POST-CRISIS DEVELOPMENT PARADIGMS in Asia

Masaru Yoshitomi
and ADBI Staff

Asian Development Bank Institute
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Foreword

Since 1999, the Asian Development Bank (ADB) Institute has explored the most appropriate development paradigms for postcrisis Asia. A development paradigm—otherwise known as an economic system for development—is composed of interactions and appropriate functions of markets, governments, and institutions. The ADB Institute has produced 50 working and research papers, analyzing and identifying the proper roles that markets, governments, and institutions should play in financial, foreign exchange goods, and labor markets, at different stages of development. Development paradigms are also strongly influenced by globalization, characterized by its three fundamental ingredients: (i) information and communication technology, (ii) expanding activities of multinational companies, and (iii) the World Trade Organization, as distinct from the General Agreement on Tariffs and Trade. This Paradigm Study synthesizes all the works of the ADB Institute on this theme,† in addition to the research of others. Since this theme is vast, we did not attempt to cover every aspect of the Asian paradigms but only selected key areas as follows (see also the Postscript).

The organizing framework for this Paradigm Study is presented in the matrix on the next page. The matrix asks both what went right with precrisis paradigms (e.g., the East Asian “miracle”) and what went wrong with them (e.g., the Asian crisis). In Chapter 1 on the miracle and Chapter 2 on the crisis, we offer coherent answers to these apparently contradictory questions. Drawing on the findings of the first two chapters, we identify in Chapter 3 new challenges confronting postcrisis Asia with special focus on (1) bank restructuring, (2) corporate governance, and (3) the opening up of the People’s Republic of China.

Finally, in Chapter 4, we make policy recommendations for three selected components of new development paradigms: (1) a more balanced financial market structure for postcrisis Asia, (2) regional trade arrangements, and (3) regional financial arrangements for averting another capital account crisis.

The primary drafters of this study were Masaru Yoshitomi, Iwan Azis, and Willem Thorbecke. There were also contributions from James Chan-Lee, Giovanni Ferri, Kyoji Fukao, Takatoshi Ito, Li-Gang Liu, David Roland-Holst, Sayuri Shirai, John Weiss, Meredith Woo-Cumings, Wing Thye Woo, and Fan Zhai.

Masaru Yoshitomi
Dean, ADB Institute
15 January 2003

† The majority of ADBI references cited herein are searchable and freely available in full text online at www.adbi.org
### Matrix for Research Program on Paradigms and Main Components

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<td>Information Asymmetry (commercial banking, debt, and stock markets)</td>
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<td>Sequencing of Liberalization</td>
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<td>Moral Hazard</td>
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### Postcrisis Development Paradigms in Asia

- What was the precrisis paradigm?
- What went right (e.g., miracle)?
- What went wrong (e.g., Asian crisis)?
- What are current challenges?
- What paradigms will be most efficient for postcrisis development?
- What growth mechanisms would be most compatible with poverty reduction and least income disparity?

ASEAN4 = Association of South East Asian Nations (Malaysia, Indonesia, Thailand, Philippines);
ICT = information and communication technology; FDI = foreign direct investment; MNCs = multinational companies;
NIEs = newly industrializing economies; PRC = People’s Republic of China; WTO = World Trade Organization.
Executive Summary

The East Asian crisis caught many by surprise, and we still lack a deep understanding to reconcile it with the region's previous economic “miracle.” In light of this, since 1999, the Asian Development Bank Institute (ADB Institute) has aimed at exploring the most appropriate development paradigms for postcrisis Asia. By development paradigm we mean an economic system for development that is composed of interactive functions among markets, governments, and institutions. ADB Institute has published 50 working and research papers, analyzing and identifying the proper roles that market forces, governments, and other institutions should play in their respective domains, i.e., financial, foreign exchange, goods, and labor markets, at different stages of development.

This Paradigm publication synthesizes all of the ADB Institute papers, with the help of the relevant research of others. Since this theme is vast, we do not attempt to cover every aspect of the Asian paradigms but only certain key areas. Given the analysis of the crisis as well as the “miracle,” we have selected two institutional issues and also in light of the development of new international environments, we have chosen a new immediate and important challenge in regional trade, namely: (i) banking sector restructuring, (ii) corporate governance of family business groups and also that of banks themselves, and (iii) opportunities and challenges or competitive threats posed by the opening up of the People’s Republic of China (PRC).

After having analyzed the miracle mechanisms, the Asian capital account crisis, and these three challenges, we identify three major ingredients of the new paradigms: (i) a more balanced intermediate financial market structure lying between bank dominant and fully developed capital market-based system, (ii) regional free trade arrangements, such as ASEAN+3 (PRC, Japan, and Korea), and (iii) regional financial arrangements, including a midway exchange rate regime between a free float and a hard peg and a regional lender of last resort to prevent and manage possible future capital account crises.

That said, this study consists of four chapters. Chapters 1 and 2 analyze, respectively, what went right with the previous development paradigms as demonstrated by the East Asian miracle and what went wrong with them as revealed by the Asian financial crisis. Our analysis shows us that the missing link between the miracle and the crisis is the sequencing of both domestic and external financial liberalization which created a large gap in the 1990s between new risks entailed by such liberalization and the capacity of existing institutions to manage such risks. From this analysis in Chapter 2 and in light of the analysis of capital account crises and of the miracle, Chapter 3 presents the three challenges facing the region. Finally,
Chapter 4 analyzes the major ingredients of the new development paradigms for postcrisis Asia.

What Went Right? (Chapter 1)

The growth performance in East Asia during the 1960s to the mid-1990s was miraculous. Since the 1970s, Southeast Asia began to show a similar performance. Following the liberalization policy and export-oriented strategy in the 1980s, the growth of the region’s output and labor productivity accelerated. Poverty fell, quite dramatically in some countries, and the income distribution did not worsen. A number of social indicators for education and health improved significantly.

While most agree that these are the ingredients of the so-called “East Asian miracle,” the explanations as to what caused such a “miracle” seem to be less unified. We argue in Chapter 1 that complex interactions between initial conditions, government policies including state interventions that are functional or pragmatic, and the presence of entrepreneurs hold the key to the story.

The demographic transition raised the share of the working age population relative to the total population, while increases in human capital formation through the government’s strong policy on education improved the quality of the labor force, providing favorable conditions for the initial takeoff. Taking care of the agriculture sector early is also important for the fairly smooth sectoral transformation. In the process, labor was allowed to freely move from lower productivity agricultural jobs to higher productivity industrial jobs.

Given the prudent macroeconomic policies, an export-oriented strategy led to soaring exports, causing income to increase and savings to rise, providing funds for further physical and human capital formation. This helped the region’s strong export performance to continue. Low inflation, stable exchange rates, minimal labor market disruptions, combined with political stability lowered risk premia, making investors more willing to undertake long-term investment in the region, encouraging further capital formation.

Effective bureaucracy insulated from political pressures played an important role in cajoling and assisting the private sector in the region to undertake industrial and technological transformation. But industrial policies strictly defined as picking the winners did not seem to consistently work. They may produce benefits, e.g., raising exports, but they may also produce high costs, e.g., rent-seeking losses and macroeconomic instability.

Policy flexibility was also apparent in the region. This was proven when many countries in the region shifted from an import substitution to an export-oriented strategy and subsequently graduated to more technology-intensive production. Other episodes also demonstrate that there was indeed policy flexibility. When the Korean economy was on the brink of recession in the early 1980s, the Government lowered interest rates, facilitating a large flow of savings into investment. Given foreign exchange controls in place at that time, the low interest rates policy did not lead to a conversion of savings into foreign currency. When Malaysia’s foreign debt soared due to massive expenditures for heavy industries during the 1980s, the Government quickly reversed the course. During the oil-boom period, the Indonesian Government recycled the windfall into expenditures for irrigation, agricultural extension services, and other social overhead capital, increasing output and productivity in the agricultural sector and raising the incomes of farmers. Then the subsequent collapse in oil prices in 1986 led the Government to shift to a new growth strategy relying more on non-oil exports.

Beyond Simply Identifying the Determinants of Growth: Dynamic Interactions Among Openness, Accumulation, and Assimilation

But analysts remain perplexed by the long period of sustained high growth in the region. The high growth levels of physical and human capital formation (accumulation) are necessary but not sufficient conditions to sustain high output growth. On their own, they would encounter diminishing returns. Labor and
capital resources cannot continue to be the main sources of growth. Labor supply growth will dwindle and capital investments will eventually confront diminishing returns. At this point, total factor productivity (TFP, helped for instance by technological progress and institutional improvement) must increase if the growth is to be sustained.

Although measured growth rates of TFP in East and Southeast Asia were not really miraculous, they were in fact still higher than in other developing countries. They were also higher than TFP growth rates in the United States (US) in the 1970s and 1980s, implying that regional economies were catching up with the advanced international best production frontier. The share of the contribution of measured TFP growth to output growth was small simply because accumulation was so high. Thereby, the miracle mechanism indicates that new machinery together with technological progress helped by human capital formation generated high output growth.

However, we believe that TFP measures fail to reflect what has actually happened in the region. Some of the technological progress in East and Southeast Asia was embodied in imported capital goods. This implies that capital accumulation already includes technical progress that was supported by local learning.

Assimilation took place at the early stage, during which imported capital goods provided both new ideas (e.g., through reverse engineering) and new equipment. The process was gradually followed by innovation, instead of leapfrogging, during which government’s role was significant, particularly in providing subsidies and other incentives. East Asia, relying entirely on export-oriented strategy, entered this stage earlier than Southeast Asia. The latter relied on both export orientation and foreign direct investment (FDI) entry.

Hence, it is the learning and innovation seen among the region’s entrepreneurs that kept the returns to capital high. Entrepreneurship involved the decision-making skills necessary to transform new ideas into practice and the creation of new firms to provide employment for the growing number of educated workers. In sum, effective interactions between accumulation and assimilation sustained high growth for several decades that led to the term “miracle.”

On maintaining a sustained growth through productivity improvements, we believe that promoting capital deepening, improving human capital, adopting an external orientation to create impetus by bringing production to world standards, and providing incentives for firms to advance technology without undermining competition, would be required. An effective partnership between government and the private sector can further strengthen attempts to improve productivity.

Growth Is the Key to Poverty Reduction

This mechanism for sustained growth also reduced poverty without, at least until the early 1990s, worsening income distribution. While in general the effect of initial inequality on future poverty reduction is uncertain, the experience of some countries in the region indicates that low inequality at the initial stage can contribute dramatically to poverty reduction. Income distribution in some countries in the region began to deteriorate (a widening income gap) during the 1990s. This suggests that governments may need to implement new targeting policies, beyond just emphasizing the agriculture sector, and review the existing social safety net system, including exploring state welfare mechanisms, albeit necessary but kept to a minimum.

What Went Wrong? (Chapter 2)

Chapter 2 considers the paradox that institutions and organizations that sustained miraculous growth for several decades suddenly proved unable to prevent a serious financial crisis in 1997–1998. It thus seeks to answer the question of what went wrong as revealed by the crisis in a manner that is consistent with our analysis in Chapter 1 of what went right during the high-growth period.

Before turning to this vexing question, it argues that the Asian financial crisis was fundamentally different from a conventional current account crisis.
In a traditional currency crisis, profligate budget deficits and excessive money creation cause domestic absorption to exceed domestic production, producing a current account deficit (CAD) and inflation. The resulting CAD could be financed by capital inflows, but poor macroeconomic fundamentals limit the availability of foreign capital. The balance of payments deficit could be financed by international reserves, but as these are depleted the country is often forced to seek emergency funds from the International Monetary Fund (IMF). In the end, the CAD proves unsustainable.

**The Asian Financial Crisis Was a Capital Account Crisis**

The Asian financial crisis was a capital account crisis, 180 degrees different from this conventional type of crisis. In a capital account crisis, the driving force is capital flows. Large capital inflows exceeding the current account deficit initially stimulate the economy by expanding money and credit, financing the cyclical upturn and increasing domestic absorption. This increases the current account deficit. In addition, since capital inflows took the form of short-term and foreign currency denominated debts, this exposed East Asia to a serious double mismatch (a joint currency and maturity mismatch). Once the domestic business cycle turns down and the asset price bubble bursts, capital flows suddenly change direction. Massive outflows then depress economic activity further, generating twin crises (i.e., both an international liquidity crisis and a domestic banking crisis), which in turn causes domestic demand to collapse through the downward spiral of banks’ and borrowers’ balance sheets. Therefore, imports collapse, resulting in large current account surpluses in as little as 1.5 years. The underlying causes are not profligate macroeconomic policies, as in current account crises, but rather sharp, rapid swings of the capital account from surplus to huge deficit.

For example, in the case of Thailand the magnitude of this reversal of capital flows between 1996 and 1998 accounted for 16.7% of gross domestic product (GDP). The Thai baht collapsed by 50% and domestic absorption collapsed by nearly 30%.

**Contagion spread** to neighboring countries. They had current account deficits that were not large (around 4% of GDP), budget surpluses, low inflation, and persistently high economic growth. Nevertheless investors who before 1997 had eagerly flocked to Asian markets suddenly pulled out. Central banks in the region abandoned their pegs and exchange rates depreciated. Like Thailand, banks and firms in these countries were exposed to currency and maturity risks. Thus the initial depreciations weakened balance sheets. Deteriorating balance sheets shook investor confidence and made foreign lenders unwilling to roll over loans. Such sudden massive reversals of capital flows produced twin crises. Banks had to curtail lending, depressing domestic absorption and output. In this environment investor confidence evaporated.

**Inappropriate Policy Responses**

The IMF advanced policies that were appropriate for countries facing current account crises, but not capital account crises. It required contractionary policies similar to those designed to help countries facing traditional currency crises due to poor macroeconomic fundamentals.

It argued incorrectly that high domestic interest rates (contractionary monetary policy) would increase the risk-adjusted interest differential between domestic and foreign rates, attract capital inflows, and strengthen the exchange rate. However, while raising domestic interest rates may attract capital under ordinary circumstances, it would not do so during a capital account crisis featuring balance sheet problems caused by double mismatches. Given the high debt-equity ratios in the region, raising interest rates increases default risk, thus undermining investor confidence and increasing the risk premium that investors require to hold domestic assets. Given the maturity mismatch at banks, higher interest rates will erode bank balance sheets, further reducing confidence and further increasing risk premia. The blows to investor confidence will raise risk premia...
Executive Summary

and lead to capital outflows and depreciations. In addition, contractionary policies imposed on countries already reeling from a speculative bust deals the economy a “double-whammy,” producing severe recessions or even depressions. Such downturns destroy investor confidence, leading to capital outflows and large exchange rate depreciations.

Financial Sector Liberalization, Growing Risks, and Ill-Designed Sequencing

Chapter 2 considers how institutions and organizations that sustained miraculous growth for several decades could suddenly allow such a severe crisis to develop. The Chapter focuses on the close relationships among family businesses, banks, and the government. At earlier stages of development, functional interactions within this triangle were successful. Family businesses substituted for weak enforcement mechanisms of contracts, the absence of managerial skills, and asymmetric information in underdeveloped financial markets. Because informational asymmetries hardly existed between owners and managers, agency problems were avoided. Banks owned and managed by family businesses were also willing to invest in projects with long gestation periods. At the same time, governments played an important role in mobilizing savings, channeling investment, and promoting export-oriented policies and sometimes targeted infant industries. Because these interactions among family businesses, banks, and governments worked well, the extent of the market increased considerably.

Over time this increase in the extent of the market, together with credit allocation problems, undermined the advantages of the family business-bank-government nexus. The substantially increased extent of the market produced daunting coordination challenges for family groups. Banks also failed to apply sound risk management techniques when deciding on loans to connected firms. Further, government-directed lending implied that normal commercial criteria were sometimes subordinated to broader economic objectives. Finally, explicit or implicit government guarantees on loans and related occasional bailing-out and “too big to fail” policies weakened banks’ incentives to monitor and discipline bad borrowers.

In the 1990s, financial liberalization—both domestic and external—produced a new financing pattern of business investment during business cycle upturns. Following financial sector liberalization, massive amounts of short-term, dollar-denominated foreign capital entered and financed a large portion of domestic investment in the region. Both maturity and currency mismatch gave rise to new risks in balance sheets of banks and borrowers, increasing the probability of twin crises.

As a result the gap widened between the new risks arising from financial liberalization and the insufficient capacity to manage them by existing institutions. The failure to recognize this gap resulted in premature capital account liberalization without stressing the importance of a new institutional setup. ADB Institute’s risk-based approach to the sequencing of financial liberalization can clearly identify the missing link between the miracle and the crisis.

Learning the Lessons: A Risk-Based Sequencing for the People’s Republic of China

Given the dangers of improper sequencing, we conclude the Chapter by considering the sequencing of financial sector liberalization in the PRC. Using a risk-based sequencing approach developed at the ADB Institute, we derive the following seven proposals for the PRC: (1) Strengthen the banking system through quick nonperforming loan (NPL) resolution; (2) Substantially diversify ownership of state-owned enterprises (SOEs) and state-owned commercial banks (SOCBs) to help build effective incentive systems and a new corporate governance structure; (3) Establish an independent Central Bank and supervisory agencies for a rules-based supervisory system; (4) Implement sensibly sequenced domestic financial liberalization; (5) Make foreign entry a part of the solution for a
vibrant financial system; (6) Sequence the order of capital account opening and reduce currency and maturity mismatches; and (7) Adopt a more flexible exchange rate regime. We believe that by following these proposals, the PRC can avoid the type of crisis that hit Asia following financial sector liberalization.

New Challenges Facing East Asia (Chapter 3)

As stated in the introduction, Chapter 3 focuses on three leading challenges facing the regional policymakers: (1) bank restructuring, (2) corporate governance, and (3) the PRC’s new openness to the global economy. The first two challenges directly arise from the institutional weaknesses closely related to the crisis of 1997-1998. The third challenge comes from new international environments. In particular, “open PRC,” whether it is a challenge or opportunity, global networks, and newly emerging vertical intra-industry trade also impose new challenges to policymakers in the region.

Challenges in Banking Restructuring

Bank restructuring, confronts all Asian crisis countries. Thailand, Indonesia, Korea, and Malaysia all face NPL problems and accompanying banking crises that needed to be resolved.

We argue that an independent supervisory agency is needed to overcome the tendency to cover up NPL problems, whose emergence is feared by banks—as NPLs would reduce reported profits; by governments—NPLs might induce a credit crunch; as well as by politically-connected borrowers. Such an agency should be immune from political pressure and staffed by professionals. Its yardstick for measuring the health of a bank should be only the bank’s capital adequacy ratio (CAR).

To minimize fiscal costs, the supervisory agency should avoid forbearance and quickly decide whether the institutions need to be suspended, closed, assumed by a bridge bank, injected with capital, or merged with a healthier bank. Also, the supervisory agency needs to facilitate resolution of NPL problems at healthy banks by promoting an appropriate legal framework to deal with failing companies and the swift transfer of collateral to lenders, while, at the same time, upgrading enforcement.

In our view, capital injections can raise the CAR, strengthening bank balance sheets so that banks can deal with NPLs and start lending again. However, to reduce moral hazard problems, it is desirable to require bank executives to quit when a capital injection is made.

We also discuss how closures or mergers can cause problems, as in the case of Indonesia, where 16 banks were shut down without a blanket guarantee on deposits and this led to a costly bank run that disrupted financial intermediation. Closure and liquidation may also become costly unless they are done promptly and management is replaced quickly. Otherwise good borrowers will be denied additional financing, leading to a credit crunch and a deeper economic downturn. The danger of using mergers instead of a capital injection is that it may make a healthier bank weaker, instead of a weaker bank healthier. It is also difficult to restructure a larger bank because of political pressure to enforce the “too big to fail” doctrine.

Finally, we consider the need for corporate debt restructuring and the role of asset management companies (AMCs) in resolving NPL problems, where AMCs can give corporations breathing room to reorganize and restructure without disrupting production. Korea’s success in this area may help explain why it has recovered more quickly than other Asian crisis countries. AMCs provide a place where bad assets can be housed for restructuring, collection, and privatization. They thus provide a means of removing NPLs from bank balance sheets.

Challenges to Corporate Governance

Given the analysis on weak institutions under financial liberalization in Chapter 2 and, also as
analyzed in Chapter 4, an intermediate financial market structure will emerge where banks conduct not only banking but also securities business, we argue that the main challenges to corporate governance are: (i) bank-based monitoring mechanisms and (ii) who monitors such banks and what ownership structure will be desirable.

For banks to monitor corporate borrowers effectively, the banks should be in a better “location” along the overall industrial and financial structure of the economy in postcrisis East Asia than they were before the crisis. In fact, it should be that government interference with the allocation of finance be reduced and also that banks are freer from family business interference and connected lending.

Regarding who monitors the monitor in the context of bank-based corporate governance, we argue that banks’ corporate governance can be improved when block-holders own them. It can be argued that appropriate prudential regulations could be enough to monitor banks. However, regulators have different objectives. Regulators aim at minimizing excessive risk-taking behavior and hence at preventing systemic crises, while corporate governance is aimed at maximizing shareholders’ value. Regulation per se is, therefore, insufficient to guarantee the good corporate governance of banks. Finally, when bank ownership is dispersed, shareholders will undergo the free-rider problem resulting in poor monitoring of the management. Thus, effective corporate governance of banks requires the presence of a block-holder, who has both the right incentive and the power to monitor management.

In our case, the typical block-holders we can envisage for banks might be large family businesses. Thus, it is essential that banks be independent from interference of family business so that poorly managed connected lending would not occur. On the one hand, a possible solution surfacing first in Korea is that families have to opt either for the bank business or for their nonfinancial business. On the other, where such specialization is unfeasible and family groups are allowed to have a captive bank, this calls for stronger institutional building to restrict and supervise connected lending.

To have efficient corporate governance of banks, those banks that were nationalized in the crisis resolution should be privatized. We identify some strategies for successful re-privatization.

**Challenges From the Opening up of the PRC in the Context of Global Networks and Trade Triangle**

In recent years, many Asian economies have experienced direct challenges to their exports from the PRC. These challenges increased competitive pressure on ASEAN exports in a third market. Evidence indicates that the main ASEAN economies have been exposed to increasing competition from the PRC in both the US and Japanese markets. Further, their reduced competitiveness in terms of market displacement or eroded market share vis-à-vis the PRC appears to be concentrated in strategically important and hitherto more specialized product categories in terms of revealed comparative advantage. Increased competition from the PRC is detected at both the labor-intensive and the technology-intensive ends of the product scale. In no product category is there any evidence of systematic gains relative to the PRC, while losses are more evident in some relevant segments. For example, for electronics and electrical and engineering (accounting for two thirds of ASEAN exports to the US and 40% to Japan), there is a consistent pattern of loss of competitiveness that is larger in more specialized products. For the other important categories of primary products, resource-based manufactures and textiles and garments, all ASEAN countries show significant losses in either the US or Japan. Thus, ASEAN countries need to react quickly by restructuring their productive specialization toward higher skill formation and technological upgrading.

At the same time, we argue that, while an open PRC provides impetus for East Asian economies to upgrade their own industrial trade structure by nurturing higher skills, an open PRC provides even greater opportunities for much larger exports from Asian countries.
There has been growing concern over the PRC’s dominance in the regional trade pattern covering all levels of skill. But our study using detailed (6-digit) trade statistics and data on sectoral skill composition shows that over the period 1996–2000 no significant departures are detected from the expected pattern. For example, Japan, Korea, and Taipei, China are still strongly export-oriented in high wage sectors and remain dominant in this respect, and ASEAN is “holding its own” in bilateral trade with the PRC by maintaining existing concentrations of relatively high wage exports. The PRC, on the other hand, maintained most of its export orientation in low wage activities, although a new component of high wage net exports is emerging.

However, this situation is likely to evolve rapidly. Significant and relatively sustained FDI into the PRC can markedly alter the productivity and skill characteristics of domestic factors. Supply conditions for skilled labor may not keep pace with demand, blunting the PRC’s traditional comparative advantage and driving its investment allocation more towards capital and technology. Whether this substitution will occur fast enough to preserve the PRC’s export competitiveness is a real important issue not only for the PRC but also for the region.

It is therefore extremely important for the region, especially ASEAN, to constantly upgrade its trade structure through higher skill formation and technological progress. But equally important is their response to a likely new regional trading pattern arising from the emerging PRC, which is characterized by increasing global networks created through the decomposition of the value chain by multinational companies and also through the newly and rapidly developing “vertical” intra-industry trade, such as in the electronics industry.

**Major Components of the New Paradigms (Chapter 4)**

Given the analyses in the preceding three chapters, Chapter 4 identifies the three major areas of post-crisis paradigms in Asia: (i) an intermediate financial market structure lying between bank dominant and fully developed capital market-based system; (ii) regional free trade arrangements, such as ASEAN+3; and (iii) regional financial arrangements, including an exchange rate regime midway between free float and hard peg and regional lender of last resort to prevent and manage possible future capital account crises.

**More Balanced Intermediate Financial Market Structure**

We argue that increasingly banks can and must play a crucial role in fostering capital markets, particularly corporate bond markets. Banks are in fact already dominant in Asian bond markets as issuers, underwriters, investors, and guarantors. But given the prevailing constraints in many countries, expanding bond markets will require banks to take a major role.

Banks are in an advantageous position since they can access and use inside information about their borrowers. This role is important among others because information about borrowers is highly idiosyncratic and the informational, legal, and judicial infrastructures necessary for developing sound capital markets are largely underdeveloped in Asia. On the other hand, the equity market could help strengthen the governance of banks by improving the management of the banking sector through strengthening the board of directors systems of banks. Hence, we argue that this “intermediate financial market structure” (positioned between a bank-dominated financial structure and a full-fledged capital market-based structure), can and should be developed in Asia.

We are aware, however, that some problems may arise with this structure, e.g., banks may gradually change into megabanks through mergers and acquisitions that may deter the development of full-fledged capital markets by placing priority on banking functions over the securities business, and that it may discourage financial innovation. In such circumstances, small firms may find it more difficult to raise funds.
from banks as financial conglomeration emerges. The solvency of banks may also deteriorate as they increasingly take part in large-scale derivatives transactions, generating new risks and worsening the existing ones. Solvency may deteriorate further when reputable firms raise their funds by issuing securities rather than borrowing from banks such that the default ratio of average loans faced by banks increases.

Given these potential problems, therefore, we strongly recommend to improve banking sector soundness, to prevent government’s interventions, and to limit connected lending. The management of banks should be monitored through the block-holder ownership structure, as mentioned above, and the presence of an effective board of directors, and regulators must avoid recommending a bailout policy regardless of banks’ solvency. In order to make the required prudential regulations effective, informational, legal, and judicial infrastructures need to be enforced. It may also be desirable for Asian countries to deal with disadvantages in the intermediate financial market structure by introducing firewall provisions, i.e., introducing the bank subsidiary form.

**Strengthening Regional Trade Arrangements**

The next major ingredient of the development paradigms is a possible new trade pattern in the region. Our study predicts the emergence of a systematic pattern of triangular trade in the region, in which the PRC’s export expansion can offer significant growth leverage to its neighbors. From a series of simulations looking at alternative regional trade arrangements, the most appropriate response for ASEAN is to form a free trade arrangement (FTA) that includes the PRC (hence, AFTA plus the PRC). This would be beneficial particularly to ASEAN, because it expands its trade within the region, but induces significant trade diversion (i.e., negative growth of exports) away from nonmembers.

Significant trade diversion can occur among regional exporters, at the expense of those countries who opt out of an FTA which include the PRC. For East and Southeast Asia as a whole, they can capture most of the absolute export growth expected from full globalization (PRC’s World Trade Organization [WTO] accession) by just forming an ASEAN+3 free trade arrangement.

**Regional Financial Arrangements**

We propose a package to avoid another capital account crisis, and to manage it should one occur. The region should (i) adopt an intermediate exchange rate regime between free floats and a hard peg; (ii) establish controls on short-term capital inflows; (iii) restrict nonresidents’ holdings of domestic currencies of emerging economies; (iv) “bail in” the private sector through, for instance, urging rollover of bank loans; and (v) establish a regional lender of last resort facility.

The East Asian financial crisis was highly contagious. This emphasizes the need to establish a regional lender of last resort through a strong surveillance system at the regional level to detect signs of a crisis at an earlier stage and to reduce its severity should it occur. Helped by its information and location advantage, such a regional system should be able to provide effective monitoring in a complementary manner to IMF’s global surveillance system. Second, conditionality should be developed to fit the capital account crises, whereas IMF conditionality may essentially fit current account crisis.

For all these reasons, a regional financial arrangement (RFA) in Asia should carry out what the IMF may not be able to effectively achieve in minimizing or managing a capital account crisis, particularly in terms of massive and timely provision of international liquidity and more relevant conditionalities attached to it. As Asian quotas and voting rights may no longer appropriately reflect Asian economic power (i.e., income and wealth) in the IMF, the proposed RFA could also provide the region with an important opportunity to strengthen its voice in the international community.
Toward New Paradigms for Postcrisis Asia

The Paradigm Study has identified the following six key ingredients of new paradigms for postcrisis Asia:

(i) Intermediate financial market structure lying between bank dominant and fully fledged capital market-based financial systems;
(ii) Bank-based corporate governance where the bank, independent from the both government and family business groups, should monitor firms. Regarding who monitors the banks, their ownership structure should be blockholder-based;
(iii) More comprehensive regional free trade arrangements compatible with globalism such as ASEAN+3 in the context of open PRC and global networks;
(iv) More innovation-based higher TFP growth through higher skill formation in the context of global networks;
(v) A midway exchange rate regime between a free float and a hard peg; and
(vi) A regional lender of last resort for any future capital account crisis.

We hope that this publication provides the Asian policy community with practical policy recommendations built upon rigorous analytical underpinnings and will stimulate further public debate.
Chapter 1

The Asian “Miracle”: What Went Right?
A. Stylized Facts

B. Determinants of Growth
   1. Demographic Changes, Labor Input, and Human Capital
   2. Capital Deepening
   3. Total Factor Productivity

C. Fundamental Causes of Strong Performance
   1. Government Policies
      a. Early Development of Agriculture and Structural Transformation
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      e. Industrial Policy
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   2. Technology and Openness
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D. Growth, Poverty, and Inequality

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References
Chapter 1

The Asian “Miracle”: What Went Right?

In explaining the Asian “miracle,” high levels of physical and human capital formation (accumulation) are necessary but not sufficient conditions to sustain high growth. On their own, they would encounter diminishing returns. It is the learning and innovation (assimilation) seen among the region’s entrepreneurs that kept the returns to capital high. Entrepreneurship involved the decision-making skills necessary to transform new ideas into practice and the creation of new firms to provide employment for the growing number of educated workers. Hence, effective interactions between accumulation and assimilation played important roles in the region’s sustained growth.

Throughout this chapter, we argue that this process is at the heart of what happened in East and Southeast Asia.

Our initial analytical framework is based on a standard production function approach, in which the determinants of output growth include inputs of labor, human capital, physical capital, and increases in the productivity of these inputs (i.e., increases in total factor productivity [TFP]). Even in this conventional framework, measured TFP growth rates in the region were found to be higher than in other developing countries. They were also higher than TFP growth rates in the United States in the 1970s and 1980s, implying that Asian economies were converging toward the international best practice production functions. The contribution of measured TFP growth to income growth was low because the region’s income grew so quickly.

We subsequently argue, however, that this approach is insufficient to explain East and Southeast Asia’s growth experience. Dynamic interactions between capital deepening and TFP growth or technological changes hold the key to the explanation. The region’s external-oriented and open policy was a critical vehicle for such dynamic interactions through which assimilation efforts took place.

The region’s external-oriented strategy promoted both capital deepening and the assimilation of new technologies. High capital formation invited large imports of capital goods and intermediate products that embodied advanced technologies. In addition, when Asian economies exported, importers in foreign markets provided the exporters with detailed engineering and managerial instructions. Licensing and joint ventures were commonly used. Firms in the region also engaged in a painstaking and cumulative process of technological learning, involving reverse engineering. In addition, competitive pressure in foreign markets necessitated greater efficiency and productivity gains.

There is a continuum linking current activities, activities that would be easy to learn and those that are out of reach (Nelson and Pack 1997). Standard growth models are thus inadequate to measure tech-
nological advancement. Yet, we believe that much of the story in the region was precisely due to assimilation and innovation.

Since the publication of *The East Asian Miracle* (World Bank 1993), there has been a major occurrence in the region. The Asian financial crisis hit a number of the countries whose development progress had been coined a “miracle” in that book. This raises the fundamental question: how can we explain both “miracle” and “crisis” in an analytically coherent manner? This particular question is taken up in Chapter 2.

But there have been other important developments since 1993. A notable example is the widening of income inequality in some countries in the region, despite the continued miraculous growth. These are the main issues to be analyzed in this chapter.

### A. Stylized Facts

In this section, we review some stylized facts about the region. While certain social and educational indicators were similar to those of other emerging economies, longer-term growth and investment rates in countries such as Korea, Malaysia, and Thailand far surpassed those in other developing countries. Our task in later sections will be to explain why regional economies performed so much better than other economies, even under comparable conditions.

Growth performance in the region before the crisis was unprecedented. Table 1 summarizes the growth rates of gross domestic product (GDP) per capita in selected Asian and Latin American countries between 1960 and 1996. East Asia’s growth rates were clearly higher than in the other countries between 1960 and 1970. During the 1970s, some Southeast Asian countries began catching up. Indonesia and Malaysia, the two resource-rich countries in the region, recorded average annual growth rates of GDP per capita in the 1970s of around 6%. As shown in Table 1, outside of Asia, only Brazil recorded similar growth in the 1970s. Between 1980 and 1996, when liberalization and an export-oriented strategy were in place in East and Southeast Asia, growth rates in the region surpassed those elsewhere.

High economic growth was accompanied by high investment. The investment ratio in Korea rose dramatically from 26% in 1970 to 39% in the early 1990s (Figure 1). A similar pattern can be found in Southeast Asian countries, where ratios in Malaysia and Thailand, for example, were greater than 40%, far exceeding those in other developing countries (e.g., Brazil, Chile, India, and Mexico).

Table 1. Average Annual Growth of Per-capita GDP, Constant PPP (%)

<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td>PRC</td>
<td>1.9</td>
<td>2.8</td>
<td>6.4</td>
</tr>
<tr>
<td>Indonesia</td>
<td>1.4</td>
<td>6.5</td>
<td>5.2</td>
</tr>
<tr>
<td>Korea</td>
<td>5.8</td>
<td>5.7</td>
<td>7.3</td>
</tr>
<tr>
<td>Malaysia</td>
<td>2.8</td>
<td>5.8</td>
<td>3.9</td>
</tr>
<tr>
<td>Taipei,China</td>
<td>6.7</td>
<td>7.5</td>
<td>6.3</td>
</tr>
<tr>
<td>Thailand</td>
<td>5.5</td>
<td>3.8</td>
<td>6.0</td>
</tr>
<tr>
<td>Philippines</td>
<td>1.8</td>
<td>3.1</td>
<td>-0.1</td>
</tr>
<tr>
<td>India</td>
<td>2.2</td>
<td>0.9</td>
<td>3.8</td>
</tr>
<tr>
<td>Brazil</td>
<td>4.1</td>
<td>5.8</td>
<td>0.5</td>
</tr>
<tr>
<td>Chile</td>
<td>2.5</td>
<td>1.0</td>
<td>3.1</td>
</tr>
<tr>
<td>Mexico</td>
<td>3.4</td>
<td>3.7</td>
<td>-0.3</td>
</tr>
</tbody>
</table>

conditions work effectively to facilitate the initial takeoff and a smooth transition to sustained economic growth. Once labor surpluses were exhausted, government policies in East Asia successfully facilitated entry into the technological era of the 1970s and 1980s. In Southeast Asia, the migration of surplus labor from the agriculture sector into the nonagriculture sector proceeded smoothly.

East Asia adopted an export-oriented strategy from the 1960s onward. Meanwhile, most Southeast Asian countries shifted from an import substitution strategy to an export-oriented strategy in the 1980s. Although the export/GDP ratio does not necessarily reflect a country’s export strategy per se, it gives an indication of real export orientation and suggests that accommodating policies are likely to be in place. Figure 2 indicates that the export/GDP ratios in East and Southeast Asia were quite high. This may be partly because many East and Southeast Asian countries are small in size. However, even for a large country like Indonesia, the export ratio far exceeded that in comparatively large countries such as Brazil and India. The region’s high export capacity was fueled by substantial imports of capital and other intermediate

goods. This explains why the export/GDP ratio in Malaysia could exceed 90% of GDP before the crisis, without producing massive trade surpluses.

East and Southeast Asia’s labor productivity, a key performance indicator, has been impressive by international standards. Since the 1960s, the average growth rate of labor productivity in Asia has been persistently higher than in other regions, increasing continuously up to the 1990s. It accelerated from 4% per year between 1965 and 1980 to 5.2% per year between 1980 and 1990 and even reached 9.0% per year between 1990 and 1993 (Figure 3).¹

One of the important determinants of this remarkable labor productivity was the relatively impressive trend in human capital. Adult literacy rates and average years of schooling in all countries of the

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¹ East Asia in Figure 3 includes Southeast Asia.
The region far exceeded corresponding rates in, for example, India (Figures 4 and 5). However, the fact that the rates in some of the fast growing economies were similar to those in economies that did not grow as fast (e.g., Brazil and the Philippines) indicates that education levels alone cannot explain high growth.

The region also performed well according to other social indicators (e.g., life expectancy and infant mortality). As shown in Table 2, in 1967–1997, life expectancy increased by 12–19 years. However, some other developing countries such as Chile, India, and Mexico experienced similar gains. Infant mortality tumbled in all the “miracle” economies between 1967 and 1997 and fell below 10 per 1,000 live births in Korea, Singapore, and Taipei, China, but some other developing countries experienced comparable gains as well.

It is commonly argued that the region’s high growth rates were not accompanied by a worsening of income distribution. This is often cited, along with the fact that the number of poor fell rapidly, to justify labeling the Asian experience as “miraculous.”

### Table 2. Life Expectancy and Infant Mortality

<table>
<thead>
<tr>
<th>Country</th>
<th>Life Expectancy</th>
<th>Infant Mortality</th>
</tr>
</thead>
<tbody>
<tr>
<td>Korea</td>
<td>57.7</td>
<td>72.3</td>
</tr>
<tr>
<td>Indonesia</td>
<td>46.0</td>
<td>65.1</td>
</tr>
<tr>
<td>Malaysia</td>
<td>59.4</td>
<td>71.7</td>
</tr>
<tr>
<td>Singapore</td>
<td>66.5</td>
<td>76.4</td>
</tr>
<tr>
<td>Thailand</td>
<td>56.7</td>
<td>68.8</td>
</tr>
<tr>
<td>Philippines</td>
<td>56.2</td>
<td>68.3</td>
</tr>
<tr>
<td>Taipei, China</td>
<td>64.0</td>
<td>74.8</td>
</tr>
<tr>
<td>India</td>
<td>48.0</td>
<td>63.1</td>
</tr>
<tr>
<td>Brazil</td>
<td>59.5</td>
<td>67.0</td>
</tr>
<tr>
<td>Mexico</td>
<td>62.4</td>
<td>72.0</td>
</tr>
<tr>
<td>Chile</td>
<td>63.4</td>
<td>75.0</td>
</tr>
</tbody>
</table>

Note: For Brazil, Chile, and Mexico, data for 1967 are from 1970-1975.

In fact, while poverty did fall, the region has had only mixed success in reducing inequality. As the trend of the Gini index in Figure 6 shows, from the early 1970s to the mid-1990s, some countries experienced a worsening of inequality early on, before witnessing an improvement later (e.g., Korea). Others experienced the opposite (e.g., Indonesia, Malaysia, and Philippines). Thailand’s level of inequality has been persistently higher than in other countries, worsening from the early 1980s to the early 1990s. By 1996, the Gini index in Thailand remained higher than 0.5.

While other emerging economies have enjoyed some of these social improvements, Asia’s growth was spectacular. Government policies seem to have played an important part in this exemplary performance, consistently accommodating the changing needs of the economy, while not guiding its path directly. Policy flexibility was apparent, for example, in East Asia’s transition from an import substitution to an export-oriented growth strategy in the 1950s and in their subsequent graduation to more technology-intensive production. In the more natural resource-rich countries (e.g., Indonesia and Malaysia), the windfall accruing during the resource-boom period was spent and saved wisely, preventing the outbreak of Dutch disease. The accrued windfall profits were recycled into irrigation, fertilizer, agricultural extension services, and similar items, increasing output and productivity in the agriculture sector and raising the incomes of farmers. These gains helped to reduce the incidence of poverty among the rural poor. Policy flexibility was also evident in Southeast Asia’s shift to an external-oriented strategy after commodity prices fell in the 1980s.

There is widespread agreement that the region’s success was predicated on:

(i) The existence of an effective bureaucracy that was insulated from political pressures that could undermine economic growth;

(ii) Cooperation between public and private sectors under the overall guidance of a pilot planning agency;

(iii) Heavy and continuing investment in education for everyone;

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2 A Dutch disease occurs when the ratio of tradable and nontradable prices changes to the disadvantage of the tradable sector. For a detailed explanation of how the Indonesian government managed to spend and save the windfall from oil revenues, see Azis (1999).
(iv) Policies to ensure equitable distribution of the wealth created by rapid growth; and
(v) Governments that intervened without distorting the price mechanism.

These issues will be discussed in greater detail in the following sections. In the next section, we use a growth accounting framework to help measure the underlying determinants of economic growth in the region.

B. Determinants of Growth

In general, a country’s output growth can be explained by increases in inputs of labor (human capital), physical capital, and by increases in the productivity of these inputs. The latter is often measured by TFP. Alternatively, one can use the growth of labor productivity (output per worker) as a narrower indicator of efficiency. In a reduced form, this framework specifies that labor productivity growth is determined by the growth of the capital-labor ratio (capital deepening), human capital, and TFP.\(^3\) In this section, we concentrate on these reduced form components.

1. Demographic Changes, Labor Input, and Human Capital

Population and health policies, including the spread of contraceptives, have helped to transform the region’s demographic landscape over the last 50 years. As policymakers have been active in this area, Asian cultures and religions have generally been receptive to contraception. Thus, despite falling mortality, the region’s population has stabilized. In addition, declining fertility has steadily increased the working age share of the population.

Each of these demographic changes has contributed to higher output growth. The average annual growth rate of the economically active population in East Asia between 1965 and 1990 was 2.4%, much higher than the corresponding population growth rate (1.6%). The difference in Southeast Asia was smaller (i.e., 2.9% versus 2.4%). Bloom and Williamson (1997) estimated that these changes increased the labor input per annum by 1.1 percentage points in East Asia and by 0.6 percentage points in Southeast Asia, assuming that the number of working

\[ \text{Figure 7. Demographic Changes and Economic Growth, 1965-1990 (%)} \]

Source: Bloom and Williamson (1997) data.

\(^3\) Observing a large amount of variation in the level of TFP across countries measured by the standard Solow residual, Hall and Jones (1999) used a different approach by emphasizing the differences in “social infrastructure” (consisting of institutions and government policies) that drove the differences in capital accumulation and productivity.
hours per employee and the labor participation rate did not change. As shown in Figure 7, the higher growth differential between working age population (WAP) and total population explains 1.6 percentage points of the 6.1% annual growth rate in East Asia and 1.4 percentage points of the 3.8% growth rate in Southeast Asia. Figure 7 shows that these effects are more marked than typically found in other developing countries. The increases in output-per-person caused by these demographic changes helped in meeting the challenges caused by the absolute increases (though relative declines) in numbers of dependents.

Increasingly, the role of geographical factors in explaining economic performance has been emphasized by some authors (e.g., Gallup, Sachs and Mellinger 1998). Geography can affect the prevalence of diseases. For instance, malaria and helminthic infections are endemic to the tropical and subtropical zones in East and Southeast Asia. These diseases are difficult to control and can affect a large part of the population. In turn, a high incidence of disease can alter the age structure, lowering the ratio of WAP to total population and, thus, adversely affecting economic growth as described above. To the extent that the region had a large proportion of working age people, both population and health policies must have worked effectively.

While the reductions in fertility and mortality raised living standards, the resulting higher real incomes and lower levels of poverty reinforced the trend by in turn reducing mortality and fertility. The region thus experienced a virtuous cycle of demographic transition and economic growth.

East Asia has been blessed with good human resources. As early as 1960, its level of human capital formation was already higher than in other countries at comparable levels of development. The region was committed to education, as reflected by high public and private investment in human capital. Governments in Korea and Taipei, China focused spending first on primary education and then on secondary or tertiary education. Postsecondary education in Korea emphasized vocational training and engineering during the 1960s and 1970s to meet the needs of the labor market. This turned out to be a critical decision, since in other countries the skills of the workers often did not match the needs of firms. By the early 1990s, primary education enrollment in East (and Southeast) Asia was practically universal. In that period, Korea also achieved universal secondary education. Although secondary enrollment rates are still relatively low in some other countries in the region, they have persistently increased.

With the economy growing quickly over the years, incomes increased steadily and broadly. Higher incomes allowed more to be spent on human capital formation, including higher-level education. From the 1980s, the Korean government shifted the focus of education to match the changing needs of industries (e.g., shipbuilding, electronic information, and services). It assigned a higher priority to science and technology at the university level than to social sciences and humanities. In the process, the expanding economy enabled more resources to be invested in secondary and tertiary education, increasing postprimary enrollment manyfold.

Thus, both the demographic changes and human capital formation had beneficial effects. Increases in the share of the working age population relative to total population raised total labor input annually, while increases in human capital formation raised the quality of the labor force.

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4 Among the three economies in East and Southeast Asia that are classified as “high income” by the World Bank (out of 28 high income economies), only Hong Kong, China and Singapore and part of Taipei, China are in the tropical zone, representing a mere 2% of the combined population of the high-income regions (Gallup, Sachs, Mellinger 1998).

5 In some Southeast Asian countries (e.g., Indonesia and Thailand), weak secondary education made it difficult to climb the ladder of technology.
2. **Capital Deepening**

Over the span of 35 years, capital per worker grew quickly in Korea and Taipei, China and slightly less quickly in Southeast Asian countries such as Thailand (Figure 8). In 1960, the capital-labor ratio in the region was similar to other developing countries (e.g., India), and even significantly lower than some (e.g., Chile and Mexico). Since then, however, the capital-labor ratio has grown much more quickly in East Asia (Figure 8), so that by 1990 the ratios in Korea and Taipei, China were far higher than those in Latin America and the rest of Asia (Figure 9).

These increases in the capital-labor ratio occurred as the region changed its development strategy. In the 1950s, East Asia’s prevailing strategy was import substitution, inducing industrialization with protectionism as a means of catching up with high
income, capital-abundant countries. As practiced in East Asia in the 1950s, import substitution included import protection, overvalued exchange rates, and below-market interest rates on loans and deposits. Import protection was designed to shield against foreign competition, protecting infant industries and replacing capital goods imports. Overvalued exchange rates were maintained to provide additional protection by limiting the foreign exchange received from exports and, thus, the countries’ ability to import. Low interest rates were intended to promote investment. In general, the import substitution strategy—only a brief interlude in Korea and Taipei, China—was characterized by a series of protectionist measures.

In the late 1950s and early 1960s, Korea and Taipei, China abandoned their antiexport bias and adopted outward-oriented strategies. The degree of protection went down sharply. The weighted average import duty rates declined consistently. By 1980s they reached 20–25%. The rates declined further to less than 10% in the 1990s. By comparison, rates in India were persistently higher than 70% until the early 1990s. Taipei, China provided import duty rebates for exportable production, allowed firms to use export earnings for required imports, and implemented an export credit program. Korea waived tariffs on imported raw materials and provided subsidized credit to exporters. Both economies also eliminated overvalued exchange rates. These changes gave firms an incentive to export by making the effective exchange rate on exports more favorable than the effective exchange rate on imports (Bhagwati 1988). Exports and investment relative to GDP began to surge in the 1960s, contributing to soaring GDP growth rates over the next 30 years.

Steadily rising domestic investment raised the capital-labor ratio, and was further sustained by the takeoff of exports. Soaring exports led to increases in income and a virtuous circle of capital formation: increases in income led to increases in saving, providing funds for physical capital formation. This further increased the capital-labor ratio and helped the strong export performance to continue. With high savings rates, Taipei, China could finance its investment without borrowing abroad and Korea could finance investment with minimal foreign borrowing (Rodrik 1995).11

Demographic changes described earlier also influenced the region’s savings rate. The rapid growth of the working age population (as a share of total population) resulted in a savings boom, because of the reduction in the dependency burden. Higgins and Williamson (1997) found that in the early 1990s, the East Asian household savings rate in ratio to GDP was 8.4 percentage points higher than its average between 1950 and 1992 due to the decline in the dependency burden. The corresponding figure for Southeast Asia was only slightly lower (7.9 percentage points above the 1950–1992 average). From this perspective, along with other policies, demographic changes

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6 Based on the work of Prebisch (1950) and Singer (1950), economists and policymakers believed that the income elasticity of demand for primary commodities was low. Income growth would thus reduce the relative demand for primary products vis-à-vis manufactures and the relative price of commodities in terms of manufacturing products. It was argued that developing countries could avoid the consequences of this deterioration in their terms-of-trade by producing manufacturing products.

7 Bhagwati (1996) argued that there was no truly compelling explanation for why East Asian nations chose the export promotion strategy.

8 The comparable figures for Southeast Asia were from 15–40% in the 1980s to 7–15% in the 1990s (World Bank’s data).

9 India’s import tariffs for capital and intermediate goods were actually lower than 70%. Unlike in East Asia, however, there was no attempt in India to favor export industries.

10 Given inertia in consumption, higher-than-expected personal income growth raised household saving rates. Increases in corporate income similarly raised business saving.

11 The contours of this debate are discussed in Bhagwati (1996) and Rodrik (1995).

12 On the contrary, East Asia’s (Southeast Asia’s) savings rate during the heavy dependency rate burden, i.e., 1970–1974, was 5.2 (3.6) percentage points below its 1950–1992 average. This strengthens the argument regarding the effect of demographic changes on the region’s savings rate.
falling dependency) played an essential part in the region’s economic growth, via increased savings and investment rates and resultant capital deepening.

In the case of Korea, the persistently positive government and corporate savings rates added to fast growing household savings (from merely 1–2% in the 1960s to 7–16% of gross national product [GNP] in the 1970s and 1980s, respectively), resulting in a rapid growth of national saving, i.e., from 10% in the 1960s to 21% in the 1970s and more than 35% of GNP in the 1980s. While government saving was policy-induced, household saving was primarily autonomous. Given inertia in consumption, sustained higher-than-expected income growth led to rising savings rates. The primary objectives of this household saving were education and housing.\(^{13}\)

In the case Taipei, China, US aid helped finance investment at the early stage, in the 1950s, coming to nearly 40% of gross investment (Dahlman and Sananikone 1997). As in the case of Korea, higher-than-expected economic growth after the takeoff raised the savings rate.

Returning to Figure 8, from 1965–1980 to 1980–1990, there is a clear slowdown in the growth rate of capital stock per-worker (with the exception of Chile). On the other hand, as indicated earlier, the growth rate of labor productivity in East and Southeast Asia accelerated from 4% in 1965–1980 to 5.2% between 1980 and 1990 and the marginal product of capital continued to increase. It is therefore likely that the region experienced an improvement in TFP and human capital—hence technology—during that period. We have discussed human capital; we now turn to TFP.

### 3. Total Factor Productivity

TFP measures the efficiency with which both labor and capital resources are used to produce output. TFP increases when firms make better use of factor inputs. Typically, a country begins with input-driven growth, in which the main sources of economic growth are first increases in labor, and then increases in human and physical capital. In the next stage, these labor and capital resources can no longer be the main sources of growth. Labor supply growth will dwindle and capital investments will eventually confront diminishing returns. At this point, TFP must increase if the growth is to be sustained.

Growth of TFP can be viewed either on its own or by its contribution to output growth. The former refers to the absolute growth rate of TFP, the latter to the proportional contribution of TFP growth to output growth. It is argued in this section that although the contribution of TFP growth to the region’s miraculous output growth was relatively low (compared to the experience of the currently developed countries when they were developing), the growth rate of TFP itself was not low in these Asian economies.

In a simple framework, the neo-classical model measures TFP by taking the (Solow) residual of a production function with Hicks-neutral technical progress.\(^{14}\) If the implicit assumptions of the model fail to hold, the residual will not measure only technological change (Abramovits’ measure of ignorance). In this case, there are several other factors that can determine the residual. These include: nonconstant returns to scale, 

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13 Renaud (1989) argued that housing was the major motivation for saving because of the high prices and shortage of mortgage lending. There was also a component of forced saving due to the advanced deposit system known as chonsei. It is also important to note that in the 1960s, foreign capital played a major role in preceding and subsequently complementing domestic saving (see Kihwan and Leipziger 1997).

14 The residual is measured as the portion of output growth that cannot be explained by increases in inputs. For instance, consider a Cobb-Douglas production function:

\[
Y = AK^\alpha L^{1-\alpha},
\]

where \(Y\) is output, \(A\) is TFP, \(K\) is the capital stock, \(L\) is the labor input, and \(\alpha\) and \(1-\alpha\) are the share of output going to capital and labor, respectively. If \(g\) represents growth rates, the production function can be written in rate of growth form as:

\[
g_Y = \alpha g_K + (1 - \alpha) g_L.
\]

In this case, \(g_Y\) measures the Solow residual. Technical change is Hicks-neutral when it does not affect the marginal rate of substitution between labor and capital.
imperfect competition, externalities, production spillovers, and omitted inputs.\textsuperscript{15} We discuss some of these factors and other possible explanations below. The major premise of the neoclassical growth model is that factor accumulation or capital deepening alone, while important at the early stage, are insufficient to sustain growth in the long run because of the law of diminishing returns to capital, unless compensated by the growth of factor productivity.

The problematic assumption of the Solow-type of model is that the residual, or “technological progress,” is not endogenously determined. It is considered to be like a public good, accessible to all entrepreneurs without any particular effort.

Uncomfortable with the presumption that long-run productivity growth is driven only by exogenous technical progress, Romer (1986) argued that there is a spillover effect from research and development (R&D) permitting constant or increasing (instead of diminishing) returns to capital that will generate sustained long-run growth of output. Based on this argument, therefore, output per worker can be specified as a linear function of capital. This is known as the endogenous growth model, with which attempts were made to explain the evolution of technology by emphasizing the role of spillover effects. However, despite sophisticated models, the endogenous growth framework cannot capture explicitly the channels explaining the exact nature of spillovers or what determines the technological parameter $A$ in the production function. Economists had tried to spell out some of these; their explanations included focusing on learning by doing (Arrow 1962), the stock of R&D (Romer 1986), the stock of human capital (Lucas 1988), and the R&D stocks of international trading partners (Coe and Helpman 1995). However, only through micro case studies could one really elucidate why and how spillover effects actually work.

Despite exemplary economic growth in East Asia, some argue that the region did not experience high TFP growth. Instead, they contend that rapid and sustained factor accumulation explains the lion’s share of growth. In other words, they report that most regional growth can be accounted for by capital accumulation, and only a small portion can be explained by TFP growth (Young 1994; Kim and Lau 1994).\textsuperscript{16} Krugman (1994) used Young’s results to make a similar but stronger argument. Bhagwati (1998), however, has remarked that if estimates are made decade by decade, rather than by lumping three decades together as these authors did, technical progress in the region is more evident.

Using a simpler form of production function, but covering a larger number of countries (grouped into six categories), Bosworth and Collins (2000) were able to make TFP comparisons with other countries, but the general conclusion is similar, i.e., TFP growth estimates in East Asia during 1960–1994 (1.5–2%) are comparable with those of Young (1995). Iwata et al. (2002) employed a nonparametric approach that does not require certain assumptions used in the conventional method. They found that during 1960–1995, the TFP growth figures for East Asia and Singapore were all similar, i.e., around 3.7%, implying that the Singapore TFP growth was higher than the estimates reported by Young, and Bosworth and Collins.

This evidence implies that TFP growth was relatively high but was still not the primary explanation for the miracle. High growth of TFP here suggests a “catch-up” process with developed countries. The low contribution of TFP growth to output growth, simply because the output growth was so high, may imply

\textsuperscript{15} Externalities are benefits or costs of a transaction that are incurred or received by members of society but are not taken into account by the parties to the transaction. These externalities magnify production spillovers.

\textsuperscript{16} Using a value-added translog production function with a discrete time extension of the standard Divisia index for TFP growth, Young (1994) found that the TFP growth in Hong Kong, China; Taipei, China; Korea, and Singapore were, respectively, 2.5%, 1.5%, 1.4%, and 0.1%, during 1960–1985. Extending the period to 1966–1990, Young (1995) came up with a slightly higher figures, i.e., 2.3%, 2.6%, 1.7%, and 0.2%, respectively. Kim and Lau (1994) used a translog meta production function without making assumptions on returns to scale. They, too, found no significant technical progress for the four economies.
that perspiration played a greater role than inspiration during the period of robust economic performance.

For Southeast Asia, Sarel (1997) used an alternative method for estimating factor shares (based on internationally comparable data) before estimating TFP growth. He found that the TFP growth in the region during 1978–1996 was relatively high, except in the Philippines. The figures range between 1.2% (for Indonesia) and 2.2% (for Singapore). For a comparison, during the same period the TFP growth in the US is recorded at 0.3%.

All of the above studies used primal production functions in different specifications. If the primal estimates are correct, i.e., implying diminishing marginal product of capital and labor, the return to capital must have declined. However, this contradicts the evidence that the cost of capital (measured by the real interest rates) in some countries did not decline.

Hsieh (2002) presented dual estimates of TFP growth for East Asia. What is most appealing about his study is the fact that it avoids the need to use the notoriously elusive data on capital stocks (and to some extent on output). Instead, he used factor prices (wages and interest rates). In some cases (e.g., Korea), the study found results similar to those obtained using the primal estimates. In other cases, the results exceeded the primal estimates by 1%. For Singapore, the dual estimate exceeded the primal estimate by as much as 2%. Table 1 displays various estimates of TFP growth for the region. Note that the variation could be as much as 1% (Young) versus 3.1% (Iwata et al.) for Singapore.

For several reasons, it is highly questionable whether TFP measures could reflect what has actually happened in the region. First, such measures using aggregate data tend to miss productivity growth in individual sectors or subsectors. Second, some of the

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**Table 1. Growth Rates of TFP (Various Estimates)**

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<tbody>
<tr>
<td>Indonesia</td>
<td>0.8</td>
<td>1.2</td>
<td>1.9</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Malaysia</td>
<td>0.9</td>
<td>2.0</td>
<td>2.3</td>
<td></td>
<td></td>
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<tr>
<td>Philippines</td>
<td>-0.4</td>
<td>-0.8</td>
<td>0.5</td>
<td></td>
<td></td>
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<tr>
<td>Singapore</td>
<td>1.0</td>
<td>1.5</td>
<td>2.2</td>
<td>1.6</td>
<td>3.1</td>
<td>2.16</td>
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<tr>
<td>Thailand</td>
<td></td>
<td>2.0</td>
<td></td>
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<tr>
<td>Taipei,China</td>
<td>1.9</td>
<td>2.0</td>
<td>1.5</td>
<td>3.4</td>
<td>3.87</td>
<td>1.9</td>
<td></td>
</tr>
<tr>
<td>Korea</td>
<td>1.3</td>
<td>1.5</td>
<td>1.1</td>
<td>3.3</td>
<td>2.07</td>
<td></td>
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<tr>
<td>Hong Kong, China</td>
<td>2.4</td>
<td>2.8</td>
<td>3.5</td>
<td>2.92</td>
<td></td>
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<tr>
<td>PRC</td>
<td>4.6</td>
<td>3.0</td>
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<td>2.7</td>
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17 Given the enormous difficulties in obtaining reliable capital stock data required in standard (primal) TFP models, by adopting a dual approach for the production function Hsieh used data on prices (wages and interest rates) instead of quantities. From the basic national income identity: 

\[ Y = rK + wL \]

where \( Y \), \( K \), and \( L \) are output, capital, and labor, respectively, and \( r \) and \( w \) denote the factor payment, instead of using the primal estimate of Solow residual:

\[ SR_{primal} = Y – s_L \cdot K - s_K \cdot L \cdot r. \]

Hsieh used \( SR_{dual} = s_L \cdot r' + s_K \cdot w' \), where \( s_L \) and \( s_K \) are the factor income shares, and \( r' \) indicates the growth rate. His analysis rests upon the observed data on the return to capital (\( r \)) and real wages (\( w \)), which, in some countries in the region continued to increase during the 30-year observation period.
technological progress in East and Southeast Asia was embodied in imported capital goods. This implies that capital accumulation already included technical progress that was supported by local learning, making it hard to distinguish between capital formation and technological growth. The industrialization processes in the region, particularly during the export-oriented period, have been characterized by large import contents. Third, TFP presents serious risks of measurement error. Fourth, neoclassical models treat technical progress as exogenous, and endogenous growth models have not succeeded empirically in explaining TFP growth. Last, even in the endogenous growth models, the actual estimations presume that parameter $A$ is identical across countries, implying that developing countries are already on the international best practice production frontiers.

It is also well known that TFP results are sensitive to the size of factor income shares (of capital and labor), and to the estimated elasticities of the factors with respect to output. These results are also sensitive to the size of the elasticity of substitution. Different elasticities of substitution may generate significantly different results when the capital-labor ratio is high.\(^\text{18}\)

Perhaps the most serious limitation of TFP measures, however, is that they fail to capture fully the role of investment made in individual, organizational, and social learning, which translate into human and social capital that is productivity-enhancing. TFP measures assume that factor markets are perfectly competitive. Yet, there is often a discrepancy between the efficient behavior of firms as implied by economic theory and the observed behavior of firms in practice, due to a lack of competitive pressures (Leibenstein's $X$-efficiency). The remarkable and persistent growth performance in the region indicates that $X$-efficiency effects in East and Southeast Asia were probably considerable. There must have been a deliberate building up of individual, organizational, and social capability that is not captured in the TFP figures. The technologies that the region came progressively to master during the 1970s and 1980s were those with which it had no experience at all in 1960. The assimilation process requires something far from routine, i.e., new sets of skills, new ways of organizing economic activity, and new market learning (Amsden 1989; Pack and Westpahl 1986). It is in many ways miraculous indeed that the region did all this so well.

We believe that capital deepening in the region contributed significantly to growth. Unlike in the neoclassical framework, however, capital accumulation lasted for a fairly long period, holding off the diminishing returns. As discussed later in Section C.2.b, the role of the region's entrepreneurship is key to this sustained growth of capital. As far as TFP and technology are concerned, the process of assimilation took place at the early stage, during which imported capital goods provided both new ideas (e.g., through reverse engineering) and new equipment. The process was gradually followed by innovation, instead of leapfrogging, during which government's role was significant, particularly in providing subsidies and other incentives. East Asia, relying entirely on an export-oriented strategy, entered this stage earlier than Southeast Asia. The latter relied on both an export orientation and foreign direct investment (FDI) entry.

In sum, although measured growth rates of TFP in East and Southeast Asia were not really miraculous, they were still higher than in other developing countries. They were also higher than TFP growth rates in the US in the 1970s and 1980s, implying that regional economies were converging towards the international best practice production functions. The contribution of measured TFP growth to income growth was low simply because accumulation was so high; indicating that new machinery together with technological progress helped by human capital

\(^{18}\) In general, if the elasticity is lower than the factor share, then the factor tends to be compensated at a higher rate than its marginal product, and vice-versa. For most East Asian countries, Iwata et al. (2002) estimated that the capital elasticity was smaller than the capital share. On the other hand, the estimated labor elasticity was larger than the labor share.
formation generated high growth. But as argued above, historically measured TFP growth is a poor indicator of what actually happened in the region.

C. Fundamental Causes of Strong Performance

In the preceding section, we identified the components of a reduced form growth model. In this section, we examine the underlying causal mechanisms linking those components.

As discussed earlier, capital deepening was crucial in producing high growth and, thus, enabling income levels in developing countries to catch up with those in advanced countries. Starting with initially low capital-labor ratios, implying initially higher marginal products of capital, faster capital deepening in developing countries than in advanced countries should enable the former to converge to the capital/labor and output/capital ratios (hence the output/labor ratios) of the latter. This demonstrates the importance of capital accumulation for developing countries seeking to catch up with developed ones. The experience of East and Southeast Asia in terms of state intervention and government policies along this line is revealing and instructive.

But capital deepening alone would not be sustainable because of eventual diminishing returns to capital. According to growth theory, these diminishing returns can be offset only by technological change. This implies that developing countries can catch up with developed countries not only by allowing their capital/labor ratios to reach advanced country levels but also by achieving technological parity. There are two types of technological advancement: (i) catching up with international best practice (reaching the frontier from the current actual practice) and (ii) advancing the international best practices (expanding the frontier). We argue that the external oriented strategy had a decisive impact on this technological advancement in the region. Elucidating the role of technology and the openness strategies in supporting the economic performance of East and Southeast Asia may yield useful lessons for other economies.

What specific policies and institutions can account for the identified accumulation of both physical and human capital and technological change? In this section we describe analytically the mechanisms whereby capital deepening, human capital formation, openness, and technological changes are interlinked. More specifically, the following three aspects are scrutinized: (i) government policies; (ii) technology and openness; and (iii) the role of the state generally and state intervention in particular.

I. Government Policies

a. Early Development of Agriculture and Structural Transformation

In East Asia, migration of labor out of agriculture was common, labor markets were flexible, and agricultural productivity was relatively high. These factors helped a large agricultural surplus to be transferred and used for industrialization.

Study after study has shown that countries that grew rapidly and equitably started by paying careful attention to the agriculture sector before industrializing. Development strategies that discriminate against agriculture early (through indirect taxation or turning the terms of trade against agriculture) will depress this sector and cannot successfully and smoothly transform the economy into a more industrialized one. But assigning priority to agriculture early should not be viewed as a stand-alone policy; it has to be seen in the broader context of a structural transformation from agriculture to industrialization.

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19 Taking care of agriculture does not necessarily involve protectionist policies. In Taipei, China and some Southeast Asian countries in the late 1960s and early 1970s the effective rate of protection in the agriculture sector was negative. The authorities in Taipei, China instead used massive support for agricultural extension services to promote the agriculture sector. Governments in Southeast Asia used investment policies in the agriculture sector as the main instrument.
Structural transformation can be attributed to the different income elasticities of demand for agricultural and industrial products (Chenery and Syrquin 1975). As income grows, demand patterns change. The demand for capital and consumer durable goods increases, and the demand for primary consumer goods decreases. Lewis (1954), Fei and Ranis (1964) and Harris and Todaro (1970) argued that in developing countries there exists a dualistic system. On the one hand, there is a traditional and predominantly agriculture sector with low productivity and low wages, wherein the bulk of the population works and produces what it consumes. On the other hand, there exists a modern capitalist sector with higher productivity and, hence, higher wages. Although the two sectors interact with each other, the degree of interaction is weak, especially in terms of technology diffusion. The transformation process occurs because increasing physical capital in the modern sector raises returns to labor, leading to labor migration from the agriculture sector into the modern sector. In this process, the share of profits in total income increases, leading higher savings and causing the accumulation of physical capital to accelerate.

In many developing countries, however, factor mobility is often limited. A shift of production factors from less productive to more productive sectors, while critical to accelerating growth, does not necessarily occur smoothly. In Korea and Taipei, China, the rural sector released a steady supply of labor from agriculture to the urban sector. By the late 1960s, half of Korea’s population was already in urban areas. The figure in Taipei, China was roughly 40%. With such high labor mobility, both countries were able to expand labor-intensive industries during the early stage of their industrialization.

How did government extract the agricultural surplus? The most important policy was agrarian reform, including land reform, in which transfers of ownership rights to tenants was the central feature. Even before the legislation concerning landownership was enacted in 1950 in Korea, many landlords sold their land because there was a strong antilandlord feeling following the Japanese colonial defeat. The demonstration effect from the North was also at play, e.g., after World War II, the North Korean government distributed land confiscated from landlords to many tenants for free. The Republic of Korea government also felt a strong motivation to neutralize communist influence in the region, to reduce class conflicts. Once some degree of stability was achieved, it extracted the agricultural surplus by imposing fixed prices below production costs for certain staples, and by gradually allowing farmers to make some profits. As conflict declined and political stability increased, agricultural price fixing was easier to implement but also posed a risk by reducing farmers’ incentives to raise productivity.

The Korean experience demonstrates that this does not have to occur. Increased landownership turned out to reinforce incentives for farmers to enhance production and efficiency, particularly in rice production (Jeon and Kim 2000). The incentives further increased as farmers were gradually allowed to make profits. Under such circumstances, agricultural productivity rose sufficiently to sustain incentives for continued expansion of production, while at the same time transferring a significant amount of the agricultural surplus to the industry sector. To achieve the same agricultural productivity results, Kay (2001) argued that farmers in Latin America would require much more costly incentives.

The whole process was not entirely market-based, however. Improved efficiency and yields in the Korean agriculture sector during this time were successfully achieved with relatively little funding from the state (Wade 1983). Instead, it was achieved through authoritarian command and control. This could occur because the vacuum left by disappearing landlords following the agrarian reform was filled by the State. The government had a monopoly over irrigation and fertilizer provision. Farmers were forced to accept the government’s decision as to the quantity of inputs needed and the quantity of output that could be sold. They were also coerced into using technological packages including high-yielding variety seeds. Despite the tenuous role played by markets in this process, the system was effective. Government directions played a similar role, albeit with less coercion, in Southeast Asian countries at their early development stage in the 1970s.
Taipei, China was also able to increase agricultural productivity, and to marshal the resulting gains to promote industrialization. Land reform transferred ownership to small farmers. This gave them an incentive to produce more, and output grew 10% per year between 1947 and 1953 (Thorbecke 1979). Higher rural incomes increased the demand for domestic manufactured goods. Rural savings were also channeled to industrial development. In addition, foreign exchange earnings from agricultural exports were used to purchase imported industrial inputs. Thus, agricultural development in Taipei, China spurred industrialization decisively (Dahlman and Sananikone 1997).

In general, government policies were able to strike a balance between extracting the agricultural surplus to finance industrialization on the one hand, and maintaining “incentives” for farmers to continue production with improved efficiency, on the other. In this way, the structural transformation proceeded smoothly.

A region’s geography can actually affect agricultural productivity unfavorably; e.g., in tropical environments agricultural activities may be hampered by the fragility of the soil (high temperatures mineralize the organic materials, and the intense rainfall leaches them out of the soil). Further, these activities are often plagued by diverse infestations of pests and parasites. To the extent that a persistent fall in agricultural productivity could be avoided, despite the fragile geographical conditions in some countries in the region, indicates that government policies worked fairly well.

The prevailing financial institutions also played a catalytic role in financing industrialization. Through state banks, the government fixed interest rates, and the central bank fixed the exchange rate, so that local and foreign currency funding for investment could be highly subsidized. Similar conditions prevailed in rapidly growing Southeast Asian countries in the 1970s.

In sum, at the early stage of development, the region was able to generate an agricultural surplus and rural savings that could be captured and used for industrialization. Transfer of the agricultural surplus occurred while governments continued nurturing the agriculture sector and at the same time fostered industrial activities. The land reforms that occurred in East Asia, by reducing inequality, strengthened agricultural production further.

b. Policies Promoting Physical Capital Formation

Government policies in East and Southeast Asia encouraged capital formation. Prudent fiscal policy, financial sector reform, and economic stability all facilitated capital deepening.

Fiscal and other policies increased national saving, providing funds for capital formation. The miracle economies all ran budget surpluses or minimal deficits. This prevented crowding out and freed domestic and foreign savings to flow to investment. In addition, as discussed earlier, fertility and mortality policies increased the working age population and, thus, the saving rate, providing additional resources for capital formation.

The primary conduit linking saving and investment in Asia was the banking system. Many countries in the region liberalized their financial sectors during the high growth period. McKinnon (1973) has argued that raising deposit rates to market clearing levels in this way should cause more saving to flow through the banking system, resulting in more investment. Agrawal (2001) presented evidence that the higher interest rates did result in more saving and investment in Indonesia, Korea, Malaysia, and Thailand.

Investment was also helped by the stability of the region. Korea, Taipei, China, and Southeast Asian

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20 Land reform took place in three stages. First, rent was reduced. Second, public lands were sold to tenant farmers. Third, the Land to the Tiller Program limited landownership to 2.9 hectares. Landholdings greater than 2.9 hectares were transferred to the Government in exchange for commodity certificates and stocks in enterprises that were about to be privatized (Dahlman and Sananikone 1997).

21 Additional financial resources for industrialization also came from landlords and foreign aid.
countries were politically stable, lowering risk premia and making firms more willing to undertake long-term investments there. In addition, unlike South America, low inflation rates and low levels of national debt reduced investors concerns about instability arising from debt monetization. Labor market disruptions were also minimal, due in part to the combined influence of authoritarian governments and policies minimizing income disparity under high growth.22 Last, exchange rates in the region seemed stable. Perceptions of stability increased investor confidence and encouraged capital formation.

The episode in Korea in the early 1980s demonstrates the pragmatic way in which policymakers were able to maintain capital formation. With the economy on the brink of recession, the government lowered interest rates. This facilitated a large flow of savings into investment. Given foreign exchange controls in place at that time, the low interest rates policy did not lead to a conversion of savings into foreign currency.

c. Policies Promoting Human Capital Formation

As discussed above, another essential regional policy success was in education and family planning. Family planning policies led to declines in fertility rates that are slowing population growth. Governments throughout the region have invested in human capital by providing widespread basic education and health services. For instance, Korea’s education was designed in anticipation of changing demands.23 A healthier, better-educated population composed of working age adults contributed to growth in labor productivity and output throughout the region.

The commitment of the Korean and Taipei,China governments to an educated workforce was beneficial. Technologies initially used in these countries were simple. In the 1960s, East Asian countries exported labor-intensive goods such as textiles, footwear, and apparel. As Little (1996) argued, workers in these countries would not have been as adept at using these basic technologies if the standards of primary education had not been high.

As growth in exported labor-intensive manufactures led to higher wages and profits, spending on education continued. Korea and Taipei,China shifted their focus to secondary and tertiary education. Post-secondary education in Korea emphasized vocational training and engineering during the 1960s and 1970s and science and technology in the 1980s. This changing focus turned out to be critical, since it allowed the skills of the workers to fit the needs of firms. Southeast Asia also channeled revenues from the growing economy into education, creating a virtuous cycle of higher growth and greater human capital formation. Educational attainment is higher, though, in East Asia than in Southeast Asia.

Hall and Jones (1999) argued that high physical and strong human capital are both mainly driven by “social infrastructure,” defined as a composite of two indices: (i) index of government antidiversion policies (GADP) composed of two categories related to government’s role in protecting against private diversion (law and order, and bureaucratic quality), and three categories related to government’s role as a diverter (corruption, risk of expropriation, and government repudiation of contracts); and (ii) openness measure from Sachs and Warner (1995). To the extent that East and Southeast Asia had high rates of investment in physical and human capital, the “social infrastructure” in the region must have been strong.

d. Export Promotion Policies

The switch from import substitution to export promotion in East Asia was accompanied by a surge in investment, but economists disagree about what

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22 As Lim (2001) discussed, labor unions in Korea were disbanded after the 1961 coup and forced to take a moderate approach once they reappeared.

23 In 1970s and 1980s, the resulting skill supplies even exceeded demand, causing a reduction in wage inequality among workers with tertiary, secondary, and primary education (Kim and Topel 1995).
caused this. Some argue that a credible commitment by the public sector to achieving a higher investment equilibrium drew a response from private investors. This is similar to the argument made by Rosenstein-Rodan in the 1940s, that a coordinated investment program boosting investment in several industries can raise the economy from a low investment equilibrium to a high investment equilibrium. The public sector commitment was seen both in public spending on infrastructure and in the removal of the bias against exports.24 In addition, political changes (e.g., President Park’s emphasis on economic issues in Korea, and Taipei, China’s pursuit of economic growth) helped provide an environment conducive to investment.

Others have challenged this story by arguing that the shift of relative prices in favor of exportables alone was not large enough to explain the takeoff. They argue that industrial policies in the form of investment subsidies, administrative guidance, and strategic interventions are also necessary to explain the investment boom.

Lim (2001) pointed out that the investment surge occurred because the Korean government removed capital market imperfections by guaranteeing foreign loans to private firms. Korea in the 1960s had high quality, low-cost labor that could produce a high return to capital, especially in labor-intensive industries. Korean firms, however, did not have the standing to borrow internationally. By guaranteeing loans, the government allowed foreign capital to enter and permit profitable investment opportunities to be undertaken.

There was substantial national variation in the way exports were promoted. The governments of East and Southeast Asia used a range of additional measures to raise export profitability and encourage industrialization. These included:

(i) Selective import tariff protection for home market sales, the profits from which could be used to cross-subsidize exports (Korea; Taipei, China).

(ii) Access to credits for exporters either for investment or export trade financing at subsidized interest rates (all economies in the region).

(iii) Tax concessions to investors in the form of tax holidays or accelerated depreciation allowances (all economies in the region).

(iv) Where direct control systems were used, preferential allocation of licenses to exporters, for example for technology imports or investment (Korea; Taipei, China).

(v) Directed finance to strengthen the position of selected and favored enterprises (Korea; Taipei, China).

(vi) Provision of subsidized infrastructure supplies and factory space, for example as part of export processing zones (EPZs) (Malaysia; Taipei, China; Thailand).

(vii) Provision of R&D facilities in government institutes, as well as tax credits for private R&D initiatives (Korea; Singapore; Taipei, China).

(viii) Repression of real wages through restrictions on labor bargaining and union activity (Korea; Malaysia; Taipei, China) or subsidization of wages through public housing programs (Singapore).

Sometimes these interventions were “functional,” in the sense of being available to all firms or to all firms in a particular line of activity. In other cases they were explicitly selective, with some firms out of a sector selected for special support. In other emerging economies, experience with these types of measures was disappointing, with rent-seeking and high cost, uncompetitive producers often the outcome (Weiss 2002). These policies appear to have been more successful in Korea and Taipei, China than in Southeast Asia. Explanations for success single out two important aspects of policy implementation (with Korea normally taken as the exemplar around which a model of East Asian industrial policy is based). One is the time-bound nature of support, which was deliberately put forward.

24 Formally, export promotion requires equality of effective rates of protection in domestic and export markets (Bhagwati 1988). In Korea this neutrality in incentives between domestic and export sales was achieved through the use of direct and indirect export subsidies.
as transitional to give firms an incentive to develop competitiveness over time. This is perhaps clearest in the case of special import tariff protection on infant industry grounds. This is in direct contrast to the blanket semi-permanent protection perceived to be on offer in import substitution programs applied elsewhere (Lall 1994). The other explanation relates to the idea that rents were not given without constraints, but had to be competed for through a series of “contests,” which mimicked a form of competition (World Bank 1993).

Guaranteed loans and concessional credit were allocated on the basis of achieving specific export sales figures. Firms in the 1960s were provided credit at subsidized rates through guaranteed foreign loans or state-owned banks. Firms that passed the “market test” by excelling at exporting were granted further subsidized credit. Firms that failed the market test were cut off and had no recourse. Thus, Korea used a “carrot and stick” approach to provide incentives to industries to export. As Lim (2001) explained, this approach helped to limit the moral hazard created by state sponsored lending.

Korea promoted exports in other ways too. In 1962, it implemented reforms designed to “get the prices right.” It also created the Korean Trade Promotion Corporation to facilitate foreign marketing and technology imports. In addition, it gave exporters tax deductions, wastage allowances, and tariff exemptions.

Taipei, China also promoted exports, but without the same degree of dirigisme as Korea. Taipei, China used subsidies rather than directed bank credit to influence resource allocation. However, as Thorbecke and Wan (1999) note, the government frequently had difficulty inducing private firms to invest in industries such as integrated steel, petrochemical, and civil aircraft. The industrial structure thus evolved more naturally in Taipei, China than in Korea. Taipei, China did use EPZs and science-based industrial parks to support export industries.

In the 1980s, the export-promotion strategy migrated to Southeast Asia. One reason is that as East Asia moved up the ladder of comparative advantage, it exhausted its labor surplus. Southeast Asia still had surplus labor that held wages down. A second reason is that the manifest success of East Asia with export-led growth had some influence on policymakers in Southeast Asia. A third reason is that the collapse in oil prices in 1986 forced oil-producing countries such as Indonesia to pursue a new growth strategy relying more on non-oil exports.

Unlike in East Asia, Southeast Asia relied on FDI to support the labor-intensive exports. To attract FDI, governments in the region used various incentives, such as tax holidays at the early stage, increasing the share of foreign ownerships (divestment), reducing administrative barriers to foreign investment, and implementing a drawback system. The surge of FDI during the 1980s was also caused by the strengthening yen following the Plaza Accord in September 1985. Under this, Japan agreed to US calls to raise the yen’s value in order to reduce the ballooning US current account deficit. The appreciating yen made Southeast Asia an attractive place for Japanese FDI. Later, as the Korean won and Taipei, China’s dollar increased in value, Southeast Asia became an attractive place for these countries to invest as well.

Access to sea trade is obviously another important determinant of a country’s trade performance. None of the major centers of “miracle” Asia is landlocked; they are either near to or concentrated in coastal areas. This geographical factor worked to the advantage of export promotion in the region.

e. Industrial Policy

(1) Conceptual Debates

The subject of industrial policy remains hugely controversial. The truth is that we still lack satisfactory methodology to verify claims for or against industrial policy because of the highly imperfect econometric techniques for quantifying its impact, as well as the problem of constructing counterfactuals (Stiglitz 2001). Nevertheless, the World Bank (1993) jumped to the

25 Gallup, Sachs and Mellinger (1998) defined “near” if the region lies within 100 kilometers of a seacoast or a sea-navigable waterway (a river, lake, or canal in which oceangoing vessels can operate) and “far” otherwise.
conclusion that industrial policy in East Asia did little to alter the industrial sectoral structure, or to improve TFP growth. This conclusion was just as quickly rebutted by critics who pointed out the highly selective and incomplete presentation of evidence as well as tendentious interpretations on the part of the World Bank. If it were correct, as the World Bank claimed, that the statistical link between growth and industrial policy was impossible to establish because of the absent counterfactuals, then the converse must also be true. The link between growth and no industrial policy would be untenable: what is sauce for the goose, is sauce for the gander (Amsden 1994). Others have also questioned the way that the evidence on TFP was presented. As discussed in Section 2, apart from the inherent difficulties in measuring and interpreting TFP, it was not clear what the utility of the TFP analysis was, at such high levels of aggregation (see also Lall 1994).

Difficult as it is to quantify the impact of industrial policy, the fact remains, as emphasized by Stiglitz, that “almost all of the economies in the region had industrial policies,” and that this “suggests that such policies were an important part of their growth strategies.” (Stiglitz 2001:519) (Italics in the original). This is really another way of saying that industrial policy is targeted at specific industries that create a “multidimensional conspiracy” in favor of certain kinds of development (Hirschman 1977).

Industrial policy has both static and dynamic dimensions. In its static dimension, it aims at ex ante coordination by the state (as opposed to ex post, or spontaneous coordination by the market), through investment coordination, recession cartels, and negotiated exit/capacity scrapping. Investment coordination occurs in sectors where economies of scale may induce a price war, and which are subject to the perils of overinvestment or underinvestment. The state can intervene in this instance, to assure optimal entry and thereby reduce the problems of strategic uncertainty. The state does this through arbitrating and facilitating private bargaining.

Recession cartels are another way to deal with the problem of price wars. In this case, price wars might result from a drop in demand due to downturns in the business cycle, world recession, change in the price of raw materials, etc. If the fall in demand is temporary, the state might take a role in persuading firms to limit their production and stabilize market shares for a period until temporary problems are fixed. If the downturn is for a longer term, however, the state might assist in arranging an orderly exit or capacity-scraping. Some firms may exit altogether in return for some payment; others might reduce their capacity in line with their share in total industrial capacity or market share; still others might be “mothballed” (Chang 1994).

The dynamic dimension of industrial policy may be exemplified by the state’s ability to aid in the generation of endogenous technical change. The more
obvious ways in which the state does this is by subsidizing R&D activities, and encouraging basic research in universities and public laboratories. The process of technical change refers not only to innovation, however, but includes the absorption and adoption of foreign technologies, through copying, self-teaching, and investment in foreign licenses and technical assistance: in other words, learning by imitation and apprenticeship. The state can facilitate the process of technological absorption and adoption through selective rewards, by setting the relative prices “wrong”—or industrial policy (Amsden 1989).29

(2) Evidence

Governments throughout the Asian region actively pursued industrial policies. These policies involved using selective interventions by government to promote the development of targeted infant industries. This approach created rents for those targeted industries. Low incentives and small returns on investment were therefore avoided (Eichengreen 2002) on a selective basis. However, unlike in import substitution regimes, there were strong inducements to producers to seek out export markets, either due to financial incentives or due to direct encouragement through a form of targeting or moral suasion. The range of incentives and the main types of recipient varied between economies but included subsidized credit for exporters, subsidized policy loans to strategic activities, selective tax holidays, duty-drawbacks on imported inputs used in export production, preferential access to technology licenses, export targets combined with protection in the domestic market, export promotion zones, and tax credits for R&D.

East Asian countries used industrial policy to climb the ladder of comparative advantage. In Korea, for instance, first textiles, then heavy and chemical industries (HCI), and last high-tech sectors were favored. In general, policies were not used to leapfrog from labor-intensive to skill-intensive industries but instead sought to follow the contours of comparative advantage. However, the HCI initiative was a clear departure from this pattern.

In this context, the gap between the industry-specific practices and the world best practice of technology determines the amount of infant industry protection that is needed. Both the time span of protection and the size of any effective subsidy should fall as the gap decreases.

On industry targeting using trade policy, countries such as Korea differed from India, not so much in the absence of import protection as in the fact that Korea was open to imports believed to be important for development. In the 1960s and 1970s, both India and Korea had a significant amount of import protection. Korea, however, liberalized imports of intermediate inputs. Firms in targeted industries could thus acquire generic technologies from abroad at world prices, enabling them to compete in world markets. India, on the other hand, followed an import substitution policy that kept tariffs high on all imports. India was implicitly trying to favor all industries at once. In the process, it failed to climb the ladder of comparative advantage and internalize much needed innovations.

The success of industrial policy in East and Southeast Asia has been debated. The basic problems in implementing industrial policy involve both knowledge and incentives. Do government officials have

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29 The process of “getting the prices wrong,” by for instance setting different interest rates for export and other policy loans, also allows the state to intervene extensively in the capital market. Such extensive intervention in the capital market has been heavily criticized, both for distorting resource allocations and for its potential for corruption. But such criticism does not address the real-life dilemma that governments are faced with: in the absence of sophisticated supervisory mechanisms for corporate governance and equity markets, the state often has little choice but to maintain its vigilance of the capital market, however compromised, to avoid further exacerbating the moral hazard problem. But many governments in East Asia did in fact extricate themselves from capital markets, especially on the eve of the Asian crisis, leading one to wonder whether the problem of the East Asian economies might not have been a result of insufficient, rather than excessive, government intervention in the capital market. Or as Stiglitz (2001:520) put it, it is “perhaps true that East Asian governments did not take enough strong regulatory actions to address the endemic failures in the capital market. The government should do more to ensure good governance in the corporate sector, which is critical to create an effective equity market.”
sufficient knowledge to identify sectors with the potential for high productivity growth through externalities (e.g., intermediate goods demand, transfers of trained labor, and interactions on equipment design)? Do government officials and private actors have the incentives to channel resources to economically-appropriate sectors rather than to politically powerful sectors?

In the early stages, policymakers in Korea were able to surmount the knowledge problem. They were able to identify the industries they needed to promote at each level of comparative advantage by following the “flying geese” pattern employed by Japan (i.e., starting with low-technology industries, moving to HCI, and later to technology-intensive goods). This Korea began in the 1960s by promoting labor-intensive manufactures, an appropriate sector at that stage of development.

Korea also managed to align incentives that produced appropriate industrial policies. Bureaucrats depended largely on performance rather than political considerations for promotion, and corruption was not prevalent among government workers (Ito 2001). In addition, the moral hazard problem arising from government loans to industries was solved by the use of a “carrot and stick” approach based on exports. Firms that did not pass the market test by exporting successfully were denied benefits, while firms that exported successfully were given continued support.

There was also a sense in which the threat from North Korea and the belief that national survival depended on exporting reduced rent-seeking struggles. Willett (1997) discussed how the “unitary actor” model provides a better explanation for political decision making during times of national crisis, while the rent-seeking model may provide a better explanation during normal times. If Korea followed the unitary actor model, then the allocation of benefits based on political considerations unrelated to national interest would be minimized.

But industrial policy in Korea ran into moral hazard problems after the 1960s (Lim 2001). State-guaranteed loans in the 1960s caused debt-equity ratios to soar, exposing firms to huge downside risks. When the Korean economy slowed down in 1972, President Park did not hold firms and banks accountable but instead bailed out the corporate sector. Moral hazard multiplied during the HCI drive as the government provided liberal benefits to the chaebols and no longer used the “market test” of export performance as the selection criterion. From 1980 to 1997, the government liberalized markets but provided chaebols an implicit guarantee against bankruptcy based on the “too big to fail” doctrine. The government thus granted de-control without de-protection, further increasing moral hazard.

In this environment, the chaebols increased systemic risk to the economy. They carried out ambitious projects with little concern for default risk, and their debt-equity ratios soared (averaging 387%). As long as these investments were financed by domestic-currency denominated bank loans, the deep pockets of the government could absorb nonperforming loans (NPLs) in a macroeconomic environment characterized by high growth, technological progress, and high returns to capital. When investments were financed by short-term loans from mainly foreign banks after financial sector liberalization in the 1990s, serious double mismatches arose in domestic balance sheets. With the economy vulnerable in this way, a series of chaebol bankruptcies in 1997 shook investor confidence and led to an international run on Korean banks (Lim 2001). The result was the currency crisis in 1997, which we discuss in Chapter 2.

Taipei, China was less vulnerable to the Asian economic crisis, partly because the government had not pursued a strategy of providing subsidized credit to large firms. Taipei, China relied more heavily on small and medium firms, and also employed government-sponsored loans much less than Korea did, preferring to use subsidies instead. Reliance on small and medium enterprises (SMEs) allowed Taipei, China entrepreneurs to develop niche markets that were more resilient to downturns. Economy in the use of state-sponsored

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Ito (2001) argued that this is partly due to the fact that bureaucrats in East and Southeast Asia are competent. Bhagwati (1988) also observed how bureaucrats in East Asia were able to learn from producers by establishing symbiotic rather than adversarial relations with managers. On trade and comparative advantage, see also ADBI Research Paper No. 34 (2002) and Research Policy Brief No. 1 (2002).
credit implied that Taipei, China firms, on average, had much lower debt/equity ratios than their Korean counterparts. SMEs in Taipei, China thus survived the crisis far better than the conglomerates in Korea. Not only did the niche markets hold up better during the crisis than the larger markets of Korean firms, but also the lower degree of leverage spared firms from the crushing debt service burdens and dependence on short-term debt rollover that afflicted the chaebols.31

The evidence from Southeast Asia is less supportive of industrial policy than for Korea in the 1960s. Political factors were often more important than economic ones in deciding which industries received benefits. Interventions by Malaysia in some heavy industries during the 1980s and by Indonesia in the aircraft industry in the 1990s were clear failures. Fortunately, these targeted industries were relatively limited in their influence on the overall macroeconomic development of the region.

One reason why, unlike in Southeast Asia, the jury is still out in the case of Korean interventions is that Korea in the past could perhaps be represented by the unitary actor model, whereas Southeast Asia in the late 1980s and 1990s could be explained by the interest group model (Willett 1997, and Milner 1998). The unitary actor model holds that political decisions are made for the good of the country. Korea, facing the threat from the North, might have been focused on economic development as a means of national survival. In this case, intra-group political struggles in policy decisions might have taken a back seat to the broader interests of the country. Similarly in Taipei, China, the survival of the regime depended critically on raising the standard of living of the population to satisfy it and protect the regime from popular alignment with the People’s Republic of China (PRC).

A similar threat or pressure was less severe in Southeast Asian countries, although some regimes also depended for their success on improving the lives of the poor in rural areas where the threat of agrarian radicalism persisted. But when such a threat eventually receded in the face of two decades of robust growth, complacency emerged. Cozy relations between governments and industrial actors flourished, causing distributional struggles and rent seeking to grow. As a result, political considerations influenced the selection of industries to be favored and the policies failed.

There are cases, however, where rent seeking increases efficiency. Some rents, like monopoly profits from production and distribution activity (which have been extensively analyzed by economists) can generate inefficiency. But there are other rents that may be efficient, or in any event signal successful exploitation of growth opportunities. Rents for innovators may be a case in point, when the firm with either cost or quality advantage earns higher returns (Khan and Jomo 2000). States can also generate rent for entrepreneurs through industrial policy aimed at absorbing and adopting foreign technologies, as discussed earlier. This was clearly the case in Korea, which had the most developed industrial policy structure, but also in places like Thailand where industrial policy was less widely practiced. There, relatively small numbers of big businesses were able to use their client list connections to the state, which accelerated technological acquisitions and industrialization (Khan 2000:14). As Bhagwati (2000) put it, the cronies, when they are given a share in profit making enterprises, might have an incentive to grow the enterprises, now that they have their fingers in the pie.

To summarize the discussions on government policies, first of all taking care of the agriculture sector early is important for sectoral transformation. Development strategies that discriminate against agriculture will depress this sector, preventing the economy from transforming smoothly into a more industrialized one. In the process, labor should be allowed to freely move from lower productivity agricultural jobs to higher productivity industrial jobs. Prudent fiscal policies free national saving to flow to investment. By raising incomes, growth-enhancing

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31 In Taipei, China short-term dollar denominated capital flows were limited due to small international interest differentials at 200 basis points. This avoided a double mismatch on domestic balance sheets. The current account was also in surplus. However, over the past several years banking problems have become increasingly serious (Montgomery 2002).
policies (e.g., export promotion and human capital investment) can increase the autonomous saving rates. By taking a functional and pragmatic approach, policymakers in the region helped sustain high growth for several decades. Industrial policies strictly defined as picking the winners did not seem to consistently work. They may produce benefits, e.g., raising exports, but they may also produce high costs, e.g., rent-seeking losses and macroeconomic instability.

2. **Technology and Openness**

There are several ways to describe the process of technological change. In Section B.3 we stressed the role of technology in enhancing productivity. What the analysis based on a production function framework implies is that East Asian countries experienced a rapid increase of capital per worker (K/L), but at the same time the region’s TFP growth indicated that a process of catch up was taking place. Together, the two spurred high and sustained growth for more than 30 years.

As an alternative portrayal of this story, consider a cross-country regression for countries with high K/L in which the dependent variable is the growth rate of GDP per capita. The independent variables are the growth rate of K/L, initial period GDP, and some control variables (i.e., population growth and primary school enrollment rate). In this context, East Asia stands out as an unusual performer. Even with comparable K/L, the actual growth rate of GDP per capita is highest in this region. The difference between actual and predicted per capita GDP growth is, respectively, 0.024 and 0.042, for Korea and Taipei,China. In the example used by Nelson and Pack (1997), covering the 1960–1985 period, six economies excluding Taipei,China had growth rates of K/L higher than Korea, and two economies outside Korea had growth rates of K/L higher than Taipei,China. Yet, the differences between actual and predicted growth in these economies are lower, and some even much lower, than in Korea and Taipei,China. For example, the differences for Greece and Ireland were only 0.008 and 0.007, respectively. The growth rate of GDP per capita in Spain, Poland, and Portugal during the same period is even negative.

Hence, while necessary, initial conditions and the size of capital deepening per se cannot explain the spectacular performance in East Asia. There must have been technological advancement involved in the process, explained not only through technological advancement in terms of capital deepening per se cannot explain the spectacular performance in East Asia. There must have been technological advancement involved in the process, explained not only through a standard approach such as R&D expenditures, but more importantly through domestic efforts to absorb new technology, learn about new opportunities, organization and management, and transform them into actual and commercialized use. These components are not easy to measure, let alone to disentangle from each other. This is why we argued in Section B.3 that TFP measures using aggregate data fail to capture fully what has really been going on in terms of technology advancement in the region.

a. **Stages of Technological Progress**

It is instructive to describe the technological process by way of development stages. Strictly speaking, all elements need to be present in each stage. But for analytical purposes, differentiating each stage helps us to understand better how the process of improved technological capabilities is taking place.

At the early stage, mature technologies imported from abroad are used to initiate industrialization. In this context, technology transfer becomes a major source of growth, in which purchase of plants and equipment and the diffusion of the corresponding codified technical information are the main mechanisms. Technology suppliers have an interest to make sure that the supplied (imported) technology works because otherwise they will lose their reputation and eventually their profits too. During the process, an assimilation and imitation mode is also important, supported by indigenous R&D efforts. Unlike scientific research conducted at

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32 The Japanese experience clearly shows that imported technology was accompanied by domestic R&D in order to secure a successful assimilation of the technology. A study by the Japan Industrial Technology Association shows that from the early 1950s, domestic R&D expenditure had a high correlation (0.9848) with the increase of technology imports.
universities, at this stage the required R&D is largely in the form of experiments by firms that include learning, doing, using and failing (LDUF).

At this stage, domestic industries supplying equipment and materials needed for the experiments will also grow. Given the fact that imported technology is expensive, a careful selection is warranted. In this case, the domestic R&D supported by public research institutes can play an important role in assessing and indicating the technologies best suited for import. Such assessment is not restricted to the types of technologies, but may also include identification of potential partners. The linking up with other institutions or firms abroad is critical, and it can be done formally or informally.\(^\text{33}\)

It is clear that government support is critical during the whole process, particularly in coordinating firms’ R&D with public research institutes to produce concrete results. It is also clear that, even at this early stage, two components of technology, i.e. “machinery” and “knowledge” must interact. The provision of “machinery” takes place through both imports and domestic production through experimentation. “Knowledge” may be generated via learning and exploring the blueprint of imported machinery, codified technical information, subsidized or independent education abroad, and technical assistance. Obviously, the success of this assimilation stage depends on the quantity and technical capabilities of local engineers.

The import-substitution episode in Korea shows that the transfer of foreign technology has been working fairly well. Many firms relied heavily on foreign capital goods and turnkey plants during the period. The government selectively reduced import tariffs on these necessary capital goods. They also maintained overvalued currency and provided supplier’s credits. During the early stage of the export oriented strategy, Korean firms were also actively acquiring foreign technology. Kim and Dahlman (1992) argued that the pressure to do so was even greater than before the strategy was implemented.

In the second stage, technology exporting firms increasingly seek to control the use of technology. On the other hand, technology importing firms want to internalize what they import and learn. This is the reason why mechanisms at this stage, such as licensing and joint ventures, are preferred. Different interests of buyers and sellers do not necessarily prevent the process of technology advancement. From the foreign firms’ point of view, differing factor endowments (e.g., human and natural resources) continue to attract them. From the recipient’s perspectives, the benefits of improved technological capability, realized and potential, provide impetus to pursue these efforts.

At this stage, technology importing countries also tend to go beyond arms-length transactions by leveraging new technological capability. They want to utilize as much as possible the relationship with foreign firms that they acquired during the first stage. The case of Taipei, China is a notable example. Through various forms of contracts, and supported strongly by public institutions such as Taipei, China’s industrial technology research, firms tapped into advanced markets, actively leveraging new levels of technological capability. Unlike Korea, however, most of these firms were small and medium-sized. The scale disadvantage was overcome by strong and effective public-private cooperation. To some extent, this is similar to Gerschenkron’s (1962) notion of latecomers’ advantages.\(^\text{34}\) Companies such as Taipei, China’s Semiconductor Manufacturing Corporation, Winbond, Macronix, Mosel Vitelic, and United Microelectronics Corporation are examples of latecomers in electronic industries that actively leveraged technological capability.

Korea’s trade liberalization in the 1980s, including allowing some FDI and foreign licensing, was also characterized by active leveraging. Foreign (mostly Western) firms were reluctant to transfer

\(^\text{33}\) UNIDO (2001) labels this stage as “linking” strategy.

\(^\text{34}\) Gerschenkron (1962) based his analysis on the 19th century industrialization experience of Europe. The late industrializers during that time were able to use state agencies and resources to overcome the problems of inadequacy of capital and entrepreneurship.
technology. Outside pressure that led to a more open system forced Korea to adopt an alternative strategy. Firms shifted their strategy from passive modes such as imitation, assimilation, and adaptation towards more interactive mechanisms facilitated by R&D. Electronic companies such as Samsung, Hyundai Electronics, and LG Semicon are good examples of this strategy.

The subsequent, third stage comprises many efforts to master process and product technologies. At this stage, technology-exporting firms are reluctant to transfer their technology because the importing firms have become emergent competitors. Consequently, technology transfers are usually accomplished at this stage through strategic alliances (including outward FDI) rather than through joint ventures or licensing. Innovations are created and then diffused and spread to an increasing number of firms. The buildup of technological prowess in East Asia is a reflection of the region’s ascent to this stage. Some, but not all firms have even reached the technological frontier.

However, firms in East Asia have been acting more as instigators than recipients of the diffusion process. The standard path, following market-induced imitation and organizationally-induced technology transfer (both of which are usually placed within the context of product cycle considerations, see Vernon [1966]), does not seem to fit with the East Asian experience (Matthews and Cho 2000; Kim and Dahlman 1992). Further, governments in the region have been actively involved in coordination and creation of appropriate institutional structures, allowing the process of diffusion to accelerate by taking over many of the functions of the market.

b. Describing the Process

Figure 10, constructed with East Asia in mind, can be used to describe the process of improved technological capabilities. The initial conditions led to increased investment by both the public and private sectors in human capital and activities that could promote learning and technology advancement (a process depicted by the arrow). The private sector could, on the one hand, respond to market signals provided by setting the prices right, and on the other hand draw upon the benefits provided by government (public assistance) ranging from the provision of physical infrastructure, science and technology infrastructure, and subsidies to acquire patents. Competition among private firms is secured, avoiding special treatment and excessive market distortions. Large investment by the public and private sector is enabled by large reserves of savings. As discussed in Section B.2, the latter was enabled by, among others, the favorable demographic changes in East Asia and a virtuous feedback cycle with rising incomes.

In this context, gains from trade include not just lowering the cost of production (moving along the production possibility frontier), but also improving technology (shifting the frontier out). Technology can also be acquired indirectly through FDI. Both the export orientation and FDI entry reflect a strategy of openness. While acquiring technology through an export oriented approach characterizes the East Asian growth story, inbound FDI combined with an export-oriented strategy more fully explains growth in Southeast Asia.

The key element is the ability to acquire and enhance technological skills when an export-oriented strategy provides the opportunity. Exporting is not only a way of exploiting comparative advantage, it is also an important learning vehicle, and can act as a mechanism for transferring technology, as described earlier. Engineers are sent abroad to identify the state-of-the-art technology required to compete in world markets. Adoption of technology then leads to a

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35 Vernon (1966) introduced the concept of “product cycle” by describing how once new products developed in developed countries become standardized, they can be produced anywhere in the world. The input mix at the early stages of product development is different from the input mix at the later stage, when production becomes standardized. Hence, there is a shift in production function along the product life cycle. The case of the textile industry in the US during the 19th century clearly showed that once the production process reached a mature stage after 1880 the industry moved from New England to the South where the production process could be carried out in a routine fashion by unskilled labor.
process of learning-by-doing for engineers and skilled workers, generating spillover effects within and among industries. Engineers and workers migrate among firms and sectors, bringing their accumulated human capital with them and dispersing it across the expanding economy. Such positive externalities can spur virtuous cycles of growth.\footnote{Amsden (1991) also stressed the important role of exports as an efficient monitoring device.}

Exporting that could lead to active learning often responds favorably to government incentives (incentives bias). The provision of subsidies and protection in Korea during the shift from import substitution to export orientation is a clear example. Pressures to improve export product quality and enhance productivity required inputs from abroad, especially capital goods. As described earlier, through this process learning and exploring products blueprints occurred. Some learning about organization and management to transform technology in actual and commercial use can also take place, but this process is not always seamless. As firms’ experience with learning in East Asia indicates, failures often occur. Hence, LDUF characterizes the whole process.

In the end, the most important ingredient in the whole process is probably entrepreneurship. Without entrepreneurship, even given favorable initial conditions, adequate investment, and a facilitating policy environment (e.g., external-orientation), technological advancement may not continue and lasting economic benefits may be limited. Capital deepening could easily have declined with diminishing marginal product if high returns on factors were not maintained. The presence of entrepreneurship has been critical in securing high returns to factors. Entrepreneurship involves the decision-making skills that transform new ideas into sustained practices. The East Asian experience proves that taking risks by entering activities with no guarantee of high profits could be a critical factor of success. Creation of new firms supported the growing number

\begin{figure}[h]
\centering
\includegraphics[width=\textwidth]{TechnologyTFPChannel.png}
\caption{Technology and TFP Channel}
\end{figure}
of educated workers (human capital), hence avoiding factor mismatches, while it also helped to sustain economic growth.

The policy implications of these observations are important. Based on the above framework of analysis, policies such as promoting capital deepening, improving human capital, adopting an external orientation to create impetus by bringing production to world standards, and providing incentives for firms to advance technologically without undermining competition would also be required. An effective partnership between government and the private sector can essentially strengthen other attempts to improve productivity.

It is clear that a process of assimilation is central to explaining the region’s technological progress. This goes beyond just moving along the production function, and implies that capital deepening, strong human capital, and getting the prices right are necessary, but not sufficient conditions. Innovation by entrepreneurs through LDUF is crucial, since this delays the onset of diminishing returns, although not because of the standard claim that the elasticity of substitution is high. Instead, the entrepreneurs’ role is embedded in the measure of capital deepening, leaving little effect to be captured by technology in standard growth accounting exercises. Hence the whole process is much more complex than implied by the Solow growth model. This also explains why standard TFP measures fail to capture the true technological progress in the region.

With the exception of Korea’s HCI period during 1973–1979, East Asia did not leapfrog up the ladder of dynamic comparative advantage but instead climbed up one rung at a time. Its economies advanced from textiles to chemicals to metals and last to transportation equipment and high-tech goods. Firms engaged in a painstaking and cumulative process of technological learning, involving reverse engineering (Hobday 1995), e.g., electronics in Korea and Taipei, China, taking a watch apart and putting it back together, followed by inventing marginal improvements in products and processes, followed by direct product innovation. The process of learning and innovation was exemplary and unique. In a later stage, new processes and new technologies were invented (e.g., digital technology). Some even moved closer toward the technological frontier, at which point new (institutional) challenges emerged. Technical achievements in these countries were clear (Bhagwati 1996). To a more limited extent, similar processes occurred in Southeast Asia.

Inasmuch as the learning process in Southeast Asia was more limited than in East Asia, the export-oriented strategy succeeded there because the region shared many beneficial initial conditions with East Asia. Savings rates were high, fiscal policy was prudent, inflation was low, and labor markets were flexible. These factors provided the backdrop for Southeast Asia’s export takeoff.

c. Technology Assimilation through FDI

FDI into Southeast Asia led to assimilation of technology and productivity gains. But as in other countries, the effect of increased openness on productivity growth varied across sectors. As revealed by a multi-country study, the effect in low growth sectors was smaller than in high growth sectors. Among the high growth sectors are textile, wearing apparel, leather, chemical and chemical products, and machinery and equipment.37 For these activities, the productivity effect works through import competition. Such competition induces domestic technological improvement, and hence productivity enhancement. The differential effect of openness on productivity applies also to growth.

Simply exporting is not sufficient to create a strong indigenous learning process, regardless of whether one takes the assimilationist or the evolutionary view (Nelson and Pack 1997), and the same is true with FDI. The more important objective is not merely to attract FDI, but to create an internal social and economic environment within which the national knowledge-accumulating process can benefit

37 The study uses data of 10 sectors from 44 countries, 33 of which are developing countries, for the period of 1970–1993 (Choudhri and Hakura 2000).
from FDI. Getting prices right under an export-oriented strategy is not sufficient. Prices should be right not just for resource allocation purposes but more importantly for learning and productivity enhancement. Some form of protection for learning, for example, could contribute to sustained growth.38

FDI in Southeast Asia often began with a joint-venture system with more limited technology spillovers, before allowing stand-alone operations of greenfield subsidiaries or foreign multinationals.39 FDI also produced a surge of capital goods imports in which new technologies were typically embodied. Initially, importers in foreign markets provided exporters from developing countries with detailed engineering and managerial instructions and specifications, facilitating assimilation of the new technologies. Later, competitive pressure in foreign markets necessitated greater efficiency and still greater productivity gains.

As discussed above, initial FDI into Southeast Asia was motivated by lower labor and other resource costs.40 Funds were channeled into firms exporting labor-intensive manufactures. Since FDI financed manufactures more often than primary commodities, the negative terms of trade effect of FDI hypothesized in the 1950s did not materialize. Since a substantial share of FDI-based production was exported, the negative effect of capital goods imports on the current account was partly offset.

Scale arguments can help explain why export-oriented FDI generally outperformed domestic-market oriented FDI. Demand in world markets far exceeds domestic demand. In addition, consumption propensities are often higher abroad than in the high saving countries of East and Southeast Asia. Last, the discipline of competition in world markets often induces greater efficiency and TFP growth.

Although the PRC was not included in the East Asian Miracle report (World Bank 1993), discussion about FDI in the region would not be complete without mentioning the spectacular growth of FDI to this country. FDI into the PRC produced vibrant growth among domestic producers. Some found that social capital in the PRC is high (Helliwell 1996) and the scale of the domestic market is huge, both of which may well explain such vibrant growth (to be discussed in greater detail in Chapter 3).41 The absence of huge domestic markets may explain why smaller emerging markets in the region, such as the Lao People’s Democratic Republic and Viet Nam, have not received large amounts of FDI in spite of the fact that, like the PRC, these countries have low labor costs.

In sum, technological progress proceeds in stages. It could begin with a joint-venture system with limited technology spillovers, before allowing stand-alone operations of greenfield subsidiaries or foreign multinationals. Importers in foreign markets provided exporters with detailed engineering and managerial instructions, facilitating assimilation of the new technologies. Later, competitive pressure in foreign markets necessitated greater efficiency and productivity gains.

Favorable initial conditions, such as strong human capital and high savings rates cannot automatically produce technological advancement without a set of necessary conditions. This section discusses those necessary conditions, ranging from

38 The famous case of Japan’s Ministry of International Trade and Industry (MITI) strategy at the early stage of industrialization shows that various protections and subsidies were given to targeted industries in order for these industries to acquire generic technology, or to obtain foreign technology. But at the same time the government encouraged private firms to follow up the process with commercialization of the acquired technology and to collaborate in R&D. For the latter, subsidies were still used, although most of the government role was more on coordination.


40 In countries such as Indonesia and Malaysia, FDI was also motivated by abundant natural resources.

41 Social capital is composed of three elements: thrift, determination, and hard work. When defined as thrift minus obedience, the PRC and Korea rank first and second among 43 countries. For comparison, India is ranked 41st (Inglehart 1994).
public investment in infrastructure and science and technology, public-private partnership, and competition. These conditions work more effectively if combined with an external-oriented strategy that facilitates learning and assimilation through the discipline of competition and acquisition of foreign technology. However, because of diminishing returns, growth and capital deepening would not be sustained without the entrepreneurship that helps embody technological progress in the capital stock.

3. **The Role of the State**

The role of the state in economic development is an old conundrum, and any meaningful discussion of this subject must take the following facts into consideration. One is that the state is an inevitable and quite possibly indispensable presence in an economy. Karl Polanyi (1944) argued that the idea of a self-regulating market necessarily implied a stark utopia, one that could not be sustained unless society took measures to protect itself, usually through state action; and that in the course of this, the self-regulation of the market might be impaired. This dilemma, Polanyi thought, was central to modern capitalist economies. This means that the role of the state in economic development cannot be thought of apart from other goals and objectives that the state might entertain in order to “protect” society, in Polanyi’s term, from undesirable outcomes of capitalist development.

No assessment of the developmental achievements of the state would be complete or fair without taking into consideration other larger social objectives the state has set for itself. In this regard, an argument can be made that the singular achievement of the East Asian “miracle” was the attainment of rapid economic growth in the course of meeting other larger social objectives. We also argue that the East Asian states were able to avoid a serious worsening of income inequality that can result from the working of private markets.

The second fact is the enormous complexity of this subject. Kazushi Ohkawa and Hirohisa Kohama in *Lectures on Developing Economies* (1989: 246) asked what role the state ought to play in the developmental process. They concluded that “answers differ with the political structure of the countries involved. Historical reality is so complex that we are not qualified to apply a theoretical model and arrive at a meaningful answer.” In one sense, this remark reinforces the conclusions of various new growth models. Given the phenomena of increasing returns, multiple equilibria, path dependence, historical lock-ins and other dynamic properties, it may be vacuous to think that growth processes can have linear, single, causal explanations. In another sense, it also points to the essential truth that the state is embedded in a myriad of social relations. Thus, the first step to assessing the state’s developmental efficacy is an understanding of both the state’s internal structure and the character of the state/society relations—or the “comparative institutional approach” in the parlance of recent advances in economics and sociology. To this end, some sociologists have suggested different categories of state/society relations, and how they might give rise to certain patterns of state intervention in industrial transformation.42

A particular pattern of state intervention suggested by the East and Southeast Asian experience is predicated on the existence of a relatively effective bureaucracy and its role in husbanding, cajoling, and assisting the private sector to undertake industrial and technological transformation. This may be termed the “market-enhancing” view of the state, emphasizing as it does the role of government policy in facilitating or complementing “private sector coordination” (Aoki 1996).

Today the best developmental advice of international financial institutions is focused on reform of institutions, based on assumptions that imply a limited scope of state action in the economy. This is very different from the situation that prevailed prior

42 The best example is Peter Evans’s *Embedded Autonomy*, which examines different ways in which the state intervenes in the market, based on the type of state institutions and the way they relate to private enterprises.
to the 1970s. Starting with the later phase of the New Deal through the Decade of Development in the 1960s, the core assumption was that development had to be predicated upon the existence of a “strong state.” The idea that economic development requires a state that can be effective in creating and regulating economic and political relationships was central to the “Big Push” industrialization arguments of Rosenstein-Rodan; the coordination of complementary investment decisions arguments by Tibor Scitovsky; the arguments on the importance of nationalist developmental states by Paul Baran; the “hard state” argument by Gunnar Myrdal that emphasized the state’s ability to override conservative interests; as well as the arguments of Simon Kuznets that emphasized the role of the state as the mediator of political conflicts between “winners” and “losers.”

The East Asian “miracle” was indeed based on the existence of “strong,” or “hard” states, and in the broad sweep of the best developmental thinking in the 20th century, this situation constitutes less a deviant case than a desirable one. Yet today the focus has moved away from ensuring the efficacy of state economic bureaucracies, to ensuring the accountability of these same institutions. While the issue of accountability is a critical one, and must be incorporated in designing institutional reform, it is all too often cast in terms of hamstringing powerful bureaucracies, and in favor of issuing sets of checks and balances, by either the legislative or judiciary branch.

State intervention is apparent in the region’s industrial policy (see again the discussions in Section B.2). Such intervention may be justified by recognizing the conditions in which markets fail—the conditions in which sole reliance on private markets leads to inefficiencies that are best remedied by state action. For instance, public finance theory emphasizes that only the state can pursue justice and remedy the inequalities of income and wealth that often result from the working of private markets (Musgrave and Musgrave 1980). Externalities, public goods, equity, national interests are some of the reasons for supporting the intervention of the state in the economic realm.

Recent advances in welfare economics also point out new conditions under which markets are not Pareto efficient. Imperfect information and incomplete markets are added to the list of factors that give rise to problems in the market (Greenwald and Stiglitz 1986). The new institutional economics also reminds us that the market is not the only, or even predominant, way in which our economic life is organized. Nonmarket institutions are integral parts of economic life, and are not necessarily rigidities that are best eliminated.

But as indicated in Section B.1, state intervention in industrial policy can create waste and corruption, in the form of rent-seeking. The arguments developed by Kruger (1974) and Posner (1975) assert that the creation of entry barriers by the state leads to standard deadweight welfare losses, as well as additional “waste” resulting from unproductive political activities intended to influence the state. In developing countries where the rules of contesting property rights are not well established, the scope for rent-seeking associated with those state interventions (like import substitution) was seen to be large. The proponents of the so-called New Political Economy also show how a “predatory” state can create a property rights structure that maximizes its revenues rather than social welfare (North 1981).

A moment’s reflection should tell us, however, that there is a wide range of critically important real world incomes that have rental characteristics. Rent seeking is an activity that aims to create, maintain or

43 For discussions of this, see Woo-Cumings (1999), especially the chapter by Ha-Joon Chang. It is also important to note that much contemporary writings on the role of the state take the neoliberal Zeitgeist as a given, even though this Zeitgeist did not come to prevail in the United States until the 1970s. The assumption here is that the state ought to be a night watchman, that it should keep an arms’ length relationship with the economy. The East Asian experience, which has clearly deviated from this nostrum, is seen as a deviant case, if a “miraculous” one. This produces a tendency to problematize the East Asian experience when, in fact, the developmental history of the now-rich countries show that industrial policies adopted by East Asian countries in the past four decades might not be so unfamiliar. When the now-rich countries were less affluent, and “developing,” they themselves resorted to various protectionist policies, which deviate from the today’s reigning orthodoxy (Chang 2002).
change the rights and institutions from which rents could be extracted, and some of these activities can be critical for growth, and some can be detrimental. For instance, we can think of rents in terms of monopoly profits. But we can also think of them in terms of subsidies and transfers organized through the political mechanism, or natural resource rents, which may not be detrimental for growth. And there are rents related to innovation and information generation, and so on.44

The arguments about rent seeking were elevated to a new height during the Asian crisis, becoming an explanation for a new mode of capitalism: “crony capitalism.” But because rent seeking is so endemic, not only in developing countries but also in the developed world, it would be impossible to evaluate its impact on economic growth. We are bedeviled by the same methodological problems that vex the effort at assessing industrial policy: the problem of imperfect econometrics, and the absent counterfactual. Besides, if the corruption and rent seeking was the main culprit in the 1997–1998 crisis, it was an old sin established over many decades of robust growth: nothing new, in other words.

State intervention is also an important reason for the region’s social development. As indicated in Section A, although the region’s record on income inequality is mixed, there is no clear sign that the region’s strong growth caused inequality to worsen. We can think of the causes in three ways: (1) motivational factors that lead to setting social goals that render the state legitimate; (2) existence of state institutions that can translate these goals into reality; (3) use of particular policies that are most effective in bringing about equal income distribution and poverty reduction.

In postcolonial East Asia, nationalism furnished a major motivational force for economic growth. As W. W. Rostow (1971 [1960] preface) noted, “a reactive nationalism—reacting against intrusion from more advanced nations—has been the most important and powerful motive force in the transition from traditional to modern societies, at least as important as the profit motive.”45 This appeal to nationalism, when combined with the existing communitarian social structure, meant that growth would have to be more equitable than in, say, Latin America. At the extreme end of this nationalist social agenda setting was Korea, which combined full-scale heavy industrialization (its “Big Push”) with radical egalitarianism of the Yushin dictatorship that suppressed conspicuous consumption of the elites and, through society-wide use of meritocracy, promoted nonelite talents. Even in Indonesia, at the other end of the East Asian spectrum, the vision of ekonomi nasional had its moral and distributive goals: increasing income, economic diversification, and transfer of ownership to indigenous Indonesians. Pembangunan, loosely translated as “development,” meant the building, uplifting, and awakening of the whole population (Rock 2002).

The state institutions that were entrusted to translate these legitimizing formulas into policy were the economic bureaucracies. The World Bank (1993) points to the importance of “deliberation councils,” as having facilitated the exchange of information between the state and the private sector. That is true: there was cooperation between public and private sectors, but it was under the overall guidance of a pilot-planning agency. Most important, the developmental bureaucracy in East Asia was insulated from political pressures that

44 Some rents, like monopoly profits, can generate inefficiency. But there are other rents that may be efficient, or in any event signal successful exploitation of growth opportunities. Rents for innovators may be a case in point, when the firm with either cost or quality advantage earns higher returns (Khan 2000). States can also generate rent for entrepreneurs through industrial policy aimed at absorbing and adopting foreign technologies, as discussed earlier. This was clearly the case in Korea, which had the most developed structure of industrial policy, but also in places where industrial policy was less widely practiced, such as Thailand. There, a relatively small number of big businesses were able to use their client list connections to the state, which aided in accelerating technological acquisitions and industrialization (Khan 2000:14).

45 This was because, Rostow continues, “men holding effective authority or influence have been willing to uproot traditional societies not, primarily, to make more money but because the traditional society failed—or threatened to fail—to protect them from humiliation by foreigners.” See further his preface to the 1971 edition of The Stages of Economic Growth.
could undermine economic growth. This insulation of the economic bureaucracy from political pressure is what makes the East Asian experience salient in light of developmental experiences elsewhere.

One way of highlighting this saliency is by contrasting the professional, meritocratic bureaucracy in East Asia with the “appointive bureaucracy” in which tens of thousands of government officials are affected by political regime change (as in Brazil). In “appointive bureaucracy,” the power of the bureaucrats is highly unstable, and their roles cannot be read off the organizational chart. Instead of being a powerful social group with predictable and coherent interests, they remain as political brokers, dealmakers, and idea peddlers. A new guy comes in, and they are fired or moved around (Schneider 1999: 14).

The actual degree of bureaucratic autonomy from politics varies over time. Bureaucratic autonomy was relatively high in Japan through the early 1970s (Johnson 1982), and through the 1980s in Korea (Woo-Cumings 1991). The subsequent attrition in the power and autonomy of the bureaucracy, and shift in economic decision-making foci to the politicians, has not been without problems. The reorganization and redefinition of the economic bureaucracies has led to the diminution of the regulatory oversight of the financial market and corporate activities, contributing to the crisis of 1997 in Korea (Woo-Cumings 2001). In Japan, the persistence of recession and the ineffectiveness of the politically-derived remedy of pump-priming (i.e., more public works), combined with the diminishing role of economic agencies in resource allocation, leads one to wonder whether they have not chosen wrong remedies for the problem of bureaucratic accountability.

Less controversial is the method that was deployed to bring about growth with equity. Fairly early on, the governments in East Asia made big inroads in tackling the problem of equity by instituting land reforms. The motives for land reform in Korea and Taipei, China were less economic than political; but there is no gainsaying the fact it did contribute to greater equity. The benefits of rapid growth, like relatively low levels of unemployment, also contributed to reducing income inequality. The states in East and Southeast Asia were also committed to education and development of human capital, judging from various indicators, some of which are shown in Figures 4 and 5.

Left unchecked and unaccountable, however, state intervention can be damaging even in a relatively democratic system. Democracy in a modernizing polity does not so much reduce corruption, as perhaps decentralize (and in some cases even increase) it.46

In sum, state intervention can make a positive contribution to development. Given a relatively effective bureaucracy, the state can facilitate private sector coordination, as the East and Southeast Asian case has indicated. Whether such intervention actually is beneficial depends on the degree of bureaucratic autonomy from political pressures.

D. Growth, Poverty, and Inequality

As already indicated, East and Southeast Asia made substantial progress in reducing poverty and moderate progress in reducing inequality. These changes occurred while economic growth was very strong. In this section, we discuss the theoretical and empirical links between growth, poverty, and inequality. It is argued that the episode in the 1990s shows that, while the growth could be sustained, and poverty continued to decline (although at a slower rate), in some countries in the region the modest progress in reducing inequality could not be sustained. This suggests that the region may need to explore new targeting policies and review the existing social safety net system.

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46 The logic of this was described by V. O. Key (1936:12): “It follows from the ideal of equality that the highest degree of impartiality and fairness should prevail in the management of government affairs and that every citizen should have equal opportunity to participate in the bounties distributed by his government.” Thus, democracy reorganizes the loci and type of corruption, from a central few to decentralized many, and from an illicit type that thrived in the dark to a legal type often resulting in corporate welfare or wasteful pork barrel programs.
Many empirical studies have shown that growth almost always benefits the poor. Dollar and Kray (2000) is an often quoted study of this type. They used data from 80 countries over 4 decades, concluding that income of the poor rises one-for-one with aggregate income growth. Accordingly, policy-induced growth is as good for the poor as it is for the overall economy and the effect of growth on poor peoples’ income is no different in poor countries than in rich ones. More surprisingly, according to the study, reducing government spending is even better for the poor than for the rest of the population and neither democracy nor spending on health or education makes any difference to growth.

While seemingly generous with policy implications, there is actually not much useful information policymakers can draw from cross-country studies of this type, partly because the causal links between growth and poverty are not comprehensively explained. So many studies using cross-country data conclude either that growth is good for poverty reduction, or growth is necessary but not sufficient for alleviating poverty. Some also suggest that the type of growth matters. All of these conclusions are not incorrect, but they are far from providing concrete policy recommendations.

What specific type of growth would be more poverty-reducing? The answer is not easy. It goes beyond standard macroeconomic, trade, and sectoral policies. It should also embrace institutional issues, hence requiring more detailed analysis of individual countries. Cross-country analyses cannot provide meaningful policy prescriptions in this case.

Faced with uncertainty regarding the precise mechanisms linking growth and poverty, and also uncertainty over the type of recommended growth, Anne Krueger (2000) proposed a simple 2-by-2 policy taxonomy:

(i) Economic growth with no increase in incomes for the poor (“win-lose” policies).
(ii) Economic growth with increase in incomes for the poor (“win-win” policies).
(iii) No economic growth with increase in incomes for the poor (“lose-win”).
(iv) No economic growth and no increase in incomes for the poor (“lose-lose”).

Krueger advocated that the steps to be followed are eliminate (iii) and (iv), promote (ii), and target selectively to the poorest of the poor. Obviously, careful studies on the tradeoff between poverty reduction and growth, and close examination of the political economy of the policy choices, are needed. But she argued that implementing the aforementioned steps, even without waiting for the concrete results of the studies, would also provide high returns. Behrman (2002) observed that the power of Krueger’s taxonomy for policy guidance can be diminished by real world complexities. He suggested a modification to it by, among other things, taking more explicit account of the dynamic response to policies, and replacing the 2-by-2 objectives with poverty alleviation and increasing efficiency (instead of growth).

The most important point from the two studies above is that both implicitly suggest ways to select “win-win” policies. However, while the concept is simple and useful, it still poses a big challenge in terms of identifying specific “win-win” policies. From this perspective, simply stating that the type of growth (and hence a particular set of policies) matters, without looking at the specific characteristics and the prevailing institutions of the country is not helpful. If policy prescriptions are to be recommended, conducting a country case study is the only reasonable way to proceed.

What is the record of East and Southeast Asia on the growth-poverty nexus? With high and accelerating growth of labor productivity in the region, real wages surged and incomes increased, helping to reduce the incidence of poverty. Whether using a $1 or $2 per-day income benchmark, the general trend shows that the region’s poverty incidence declined significantly. During the last decade prior to the crisis, the decline was from 417.5 to 265.1 million people ($1 criterion, Figure 11) or from 1.1 billion to 863.9

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47 But both also realize the complexities of real world decision making that are often affected by the nature of political processes in each country.
Post-crisis Development Paradigms in Asia

In some countries, poverty reduction was more dramatic. For example, in PRC, Indonesia, Malaysia, and Thailand, the number of poor dropped by 95%, 90%, 82% and 63%, respectively, during 1975–1995. It is important to note that the world’s poverty reduction during the early 1990s, i.e., from 1.3 billion in 1990 to 1.2 billion in 1996, has been exclusively due to the decline in poverty in East Asia (see again Figure 11). Hence, the region clearly achieved impressive gains before the crisis hit in 1997. Most remarkable was the PRC’s achievement in reducing the number of poor from 360 million people in 1990 to 210 million in 1996 (a decline of 150 million people in only 6 years).

It is clear, therefore, that the East and Southeast Asian experience demonstrates a robust association between sustained growth and significant poverty reduction. It is, however, widely known that the head-count poverty index does not necessarily capture the multidimensional experience of poverty (“capability deprivation,” see Sen [1999]). Yet, by a variety of other social indicators, such as access to education and health services, the region also showed steady and remarkable progress. In addition, significant gains in school enrollment, morbidity rates, nutritional condition, and other health indicators were also achieved.

The determinants of such exemplary trends varied between countries, although some common strategies are discernable. Most of these have been discussed earlier, e.g., demographic transition characterized by a sharp drop in fertility rate, sectoral transformation without sacrificing agricultural productivity, rapid capital accumulation enabled by conducive trade and macroeconomic policies, investment in human and other social overhead capital, technology policies, and labor market flexibility.

The discussion of poverty reduction is often juxtaposed with the issue of inequality. The growth-inequality nexus is far more complex than its growth-poverty counterpart. The thinking on this issue should be distinguished between inequality as an initial condition and inequality as the result of the growth process. Let us begin with the conceptual arguments regarding the effect of income distribution on growth.

Theoretically, inequality can affect growth through at least two channels: directly via savings, and indirectly via the redistribution of income, social conflict, political instability, and democracy. At the early stages of development, the accumulation of the

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48 All figures are based on $1/day per-person in 1985 PPP dollars poverty line. Note that the PRC and Indonesia accounted for 92% and 84% of the region’s poor in 1975 and 1995, respectively.

49 For an extensive literature review on the subject, see Thorbecke and Charumilind (2002).
The indirect effect works through the redistribution of income and the sociopolitical process. In a Kaldorian world, efforts to reduce income inequality by redistribution would reduce saving and investment, and in turn dampen growth. But Aghion and Bolton (1997) and Aghion and Howitt (1998) have argued the opposite. A larger proportion of poor in a highly unequal distribution situation tends to preclude them from participating in productive investment due to large sunk costs. Further, there is a limited incentive for creditors to supply effort to ensure a high return on investment when a large number of poor must borrow to undertake investment projects. Hence, redistribution of income to reduce such an inequality would stimulate rather than stifle growth.

High inequality of income and wealth also tends to cause social tension and political instability. The latter can in turn reduce growth by increasing the probability that governments will repudiate contracts, and property rights will be breached, both of which could discourage capital accumulation. In such circumstances, the number of poor people engaging in rent-seeking, illegal activities and other predatory behavior increases, further threatening the security of property rights. All these tendencies discourage capital accumulation and undermine the basis for economic growth (Benhabib and Rustichini 1991; Fay 1993). Another channel is through fiscal redistribution. As argued by Alesina and Rodrik (1994), a highly unequal income distribution raises the demand for fiscal redistribution. This redistribution is often financed by distortionary and inefficient taxes because a large number of poor median voters tend to prefer higher taxation on the rich. Such distortions discourage capital accumulation. Hence, there is an inverse relation between inequality and investment in physical capital.

The above discussion is largely based on the theoretical concept of the linkage between inequality and growth. Let us now look at the empirical evidence before we turn to the East and Southeast Asian cases. As it turns out, empirical evidence on this issue is less conclusive than that concerning the growth-poverty link. Some empirical work supports the negative association between inequality and growth, contradicting Kaldor’s argument. Other evidence supports the opposite conclusion. Let us first look at the earlier category.

Using data from Angus Maddison (1982) for the period 1830–1950 and from Summers and Heston (1988) for the period 1950–1985, Persson and Tabellini (1994) came to the conclusion that inequality is harmful to growth, primarily because of government distributive policies and political forces. Similarly, Alesina and Rodrik (1994) found a negative effect of inequality (measured by income and land distribution) on political instability, and a negative effect of political instability on investment (and hence on growth).51 It is clear from these studies that factors other than just saving behavior (e.g., political instability and uncertainty over property rights) are also at play, affecting the direction of inequality’s influence on growth.

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50 Kaldor (1956) pointed out that higher inequality leads to higher savings. Two underlying hypotheses support this conclusion. First is the subsistence consumption hypothesis, easily demonstrated by the well-known Stone-Geary utility function. Below a subsistence consumption level, consumption smoothing cannot occur thereby forcing the poor not to save. The second is the life cycle hypothesis, which claims that income inequality positively affects private savings rates because few rich savers have strong incentives to pass on their bequests to the younger generations.

51 See also Benabou (1996), Perotti (1996), Rodrik (1998), Barro (1999), and Banerjee and Duflo (2000).
If lower inequality tends to raise growth, and if growth reduces poverty, it should follow that higher inequality would also raise poverty, although the mechanism is rather complex and not well understood. Using Deininger-Squire data for the 1965–1985 and 1985–1995 periods, Timmer (1997) found in a panel data analysis that a higher income gap is associated with a sharp decrease in economic growth.\footnote{The income gap is measured as the per capita income difference between the top and the bottom quintile normalized by the average per capita income.} He further found that when the initial income gap was high, growth tends to exclude the poor even when the country pursued pro-agriculture policies. Hence, inequality reduces growth and causes less reduction in poverty.

But another set of empirical studies pointed to either inconclusive or even opposite results. One of the most important studies in this category is by Forbes (2000). Using 1970–1995 for the annual per capita growth period, and 1970 for the level of inequality (Gini index) and other relevant control variables, her study found that in the short and medium term higher inequality tends to improve growth. The results are robust across samples, variable definitions, and model specifications. This conclusion suggests that many countries face a tradeoff between reducing inequality and enhancing growth. But she was careful neither to draw any policy conclusions from the study nor to contradict the many other studies that reach the opposite conclusion, among others, because the within-country data that she used were limited to only 10 years. She admits that the strong positive relation between inequality and growth could disappear over a longer period. In contrast with most other empirical studies, hers is one of the few that examined within-country trends of inequality and growth, although the variability of the channel of influence between countries still cannot be well explained.

What can we conclude from the above? Although important, the link between initial inequality and growth remains unclear. Most likely the underlying mechanisms linking the two are complex and differ between countries, rendering the existing empirical evidence inconclusive. In his study for the ADB Institute, Srinivasan (2001) remarked that there is no robust association between income inequality and aggregate growth. If one measures inequality using wealth rather than income or expenditure data, however, it is possible that inequality is negatively associated with growth, via a number of channels discussed earlier.

What is the empirical evidence in East and Southeast Asia? Data on the region’s inequality in the early period give a mixed picture. For example, Korea’s measured Gini index in the early 1960s is relatively low, i.e., around 0.34. Land reform must have played an important role in lowering inequality at the early stage. The index for countries in Southeast Asia in the early 1970s ranges from 0.42 in Indonesia and Thailand to 0.52 in Malaysia. By comparison, the Gini index in Brazil, Mexico and Chile are, respectively, 0.62, 0.58, and 0.46. Hence, inequality in some Southeast Asian countries in the early 1970s was only slightly better than in some countries in Latin America. On the other hand, if we compare with the index in India during the same period, the Southeast Asian inequality was worse. India’s Gini index during 1971–1975 is 0.36. We know that the growth performance in East Asia and Southeast Asia was superior to that in Latin America and India. Therefore, the link between initial inequality and growth performance in East and Southeast Asia is not conclusive, except for Korea.

For Korea, a relatively low initial inequality put the country in a better position to foster growth. The region’s development strategy, i.e., taking care of the agriculture sector before industrializing, strengthened the contribution of the growth process to poverty alleviation. However, since trade openness generally leads to higher growth (Little, Scott, and Scitovsky 1970; Sachs and Warner 1995; Frenkel and Romer 1999), Korea’s export-oriented strategy must have also played an important role in the reduction of poverty. One of the persuasive arguments suggesting the (indirect) role of trade openness in poverty reduction was given by Bhagwati and Srinivasan (2002). They argued that countries opting for freer trade or an export-
oriented strategy will, generally speaking, have to maintain macroeconomic stability with low inflation (macroeconomic stability is endogenous to the policy choice). Since the poor are vulnerable to inflation, it follows that a policy choice in favor of freer trade will indirectly assist the poor.

What about the causality in the opposite direction, i.e., the effect of growth on inequality, and hence also on poverty? This involves looking at the effect of the growth process, especially during the high growth period, on inequality. It is generally accepted that for a given rate of growth, poverty reduction would be larger if inequality could be reduced. But it remains unclear whether inequality reduction will sacrifice growth, and whether the poverty reduction due to reduced inequality will be more than offset by the increase in poverty due to slower growth.

Although many studies have placed emphasis on the importance of growth rather than income and asset distribution in explaining poverty reduction in East and Southeast Asia (see for example, Quibria [2002]), there have been fierce debates and disagreement on the relative weight to be placed on growth (“opportunity”) and interventions to assist the poor and redistribute income (“empowerment”). The latter implicitly takes a strong position that poverty and inequality should be defined more broadly, not just by simple head count measures or Gini indexes. Gini indexes in the region from 1980 to the precrisis year point to either stagnant or worsening inequality. But if we look at the data during the 1990s, inequality has worsened in Indonesia and the Philippines (Figure 12). The same is true of Thailand (not shown in the figure). Although the index in Malaysia was practically stagnant, it remains the highest in the region.

Indeed, the income distribution record of the region generally is not very impressive. Several studies also show that asset distribution in some countries has become more unequal over time. The income gap between the rich and the poor has widened during the high growth period in Southeast Asia. Compared to the Gini index, the income gap measure blends more easily into political debates—making it important to watch, especially since the data being used usually measure consumption expenditure rather than income. In the 1990s, the gap (measured by the per capita income difference between the top and the bottom quintile normalized by the average per capita income) in Malaysia, Philippines, and Thailand recorded around 2.4, similar to that in many Latin American countries. This is much higher than in East Asia. In Korea and Taipei, China, the recorded gap ranged between 1.5 and 1.8 (Timmer 1997).

Hence, the East and Southeast Asian experience shows that high growth has been associated with a
significant reduction in poverty and modest progress in the reduction of inequality. However, the episode in the 1990s shows that, while the growth could be sustained, and poverty continued to decline (albeit at a slower rate), the modest progress in reducing inequality could not be sustained in some countries.

To the extent that inequality, especially that measured by income gap, is as important as poverty, careful thinking and better targeting are needed if future growth in the region is expected to be socially and politically more acceptable. In this context, although the region has coped relatively well with the short-run social impacts of the 1997 financial crisis, the shock has brought to the surface the importance of reviewing the existing social safety net system. Such an examination should include a review of the adequacy of family and community supports (central to so-called “Asian values”) on the one hand, and exploration (without necessary adoption) of the welfare state system on the other. Setting up a welfare system will require more (fiscal) resources than are presently available. To a certain extent, however, the region’s relatively high savings rates could be enlisted to support such an enterprise.

To summarize, the effect of initial inequality on future poverty reduction remains largely indeterminate. The East Asian experience, however, indicates that in some countries low inequality at the initial stage can contribute dramatically to poverty reduction. The incidence of poverty declined so sharply, in fact, that further gains have been difficult to achieve. This suggests that governments may need to explore state welfare mechanisms, without necessarily adopting them indiscriminately. In some economies in the region, high growth and poverty reduction were sustained but improvements in income inequality did not accompany this progress, especially in the 1990s. A widening income gap, politically more sensitive in many ways than the incidence of poverty, was indeed perceived in some countries that fell into crisis in 1997–1998.

E. Lessons

To recapitulate, some important lessons can be drawn from East and Southeast Asia’s development experience. We caution, however, that generalizations must be carefully interpreted lest they be misleading. The relevance of each lesson depends on the conditions and circumstances faced by individual countries. In particular, inferences drawn from this region’s experience obviously might not apply to countries with unfavorable initial conditions, especially those countries unwilling to correct imprudent macroeconomic policies. The keys to Asian policy success have most often included pragmatism and respect for functionality, irrespective of differences in the nature and stage of institutional development.

Four lessons stand out. First, exports and FDI (economic openness strategy) can be an important source of technological assimilation and enhancement, but an export strategy or FDI entry per se does not guarantee sustained growth and improved productivity. These must be complemented by an effective domestic learning process to achieve assimilation and autonomous innovation. Knowledge embodied in imported capital goods cannot be fully utilized without local learning and skill formation, facilitated in particular by good education. The Asian “miracle” experience strongly suggests to us that the nexus among capital accumulation (new machinery), human capital and skill formation, and assimilation of foreign technologies (embodied or not), is so important that the absence of one of these essential facts would seriously undermine technological advancement, TFP growth, and the ultimate realization of domestic economic potential. The process is sometimes much more complex than implied by a simple, accumulation driven Solow growth model, since real domestic technological progress may or may not be embodied in high capital formation. The role of entrepreneurs is paramount in sustaining this capital

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53 Various studies have shown that both family strength and community-based support in East and Southeast Asia have weakened over the years (Chan 2001). On the other hand, Asian policymakers have often criticized the “welfare state” system of the West, and warned against entertaining thoughts of such a system.
deepening and dispersing the benefits of innovation vertically, horizontally, and inter-temporally from the original FDI recipients and exporters.

Second, it is important to take care of the agriculture sector at an early stage, both to foster rapid growth that benefits the poor and to develop manufacturing industries along the lines of comparative advantage. Development strategies that discriminate against agriculture will depress this sector, preventing the economy from transforming smoothly into a more industrialized one. In this process, labor should be allowed to freely move from lower productivity agricultural jobs to higher productivity industrial jobs.

Third, growth almost always benefits the poor, but the gap between the rich and the poor is equally crucial to simple measures of poverty incidence. It is more visible to citizens, and is often included in political discussions. When the gap is small, the poor will benefit from growth, especially growth that raises agricultural productivity. On the other hand, the poor risk being left out when the initial gap is large, because the income gap may continue to widen. If the growth process itself involves parallel development of resource-endowment-based comparative advantage and human capital formation, as in the case of East and Southeast Asia, the income disparity can be prevented from widening. Growth without adequate emphasis on social development and equity can widen the gap between the rich and the poor, potentially endangering the sustainability of the growth process itself.

Fourth, government intervention can facilitate development, especially at the early stages. Governments in East and Southeast Asia generally exhibited strong “growthmanship.” They also played an important role in providing necessary infrastructure and social overhead capital to support growth and facilitate its linkage to improvements in conditions associated with social indicators. Governments can also benefit from having effective bureaucrats who are insulated from political cycles and pressures, as the East and Southeast Asian experience in the later stages of development indicates.

On the question of industrial policy, evidence remains mixed and responsible guidance must be cautionary. Government industrial policies can be useful if more serious moral hazard problems can be overcome. In this regard, using a carrot and stick approach, as Korea used when selecting industries based on export performance, works better than protecting a large range of industries irrespective of their performance (e.g., India). The endemic risk of industrial policy, however, is that political criteria will supersede economic ones. Government is usually on more solid ground when playing a facilitating role, as in financial and organizational support for national scientific and technological infrastructure, public growth externalities serving all private agents.

In closing, we should also recall the lessons of the region’s negative experiences in this context. If left unchecked, government administrative controls can become excessive and misguided, abusing the concept of public-private collaboration. Among other things, government needs to prevent the buildup of systemic risk that accompanies financial liberalization, a topic to which we turn in the next chapter.
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Post-crisis Development Paradigms in Asia


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The Asian Capital Account Crisis and the Sequencing of Financial Liberalization: What Went Wrong?

It is paradoxical that institutions and organizations that sustained miraculous growth for several decades suddenly experienced a serious financial crisis in 1997–1998. One area where this contrast is clearest is in the close relationships between family businesses, banks, and government.

At earlier stages of development, functional interactions within this triangle were successful. Family groups substituted for weak enforcement mechanisms of contracts, the absence of managerial skills, and asymmetric information in financial markets. Because informational asymmetries hardly existed between owners and managers, agency problems were avoided. Banks owned and managed by family businesses were also willing to invest in projects with long gestation periods. At the same time, governments played an important role in mobilizing savings, channeling investment, and promoting targeted infant industries. Because these interactions between family businesses, banks, and governments worked well, the market expanded considerably.

Over time, this expansion, together with credit allocation problems, undermined the advantages of the family business-bank-government nexus. Larger markets produced daunting coordination challenges for family groups. Banks also failed to apply sound risk management techniques when deciding on loans to connected firms. In addition, government-directed lending implied that normal commercial criteria were sometimes subordinated to broader economic objectives. Last, explicit or implicit government guarantees on loans weakened banks’ incentives to monitor and discipline bad borrowers. Thus, bad loans began to accumulate in the banking system.

These loans did not necessarily pose systemic risk as long as they were largely financed domestically. Particularly in a high growth environment, governments could bail out insolvent banks and large borrowers through implicit deposit insurance and guaranteed bank loans.

However, a new financing pattern of business investment during business cycle upturns in the 1990s multiplied risks. Following financial sector liberalization, massive amounts of short-term, dollar-denominated foreign capital entered and financed a large portion of domestic investment in the region. These inflows were channeled into long-term domestic investments in real estate and manufacturing. A double mismatch (i.e., both a currency and a maturity mismatch) thus developed on the balance sheets of banks and firms. When capital quickly exited in 1997 and Asian currencies depreciated, balance sheets collapsed. This in turn restricted financial intermediation and depressed the real sector. In this environment, investor confidence collapsed, producing the Asian financial crisis.
In this chapter, the crisis is analyzed in a manner that is consistent with our analysis of the Asian miracle in Chapter 1. It focuses on, first, the distinct nature of the Asian capital account crisis and, hence, its implications for new policy prescriptions and, second, what went wrong with the sequencing of financial liberalization in crisis-hit Asian economies. The fundamental error in sequencing was that capital account liberalization preceded the establishment of sound core institutions. This allowed huge amounts of foreign capital to flow in before governments had sufficient prudential regulatory oversight capacities and banks had adequate risk management skills. The result was the emergence of double mismatches that helped transform initial currency depreciations into major economic downturns.

The next section considers the nature of the Asian crisis. This is followed by a discussion in Section B of the policy responses that were employed. Section C reviews financial sector liberalization (FSL) in the region, the role of the nexus among family firms, and the appropriate sequencing of FSL. Section D proposes a sound sequencing strategy for the People’s Republic of China (PRC).

A. The Asian Capital Account Crisis

The Asian financial crisis was primarily a capital account crisis, differing fundamentally from conventional current account crises. It was caused by massive inflows of capital into the region followed by sudden, equally massive outflows. But it was not caused by bad macroeconomic policies that rendered fixed exchange rates unsustainable. To know how to respond to a crisis, one must first understand its nature.

In this section, we discuss the factors that produce capital account crises and describe how the Asian crisis evolved.

1. The Nature of Capital Account Crises

In a conventional current account crisis, profligate budget deficits and excessive money creation cause domestic absorption to exceed domestic production, producing a current account deficit (CAD) and inflation. The resulting CAD could be financed by capital inflows, but poor macroeconomic fundamentals limit the availability of foreign capital. The balance of payments deficit could be financed by international reserves, but as these are depleted, the country is often forced to seek emergency funds from the International Monetary Fund (IMF). In the end, the CAD proves unsustainable. The Asian crisis was 180 degrees different from this type.

Asian crisis countries had low budget deficits, in some cases surpluses, low inflation, high growth rates, and stable exchange rates. Thus first generation currency crisis models cannot explain the crisis.1 The seeds of the crisis arose instead from massive capital inflows attracted by sound macroeconomic fundamentals and higher interest rates in the region. As East Asian countries opened their financial sectors, foreign investors, seeking high returns in the miracle economies, flooded the region with liquidity. The resulting capital

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1 Paul Krugman’s 1979 article “A Model of Balance of Payments Crisis” pioneered the “first generation models” of crises that focused on a fundamental flaw in the macroeconomic policies. The model, which was later enhanced by Flood and Marion (1996), explains the cause of crisis as a product of weak macroeconomic fundamentals such as budget deficits. This model had been used throughout the 1980s, and it guided much of IMF’s policymaking during the time. As the model failed to predict the first two major financial panics in the 1990s, that in the European Monetary System (1992–1993), and the Mexican crisis (1994–1995), “second generation models” of bank runs based on Diamond and Dybvig (1983) gained currency. In these models, government policy is not predetermined. Instead, moral hazard plays a central role in the analysis. The capital account crises described in this section, in which the balance sheet effect on highly leveraged firms is emphasized, can be categorized as “third generation models.” As Krugman asserted in his speech at the ADB Institute on 17 December 1999: “My preferred candidate for a third generation crisis model ... is the one that emphasizes the balance-sheet effect on firms.” [Keynote transcript p. 4, available at www.adbi.org/PDF/cf991217/Krugman991217.pdf]
account surpluses far exceeded the underlying current account deficits.

As a result, the balance of payments registered large surpluses. Since exchange rates were not floating, these balance of payments surpluses caused international reserves to accumulate. The rise in foreign reserves and the capital inflows caused money and credit to increase, raising domestic absorption. Higher domestic absorption then increased current account deficits. Unlike in the case of current account crises, therefore, widening current account imbalances were driven by massive capital inflows via higher domestic absorption.

There were speculative excesses before the crisis, with foreign investors exhibiting herd behavior. This exuberance led to excessive lending by domestic financial institutions and excessive borrowing by domestic firms. Bubbles arose in stock and real estate markets and overcapacity developed.

Moral hazard could also have led to excessive credit creation. As Yoshitomi and Ohno (1999) discussed, moral hazard could have occurred on many levels. The relationship among family businesses, financial institutions, and governments might have become less disciplined because of a series of government-orchestrated bailouts. Bank managers and borrowing enterprises might have become careless due to government protection. International investors could have over-lent due to excessive competition among themselves and possible rescues by the government and IMF. All of these factors could have led to excessive risk taking.

The risks due to moral hazard and massive capital inflows were not well managed. Banks and firms often unwisely borrowed short term (i.e., with maturities less than 1 year) in dollars and then invested long-term in domestic real estate and manufacturing projects. There was thus a “double mismatch” (i.e., currency and maturity) on domestic balance sheets. Borrowers apparently believed that exchange rates would remain stable and that short-term loans could continue to be rolled over.

When capital began flowing out, the double mismatch magnified the initial shock and produced major outflows. When the asset price bubble burst, the world electronics market slumped, and the business cycle turned down, capital flows started to slow down. The slowdown of capital inflows combined with the already growing current account deficit created deficits in the overall balance of payments, decreasing foreign reserves under fixed exchange rates. When foreign reserves were drained from central banks, speculators attacked currencies. Central banks in the region eventually had to abandon their pegs, and Asian currencies depreciated. Given the double mismatch, while the domestic business cycle downturn and the bursting bubble reduced the real value of assets on the balance sheets of borrowers and banks, currency depreciations expanded liabilities on domestic balance sheets, shaking investor confidence, and leading to further massive capital outflows. Asian currencies did not simply depreciate but collapsed, declining 50% or more over several months. This is exactly the opposite of what happens during a conventional current account crisis. In the latter case, currency depreciations can rectify current account deficits if accompanied by restrictive fiscal and monetary policies.

The swing of capital movements from inflows to outflows equaled 15–20% of gross domestic product (GDP). Such sudden massive reversals of capital flows produced twin crises, i.e., both an international liquidity crisis (the sharp drain of foreign reserves and currency collapse) and a domestic banking crisis. Banks had to curtail lending, depressing domestic absorption and output. In this environment, investor confidence evaporated. The twin crises caused domestic absorption to decline by 20–30% in 1997–1998.

This collapse in domestic demand, in turn, reduced imports, moving the current account from deficit to large surplus in just one year. This “improvement” in the current account was not a sign of economic health, however. Instead, it occurred because imports collapsed due to depressed domestic absorption and output and due to the fact that banks could no longer provide letters of credit to firms that needed to import intermediate inputs. With limited imports of intermediate inputs, exporting firms had difficulty increasing production. Thus, the sizeable currency depreciations did not generate a surge in exports. In
addition, low prices depressed revenues on goods that were exported. Extraordinarily large current account surpluses were thus achieved, not because exports increased but because import spending fell much more than export revenues. Hence, GDP declined by only one third or one half as much as domestic absorption.

In sum, the sharp swing in the capital account from large surplus to even larger deficits caused the current accounts to move from deficit to large surplus by shrinking domestic absorption. Just one year after the crisis began, therefore, an overall balance of payments equilibrium was achieved and, hence, exchange rates stabilized, but only through this extremely harsh mechanism. International assistance made only a minor contribution to the resulting stability.

In a capital account crisis such as the Asian financial crisis, the driving force is the capital account. Large capital inflows exceeding the current account deficit initially stimulate the economy by expanding money and credit, financing the cyclical upturn, and increasing domestic absorption. This increases the current account deficit. Once the domestic business cycle turns down and the asset price bubble bursts, capital flows suddenly change direction. Massive outflows then depress economic activity further, generating twin crises, and collapsing absorption through the downward spiral of banks' and borrowers' balance sheets. This in turn causes large current account surpluses. The underlying causes are not profligate macroeconomic policies, as in current account crises, but rather sharp, rapid swings of the capital account from surplus to huge deficit.

2. How the Asian Crisis Evolved

Foreign capital flooded into Thailand following financial sector liberalization, generating a boom-and-bust cycle. Massive capital inflows marked a new way of financing business cycle upturns in Thailand and other countries in the region. Initially the funds led to a speculative bubble in real estate and equity and consequently to overinvestment, peaking in 1994. In that year, commercial bank credits to the private sector increased by more than 30%.

In 1995, the bubble burst, weakening banks, restricting growth, and leaving the Thai economy with excess capacity. The downturn of the semiconductor industry in 1996, which was unrelated to the bursting bubble, also contributed to the slowdown in exports.

Slowing capital inflows, combined with widening current account deficits, created deficits in the overall balance of payments, decreasing foreign reserves. Reserves equaling several months of imports were thought to be sufficient to take care of balance of payments crises. However, this was only true for a conventional current account crisis. For a capital account crisis, several months of reserves were insufficient to maintain the peg. The exchange rate depreciated, further deteriorating the balance sheets of banks and firms exposed to currency risk. Capital that had entered Thailand in previous years quickly exited. The magnitude of this reversal of capital flows between 1996 and 1998 was enormous, equaling 16.7% of Thai GDP. This sudden, massive withdrawal of liquidity caused additional harm to domestic balance sheets since they were exposed to both currency and maturity risk.

While Thailand’s domestic economy was suffering from the speculative downturn, its exports were declining for other reasons. The depreciation of the renminbi in the PRC in 1994 caused Thai firms to lose competitiveness relative to PRC firms. The glut in the semiconductor market further reduced exports. The appreciation of the dollar between 1995 and 1997 pushed up the baht relative to the yen and reduced exports.2

It is often claimed that the decline in Thailand’s exports in 1996 due to the sharp depreciation of the yen caused the current account deficit to widen, giving rise to concerns about Thai competitiveness. This claim is not necessarily correct because Thailand’s current account deficit had already reached more than 8% of GDP in 1995 when the yen was still strong, as large as it was in 1996 when the yen was weak.

2 One quarter to one third of the region’s trade was with Japan (Ito 2001).
Table 1. Balance of Payments in Crisis Countries in Billions of Dollars (Percent of GDP)\(^{a}\)

<table>
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<tbody>
<tr>
<td>Current Account</td>
<td>-41.0</td>
<td>-54.6</td>
<td>-26.3</td>
<td>58.5</td>
<td>43.2</td>
</tr>
<tr>
<td>Capital Account</td>
<td>81.5</td>
<td>100.6</td>
<td>28.8</td>
<td>-0.5</td>
<td>-1.2</td>
</tr>
<tr>
<td>Direct Equity</td>
<td>15.9</td>
<td>19.7</td>
<td>3.6</td>
<td>8.5</td>
<td>18.7</td>
</tr>
<tr>
<td>Portfolio Equity</td>
<td>11.0</td>
<td>13.9</td>
<td>-3.2</td>
<td>2.1</td>
<td>4.5</td>
</tr>
<tr>
<td>Comm. Bank Credit</td>
<td>53.2</td>
<td>65.3</td>
<td>25.6</td>
<td>-35.0</td>
<td>-18.8</td>
</tr>
<tr>
<td>Nonbank Credit</td>
<td>9.9</td>
<td>18.2</td>
<td>21.0</td>
<td>-1.7</td>
<td>-4.6</td>
</tr>
<tr>
<td>Official Flows</td>
<td>2.5</td>
<td>-2.6</td>
<td>29.9</td>
<td>27.8</td>
<td>3.5</td>
</tr>
<tr>
<td>Errors &amp; Omissions</td>
<td>-26.5</td>
<td>-26.8</td>
<td>-35.0</td>
<td>-16.9</td>
<td>-14.9</td>
</tr>
<tr>
<td>Reserve (- increase)</td>
<td>-14.0</td>
<td>-19.3</td>
<td>32.5</td>
<td>-41.1</td>
<td>-27.0</td>
</tr>
</tbody>
</table>

Source: Institute for International Finance cited in Yoshitomi and Ohno (1999) and calculations by the authors.

*The crisis countries are Indonesia, Korea, Malaysia, Philippines, and Thailand.*

Even under a floating exchange rate regime, so long as massive amounts of capital continue to flow in either because of euphoria or expectations of further currency appreciations, the resulting currency appreciation will widen the current account deficit to unsustainable levels. The basic reason for Thailand’s widening current account deficit was the massive capital inflows, which caused domestic absorption to increase through money and credit expansion and also caused the real effective exchange rate of the Thai baht to appreciate (due to higher inflation in Thailand than in its trading partners).\(^3\)

While the business cycle downturn and the fallout from the bursting of the asset bubbles reduced capital inflows, investors in the spring of 1997 launched a speculative attack. The Bank of Thailand fended off the attack. However, it faced renewed pressure in the summer as Thai exporters delayed converting exports earnings into baht and Thai banks and corporations scrambled to sell baht to cover their short-term dollar loans (Lauridsen 1998). The Bank of Thailand abandoned its peg on 1 July 1997. The currency initially fell and then tumbled further when IMF and the US Treasury encouraged the central bank to reveal to market participants that much of its reserves was tied up in swap contracts.

Contagion spread to neighboring countries. These countries had current account deficits lower than Thailand (around 4% of GDP), budget surpluses, low inflation, and persistently high economic growth. Nevertheless investors who before 1997 had eagerly flocked to Asian markets suddenly pulled out. This break in investor confidence is evident in the sudden reversal of capital flows (see again Table 1), estimated in some countries at more than 15% of GDP.\(^4\) Through changes in domestic absorption, this caused the current account to swing sharply to surplus.

Central banks in the region abandoned their pegs and Asian currencies depreciated. As in Thailand,

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\(^3\) The capital inflows also put pressure on currencies to appreciate. In this respect, the exchange rate regime does not matter much. Regardless of the system, the pressure would have been similar: an appreciation of nominal rate in a flexible system, an appreciation of real rate in a fixed system. Either way, exchange rate-driven competitiveness would be harmed. Governments responded to these pressures by trying to implement policies that basically violate the impossible trinity theorem. They wanted to maintain pegged exchange rates, so they conducted sterilized interventions. This tended to raise interest rates, stimulating further capital inflows and putting further pressure on the currency to appreciate. Eventually, this approach produced the unfavorable combination of high interest rates and overvalued currencies.

\(^4\) Individually, between 1996 and 1997 the reversal in private capital flows in percentage of 1996 GDP was as follows: Korea (10.5%), Thailand (7.9%), Indonesia (5.4%), Malaysia (11.3%), Philippines (10.4%). However, the reversal was much larger if country specific periods from peak to trough are chosen: for example, Thailand (16.7% from 1995 to 1998) and Indonesia (13.4% from 1996 to 1998). These are calculated as inflow in 1998 minus that in 1995 (or 1996), in percent of 1996 GDP (see Yoshitomi and Ohno 1999).
banks and firms in these countries were exposed to currency and maturity risks. Thus the initial depreciations weakened balance sheets. Deteriorating balance sheets shook investor confidence and made foreign lenders unwilling to roll over loans.\(^5\) Massive capital outflows occurred, exceeding 15% of GDP in some countries.

Table 2 indicates that other Asian economies experienced speculative bubbles that suddenly burst in 1997. Indonesia; Hong Kong, China; and Malaysia appear to have had equity bubbles that popped during the crisis, and Hong Kong, China; Malaysia; and Singapore apparently had real estate bubbles that burst in 1997. As with Thailand, the bubbles were fed by large inflows of foreign capital and created overinvestment.

The capital outflows led to depreciations of the Indonesian rupiah, Korean won, Malaysian ringgit, and Thai baht, as shown in Table 3.

Bernanke and Gertler have shown that the effects of an adverse macroeconomic shock will be amplified if it restricts the flow of credit (see, e.g., Bernanke, Gertler, and Gilchrist 1996). A decline in credit creation could occur because a negative macroeconomic shock worsens firms’ balance sheets and, thus, their access to...
credit, or because it worsens banks’ balance sheets and, thus, restricts their ability to supply loans. In a world of asymmetric information, if a negative macroeconomic shock worsens firms’ financial positions, it might impair even potentially healthy firms’ access to credit. Similarly, an adverse shock might reduce bank capital due to increasing loan losses and thus banks’ ability to provide loans, or even force banks to curtail lending and rebuild capital. Firms lost access to credit as their net worth plummeted, forcing them to curtail spending.\(^6\)

Thus, the traditional textbook relationship between depreciating currencies and increases in spending failed to hold during the crisis. Instead, the aggregate demand curve had a backward-bending portion and the economy gravitated to this bad equilibrium.

**B. The Policy Response**

To manage the Asian financial crisis and facilitate recovery, policymakers needed to recognize the sharp distinction between capital account and current account crises. Unfortunately, they failed to do so during the crisis. Their actual policies would have been appropriate for a current account crisis, but not a capital account crisis.

1. **The IMF-Mandated Response**

IMF asserted its policy leadership, in the case of Thailand coming in before it was even invited. It imposed macroeconomic austerity, opting for policies appropriate for countries facing balance of payments problems due to profligate macroeconomic policies. In exchange for financing, IMF required microeconomic restructuring and monetary and fiscal tightening. These policies are necessary for countries facing current account crises arising from high budget deficits, low private saving, and high inflation. Whether they are beneficial for countries with sound macroeconomic policies facing massive capital outflows is another question.

Each of the policies that IMF recommended had a specific rationale and objective. Fundamental microeconomic reforms, including bank restructuring, were meant to clean up the financial and real sectors, restore confidence, and enhance the quality of governance. Contractionary monetary policy, by raising interest rates, was expected to attract foreign capital. A strict government budget together with tight monetary policy was intended to remove inflationary pressure arising from depreciating exchange rates. In this way, a real appreciation could be avoided, allowing exports to increase and the balance of payments to improve (Lane, et al. 1999).

The first pillar of the IMF program was microeconomic restructuring. It covered not only restructuring of the financial sector but also areas outside IMF’s usual mandate. The heavy dose of microeconomic adjustments (e.g., imposed in Indonesia) was not really needed for the return of capital, nor was it required to restore market confidence. On the contrary, making drastic changes in the midst of a currency crisis has a tendency to be more disruptive than helpful.

Since nonperforming loans (NPLs) at banks had increased, a large amount of public money (raised through bonds issuance) was spent on recapitalizing banks. The costs of the program ranged from 30% to 60% of GDP. Yet in many countries the objective of resuming banks’ intermediation function has yet to be achieved, some recapitalized banks need further recapitalization, and the progress of strengthening bank supervision and governance issues in general remain slow. There is thus reason to question the effectiveness of this program.

The regulatory policies that accompanied the recapitalization process resulted in a substantial decline of lending to small businesses, as clearly found in the case of Korea (Domac and Ferri 1999). The value of bonds used to recapitalize banks removed the prevailing bank’s negative net worth, but only on paper. Liquid markets for the bonds have yet to be established. With a large quantity of illiquid assets, banks have had to focus on rebuilding liquidity rather than on lending.

\(^{6}\) The decline in retained earnings pushed debt-equity ratios unacceptably high, making creditors unwilling to provide loans.
In Indonesia particularly, IMF restructuring conditions went far beyond the IMF’s mandate to include conditions that clove monopolies be dismantled, a national car project be canceled, benefits to the palm oil industry be discontinued, and cronyism and nepotism in general be curtailed. Speaking of these policies, IMF board member Karen Lissakers felt this was clearly “pushing the outside of the envelope.” Paul Volcker, reading page after page of conditions, reportedly expressed astonishment and questioned why IMF had exceeded its macroeconomic mandate by intruding into basic cultural and economic structures.7

IMF argued that these changes would restore financial market confidence, but this proved to be wrong. Immediately after the program was announced, the Indonesian rupiah tumbled. A senior economist at Nomura Research Institute, echoing the views of many investors, believed the reason for the negative reaction was that “the reform is short of policy on how to resolve the problem of corporate debts. The market will not go anywhere as long as the issue remains unresolved.”8

With the benefit of hindsight, it should not be surprising that these IMF-mandated changes failed to restore confidence. Monopolies, cronyism, and nepotism, while distasteful, had been around for 30 years without triggering financial crises. As explained later, it is naïve to argue that they caused the crisis and that removing them would trigger recovery.

The second pillar of the IMF program was the use of high interest rates to generate capital inflows. This policy is based on the rationale that private capital flows should depend on the risk-adjusted interest differential between domestic and foreign rates.9 Conventional theory implies that raising the domestic interest rate relative to the foreign interest rate will attract capital inflows and strengthen the exchange rate.

However, while raising domestic interest rates may attract capital under ordinary circumstances, it would be unlikely to do so during a capital account crisis featuring balance sheet problems caused by double mismatches (Azis 2002a; Ohno et al. 1999). Just as exuberant investors were careless of risks during the speculative boom period, they became overly conscious of risks during the speculative bust period. For instance, while they discounted default risk before the crisis, they focused on it once the crisis started. Given the high debt-equity ratios in the region, raising interest rates increases default risk, thus undermining investor confidence and increasing the risk premium that investors require to hold domestic assets. In this case, higher domestic interest rates will not attract foreign capital. Investors also gave short shrift to financial sector problems before the crisis but became acutely aware of them once the crisis started. Given the maturity mismatch at banks, higher interest rates will erode bank balance sheets, further reducing confidence and increasing risk premia.10 The blows to investor confidence will not only raise risk premia but also lead to capital outflows and depreciations. Foreign investors interested in returns in their own currencies will not be attracted by higher interest rates in Asia if they expect them to be offset by depreciations.

In addition, contractionary policies imposed on a country already reeling from a speculative bust deals

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9 To understand the rationale for this policy, consider the uncovered interest rate parity condition: \[ i_t - i^*_t = E(\Delta e_t/e_t) + r_p \], where \( i_t \) is the domestic interest rate at time \( t \), \( i^*_t \) is the relevant international rate reflecting the opportunity cost of funds, \( E(\Delta e_t/e_t) \) is the expected change in the exchange rate (with a rise in \( \Delta e_t/e_t \) implying a devaluation) and \( r_p \) is the risk premium. Private capital flows can be assumed to depend positively on the risk-adjusted interest rate differential between domestic and foreign rates, so that: \[ Kap_t = a + b ( i_t - i^*_t - E(\Delta e_t/e_t) - r_p ) \], where \( Kap_t \) is the private capital account of the balance of payments, \( a \) is a constant, and \( b \) measures the responsiveness of capital flows to the risk-adjusted interest rate differential (\( b \) is assumed positive). In this case, raising \( i_t \) relative to \( i^*_t \) will attract capital inflows, raise \( Kap_t \), and strengthen the exchange rate.
10 The effect of higher interest rates on bank balance sheets will be amplified as they cause firms to default and increase the amount of NPLs.
the economy a double blow, producing a severe recession or even a depression. These effects work not only directly by reducing aggregate demand in already depressed economies, but also indirectly by worsening bank and firm balance sheets and thus restricting financial intermediation (Bernanke and Gertler 1995). Financial intermediation is further restricted as high interest rates produce an adverse selection problem, causing responsible agents to stop borrowing while risk-lovers and firms “gambling on resurrection” continue. High interest rate policies that produce depressions will destroy investor confidence, leading to capital outflows and large exchange rate depreciations.

The third pillar of the IMF program was contractionary fiscal policy. This also triggered capital flight. The budgetary tightening implied massive expenditure cuts, including reductions in spending on social overhead capital. In Indonesia and Thailand, many subsidies (e.g., fuel, food, etc.) had to be either slashed or removed completely from the budget, causing prices of some basic necessities to increase. As prices rose, social conditions deteriorated and people began rioting and looting.11 This raised the countries’ risk premiums, triggering further outflows.

It should be noted that the IMF policy mix “succeeded” in restoring the current account balance, though not in ways that benefited the economy or restored investor confidence. By 1998 and 1999, current accounts in crisis countries had swung to surplus. As discussed earlier, this occurred not because real exchange rate depreciations raised exports but because credit crunches caused by domestic banking crises and severe recessions (collapsing domestic absorption) squeezed imports. The policy mix recommended by IMF expedited this severe adjustment process, which is inherent in capital account crises. Imports of consumer goods fell and, more alarmingly, imports of capital goods, raw materials, and other intermediate inputs tumbled.

When the crisis countries were hit with both contracting credit and a sustained bursting bubble at the same time, IMF required them to further restrict aggregate demand. Not surprisingly, this strategy produced severe slowdowns. As discussed above, these depressions failed to restore financial market confidence. Even if they had, though, one could question whether the restoration would have been worth the resulting social costs.

2. The Effect of Contractionary Policies on Poverty

Poverty throughout the region surged during the crisis (Figure 1).12 In Indonesia and Korea, the

![Figure 1. Headcount Poverty Index, Number of Poor, and Gini Index](Poverty line equals $8 per day in Korea, $1.50 in the other countries)

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11 Once IMF noted the severity of the downturn, it permitted budget deficits.

12 Note that the headcount poverty index is measured using a poverty line of $8 per day in Korea and $1.50 per day in the other countries.
headcount poverty index increased by almost 10 percentage points and in Thailand the number of the poor increased from 6.8 million to 9.8 million.

A model-based counterfactual policy study conducted at the ADB Institute shows that if interest rates had not been forced up, the socioeconomic outcomes in Indonesia would have been more favorable (Azis 2002b). The model indicates that if the Indonesian central bank had maintained the low interest rate policy that it followed before IMF insisted on raising rates, the headcount poverty ratio would have been 4 percentage points lower than it actually was (i.e., 16\% in 1999 instead of 20\%, compared to 11\% in 1996). The study also indicates that the high interest rate policy worsened the distribution of income. High interest rates provided windfalls to savers but since most savings were held by medium- and high-income groups, the high interest rates increased the income disparity. Thus, the counterfactual study indicates, not surprisingly, that lower interest rates would have reduced poverty and improved the distribution of income.

3. **Capital Controls in Malaysia and Bailing-In in Korea**

In Malaysia, the crisis had two unique features: equity market speculation and pure currency speculation in 1998 (not 1997). The “double mismatch” was less serious there because a large portion of the capital inflows was in the form of equity rather than short-term dollar-denominated loans.

The case of Malaysia does not require a counterfactual simulation, since the country opted for an alternative policy response after early implementation of contractionary policies failed to produce favorable results. In September 1998, Malaysia introduced capital controls and eased policy by reducing the statutory reserve requirement and the interest rate. In addition, the real sector was stimulated by exempting loans for the purchase and construction of houses costing less than a certain amount from the 20\% lending limit to the broad property sector. Currency speculation against the ringgit, which started in the spring of 1998, was successfully countered by prohibiting ringgit offshore transactions, largely through Singapore’s over-the-counter market (Central Limit Order Book [CLOB]). It is worth noting that until recently, the Singapore Government restricted Singapore dollar currency holdings by nonresidents to prevent attacks on the currency.13

Unlike in other Asian crisis countries, the Malaysian Government also fixed the exchange rate at RM38 per US dollar compared to RM25 before the crisis, in order to provide greater certainty for external business transactions. More controversial, at least at the time, was the imposition of selective capital controls (mostly on equity). These began with a prohibition on the repatriation of portfolio funds for 12 months. This was later softened by charging a levy for new funds, and then diluted further by applying the control only to dividends.

The results were generally favorable. Even after accounting for external factors (i.e., net financial flows and international interest rates), the controls increased the effectiveness of financial and monetary policies, causing Malaysia’s recovery to be speedier than it would have been if the country had adopted orthodox demand management policy. After falling by 7.5\% in 1998, Malaysian GDP grew by 5.4\% in 1999, compared to 4.1\% and 0.2\% in Thailand and Indonesia, respectively. Consequently, employment and real wages declined less, and the stock market turned around more quickly (Kaplan and Rodrik 2001). There were two key differences between the policies adopted by Malaysia and those employed by other countries. First, Malaysia paid direct attention to stimulating the real sector. Second, Malaysia removed uncertainty associated with a flexible exchange rate system. Both of these factors were crucial for restoring confidence.

While it is still premature to evaluate whether controls will reduce capital flows in the long run, the Malaysian experience indicates that the usual claims about the adverse impacts of capital controls are doubtful.

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13 This restriction was proposed for other emerging economies by the Asian Policy Forum in its “Policy Recommendations for Preventing Another Capital Account Crisis,” APF-ADB Institute, July 2000. See also Chapter 4.
The restriction on domestic currency holdings by nonresidents was clearly successful. The stimulative policies combined with capital controls helped cushion the downturn.

One factor that helps explain differences in the recovery process across economies is the way countries have handled their huge private debts. A debt standstill and debt rollover strategy is critical to achieving recovery. It provides tremendous breathing room for agents, allowing them to reorganize and restructure without disrupting the production process—and hence the real sector—too severely. Korea has done well in this regard thanks to the enforced rollover of bank loans orchestrated by the G-3 monetary authorities in December 1997 to stop the international liquidity crisis. Korea adopted an effective private sector involvement (PSI) bail-in scheme, instead of bailing out foreign banks. De facto, this plan was a form of capital control. Under the agreement, governments persuaded foreign banks not to withdraw their money from Korea. Indonesia and Thailand were unable to reorganize their private debts. The absence of bail-ins in these countries helps explain why recoveries there have been sluggish.

An important lesson from the crisis is the importance of timing. IMF was probably right in seeking greater transparency. However, to encourage the Bank of Thailand in the midst of a currency crisis to reveal that much of its reserves were tied up in swap contracts aggravated the panic. Similarly, IMF was correct to seek to address banking sector problems. However, to decide at breakneck speed to close 16 banks, as it did in Indonesia, and only 6 months later to provide deposit insurance produced a bank run. In addition, imposing a contractionary fiscal policy on countries facing capital account crises (and easing later)\(^{14}\) possibly contributed to conditions for riots and looting that left lasting scars.

In sum, the appropriate policy response to a capital account crisis is the opposite to that needed to tackle a current account crisis. Monetary policy should not be restrictive since it aggravates balance sheet problems and the liquidity-cum-insolvency crisis. Fiscal policy should not be restrictive because capital account crises already produce a sharp decline in domestic absorption. The currency freefall should be avoided by a timely and substantial provision of international liquidity, together with a well-designed PSI bail-in scheme. Structural reform policy should focus on strengthening the financial system. The timing of the implementation of crisis-sensitive reforms such as improved transparency, deposit insurance, and capital adequacy requirements should be carefully thought out so as to avoid spreading panic. The best policy, however, is to reduce the possibility of a capital account crisis rather than managing a crisis after it has broken out (see ADB Institute–Asian Policy Forum No. 1, 2000, and Chapter 4, Section C).

C. Financial Sector Liberalization, Growing Risks, and Sequencing

In the preceding two sections, we analyzed the nature of the Asian capital account crisis and the associated failure of the actual policies employed to mitigate it. A deeper question is why the miracle so quickly gave way to crisis. The missing link between the miracle and the crisis can be found in the widening gap between new risks arising from domestic and external financial liberalization, on the one hand, and the capacity of pre-existing institutions to manage such risks, on the other hand. In this section, we discuss FSL and the resulting emergence of new risks, the main characteristics of pre-existing institutions including the triangle relationship among large family businesses, banks, and governments financing family firms, and most important, the appropriate sequencing of liberalization.

1. Financial Sector Liberalization and the Emergence of New Risks

The Asian financial crisis was preceded by a period of financial sector liberalization. By the late

\(^{14}\) In this regard, it is commendable that IMF reversed course and allowed fiscal policy to ease.
1980s, all countries in East and Southeast Asia had liberalized their domestic financial sectors. Some had opened up their capital accounts as well. Controls on deposit rates, lending rates, credit allocation, and capital account transactions were lifted. Indonesia liberalized the capital account in 1970 and interest rates in 1983. It also allowed free entry into banking in 1988. Thailand liberalized deposit rates in 1990, the capital account in 1991, and lending rates in 1992. Other countries in the region followed similar patterns. By 1995, Indonesia; Hong Kong, China; Korea; Malaysia; Philippines; Taipei, China; and Thailand had achieved “full liberalization” of the domestic financial sector, and “partial liberalization” of the capital account.\(^\text{15}\)

Liberalizing the financial sector is fundamentally different from liberalizing trade. Most economists agree that trade liberalization brings significant economic gains, as was discussed in Chapter 1. However, economists have not reached a consensus about the net benefits of financial sector and capital account liberalization. This is largely because financial markets differ from other markets. One critical difference concerns the role of information. Information is crucial for allocating saving to its most productive uses, yet in financial markets information is often asymmetric and incomplete (Stiglitz 1994). Asymmetric information occurs because borrowers know a lot more than lenders about the quality of their investment projects, the utilization of the borrowed funds, and the probability of future repayment. Imperfect information exposes the economy to asset bubbles that eventually burst, large swings in the flow of credit, and a cycle of speculative booms followed by speculative busts.

When considering whether to liberalize the financial sector, it is important to compare the potential benefits with the possible costs. A benefit of financial sector liberalization is that it causes more saving to flow through the banking system, producing higher investment when financial repression (e.g., negative real interest rates) is replaced by financial restraint (e.g., positive real interest rates below market-clearing rates).\(^\text{16}\) Agrawal (2001) presented evidence indicating that raising interest rates toward market-clearing levels did increase saving and investment in Indonesia, Korea, Malaysia, and Thailand. A cost of liberalization is that it increases interest rates. This occurred in all Asian crisis countries. It significantly altered banks’ incentive structure and led to excessive risk taking (Hellman, Murdock, and Stiglitz 2000). Under these circumstances, the amount of investment credits going to risky sectors rose (adverse selection), the incidence of bailouts in the absence of free-exit schemes increased (moral hazard), and banks’ franchise values (expected returns) declined. The reduction in franchise value caused banks to behave less prudently.

The surge in credit creation following liberalization was accompanied by a downplaying of risks. Borrowers in the region, for instance, did not hedge against exchange rate risk. They were able to borrow in foreign currency at interest rates well below domestic rates.\(^\text{17}\) Further, they were confident that the exchange rate would remain stable, so they discounted exchange rate risk and did not hedge against it. In most countries it appears that this risk was borne by borrowers rather than banks either because banks lent in foreign currency or because firms borrowed directly from abroad (Yoshitomi and Shirai 2000:37).

Foreign investors, lending in dollars at low rates, did not incorporate default risk into the returns they required to lend to the region. They might have discounted default risk because of irrational exuberance or moral hazard. Irrational exuberance could have occurred if investors, dazzled by the “East Asian miracle,” joined the bandwagon without accurately accessing fundamentals. Moral hazard could have occurred if lenders, believing IMF would organize a

\(^\text{15}\) “Full liberalization” and “partial liberalization” measure the extent and nature of three markets: capital account, domestic financial sector, and the stock market. For further details, see Kaminsky and Schmukler (2002).

\(^\text{16}\) See McKinnon (1973).

\(^\text{17}\) For example, in Indonesia over the period 1987–1996 the average interest rate for US dollar loans was 9%, while that for local borrowing was 18% (Zhuang et al. 2000:57).
rescue in the event of a crisis, discounted the downside risks. For whatever reason, default risks were not factored into required returns.

Downplaying risk artificially reduced the cost of capital and inflated asset prices, causing excessive capital formation.\(^{18}\) If the perceived cost of capital were below the true opportunity cost of capital before the crisis, there would be overinvestment. Assuming firms acquire capital up to the point where the expected marginal product of capital equals the cost of capital and assuming diminishing marginal productivity of capital, a reduction in the perceived cost of capital will increase the desired capital stock and, thus, business investment. Domestic corporations able to raise funds in equity markets at inflated prices or to borrow in dollars at depressed interest rates will spend too much on capital formation.

It is important to note that even without underestimating the cost of capital there would have been high levels of investment in the region. Domestic saving rates often equaled 25% of GDP. When combined with capital inflows of 8% of GDP and little or no public sector borrowing, huge amounts of funds (35% to 40% of GDP) were available for capital formation. Since the quantity of rewarding investments is limited, some of these funds would flow into projects with low expected returns. Thus, even if risks were correctly perceived, many projects undertaken would be marginal given the enormous volume of funds channeled into investment.

In the context of high domestic savings in miracle economies, capital account opening implied that this overinvestment was financed largely from abroad (Bosworth and Collins 2000). Foreign investors, attracted by higher interest rates and miracle performance, flocked to Asian financial markets.

Because of underdeveloped corporate bond markets at home and high risk premia on domestic currency denominated international borrowing, economies in the region tended to borrow short-term in dollars and lend long-term in domestic currencies.\(^{19}\) This produced a double mismatch—both in terms of currency and maturity—on domestic balance sheets.

Banks and regulators did a poor job in managing financial sector risks after financial liberalization. Banks failed to hedge against interest rate and exchange rate risk. They also did a poor job monitoring borrowers’ behavior and creditworthiness when rolling over loans. This was due to government interference-induced moral hazard, as discussed earlier. Regulators, for their part, failed to prevent the buildup of systemic risk associated with the double mismatch. These risk management skills were not needed before financial liberalization. At that time, the domestic government-bank-family business nexus functioned well enough without modern risk management techniques.

However, once business cycle upturns in the 1990s began to be financed by capital inflows from abroad, risks multiplied. As discussed in Section A, given double mismatches at banks and firms, capital outflows in 1997 caused balance sheets to deteriorate, credit creation to plummet, and investor confidence to evaporate. Since so much of the investment was financed from abroad, governments were unable to use bailouts to prevent the emergence of a systemic crisis. The Asian financial crisis thus emerged.

\(^{18}\) To see how downplaying risks affects asset prices, assume that the price of an asset (e.g., an equity or a real estate property) equals the present value of future cash flows. The price of the asset can then be represented as: 
\[
P_i,t = \sum_{j} CF_{t+j} / (1 + R_i)^j
\]
where \(P_i,t\) equals the price of asset \(i\) at time \(t\), \(CF_{t+j}\) is the expected cash flow generated by the asset at time \(t+j\), and \(R_i\) is the discount rate that capitalizes the expected cash flows into a present value. The discount rate reflects investors’ perceptions of the riskiness of holding asset \(i\). It can be written as: 
\[
R_i = r_f + r_p, \text{ where } r_f \text{ is the risk-free rate and } r_p \text{ is the risk premium investors require to hold asset } i.
\]
If investors discounted risk before the crisis, \(r_p\) and thus \(R_i\) would be underestimated, causing \(P_i,t\) in equation (1) to be overvalued. Thus, required returns and the cost of capital would be too low and asset prices too high.

\(^{19}\) There would have been a smaller maturity mismatch if there had been a better developed corporate bond market. However, as Yoshitomi and Shirai (2001) discuss intensively, developing a domestic bond market is difficult. For policy proposals to develop bond markets, see APF (2001) and Chapter 4, Section A of this study.
Financial sector liberalization led to a surge in interest rates and credit creation that the financial system was not able to handle. Higher interest rates following liberalization reduced the franchise value of banks and led to imprudent behavior. Regulators were unable to contain the systemic risks associated with this imprudent behavior. A herd mentality and excessive exuberance led to overinvestment. Because capital accounts were open and domestic bond markets underdeveloped, this investment was financed largely by short-term foreign currency denominated borrowing. This then created the double mismatch in domestic balance sheets that helped translate initial capital inflows into a collapse of the real sector and an evaporation of investor confidence.

Financial sector liberalization and capital account opening can thus be dangerous if poorly sequenced. They should not be imposed roughshod on emerging economies that lack the necessary institutional infrastructure. The next subsection highlights the main characteristics of the preexisting miracle-compatible institutions.

2. The Defining Characteristic of Pre-Existing Institutions: Family-Owned Businesses and the Triangular Relationship

Family-owned businesses were so dominant that they were almost a paradigmatic feature of corporate organization and governance in Asia.

Family-based groups often use relationship finance within internal capital markets. The family-based organization that often accompanies relationship financing also compensates for missing institutions such as insufficient legal protections of property rights and weak contract enforcement mechanisms. “Arms-length” financing (or the Anglo-American model) is usually associated with greater transparency and higher quality information incorporated into interest rates (Rajan and Zingales 1998). As analyzed below, however, emerging economies often cannot choose between relationship and arms-length systems because of the underdevelopment of capital markets and legal, judicial, and informational infrastructure, particularly at early stages of development.

In response to these financial market and institutional imperfections, large family business groups developed their own internal markets for credit and pooled resources among subsidiaries. Key mechanisms for intra-group transfers included cross-shareholdings between subsidiaries and cross-guarantees for debt repayment. In the latter case, financially stronger subsidiaries offer guarantees against the borrowing of newer or weaker subsidiaries.

Family firms also reduced transaction costs through their flexible, relationship-oriented organization. Transaction costs are expected to be relatively high in situations of poorly developed markets and legal systems in which property rights are not well-defined and court procedures are not well established or trusted (Khan 1999). In this regard, good governance is a matter of reducing transaction costs by building and investing in stable and long-term commercial relationships among transacting companies (Gourevitch 1996). Family ties substitute for capital markets and a well-developed financial and legal system. Where accounting and disclosure practices are weak, information may be much easier to obtain within families than between unrelated market participants. In the absence of adequate legal protection for creditors and minority shareholders, intra-family enforcement mechanisms (such as disinheritance) may serve as an alternative. Family groups can also serve to pool savings in a system where the governance structure of the family substitutes for the discipline of the capital market.

Another advantage of relationship finance is that it is longer term in nature. The long-term relationship between financiers and borrowers shifts the focus from short-term performance to long-term profitability. This enables firms to undertake investments with longer gestation periods, whose payoffs might occur in a matter of years rather than quarters.20

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20 A drawback with the relationship finance model relative to the arms-length model is that not as much information is incorporated into interest rates, and thus financial markets may be less efficient at allocating savings among competing uses. As Rajan
To avoid equating corporate governance with the ideal-type of Anglo-American business practice (which may have limited utility as a template for countries with substantially different legal norms and traditions), we can seek a broader conceptualization that transcends the regional-specificity of governance models. Carl Kester (1966:109) provides a functional definition in which corporate governance is understood simply as “the entire set of incentives, safeguards, and dispute-resolution processes used to order the activities of various corporate stakeholders, each seeking to improve its welfare through coordinated economic activity with others.” In this rendering, both the Anglo-American and Nippo-Rhenish systems of governance are economically rational attempts to resolve problems of coordination and control among corporate stakeholders, and no a priori judgment is made about the ultimate superiority of either national configuration. This encompassing definition of corporate governance is still, however, predicated on the highly evolved structure of the modern corporation, with a whole panoply of legal or otherwise regularized sets of norms that dictate the behavior of transacting parties.

This makes institutional emulation on the part of “late” developers that much more difficult—particularly for the economies of East Asia. In these, the norm is not the “modern” corporation, with a long-standing separation between management and ownership, but the family-owned and controlled firm, which can take the form of the modal Korean conglomerate, the chaebol, or the widespread Chinese family enterprise in Southeast Asia.

East Asian business has developed in a cocoon of particular historic practice, where what appears irrational from an ideal-typical Western standpoint may be an effective local adaptation in the interest of wealth accumulation. Also, economic development in East Asia has been so incredibly rapid that practices that might have been expected to die out have persisted because everything seemed to work. For nearly 50 years, East Asian capitalism developed at a phenomenal speed, in many cases in a single generation; therefore, rapid growth was less the solvent of outdated practice as its preservative.

The modal firms in Korea and in Southeast Asia are family businesses, big and small, that operate not within the bounds of a well-established rule of law but amid the uncertainties of many decades of authoritarian rule. But there the similarities end. Korea’s economic development has been marked by ubiquitous industrial policy, with the state creating and recreating the business class, protecting and disciplining its members (see Chapter 1). Because Southeast Asian states have practiced industrial policy less intensely, except where it is a device to buttress an economically disadvantaged ethnic majority, they have had a (relatively) free market, punctuated by economic affirmative action of sorts. The upshot is that family businesses in Southeast Asia rely less on the ethnically alien government and, of course, less on government-mediated capital. Thus, the business class in the heterogeneous Southeast Asia was forced into self-sufficiency and onto the market.

The principle of corporate governance in the Chinese firms in Southeast Asia is similar to the Chinese family business elsewhere, as in Hong Kong, China and Taipei, China. This does not mean that certain cultural traits are immutable but it does mean that there is a heritage of economic organization through clan lineage and pang (speech-group) networks, that seems conducive to economic success at earlier stages of commercial activity. The Chinese term most often used to describe business groups is not caifa (a translation for zaibatsu or chaebol), or qiyejituan (for kigyo shudan) but rather quanxiqiye, meaning “related enterprise.” Guanxi refers to particularistic connections between persons that are based on some common or shared identification, and Ichiro Numazaki defines a quanxiqiye as a “cluster of enterprises owned and controlled by a group of persons tied by a network of various guanxi” (Fields 1995:66).

Most Chinese family businesses are small and highly specialized, preferring informal sources of

and Zingales (1998) discussed, the absence of competition and the relative opaqueness (particularly to outsiders) of relational finance implies that several lenders do not give independent assessments of a project. Thus, the actual cost of borrowing is less likely to reflect the appropriate risk-adjusted cost. In this case, funds may not be allocated to optimal investments.
finance—family members, close friends, revolving credit associations, or the unregulated “curb,” as, for example, in Taipei, China. As the firms get bigger, the reliance on network tends to become attenuated, in favor of thicker ties with outsiders, for greater economic opportunities as well as political protection. Today, it is the small, or merely unsuccessful, businessmen who, lacking such fortuitous outside arrangements, still must resort to Chinese lineage and home-village associations.

When Chinese family firms engage in “opportunistic diversification,” it is with retained profits of the existing firms (unlike the Korean chaebol) under the management of a family member or another highly trusted close associate. Where investment requirements are too great or there are needs for political and business connections, the families enter into alliances with trusted partners to set up new businesses, thus forming the Chinese “business groups” that operate in a variety of industries. These are not integrated through a central administrative hierarchy like the Korean chaebol; instead, they operate like partnerships united by common investments and mutual trust in which the critical locus of decision-making and control remains the individual family business.

Large Chinese family businesses span a number of fields and are interconnected through a network of alliances and ties between family heads; in contrast again to the Korean chaebol, Chinese businesses combine managerial specialization with entrepreneurial diversification. The strategic preferences of the Chinese family firm include reliance on price and cost competition, short payback periods for new investments, the intensive use of resources, and a reluctance to share control or responsibility; risks are managed largely by restricting commitments and maximizing resource flexibility (Whitley 1992).

Are the family firms necessarily inefficient? For much of postwar Korean history, the chaebol were in many ways the Schumpeterian entrepreneurs of Korean development. Their mammoth structure and even their inveterate reliance on state-mediated bank credit made sense, especially given the immaturity of financial markets and Korea’s strategy of making an assault on the world market, to compete with the advanced countries in product areas such as semiconductors, heavy and chemical industry items, petrochemicals, automobiles, and other machines. Erecting these strategies required massive investments that far exceeded retained earnings.

Suehiro (2001) also reports that family businesses have performed reasonably well in Thailand. In a detailed analysis of company data for the ADB Institute, he finds that family businesses do not necessarily perform worse than other types of businesses. He argues that family firms were at the forefront of industrialization efforts in the 1980s and early 1990s. Even though many participated in the “bubble economy,” significant numbers have undertaken extensive and effective corporate restructuring in order to recover from the crisis. In explaining this contradictory pattern he distinguishes between two categories of family-controlled firm—an “authoritarian” type and an “innovative” type. In the former case, control remains in the hands of a few family members, who are generally resistant to change. In the latter case, family firms have proved willing to respond constructively to the new operating environment, for example by downsizing, promoting alliances with foreign partners, and diversifying their sources of funding away from the predominant reliance on bank loans. Given the relatively undeveloped financial structure in Thailand, Suehiro recommends focusing on ways of rationalizing and modernizing family businesses—as the innovative firms have—rather than uncritically adopting the Anglo-American model.

Empirical studies by Jang (2001) and Fukagawa (2002) found that in Korea, both before and after the reform, the degree of family ownership did not have a significant negative impact on performance. They also found that foreign ownership had a significant positive effect. These results are partly consistent with Suehiro’s results cited above.

Nam (2001) argues that in the case of Korea, the original rationale for internal markets weakened as the extent of external markets expanded over the miracle period. With the growth in the 1980s of external financiers willing to evaluate borrowers, asymmetric information problems decreased. In addition, as family
The Asian Capital Account Crisis and the Sequencing of Financial Liberalization: What Went Wrong?

Groups moved into industries that were vertically linked or in other ways closely related, the difficulty of coordinating investment decisions increased. Information processing requirements also soared due to the increasing technological sophistication in industrial activities. In some instances, intra-family disputes and problems over the succession of the chairpersons, once the founder retired, also contributed to a weakening in the efficiency of the group system. Thus, by the 1980s the costs of the internal markets began to outweigh the benefits.

As discussed in Chapter 1, the massive mobilization of domestic investment and saving to promote rapid industrialization under an outward oriented open policy engaged governments in the development process quite heavily. This created the close triangular relationship among governments, large family businesses, and banks. This is the institutional background against which dynamic interactions between capital deepening and technological progress or between accumulation and assimilation produced a “miracle” performance. All of these developments took place in domestic financial markets with closed capital accounts. This institutional setup made it possible for governments to engage in a “too big to fail” policy when industrial policies were unsuccessful or when domestic business cycles turned to recession. Over time, this system was eroded by moral hazard on the part of both large family businesses and banks.

Under these changing circumstances, the close triangle relationships distorted the allocation of credit. Government-directed lending implied that normal commercial criteria were sometimes subordinated to broader economic objectives. In addition, explicit or implicit government guarantees on loans weakened banks’ incentives to monitor and discipline bad borrowers. Therefore, banks often failed to apply normal commercial criteria in assessing the merits of a loan or in monitoring borrower performance.

These financial sector problems would have been manageable if investment had been funded with domestic loans and saving. In this case, in a high growth environment, governments could bail out insolvent large domestic institutions (“too big to fail”). However, when domestic financial markets were liberalized and the capital account was almost completely opened in the late 1980s and early 1990s, this institutional setup proved incompatible with financial sector liberalization. This is essentially because both domestic and external financial liberalization gave rise to completely new risks, as analyzed in the previous subsection, which the aforementioned pre-existing institutions were fundamentally unprepared for and incapable of effectively managing.

Government regulation and supervision was inadequate for the liberalized financial environment. Regulation was based on the assumption that large banks in particular would never fail (Ito 2001). While this assumption had some justification during the “miracle” phase, it also increased the danger to the financial system of business defaults. The financial sector was vulnerable to defaults because procedures for resolving bad debts were unclear and bankruptcy laws were underdeveloped. The laws made it difficult for creditors to claim collateral, replace management, and act collectively. Thus, a series of business failures could easily spread to the banking system, causing a systemic crisis.

As discussed earlier, systemic risk also grew because of the new way of financing business cycle upturns in the 1990s. Massive international capital inflows financed a large portion of domestic spending. When the capital flowed out, governments were unable to prevent the resulting twin crisis.

3. Sequencing of Financial Liberalization to Avoid a Capital Account Crisis

To briefly summarize the discussions above, the contemporary existing institutional infrastructure for financial markets was compatible with the “miracle” performance over an extended period of time. At earlier stages of development, family business groupings were a substitute for the weak enforcement mechanism of contracts entailing high transaction costs, for the absence of managerial skills in the market, and for asymmetric information in capital markets. Because
of the close links between ownership and management, serious agency problems did not arise since information asymmetry hardly existed between owners and managers. Banks were also managed by such family businesses (Khan 2000; Nam 2001). At the same time, governments played an important role in mobilizing savings, promoting openness and foreign technology absorption, channeling investment, and sometimes advancing targeted infant industries. Because of the success of functional interactions between family businesses, banks, and governments, the market expanded considerably, reducing the aforementioned original justifications for family business. In addition, over time, moral hazard and credit misallocation problems undermined some of the original advantages of the family business-bank-government nexus.

Given this background, the financial liberalization that took place in the late 1980s and early 1990s was poorly sequenced. The Asian financial crisis (i.e. what went wrong) can be coherently analyzed only together with the Asian miracle (what went right) when the analysis focuses on what went wrong with liberalization sequencing in crisis-hit Asian economies.

Once the financial sector was liberalized, both domestically and externally, the incentive structures changed substantially. Financial resources became more freely available, expanding risk-taking behavior of investors and borrowers. In other words, this liberalization gave rise to new risks in the financial system. This implies that a new regulatory and prudential framework is necessary to guard against the buildup of new systemic risk. However, the pre-existing institutional infrastructures were not in a position to manage new risks of liberalized financial markets, because they were not designed to effectively handle such risks. Therefore, a large gap emerged between the new risks entailed by liberalization and the pre-existing institutional infrastructure.

Given the problems suffered by Asian countries after liberalizing financial flows without adequate prudential supervision and regulation, the issue of sequencing is of particular importance. A capital account crisis and balance sheet problems render the earlier optimal sequencing literature less relevant for practical policy analysis, thereby leaving a policy vacuum. The ADB Institute developed an alternative risk-based approach to sequencing FSL and economic reform by developing a set of quantitative indicators based on quantitative and nonquantitative information (Chan-Lee and Ahn 2001). An essential feature of this approach is that it draws on existing pragmatic experience by assessing core institutional capacities for managing risks associated with differing types of capital flows under capital account opening. The approach underscores the need to understand the gap between the new risks entailed by financial liberalization and pre-existing institutions, by taking into consideration the complexities inherent in the interactions among the wide variety of paths taken toward institution building and FSL.

The sequencing literature that postulated strict sequencing assigning top priority to the real economy, followed by domestic financial liberalization (DFL) and then capital account (KAO) opening proved too compartmentalized and operationally sterile to analyze capital account crises and to provide guidance for the avoidance of such crises. It mingles all types of crises without a clear distinction between conventional current account and capital account crises. It is too complex, and hence necessitates a case-by-case approach. More recently, conventional views on financial sequencing have evolved into a complex “integrated approach,” notably advanced by Johnston and Sundararajan (1999), to include virtually every conceivable aspect of microeconomic, institutional, and macroeconomic policy. However, this overly complex approach is unoperational, as it lacks (i) a clear hierarchy of priorities, (ii) an analytical database, (iii) an overarching analytical framework, and (iv) a concrete implementation strategy.

Once we have analytically identified new risks arising from DFL, KAO and from interactions between DFL and KAO, we are in a position to examine gaps between the existing core institutional framework and actual DFL and KAO. In order to analyze such gaps, the ADB Institute has quantified both the quality of core institutions and the degree of DFL and KAO.

Thus, the focal point of the sequencing approach proposed by the ADB Institute is an analytical database that considers the relation between constraints from
existing core institutions and the actual degree of DFL and KAO. Our 34-country emerging market economies (EME) database includes three vectors of structural-financial variables arrayed in a prioritized policy matrix, whose ordering draws on the “new institutional economics” (Williamson 2000). These include (i) good core institutions that are the necessary preconditions for successful reform and strongly determine the formal characteristics of the “rules of the game” (property rights, judiciary, polity, bureaucracy, etc., that impose important constraints on lower level behavior); (ii) the effective status of DFL, necessary for the establishment of market-based domestic financial systems; and (iii) the actual degree of KAO, an essential element of internationally integrated financial systems (effective DFL and KAO reflect the actual application of the “rules of the game,” i.e., governance and prudential oversight capacities).

Our hypothesis is that until the late 1980s, slow financial deregulation and capital controls shielded financial systems from internal and external financial shocks. Once a critical threshold of core institutions is attained, per capita GDP may rise to much higher levels before meeting new constraints. The relation between the informational quality of financial systems ($IQFS^{21}$) and per capita GDP (PPP) levels grouped into four categories is illustrated in Figure 2.

A salient feature of these country groupings is the strong evidence of nonlinearities or threshold effects. Thus, once a certain minimum IQFS threshold is met, this is consistent with a wide range of per capita GDP (PPP) levels. Thus, IQFS readings from 0 to 3 include countries with per capita GDP levels ranging from $250 to $4,000. Similarly, IQFS readings from 3.1 to 5 include countries per capita GDP readings from $4,500 to $18,000. Hence, high growth rates are not necessarily inconsistent with mediocre institutions, so long as critical necessary conditions are met. But the corollary is equally important: there appear to be glass ceilings with respect to per capita GDP levels. Hence, institution building should be an ongoing process; ignoring this risks midlife crises, as in the case of Japan in the 1980s.

Thus, high economic growth and mediocre institutions can co-exist for some time despite opaque transparency, asymmetrical information, and socialized financial systems, because key elements of systemic risk (such as the absence of a credit culture) can be internalized to a surprisingly high degree. Indeed, the Asian experience showed that despite poor formal institutions, the triangular relationship was highly successful in mobilizing resources and maintaining high economic growth. Last, many of the potential shortcomings noted above were tractable in a regime of relatively closed capital accounts and, hence, only

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21 That is the informational quality of financial institutions (IQFS) to transform uncertainty into continuously priced risk.
became apparent under KAO. With the exception of Indonesia, all East Asian countries had a relatively low degree of KAO until the late 1980s. Hence, occasional banking and financial problems did not pose serious systemic risk, as these were largely related to domestic balance sheet adjustments that were facilitated by occasional “too big to fail” policies under strong, self-perpetuating economic growth.

For many East Asian EMEs, DFL launched in the early 1980s was slow, incomplete, and poorly executed. DFL broadly reflected the mediocre status of core institutions.22 However, our indicator of DFL flatters Asian economies, as the legacy of directed lending and moral hazard is difficult to capture. East Asian banks (new banks and especially nonbanks) were generally undercapitalized, laxly regulated, and badly managed. At the same time (apart from Indonesia), East Asian EMEs adopted a slow, cautious approach to current and long-term capital account decontrol. Even so, by the mid-1990s, short-term capital-flows had been liberalized.

A mapping of the 1997–1998 Asian crisis economies strongly suggests that the crux of the problem was weak core institutions relative to high KAO (Figure 4), and incomplete DFL juxtaposed onto KAO without systemic coherence. Indeed, there is a glaring absence of the positive relation between DFL and KAO presumed in sensible international financial sequencing patterns, although the Asian economies were not the worst offenders.23 Nonetheless, the massive capital inflows attracted by Asia’s strong, unending growth and progressive KAO took on ever-larger short-term elements. These were badly or corruptly intermediated by laxly monitored, undercapitalized banks and financial systems, spilling over into excessive credit growth, asset price inflation, and growing currency-maturity mismatch.

In short, a strong case can be made that KAO was premature and badly prepared in the five Asian crisis economies because DFL had not been successfully realized, and it is clear that institutional oversight capacities were severely lacking. In essence, the new risks from KAO could not be managed by pre-existing institutions. Hence, bankruptcy laws and creditor rights were quite weak owing to the absence of explicit exit policies for insolvent banks and firms under government guarantee of credit risks and “too big to fail” policy measures. Under such circumstances, basic concepts such as capital adequacy were not needed and, hence, barely existed.

When we apply the risk-based analytical framework for sequencing liberalization and the analytical database to a particular country, we use a policy matrix approach (an example of this matrix approach for the PRC is presented in Appendix 1). A big advantage of this approach is that it helps to formalize implicit assumptions concerning alternative paths toward economic reform of the country. Moreover, by heightening transparency, it may reduce the pitfalls of second-best policy dilemmas, time inconsistency, and policy capture in framing alternative implementation strategies. A concrete example will be given below about the sequencing issues of DFL and KAO in the case of the PRC. In any concrete cases of particular countries, it goes without saying that initial conditions have to be taken into account.

Operationally, it starts with a strategic diagnosis of pre-existing core institutional capacities, to underscore potential areas of systemic financial risk

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22 Excluding in Hong Kong, China; Singapore; and Taipei, China, the effectiveness of DFL for the other Asian countries was just over 50%, and reality was probably worse. Even though our DFL indicators fail to capture this, the same can be said for Japan. Interest rates were liberalized in Japan in the early 1980s and DFL appears on paper to have been quite effective. However, it is impossible to capture cultural features such as administrative guidance and supposed “Confucian ethics” that blunt market mechanisms. Indeed, Bakker and Chapple drawing on Japanese literature point out that some controls on interest rates were removed only in 1994 (in 1993 in Korea). As a consequence, Asia’s capitalistic system obviously differs in many respects from the “Anglo-Saxon” model as its financial system is in fact highly “socialized” (see Rajan and Zingales 1998).

23 Hong Kong, China and Singapore are exceptions, as they have world-class core institutions and banking systems. However, the Asian financial crisis has raised reservations concerning the advantages of being an international financial center. Recently, Singapore adopted regulations to limit the holdings of its currency in nonresident accounts.
under the possibility of a capital account crisis (i.e., the international liquidity crisis and structural balance-sheet mismatches—currency and maturity—that can compromise the solvency of financial systems). It then assesses initial conditions with respect to DFL and KAO and lays out an operational roadmap for reform. A key general policy issue is how to establish the institutional preconditions for successful DFL and KAO to minimize new potential risks from developing into systemic financial risk. In particular, the approach stresses the central role of the quality of core institutions, including prudential regulatory oversight capacities in successful financial reform (Chan-Lee and Ahn 2001; Liu 2002).

The quality of the aforementioned core institutions is approximated by six criteria: the rule of law, creditor rights, shareholder rights, accounting standards, foreign bank presence, and state ownership of the banking sector. If there is failure to establish core institutions to a reasonable extent, new risks might be serious enough to develop into systemic risk with financial liberalization, particularly when combined with full-scale KAO.
Against this general backdrop, a “roadmap” identifies the specific risk profiles for each element of DFL and KAO, based upon which one can analyze new risks arising from their interaction with existing institutions to avoid systemic financial crises. The sequencing steps are therefore strongly influenced by the distance of individual “new risks” from systemic financial risk. The greater the distance of such new risks are from “systemic risk,” the earlier and easier the implementation of such measures will be.

According to our risk-based sequencing strategy, KAO is inherently risky compared with DFL because it embodies both international liquidity risk and domestic banking system risk. Thus, DFL should be implemented quickly in tandem with building better institutions. By contrast, successful KAO clearly depends on a high effective degree of DFL and especially on sound core institutions to transform potential efficiency gains from liberalization into tangible economic benefits. Regarding specific aspects of KAO, new risks associated with FDI and trade credits are quite distant from systemic financial crises, as these flows are relatively stable and largely permanent.

Despite some disagreement about the labeling of capital flow categories, we regard portfolio equity investment as somewhat distant from systemic risk, unless banks are heavily involved in such investments. By contrast, new risks arising from the liberalization of short-term foreign currency-denominated capital flows could develop into serious maturity and currency mismatches and, hence, systemic crisis, as already discussed.

In sum, the interaction between DFL and KAO tends to create the most serious systemic risks. This is because new risks arising from DFL such as higher interest rates, credit surges, a large number of new banks and nonbanks, and declining franchise value of banks can be combined with maturity and currency risks caused by massive short-term, dollar-denominated capital flows under KAO.

D. Proposed Sequencing for the PRC

The importance of liberalizing the financial sector cannot be overstated for the PRC, since the country has recently entered a new environment, one with more liberalized trade setting both in goods and in services including financial services under the World Trade Organization (WTO) system. As stated earlier, liberalizing the financial sector is fundamentally different from liberalizing trade. Hence, the policy implications of the two concepts should not be the same. From this standpoint, we have applied our risk-based sequencing approach to the case of the PRC.24

After an in-depth analysis, we came up with the following seven proposals: Proposal 1: Strengthen the banking system through quick NPL resolution; Proposal 2: Substantially diversify ownership of state-owned enterprises (SOEs) and state-owned commercial banks (SOCBs) to help build effective incentive systems and a new corporate governance structure; Proposal 3: Establish an independent central bank and supervisory agencies for a rules-based supervisory system; Proposal 4: Implement sensibly sequenced domestic financial liberalization; Proposal 5: Make foreign entry a part of the solution for a vibrant financial system; Proposal 6: Sequence the order of KAO and reduce currency and maturity mismatches; and Proposal 7: Adopt a more flexible exchange rate regime.

Let us now briefly explain each proposal. Our seven-point proposal gives top priority to restoring banking sector solvency through prompt resolution of large NPLs in the SOCBs, which in turn requires substantial restructuring of large SOEs (Proposal 1). In order to stop ever increasing NPLs under semi-autonomous management with state ownership and to promote market-based risk management, rational incentive structures must be established through substantial ownership diversification and, hence, clearer property rights (Proposal 2). Such fundamental

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changes in the ownership structure of SOCBs and SOEs could be effectively implemented owing to the large accumulation of private savings and strong entrepreneurship, due to the PRC’s successful dual-track strategy for reform over the past quarter century. There would, nonetheless, be serious implications for fiscal sustainability because recapitalization of the banks and establishing a minimum social safety net (e.g., unemployment insurance and pensions) will require large fiscal commitments. To avoid monetization of the public debt, the central bank should be given independence from state interference. Likewise, the independence of financial supervisory agencies should be guaranteed to enforce effective legal, judicial, and prudential regulations over financial institutions (Proposal 3).

These first three points of our proposal should enable the PRC authorities to effectively address the new risks entailed by domestic and external financial liberalization. Financial liberalization expands lenders’ and borrowers’ opportunities, as well as their resources, for taking excessive risks, particularly when coupled with an expansionary macroeconomic environment. Managing excessive risk-taking behavior, induced by such new incentives, necessitates new institution building, which, however, generally tends to advance with a lag. Domestic financial liberalization of interest rates should, therefore, be sequenced from lending to deposit rates and from long-term to short-term maturities in order to avoid reducing franchise values of banks abruptly over a short period, which might otherwise induce banks to take excessive risks. A carefully phased approach would thus provide banks with sufficient time to develop new profit-making opportunities compatible with their capabilities of managing such new risks (Proposal 4). Relaxing domestic entry requirements for banking and other financial service industries would create a large number of new banks and also nonbank financial institutions. This runs the risk of generating excessive risk-taking activities among these new institutions and intensified competition, impairing banks’ franchise values and thereby raising systemic risk. At the same time, it is important to prevent private monopolies from emerging as a result of substantial ownership diversification of the SOCBs. With these considerations in mind, an entry strategy should be structured to encourage reputable foreign participation, as a means of introducing better risk management skills and a credit culture to the domestic financial sector (Proposal 5).

Our risk-based approach flags the need for caution in opening the capital account. Given the current status of core institutions, further capital account opening, particularly for short-term, foreign currency denominated international capital movements, should not be on the short-run policy agenda for the PRC, and should be phased in accordance with progress made in institutional capacity building. Ill-prepared capital account opening can exacerbate both maturity and currency mismatches, increasing the possibility of twin financial crises (i.e., difficulty in simultaneously achieving international liquidity and domestic banking crises). Such mismatches were the crux of the problem behind the Asian capital account crisis of 1997–1998. However, policymakers must also be aware that domestic banking and financial services liberalization (particularly via accelerated foreign bank entry, within the context of increasingly globalized financial markets and rapid financial products innovation) will hasten de facto capital account opening. This phenomenon underscores the need to speed up the establishment of the sound core institutions that would mitigate and better manage these “double mismatches and twin crises” (Proposal 6).

When freer international capital flows are allowed, a more flexible exchange rate regime should be introduced to cope with the so-called “trilemma problem” (i.e., the difficulty of simultaneously pursuing free capital flows, independent monetary policy, and a fixed exchange rate). This would keep counter-inflationary monetary policy independent of swings in the overall balance of payments strongly influenced by volatile capital flows. However, given the shallow and narrow nature of financial markets in the PRC, large capital flows could translate into excessive volatility of its exchange rate and domestic asset prices, thereby undermining the stable development of trade and foreign direct investment. Hence, a midway exchange rate regime between a free float and hard peg is proposed.
Further, because of the possibility of severe twin crises driven by currency depreciation and balance sheet deterioration over short time spans, regional lender of last resort facilities should also be established with the PRC’s active participation to prevent the collapse of exchange rates owing to a capital account crisis (Proposal 7).25

Thus, our seven-point policy recommendations should contribute to establishing a new coherent policy nexus for the PRC, consisting of (i) a strong banking system, (ii) robust core institutions, together with (iii) a flexible midway exchange rate regime combined with regional lender of last resort facilities, as well as (iv) sustainable macroeconomic policies, in a new era of domestic and external financial liberalization after the PRC’s accession to the WTO. A comprehensive dynamic applied general equilibrium model has also been developed by the ADB Institute and is used to demonstrate quantitatively the favorable impacts of these seven-point policy recommendations (see Appendix 2 for the model specifications and simulation results).

In the transition to a more market-based economy, the speed and scope of liberalization per se is not the critical issue. Rather what is important is the quick establishment of the institutional preconditions for successful domestic and external liberalization and structural reforms. This will in turn be determined by the pace of establishing better functioning institutions to address the specific new risks to which each step of financial liberalization will give rise. As described earlier, these institutions should include better enforcement of the rule of law, clearer property and creditor rights, suitable corporate governance, effective bankruptcy procedures, stronger human capital, and better risk management skills.

Political will is needed for ownership diversification and effective reforms. A successful transition will thus necessitate a clear articulation and a political commitment to longer-term institutional goals, so that they are not captured by vested interests inherent in the current ownership structure. At the same time, the authorities should be aware that reform entails costs and possible new risks that inevitably arise from the liberalization process, as discussed.

In the process, some consideration should be given to establishing a coordinating agency to ensure the proposed overall consistency of economic reform policies, that is, the nexus among macroeconomic stability, a strong banking system, building robust core institutions, and the exchange rate regime, so that the new risks emerging from the liberalization program can be dealt with in a cost-efficient and timely way. This coordinating agency could also frequently review inherent gaps between the capacities of existing core institutions and new risks arising from further financial liberalization. It could make prompt suggestions to the government on upgrading institutional capacities so as to prevent such new risks from developing into serious systemic problems that jeopardize the stability of the overall economy.

25 The desirability of a midway exchange rate regime and a regional lender of last resort facility is discussed more fully in Chapter 4.
References


Appendix 1. An Example of the Policy Matrix Approach: Sequencing Financial Liberalization in the PRC

Table 1. A Roadmap for Financial Reform in the PRC

<table>
<thead>
<tr>
<th>Policy Goals</th>
<th>Existing Strategy</th>
<th>Problems and Limitations</th>
<th>APF Proposals</th>
<th>Possible New Risks</th>
<th>Institutional Requirements</th>
<th>Implementation Issues</th>
<th>Time-Frame for Implementation</th>
</tr>
</thead>
<tbody>
<tr>
<td>I. Restore Banking Sector Solvency and Reduce Banking Sector Risks</td>
<td>Hybrid Approach: Carving out a portion of NPLs and growing out the rest; contingent liabilities are not fully recognized and need high growth to maintain fiscal sustainability</td>
<td>Undermining sustainable economic growth and possible medium-term fiscal stress</td>
<td>Quick resolution of NPLs via large-scale ownership diversification. Sustaining high, medium-term growth via viable banks and SOE restructuring</td>
<td>Fiscal costs, moral hazard without ownership changes and weak corporate governance; NPL resolution will entail short-term high debt to GDP ratio</td>
<td>Better functioning government bond markets and better equity market for privatization; transparent budget institutions and strengthening tax administration</td>
<td>Start now and accelerate existing programs to maintain fiscal sustainability in the medium term.</td>
<td></td>
</tr>
<tr>
<td>II. Change Incentive Structures</td>
<td>Attempt to build an incentive structure without clear property rights</td>
<td>Severe agency problems; increased state assets stripping and related corruption</td>
<td>Clear property rights through ownership diversification</td>
<td>Possibility of transitional unemployment and social dislocation</td>
<td>Effective legal system to enforce property rights</td>
<td>Converting private savings into ownership claims via shareholders</td>
<td>Start now as it may take decades</td>
</tr>
<tr>
<td>III. Independence of the Central Bank and Supervisory Agencies</td>
<td>Under control of the State Council; multiple supervisory agencies subject to political interferences</td>
<td>Perpetuates government interference and poor standards; politicized exit policies</td>
<td>Full independence</td>
<td>Difficulties in coordinating fiscal and monetary policy and accountabilities</td>
<td>Competent technocrats and regulators; enforcement of rules-based supervision; better accountability, transparency and disclosure standards</td>
<td>Appoint independent central banker and regulators and improve the court system; develop indirect monetary policy instrument via better interbank and money market</td>
<td>Short to medium term</td>
</tr>
<tr>
<td>IV. Staged Interest Rate Liberalization</td>
<td>Administered controlled interest rates</td>
<td>Improper pricing of risks</td>
<td>Phased interest rate deregulation with a balance on competition and banks' franchise value</td>
<td>Tips maturity structure to short term owing to distorted yield curve</td>
<td>Functioning interbank and money markets; capacity to actively monitor credit growth to speculative sectors</td>
<td>Lending rates first followed by deposit rates</td>
<td>Start now</td>
</tr>
<tr>
<td>V. New Domestic and Foreign Bank Entry</td>
<td>Administrative requirements for entry and restricted foreign entry</td>
<td>Maintains oligopoly rents, but limits financial innovation and competition</td>
<td>Encourage entry of reputable foreign financial institutions through joint ventures or M&amp;A, as a part of WTO commitment</td>
<td>Weaker competition maintains domestic monopoly power; de facto acceleration of KAO via relabeling of capital flows</td>
<td>Level playing field for regulatory control; “Fit and proper” criteria for entry; Higher prudential oversight and transparency standards; monitor net positions of banks and be aware of off-balance sheet risks</td>
<td>Encourage foreign financial institutions entry to improve information processing and enhance risk management skills; National treatment for foreign banks</td>
<td>Start now</td>
</tr>
<tr>
<td>VI. Open the Capital Account</td>
<td>Relatively restricted</td>
<td>Appropriate in the short run but with distorting capital costs</td>
<td>Risk-based sequencing</td>
<td>Currency and maturity mismatches</td>
<td>Better long-term debt markets and capacity to monitor short-term capital inflows</td>
<td>FDI, trade credits, followed by portfolio investment and bank loans depending on institutional capacity; be aware of labeling of capital flows via derivatives</td>
<td>Medium term</td>
</tr>
<tr>
<td>VII. More Flexible Exchange Rate and Active Participation in Regional Financial Arrangement</td>
<td>Pegged to the US dollar. The PRC has signed bilateral swap arrangements with key countries in the region based on the Chiang Mai Initiatives</td>
<td>Illusion of FX guarantee discourages hedging practices</td>
<td>Currency Basket System and formalized multilateral monetary arrangement</td>
<td>Greater volatility; management of expectation; Difficulties of monitoring and moral hazard</td>
<td>Greater transparency and consistency of economic policy; Regional monetary arrangement</td>
<td>Use dollar/yen/euro as key basket currencies; Actively participate in regional monetary cooperation</td>
<td>Short term for the exchange rate regime and medium term for the formal regional lender of last resort arrangement.</td>
</tr>
</tbody>
</table>
Appendix 2. Model Simulations for the Sequencing of Financial Sector Liberalization in the PRC

To test the seven proposals previously stated, we construct and use a comprehensive applied dynamic general equilibrium model for the People’s Republic of China (PRC) drawing on the work of Fargeix and Sadoulet (1994) and Azis (2000, 2001). For further details of the model, see Azis and Fan (2003).

**Description of the Model**

The model incorporates various structural features of the PRC’s financial sector such as fixed interest and exchange rates, commercial banks’ credit rationing, and nonperforming loan (NPL)-related lending risks. In the real sector, wages are rigid, implying that unemployment is determined endogenously in the labor market. The portfolio behavior of institutions is based on Tobin (1970).

There are 38 production sectors, 11 assets/liabilities types, and 15 institutions. The institutions include firms, government, commercial banks, the central bank, foreign sector, and 10 household groups. The latter is differentiated into urban and rural categories.

It is specified in the model that firms finance their investment through retained earnings, loans, and equity. The portfolio behavior of commercial banks determines the supply of loanable funds, while the portfolio behavior of firms determines the demand for loanable funds. Since interest rates are fixed, the actual quantity of loans is the minimum of the two.

It is also assumed that the quantity of NPLs affects the loan interest rate. The loanable funds market is therefore cleared by the official rate adjusted for an interest rate premium.

In the government sector, the deficit is financed by bonds and by foreign borrowing. Government bonds are assumed to be risk-free, implying that banks and households are always willing to meet the government’s financing requirement. Two key expectational factors embodied in the model are inflation expectations affecting the household savings rates, and exchange rate (depreciation) expectations affecting the composition of foreign and domestic assets.

The specification of the real sector is fairly common as in standard compatible general equilibrium (CGE) models, where the production structure is modeled as a set of nested constant elasticity of substitution (CES) functions. In the first stage, the production function (expressed as value added) is determined, with primary inputs being the right-hand side (RHS) variables in the equation. The structure of production and trade is such that many intermediate inputs are imported. Therefore, the composite intermediate inputs are modeled as a CES function of domestic and imported inputs, such that in the model simulations one can alter the elasticity of substitution of some of these inputs. In the second stage, domestic output is specified as a CES function of value-added and composite intermediate inputs.

Exports are assumed to be differentiated from domestically sold products in each sector. Domestic output is allocated between exports and domestic sales using a constant elasticity of transformation (CET). This suggests that substituting exports with domestic goods is not costless; a lower elasticity implies a greater cost (more obstacles). Further, the domestic market price is different from the export price (determined by the world price and the exchange rate). Thus, producers’ behavior is captured through equations expressing the ratio of exports to domestic sales as a function of relative prices.

Following Armington (1969), aggregate demand is a CES composite of imports and domestically produced products. Minimizing the cost of acquiring composite goods yields the first-order condition where the ratio of imports to domestic sales is determined by their price ratio. The demand for imports is assumed to be infinitely elastic with fixed world prices (small country assumption). Along with the exchange rate, the import tax and the trade and transport margin, the world price is assumed to determine the domestic price of imports.

The labor market specification is as follows: sectoral demand for the different labor categories is derived from the first order condition. Each sector’s labor demand depends on a set of variables such as product prices, wages, and prices of intermediate inputs. A
composite labor demand function for each sector is postulated as a Cobb-Douglas function of the various labor categories. This is the composite labor input, which appears as an argument in the sectoral domestic output functions. In turn, sectoral wage rates are determined by value added, labor productivity growth, and the inflation rate. Hence, sectoral wage rates are endogenously derived in the present model. A key implication that underlies the form of the wage equations is the prevalence of labor market segmentation with wages being strongly sector-specific.

The average wage rates for each labor category are arrived at based on the sectoral wage rates and the wage shares of each type of labor in each sector. Last, the labor supply of each category is assumed to be fixed in the base year. Further, it is assumed that there is some slack in the labor market (in the form of unemployment or underemployment).

**Model Simulations**

The various simulations are conducted by imposing different conditions sequentially during the time frame 2002–2015. Here we only summarize the main outcomes. More detailed results and the underlying mechanisms for each scenario simulation are discussed in Azis and Fan (2003).

Regarding rapid NPL resolution and market-based risk management through stronger incentives provided by the diversification of ownership of state-owned banks (Proposals 1 and 2), we explore five scenarios: (i) a growing out approach by assuming that some 60% of a commercial bank’s profits are used to resolve the NPL; (ii) use of fiscal resources from a value added tax; (iii) use of government bonds; (iv) use of a combination of government bonds, proceeds from state assets, and 30% of bank profits; (v) same as (iv) plus reductions in NPLs in new loans, more particularly lowering the new NPL by 25 percentage points from 2003 to 2008. Hence, the ratio of new NPL in new loans is assumed to decline gradually from 40% to 15%.

On domestic financial liberalization (DFL) (Proposal 4), we experiment with the liberalization of the interest rate. The capital account opening liberalization (KAO) (Proposal 6) is captured in the model by adjusting a parameter that reflects the degree of openness to capital inflows. The final step in the sequence is to liberalize the exchange rate (ER) (Proposal 7).

For simplicity, we will use the following notation to denote the above Asian Policy Forum-ADB Institute (ADBI) proposed sequence: (i) NPL-DFL-KAO-ER. To evaluate the outcomes of this sequence, one has to have references to compare the outcomes with. We use the following two alternative sequences for references: (ii) DFL-KAO-ER; and (iii) DFL-KAO-ER-NPL. All three scenarios are superimposed on the baseline trend, which is generated under the early World Trade Organization (WTO) scheme, i.e., trade liberalization. Hence, the generated outcomes of the three scenarios are compared by looking at their deviations from this baseline trend.

![Figure A2.1 Real Gross Domestic Product (% change relative to baseline)](image-url)
As shown in Figure A2.1, the trend of gross domestic product (GDP) clearly points to the superiority of the ADB Institute proposed sequence. The GDP level under this sequence by the end of the simulation period (2015) could be higher by 1.5 to 3.5 percentage points than under the alternative sequences. The main mechanisms basically stem from the early resolution of NPL that will (i) raise the return on banks’ loans, providing more incentives to commercial banks to issue loans rather than to put the assets in the central bank; (ii) increase the efficiency of new investment; and (iii) improve the efficiency of capital allocation across sectors. The resulting inflation rate in 2015, however, is slightly higher than under the DFL-KAO-ER-NPL sequence, although the trend fluctuates less (Figure A2.2).

The impact on income distribution varies for each policy shock, irrespective of the sequence. DFL almost always worsens the income distribution, but KAO helps reduce inequality. The main mechanisms work through a decline in the returns on financial assets due to increased capital inflows. These financial assets are largely owned by high-income households, implying that their relative incomes also decline. The net effects of all the policy shocks in the baseline and the three sequence scenarios on income distribution, however, tend to be less serious than many would have thought. The overall trend of the Gini index is declining (Figure A2.3).

One of the most debated issues concerning financial liberalization is the risks generated by such a policy. Indeed, as shown in Figure A2.4, there is a rapid increase in foreign debt ratio to foreign reserves.
under all financial liberalization sequence scenarios. Up to 2010, the ADB Institute proposed sequence produces the lowest ratio, but after that the ratio increases rapidly and exceeds the ratio under DFL-KAO-ER scenario. However, by 2015 the foreign debt to foreign reserve ratio is still lower than under the DFL-KAO-ER-NPL scenario. Hence, while all of the scenarios increase risk, the proposed sequence is not the one that would create the highest risk.

Similarly, looking at the real exchange rate trend, the ADB Institute proposed sequence does not lead to a sharp appreciation of the real exchange rate, unlike the case of the DFL-KAO-ER-NPL scenario (Figure A2.5).

From the analysis above, it is clear that resolving the huge amount of NPLs in the PRC’s banking system should be the first step to take in the process of financial sector liberalization. Without this step, any financial sector liberalization (FSL) would tend to reduce economic growth. Resolving NPLs solely by using fiscal resources should be avoided, since it would stifle growth and threaten fiscal sustainability. Although for some indicators the results are mixed, in general the seven-step sequence proposed by the ADB Institute tends to produce better outcomes than alternative sequence scenarios.
Chapter 3

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References

Appendix
Chapter 3
New Challenges Confronting Postcrisis Asia

The Asian financial crisis was an important learning experience for policymakers and private agents across the region. It is hoped that disseminating some of the positive and negative lessons identified in Chapters 1 and 2 can help decision-makers elsewhere enjoy sustained dynamic development but at the same time avoid the same pitfalls. Over the last few years, important real and putative commitments have been made by national governments, multilateral institutions, and countless private parties, to remediate the weaknesses that became evident during the crisis. If taken seriously, these commitments will have the concerted effect of reducing system risks and the likelihood of another serious disruption in Asia’s progress toward sustained growth and broader prosperity.

Meanwhile, however, there is a variety of unfinished items on the policy agenda and some challenges confront postcrisis Asia. In this chapter, we identify three challenges to regional policymakers: (i) bank restructuring; (ii) corporate governance; and (iii) the People’s Republic of China (PRC)’s new openness to the global economy. These issues have important implications for new development paradigms in the region.

A. Challenges in Bank Restructuring

Bank restructuring poses a major challenge to Asian countries after the crisis. Indonesia, Republic of Korea (Korea), Malaysia, and Thailand all face nonperforming loan (NPL) problems and accompanying banking crises that need to be resolved. The severity of the crisis was different in each—most severe in Indonesia and least in Malaysia—but the resolution process has been similar, and lessons can be drawn for other countries in the future. It is important to recognize and address the NPL problem early. It is better, if necessary, to fiscalize losses in the banking sector rather than to prolong the crisis. Injecting capital into undercapitalized banks is one way, and closing down or nationalizing insolvent banks is another. Then, setting up an asset management company to take over distressed assets becomes necessary. Corporate debt restructuring as well as bank restructuring also must be undertaken, because sometimes the legal framework favors borrowers rather than creditors. The last step is to dispose of assets from an asset management company, and recover part of the losses from capital injections and from nationalizing assets. We discuss these issues below.
I. Resolving the NPL Problems

Resolving the NPL problem is important, because large quantities of poor quality loans tie up bank capital and restrict banks’ ability to provide loans. Since banks play a special role in bridging asymmetric information problems and in channeling savings to productive uses, a reduction in intermediation can have serious economic consequences. This is especially true in Asia, where capital markets are underdeveloped.

The first step in resolving the NPL problem is to recognize it. Before the crisis, there was no standard definition in the region for NPLs. For example, Thailand used a 12-month overdue definition, whereby loans were considered nonperforming when principal and interest on them were left unpaid for at least a year. However, in the aftermath of the crisis, a 3-month overdue definition—the international standard definition—was adopted in the region. Malaysia was an exception in giving banks the choice of using either a 3-month or a 6-month overdue criterion.

Banks are reluctant to acknowledge NPLs for several reasons. Loan loss provisions due to NPLs reduce reported profits. They also make it harder for banks to reach Bank for International Settlements (BIS)-mandated capital-adequacy ratios (CARs). In addition, increases in reported NPLs can affect outside perceptions of the quality of a bank’s portfolio and, thus, the bank’s credit rating. Last, an increase in NPLs can reduce the price of the bank’s stock. Banks thus have a tendency to cover up and delay acknowledging NPL problems.

Many countries also hide NPL problems because of the thorny macroeconomic problems they pose. If an economic downturn increases the amount of NPLs, and if this information is publicly available, banks will have to curtail lending and rebuild liquidity. This can lead to a credit crunch where banks reduce lending to viable firms. Even companies with profitable production opportunities then have to reduce output. This worsens the economic downturn, leading to more NPLs and the onset of a vicious cycle.

There may also be political pressure to avoid public disclosure of NPLs. Particular sectors (e.g., borrowers) may be disproportionately harmed by news of NPLs. These sectors may be well-connected politically. They may thus exert political influence to prevent the disclosure of NPLs.

2. Supervisory Agencies

Since politicians may seek to avoid disclosing NPLs and allowing bank failures, there is a need for an independent supervisory agency. This agency should be immune from political pressure and staffed by professionals. The decision on whether a bank should be allowed to fail should be based solely on the health of the bank and not on political factors.

Before the crisis, financial supervision was carried out by finance ministries or central banks. Because of political repercussions, both kinds of institutions sought to avoid bank failures.

After the crisis, countries in the region have set up new supervisory agencies. Korea established the Financial Supervisory Commission (FSC) in April 1998 to supervise the banking sector. Indonesia set up the Indonesian Bank Restructuring Agency (IBRA) in January 1998 to supervise banks and manage bank assets. Malaysia instituted Danamodal in August 1998 to recapitalize the banking sector. Thailand set up the Financial Sector Restructuring Authority (FRA) in October 1997 to plan the rehabilitation of closed finance companies and to sell their assets.

Upon their establishment, these agencies sought to evaluate bank balance sheets, identify NPLs, and determine whether banks were weak or healthy. To make these determinations they used the CAR as a yardstick.

For weak banks, the supervisory agencies must decide whether the institutions need to be suspended, closed, assumed by a bridge bank, injected with capital, or merged with a healthier bank. To minimize fiscal costs down the road, it is important to act quickly and not show forbearance toward unhealthy banks.

For healthy banks, the supervisory agencies need to facilitate resolution of NPL problems. To do this, an appropriate legal framework is needed. This framework must clearly spell out how to deal with failing companies and how to swiftly transfer collateral to lenders. It must
also allow a majority of creditors to force bankruptcy on a firm that refuses to make overdue interest payments. The laws must be implemented by well-trained judges who are fair to both borrowers and creditors (Ito 2001).

Supervisory agencies currently classify banks into three categories: (i) those that are in good health; (ii) those that are candidates for capital injection; and (iii) those that need to be closed and taken over by the government. Based on CAR, Indonesia and Thailand classify banks into the three categories as follows. In Thailand, category (i) includes banks with CARs above 8%; category (ii) includes banks with CAR values between 8% and 2%; and category (iii) includes banks with ratios below 2%. In Indonesia, category (i) includes banks with CAR values over 4%; category (ii) includes banks with CAR values between 4% and –25%; and category (iii) includes banks with CAR values below –25%.

To maintain the health of the banking system, supervisory agencies need to implement several policies. They need to require banks to use the 3-month overdue standard when classifying NPLs. In this context, they need to prohibit evergreening, whereby banks continue to roll over bad loans. They also need to require banks to adequately provision for NPLs. Last, they need to mandate accurate and timely disclosure of NPLs to maintain the credibility of the banking system.

### 3. Capital Injections

Bank credibility and the payments system are public goods. Financial intermediation is also important for macroeconomic stability. Government has an important role to play in maintaining the health of the banking system. One way to do this is through the use of capital injections.

Capital injections can raise the CAR and, thus, help maintain international credibility. They can also strengthen bank balance sheets so that banks can deal with NPLs and start lending again to companies. This in turn can mitigate a credit crunch.

The difficulty with capital injections is in striking a balance between maintaining the stability of the financial system and preventing moral hazard. As discussed above, capital injections can reduce systemic problems. However, if they involve not holding bank managers accountable for the performance of banks, they can lead to moral hazard. It thus may be desirable to require bank executives to resign when a capital injection is made.

Government can also recapitalize banks by repaying depositors on behalf of banks and by repurchasing NPL assets. One danger with the latter approach is that the government may pay inflated prices for the assets.

Table 1 shows the extent of the NPL problem immediately after the crisis.

Throughout the region, huge amounts of public funds have been injected into the banking system. In Indonesia, IBRA had injected Rp564.5 trillion (68% of gross domestic product [GDP]) by October 1999. In Korea, the Korea Deposit Insurance Corporation (KDIC) had injected W139.5 trillion (26.7% of GDP) by June 2001. In Malaysia, Danamodal had injected RM6.4 billion (15% of GDP) by December 1999. Last, in Thailand, FRA had injected B716,929 million (20% of GDP) by 2002.

<table>
<thead>
<tr>
<th>Country</th>
<th>Peak Year</th>
<th>NPL/Total Loan (%)</th>
<th>NPL/GDP (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indonesia</td>
<td>1998</td>
<td>75</td>
<td>53</td>
</tr>
<tr>
<td>Koreaa</td>
<td>1998</td>
<td>10.5</td>
<td>35</td>
</tr>
<tr>
<td>Malaysiaa</td>
<td>1998</td>
<td>13.2</td>
<td>42</td>
</tr>
<tr>
<td>Thailand</td>
<td>1998</td>
<td>47.7</td>
<td>60</td>
</tr>
</tbody>
</table>

* Average of banks and nonbanks.
* Based on 3-month classification.
4. **Mergers and Closures**

While capital injections can help viable banks, closures or mergers with healthy banks are better than capital injections for insolvent banks.

Several banks in the region have been closed since 1997. Thailand suspended 16 finance companies in June 1997 and 42 more finance companies in August 1997. It then closed down and liquidated 56 of them in December 1997. Indonesia closed 16 banks in November 1997. Table 2 reports the changes in the number of banks since the crisis.

In the case of Indonesia, 16 banks were shut down without a blanket guarantee on deposits. This led to a costly bank run that disrupted financial intermediation. One important lesson from this experience is that a blanket guarantee is needed when closing banks during a crisis. Once the crisis is over, however, the deposit insurance system should return quickly to providing limited guarantees.

Another lesson is that closure and liquidation may become costly unless they are done promptly and management is replaced quickly. Otherwise good borrowers will be denied additional financing, leading to a credit crunch and a deeper economic downturn. The danger of using mergers instead of a capital injection is that it may make a healthier bank weaker, instead of a weaker bank healthier. It is also difficult to restructure a larger bank because of political pressure to enforce the “too big to fail” doctrine.

State banks may become large bad banks, as has been seen in Indonesia and Thailand. On both counts they need to be carefully managed, since bad banks and state banks may undercut the lending interest rate and rob customers from private banks.

It is also important to plan ahead what to do with acquired assets. Options include restructuring and selling as one piece, separating assets into good and bad asset categories, or auctioning a bundle of assets and moving unsold assets to asset management companies.

In the merger process it is necessary to consider how to maximize the franchise value of banks. Otherwise banks may have an incentive to engage in risky behavior by “gambling for resurrection.” One way to increase franchise value might be to allow foreigners to bid on banks.

Last, the necessary legal framework for mergers and closures should be in place before a crisis. This will allow the authorities to act quickly to maintain systemic stability when a crisis arises.

5. **Corporate Debt Restructuring**

NPLs are mostly corporate debts. Disposal of NPLs will cause corporate bankruptcies. In restructuring corporate debts, it is important that there be loss-sharing among shareholders, management, bond holders, and bank lenders.

Countries in the region have established agencies to oversee corporate restructuring. In Korea, the Corporate Restructuring Committee was set up in 1998. In Indonesia, the Indonesian Debt Restructuring Agency (INDRA) was set up in 1998 as part of the Frankfurt Agreement (and subsequently the “Jakarta Initiative Task Force”). INDRA was later absorbed by IBRA. In

<table>
<thead>
<tr>
<th>Country</th>
<th>Type of Bank</th>
<th>Before Crisis</th>
<th>After Crisis</th>
<th>As of</th>
</tr>
</thead>
<tbody>
<tr>
<td>Korea</td>
<td>Banks</td>
<td>33</td>
<td>22</td>
<td>Jun. 2001</td>
</tr>
<tr>
<td></td>
<td>Merchant Banks</td>
<td>30</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Indonesia</td>
<td>State Banks</td>
<td>7</td>
<td>5</td>
<td>Dec. 2001</td>
</tr>
<tr>
<td></td>
<td>Private Banks</td>
<td>160</td>
<td>80</td>
<td></td>
</tr>
<tr>
<td>Malaysia</td>
<td>Commercial Banks</td>
<td>37</td>
<td>25</td>
<td>Dec. 2001</td>
</tr>
<tr>
<td></td>
<td>Finance Companies</td>
<td>40</td>
<td>12</td>
<td></td>
</tr>
<tr>
<td>Thailand</td>
<td>Commercial Banks</td>
<td>15</td>
<td>13</td>
<td>Jul. 2002</td>
</tr>
<tr>
<td></td>
<td>Finance Companies</td>
<td>91</td>
<td>19</td>
<td></td>
</tr>
</tbody>
</table>
Malaysia, the Corporate Debt Restructuring Committee was set up in 1998. Last, in Thailand, the Corporate Debt Restructuring Advisory Committee (CDRAC) was set up in 1998 as part of the “Bangkok Initiative.” CDRAC was later absorbed by the Thailand Asset Management Corporation (TAMC).

The number of completed applications varies among countries. In Korea, out of 102 applications, 80 have been completed. In Indonesia, out of 251 applications, 24 have been completed. In Malaysia, out of 75 applications, 33 have been completed. In Thailand, out of 689 applications, 392 have been completed.

Korea has probably been the most successful country at restructuring its debts. As discussed in Chapter 2, this has given Korean corporations breathing room and may explain why Korea has had the most rapid recovery among the crisis-hit countries.

There are several difficulties in corporate restructuring. These include how to judge whether a corporation is viable or not, how to ensure nonviable corporations go bankrupt (i.e., how to design appropriate bankruptcy laws and court procedures), how to coordinate multiple lenders, and how to decide whether some corporations are “too big to fail.”

6. Asset Management Companies

The asset management companies (AMCs) can play an important role in resolving NPL problems. They provide a place where bad assets can be housed for restructuring, collection, and privatization. They thus provide a means of removing NPLs from bank balance sheets.

There are several issues involved in purchasing and disposing of NPLs. On purchasing, these issues include agreeing on the price and the type of assets to be purchased. On disposing, these issues include deciding whether loans should be sold individually, sold as a portfolio, or securitized, and whether there should be a public auction or a court auction.

AMCs face several difficulties. These include the tendency to become “warehouses,” deterioration of the value of assets, and difficulty in disposing of assets.

There tends to be a tradeoff between the speed of disposal and the price received. Assets sold quickly are often sold in bilateral deals for lower prices. Assets sold more slowly are often sold at auctions for higher prices.

In general, the objective of asset disposition should be to maximize recovery value. The amount recovered has varied across crisis countries. Korea has acquired assets worth W38.7 trillion and disposed of W17.3 trillion of these. The Korea Asset Management Corporation (KAMCO) stopped buying assets in November 2002. Indonesia acquired Rp38 trillion of assets (equaling 16% of IBRA’s portfolio). It will be closed in Fall 2003. Malaysia acquired RM48.3 billion and disposed of RM40.9 billion of these. Danaharta has been closed. Thailand transferred B717,656 million to TAMC and resolved B200,884 million. TAMC has just begun to purchase assets.

Countries have packaged distressed assets differently. Malaysia uses continuous tendering; Indonesia uses numerous small packages; and Thailand uses the one-shot, large-value package.

There are several vexed problems involved in disposing of assets. One is what to do if there are no bidders. A solution might be to invite foreign bidders. This can lead to political problems though as people complain that assets are sold to foreigners at “fire sale” prices. A second problem is whether previous owners of NPLs should be allowed to bid in the auction. In principle, they should not, but in practice it is hard to exclude them and they tend to place the highest bids. This is especially true in Indonesia.

To summarize, progress has been made in resolving the NPL problem, although some NPLs have merely been shifted to AMCs and some smaller institutions still have large NPLs. However, the total fiscal costs, financed mostly by budget deficits, are large. These costs are summarized in Table 3.

The postcrisis experience offers several lessons in crisis management. First, capital injections should only be made to solvent institutions. Second, mergers may complicate weak bank problems instead of solving them. Third, closing banks may trigger a bank run, especially in the absence of a blanket guarantee on deposits. Fourth, foreign capital and banks should be
allowed to take part in the process, but this may trigger a political backlash if they purchase assets at “fire sale” prices. Fifth, corporate debt restructuring can help the recovery process.

Recent experience also offers some lessons in crisis prevention. First, financial liberalization should be carefully undertaken. Finance institutions flourished during the boom period but failed during the crisis. As discussed in Chapter 2, this occurred partly because of inappropriate sequencing of financial liberalization (i.e., opening the capital account before sound core institutions were in place). Second, prompt corrective action is needed when regulating the banking sector. Supervisors need to act quickly in warning banks and in forcing them to rebuild capital. Otherwise systemic risk can develop, making the financial system vulnerable to crisis.

B. Family Business Groups and Banks: Challenges to Corporate Governance

This section identifies major challenges confronting corporate governance in postcrisis Asia. For this purpose, the section starts by recalling the description—presented in Chapter 2—of how the triangular relationship among family businesses, banks, and governments was behind East Asia’s sustained growth. This triangular relationship was the institutional setup that contributed to rapid promotion of investment and savings and technological progress and, thus, generated dynamic interactions among capital deepening, human capital formation, and assimilation of foreign technology, as analyzed in Chapter 1. Over a prolonged period of sustained high growth, however, occasional bailing out and “too big to fail” policies were implemented by governments under regulated financial markets, which embedded moral hazard on the part of family businesses and banks. In particular, this institutional setup ran into trouble under new environments of domestic financial liberalization and capital account opening, thus requiring improvement of corporate governance in the region.

The rest of this section addresses the following issues: (i) could a bank-based model improve the corporate governance of firms? (ii) for the bank-based model to function, how could corporate governance of banks be enhanced and would block-holder ownership be effective in this respect? And (iii) what strategy is necessary for the successful reprivatization of banks? This is a crucial step to improve the governance of banks and, thus, make the bank-based corporate governance model workable.

1. The Dominance of Family Groups in Asia: Stylized Facts and Views

As analyzed in Chapter 2, East Asian countries nurtured a special model of capitalism where big family businesses played a large role in a triangular relationship with banks and government. The importance of family-controlled chaebol groups in Korea’s rapid progress (Lim 1999) and the pervasive role of family groups—often, ethnic Chinese—in the extensive development of Southeast Asia (Brown 2000) are well known. While the presence of family business groups is not unique to contemporary East Asia,1 they played a more central role over the last decades in this region than they did elsewhere.2

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1 To cite just a few other countries, family group control has long played a pivotal role in late-joiner Southern European econo-
The literature identifies various important characteristics of family groups. First, through pyramid structures and cross-shareholdings, family control brings about a situation where voting rights exceed cash-flow rights. In their comprehensive study of East Asian listed corporations where they track corporate ultimate control, Claessens, Djankov, and Lang (2000) find that the dissociation between voting and cash-flow rights is most pronounced among family-controlled firms. Indeed, they report that more than two thirds of East Asian corporations are controlled by a single shareholder. Second, managers of closely held firms tend to be relatives of the controlling shareholder’s family. Third, still according to the same study, for East Asia, there is no evidence that closely held corporations turn to dispersed ownership as time progresses: the opposite seems to be the case, with older firms generally family-controlled.

The authors argue that the first finding—voting rights exceeding cash-flow rights—likely induces expropriation of minority shareholder rights. The second finding—managers tending to be family relatives—restricts the flow of external professional managers and may damage firm performance, as there is no guarantee that the families contain the appropriate talents.

Family groups in East Asia have often evolved into mixed business and finance groups. In various Southeast Asian countries, such as Hong Kong, China; Indonesia; Philippines; Taipei, China; and Thailand, family groups have had the option to run their own banks. The option was widely exploited over the late 1980s and early 1990s as state ownership of banks was decreased and/or as domestic financial liberalization permitted the establishment of newly chartered banks. By the mid-1990s it had become clear that family controlled banks were an integral component in East Asia’s sustained growth and there was simply no anticipation that this was going to lead to trouble later on (Montag-Pollock 1995; Yu 1994a, 1994b, 1995). And, even in countries where they could not break into banking, family business groups often gained access to captive nonbank financial institutions: this was the case with the merchant banks in Korea, essentially originated in and controlled by the chaebol groups.5

What are the merits of family-based corporate governance? There must be a reason why these groups exist and, sometimes, prosper, as they did in the East Asian miracle. One possible explanation is that closely held business groups perform an economic function that supplements poor institutional setups. This is, in essence, argued by Khanna (2000) and Khanna and Palepu (2000). The former paper argues that the performance effects of group affiliation are large and generally positive in emerging economies. It finds substantial evidence that part of this is due to welfare-enhancing functions originating in the idea that groups substitute for missing outside institutions. As mentioned in Chapter 2, in a detailed country study on Thailand, Suehiro (2001) found that the degree of family ownership did not have a significantly negative impact on performance, while foreign ownership had significantly positive effects. Fukagawa (2002) found similar results for Korea both before and after the crisis.

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2 This might be attributable to several factors: Confucian culture emphasizing the value of (extended) family, inadequate institutions geared to protecting property rights and minority shareholders, traditional modes of inheritance and the strength of capitalist groups, and limited competition and entrenched interests of powerful families interfering in the policy-making process.

3 For Hong Kong, China, see e.g. Claessens, Djankov, and Lang (2000); for Indonesia, see e.g. Pangestu and Habir (2002); for the Philippines, see e.g. Lim and Woodruff (1998); for Taipei, China, see e.g. Montgomery (2002); for Thailand, see, e.g. Wiwattanakantang (1999).

4 Chaebol is a Korean term for a conglomerate of many companies clustered around one parent company. The companies usually hold shares in each other and are often run by one family.

5 Exceptions appear to be Malaysia and Singapore. In Malaysia, large banks (excluding the foreign-owned ones) are owned either by the government or by large bumiputra interests with close ties to government (Perkins 1998). As it is a financial hub, foreign banks are a dominant force in Singapore.
However, this positive function is also associated with welfare-reducing minority shareholder expropriation. There seems, therefore, to be a tradeoff between the former and the latter function of business groups. Khanna and Palepu (2000) analyzed the performance of business groups in India. Again, the hypothesis is that, along with the potential to destroy value via the rent-seeking allowed by their market power, business groups also have the potential to offer member firms benefits in an environment where poorly functioning institutions lead to severe agency and information problems. In line with this hypothesis, their empirical analysis shows that, in contrast to the United States, affiliates of the most diversified business groups outperform unaffiliated firms. However, it is important to note that minority shareholders in emerging economies are different from those in the Anglo-American corporate governance setup. In the former, the predominant shareholders are family businesses and, hence, there may arise conflicts of interests between the family and minority shareholders. In the latter, minority shareholders are literally dispersed and, hence, conflicts of interests arise between management and such minority shareholders.

Thus, to the extent that family business groups do play an economic role in supplementing poor institutional setups, the tentative conclusion may be that emerging economies actually need them, at least from a static perspective. From a dynamic perspective, however, the answer is more uncertain and depends on whether the presence of these groups can be effectively managed by preventing their negative interference with the evolution of the institutions that they are increasingly supplementing (Arnott and Stiglitz 1991).

As stated in Chapter 2, this element per se would unlikely lead to the crisis lacking the other factors (domestic financial liberalization and capital account opening, but under the given institutional setup in the region)—the East Asian model did have special fragility in its weak governance. For instance, analyzing the East Asian crisis, Johnson et al. (2000) find that measures of corporate governance explain the extent of exchange rate depreciation and stock market decline better than do standard macroeconomic measures. They infer that in countries with weak corporate governance, expropriation by managers worsens the economic prospects and, thus, results in a larger fall in asset prices. While it would be possibly naïve to make a direct connection from weak corporate governance directly to macro outcomes, a more sophisticated channel is certainly credible. Under this, the capital account opening of East Asian countries, whose business cycle upturn was largely financed by short-term, foreign currency denominated capital flows, transformed the East Asian triangle into a vehicle for major moral hazard as well as macroeconomic twin crises (Chapter 2). Taking an analogous direction, but focusing on microdata of Indonesian corporations with and without links to KKN groups, Azis et al. (2002) show that precrisis performance was much weaker at affiliates of KKN groups than at otherwise comparable corporates. Thus, also in this case, corporate governance weaknesses were at the heart of Indonesia’s vulnerability. Besides, analyzing the determinants of the probability that individual financial intermediaries would experience distress and closure in the East Asian crisis, Bongini, Claessens, and Ferri (2001) show that “connections”—with industrial groups and/or influential families—increased the likelihood of distress, suggesting that supervisors had granted selective prior forbearance from prudential regulations.

Also, government policies were not always effective at improving corporate governance of family groups. In the case of Korea, for example, the government oscillated between a benign neglect stance and a confrontational approach to the chaebol. The latter approach prevailed with the Fair Trade Law (FTL) weakening the scope for pyramid ownership structures.

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7 See, among others, Azis et al. (2002); Lim and Woodruff (1998); Nam (2001a, 2001b); Pangestu and Habir (2002); Suehiro (2001); and Wiwattanakantang (1999).
8 KKN is a well-known Indonesian abbreviation for Korupsi (Corruption), Kronisme (Cronyism), and Nepotisme (Nepotism).
However, as the chaebol responded by increasing their diversification and leverage via cross-guarantees within the group, the situation did not much improve. After the crisis, the government gave new legitimacy to controlling families when it treated them as the real counterparts behind the chaebol’s debt restructuring while, at the same time, prohibiting the use of cross-guarantees within the group but freeing cross-shareholding again. In response, more recently the chaebol appear to have reinforced their pyramid ownership structure, possibly making chaebol control more resilient to change (Fukagawa 2002).

In all, family groups continue to play a substantial role in the crisis-hit countries. A key question is how these groups can cater to the interests of all shareholders rather than those of controlling owners only. Better corporate governance and political reforms are needed to limit corruption within big businesses, along with strong tax enforcement to prevent the unlawful intergenerational transfer of wealth. Also, there must be greater competition encouraged by employing professional management to push business groups toward better corporate performance (Nam 2002).

2. Improving Corporate Governance of Firms through a Bank-Based Model

The Asian financial crisis revealed various weaknesses in the region’s domestic banking system (Chapter 2). Since the bulk of external finance in Asia is provided by bank credit, banks were naturally expected to have effectively monitored borrowing firms during the Asian miracle decades. However, in retrospect, banks generally failed in this task. There are several reasons for the weakness of the banking system in Asia, as synthesized by the World Bank (1998):

The East Asian crisis has underlined the importance of the rules, norms, and organization that govern corporate behavior and define accountability to investors. East Asian corporate finance markets typically are dominated by banks. Because securities markets require a more sophisticated institutional and regulatory framework, bank dominance of corporate finance is probably the best way for developing countries to grow, provided they are not subject to undue state influence, are exposed to competition, and are prudently regulated (p. 56).

However, it is too simplistic to associate banks’ dominance as providers of external finance with their ability to monitor borrowers. One needs to ask whether the “location” of banks in the overall industrial and financial structure of the economy allows them to perform such monitoring effectively (Khan 1999). Specifically, if banks are under the strong influence of large family business groups (or of government lending directives), they may be ineffective at monitoring those groups, particularly when those borrowers are selected by the government. The typical family group with a captive bank may be exemplified by the precrisis (1996) structure of the Ayala family group in the Philippines (see Claessens, Djankov, and Lang 2000). The pervasiveness of family group control of banks in the case of Thailand is quantified in Khan (1999).

As will be extensively argued in Chapter 4, given the large reliance of corporations on banks for their external finance, the more likely route for East Asia seems a bank-based corporate governance system (Yoshitomi, and Shirai 2001; Shirai 2001).

As the Japanese experience teaches us, depending on the position of the bank vis-à-vis the firm, there are banks that are captive to conglomerates (e.g., the zaibatsu experience, where banks’ shareholdings are with the family groups) or banks monitoring corporations (e.g., the keiretsu experience, where banks are in a good position to monitor the keiretsu) (Okazaki and Yokoyama 2002). Thus, family-controlled banks may be able to effectively monitor firms that do not belong to their own group but are in a weak position (location) to monitor firms belonging to their own group. This means that adequate institutional strengthening is needed in East Asia to prevent and monitor connected lending and the other potential distortions within family-based groups, which could go unchecked otherwise.

The evolution in Korea can exemplify the issue further. In its 5-year struggle back since the crisis of
1997/98, copying Anglo-American type of governance has turned out to be an uneasy experience, while signs of an evolution toward alternative bank-centered, external governance as in Germany or Japan are still missing. Despite intensive efforts to enhance the market, most corporate bonds still bear bank guarantees, and banks—most of them nationalized in response to the crisis—play a significant role. Governance may not be effective until banks are privatized and their character as institutional investors as well as creditors is better defined. After all, corporate governance reform in Korea has a very different character to that in more mature economies, where the governance system may be in transition but is soundly established with a strong legal background. As a young capitalist economy, the governance of family businesses has to start from the basic point that management must be monitored by outsiders. While the government takes a back seat and minority shareholders remain weak, corporate governance can be seen only as staying at an early stage of transition. Especially after the Daewoo debacle in 1999, improving the governance of Korea’s financial institutions has become a necessity. At least during the transitional period, banks will have to perform a substantive role in governing chaebol. Indeed, after nationalization, the management of banks was reformed intensively. Now, in most banks, the chairman of the board is elected separately from the nonstanding members of the board, and checks and balances between the standing and non-standing members are carefully designed. Credit management systems were brought in, with the support of foreign banks, to introduce a credit rating system that would stop certain individuals from making discretionary decisions, through the database and information accumulated in the banks. But, will these changes be enough for Korean banks to be able to start enforcing corporate governance of the chaebol? The task appears difficult because the position of Korean banks is not (yet) over business groups, although banks are not below the groups (Fukagawa 2002).

The Korean case also illustrates how shareholder activism can be important in enhancing corporate governance. Nongovernment organizations (NGOs), in alliance with minority shareholders and stakeholders at large, have played a key role in preventing Korea’s reforms from ending up as mere window-dressing efforts since the crisis. Other stakeholders, such as employees and subcontractors external to the group, may also help in this.

East Asia also needs to upgrade its internal corporate governance mechanisms (see Chapter 4). This implies boosting the powers of the board, by populating it with more outside directors and making it more transparent on accounting and firm-level information.

However, internal mechanisms are not by themselves sufficient and can only play a supporting role to corporate governance that is guaranteed through an effective external mechanism, which, again, in the case of East Asia points to bank-based monitoring. But, for bank-based monitoring to work, banks themselves must have good corporate governance. This is discussed in the next subsection.

Before closing this section, it is worth noting that the case of East Asia contradicts the hypothesis that there should be a global convergence in corporate governance toward the Anglo-American model. This hypothesis was widespread up to the 1970s, questioned in the 1980s, questioned in the 1980s, questioned in the 1980s, questioned in the 1980s, questioned in the 1980s, questioned in the 1980s, questioned in the 1980s, questioned in the 1980s, questioned in the 1980s, questioned in the 1980s, questioned in the 1980s, questioned in the 1980s, questioned in the 1980s. For instance in confronting SK’s family (the family controlling the SK chaebol), the NGO succeeded in getting two outside directors appointed who are given authority to approve intra-affiliate transactions.

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9 The Daewoo crisis was a turning point for Korean reforms for three main reasons. First, the scale of Daewoo—one of the big-five chaebol—was unprecedented. Second, it was the first time that a chaebol had to be dismantled because of market pressure. Third, it was virtually the first time that the Korean Government abandoned the “too-big-to-fail” tradition (Fukagawa 2002).

10 Since the reform, the People’s Solidarity for Participatory Democracy (PSPD), a nongovernmental organization (NGO), has mobilized minority shareholders and foreign institutional investors to file several lawsuits against cases of expropriation. The members have attended annual shareholders’ meetings every year as minority shareholders to check management. In some cases, their activism has jolted the government into strengthening the legal requirement for corporate governance. For instance in confronting SK’s family (the family controlling the SK chaebol), the NGO succeeded in getting two outside directors appointed who are given authority to approve intra-affiliate transactions.
1990s, but has been subject to considerable doubt more recently (see Appendix).

3. Enhancing Corporate Governance of Banks through Block-Holder Monitoring

To discuss the corporate governance of banks, we need to consider specific functions unique to banks. According to many authors (e.g., Freixas and Rochet 1997), what makes banks really different from other businesses is the fact that they jointly (i) offer access to the payment system and (ii) monitor and process information about borrowers. (See Chapter 4 for a detailed comparison of the functions of banks and capital markets). These two joint core functions explain why banks are special as well as why they are subject to a specific set of regulations, which differs from those normally applied to other businesses. Namely, holding fixed-value deposit liabilities—whose liquidity is vital to the functioning of the payment system—against uncertain-value loans extended to opaque borrowers, banks are themselves subject to a major moral hazard problem. This is because their fixed-value deposits enjoy some form of public support, either through deposit insurance or lending of last resort interventions, which is needed to prevent breakdown of the payment system. Welfare reducing bank runs might otherwise ensue without justification (Diamond and Dybvig 1983). Thus, depositors must have assurances to prevent unwarranted runs and the consequent breakdown of the payment system. This also means that depositors have little incentive to monitor banks’ risk taking. Bankers may thus have more incentive to take risks than they would in the absence of deposit insurance. Since part of the franchise value of the bank depends on deposit insurance, it is paramount that banks should be subject to regulation and effective supervision. It is no surprise that weak supervision, along with deposit insurance without risk-related premia, was the main cause for the increased gambling and bankruptcies in the US savings and loan crisis of the 1980s (Barth and Bradley 1989).

The key question, in this respect, is whether prudential regulation and supervision are enough to secure and, hence, serve as a substitute for market-based corporate governance of banks. The answer is negative for three main reasons. First, regulators can only intervene after the crisis has been revealed. Even then, it is not easy to detect real weaknesses early. Second, there is a lag in discovering new risks generated in association with financial market innovation and/or with the exercise of managers’ discretion, and sometimes authorities even grant banks supervisory forbearance. Third, whereas the objective of corporate governance...
is to maximize shareholder value, the regulator’s objective is to minimize the possibility of the systemic failure of the banking system. Therefore, prudential regulations can only indirectly improve banks’ corporate governance through overseeing excessive risk-taking behavior that will jeopardize systemic stability.

Then the big question is “who can really monitor the monitor”? In other words, who ensures that bank managers maximize bank profits through effective monitoring of borrowers, thus avoiding excessive risk taking? In particular, if depositors do not monitor banks and regulators/supervisors may have insufficient capacity, can outside directors and/or shareholders be effective in monitoring bank managers? Outside shareholders will typically have different objectives than bank managers and, hence, there is scope for potential conflicts between the two. Outside directors normally do not have direct access to key information to assess the bank’s performance. Rather, they receive such information from management. By and large, this limits the effectiveness with which outside directors can monitor management (see, e.g., Klein 1998), as recent corporate scandals (e.g., Enron, Worldcom, etc.) have made clear.

Then, can shareholders monitor bank managers effectively? This may depend on whether the bank has a block shareholder. In a situation of dispersed ownership, there is not enough incentive for individual shareholders to monitor the company. But the presence of a block-holder—i.e., some form of concentrated ownership structure with at least one large shareholder—may offer a solution, as shown by the experience of continental Europe and other Organisation for Economic Co-operation and Development (OECD) countries with Anglo-American traditions. The block-holder has both an interest in monitoring management and the power to implement management changes.

It is then no surprise what Prowse (1995) finds in one of the few papers specifically addressing the issue of corporate governance of banks. He discovers that in the United States, both a lower takeover threat—partly abated by regulation—and fewer interventions by outside directors than in the case of manufacturing weaken the effectiveness of corporate governance of bank holding companies (BHCs), thereby leaving bank managers less disciplined than managers at nonfinancial corporations. Further, Prowse shows that in the face of weak internal governance, banks that run into trouble through mismanagement will require regulatory intervention. But this late external intervention will come at a large cost. Last, he finds that banks in need of regulatory intervention have markedly lower ownership concentration: this suggests that higher ownership concentration at banks might improve performance by motivating greater oversight and monitoring by large shareholders and their representatives on the board of directors.

In addition, if—through timely disciplining of management—the block-holder solution ensures a lower turnover of managers, this will improve efficiency as the bank will operate under less severe information

debt finance so that unsecured lenders will have to step in with the right incentives to monitor; Rochet and Tirole (1996) advocate reducing systemic risk, and, thus, the undesirable effects of deposit insurance, through peer monitoring among banks in their decentralized mutual lending in the interbank market.

At first, Diamond (1984) held that this question (and the potential duplication of monitoring costs for depositors) could be ignored, by showing that if the bank is sufficiently well diversified, it can almost perfectly guarantee a fixed return to its depositors. Also, there is no need to monitor the bank’s management continuously but only the need to inspect the bank’s books when it is in financial distress. However, later it was recognized that bankers have incentives to conduct monitoring only if there is no deposit insurance and the first-come first-served feature of bank deposit contracts is maintained, so that the threat of a bank run by depositors still acts as a disciplinary device on managers (Diamond and Rajan 2000). And, even if one were to consider abolishing deposit insurance to restore the right incentives for bankers to monitor borrowers, many are skeptical of depositors’ ability to monitor bankers due to the expense required to process information and monitor banks’ performance and, hence, the associated free rider problem (Dewatripont and Tirole 1994).

Among the reasons why block-holders are missing in Anglo-American type countries one can list (i) the presence of regulatory restrictions on block-holder actions and (ii) the fact that the higher liquidity of secondary markets reduces block-holders’ incentive to use “voice” (in the Hirshman sense) and this, thus, reduces their effectiveness as a monitoring device.
asymmetry. Since banks specialize in information gathering, the turnover of management is costly, as some of the information is lost with each change.  

However, the block-holder system comes with a cost. There is a tradeoff between the effectiveness of the monitoring of the company and the possibility that the block-holder holds up other stakeholders. This reduces the incentives for employees and managers to make costly firm-specific investment in the company, without which efficiency gains are forgone. Or there might be expropriation, via self-dealing or collusion with management at the expense of minority shareholders. Then, the issue debated in the literature is whether it is possible to design the corporate ownership structure or limit the power of the block-holder in a way that prevents expropriation (due to conflicts of interest) without phasing out the incentives for them to monitor the company effectively (Bolton, Becht, and Röell 2002).

Last, what if the block-holder is a family? Burkart, Panunzi, and Shleifer (2002) analyze this case, contrasting the potential benefits of having a family play the role of the block-holder and the associated potential costs stemming from expropriation, unqualified management, and the other problems already outlined above about family group ownership. The paper also considers benefits and costs in the light of various institutional setups and reaches the following prescriptions: (i) in legal regimes that successfully limit the expropriation of minority shareholders, the widely held professionally managed corporation emerges as the equilibrium outcome; (ii) in legal regimes with intermediate protection, management is delegated to a professional, but the family stays on as large shareholders to monitor the manager; and (iii) in legal regimes with the weakest protection, the founder designates an heir as manager and ownership remains inside the family.

What recommendations can we draw from these findings for the corporate governance of banks in East Asia? The legal setup to deal with expropriation in East Asia is certainly neither as effective as in the Anglo-American countries nor is it as weak as in many other emerging economies. Thus, we may safely conclude that East Asia is at an intermediate stage. Then, following Burkart, Panunzi, and Shleifer (2002) we can predict that family/block-holder monitoring may be efficient for banks in East Asia.

4. A Three-Layer Proposal for a Successful Reprivatization of Banks

Thus, even though business family groups, either with or without captive bank(s), were contributory factors to the crisis, maybe it is now time to think again about how to reinstate family group control over banks. The issue is one that is being hotly debated, especially in Southeast Asia, due to three related aspects. First, following the crisis, recapitalization brought state ownership to most banks; exhausted by the fiscal burden, governments are now pressed to dispose of their stakes in banks. Even though foreign banks can play a role in the reprivatization process—fostering competition and contestability (Dages, Goldberg, and Kinney 2000; Focarelli and Pozzolo 2001)—it seems unlikely that these institutions will suffice to solve the problem. Second, it is commonly held that family groups were the main actors behind massive capital outflows from East Asian crisis countries that piled up abroad, reaching an estimated tens of billions of US dollars. From the perspective of the crisis countries, it is desirable that this capital be brought home, and Southeast Asia’s influential families have an interest in that, provided the main obstacles are removed. Third, with the nationalization of a large part of the banking system, much of the informational capital of banks has been damaged—because of the new management and the resulting disruption of previous bank-firm relationships—and the restoration of

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16 For example, Ferri (1997) showed that lower branch manager turnover has a correlation with lower NPL ratios at individual banks; Scott (2000) found that low account manager turnover at the bank and frequent social contact with the owner of the firm strengthen relationship banking and benefit borrowers in terms of both credit availability and loan pricing.
normal intermediation postulates preliminary recovery of this informational bank capital (Domac, Ferri, and Kang 2002).

Provided there has been sufficient upgrading of institutions in East Asian crisis countries—e.g., in terms of greater bank regulation and supervision and, more generally, protection against expropriation—the restoration of family ownership of banks could effectively address the three concerns above.

In light of this, should East Asian crisis countries reinstate influential families to lead their bank-business groups?

On the touchy subject of repatriating lost capital, two European countries provide an important example—Germany and Italy. Italy has launched and Germany is introducing an amnesty to encourage the repatriation of capital held abroad by residents. In the case of Italy, the amnesty was introduced with the budget law for 2002 to attract the repatriation of capital illegally exported by residents. The cost for safeguarding repatriated capital from any future state levy or inquiry was a 2.5% tax. The amnesty proved successful: according to the figures reported by the Ministry of the Economy and Finance, repatriated capital stood at $60 billion.

Should East Asian crisis countries consider a similar move? Should this be politically feasible, then governments would be advised to wait for such a policy to be passed to reprivatize banks.

While this recipe seems appropriate for Southeast Asia’s crisis countries, a different solution may be suitable for Korea, in view of the country’s more advanced stage of development. Specifically, the potential perils of letting the still powerful chaebol gain ownership over banks are deeply felt. One possibility would be for Korea to reprivatize while going for a BHC model, whereby family groups have to opt out either into banking groups or to remain manufacturing groups.17 This would also secure the presence of blockholder monitors. Another possibility for Korea, if concentrated ownership is not allowed and monitoring over banks remains poor, is to adopt incentives to reduce the likelihood that bank managers will misbehave. One example is the personal liability of bank managers introduced in Sweden to limit moral hazard caused by state nationalization of banks following the major crisis in the domestic banking system.18

C. Open PRC: Challenges and Opportunities for East Asia

The PRC’s economic emergence over the last two decades, and in particular its recent World Trade Organization (WTO) initiative, portend a dramatically changed landscape for East and Southeast Asian trade. This has aroused concern around the region, where the PRC’s success as an exporter could be perceived as a competitive threat by other economies that rely on external demand as an essential source of growth. At the same time, the early stage of the PRC’s development understates the opportunities its internal market will ultimately offer exporters, particularly in East and Southeast Asia. The resulting bias in perceptions could undermine multilateralism and retard the dramatic historical progress of regional trade and economic growth.

Based on our research, in this section we argue that there is a more complex picture of the PRC’s emergence, one that presents as many opportunities as threats to East and Southeast Asian policymakers.

1. The PRC as a Competitive Challenge

The long-term promise of the PRC’s growth may be considerable, as discussed in the following sections. But in recent years, many Asian economies are experiencing direct challenges to their export

17 Chaebol agreeing to divest their nonfinancial business within 2 years are allowed to hold voting rights of up to 10% in a bank, while for the chaebol not signing such an agreement voting rights cannot exceed 4% even if they hold a large stake. This may be an indication that Korea could follow the BHC approach.

New Challenges Confronting Postcrisis Asia

competitiveness. It is indeed true that some countries’ fears are not unfounded. In particular, the view can strongly be supported that the main Association of Southeast Asian Nation (ASEAN) economies have been exposed to increasing competition from the PRC in both the US and Japanese markets. Further, their reduced competitiveness in terms of market displacement or eroded market share vis-à-vis the PRC appears to be concentrated in strategically important and hitherto more specialized product categories in terms of the revealed comparative advantage (RCA) index. The pattern of loss of competitiveness shows broad similarity for both the US and Japanese markets (Weiss and Gao 2002).

There is evidence of increased competition from the PRC at both the labor-intensive and the technology-intensive ends of the product scale, although within a given trade category, technological sophistication appears generally to be offering some protection to ASEAN exporters. The only product category for which there is no evidence of systematic loss of competitiveness is automobile products, but this is relatively small in value terms. In no product category is there any evidence of systematic gains relative to the PRC, although for a few countries and categories we find that, at lower levels of specialization, there is a gain of competitiveness vis-à-vis the PRC, while there are losses at higher levels.

For the large categories of electronics and electricals and engineering (which combined account for two thirds of ASEAN exports to the US and 40% to Japan), there is a consistent pattern of loss of competitiveness, which is larger in more specialized products (i.e., higher RCA). For the other important categories of primary products, resource-based manufactures and textiles and garments, all ASEAN countries show significant losses in either the US or Japan.

However, it must be stressed that loss of competitiveness as defined here refers to loss of market share relative to the PRC, not necessarily an absolute decline in exports. Absolute export declines for ASEAN are found for primary products and engineering to the US, and for primary products, resource-based manufactures, and textiles, garments and footwear to Japan. Hence, much of the erosion of market share is in categories whose sales from ASEAN are continuing to expand, principally the large category of electronics. Here, losses of market share are in the product lines where ASEAN is most specialized, eroding established market positions.

This implies the need to consider some future restructuring along the lines of higher skill formation and technological upgrading, but it is not an immediate crisis in terms of declining absolute export sales. Also, some of the gains by the PRC in this category are misleading in that they are supported by its imports of assembled parts and components, some of which are ASEAN exports to the PRC. This emerging regional division of labor as yet has had only a modest impact in compensating ASEAN economies’ loss of export market share. Weiss and Gao (2002) estimate in the aggregate a net export gain in sales to the PRC to be less than 20% of the combined value of the loss of market share in the US and Japan over 1990–2000. In terms of parts and components exports to the PRC, it appears that Malaysia and Thailand are the economies where the strongest signs of this compensating effect have begun to emerge.

2. Growth, Market Opening, and Trade Triangle

Despite the trend signaling that ASEAN economies have been exposed to increasing competition from the PRC, we argue that PRC’s emergence provides more opportunities than threats to East and Southeast Asia.

Using a sophisticated global forecasting model (ADB Institute Global Model), we forecast the composition of regional growth and trade to 2020.19

19 These results are reported in greater detail in Roland-Holst (2002). The global forecasting model used (Global General Equilibrium Model) examines the emergence of the PRC and the East and Southeast Asian trade pattern to 2020. This model contains 18 countries/regions and 18 sectors. The Global Trade Analysis Project (GTAP) database is used.
We find that, among other aspects, the PRC’s imports and exports will exceed those of any nation including Japan in East and Southeast Asia by 2010. Second, we predict the emergence of a trade triangle that will leverage regional exports via the PRC’s expanding exports and induced domestic growth. This result leads to the most important inference from our new paradigm, that the PRC’s expansion may represent a challenge to traditional regional exporters, but that it also represents unprecedented opportunities for new export expansion.

Contrary to the view that the PRC’s exports will stifle competitiveness and growth among its neighbors, we find that its expansion, particularly when accelerated by its WTO accession, will represent a windfall opportunity for regional exporters. Indeed, while the PRC will become the region’s largest exporter only in 2010 (Figure 1), it will be the largest East Asian importer by 2005 (Figure 2).

The model’s results indicate the emergence of an important secondary growth phenomenon. Over the
next two decades, the PRC will develop a large and sustained trade surplus with Western OECD economies, but a nearly equal and sustained deficit with East Asia (Table 4). The emergent picture is one of a ‘Trade Triangle’ encompassing the PRC, the rest of East and Southeast Asia, and US, European Union (EU) and the rest of the world (ROW). While PRC exports expand dramatically to non-Asian regions, especially the Western OECD economies, exports from the rest of East and Southeast Asia to the PRC will increase sharply to meet the latter’s expanding capacity to produce as well as its growing absorption. Looked at in this way, it is apparent that the export growth potential represented by PRC competitiveness will ultimately induce significant growth and export expansion for the region as a whole. The incidence of this induced export growth will of course depend upon the ability of individual regional economies to identify and capture opportunities in the expanding PRC market.

In this sense, the PRC poses not a threat but an opportunity to its neighbors. This opportunity comes in the form of a challenge to reorient production and marketing capacity to a new market of unprecedented potential. Japan and other dynamic Asian exporters have met this challenge before in Western markets, and the stakes are high enough in the present context to justify a second effort. These results reveal the mercantilist fallacy of the “PRC as threat” argument. Our results further indicate that the spillover effects of PRC growth and trade expansion will far outweigh any trade diversion effects for the rest of East and Southeast Asia. On a more detailed level, our results also indicate that sectoral trade patterns in the triangle are consistent with established comparative advantages of the regional economies, but with the caveat that most trade growth is in intermediate goods. This kind of intraindustry trade, where commodities are destined to be incorporated into production processes rather than final demand, is discussed in more detail below in Section C.3. As a byproduct of rapidly growing multilateral supply chains, however, it is one of the most salient emerging characteristics of trade in East and Southeast Asia. Trade in intermediates also tends to be more “eye-to-eye” in value added and resource content, implying more comparable technologies and skills levels between trade partners (like EU trade) rather than greater specialization.

In terms of specialized trade patterns, we forecast an expansion of the PRC’s regional imports in resource-intensive commodities (especially food and energy) and high technology, high skills goods from Japan and Korea. The PRC’s domestic growth rate exceeds its primary resource capacity, so the former kind of import dependence can only grow over time. In high-tech and capital goods, the PRC is certainly expanding domestic capacity, but here again its domestic absorption needs will exceed this, and the most advanced OECD countries are very established global competitors in these sectors.

It may also be worth noting that the PRC is forecast to be Japan’s largest bilateral trading partner by 2020—in terms of both exports and imports. Therefore,

### Table 4. Projected Bilateral Trade Balances
(year 2020 in 1997 $ billion)

<table>
<thead>
<tr>
<th>Importer</th>
<th>PRC</th>
<th>Japan</th>
<th>NIE</th>
<th>ASEAN</th>
<th>US</th>
<th>EU</th>
<th>ROW</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>PRC</td>
<td>0</td>
<td>-5</td>
<td>-135</td>
<td>-41</td>
<td>166</td>
<td>66</td>
<td>71</td>
<td>122</td>
</tr>
<tr>
<td>Japan</td>
<td>5</td>
<td>0</td>
<td>39</td>
<td>20</td>
<td>23</td>
<td>-15</td>
<td>-50</td>
<td>21</td>
</tr>
<tr>
<td>NIE</td>
<td>135</td>
<td>-39</td>
<td>0</td>
<td>19</td>
<td>-32</td>
<td>-32</td>
<td>-12</td>
<td>40</td>
</tr>
<tr>
<td>ASEAN</td>
<td>41</td>
<td>-20</td>
<td>-19</td>
<td>0</td>
<td>18</td>
<td>8</td>
<td>12</td>
<td>41</td>
</tr>
<tr>
<td>US</td>
<td>-166</td>
<td>-23</td>
<td>32</td>
<td>-18</td>
<td>0</td>
<td>48</td>
<td>-40</td>
<td>-168</td>
</tr>
<tr>
<td>EU</td>
<td>-66</td>
<td>15</td>
<td>32</td>
<td>-8</td>
<td>-48</td>
<td>0</td>
<td>34</td>
<td>-41</td>
</tr>
<tr>
<td>ROW</td>
<td>-71</td>
<td>50</td>
<td>12</td>
<td>-12</td>
<td>40</td>
<td>-34</td>
<td>0</td>
<td>-16</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>-122</strong></td>
<td><strong>-21</strong></td>
<td><strong>-40</strong></td>
<td><strong>-41</strong></td>
<td><strong>168</strong></td>
<td><strong>41</strong></td>
<td><strong>16</strong></td>
<td><strong>0</strong></td>
</tr>
</tbody>
</table>

the policy conclusions on regional free trade agreements in Chapter 4 are of special relevance to Japan.

Last, it should be observed that the trade triangle has implications for financial flows. Although there is not necessarily a link between the regional components of current and capital account balances, the aggregate and constituent balances we have identified in the triangle (Table 4) are likely to have significant implications for regional capital markets.

3. Global Supply Networks, Intraindustry Trade, and Multilateral Trade Hierarchy

The traditional view of international trade focuses on trade in final goods and resources. This perspective reinforces rather outmoded ideas of highly differentiated national comparative advantage and trade specialization. One of the hallmarks of today’s globalization, however, has been the proliferation of trade in intermediate goods, a trend accompanied by the decomposition of supply chains across extensive multilateral trade networks. These global supply networks have increased the intraindustry component of trade dramatically, reducing the degree of national specialization and propagating a finely partitioned trade hierarchy around economically dynamic regions such as East and Southeast Asia.20 This trend represents yet another new paradigm for understanding regional and global trade, changing the course of international comparative advantage, specialization, and economic development in ways unforeseen a generation ago.

As the global economic regime shifted from postcolonial bilateralism to multilateralism, one of the most dramatic events has been the expansion of global networks by multinational companies (MNCs) and other private agencies. A more open multilateral trading environment appears to be especially congenial to propagating global supply networks, where private parties diversify their economic ties across complex webs of ownership, contracts, and general factor and product market-seeking activities. The result is a remarkably diffuse mosaic of economic activity, coexisting with and often transcending official networks of bilateral and multilateral diplomacy and trade negotiation.

In the East and Southeast Asian region, supply chains have proliferated to an extent and at a rate unimagined decades ago. The role of foreign direct investment (FDI) in this process has been essential. FDI behavior has exerted a decisive influence on patterns of regional production and trade. An important implication of the resulting decomposition of supply chains is that the global network of value creation and income linkages is much more extensive and complex than would be suggested by bilateral trade statistics alone. For this reason, the significance of existing multilateral ties, as well as the gains from more liberal future trade, may be seriously underestimated.

In this subsection, we discuss the phenomena of such global networks and supply chain decomposition generally, and then use detailed international data to assess their empirical significance. The results indicate that complex indirect linkages in these trading systems, largely mediated by intermediate supply and intraindustry trade, can often represent the majority of value creation.

a. An Overview of Global Supply Networks

The world trading system has steadily expanded the basis for an international division of labor that is unprecedented in both scope and depth. While trade has always been remarkable for its ability to move resources and resource services over great distances, today’s supply chains and networks of ownership and contracts...

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20 Intraindustry trade is defined as import and export flows in the same or similar product categories. When examining even relatively detailed trade statistics, it is apparent that countries can be importers and exporters of very similar products simultaneously. The two main reasons for intraindustry trade are product variety in final goods and component trade in intermediate goods. The latter, which can be labeled as “vertical” intraindustry trade, as against “horizontal” intraindustry trade in final goods such as automobiles, are the main focus of our interest, as these animate the majority of international supply chain linkages.
are beyond the most vivid imaginings of Levantine traders of centuries past. The changes that have taken place are the result of a combination of public and private forces, working in parallel and often (but not always) in concert to expand and deepen global trade linkages. In this section, we summarize some of the mechanisms that are at work, with particular reference to East and Southeast Asia.

Two of the most compelling aspects of this new, private multilateralism are its spontaneity and (de facto) collaborative nature. Historically, economic policy in general and trade policy in particular was closely circumscribed by official institutions representing abstract notions of national interest. Like many forms of regulation, the relatively simplistic agendas of national trade policy do not mesh well with complex and often conflicting incentives/signals that permeate today’s international commerce. But the risks of commerce always carry the prospect of reward and, for every reticent trade negotiator, there may be hundreds of firms eager to establish a lucrative foreign partnership or open a new market.21

It should be emphasized that much FDI is often doubly targeted, at both an internal and external market. Every investor in export capacity knows that there is, or may some day be, a local market for the same product.22 By converse logic, investors in the local market are often mindful of the existence or emergence of neighboring markets that can provide later opportunities or even a marketing hedge for excess local supply. Just as Mexico used North American Free Trade Agreement (NAFTA) access to the US market to enhance its attractiveness as an FDI destination, so might low-income ASEAN attract FDI to produce exports for Japan, the PRC, and other economies in the region.

These kind of intercountry comparisons lead to relatively complex and strategic decisions for foreign investors, and a continuing process of supply chain decomposition, distributing intermediate linkages across many economies. Obviously, the incentive to do this is economic, reflecting a complex mix of cost advantages and market access motives.

As we argue below, supply chains are spreading rapidly in East and Southeast Asia. Additional commitments by regional governments to facilitate this, by a combination of rule making and infrastructure investments, will accelerate the process.

Accompanying direct allocation of capital along these supply chains are two elements that can have an essential influence on local economic development, value added, and accumulation of intermediate production capacity, including in particular capital goods and technology.23 More sustained FDI benefits, for example, can arise from capital inflows associated with production activities that upgrade domestic technology and, especially, promote local skills development and intermediate linkages. Many of the most successful FDI stories in the region include all these components.24

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21 The resulting "invisible handshakes" ultimately serve national interest by transcending it, reaching beyond the short-term perspective of (e.g.) domestic protection to broaden the basis for economic activity globally and take a (national) material interest in the resulting economic growth.

22 Foreign investors in the PRC export industries are well aware of the dynamism of this country’s domestic market, and are likely seeking a first mover advantage in terms of local market presence, even if their first beachhead is in an export zone. Indeed, the implicit opportunity presented by its emergent internal economy has given the PRC an edge over many smaller or slower growing developing countries in the global FDI “beauty contest.”

23 Consider an example of one multinational firm, although in most cases the process being described applies to a mosaic of independent or partially cross-controlled firms. Allocating capital across a distributed supply chain confers different components of the cumulative production process upon different locations. With this allocation come two hierarchies, one of pecuniary value added (i.e., the margin between cost of components and value of deliverables) and one of capital/technology. Each of these represents an important local benefit of FDI, one direct and the other indirect. The former is easier to measure, but the latter can make a more decisive impact on long-term development.

24 As intensively discussed in Chapter 1, technology assimilation has been an essential primer for growth in the dynamic Asian economies. The success of individual FDI experiences can significantly be measured by the recipient’s progress from simple accumulation of foreign capital and technology to its assimilation. The distinction is an essential one, because it measures the extent to which benefits of modernization can be internalized and put to the task of promoting autonomous domestic growth and innovation.
b. Global Supply Networks and Multilateral Value Creation: A Multiplier Analysis

Global supply chains act through international trade, but bilateral trade statistics tell only part of their story of value creation. In the international economy, a myriad of interactions delineates the path from initial expenditure to ultimate incomes. This is particularly the case with trade in an era of globalization, where international supply chains are ever more elaborate and indirect linkages often represent the majority of value creation.

To more fully capture these complex, trade mediated interactions, we developed an international multiplier model.25 Detailed decomposition analysis with this model reveals regional trade interactions at unprecedented levels of detail. To further analyze this issue, we applied two separate methods, block decomposition and path decomposition, and generated detailed estimates of multilateral linkage effects (Roland-Holst 2003a).

To see how these supply chains extend across international multiplier linkages, consider two examples of the path decomposition technique. This approach, first applied in the multiplier context by Defourny and Thorbecke (1984), decomposes a bilateral linkage into all the direct and indirect chains of multilateral expenditure and income links that connect them. Typically, these would include complex supply chain links of intermediate delivery, value added, and even consumption feedbacks. In Tables 5 and 6, we give examples of the chains that link the PRC’s electronics sector to two of its counterparts in neighboring economies, Japan and ASEAN.

Without going too much into technical detail, observe first the so-called global effect. This indicates that a one currency unit (US dollar, for example) increase in demand for PRC electronics will ultimately yield $0.379 for Japan’s electronics sector, as a result of the web of supply chain linkages that connect these two activities. The constituent linkages that make up this connection are many, but we only show the 11 largest here, contributing (last column) 75.4% of the total effect. The most relevant aspect of these links is of course their geographic diversity, linking every one of the five Asian economic regions we consider in the process of regional income generation. Surely, these links testify persuasively to the material advantages of global supply networking and multilateralism generally.

The next example shows links extending from PRC electronics to ASEAN electronics. These are weaker in terms of global effect (0.216), but they appear to be nearly as complex in terms of the mosaic of supply chain links that constitute them. Again, bilateral, trilateral, and even quadrilateral trade linkages are captured in the paths that determine 87.7% of the total effect.

Hence, through decomposition analysis we can reveal detailed regional trade interactions involving multilateral linkage effects (Roland-Holst 2003a). We found that international supply chains in the region are indeed elaborate, and indirect linkages often represent the majority of value creation.

The process of regional supply chain decomposition represents much more than simple capital allocation, however. For a recipient country, FDI inflows represent employment, value-added capture, and a place in the regional and global hierarchy of technology and growth. Moreover, localization of a node in an international supply chain also stimulates intermediate linkages that might not arise form the internal market. These spillovers not only promise longer term endogenous growth benefits, but they help articulate local markets and commercial networks that can serve other purposes, and eventually contribute to development of autonomous local markets. Each big green field FDI development in the region spawned a community of small intermediate suppliers who have since achieved maturity as independent suppliers for domestic and export markets.26

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25 The model is based on the multilateral SAM estimated from the GTAP database.

26 In East and Southeast Asia, this phenomenon is already well established and might be referred to as “Bamboo Capitalism.” In these situations, because of network externalities in local production and finance, complete markets are sprouting from nodes in
Vertical Intraindustry Trade, Trade Hierarchy, and FDI

Recent studies on intraindustry trade (IIT) have brought to light rapid increases in vertical IIT, i.e., intraindustry trade where goods are differentiated by quality. Commodities of the same statistical group but of different quality may be produced using different mixes of factor inputs. Moreover, developed economies may export physical and human capital-intensive products of high quality and import unskilled labor-intensive products of low quality from developing economies. Through this mechanism, an increase in vertical IIT can have a large impact on factor demands and factor prices.

Vertical IIT is more likely to be driven by differences in factor endowments. Consequently, we expect vertical IIT to be more pronounced between developing and developed economies. At the same time, however, developing economies rarely possess the technology to produce commodities that belong to the same statistical categories as the commodities exported by the developed economies, such as telecommunications equipment and advanced office machinery.

Despite the potential importance of this issue and the fact that theory suggests that the determinants of vertical and horizontal IIT (products differentiated by attributes) differ, most previous empirical studies on IIT in East and Southeast Asia have focused on total IIT.

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Table 5. Income Linkages from PRC Electronics to Japanese Electronics

<table>
<thead>
<tr>
<th>Path</th>
<th>Global Effect</th>
<th>Direct Effect</th>
<th>Path Mult</th>
<th>Total Effect</th>
<th>% of Global</th>
<th>Total %</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. PRC-Ele → JPN-Ele</td>
<td>0.379</td>
<td>0.125</td>
<td>1.883</td>
<td>0.236</td>
<td>62.3</td>
<td>62.3</td>
</tr>
<tr>
<td>2. PRC-Ele → KOR-Ele → JPN-Ele</td>
<td>0.003</td>
<td>2.142</td>
<td>0.007</td>
<td>2.0</td>
<td>64.3</td>
<td></td>
</tr>
<tr>
<td>3. PRC-Ele → TAP-Ele → JPN-Ele</td>
<td>0.006</td>
<td>2.128</td>
<td>0.013</td>
<td>3.4</td>
<td>67.7</td>
<td></td>
</tr>
<tr>
<td>4. PRC-Ele → ASEAN-Ele → JPN-Ele</td>
<td>0.009</td>
<td>2.545</td>
<td>0.023</td>
<td>6.2</td>
<td>73.9</td>
<td></td>
</tr>
<tr>
<td>5. PRC-Ele → PRC-OME → JPN-OME → JPN-Ele</td>
<td>0.000</td>
<td>3.640</td>
<td>0.001</td>
<td>0.2</td>
<td>74.1</td>
<td></td>
</tr>
<tr>
<td>6. PRC-Ele → KOR-Ele → ASEAN-Ele → JPN-Ele</td>
<td>0.000</td>
<td>2.884</td>
<td>0.001</td>
<td>0.2</td>
<td>74.3</td>
<td></td>
</tr>
<tr>
<td>7. PRC-Ele → TAP-Ele → KOR-Ele → JPN-Ele</td>
<td>0.000</td>
<td>2.418</td>
<td>0.000</td>
<td>0.1</td>
<td>74.3</td>
<td></td>
</tr>
<tr>
<td>8. PRC-Ele → TAP-Ele → ASEAN-Ele → JPN-Ele</td>
<td>0.001</td>
<td>2.859</td>
<td>0.002</td>
<td>0.5</td>
<td>74.9</td>
<td></td>
</tr>
<tr>
<td>9. PRC-Ele → ASEAN-Ele → KOR-Ele → JPN-Ele</td>
<td>0.000</td>
<td>2.884</td>
<td>0.001</td>
<td>0.2</td>
<td>75.1</td>
<td></td>
</tr>
<tr>
<td>10. PRC-Ele → TAP-Ele → ASEAN-Ele → JPN-Ele</td>
<td>0.000</td>
<td>2.859</td>
<td>0.001</td>
<td>0.2</td>
<td>75.3</td>
<td></td>
</tr>
<tr>
<td>11. PRC-Ele → ASEAN-Ele → ASEAN-OME → JPN-OME → JPN-Ele</td>
<td>0.000</td>
<td>3.876</td>
<td>0.000</td>
<td>0.1</td>
<td>75.4</td>
<td></td>
</tr>
</tbody>
</table>


Table 6. Income Linkages from PRC Electronics to ASEAN Electronics

<table>
<thead>
<tr>
<th>Path</th>
<th>Global Effect</th>
<th>Direct Effect</th>
<th>Path Mult</th>
<th>Total Effect</th>
<th>% of Global</th>
<th>Total %</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. PRC-Ele → ASEAN-Ele</td>
<td>0.216</td>
<td>0.097</td>
<td>1.617</td>
<td>0.157</td>
<td>72.8</td>
<td>72.8</td>
</tr>
<tr>
<td>2. PRC-Ele → JPN-Ele → ASEAN-Ele</td>
<td>0.005</td>
<td>2.546</td>
<td>0.013</td>
<td>5.9</td>
<td>78.7</td>
<td></td>
</tr>
<tr>
<td>3. PRC-Ele → KOR-Ele → ASEAN-Ele</td>
<td>0.002</td>
<td>1.839</td>
<td>0.004</td>
<td>1.8</td>
<td>80.6</td>
<td></td>
</tr>
<tr>
<td>4. PRC-Ele → TAP-Ele → ASEAN-Ele</td>
<td>0.008</td>
<td>1.824</td>
<td>0.014</td>
<td>6.4</td>
<td>87.0</td>
<td></td>
</tr>
<tr>
<td>5. PRC-Ele → JPN-Ele → TAP-Ele → ASEAN-Ele</td>
<td>0.000</td>
<td>2.860</td>
<td>0.000</td>
<td>0.2</td>
<td>87.2</td>
<td></td>
</tr>
<tr>
<td>6. PRC-Ele → KOR-Ele → JPN-Ele → ASEAN-Ele</td>
<td>0.000</td>
<td>2.885</td>
<td>0.000</td>
<td>0.2</td>
<td>87.4</td>
<td></td>
</tr>
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<td>7. PRC-Ele → TAP-Ele → JPN-Ele → ASEAN-Ele</td>
<td>0.000</td>
<td>2.860</td>
<td>0.001</td>
<td>0.3</td>
<td>87.7</td>
<td></td>
</tr>
</tbody>
</table>

without distinguishing between vertical and horizontal IIT. We review vertical and horizontal Asian IIT and compare it with trade patterns in other regions, particularly the EU. In a more detailed paper (Fukao et al. 2002), we also construct a theoretical model to understand the relationship between vertical IIT and FDI. Based on this model, we conducted an econometric analysis to determine what country-specific factors explain the size of vertical IIT. We also undertook econometric analysis with detailed (HS-9) statistics on Japan’s electrical machinery trade. It is assumed that if relative export/import unit value of a traded product ranges between 0.8 and 1.25, such trade is identified as horizontal IIT, whereas if this unit value ratio lies outside 0.8 or 1.25, it is identified as vertical IIT.

In the last two decades, the countries of East and Southeast Asia experienced rapid economic growth based on trade expansion. In the 1980s and 1990s, dependence on international trade increased rapidly for the ASEAN4, PRC, and Hong Kong, China. Compared with this, the ratio has not increased substantially for the EU or the Southern Common Market (MERCOSUR). The East and Southeast Asian countries increased not only their exports of labor-intensive products, such as apparel and leather products, but also of technology-intensive products, such as electrical machinery and telecommunications equipment. The PRC’s share is rapidly catching up with Japan’s in many high-tech product categories such as telecommunications hardware and office machines.

In the case of technology-intensive products, we observe very active IIT among the East and Southeast Asian countries. In 1999, Japan exported ¥272.4 billion worth of telecommunications equipment and parts (SITC R3 #764) to the PRC and Hong Kong, China and imported ¥221.8 billion worth of the same products from these two economies. Similarly, in the case of television receivers (SITC R3 #761), Japan exported to and imported from the PRC and Hong Kong, China ¥37.5 billion and ¥39.5 billion worth of merchandise, respectively, in 1999.

The FDI/GDP ratio in East and Southeast Asia is high compared with the EU, Latin America, or North America. As discussed in Chapter 1, FDI in this region also tends to be export-oriented. Further, affiliates in East and Southeast Asia are more export oriented than affiliates in other regions. The export-bias and accelerating development effects of FDI are also evident for the PRC.27

Asian export-led growth depended not only on intraregional trade, but also on trade with other regions. For example, compared with the EU countries, which depend more on the regional market, Asian countries depend on the US and EU markets. In this context, East and Southeast Asia is a major supplier of information technology (IT) products for the world market, not simply its own region.

EU and Asian intraregional trade patterns also show that the share of IIT and the Grubel-Lloyd index are much higher in the EU, while the share of IIT in East Asia is still low. However, the share of vertical IIT in East and Southeast Asia has increased substantially from 16.6% to 23.7% of total intra-Asian trade during 1996–2000,28 while the vertical IIT share of EU increased gradually from 37.5% to 40.0% of total intra-EU trade during the same period. In East Asia, the shares for electrical machinery and general and precision machinery are high, while the shares of transportation machinery and chemical products are still low compared with the EU. These differences and the fact that the IIT

27 In industries that experienced export-led growth, e.g., garments, leather, and electric and telecommunications equipment, the share of foreign affiliates in value added is very high. It is apparent that the PRC’s remarkable export-led growth has been facilitated by foreign firms, accounting for about half of the PRC’s total exports in 2000.

28 East Asia includes the PRC, the ASEAN4 (Indonesia, Malaysia, Philippines, and Thailand), the NIE3 (Hong Kong, China; Korea; Singapore), and Japan. We will use the EU as a benchmark case for our analysis of East and Southeast Asia. In the latter region, there exist much higher barriers against intraregional trade and FDI than in the EU, and these are likely to reduce IIT within Asia. On the other hand, there is a huge income gap among countries in this region. Probably this gap enhances vertical IIT because of the differences in labor costs and other factor prices. At the same time, this gap is likely to reduce horizontal IIT because of the differences in industrial structure and preferences (Helpman and Krugman 1985).
shares are high in the EU trade in transportation machinery and chemical products seem to imply that IIT has contribute to the increase in trade volumes in both regions.

A major part of vertical IIT may be conducted by multinational enterprises in the context of the international division of labor. In East and Southeast Asia, efficiency-seeking and export-oriented FDI (mainly from Japan and the US) have increased rapidly over the last decade. As a result, one scenario for the future would be a more active vertical IIT between the region and Japan and the US.

4. Technological Emergence in the PRC and India: Information Technology

When searching for new paradigms that will define the future course of trade and development in East and Southeast Asia, special attention must be given to the IT industry. Not only does this sector embody human aspiration for technological progress, but it is seen by most observers as the most important and dynamic emerging sector in international trade. The IT sector is known for high absolute real growth, high value added, and a whole constellation of positive growth externalities including technology transfer and spillovers, rapid skills acquisition, and accelerated direct and induced innovation rates. For this reason, IT is expected to play a decisive role in East and Southeast Asian development.

The ADB Institute’s comparative study revealed a contrasting development path of IT software industries between the PRC and India, summarized as follows (see Tschang and Xue 2003; Tschang, Amsden, and Sadagopan 2003). First, India has been outsourced by multinational corporations (particularly from the US) in the case of IT-enabled services and software. In contrast, the PRC’s software sector has been rapidly developing because of high growth of its domestic demand for personal computers. Second, India’s competitive advantage in the software industry rests on its relatively low labor cost, as well as a large quantity and high quality of professionals. But, the PRC suffers a shortage of experienced software professionals and also outward migration of graduates to the US. Third, while the development of the Indian software industry is essentially market-driven and helped by the Indian Government’s provision of education and infrastructure, a large proportion of PRC software firms have origins in universities and government-supported institutions. Fourth, the Indian software industry is highly concentrated, with the top 25 firms accounting for two thirds of its total software export services, reflecting its development over the past two decades. In contrast, in the PRC, the software industry consists of many small firms due to its early stage of development.

Both India’s and the PRC’s software industries have important implications for each other’s growth, and for other countries in the region. India is particularly concerned with the PRC’s potential emergence as a competitor, as well as opportunities in the PRC market for Indian software services companies. The PRC on the other hand is concerned with whether it can catch up with India in capability, while following its own development path.

Previous studies of the Indian software industry illustrate its origins (Evans 1995, Heeks 1996). Recent evidence has gone further in illuminating the offshore services model for outsourcing (Arora et al. 2001). The PRC demonstrates a different but equally valid strategy, which a country with a large domestic market can undertake. The PRC market has been able to act as a pull on the software sector by its boom in private and business demand for personal computers (and the associated software), as well as the need of a manufacturing sector for intermediates such as software.

The ADB Institute study on India’s software industry shows how the new international division of labor has occurred between the developed markets (especially the US) and India. Table 7 shows that India has focused on expanding its technical and organizational capabilities for export services. While this is not to say that India was not capable of making products, only one Indian firm was found to be highly successful at this, which highlights the difficult nature of entering the market for international products and high-end software services.
In contrast, the PRC’s software industry has developed a fairly strong focus on products for the domestic market, which highlights a very different growth path at work—one focused on the domestic growth engine. At the same time, the PRC is also capable of moving into software services, although it remains some distance behind India, which has certain advantages such as its English language capability and expertise in software processing (equivalent to process manufacturing on the hardware side).

The relative composition and growth of PRC and Indian software industries are shown in Table 8. The PRC software industry appears to be moving forward on many fronts. The software industry already accounts for a fairly large proportion of the overall computer industry, as shown in the table, but only a small proportion of the country’s GDP.

Generally speaking, the PRC clearly has advantages in its large, growing domestic market and its hardware manufacturers, while India has superior software service capability, based on a strong process advantage at the individual and organizational levels. In the future, the PRC’s dynamic domestic market may provide a decisive advantage for sustained industry development. Indeed this inference is supported by the presence of Indian firms aggressively trying to establish a marketing presence in the PRC.

### Table 7. Main Foci of Indian and PRC Software Industries

<table>
<thead>
<tr>
<th>Producing Services</th>
<th>Domestic Market</th>
<th>Export Market</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Producing Services</strong></td>
<td><strong>PRC</strong></td>
<td><strong>India</strong></td>
</tr>
<tr>
<td>Domestic Market</td>
<td>Rudimentary types of software services</td>
<td>—</td>
</tr>
<tr>
<td>Export Market</td>
<td>Beginning to develop this</td>
<td>Main strength</td>
</tr>
<tr>
<td><strong>Producing Products</strong></td>
<td><strong>PRC</strong></td>
<td><strong>India</strong></td>
</tr>
<tr>
<td>Domestic Market</td>
<td>Main strength</td>
<td>Can do it technically, but few very successful</td>
</tr>
<tr>
<td>Export Market</td>
<td>None</td>
<td>Only one successful case</td>
</tr>
</tbody>
</table>

### Table 8. Output of Software Sector and Computer Industry ($)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall Software</td>
<td>8.2 billion</td>
<td>9.9 billion</td>
<td>7.4 billion</td>
<td>—</td>
</tr>
<tr>
<td>~Software Exports</td>
<td>6.2 billion</td>
<td>7.7 billion</td>
<td>0.4 billion</td>
<td>0.8 billion</td>
</tr>
<tr>
<td>~Domestic Software</td>
<td>2.0 billion</td>
<td>2.2 billion</td>
<td>7 billion (~3 bill in domestic products)</td>
<td>(~3.6 bill in domestic products)</td>
</tr>
<tr>
<td>Overall IT Industry</td>
<td>12.1 billion</td>
<td>13.6 billion</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Overall Computer Industry</td>
<td>—</td>
<td>—</td>
<td>26.9 billion</td>
<td>31.3 billion</td>
</tr>
<tr>
<td>Growth Rate</td>
<td>65% (software and services)</td>
<td>29% (software and services)</td>
<td>25% (overall computer industry, 1999-2000)</td>
<td>15% (overall computer industry)</td>
</tr>
<tr>
<td></td>
<td>34% (software sector)</td>
<td>34% (software sector)</td>
<td>23.9% (software sector)</td>
<td></td>
</tr>
</tbody>
</table>

**Sources:**

$a$ NASSCOM, India.

$b$ China Software Industry Association.

$c$ Based on CCID Consulting data.
References


Appendix

In this Appendix, we describe the debate on global convergence of finance and corporate governance models. In an extensive representation, the literature has contrasted two systems of corporate governance: the Anglo-American market-based (MB) system and the long-term large investor models of, say, Germany and Japan, often referred to also as bank-based (BB).

In the 1960s, based on his “transactional” view of finance—whereby transaction costs will be minimized by multilateral markets, something that bank intermediation cannot intrinsically achieve—Raymond W. Goldsmith (1966, 1969) proposed that the passage from BB to MB financial systems is basically a “natural evolution.” Thus, as industrial economies grow more affluent, we should observe the deepening of financial markets everywhere together with the weakening in banks’ role.

The evolutionary view was questioned in the 1980s as it lacked deep analytical foundations in economic theory. Theories of financial intermediation moved away from a “transactional” to an “informational/agency” approach, casting doubts on the substitutability between banks and markets. Also, some BB systems in high-performing industrial countries (Germany and Japan) were quite resistant to change. This was all puzzling to the evolutionary view (Mayer 1988), as their economies were perceived to be overtaking the United Kingdom (UK) and the US—the champions of MB systems. Thus, in the 1980s, the German and Japanese long-term investor corporate governance perspectives were seen as strengths relative to the Anglo-American MB short-termist perspective. Thanks to close relationships with banks and other long-term debt and equity holders, corporations in Germany and Japan had a lower cost of capital than their UK and US counterparts (Fukao 1995) and, especially Japanese corporations, had higher investment rates than their US counterparts (Prowse 1990).

But the recovery of high growth in the US in the second half of the 1990s—while Japan suffered a decade of economic recession and Germany went through costly postunification adjustment—promoted Goldsmith’s view once again. The engine behind the new US boom, the “new economy,” was largely intertwined with high reliance on venture capital finance and, ultimately, the stock market that experienced an unprecedented boom, which significantly reduced the cost of capital in the US. In the late 1990s, pundits increasingly pointed out that greater minority shareholder protection was needed across the globe to allow countries to enjoy the faster growth associated with the higher reliance on the Anglo-American type equity financing. While the issue of global convergence in corporate governance models had already surfaced (Balling, Hennessy, and O’Brien 1998), this was the time, by the end of the 1990s, when American corporate governance was hailed as the model for all to follow (Hansmann and Kraakman 2000).

After being lauded just a few years earlier, the Japanese corporate governance model was now stigmatized: its low cost of capital was a sign of excesses leading to overinvestment (Kang and Stulz 2000). At the same time, now hostile takeovers were no longer accused of bringing about short-termist behavior but lauded as an effective way to break up inefficient conglomerates (Shleifer and Vishny 1997). In passing, it should be noted that while Anglo-American corporate governance is praised because of its hostile takeovers, since the early 1990s the market for corporate control in the US has essentially

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29 Japanese corporate governance was praised in the 1980s also because of the long-run nature of relationships between the multiple stakeholders in the corporation, which made greater involvement by employees and suppliers possible, in contrast with the costs of potential “breaches of trust” following hostile takeovers in the US (Shleifer and Summers 1988).

30 Anglo-American MB corporate governance was accused of obsessing managers with quarterly performance measures and forcing them to take an excessively short-termist perspective. For instance, among others, Porter (1992) argued that US managers are myopically “short-termist” and pay too much attention to potential takeover threats. On the contrary, in the corporate governance setup at German and Japanese corporations, the long-term involvement of investors, especially banks, allowed managers to invest for the long run while, at the same time, monitoring their performance.
collapsed. A wave of anti-takeover laws and charter amendments is now protecting most US corporations against hostile takeovers, with their control being no longer contestable.

The idea that all countries should converge to the Anglo-American corporate governance model has lost momentum, as the US model experienced its own debacle with the massive overinvestment in the technology sector and with its major bankruptcies and corporate governance scandals. The low cost of equity capital—lost by Japan after its 1990 stock market crash—was gained by the US throughout the unprecedented bull market. Many saw this as resulting from superior minority shareholder protections (see La Porta et al. 1998). But now, with the benefit of hindsight, it seems that the low cost of equity capital in the US in the late 1990s had more to do with the technology bubble than with minority shareholder protection, just as the low cost of capital in Japan in the late 1980s depended more on the real estate bubble than on Japanese corporate governance (Bolton, Becht, and Röell 2002). Also, it is clear that corporate governance problems were at the origin of the mega bankruptcies of Enron and Worldcom, companies that looked like exemplary “Anglo-American” corporations. Moreover, as stock prices fell, it became clear that executive remuneration (compensation) at US corporations was increasingly out of line with corporate reality and also the effectiveness of outside directors was heavily questioned (for a critical note on the role of outside directors see, e.g., Klein 1998). It was discovered that pervasive conflicts of interest at financial and accounting firms produced major distortions in the information offered to investors. Thus, although the global corporate governance reform movement is still pressing ahead, its chosen direction may not be the US model, which is itself on the mend.
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Appendix 1
Appendix 2
Chapter 4

New Paradigms

A. Designing a More Balanced Financial Market Structure for Postcrisis Asia

Given that Asia’s capital markets are immature, the banking sector holds an important role as a major financier to the region’s firms. Commercial banks in some countries in the region have also played an important role in the bond markets (even though the markets are still underdeveloped) as issuers, underwriters, investors, and guarantors. It is argued in this section that banks should be further encouraged to foster corporate bond market development. Further, the equity market could help improve the management of the banking sector by strengthening the board of directors systems of banks and hence their governance. Such a financial landscape can be characterized as an “intermediate financial market structure,” which lies somewhere between a bank-dominated financial structure and a full-fledged capital market-based financial structure. In this intermediate financial market structure, priority should be placed more than ever on strengthening the banking sector. In this section, we outline the necessary steps to fulfill this objective.

1. Background

In recent years, the financial structure of firms has become one of the central issues in emerging market and developing economies. This reflects a growing recognition that the Asian crisis was preceded by massive, unhedged, short-term capital inflows. Prior to the crisis, such inflows aggravated double mismatches (a currency mismatch coupled with a maturity mismatch) and thus affected the soundness of the domestic financial sector. A maturity mismatch is generally inherent in the banking sector, since commercial banks accept short-term deposits and convert them into longer-term, often illiquid, assets. Nevertheless, massive, predominantly short-term capital inflows shortened banks’ liabilities, thereby expanding the maturity mismatch. Further, the currency mismatch was aggravated, since massive capital inflows denominated in foreign currency were converted into domestic currency to finance the cyclical upturn of domestic investment in the 1990s (Yoshitomi and Shirai 2000).

Since the Asian crisis, a strong and increasingly prevalent view has emerged that the heavy dependence on a poorly functioning banking system was an important source of the Asian crisis. This view concludes that Asian countries should develop domestic capital (bond and equity) markets as alternative sources
for financing for firms. In general, bank loans are more flexible and discretionary than bonds, so renegotiation of loan contracts, earlier repayments, and provision of loans to financially distressed firms are more feasible for the former than the latter. However, the main advantage of developing long-term domestic capital markets is that it helps mitigate double mismatches. Bank loans have limits to maturity transformation from short-term liabilities to long-term assets because banks’ liabilities (or deposits) are inherently short-term and liquid. Moreover, the development of capital markets promotes efficient financial resource allocation by fostering pricing mechanisms. Further, equity markets provide alternative tools for corporate governance and support a venture capital industry by permitting venture capitalists to exit through an initial public offering (IPO). Nevertheless, corporate bond markets remain largely underdeveloped in Asia because of the small size of issues, relatively short maturities, and illiquidity in the secondary markets. Equity markets, while tending to flourish as compared with bond markets, fail to provide stable financing sources partly because of the lack of adequate informational, legal, and judicial infrastructures.

This section, therefore, stresses the importance of the banking sector as a major financier to firms in Asia given the immature state of the capital markets. At the same time, however, it recognizes the fact that commercial banks are already starting to play an important role in the bond markets as issuers, underwriters, investors, and guarantors in Asia. Thus, banks should be encouraged to foster corporate bond market development and pursue a complementary role. Moreover, the equity market could help improve the management of the banking sector by strengthening the board of directors systems of banks and, hence, their governance. Such a financial landscape can be characterized as an “intermediate financial market structure,” which lies somewhere between a bank-dominated financial structure and a full-fledged capital market-based financial structure.

This section consists of four subsections. Subsection 2 reviews three-stage problems that arise between firms and financiers (creditors and investors), while subsection 3 examines how each financial system (banking system, bond market, and equity market) deals with these problems. Subsection 4 characterizes the financial landscape suitable for Asia as an “intermediate financial market structure” and discusses necessary regulatory frameworks.

2. Three-Stage Problems Arising Between Firms and Financiers

To develop sound capital markets, it is crucial to understand the nature of each financing system (banking system, bond market, and equity market), as each offers different ways to solve problems arising between firms and financiers and, thus, requires different informational, legal, and judicial infrastructures. This section begins by examining the question of who bears the various risks associated with financing firms (i.e., credit and default risks), and subsequently, examining the problems that emerge between firms and financiers.

a. Major Players in the Respective Financial Systems

In the case of bank finance, the ultimate creditors are depositors who make an investment in the form of deposits with commercial banks (Table 1).

However, it is not the depositors but the banks that directly bear the credit (and default) risks associated with lending to borrowing firms. Depositors do not have incentives to monitor banks’ management and remain passive as long as they obtain fixed interest payments. Depositors are protected by the deposit insurance system. Therefore, banks as credit risks bearers have to find ways to minimize such risks (Table 2).

By contrast, the ultimate risk bearers are public investors in the case of both the bond and the equity markets. Bond investors make their own investment decisions and, thus, have to bear the credit (and default) risks of bond issuers. Similarly, shareholders make their own investment decisions but they bear default risks of equity issuers as well as market risks. Shareholders do not bear credit risk, however, since they obtain...
Table 1. The Role of the Banking Sector in Asia

<table>
<thead>
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<th>Thailand</th>
<th>Indonesia</th>
<th>Korea</th>
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<tr>
<td>Issuers</td>
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<td>Underwriters</td>
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<td>Investors</td>
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<td>Guarantors</td>
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* Refers to cases where the banking sector plays a crucial role.

Table 2. Major Players in the Respective Financial Systems

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<thead>
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<th></th>
<th>Bank Loans</th>
<th>Bond Finance</th>
<th>Equity Finance</th>
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<tbody>
<tr>
<td>Ultimate Creditors</td>
<td>Depositors</td>
<td>Public Investors</td>
<td>Inside and Outside Shareholders</td>
</tr>
<tr>
<td>Risk Bearers</td>
<td>Commercial Banks</td>
<td>Public Investors</td>
<td>Shareholders</td>
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<tr>
<td>Intermediaries</td>
<td>Commercial Banks</td>
<td>Investment Banks</td>
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<td>Risk Rating Agencies</td>
<td>Financial Analyst</td>
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b. Ex-Ante, Interim, and Ex-Post Problems Between Financiers and Firms

Generally speaking, financiers encounter problems at three stages when they provide financial resources to firms: ex-ante (before lending), interim (during lending), and ex-post (in cases of financial distress of borrowers). At the first stage, the problem of “adverse selection” arises.

In the case of bank loans, banks may inadvertently extend loans to firms that offer to pay higher interest rates on loans because of their preference for risky projects. If a higher interest rate attracts riskier firms, as stressed by Stiglitz and Weiss (1981), and raises the average risk of borrowing firms, banks may optimally choose to ration the quantity of loans they offer rather than raise the lending rate to clear the market. As lowering interest rates generates excess demand for credit and, thus, rationing, banks need to obtain credible information about borrowers. Otherwise, banks may not extend credit to firms for fear of provoking deterioration of their balance sheets, thereby giving rise to underinvestment. In the case of capital markets, bond and equity investors who are unsure of the quality of issuers tend to discount the prices of securities and, thus, many firms find it too costly to raise funds for investment, unless additional information is provided. Moreover, to raise funds cheaply (at higher securities prices) corporate managers or inside shareholders may attempt to depict a positive outlook to securities investors who do not have much information about issuers. Knowing this behavior, (outside) investors may discount stock prices, raising the financing cost for high-quality firms and causing underinvestment in them (the so-called Lemon problem).

The presence of adverse selection affects the capital structure (or debt-equity composition) of firms. For example, high-quality firms may increase debt...
compared with low-quality firms to signal that they are in a favorable position, since they know that the latter will not follow them because of higher expected bankruptcy costs for any debt level (Ross 1977). Moreover, firms may increase debt to benefit existing shareholders fully from the projects and, thus, prevent underinvestment (Myers and Majluf 1984). If firms increase equity instead of debt, the projects are likely to be rejected by existing shareholders. This is because outside shareholders would discount stock prices heavily due to lack of knowledge about the quality of the projects and, thus, their net present value would be lower than stock prices, giving rise to a net profit. As a result of the greater allocation of profits to new shareholders, existing shareholders obtain less from the project and so will reject the project.

Problems at the interim stage, generally called “moral hazard,” occur when transferred financial resources are abused by borrowers. In the case of debt finance (bank loans and bond finance), bank borrowers and bond issuers do not honor their commitments to invest in agreed and contracted projects and, thus, do not exercise debt obligation. Without a proper monitoring capability, creditors may not have confidence in obtaining regular principal and interest payments and so may not provide loans to firms to begin with. In the case of the equity market, the problems happen when issuers perform poorly or use the financial resources for unproductive purposes once they have received financing from shareholders, thereby lowering the amount of dividends and expected future earnings (hence lower stock prices). As a result, equity investors may not buy shares to begin with.

The moral hazard problems also cause conflicts of interest between shareholders and debt holders (banks and bond investors). Shareholders wish to invest in high-risk high-return projects and get almost all residual claims when the projects turn out to be successful. However, debt holders will be rewarded only by fixed income. But once the borrower becomes bankrupt, debt holders bear credit risks and lose their principal and interest incomes whereas shareholders are protected by limited liability (Harris and Raviv 1991). As a result, the decline in debt value would lead to a deterioration of the balance sheets of banks or cause capital losses for bond investors, giving rise to the asset substitution effect from debt holders to shareholders. Further, when managers tend to use firms’ assets for unproductive activities, financiers may prefer to increase debt rather than equity to reduce free cash available to managers by requiring regular debt services (Jensen 1986).

The problems at the ex-post stage occur when borrowers get into financial distress. Banks and bond investors may not be able to distinguish between viable, but temporarily illiquid, firms and those that are nonviable. These problems emerge after financed investment projects have been executed and completed. Thus, ex-post monitoring is required to distinguish between viable and nonviable firms, which are in financial distress. If funds are not made available to viable firms in financial distress, they will be forced into liquidation and exit from the market. In this case, liquidation costs are high, probably exceeding the discounted present value of the firms. Due to flexible bank loan contracts with borrowers, this ex-post monitoring can be better performed by banks, whereas explicit contracts will not allow bond holders to be so flexible as banks’ ex-post monitoring. These problems are, however, irrelevant for the case of equity finance, since shareholders lose all the equity invested when firms enter into bankruptcy.

As all of these problems at each stage of monitoring will lead to underinvestment in good projects (or firms) and unnecessary bankruptcy and liquidation costs, it is important to find ways to mitigate them. However, it is difficult to solve such problems because information processing and monitoring costs (so-called “agency costs”) are too high for individual financiers. Information processing costs include not only actual costs of collecting, evaluating, and producing information about borrowers or issuers, but also free-rider problems. These arise when some financiers have an incentive to utilize information that other financiers collect, analyze, and produce about borrowers or issuers by paying a high cost. Consequently, no financier may be willing to spend significant time and money for collecting and analyzing information about borrowers or issuers.
Further, monitoring costs involve not only actual costs associated with ex-ante, interim, and ex-post monitoring, but also the problems arising from incompleteness of contracts. Financiers often find it difficult to write perfect and complete contracts in advance of actual transfer of financial resources. If financiers had been able to write such perfect contracts, they would have discouraged borrowers or issuers from benefiting from their advantageous positions arising from information asymmetry. In practice, however, it is difficult to allow for all contingencies. Borrowers’ and bond issuers’ responsibilities for repayment of loans cannot be spelled out for all possible outcomes. In many cases, contracts have to be tried out by actually going through all contingencies in real business transactions. Therefore, it is costly to attempt to write complex, explicit contracts ex ante (Rajan 1996 and 1997). Even if such contracts can be written, financiers may find it difficult to enforce them in the event of any violation without a well-established court system. High monitoring costs discourage financiers from extending new credit lines to firms. Similarly, shareholders find it difficult to write and enforce contracts with managers due to verification problems.

3. How to Mitigate the Ex-Ante, Interim, and Ex-Post Problems

This section is an overview of how each financial system attempts to cope with these ex-ante, interim, and ex-post problems between firms and financiers.

a. Methods to Reduce Banking Sector Problems

Commercial banks are able to reduce the costs of collecting, analyzing, and processing information by obtaining inside information about borrowers in various ways (Table 3).

First, commercial banks gain access to information about their borrowers by performing repeated transactions (Sharpe 1990). Second, borrowers are more willing to reveal information about their activities to commercial banks than to (bond or equity) investors, especially when information contains confidential or proprietary elements. Third, commercial banks may be able to reduce the costs of collecting and evaluating information regarding the creditworthiness of their borrowers through economies of scale. These

<table>
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<th>Table 3. Different Methods to Reduce Agency Problems</th>
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<tbody>
<tr>
<td><strong>Bank Loans</strong></td>
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<tr>
<td>Processing internal information (idiosyncratic)</td>
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<tr>
<td>Repetitive transactions and long-term relationship (implicit contract)</td>
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<tr>
<td>Monitoring with loan officers and credit analysts and through economies of scale</td>
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<tr>
<td>Providing other services (checking and settlement accounts)</td>
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<td>Reputation</td>
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<td>Collateral</td>
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occur through the fixed cost of hiring professional staff with special expertise in loan evaluation. Fourth, commercial banks provide settlement and checking accounts and other financial services to their borrowers, which gives them an opportunity to keep track of economic activities and cash flow movements of their borrowers (Chemmanur and Fulgheri 1994). Fifth, commercial banks obtain more information from borrowers by gaining reputation as trustworthy financiers and building up trust. Through these various means, commercial banks are able to obtain inside information about borrowers such as their preferences concerning risk and creditworthiness, return streams, and investment opportunities. This information is highly idiosyncratic especially when the severity of information asymmetry is high.

Commercial banks specialize in extracting and processing information about borrowers via close relationships, a feature that is not replicable among individual investors. The banking system attempts to reduce information asymmetry between banks (agents for depositors) and borrowing firms, but does not attempt to reduce the information gap between depositors (principals) and borrowing firms. This makes sense since commercial banks themselves directly bear the risk of extending loans. This idiosyncratic nature of information on borrowers is bound to be reflected in the extreme difficulty in assessing bank credit risks. Therefore, bank loans are not easily marketable, except in the case of reasonably standardized loans such as mortgages, etc. Correspondingly, this difficulty in assessing credit risks of bank loans finds reflection in the difficulty in securitizing banks loans, with the exception of mortgages whose returns and risks are relatively easier to evaluate.

Within the banking system, free-rider problems arise when some creditors are unwilling to pay a high price to utilize information that other creditors collect, analyze, and produce about borrowers. Consequently, no creditors may be willing to spend significant time and money to collect and analyze information about borrowers, resulting in underinvestment and sluggish growth of firms. As one solution, a main bank system, which functioned relatively well in Japan until the early 1980s, can be developed to solve such free-rider problems. It collects and processes information by becoming the major creditor, thus avoiding duplication of efforts. This function can be delegated to a main bank to act as monitor. This situation is in contrast to the case of corporate bonds (Diamond 1984).

In the banking system, the regulatory system limits commercial banks’ excessive risk taking to prevent systemic banking crises. To achieve these goals, banking laws that define the scope and types of financial services granted to banks and entry criteria are necessary. In addition, there are at least five areas that should be carefully considered by regulators to establish an appropriate prudential regulatory framework: (i) adoption of capital adequacy requirements, (ii) a limit on credit concentration and foreign currency exposure, (iii) a smoother debt restructuring process, (iv) adoption of a deposit insurance system, and (v) control of excessive competition.

Imposing minimum capital adequacy requirements may promote prudent management of commercial banks. A higher capital adequacy requirement limits the ability to extend additional loans and, thus, contains interbank competition, which would increase the financial cushion of commercial banks to cope with a volatile economic environment. The capital adequacy requirement also forces banks to reduce reckless lending, thereby mitigating any potential fragility in the banking system. It is also an important way of lowering the credit risk premium, although at the same time, the lower leverage raises the banking operation costs. One of the difficulties in implementing the capital adequacy requirement is that bank behavior tends to be procyclical independently of the regulations in place. The need for such tightening usually becomes manifest only when a recession or some other shock reveals the consequences of poor banking practices (Turner 1999). Given the procyclicality, regulators could tighten the minimum requirement in normal times so that some margins or capital cushions are created for bad times.

Other measures to strengthen the banking system would include a limit on large exposures to a single borrower; a limit on credit concentration in particular
industries; a foreign currency exposure limit for loans; and incorporating various elements of cross-border risks in loan classification and loan-loss provisioning requirements. Those risks include foreign exchange risk (arising from adverse changes in exchange rates), settlement risk (in the settlement of foreign exchange operations due to time zone differences, the existence of different currencies, or different settlement systems), and country risk (associated with the economic, social and political environment of the borrower’s country). Furman and Stiglitz (1998) have emphasized the use of speed limits and direct restrictions on lending to real estate. It is also crucial to monitor commercial banks’ foreign currency-denominated or indexed loans extended to domestic borrowers.

The laws and regulations that protect creditors are generally associated with bankruptcy and reorganization procedures. These include measures to enable creditors to repossess collateral, protect their seniority, and make it harder for firms to seek prompt court protection under reorganization. Bankruptcy laws contain reorganization and liquidation proceedings that facilitate debt restructuring and promote the increased availability of commercial bank loans—by lowering the degree of uncertainty in the event of borrowers’ failure. Reorganization proceedings would allow borrowers to submit restructuring plans and, if accepted by creditors, give them an opportunity for a new start. Under bankruptcy laws, borrowers must submit all their assets to the control of the bankruptcy courts and, thus, cannot use collateral of secured creditors without their approval or a court order. In addition, borrowers are not allowed to engage in transactions outside the ordinary course of business or sell property without a court order.

One way to cope with systemic bank runs and at the same time protect depositors is to introduce a deposit insurance system. This provides assurances to savers and is a source of financial sector stability by reducing the risk of bank runs and the disruptive breakdown of essential banking activities that accompanies such runs (Cull 1998). Such a system also contributes to smoother functioning of the payments system and credit flow mechanisms. The system may also boost depositors’ confidence about the banking system by alleviating uncertainty and, thus, may spur capital mobilization. Therefore, it is crucial to design a deposit insurance system that encourages all parties directly or indirectly affected by the system to keep the financial system sound. To achieve this, the authorities should promptly move to restore the health of problematic commercial banks. If the soundness of these banks continues to deteriorate, they should be closed, merged, or their difficulties resolved. Also, it is impractical to establish a deposit insurance system without effective prudential supervision and regulations.

The structure of the deposit insurance system should be incentive-compatible if membership is compulsory. A compulsory system helps mitigate the problems of adverse selection, where only unsound commercial banks are left in the system. Also, banks’ risk-taking behavior may be mitigated if the coverage is narrow, with only small depositors protected. A coverage limit encourages uncovered large depositors and sophisticated creditors to discipline their banks. On the other hand, the coverage should not be too narrow or it may fail to prevent bank runs when there is financial trouble. Therefore, there needs to be a balance between uncovered large depositors generating a disciplinary effect and protection against bank runs and associated costs caused by uncovered depositors (Financial Stability Forum 2000). Further, the problems of adverse selection can be mitigated if insurance premiums are risk-adjusted for individual banks. As discussed earlier, however, the idiosyncratic nature of information about individual borrowers of bank loans makes it difficult to estimate insurance premiums for individual banks because of the skewed distribution of bank credit risks. The same difficulty applies to the estimation of risk-adjusted capital-asset ratios that are appropriate for individual banks. As discussed earlier, however, the idiosyncratic nature of information about individual borrowers of bank loans makes it difficult to estimate insurance premiums for individual banks because of the skewed distribution of bank credit risks. The same difficulty applies to the estimation of risk-adjusted capital-asset ratios that are appropriate for individual banks. A provision of a lender of last resort facility is also important to limit costly bank runs. However, the prospect of such protection tends to undermine market discipline by making depositors careless as to where they place their money. Thus, regulators need to constrain risk-taking behavior by banks with other measures listed in this section.

When regulators determine entry criteria, they need to ensure that commercial banks have an incentive
to establish relationships with their borrowers. To achieve this, regulators need to strike a balance between allowing banks to maintain profitability (or earn economic rents that offset risks borne in providing various financial services) and preventing them from extracting excessive rents. Without sufficient rents, banks may have no choice but to take risks because they need to fight for their market shares or profit margins. As a result, such risk taking would reduce the value of banks’ future earnings and associated incentives to avoid bankruptcy (Allen and Gale 2000). To maintain sufficient profitability in the banking process, therefore, excessive competition needs to be avoided by granting a relatively small number the right to offer demand deposits and payment services (Rajan 1997).

b. Methods to Reduce Bond Market Problems

Bond finance stands in sharp contrast to bank loans, as the ultimate risk bearers are public investors, who make their own investment decisions and, thus, have to bear the risks of their decisions. Since investors take direct investment risks, information about issuing firms needs to be standardized and transferable so that firms’ characteristics and performances can be easily represented in terms of coupon rates, risk premiums, length of maturity, etc. The availability of standardized information is a crucial element in mitigating asymmetric information between issuing firms and public investors and, hence, in promoting the development of corporate bond markets.

The application of appropriate (and standardized) accounting and auditing rules is a basic condition for promoting credible disclosure and standardization of information about issuing firms. Accounting and auditing standards should be imposed on issuing firms with respect to their earnings performance and debt service capacity for the recent past and the foreseeable future and must be rigorously interpreted and applied. Regulators should require issuing firms to release properly audited financial statements covering the last few years and a qualified and quantified business outlook for the next few years. Also, data on bond prices and quantities should be available in real time through a modern computerized information system prior to the completion of any bond transaction. Without such real-time information, the system might become inefficient and nontransparent. To facilitate trading activity, it may be desirable to adopt a centralized bond information system, since it enables coverage of information on transactions in the stock exchange and over-the-counter (OTC) markets.

The establishment of bankruptcy laws is necessary particularly for corporate bonds, since nongovernment bonds may default. Such laws should clearly define the limit of public investors’ legal ability to force bankrupt issuers to repay their obligations and the procedures for going to that limit (Endo 2000). As a result, public investors are able to rationally assess the risk of investing in bonds and the likelihood of a partial restoration in cash or securities with little delay. Further, it should be noted that debt restructuring is more difficult for corporate bonds than for bank loans, because the decentralized nature of public investors make it difficult for them to coordinate in restructuring debt contracts or negotiating over default on bonds. As a result, issuers may please themselves since their behavior is unlikely to trigger intervention by investors. To avoid such problems, it may be important to organize collective representation of creditors; majority action to alter the payment terms of the contract; and sharing of payments among creditors. The importance of these clauses has been recognized in recent years, especially in the context of sovereign bonds in some countries. It is true that adequate bankruptcy laws with efficient enforcement mechanisms should eliminate the need for such a modification in the case of corporate bond contracts, while the modification is always necessary for sovereign bonds in the absence of bankruptcy laws. However, the private sector debt restructuring process has not produced satisfactory outcomes in Asia in spite of the adoption of such laws and legal systems. Thus, this approach should be seriously considered as a supplement to the bankruptcy laws even in the case of corporate bonds.

While the rules for accounting, auditing, and disclosure as well as securities and bankruptcy laws are
important, the more difficult task is to develop institutions—especially reputable accountants, investment bankers and securities lawyers, credit rating agencies and other information producing agencies, and courts—that can enforce and implement the rules and laws. Sophisticated professional accountants with adequate skills and experience are needed to detect false and misleading information. A judicial system should be advanced enough to handle complex financial disclosure cases. Securities lawyers should be sophisticated enough to ensure that a company’s documents comply with disclosure requirements. Investment banks should be competent enough to investigate the issuers of corporate securities they underwrite. Investment banks play a crucial role as market intermediaries in the bond market to standardize and disseminate information about issuing firms. Their role is to design the terms of conditions of corporate bonds in such a way that ultimate public investors can purchase newly issued bonds with confidence, prepare a prospectus of the issuing firms, and promote the sale of the issues. Developing the corporate bond market also requires rating agencies, which assist public investors by assigning firms and new issues a grade according to a predetermined and well-known scale.

Credit rating agencies aim to measure the relative risk of rated bonds and provide objective opinions on them by evaluating issuers’ ability and willingness to make full and timely payments of principal and interest over the lifetime of the rated bonds. Credit rating agencies should be required to make public their rating methodology and sources of data, to publish individual ratings and their rationales timely, and to disclaim any liabilities arising from ratings (Endo 2000). In addition, they should be subject to regular audits and should publish the results. These measures would ensure the efficiency, competence, fairness, and transparency of credit rating agencies. Also, Emery (1997) has suggested that the ownership of credit rating agencies should be broad-based to avoid possible conflicts of interest. Moreover, other information-generating agencies—data gatherers (such as Datastream and Lexis-Nexis) and data disseminators (such as Reuters and Bloomberg)—supplement speedy flows of information about issuers.

c. Methods to Reduce Equity Market Problems

Like the bond market, the equity market requires standardization of information about issuers, particularly through the disclosure of firms’ financial statements based on global accounting and auditing standards. Moreover, making credible information available to investors is not easy. This is because corporate insiders have an incentive to exaggerate issuers’ past profitability and future prospects to raise stock prices, and equity investors cannot directly verify the information that these issuers provide. The bond market also helps develop the infrastructure for equity markets, since accounting, auditing, and disclosure requirements, as well as information provided in the bond market (such as risk ratings, risk premiums, maturity, etc.) can be used to assess the quality of equity issuers and vice versa. While the equity market can flourish without a bond market, it may not be efficient. Herring and Chatusripitak (2000) point out that the equity market that is efficient in processing information presupposes the existence of an efficient bond market, which provides the term structure of risk-free discount rates.

Although bond and equity markets share a number of common institutional requirements, it should be emphasized that securities laws targeting shareholders focus on how to assure shareholders unconditional control rights over managers (i.e., dismissal of managers) throughout the (unlimited) life of shares, while those targeting bond holders stress how to ensure bond investors fixed payments and control rights contingent upon the failure of payments. For this reason, the equity market provides tools for improving corporate governance of firms’ managers by strengthening their accountability through shareholders’ meetings, delegating the role of monitoring them to the board of directors, providing them with incentives to align their interests with those of shareholders (e.g. stock options), and fostering a market for takeovers.

Unlike depositors or bond investors, shareholders are not promised any payments in return for their financial investment in the firm, although often they receive dividends at the discretion of the board of
directors (Shleifer and Vishny 1996). Similarly, individual shareholders have no claim to specific assets of the firm, and have no right to demand the collateral (an exception is a mutual fund, in which individual equity holders can force a liquidation of their pro rata share of the assets and a repayment of its value). Moreover, shareholders do not even have a final date at which the firm is liquidated and the proceeds are distributed. Thus, it is important to ensure that shareholders are entitled to vote for the board of directors as well as to legal protection. Moreover, leveraged buyouts may improve corporate governance if taking over underperforming firms enables the replacement of inefficient management and the introduction of new business strategies, thereby improving performance and realizing a capital gain on their investment. Takeovers can be viewed as rapid-fire mechanisms for ownership concentration. They typically increase the combined value of the target and acquiring firm, indicating that profits are expected to increase afterwards.

Timely and regular disclosure of precise information about issuers becomes even more important for equity markets than for bond markets, since shareholders need to assess firms’ performance or the capability of managers over the unlimited life of the firms. Thus, securities laws focus on financial disclosure, including independent audits of companies’ financial statements. Securities laws should impose on accountants sufficient risk of incurring liability to investors for having endorsed false or misleading financial statements. The laws should also impose on investment bankers’ sufficient risk of incurring liability to public investors for securities they underwrite. In this light, securities regulators with well-trained, highly skilled staff and sufficient budget are needed to pursue legal cases. Since it is difficult to protect investors’ rights solely with contracts, laws are necessary to enforce the contracts. Moreover, regulators should develop a comprehensive and efficient legal system to protect a large number of investors against losses and other damages that may arise from false or misleading information, fraud, or insider trading. When insiders have better information about firms than outsiders, public information does not contain all information necessary for investors to make correct investment decisions and, thus, equity markets become ineffective devices for exerting corporate control (Myers and Majluf 1984).

One feature of the equity market is that it can grow even when an existing market infrastructure does not support the development of a market for corporate bonds, for which the upside return is limited by the contractual interest rate (Herring and Chatusripitak 2000). This is because shareholders can potentially claim unlimited upside returns (with downside risks limited to the value of initial investment by virtue of limited liability so that they are willing to invest in shares). This happens especially when firms have substantial growth opportunities or the economy is expanding. However, it should be cautioned that such markets do not have adequate infrastructures to protect investors, who tend to suffer at the hands of false accounting practices and insider trading.


a. Reasons for Underdeveloped Bond Markets

While capital markets offer various unique advantages over the banking system, it generally takes time to develop viable bond markets in developing countries. This is due to supply- and demand-side reasons as well as institutional reasons.

An important supply-side reason is that there is only a small number of large, reputable firms whose information is sufficiently available and transferable in the market to make them creditworthy potential bond issuers. These firms must be financially sound, supported by a good record of corporate performance, while at the same time being able to issue bonds regularly and on a sizable scale through public offerings if the cost of issuing bonds is to be minimized. In particular, first-time issuers will be qualified more convincingly if they have had good track records of creditworthiness accumulated in long-term relations with banks. Such bonds are likely to be transacted
frequently on a large scale in the market, contributing to the development of liquid secondary markets. Because only a small number of firms satisfy these qualifications, it takes time for developing countries to expand the number of such qualified corporations and to develop a viable bond market. As for the demand-side reasons, corporate bond markets are unlikely to develop quickly in developing countries, because households tend to hold their assets in the form of liquid and short-term bank deposits, reflecting low levels of per capita income and wealth accumulation. This also explains the small scale of accumulated funds in the hands of insurance companies and pension funds.

There is also an institutional reason for the underdevelopment of corporate bonds in developing countries. Since public investors are direct risk-takers, accounting, auditing, and disclosure systems, enforceable laws, and sophisticated judicial systems have to be established to protect them from severe information asymmetry and to penalize dishonest corporate securities issuers and underwriters. The infrastructure should make information on issuing firms credible and transactions in the market fair and honest. It takes more time for developing countries to establish such an infrastructure compared with that necessary for the banking system.

Thus, the determinants of whether bank finance or bond finance becomes dominant depend to a large extent on (i) degree of severity of information asymmetry between ultimate creditors and borrowers; (ii) the stage reached in economic development, reflected in the number of large, reputable firms and the number of institutional and individual investors; and (iii) the state of development of the informational, legal, and judicial infrastructures. Creditors’ rights and property rights should be well established through legal enforcement mechanisms, such as bankruptcy laws and court systems, to protect banks as creditors and also as direct credit risk bearers of bank loans.

b. Reasons for Unsound Equity Markets

In many developing countries, firms need to obtain alternative sources of finance to bank loans given that banks have been trying to improve their balance sheets and thus become more cautious in extending credit to firms. However, the equity market fails to provide stable sources of finance to firms, reflecting a lack of adequate and credible information about issuers. As a result, public investors tend to hold stocks for only short-term gains, making stock prices highly volatile and equity an unstable source of external finance. At the same time, it takes time to develop a system of corporate governance that may work properly under the equity market. The system includes a good infrastructure that would prevent potential issuers from manipulating profits so that they can qualify for listing and raise the offering price and stop current issuers from being engaged in insider trading. Also, managers and inside shareholders should refrain from exploiting outside shareholders by selecting projects to their advantage and siphoning the profits. To improve governance, investors are needed who are interested in firms from a long-term aspect. In general, public shareholders lack the incentive to impose discipline on firms owing to their small cash flows and/or control rights and, thus, are more concerned with short-term capital gains. Government needs to foster a system of several block-holders (comprising large firms unrelated to the firms under consideration as well as financial institutions) who can act as board directors and monitor managers. Moreover, internal audits should be empowered and protected from the excessive powers of chief executive officers (CEOs).

c. An Intermediate Financial Market Structure

In some Asian countries, commercial banks are already playing an important role in the corporate bond market as issuers, underwriters, investors, and guarantors. This reflects banks’ dominance of their financial markets, their high reputation, and the informational advantages they enjoy. Thus, banks should be encouraged to foster corporate bond market development and pursue a complementary role. Such a financial landscape can be characterized as an “intermediate financial market structure” (Shirai 2001a). At the same time, the management of banks should be
monitored through both the regulator and the equity market, particularly through block-holders and their presence on the board of directors. This situation lies somewhere between a bank-dominated financial structure and a full-fledged capital market-based financial structure. In the former, banks provide traditional banking services. In the latter, large numbers of borrowers have direct access to corporate bonds in addition to bank loans and there are numerous investors who are willing to diversify their asset portfolios. In the latter case, corporate bonds substitute for bank loans extended to large, reputable corporations.

In the intermediate financial market structure, “long-term credit banks” may issue relatively medium-term bank debentures (i.e., of 1–5 years). This may be desirable, especially when a country has a sufficiently high rate of savings. Yet investors in those countries are reluctant to diversify their portfolios given their strong preference for safe, liquid bank deposits. These banks may transform short- and medium-term funds into long-term funds—which are in great demand from private sector investment projects—if such medium-term bank debentures are bought by relatively wealthy individuals, deposit-taking commercial banks, credit unions, etc., for their portfolio investment. Initially, it may be desirable for the central bank to indirectly support bank debentures by using them in open market operations or qualifying them for a central bank discount window, to increase liquidity and boost investors’ confidence in bank debentures. This support system may make bank debentures attractive payment reserve assets for commercial banks, which perennially depend on central bank borrowings. It should be pointed out that long-term credit banks played a crucial role in Japan during the shift in industrial structure from light to heavy industries, by providing careful screening of new, venture-style industries and making bold investments based on their demand forecasts during the high-growth period. However, this period coincided with a low-interest policy that included bank debentures. Thus, it is still debatable whether long-term credit banks can be developed, at least initially, without pursuing such financial restraint. Also, cofinancing with commercial banks can be used to strengthen discipline on the management of these banks.

d. Advantages and Disadvantages of Bank Engagement in the Securities Business

Various advantages accrue to banks from their involvement in the securities business. First, banks are able to maintain long-term relationships with their clients throughout the latter’s life cycles—starting with bank loans and later switching to securities underwriting. Thus, banks will be encouraged to spend more resources in generating inside information about their clients and prudently monitoring client performance. Further, diversifying banks’ asset portfolios helps lower banks’ costs of funds, which in turn reduces the costs that banks charge their lending and underwriting customers. Second, banks are able to handle securities more efficiently than nonbank financial institutions—due to the high reputation and informational advantages they enjoy. Third, banks’ involvement with securities may promote mergers and conglomeration of the banking sector, thereby improving operational efficiency. Fourth, the development of long-term credit banks may result in milder maturity mismatches and help develop domestic corporate bond markets by substituting for long-term lending.

On the other hand, banks’ involvement in the securities business can also have disadvantages for the banking sector, ultimate borrowers, and investors. First, banks may end up lending more to small firms if large, reputable firms increasingly raise funds through securities issuance. This will be especially so for small banks if large banks expand their lending and securities dealings with large clients and cut lending relationships with small ones. This suggests that banks face a higher default ratio on average bank credit, strengthening the need to improve their internal risk management system. Second, banks may be encouraged to become megabanks through acquiring smaller, weaker banks to exploit economies of scale and diversification benefits. As a result, the number of small banks would decline and, hence, small firms may find it more difficult to obtain funds from banks.
Third, as banks increase in size through financial conglomeration, there may be a concentration of power in the sector. This could deter the development of capital markets, since banks tend to give priority to lending over securities business. Further, the concentration of power in the banking sector may discourage financial innovation, since banks’ innovation generally focuses on cost saving rather than products. This reflects the fact that banks generally place priority on building reputation, reliability, and long-term commitment to their clients rather than providing advice about new financing strategies to their customers.

Fourth, issuers who have formed long-term relationships with bank underwriters may find it difficult to switch to independent underwriters, resulting in high switching costs. If public investors cannot trust independent underwriters, they will discount the value of corporate bonds underwritten by even honest underwriters.

Fifth, conflicts of interest between banks and investors may emerge, in instances when banks attempt to underwrite securities of troubled borrowers and the proceeds of the issues are used to pay off banks’ own loans to the firms. The presence of such conflicts may weaken investor confidence in the capital market and discourage the market from developing further. Sixth, when banks handle securities and derivatives on a large scale as dealers and/or end users, they face various risks, including the prospect that they will have to buy up unsold securities underwritten by them, counterparty risk, and market risk. This may weaken the banks’ solvency and trigger systemic banking crises. In particular, derivatives are generally handled by a limited number of large banks, making a systemic banking crisis a plausible outcome. Further, derivatives activities may reduce transparency by increasing the speed and complexity of transactions. Thus, regulators may find it increasingly difficult to contain risks associated with derivatives transactions because of the extreme difficulty in understanding the nature and risk involved, and the need for prompt international cooperation.

Therefore, in searching for appropriate regulatory frameworks for the intermediate financial market structure, the advantages and disadvantages described above should be carefully examined and regulatory frameworks should take into account those tradeoffs. In other words, regulatory frameworks for the intermediate financial market structure should include measures to (i) further strengthen the banking sector, (ii) contain disadvantages arising from banks’ involvement with securities, (iii) cope with problems associated with derivatives, and (iv) coordinate between relevant regulators.

e. The Need to Strengthen the Banking Sector in Asia

More than ever, priority should be placed on strengthening the banking sector. There are several reasons for this. First, banks face new or amplified risks because of their involvement with securities and derivatives, which potentially affects the solvency of the whole banking sector. Second, banks are likely to face a higher default ratio on their average bank credit, since large, reputable firms increasingly issue securities, meaning that only medium and small firms without such access depend solely on bank loans.

But how should we strengthen the banking sector? In the case of Asia, three separate steps are required. The first is to remove government intervention both in directing private bank credit to targeted industries and/or selected companies, and in bailing out banks in distress regardless of their viability. Such interventions reduce banks’ incentives to engage in risk management by processing idiosyncratic information about their clients and prudently monitoring borrowers’ performance.

The second step is to limit connected lending—the offering of favorable terms to firms that are connected through shareholdings. In general, the ownership of Asian firms is highly concentrated because of family control and group affiliations, which generate a divergence between cash-flow rights and control rights. Even if ownership of cash-flow rights of each firm based on the share of stockholding is small, ownership of control rights based on voting rights can be concentrated, for example, through pyramid structures (where a firm owns a majority of the stock
of one firm, which in turn holds a majority of the stock of another firm, with this process repeated several times). Banks are often incorporated in this pyramid structure, providing loans to affiliated firms without properly taking into account the risks involved. Therefore, special attention should be paid to the quality of banks’ own capital, since bank shareholders—often concentrated through the pyramid structure—may constitute largely banks’ affiliated firms and borrowers. It is difficult to improve both monitoring functions and corporate governance of the banking sector unless connected lending practices are contained. At the same time, it is also important to limit mutual holdings of equity between banks and nonbank firms until banks improve their internal risk management systems.

While government intervention and connected lending are to be reduced, the third step is to adopt prudential regulation and supervision practices similar to those in industrial countries. This sequence is important because until the first two steps are dealt with, the soundness of the banking system will not improve meaningfully, even if sophisticated prudential regulations are introduced. One way to help contain connected lending would be to raise banks’ capital requirements on such lending to a level far above those seen in industrial countries, until bank managements become clearly separated from ownership.

Moreover, it should be recognized that traditional indicators frequently used in industrial countries to estimate the soundness of banks (e.g., CAR, liquidity ratio, and nonperforming loan [NPL] ratio) are not necessarily effective in Asia. This is because accounting, auditing, and disclosure requirements are often inadequate and poorly enforced. Therefore, prudential regulations and supervision should be supplemented by market-related indicators in addition to traditional ones if the soundness of Asian banks is to be evaluated more realistically. Market-related indicators include (i) deposit rates, (ii) interest rate spreads of banks, and (iii) interbank rates. The first two indicators are useful because low interest rate spreads and high deposit rates indicate declining performance. This is because poorly managed banks attempt to increase their market share by rapidly expanding their loan portfolio through loans to risky borrowers and by gaining funding by raising deposit rates. Since these banks do not increase lending rates because they know this could cause their risky borrowers to default, their interest rate spreads decline. The third indicator is also useful since banks may know the financial positions of other banks much better than depositors or bank shareholders because they conduct financial transactions with each other in interbank markets.

f. Containing Disadvantages

So how can the various disadvantages arising from banks’ involvement with securities, such as solvency problems, conflicts of interest, high switching costs, and concentration of power, be mitigated? And what corporate form should be selected? One needs to examine whether the disadvantages could be contained through a banking system where banks directly engage in securities activities. Alternatively, the disadvantages could be mitigated by separating securities activities from banking activities through the establishment of legally separate subsidiaries. The former refers to the universal banking (UB) form, while the latter is divided into two forms: (i) banks with their own subsidiaries (“bank subsidiary form”), and (ii) bank holding companies (“BHC form”) under which securities subsidiaries operate.

The UB form assumes that regulators are able to contain various risks associated with securities services and maintain the solvency of the banking sector. These can be achieved either by combining all activities within the banking entity, pooling risks, and imposing a common capital adequacy requirement on the combined businesses; or by defining banking and securities activities and applying differential capital requirements on them based on definitions. The latter approach generally requires banks to set higher capital adequacy requirements on banking services than securities services because bank services are exposed to liquidity and systemic risks. The latter includes the trading book approach adopted in the European Union (EU), which segregates securities trading from other business and subjects the trading book alone to capital requirements.
In practice, however, such approaches may be difficult to implement. First, they require sophisticated accounting, auditing, and disclosure standards to mitigate disadvantages from securities dealings. Second, differential capital requirements among various types of services may give rise to regulatory arbitrage. Third, since banks are able to get lower funding through various safety nets compared with nonbank financial institutions, they may have stronger incentives to engage in securities business. This may lead to moral hazard problems, and worsen excessive risk taking by banks. In this circumstance, it may be desirable for banks to engage in securities services at separate subsidiaries or legally independent firms.

Thus, the choice will lie between the bank subsidiary form and the BHC form, both of which separate banking from securities with firewall provisions. In Asia, the bank subsidiary form may be suitable for four reasons. The first is that banks may directly impose discipline on the management of their securities subsidiaries, while they are not able to do so under the BHC form. The second reason is that it is cheaper to establish the bank subsidiary form than the BHC form. Third, there appears to be a natural preference for the bank subsidiary form over the BHC form in countries whose banks are free to choose any form. These factors suggest that the bank subsidiary form is superior to the BHC form. Fourth, there is no strong evidence that firewall provisions of the BHC form are effective, especially where nonbank affiliates fall into financial distress. This reduces, too, the advantages of the BHC form.

With respect to increases in derivatives business, banks—particularly large banks that originate large-scale business loans—need to enhance their internal credit rating systems. This requires both expertise and human resources, as quantitative and qualitative information needs to be gathered on highly complicated transactions, comparing the standards for each grade of these transactions, weighting the transactions in choosing a borrower grade, and supplementing this process by establishing mathematical models. Thus, regulators should direct their supervisory methods toward more risk-focused monitoring than balance sheet-based monitoring. The attention should be placed on what types of risks banks are facing and how they manage those risks. Further, regulators may be able to limit risks and problems associated with derivatives by encouraging transactions at organized exchanges, or imposing margin requirements and/or increased collateral if transactions take place on OTC markets. Also, imposing a limit on large-scale derivatives activities may be desirable.

As banks increasingly engage in securities and derivatives business, regulators need to coordinate to improve their effectiveness. They should examine whether to take an umbrella (functional) approach where banking and securities regulatory authorities are separately established and coordinated, or a consolidated approach where all relevant regulators are combined under a uniform authority. It may be desirable for Asian developing countries to select an umbrella approach since they usually do not have prudential regulations of sufficient strength or banking sector supervision. Given this situation, integrating bank regulators with nonbanking regulators may reduce confidence in the overall financial system, as it could weaken the regulatory capacity of banking regulators if there are limited human and financial resources. Further, many countries have not established independent regulatory regimes that protect central banks from policy intervention. Thus, integrating the various regulators without ensuring independence may weaken the quality of the overall regulatory regime and with it, its credibility. Governments should place priority on the prompt strengthening of bank regulation, while improving regulatory capacities for nonbanking business.

**g. Conclusions**

This section emphasizes that banks can play a crucial role in fostering capital markets, particularly corporate bond markets. This is because banks are already dominant in Asian bond markets, due to the information processing capability and reputation advantages they enjoy.

Banks can utilize inside information about their borrowers that they have gained through relationship
lending. This role of banks is important, particularly when information about borrowers is highly idiosyncratic and the informational, legal, and judicial infrastructures necessary for developing sound capital markets are largely underdeveloped. Moreover, banks can exploit economies of scale by using their branch networks and staff. Further, the role of banks in providing liquidity can complement the development of corporate bond markets since it facilitates securities transactions. Owing to these comparative advantages, banks may be able to underwrite securities at lower cost than independent investment firms, thereby promoting companies’ investment and economic growth. At the same time, banks engaged in securities and related businesses are able to maintain profitability by increasing income from securities. This not only helps limit excessive risk-taking by banks, but also enables them to obtain implicit rents, which are necessary for them to continue to provide discretionary, flexible, and repetitive transactions to customers.

This is the “intermediate financial market structure,” which lies between a conventional bank-dominant financial market and a full-fledged capital market-based one. In this intermediate structure, bank loans are a substitute for fledgling corporate bonds, yet banks play a crucial role in developing the corporate bond market as investors, issuers, underwriters, and guarantors. In many emerging economies, banks complement the investor base, which is limited since individual investors have a strong preference for liquid, safe assets (e.g., bank deposits) and the insurance and pension industries—potential institutional investors—which are underdeveloped, reflecting low levels of both income per capita and asset accumulation. Further, banks complement the issuer base, given that there are few large, reputable firms that are able to issue bonds at reasonable costs. Moreover, establishing “long-term credit banks” that issue medium-term bank debentures can be considered as a way of transforming short- and medium-term funds into the long-term funds that are needed by the private sector.

While the banking sector may promote the development of corporate bond markets in the intermediate financial market structure, a few problems may arise when banks are involved with securities. For example, banks may gradually change into megabanks through mergers and acquisitions to take advantage of economies of scope and information. This may increase the concentration of power in the banking sector and eventually deter the development of full-fledged capital markets, since banks tend to place priority on banking functions over securities business and it may discourage financial innovation. Moreover, small firms may find it more difficult to raise funds from banks as financial conglomeration emerges. In addition, the solvency of banks may deteriorate as they increasingly take part in large-scale derivatives transactions, generating new risks and amplifying existing ones. Solvency may deteriorate further as large, reputable firms issue securities rather than depend on bank loans, and therefore the default ratio of average loans faced by banks may increase.

In the intermediate financial market structure, therefore, tremendous efforts should be made to improve banking sector soundness. To promote banks’ incentives to collect and process information, and monitor their clients, governments should not intervene in banks’ decisions over lending. Regulators should also cease to apply a “too-big-to-fail” policy that bails out banks regardless of their solvency. Moreover, it is important to limit connected lending by requiring lending activities to be made under the proper risk management system, and imposing limits on banks’ holdings of nonbank firms until banks improve their risk management systems. And the quality of banks’ own equity should be carefully examined.

While government interventions are reduced and connected lending practices are mitigated, prudential regulations and supervision similar to those seen in industrial countries should be introduced. However, such prudential regulations may not be effective when informational, legal, and judicial infrastructures are inadequately implemented and enforced. In such cases, additional instruments are necessary to deal with issues specific to Asian countries. In the meantime, prudential regulations and supervision should be improved substantially by boosting the skills and knowledge of staff, and making the regulatory regime flexible and responsive to changes in the financial environment. It
may also be desirable for Asian countries to deal with disadvantages in the intermediate financial market structure by introducing firewall provisions. In other words, they could introduce the bank subsidiary form or the BHC rather than allow the UB form, until the informational, regulatory, and judicial infrastructures are sufficiently developed. Prudential regulations and banking sector supervision need to be improved substantially, with independence of bank regulatory authorities from government intervention attained to a satisfactory level, so that there is enough confidence in the existing banking regulatory regime. Until then, an umbrella (functional) approach based on close coordination among relevant regulators could be a desirable approach for Asian developing countries, as compared with a consolidated approach where all relevant regulators are combined under a uniform authority.

At the same time, the management of banks should be monitored through the block-holder ownership structure and the presence of effective boards of directors (see Chapter 3). This is partly because it may be difficult for external directors to maintain independence from managers and at the same time obtain detailed information about firms from them to monitor the management.

B. Regional Trade Arrangements and Trade Patterns by Skill

In this section we outline important directions related to regional trade. Much of the discussion concerns the emergence of the People’s Republic of China (PRC). In particular, we discuss regional free trade agreements and trade patterns of comparative advantage by skill.

1. Asian Regionalism: Regional Free Trade Agreements

As indicated in Chapter 3, our results predict the emergence of a systematic pattern of triangular trade for East Asia. This Asian Trade Triangle reveals that the PRC’s export expansion offers significant growth leverage to its neighbors. Strategic responses to the PRC’s emergence must take account of this, exploiting the triangle to translate regionalism into globalism.

While the world is beating a path to World Trade Organization (WTO)-style globalization, individual countries are aggressively pursuing self-interest as export competitors. Nowhere is this more apparent than in East and Southeast Asia, where regional economies are looking to the promise of globalization while competing head-to-head for export markets around the world. This dual perspective has focused considerable attention on the PRC in the regional context, where its WTO accession represents a leading globalization initiative, but its dramatically emergent exports are viewed as a threat by regional competitors. In its own research program, the ADB Institute has developed a new paradigm for trade policy in East and Southeast Asia—globalism through more comprehensive regionalism. We summarize this approach below.

In addition to the baseline forecasts reported in Chapter 3, Section B, we examine various trade liberalization scenarios for East and Southeast Asia, with reference to the PRC’s WTO accession. In particular, we compare unilateral PRC liberalization, i.e., the WTO initiative, with several examples of East and Southeast Asian regionalism (for instance, the ASEAN Free Trade Area [AFTA] plus the PRC) and one global trade liberalization (GTL) scenario that abolishes all tariffs. Our results are consistent with some conventional intuition and in other ways indicate the complexity of the regional negotiating environment.

The free trade agreement (FTA) and related regional scenarios we examined include the following (each includes a baseline of the PRC’s accession to WTO):

(i) CNWTO: the PRC joins the WTO, the rest of Asia retains status quo policies;
(ii) AFTA: ASEAN Free Trade Area;
(iii) AFTAPC: AFTA plus the PRC;
(iv) NEAFTA: Northeast Asian Free Trade Area (PRC; Japan; Korea; and Taipei, China);
(v) EAFTA: East Asia Free Trade Area;
(vi) PAC3: Pacific Trilateralism—PRC, Japan, US; and
(vii) GTL: Global Trade Liberalization.

A general indication of the results for these FTA scenarios is given (in terms of total export effects) in Figure 1.

As intuition would dictate, we find that GTL yields the largest and most widespread gains or export expansion, both for the region and for the rest of the world. The regional arrangement, AFTA plus the PRC, is beneficial particularly to ASEAN, because it expands their trade within the region, but induces significant trade diversion (i.e., negative growth of exports) away from nonmembers. Despite these problems, ASEAN’s ability to leverage PRC growth would appear to make this arrangement quite attractive to them.

The PRC’s role in all these scenarios is a unique one, however, and appears to be governed by complex incentives. The PRC gains much less in relative terms than either ASEAN in the AFTA or the rest of East and Southeast Asia under GTL. The reason for this is that the PRC can realize most of its export growth by eliminating its own protection unilaterally, while a large part of the export gain to East and Southeast Asia comes from the PRC market access.

The PRC may have other reservations about regionalism that limit its willingness to take detours from the path to globalization. In particular, our results indicate that the PRC might experience adverse terms of trade effects by diverting its trade into smaller zones delineated by Southeast Asian regional preferences.

Beyond this, it appears that most regional arrangements would reinforce the PRC’s neo-mercantilist (exporting more than importing) position vis-à-vis economies outside the region. In each scenario, the PRC is estimated to increase ex-Asian exports more than it increases ex-Asian imports, while doing the opposite for East and Southeast Asia. This can make it difficult to recruit the PRC into East and/or Southeast Asian regional agreements, yet our results indicate its membership would be essential to the gains realized by other members. Barring the PRC’s participation, most regional pacts would yield only small gains and other regional economies would probably be better off going directly toward the goal of GTL. Thus, the PRC’s current orientation, i.e., GTL as reflected in its assertive WTO commitments, is the primary goal for this country and may ultimately be the best route for other East and Southeast Asian economies.

What we are seeing here is the trade triangle at work. As indicated in Chapter 3, our results predict the emergence of a systematic pattern of triangular trade for East and Southeast Asia. The trade triangle reveals that the PRC’s export expansion offers significant growth leverage to its neighbors. Strategic responses to the PRC’s emergence must take account of this, exploiting the triangle to translate regionalism into globalism. The extent to which East and Southeast Asian economies can facilitate access to the triangle through FTAs will of course depend upon negotiations involving the PRC itself.
In particular, economies of the region need to negotiate relatively inclusive FTAs with the PRC to avoid being crowded out of regional and extraregional markets. The regional incidence of export gains from the triangle depends critically on this. Our results indicate that significant trade diversion can occur among regional exporters, at the expense of those countries who opt out of an FTA including the PRC.

Last, the PRC’s situation in the East and Southeast Asian trading region appears to be unique, as indicated earlier. Because of the sheer size and growth momentum of this economy, it apparently is in a position to “go it alone” on the path to globalization, i.e., most of its own benefits from multilateralism can be captured by unilateral liberalization. This fact not only strengthens its resolve to follow that path, but could limit any incentive to be drawn into preferential, trade-diverting regional agreements.

Because of these complex incentives, the PRC possesses two carrots and one stick in regional negotiations. The carrots are access to its own domestic market and, by joining the PRC in an FTA, greater indirect market access to the rest of the world (the triangle-induced export effect). The stick, obviously, is one of the carrots, used instead as a club: trade diversion arising from direct export competition from the PRC and its partners. Clearly, the mercantile view of the PRC is too simplistic, but this country still holds a special position in the regional negotiating environment, and other East and Southeast Asian economies must take account of this fact.

Hence, it should be noted that the PRC’s strategic leverage appears to be limited by two factors:

(i) Preferential access to individual East and Southeast Asian exporters is not sustainable under its WTO commitments. The carrot is real, but its strategic value is limited.

(ii) Further, imports from East and Southeast Asia are essential to the PRC’s export capacity. The stick is not credible against most of the PRC’s regional partners.

The most important insight arising from this analysis is that the trade triangle enables the PRC to “deliver globalization” to its regional neighbors by its accession to the WTO. In this sense, East and Southeast Asia can capture most of the absolute export growth expected from full globalization by just forming an ASEAN+3 FTA. This represents an important new paradigm for trade policy in the region, recognition that head-to-head export global competition is less important than leveraging the opportunities presented by the region’s fastest growing internal market and soon, its largest importer. Other East and Southeast Asian countries should negotiate collectively with the PRC with this broader objective in mind. In other words, our results indicate that, in the wake of the PRC’s WTO accession, the best strategy for East and Southeast Asia is to pursue globalism through more comprehensive regionalism.

2. **Patterns of Comparative Advantage and Skills Composition**

Trade patterns by commodity do not fully reflect underlying comparative advantages, particularly at higher levels of commodity aggregation. The skills embodied in trade flows more accurately reflect underlying comparative advantages. Wage differentials can only be sustained by skills differentials.

Trade flow analysis that takes account of skills composition indicates very different patterns of East and Southeast Asian trade advantages and disadvantages. In particular, using detailed (6-digit) trade statistics and data on sectoral skills composition, we derived indicators of skills composition in bilateral trade patterns and showed how these reveal important hierarchies in Asian regional trade (details in Roland-Holst 2003b). In particular, we found four important trends apparent over 1996–2000.

(i) Japan is strongly export oriented in high-wage sectors and remains dominant in this respect.

(ii) Korea and Taipei, China both maintain strong regional export orientation in high-wage activities.

(iii) ASEAN is “holding its own” in bilateral trade with the PRC by maintaining existing concentrations of relatively high-wage exports.
(iv) The PRC has maintained most of its export orientation in low-wage activities, although a new component of high-wage net exports is emerging.

As a more detailed example of these results, Table 4 compares bilateral trade flows (IIT) and their skills content (ELT) for Japan.\(^1\) It is immediately apparent from these results that Japan’s export orientation is much stronger in higher skills activities, and that total trade flows do not accurately reflect the underlying value added capture in Japan’s bilateral trade. With respect to the PRC, for example (rows 6–10), Japan is strongly import dependent in terms of trade volume, accounting for 54% of its trade-weighted sectors in IIT indexes in the (-1.0, -0.6) interval. But, in the ELT indexes, this comes down to only 23% in terms of skills content. Similarly when trade is measured by embodied skills content, 66% of Japan’s bilateral trade flows are found in the (0.6, 1.0), indicating high export orientation of highly skill-embodied commodities. Surely this kind of trade imbalance is what most advanced economies would find desirable. Thus, they maintain their place at the top of the value-added ladder while taking full advantage of the international division of labor.

Table 5 presents analogous results for ASEAN, and here we can see the conclusion offered above, that ASEAN is holding its own in terms of skills composition. In trade with the PRC (column 1), skill-weighted trade is much more export oriented than total trade. These data are for 2000, and at present, therefore, ASEAN appears to be holding on to a skills advantage in trade with the PRC.

However, as discussed in Chapter 3, Section C.1, there appears to be an adverse trend against ASEAN in this context. It is, therefore, extremely important that ASEAN should constantly upgrade its trade structure through higher skills formation and technological progress. Then it will be able to gain higher benefit from the PRC’s huge absorption in its domestic market as well as from global networks and the trade triangle as discussed in Chapter 3, Section C.1.

Despite remarkable technical progress, the PRC’s ultimate source of comparative advantage is labor, as these results remind us. However, this situation is likely to evolve rapidly for two reasons.

(i) Significant and relatively sustained inbound foreign direct investment (FDI), which expands supply capacity and can significantly alter the productivity characteristics of domestic factors, such as land and labor.

(ii) The PRC’s labor markets are entering an important transition period.

(a) Migratory patterns for unskilled labor are likely to intensify. Rural-to-urban migration is continuing. Transactions costs to this activity are rising, but the opportunity cost of labor in the rural sector continues to decline, and this is expected to accelerate with WTO accession and reforms of agricultural property rights.

(b) Supply conditions for skilled labor may not keep pace with demand. Skilled labor demand is rising faster than supply. This trend is being accelerated by FDI, for which skilled labor appears to be a complement.

(c) Economic reform may adversely affect short-term aggregate labor demand, as SOEs are likely to reduce employment faster than the private sector can absorb the combined displaced and migrant population.

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\(^1\) In tables 4 and 5, we measure relative import and export orientation by two indexes. Trade for most commodity groups and bilateral partners flows in both directions, intraindustry trade. IIT refers to an index of this intraindustry trade, indicating the extent to which trade within a commodity category is biased toward exports or exports. IIT = 1 for a country that only exports in that group, IIT = -1 for a country that only imports in that category. When IIT = 0, bilateral imports equal exports in this commodity group, indicating neutrality. The embodied labor trade (ELT) index weighs bilateral trade flows by their embodied skills content, but is normalized to the same (-1.1) interval to indicate the extent of import or export dependence. The quintiles in both subtables represent 20 segments of the (-1.1) interval for each index, and entries in the table record the percent of total bilateral trade or embodied labor skills trade in each quintile.
These trends may increase the opportunity cost of PRC labor, blunting its traditional comparative advantage and driving its investment allocation more toward capital and technology. Whether this substitution will occur fast enough to preserve the PRC’s export competitiveness is an important open question.

### Table 4. Japanese Trade and Embodied Skills Composition
(trade weighted percentages)

<table>
<thead>
<tr>
<th>IIT: Intraindustry Commodity Trade</th>
<th>PRC</th>
<th>Japan</th>
<th>NIE</th>
<th>ASEAN</th>
<th>US</th>
<th>EU</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Strong Import</strong></td>
<td>54</td>
<td>0</td>
<td>25</td>
<td>46</td>
<td>27</td>
<td>34</td>
<td>35</td>
</tr>
<tr>
<td><strong>Neutral</strong></td>
<td>9</td>
<td>0</td>
<td>6</td>
<td>4</td>
<td>10</td>
<td>15</td>
<td>7</td>
</tr>
<tr>
<td><strong>Strong Export</strong></td>
<td>3</td>
<td>0</td>
<td>57</td>
<td>5</td>
<td>16</td>
<td>6</td>
<td>9</td>
</tr>
<tr>
<td>Total</td>
<td>100</td>
<td>0</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ELT: Embodied Labor Trade</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td><strong>Strong Import</strong></td>
<td>23</td>
<td>0</td>
<td>14</td>
<td>21</td>
<td>8</td>
<td>12</td>
<td>13</td>
</tr>
<tr>
<td><strong>Neutral</strong></td>
<td>4</td>
<td>0</td>
<td>2</td>
<td>4</td>
<td>5</td>
<td>9</td>
<td>2</td>
</tr>
<tr>
<td><strong>Strong Export</strong></td>
<td>4</td>
<td>0</td>
<td>27</td>
<td>4</td>
<td>10</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Total</td>
<td>100</td>
<td>0</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
</tbody>
</table>


### Table 5. ASEAN Trade and Embodied Skills Composition
(trade weighted percentages)

<table>
<thead>
<tr>
<th>IIT: Intraindustry Commodity Trade</th>
<th>PRC</th>
<th>Japan</th>
<th>NIE</th>
<th>ASEAN</th>
<th>US</th>
<th>EU</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Strong Import</strong></td>
<td>13</td>
<td>20</td>
<td>28</td>
<td>0</td>
<td>13</td>
<td>17</td>
<td>5</td>
</tr>
<tr>
<td><strong>Neutral</strong></td>
<td>12</td>
<td>73</td>
<td>53</td>
<td>0</td>
<td>13</td>
<td>11</td>
<td>10</td>
</tr>
<tr>
<td><strong>Strong Export</strong></td>
<td>11</td>
<td>4</td>
<td>16</td>
<td>0</td>
<td>48</td>
<td>15</td>
<td>74</td>
</tr>
<tr>
<td>Total</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>0</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ELT: Embodied Labor Trade</th>
<th></th>
<th></th>
<th></th>
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<th></th>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Strong Import</strong></td>
<td>6</td>
<td>48</td>
<td>57</td>
<td>0</td>
<td>10</td>
<td>10</td>
<td>1</td>
</tr>
<tr>
<td><strong>Neutral</strong></td>
<td>5</td>
<td>27</td>
<td>24</td>
<td>0</td>
<td>42</td>
<td>14</td>
<td>8</td>
</tr>
<tr>
<td><strong>Strong Export</strong></td>
<td>6</td>
<td>4</td>
<td>1</td>
<td>0</td>
<td>29</td>
<td>57</td>
<td>48</td>
</tr>
<tr>
<td>Total</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>0</td>
<td>100</td>
<td>100</td>
<td>100</td>
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C. Policy Recommendations for Preventing and Managing Capital Account Crises

This section considers new policy prescriptions tailor-made for capital account crises. There are two aspects to such prescriptions: (i) how to minimize or
prevent a latent capital account crisis; and (ii) how to manage it once it occurs. Our basic policy stance is that a regional financial arrangement (RFA) in Asia could execute what the International Monetary Fund (IMF) cannot effectively implement in minimizing or managing a capital account crisis. That is, supplementing rather than substituting the IMF’s functions.

To begin with, in subsection C.1 we discuss how IMF and Asian crisis-hit countries reached an agreement on the policy response, despite the inappropriateness of some of the proposed policies for a capital account crisis. We then proceed in subsection C.2 with proposing policies to minimize incipient capital account crises. Three areas are covered: (i) appropriate exchange rate regimes; (ii) short-term capital controls; and (iii) restrictions on nonresidents’ holdings of domestic currencies. Subsection C.3 discusses how to manage a capital account crisis. Since sudden reversals of massive capital flows cause sharp drains of foreign reserves and currency collapses, aggravating the balance-sheet effects, a large amount of international liquidity support needs to be provided quickly. The Supplementary Reserve Facility (SRF) and Contingent Credit Line (CCL) approval process of IMF may take too much time, and the disbursement of funds may be too small. In addition, the comparative advantage of IMF is in macroeconomic issues, not the microeconomic financial sector issues that were most relevant to the Asian financial crisis. Therefore, a new RFA should be constructed with the ability to disburse sufficient international liquidity quickly based on intensive routine surveillance on regional financial issues and supported by new conditionalities attached to withdrawal of international liquidity from the RFA. In the last subsection (C.4), we outline how the existing Chiang Mai Initiative should proceed in fulfilling these requirements.

1. How the IMF and Asian Crisis-Hit Countries Agreed on an Inappropriate Policy Response

In this subsection, we consider how the IMF and Asian crisis-hit countries agreed on a policy response. IMF sought to encourage policies appropriate for conventional current account crises rather than a capital account crisis, which, as was explained in Chapter 2, characterized the Asian financial crisis. We demonstrate, using the techniques of analytic hierarchy process (AHP) and game theory, how IMF and crisis-hit countries were able to reach an agreement on their inappropriate and ineffective set of policies.

To recap, the Asian financial crisis was a capital account crisis caused by inflows of short-term private capital that were large relative to the underlying current account deficit, followed by sudden and massive capital outflows. The magnitude of the swing in capital movements from massive inflows to sudden reversals equaled on average about 11% of the gross domestic product of crisis-hit Asian economies in just a year or so. During this crisis, large swings in the capital account balance first produced large current account deficits in 1995–1996 and then large current account surpluses in 1998–1999. The capital account and not the current account was thus the underlying driving force, unlike in conventional balance-of-payments crises. The largely unhedged foreign-currency denominated short-term debt created a serious “double mismatch,” i.e., mismatches in both maturity and currency. Short-term foreign currency borrowing was increasingly used to finance long-term, local-currency denominated business activities. However, pre-existing institutions including both prudential regulation by governments and risk-management capabilities in the private sector were not equipped to cope with the new stresses arising from this double mismatch. We have discussed this issue in Chapter 2 by pinpointing the gap between new risks entailed by financial liberalization and the capacity of pre-existing institutions to manage such new risks, including this double mismatch. These internal weaknesses were aggravated by asset bubbles in real estate and stock markets.

Such a double mismatch made the balance sheets of local financial institutions and enterprises vulnerable to currency devaluation, which expanded liabilities in local currency while domestic assets declined in value due to domestic recession and the bursting bubbles. They were also vulnerable to bank...
runs caused by domestic liquidity problems from massive deposit withdrawals. It is worth reemphasizing that under a capital account crisis, an initial modest depreciation of the exchange rate would aggravate the balance sheets of enterprises and financial institutions by expanding liabilities in local currency. In contrast, such a depreciation would contribute to resolving a conventional currency account crisis supported by restrictive macroeconomic policy. The sudden and massive withdrawal of foreign capital led to the “twin crises,” i.e., currency and banking crises, which mutually reinforced each other to deepen and broaden the financial and hence real economic costs related to the crisis. Domestic demand in crisis-hit Asian economies declined by 20%–30%, leading, in turn, to the collapse of imports, generating even a larger surplus on the current account in just less than two years.

We therefore see financial markets as susceptible to capital account crises in the face of financial globalization. IMF adopted a “soft-rot” view, which blamed the collapse of the crisis-hit countries on weak internal fundamentals, notably bad governance as manifested by crony capitalism, instead of addressing the sequencing issues of capital account convertibility and institutional capacity to manage new risks arising from financial liberalization. Table 6 summarizes the diagnosis and prescriptions of these contrasting views.

Given these diametrically opposed perspectives, it is useful to consider how the two sides could reach an agreement on the proper policy response. We use AHP and game theory techniques to demonstrate how despite these contrasting views, an agreement between IMF and the recipient country was achieved. By assigning weights (priorities) to each of the items in the generated hierarchy, we could yield a priority ranking as shown in Figure 2. For the methodology of deriving the weights, see Appendix 2.

The first priority ranking is for the sources of the crisis. It is perceived that IMF tends to put the weakness of the banking sector (WEAKBANK) as the

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<tbody>
<tr>
<td><strong>Sources</strong></td>
<td><strong>IMF Views</strong></td>
<td><strong>Unintended</strong></td>
<td><strong>Alternative Views</strong></td>
<td><strong>Policy</strong></td>
</tr>
<tr>
<td><strong>Weak banking system</strong> (WEAKBANK)</td>
<td>Microstructural reform: bank, corporation (CLM)</td>
<td>Resume bank lending (BLENDING)</td>
<td>High cost and ineffective restructuring (ECCOST)</td>
<td>Massive inflows and corporate debts (CORPDEBT)</td>
</tr>
<tr>
<td><strong>Fixed exchange rate and currency overvaluation</strong> (FIXEDER)</td>
<td>Tight money policy and ER float (TMP)</td>
<td>Positive net capital flows (CPFLOWS)</td>
<td>No real improvement in the balance sheet (NOBS)</td>
<td>Contagion (CGION)</td>
</tr>
<tr>
<td><strong>Poor governance</strong> (GOVANCE)</td>
<td>Tight fiscal and monetary policies (LIQ)</td>
<td>Low inflation to avoid currency appreciation (RERAF)</td>
<td>No capital inflows and big windfall to savers (SAVERS)</td>
<td>Weak prudential enforcement (PRUDBANK)</td>
</tr>
<tr>
<td></td>
<td>Improved governance and improved balance of payments (GOVT)</td>
<td></td>
<td>High social cost (SOCCOST)</td>
<td></td>
</tr>
</tbody>
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2 AHP combines the theory of hierarchy with the theory of scaling. For a detailed explanation of AHP, see Saaty 1994a, 1994b; Azis and Isard 1996.
most important source of vulnerability (given the highest weight, i.e., 0.648), followed by poor governance (GOVANCE, 0.23) and the adoption of a fixed exchange rate system (FIXEDER, 0.122). The same is done for the alternative view of the capital account crisis school, resulting in the following priority ranking: CORPDEBT (0.669), PRUDBANK (0.243), and CGION (0.088). Under each of these items, alternative joint policies are evaluated. Given three policies proposed by IMF and two policies recommended by the alternative view, there are six joint policies; see the bottom level of the hierarchy in Figure 2.

The six joint policies are ranked under each of the sources of the crisis; this is done for both, the IMF view and the capital account crisis view. The resulting priority weights for the joint policies according to the IMF perspectives are listed on the first row of the two numbers at the bottom level of the hierarchy. The second row reflects the weights for the alternative (capital account crisis) view. One can clearly see from those weights that TMP-MPBC is ranked highest by IMF (receiving 0.256). Indeed, from IMF’s standpoint, a tight money policy (TMP) appears to be a nonnegotiable item in a crisis.

The alternative view yields a different outcome. The most preferable joint policy is LIQ-MPBC (0.439), that is, government should adopt only a moderately tight financial policy and a gradual restructuring of the banking and corporate sectors, while IMF extends its liquidity supports to help improve the balance-of-payment position. Clearly, there is a disagreement over policy priorities. Despite such a disagreement, based on the analysis using AHP and the game-theory approach, some joint policies are found to be feasible.

Figure 3 shows that an equilibrium state is achievable, i.e., TMP-MPBC, yielding 0.256 and 0.259 for the IMF and the alternative view, respectively.
Other equilibrium states are possible (see Azis 2002), but the above seems to be the closest to what really happened, where the policy implemented was a combination of tight money policy and slight reductions in government spending, and the restructuring of the banking and corporate sector was conducted gradually (TMP-MPBC). Note that such an equilibrium state does not imply effectiveness of the policy. In fact, the above joint-policy equilibrium failed to produce a timely, robust, and sustainable recovery. It could not cope with the aggravated balance sheet problems inherent in a capital account crisis.

IMF’s tight monetary policy not only failed to restore the exchange rate, but it also exacerbated the loss of market confidence by bringing the country into a recession. The ineffectiveness of the interest rates policy to strengthen the exchange rate is consistent with the conclusions of other studies (see Ohno et al. 1999; Gould and Kamin 1999; Turongpun 2001; Goldfajn and Baig 1998; Azis 2001). By now, it is widely accepted that the nature of the crisis in Asia was very different from a standard crisis caused by unsustainable current account deficits. As discussed extensively in Chapter 2, during the Asian financial crisis, the weak spot was not in standard macroeconomic fundamentals. It was the composition of capital inflows that produced both currency and maturity mismatches in domestic balance sheets. The phenomenon occurred because, under pressure from international financial institutions, the financial sector was liberalized in a world of highly mobile capital before sound institutions (e.g., sufficient prudential regulatory oversight capacities) were in place.3

IMF’s insistence that Asian crisis countries ought to raise their interest rates (TMP) proved counterproductive. Its arguments for drastic and fundamental microeconomic adjustments (CLM) seemingly make sense, e.g., ending corruption, curtailing special business privileges, and imposing the practice of good governance. But apart from the fact that this is outside IMF’s mandate, some argued that such adjustments in the midst of crisis could shake investor confidence and undermine the source of the region’s stability, as extensively discussed in Chapter 2.

Comprehensive and fundamental reforms are hard to implement. Even countries of the Organisation for Economic Co-operation and Development (OECD) could probably not implement programs as detailed and comprehensive as IMF have prescribed. Because of these difficulties, wrangling and disputes over program implementation often characterize the process after the official letter-of-intent has been signed. Also, CLM is not really necessary to attract capital or to restore market confidence. On the contrary, calling attention to the drastic changes that need to be made in the midst of a currency crisis could be more destructive than helpful. Japan has clearly expressed its disagreement with the idea of imposing sweeping structural reforms as part of IMF’s conditionality (see, e.g., the comments of the Japanese Vice Minister of Finance, Hirohiko Kuroda, at the meeting of the Manila Framework group in March 2000).

Given the unintended role that IMF-mandated policies played during the crisis, it is important to consider what policies are appropriate for preventing and managing capital account crises. We turn in the next subsection to a consideration of policies that could help prevent another crisis from arising in the region.

2. Policy Proposals to Prevent Another Capital Account Crisis4

We recommend: (1) adopting an intermediate exchange rate regime; (2) establishing controls on short-term capital inflows; and (3) restricting nonresidents’ holdings of domestic currencies of emerging

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3 Mohsin Khan, the Director of the IMF Institute, suggested that IMF was ill-equipped to combat such a new type of crisis. He remarked, “A lot is related to financial sector issues, where the IMF staff did not have necessary expertise at all...we find ourselves making standard policy prescriptions...very seldom would you go wrong if you said ‘raise interest rates and tighten fiscal policy’...I thought the teams in Asia were sort of conditioned by the framework they had in mind.” (see Blustein 2001).

4 This subsection and the next draws mainly on ADB Institute-Asian Policy Forum (2000).
economies. We discuss the rationale for each of these proposals below (see also ADB Institute-APF, 2000). The main issues regarding the strengthening of the banking sector with prudential regulation and supervision, and the development of domestic capital markets, which are critical for minimizing double mismatches, were discussed in subsection C.1.

a. Adopting an Appropriate Exchange Rate Regime

Economists have long recognized the impossibility of simultaneously pursuing a fixed exchange rate regime, independent monetary policy, and open capital accounts. Prior to the regional crisis, emerging market economies in Asia more or less pegged their currencies to the US dollar, pursued independent monetary policies, and rapidly liberalized their capital accounts. When the regional crisis struck, crisis-hit emerging economies in Asia scrambled to drop one of the three objectives. Most of the crisis-hit Asian economies went for a freely floating exchange rate. In contrast, only Malaysia opted to impose capital controls (applied in September 1998 and relaxed significantly in February 1999) and to fix the exchange rate with the US dollar. While Singapore and Taipei, China maintained their managed float exchange rate systems, Hong Kong, China maintained its currency board system. As a result, a diverse set of exchange rate regimes now exists in East Asia.

The two corner solutions—a freely floating system versus a fixed rate implemented by a currency board (hard peg)—each have their own strengths and weaknesses. The freely floating exchange rate regime increases exchange rate risk, which helps to limit capital inflows, and especially short-term, volatile capital inflows. Economic agents are expected to prudently manage their exposure to foreign exchange risk by availing themselves of hedging instruments. As a result, a floating exchange rate regime can promote market discipline, thereby discouraging massive capital inflows.

There are two potential problems, however, with a freely floating regime: volatility of the exchange rates in the short term; and misalignment of exchange rates in the medium term. Regarding the first problem, since emerging economies in Asia tend to have narrow and shallow capital markets, they are highly vulnerable to exchange rate volatility, including manipulations by a few large players in the international capital market. Bandwagon or herding effects can easily magnify such volatility. High exchange rate volatility causes two related problems. One is that greater exchange rate volatility and, hence, higher exchange risks tend to increase interest rates, undermining economic growth. Also, Asian economies’ limited hedging possibilities increase the exposure to exchange risk and raise hedging costs. A second problem is that high exchange rate volatility tends to discourage the development of capital markets in small, open economies because residents face constant fluctuation in the real value of domestic assets due to exchange rate volatility, which encourages residents to invest in more stable and liquid financial instruments abroad.

With regard to medium-term currency misalignment, when a currency appreciates as a result of capital inflows, this can create “bandwagon” expectations that will induce even greater capital inflows, further appreciating the currency and resulting in a medium-term misalignment. The exchange rates can thus lose touch with fundamentals for an extended period of time (Park 2002). Such a persistent exchange rate misalignment can seriously distort domestic resource allocation between tradables and nontradables.

The alternative corner solution is the hard peg, which will force an economy to forego monetary autonomy as long as there are no restrictions on international capital movements. Currency boards are typically used in economies where the public has lost confidence in domestic monetary and exchange rate policy due to bouts of hyperinflation, requiring that a fixed exchange rate serve as a new anchor for monetary policy. Since this is not the case in Asia—Asian economies have a strong track record of low to moderate inflation—there is no compelling reason for Asian economies to institute a currency board and give up the flexibility inherent in domestic monetary autonomy.

The key policy issue, therefore, is what exchange rate regime would be most appropriate, not
only for preventing massive capital inflows and currency crisis but also for better facilitating trade, FDI, and economic growth. As discussed above, the two extreme exchange rate regimes—i.e., freely floating exchange rate and currency board regimes—are not appropriate for Asian economies. Instead, an intermediate exchange rate system that could mitigate the negative effects of the two extreme regimes would be more appropriate.

Emerging Asian economies with open capital accounts can adopt a managed float exchange rate policy, which would be consistent with sustainable international competitiveness. It would allow sufficient exchange rate flexibility but avoid a serious exchange rate misalignment caused by persistent capital movements. The exchange rate compatible with competitiveness can be based on an appropriately trade-weighted currency basket rather than a single currency, adjusted appropriately for differences in international inflation rates. Such an exchange rate regime would be consistent with both facilitating trade, FDI and economic growth and accommodating pressures from too abrupt and large swings in capital flows.

The advantages of the recommended exchange rate regime are threefold. First, an appropriately trade-weighted basket can avoid wide fluctuations in international competitiveness caused by a single currency-dominant basket. Second, sufficient flexibility can accommodate moderate swings in capital flows without undermining monetary policy autonomy and smoothing operations can be used to limit excessive short-run exchange rate volatility. Third, serious misalignment of exchange rates in the medium term can be avoided. Thus, the managed float policy recommendation is consistent with Asian economies’ move toward greater financial integration and the promotion of real economic growth, while also allowing for reasonable monetary policy autonomy.

There are several disadvantages to using such a managed float. First, an exchange rate regime compatible with international competitiveness requires appropriate trade-weights and adjustments for international inflation differentials that involve difficult calculations and careful evaluation. Second, it can be hard to judge when a currency is seriously misaligned and such judgment can differ from economy to economy. Third, the degree of flexibility should be increased in order to accommodate extraordinarily large shocks, such as massive, persistent capital inflows, international price shocks (e.g. oil price shocks), and relative productivity advances related to technological innovation.

The currencies in the basket should include major currencies, such as the US dollar, the yen, and the euro, as well as others representing major trading partners of the economy concerned. The degree of flexibility could vary from economy to economy depending on differences in the magnitude of capital flows and the development of resilient capital markets. But, such flexibility should be sufficient enough to limit large volatility and serious misalignment in the exchange rate that would not be compatible with sustainable competitiveness and resource allocation.

We want to emphasize that the managed float exchange rate policy is proposed as part of an integrated policy package and should not be considered as the sole instrument for managing capital inflows and preventing a capital account crisis.

As a practical operational rule, governments should maintain a level of foreign reserves that exceeds the amount of its outstanding external short-term debt. This operational rule is important because if external short-term creditors do panic and put pressure on the exchange rate, the country will be able to pay them off and, hence, avert a more general panic. However, excessive accumulation of foreign reserves by individual emerging economies is a waste of valuable financial resources due to high opportunity costs (i.e., low US Treasury bonds’ interest rate compared with high rate of return to domestic capital). An RFA could considerably reduce the waste of resources.

b. Establishing Controls on Capital Inflows

The appropriate exchange rate regime alone may not be able to reduce massive capital inflows, especially short-term capital inflows. The surge in short-term capital can threaten effective domestic
monetary autonomy and also lead to an excessive appreciation of the domestic currency. It can also cause greater vulnerability for the financial institutions intermediating such flows, as revealed by the Asian financial crisis, leading to a systemic bank run.

Thus, there is a need for Asian economies to manage massive, short-term capital inflows, at least during the period when they are in the extended process of strengthening their banking systems. An Asian economy may install the capability to implement unremunerated reserve requirements (URR) and minimum holding periods (MHP) on capital inflows. Both the URR and MHP can be varied depending on the magnitude of such capital inflows and the general condition of the economy.

Several studies have shown that the imposition of an URR and MHP on capital inflows, which makes capital inflows increasingly more costly the shorter the maturity, can change the composition of capital inflows toward a longer maturity but may not necessarily affect the volume of total capital inflows. This in itself is already a big improvement towards reducing the vulnerability of an economy to a currency crisis because short-term capital is obviously much more volatile than long-term capital.

The effectiveness of the recommended controls in slowing down short-term capital inflows can be eroded over time as markets exploit the potential loopholes in the system. There are also instruments, such as derivatives, which foreign investors could use to convert long-term into short-term capital, although such instruments are limited in the underdeveloped financial markets in Asian economies. The problem of circumvention can be reduced by adopting a comprehensive set of controls at the outset and by constantly monitoring capital flows.

If the capital controls recommended above are applied to all capital inflows (as was done in Chile), they tend to reduce the need for complicated administrative procedures and extensive data to distinguish types of capital flows. Less comprehensive controls that target specific types of capital inflows would require stronger administrative capacity and better data and monitoring systems.

We also note that the problems associated with short-term capital inflows can be managed through prudential regulation of banks and other financial institutions, which is discussed under the sections on minimizing double mismatches. Once domestic financial systems are strengthened, the short-term capital controls suggested here may be lifted. Asian economies that have already strengthened their banking system may not need such capital controls.

c. Restricting Holdings of Domestic Currencies by Nonresidents

Allowing substantial holdings of an economy’s domestic currency by nonresidents can lead to the development of domestic-currency denominated offshore markets. This development can limit the effectiveness of domestic monetary policy since such markets can be used as an unregulated platform for currency speculation, as vividly indicated by currency attacks on the Malaysian ringgit in 1997/98 (discussed in Chapter 2). Several Asian economies were moving to allow greater holdings of their domestic currency by nonresidents before the onset of the regional crisis.

In small open emerging economies, holdings of national currencies by nonresidents may be restricted. If substantial holdings of domestic currency by nonresidents have already accumulated, such holdings and their use can possibly be minimized (in some cases freezing the use of domestic currencies by nonresidents) if threatened with a speculative attack.

Limiting the holdings of local currency by nonresidents will help maintain monetary policy autonomy and reduce the opportunities for a speculative attack on an economy’s currency. It should be emphasized, however, that such restrictions do not constrain capital convertibility.

Since the regional crisis, various Asian economies have taken measures to halt or reverse nonresident holdings of their currencies. Clear criteria need to be established for determining nonresident status and the restricted amounts of nonresident holdings that may be allowed. For example, most countries allow small
(personal) holdings of their domestic currency by nonresidents while restricting larger holdings.

This restriction of the holdings of domestic currencies by nonresidents is a form of capital control. Along with the proposed “bail-in,” this is labeled LBDH in Table 6.

3. Policy Proposals to Manage Another Capital Account Crisis

The proposals in the previous section were designed to prevent another capital account crisis from developing. It is far better to prevent a crisis from occurring than to attempt to limit the fallout once it has started. In cases where capital account crises do arise, however, we present several suggestions below on their management. These include both “bailing in” the private sector and a form of capital control, i.e., restricting holdings of domestic currency by nonresidents, both of which are labeled LBDH in the last column of Table 6. In Section C.3.a, we elaborate on why we recommend these proposals. Given the unique nature of capital account crises, we finally recommend in Section C.3.b the establishment of an RFA.

a. “Bailing In” the Private Sector

If the private sector simply walks away from a crisis, the shortage of international liquidity will seriously worsen and a larger amount of international assistance will be required. Further, multilateral assistance to crisis-hit countries creates a moral hazard problem if it allows private creditors to walk away without sharing any of the cost of the crisis. This is the reason why there is now great interest among multilateral agencies to achieve greater private-investor involvement in crisis resolution. One approach is to induce private sector involvement by requiring private creditors to roll over their maturing claims, which effectively suspends payments and compels private creditors to negotiate. This approach, however, can raise the cost of future loan contracts and can also aggravate a crisis if creditors attempt to exit pre-emptively at the slightest hint of trouble to avoid any prospect of a negotiated settlement involving losses. Further, the private sector’s response to a possible forced burden-sharing scheme may reduce new lending.

There is, therefore, a need to develop private sector “bail-in” measures that are free from the problems mentioned above. Such “bail-in” measures need to be put in place during normal periods so that the private sector will know that such measures can be activated in the event of a crisis.

Measures to facilitate not only rollover but also greater involvement of private creditors should be formulated to better manage an international liquidity crisis. Another policy measure is for governments to establish credit lines with private creditors in collaboration with multinational financial organizations that can be activated in the event of a crisis.

Measures to “bail in” private creditors need to be in place to manage a quick and orderly execution of debt relief and restructuring. One such measure is to consider introducing more flexibility into bond contracts by incorporating the following collective action clauses: (1) collective representation of creditors; (2) majority action to alter payment terms of contracts; and (3) sharing of payments among creditors.

The private sector “bail-in” measures recommended above will increase the cost of international lending and raise the share of costs associated with crisis resolution that are borne by private investors, both of which contribute to reducing moral hazard. In addition, these measures will decrease the financial assistance needed from multilateral institutions and will reduce uncertainties surrounding the debt workout process. Because countries that are highly vulnerable to a liquidity crisis will be charged higher interest rates under such measures, they will be discouraged from excessively borrowing abroad.

One disadvantage with such “bail-in” measures is that they could increase the cost or reduce the supply of foreign financing available to an economy. Another disadvantage is that they may send a wrong signal to the market, thereby making countries reluctant to adopt them. In the case of collective clauses in bond contracts, there is no guarantee that the qualified majority of the
creditors can come to an agreement rapidly enough to avert a looming crisis.

To allow more flexibility in bond contracts, industrial countries need to introduce the collective action clauses into their debt instruments so that it would be easy for developing countries to incorporate them in their debt contracts. To avoid any free rider problems, the collective action clauses should be applied to all classes of contracts.

Regarding possible credit lines, the implementation issue centers on how to persuade private creditors to provide additional funding to an economy to arrest a looming liquidity crisis. Multilateral development banks could provide enhancements to such a scheme in the form of partial guarantees to private creditors.

b. Establishing a Regional Financial Arrangement

The recent crisis was highly contagious in the region both through the usual trade and financial channels and through herd behavior among investors. This emphasizes the need for a strong surveillance system at the regional level to detect signs of a crisis at an earlier stage and reduce its severity should it occur. Helped by its information and location advantage, such a regional system should be able to provide effective monitoring in a complementary manner to IMF’s global surveillance system.

In response to the financial crises in Asia, Latin America and Russia, IMF has tried to strengthen its capacity to act as a sort of international lender of last resort by establishing the SRF and CCL. The SRF allows an economy to borrow in excess of its normal quota (without any general access limits) once a crisis has occurred. In principle, access to the SRF should be quick and funding unlimited. In practice, however, there is some concern that conditionality may be too stringent, the approval process may take too much time, and the phase-in process of fund disbursement may be too slow to meet immediate needs. The CCL, on the other hand, is a preventative facility that can provide contingency funding for an economy facing a potential vulnerability but not yet facing a full-blown crisis. Since the CCL has not yet been used, the pre-qualification requirements have yet to be clearly specified and there is some concern that the criteria may be too complex and strict to be of practical use. In addition, an economy may be reluctant to use the CCL because of fear that it may provide a signal of weakness to the market that might precipitate the very crisis that the facility is intended to safeguard against. Further, because of IMF’s global mandate to provide financial assistance at any time to many member countries, the current IMF facilities may not be able to contain a looming regional liquidity crisis due to a possible overburdening of its resources. For these reasons, there is probably scope for establishing an RFA that can provide a regional lender of last resort facility to complement the efforts of IMF.

One last reason to establish a regional financial arrangement is the fact that capital account crises are driven by financial issues, not macroeconomic issues where IMF has expertise. If the region were experiencing current account crises, IMF would be capable of addressing the problem alone. Since Asian economies are vulnerable to double mismatches and other financial sector issues, however, it is more appropriate to develop institutions with comparative advantage in dealing with these issues. A regional facility could be set up with the ability to address financial sector issues. Being located in Asia, it might also be better able than institutions located in Washington to understand and monitor local financial institutions and business practices.

Further, as Asian quotas and voting rights (i.e., minority shareholder rights) in IMF may not appropriately reflect Asian economic power (i.e., income and wealth), the proposed RFA could provide the region with an important opportunity to strengthen its voice in the international community.

Such a regional facility could forestall panic, prevent a free fall of the exchange rate, deter a liquidity crisis, and moderate the severity of any crisis that occurs. To reflect the nature of a capital account crisis, policy prescriptions for such a crisis should be different from those for conventional current account crises caused by poor macroeconomic fundamentals.

There is an important side effect of such a facility. East Asian economies may not catch up with Western
competitors in the area of financial services, leaving them vulnerable to the type of panic withdrawals by foreign financial institutions that occurred in 1997. Because the gap in financial technology and expertise between East Asian emerging market economies and advanced developed countries is so large and the construction of legal, regulatory, and other financial infrastructures is so costly and time consuming, East Asian countries may remain at a competitive disadvantage in the financial services sector (Park 2002). It is difficult to predict, however, how branches or subsidiaries of foreign financial institutions and their parent institutions would behave in times of financial difficulties and crises in emerging market economies. Would they panic and move out all at once at the first sign of crisis as they did in the fall of 1997? Most East Asian countries have not been able to borrow from international capital markets in their own currencies (although they have been removing many restrictions on capital movements), and they are not likely to be able to anytime soon. This means that they will be continuously exposed to the currency and maturity mismatch problems that triggered the crisis in 1997. These concerns and competitive disadvantages in producing financial services provide additional support for the establishment of an RFA in East Asia (Bergsten & Park 2002).

The RFA, which would provide a lender of last resort facility, should be strongly supported by an effective surveillance system, complementing IMF’s activities through close collaboration. The regional lender of last resort facility should have the following features:

(a) A sufficient quantity of international liquidity to forestall a currency collapse (which would go beyond the appropriate midway exchange rate regime with reasonable bands) should be prepared and, if needed, provided.

(b) Immediate availability of funds for requesting economies that satisfy surveillance criteria (e.g., international capital movements as well as macroeconomic policy, bank regulation and prudential measures).

(c) A new structure of “conditionalities” that focuses on strengthening the financial sector, as is appropriate in capital account crises. These newly designed conditionalities will be different from those applied to traditional current account crises, and should be carefully integrated with regional surveillance procedures that monitor key indicators related to capital account crises.

Because of the regional focus of its surveillance system, the RFA should be able to respond quickly to an imminent contagious crisis in the region and provide the appropriate amount of funds needed to manage a problem situation before it develops into a full-blown currency crisis. The regional focus of the RFA compensates for the difficulty that IMF, given its global mandate and resource constraints, has in paying constant attention to any one region of the world. The RFA can facilitate the sharing among regional governments of up-to-date data on capital flows, financial institutions, regional financial markets, and key macroeconomic indicators. Even under the recommended managed float exchange rate regime, or midway exchange rate regimes between a complete float and hard peg, the lender of last resort facility would be needed when massive capital outflows could cause a free fall in exchange rates. A collapse in exchange rates could weaken domestic balance sheets and initiate a domestic financial crisis even if improved bank supervision and our other policy recommendations are in place. Such massive capital outflows could occur as a result of, for example, regional contagion effects or the repositioning of international investors in response to a major disruption in global financial markets (such as a major fall in US stock prices). The effective use of a lender of last resort facility should be closely linked to strong surveillance systems and prequalification criteria that can help to distinguish between short-term liquidity and longer-term structural problems and, hence, can help to identify new structures of conditionality.

However, the RFA should minimize moral hazard problems associated with any lender of last resort facility by developing an effective regional surveillance and monitoring system, and new conditionalities. An additional disadvantage would be the need for a new international bureaucracy to
implement an RFA, as this could be expensive and possibly duplicative in some ways. It could also raise additional coordination difficulties for domestic policymakers who are already interacting with a number of international institutions. Such costs should be minimized as much as possible in light of large benefits from such deeper information to be shared by member countries as well as much better management of disastrous capital account crises.

4. **Implementing an RFA: How the Chiang Mai Initiative Should Proceed**

The idea of a regional financial arrangement gained acceptance in May 2000 when the 10 members of ASEAN met with the three Northeast Asian economies of the PRC, Japan, and Korea in Chiang Mai, Thailand. This ASEAN+3 group announced the Chiang Mai Initiative (CMI) on financial cooperation. The CMI will take the form of a network of bilateral swaps to help each participating country combat speculative attacks and resist financial contagion.

Such a regional pooling of reserves (e.g., via a network of bilateral swap arrangements) as proposed by the CMI cannot be viable without effective monitoring and surveillance. The creditor nations are willing to lend their reserves only when the borrowing country is credibly seen as a victim of unfounded speculative attacks. Since there will not be time to start examining the merits of a request for liquidity assistance during a speculative attack, frequent assessments of the economic health of the member countries would be required for the functioning of any regional financial cooperation. By prequalifying members for assistance, funds can be disbursed quickly to fight contagion and bailouts of countries with mismanaged economies can be avoided.

We recommend a vehicle that could make the prequalification process credible and binding. This vehicle, which we regard to be the minimum set of requirements, is the drastic strengthening of the ASEAN+3 surveillance process to stretch the limits of the present noninterference peer review process.

The original ASP was set up in October 1998 in direct response to the Asian financial crisis as a forum for the finance ministers to meet twice a year. The unexpected nature of the Asian crisis plus the constant identification of microeconomic inefficiency as a causal factor in the crisis has motivated the ASP to monitor sectoral and social policies as well as macroeconomic and exchange rate management. The responsibilities of ASP include capacity building, institutional strengthening, and information sharing.

The finance ministries and central banks provide information on their latest economic and financial situations to the ASEAN Surveillance Coordinating Unit (ASCU) at the ASEAN Secretariat. ASCU uses these inputs to analyze the economic and financial developments in ASEAN (while taking into account global developments that could affect ASEAN), and presents its conclusions in a report, currently called the ASEAN Surveillance Report. The ASEAN finance and central bank deputies review and finalize this report before it is tabled for discussion by the ASEAN finance ministers during their peer review.

This process expanded into the ASEAN+3 Surveillance Process after the leaders of ASEAN invited the PRC, Japan and Korea to join them in Manila in 1999 to discuss economic cooperation in the region. The ASEAN+3 Surveillance Process has become much more important since the ASEAN+3 agreement in May 2000 (the CMI) in establishing a pooling of regional reserves.

The present ASEAN+3 surveillance process is clearly inadequate to meet the demands of the CMI. Wang and Woo (2002) and Azis and Woo (2003) have identified several areas in the surveillance process that can be improved. First, the surveillance process needs to specify the precise content of the information to be exchanged. Presently, the countries have such wide discretion over the contents of their reports that easy comparison of situations across economies is difficult for many important issues. The ASEAN+3 surveillance process should specify clearly the minimum information that should be included in each report. By allowing the participants to conduct comparative analysis easily, the probability of a mutually useful exchange of views and experiences should be much higher.
Second, current practices under the ASEAN+3 process do not effectively signal the potential risks early enough to allow for the required individual or collective policy responses that will be needed. Emerging problems are not sufficiently addressed mainly because discussions at the ASEAN+3 meetings tend to focus on recent economic developments of member countries on a voluntary basis. It remains for the substance of surveillance recommendations in the peer review process and the actual implementation of surveillance recommendations to be developed.

Third, in light of the inadequacies in information exchange and in peer review, it is not surprising that the ASEAN+3 surveillance process has not helped to improve the regulation, supervision, and integration of the financial markets of the member countries.

The CMI expanded the pre-existing ASA (covering the 10 ASEAN members) to a new network of bilateral swap agreements between individual ASEAN economies with each of the three Northeast Asian economies of PRC, Japan, and Korea. This means that the members of the ASEAN+3 are now risking their foreign exchange reserves to come to the rescue of currencies in distress. Because these swap funds can be disbursed only with the consent of swap-providing countries, the latter need to formulate their own assessments about the swap-requesting country. To ensure quick disbursement to fight contagion and to avoid bailing out countries that mismanaged their economies, it is necessary for the CMI to enhance the existing ASEAN+3 Surveillance Process by pre-qualifying members for assistance.

In order to accomplish this goal, an ASEAN+3 Surveillance Unit (A3SU) must be established. Ideally, A3SU should be located in a major communications and transit hub. The principle of a noninterference peer review should not prevent A3SU from dispatching fact-finding missions to member economies. However, if fact-finding missions are deemed unacceptable, either because of the costs associated with a large bureaucracy or because of the political sensitivity about foreign intrusion, then one of the first tasks for A3SU is to develop a common template for the economic report currently prepared by each participating member on a voluntary basis. Wang and Woo (2002) have suggested the ASEAN+3 countries should supply, in addition to the usual macroeconomic information used in the IMF’s Article IV consultations, data on social variables that would give additional indications of the resilience of their economies, e.g., absolute poverty rate, labor strikes, political developments (general and presidential elections), as well as important changes in regulatory and supervisory systems for financial markets, and in corporate governance and its related laws. It is vital that A3SU go beyond being a warehouse of information to being a generator of warning signals for individual countries and the group as a whole.

Because the 1997–1998 economic crisis in East Asia originated in the vulnerability of the financial systems there, the A3SU-sponsored policy dialogue process should focus not only on the conditions in the financial sectors in these countries but also on the root problems in East Asia’s weak financial systems: the weaknesses in prudential supervision, risk management, and corporate governance; and the absence of long-term corporate debt and equity markets as supplements to bank loan financing, as discussed above (see also ADB Institute-APF 2001). This is a situation where the A3SU should work with the existing regional organizations of central banks (EMEAP and SEACEN) to steer policy dialogue toward financial cooperation to deepen and enhance regional financial markets in addition to closely monitoring the region’s financial sectors.

In the sharing of information within ASEAN+3, the economic reports should include not only assessments made by IMF, the World Bank and ADB, but also the countries’ responses to these assessments, and the various reports from the private sector such as international credit rating agencies and global investment companies. The inclusion of the last two items would facilitate a candid exchange of views and increase the “comfort level” among officials. Because of the inherent difficulty in enhancing the effectiveness of regional surveillance, achieving and raising the mutual “comfort level” is most important.

The ASEAN+3 policy dialogue process should discuss the issues identified by the surveillance report, and make specific policy recommendations to member
countries. As these policy recommendations are not binding, but only encouraged through peer pressure, it is essential that the policy recommendations agreed upon by member countries be made public, thereby reinforcing peer pressure through monitoring in the marketplace. The countries that do not comply with these recommendations will hence be pressured by market discipline.

In order to further accentuate the peer pressure to take surveillance recommendations seriously, the surveillance report should also include the implementation progress of recommended policy changes in a separate section. In particular, the progress on the harmonization of standards in the financial sector, and of the strengthening of the banking sector, as well as the growth of the long-term capital markets of every country should be a regular feature in the report.

As emphasized earlier, the ASEAN+3 policy dialogue group should also initiate collective efforts to improve the regulation, supervision, development, and integration of the financial services markets of the ASEAN+3 countries. The best financial sector practices both within and outside the group should be identified. Taking into account the economic diversity of the region, the unit should design an appropriately paced phasing in of these best financial sector practices. The surveillance unit would also provide technical assistance to national financial sector agencies along with ADB and other international organizations.

To summarize, in this chapter we argue that in the new paradigms of financial market for Asia, banks can play a crucial role in fostering capital markets, particularly corporate bond markets. This is because banks are already dominant in Asian bond markets, thanks to the information processing capability and reputation advantages they enjoy. In the regional trade market, the most important insight arising from our analysis is that the East Asian Trade Triangle enables the PRC to “deliver globalization” to the region by joining the WTO. In this sense, East Asia can capture most of the absolute export growth of full globalization simply by forming an East Asian free trade area (EAFTA). In the wake of the PRC’s WTO accession, the best strategy for East and Southeast Asia is to pursue globalism through comprehensive regionalism.

In the area of preventing and managing another possible financial crisis similar to the Asian financial crisis of 1997–1998, we have suggested ways to minimize or prevent a latent capital account crisis, and to manage it once it occurs. It is our position that an RFA in Asia should carry out what IMF cannot effectively achieve in minimizing or managing a capital account crisis.
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New Paradigms


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Appendix 1

In this appendix, we elaborate the components of Table 6. From IMF’s point of view, a weak banking system (labeled WEAKBANK in the first column) was among the most serious sources of economic vulnerability. This was reflected, among mechanisms, through high growth of bank credits. IMF also believed that the fixed exchange rate system prior to the crisis, labeled FIXEDER, had left the region susceptible. Actually, the appreciation of the real exchange rate (RER) in the region never exceeded that in Mexico, Brazil, and Argentina (see Chinn 1998). Poor governance in the corporate, banking, and government sectors (labeled GOVANCE) was another source of vulnerability (Summers 2000). IMF believed that this featured heavily in Asia, exacerbating the region’s vulnerability.

Based on this perspective, the prescribed policies were as follows. The weak banking system needed to be tackled via major banking reform, including closures of nonviable banks. At the same time, the problems of poor governance have to be resolved by major reforms to fundamentally alter the region’s microeconomic and institutional structures.

IMF also requested recipient countries to tighten their budgets. This policy is a fairly standard IMF condition. A tighter budget would help reduce the inflation rate, and simultaneously it could assure the market that the government was dealing seriously with the problem. In the second column of Table 6, bank restructuring, fundamental changes, microeconomic reforms, and tightening of government budget are all combined in a policy item labeled CLM.

A more important—but more controversial—policy was to tighten the monetary sector by raising the interest rates (labeled TMP). In addition to curbing inflation caused by the currency depreciation, such a policy was expected to prevent further capital outflows and/or to attract new capital inflows, both of which would help strengthen the local currency. Only with CLM and TMP in place would IMF’s role as a lender of last resort to provide liquidity supports (labeled LIQ) be carried out.

Each of the above policies had its specific rationale and objective. Bank restructuring and fundamental microeconomic reforms were meant to clean up the financial and real sector, and to enhance the quality of governance (labeled GOVT in the third column of Table 6). The corresponding improvements in the banks’ balance sheet would allow banks to resume their intermediation function by extending loans (BLENDING). A strict government budget together with tight monetary policy would help remove any inflationary pressure that might have been fueled by the exchange rate depreciation. If successful, the RER could be prevented from appreciating (labeled RERAP). In turn, this would help increase the country’s exports and improve the balance of payment position. As indicated earlier, the tightening of monetary policy by raising the interest rates was also expected to generate positive net capital flows (CPFLOWS). For more detailed explanations of the IMF policies during the Asian financial crisis, see Lane et al. (1999).

In reality, some of these intended outcomes did not materialize, and several others that were unintended emerged. In some instances, the latter overwhelmed the positive results.

In restructuring the banking sector, a huge amount of resources, mostly public money, had to be spent for the main component of the program, i.e., bank recapitalization. Indeed, a most notable sign of vulnerability prior to the crisis was the sheer size of private sector debt, largely short-term and unhedged. By mid-1997, the proportion of short-term debt in total foreign reserves reached more than 100% in countries that were severely hit by the crisis (Indonesia, Korea, and Thailand).

As the exchange rate began to depreciate, local currency value of the debts surged, hurting the balance sheet position of most corporate and banking sectors. Hence, a recapitalization program was inevitable. But in practice, the amount of resources used for the program (some 30% to 60% of GDP) went beyond what these countries could afford. Yet, the intended objective of resuming banks’ intermediation function was not met even a few years after the recapitalization program, implying that the program is cost ineffective.
(labeled ECCOST in Table 6). Further, since bank recapitalization has been financed largely by government bonds, with so much nonliquid assets many recapitalized banks were not in a position to lend. Hence, the fact there was no real improvement in bank’s balance sheet (NOBS) is one of the unintended outcomes listed in Table 6.

The expected capital inflows also did not occur, suggesting that the costs of a high interest rate policy exceeded the benefits. The high interest rate policy also provided huge windfalls to savers, mostly among the medium- and high-income groups, while a large proportion of the population did not have bank savings. This worsened the income disparity. In Table 6, this unintended outcome is labeled SAVERS.

Another unintended outcome is related to the tightening of government budgets. This would cause massive expenditure cuts, including for those items related to social overhead capital. In Indonesia and Thailand, many subsidies (e.g., fuel, food, etc.) had to be either slashed drastically or removed completely from the budget, causing prices of some basic goods to increase. This led to further deterioration of the social conditions (SOCCOST).

The list of alternative (capital account crisis) views is shown in the last two columns of Table 6. According to this view, the massive amount of capital inflows was the major source of vulnerability. In the AFC, these inflows consist largely of private corporate debts (CORPDEBT). During the crisis, these debts could not be rolled over, with the exception of the bail-in program for Korea in December 1997. Consequently, through the balance-sheet effect many economies in the region fell into recession. Further, many believe that a contagion (labeled CGION) also played an important role in precipitating the crisis and intensifying its depth. While the alternative view acknowledged that the banking sector was weak, revealed especially after the implementation of financial sector liberalization (FSL), the key problem rests on the lack of enforcement of prudential regulations (PRUDBANK), not on the regulation itself.

In light of the above assessments, the capital account crisis view recommends a bail-in program and some capital control measures (labeled LBDH in Table 6). Further, unlike the remedies proposed by IMF, the tightening of the financial policy should have been moderate, so that it would not aggravate the already damaged balance sheets of many banks and corporate firms. The combination of gradual restructuring and moderate financial policy is denoted by MPBC.
Appendix 2

In this appendix, we explain how the weights in Figure 2 are derived. As an example, let us use the first sub-hierarchy for the “IMF Views” in Figure 2.

Given the three sources of the crisis (i or j), WEAKBANK, GOVANCE, and FIXEDER, we have a 3-by-3 matrix with elements $a_{ij}$, from which one can compare each pair of these sources of the crisis and rank them on the following scale:

1. Source i and j are of equal importance
2. Source i is slightly more important than j
3. Source i is strongly more important than j
4. Source i is very strongly more important than j
5. Source i is absolutely more important than j

2, 4, 6, 8 are intermediate values

In our case, WEAKBANK is considered slightly more important than GOVANCE and strongly more important than FIXEDER; hence, we assign values 3 and 5, respectively, in those two pairwise comparisons. GOVANCE is viewed as between slightly more important than, and equally important to, FIXEDER; hence, we assign value 2. Hence, $a_{12} = 3; a_{13} = 5; a_{23} = 2$. The sub-diagonal elements of the matrix are the reciprocals of these values, i.e., $a_{21} = 1/3; a_{31} = 1/5; a_{32} = 1/2$. It has been shown (see Saaty, 1994) that the eigen-vector of such a pair-wise comparison matrix gives the consistent ranking (priorities). In this particular case, the elements of the resulting 3-by-1 eigenvector are 0.648; 0.230; and 0.122. Let us label this eigenvector $V_1$. These are the numbers shown in Figure 2 for, respectively, WEAKBANK, GOVANCE, and FIXEDER.

In the next level of the hierarchy, for each source of the crisis we rank the six “joint-policies” arising from three IMF policies listed in Table 6, i.e., LIQ, TMP, and CLM, and two policies of the alternative (capital account crisis) view, i.e., LBDH and MPBC. This is done by comparing pairwisely the six joint policies in a similar manner as before, resulting in a 6-by-1 eigen-vector. Since IMF held that there were three sources of the crisis, we do the same procedure for the other two sources. Hence, we eventually have three 6-by-1 eigen-vectors. Combining these eigen-vectors into one will yield a 6-by-3 matrix containing the elements of all the derived eigen-vectors. To generate the overall ranking of the joint policies after taking into account the priorities of the sources of the crisis obtained earlier, we multiply this 6-by-3 matrix with the 3-by-1 eigen-vector $V_1$. This gives a 6-by-1 vector whose elements are: 0.080; 0.125; 0.256; 0.180; 0.191; and 0.169, for LIQ-MPBC; LIQ-LBDH; TMP-MPBC; TMP-LBDH; CLM-MPBC; and CLM-LBDH, respectively. These numbers are listed in the first row below the bottom of the hierarchy in Figure 2.

Similarly, under the alternative views there will be a 6-by-1 vector whose elements are: 0.439; 0.093; 0.259; 0.067; 0.034; and 0.108, for, respectively, LIQ-MPBC; LIQ-LBDH; TMP-MPBC; TMP-LBDH; CLM-MPBC; and CLM-LBDH. These numbers are listed in the second row below the bottom level of the hierarchy in Figure 2.

In a general form, the above procedure can be represented by the following exposition. Let $A_1, A_2, A_3, ..., A_n$ be $n$ elements in a level of the hierarchy. The quantified judgments on pairs of elements $(A_i, A_j)$ are represented by an $n$-by-$n$ matrix $A = (a_{ij}); i, j = 1, 2, 3, ..., n$. A set of numerical weights $w_1, w_2, w_3, ..., w_n$ reflects the recorded quantified judgments. Hence, in paired comparisons:

\[
\begin{pmatrix}
A_1 & A_2 & A_3 \\
A_1 & w/w_1 & w_2/w_1 & \ldots & w_n/w_1 \\
A_2 & \ldots & \ldots & \ldots & \ldots \\
A_3 & \ldots & \ldots & \ldots & \ldots \\
A_n & \ldots & \ldots & \ldots & \ldots 
\end{pmatrix}
\]

For example, in terms of Figure 2, with respect to WEAKBANK the IMF’s intended policies are, $A_1 = LIQ$, which is the provision of liquidity support, $A_2 = TMP$, which is a tight money policy, and $A_3 = CLM$, which consists of budget retrenchment, bank
restructuring, and other fundamental changes in the economic and institutional structures. All three policies are compared pairwisely. Since every row is a constant multiple of the first row, \( A \) has a unit rank.

By multiplying \( A \) with the vector of weights \( w \),

\[
Aw = nw \quad (1)
\]

To recover the scale from the matrix ratios, the following system ought to be solved:

\[
(A-nI)w = 0
\]

Clearly, a nontrivial solution can be obtained if and only if \( \det(A-nI) \) vanishes, i.e., the characteristic equation of \( A \). Hence, \( n \) is an eigenvalue and \( w \) is an eigenvector of \( A \). Given \( A \) to have a unit rank, all its eigenvalues except one are 0. Thus, the trace of \( A \) is equal to \( n \).

If each entry in \( A \) is denoted by \( a_{ij} \), then \( a_{ij} = 1/a_{ji} \) (reciprocal property) holds, and so does \( a_{ij} = a_{ji}/a_{ij} \) (consistency property). By definition, \( a_{ii} = a_{jj} = 1 \).

Therefore, if we are to rank \( n \) number of elements, i.e., \( A \) is of the size \( n \)-by-\( n \), the required number of inputs (from the paired comparison) is less than \( n^2 \); it is equal to only the number of entries of the sub-diagonal part of \( A \). Hence, when there are three elements (policies) in the hierarchy, such as in the earlier cited example, only three input judgments are required.

But in a general case, the precise value of \( w/w_j \) is hardly given, simply because the input judgment is only an estimate. It suggests that there are some perturbations. While the reciprocal property still holds, it no longer does for the consistency property. By taking the largest eigenvalue, denoted by \( \lambda_{\text{max}} \),

\[
A^p w^p = \lambda_{\text{max}} , w^p \quad (2)
\]

where \( A^p \) is the actual, or the given, matrix (perturbed from matrix \( A \)). Although (1) and (2) are not identical, if \( w^p \) is obtained by solving (2), the matrix whose entries are \( w/w_j \) is still a consistent matrix; it is a consistent estimate of \( A \), although \( A^p \) itself does not need to be consistent. Notice that \( A^p \) will be consistent if and only if \( \lambda_{\text{max}} = n \). As long as the precise value of \( w/w_j \) cannot be given, which is common in a real case due to bias in the judgments, \( \lambda_{\text{max}} \) is always greater than, or equal to, \( n \). Hence, a measure of consistency can be derived based on such deviation of \( \lambda_{\text{max}} \) from \( n \) (the conditions for existence of an eigenvalue under a small perturbation, and for the stability of eigenvector, are shown in Saaty 1994). During the process of conducting pairwise comparisons, such a measure of consistency is needed to insure that the resulting ranking is not too inconsistent.

A consistency index (CI) is equal to \((\lambda_{\text{max}} - n)/(n - 1)\). Comparing CI with a random index (RI), which is the same index calculated from a randomly generated reciprocal matrix, one can generate a consistency ratio (CR), which is the ratio of CI to average RI. This ratio can also be considered as the overall inconsistency index. The threshold point is usually CR \( \leq 0.10 \). In the analysis presented in this section, all pairwise comparisons do not violate this threshold point.

When more than two elements are compared, the notion of consistency can be associated with the assumption of transitivity: if \( A_1 > A_2 \) and \( A_2 > A_3 \), then \( A_1 > A_3 \). It should be clear, that in solving for \( w \), the transitivity assumption is not strictly required. In other words, the inputted judgments do not have to reflect a full consistency (in fact, in addition to permitting some degree of inconsistency, another strong point of AHP is its allowance for a rank reversal; Saaty 1994). Yet, as shown earlier, the resulting matrix and the corresponding vector remain consistent. It is the consistent vector \( w \) that reflects the priority ranking of the elements in each level of the hierarchy. The resulting priority ranking in each level is derived from the computed \( w \).
Postscript

This study has explored development paradigms for postcrisis Asia. It began by analyzing what went right with the precrisis paradigms during the ‘miracle’ phase and what went wrong during the crisis. This led to a discussion of new challenges facing new paradigms in Asia.

In analyzing the mechanisms of the miracle performance in Chapter 1, we attempted to go beyond the reduced form approach of growth functions. We thus emphasized the dynamic interactions between the determinants of growth (i.e., capital deepening, human capital formation, and technological progress) under the externally-oriented open policies in Asia. We also highlighted the contribution of a special institutional setup to the miracle mechanism. That is, the triangular relationships between family businesses, banks, and governments that contributed to the aforementioned dynamic interaction between accumulation and assimilation. Over time, however, this institutional setup was gradually eroded by moral hazard due to occasional bailing out and “too big to fail” policies under regulated financial markets.

In Chapter 2, we characterized the Asian financial crisis of 1997–1998 as a capital account crisis that was 180 degrees different from conventional current account crises. Because of this, new policy prescriptions must differ fundamentally from those of IMF, which are appropriate for conventional current account crises caused by poor macroeconomic fundamentals.

In Chapter 2 we also considered how miracle economies suddenly fell into the capital account crisis. Our hypothesis is that the sequencing order of financial liberalization both domestically and externally was wrong. Our contribution in this area is a risk-based approach to sequencing with special focus on the widening gap between the new risks entailed by domestic financial liberalization as well as by capital account opening, on the one hand, and the capabilities of the pre-existing institutional setup to cope with and manage such new risks, on the other. This was the missing link between the miracle and the crisis.

In Chapter 3 we identified new challenges facing postcrisis Asia in three areas. One challenge is how to proceed with bank restructuring, particularly on resolving non-performing loan problems.

Another challenge concerns corporate governance in Asia. The key question is whether bank-based corporate governance can be efficiently implemented in the context of the continued dominance of family businesses. At the same time, we identified new challenges facing corporate governance of banks themselves, that is, the question of who monitors the monitors?

The third challenge is the case of “open China,” i.e., whether it provides opportunities or competitive threats to regional trading partners. Our finding is balanced in the sense that, while open PRC challenges and urges East Asian economies to upgrade their own industrial trade structure by nurturing higher skills, it provides even greater opportunities for much larger exports from Asian countries. This opportunity is based upon the growing global networks through multinational corporations by decomposing the value chain that has been taking place more rapidly in Asia than in any other part of the world.

Chapter 4 highlighted three major components of a new postcrisis Asian paradigm. One is a more balanced “intermediate” financial market structure, lying somewhere between
a predominantly bank-based and a fully-fledged capital market-based financial system, where both corporate bond and equity markets should be developed to complement banks. Our proposal is for a sort of universal banking, where banks undertake not only conventional banking but also securities business. However, we need a strong device to prevent banks from becoming so dominant that they will undermine the development of fully-fledged capital markets, as happened in Germany.

A second major component is a regional trade arrangement. We proposed a comprehensive larger free trade area composed of ASEAN+3 countries (PRC, Japan, and Korea).

Last, we proposed a new regional financial arrangement, to include four key policy measures:

(i) A midway exchange rate regime between free floating and a hard peg to accommodate both relatively smooth expansion of trade and FDI, and at the same time some volatility of capital movements. This regime would help promote sound development of not only the real sector through preventing medium-run misaligned exchange rates, but also capital markets through preventing extreme volatility of exchange rates in emerging economies.

(ii) Introduction of short-term capital controls to reduce the short-term foreign currency-denominated capital inflows.

(iii) Restrictions on nonresidents’ holdings of the domestic currencies of emerging economies to avoid unnecessary currency attacks.

(iv) Regional lender of last resort facilities to avoid the collapse of currencies and to better manage any capital account crisis. These should be put in place together with new conditionalities that would be most appropriate for this new type of crisis as well as an associated surveillance mechanism with strong peer pressure.

Only when we implement these measures as a comprehensive policy package will we be able to prevent another disastrous capital account crisis in the region.

Reflecting the strong policy-orientation of research at the ADB Institute, it is our hope that this Paradigm Study will provide the Asian policy community with useful and concrete policy recommendations built upon rigorous analytical underpinnings.
Abbreviations

A3SU  ASEAN+3 Surveillance Unit
AFTA  ASEAN free trade area
AFTAPC  AFTA plus the PRC
AHP  analytic hierarchy process
AMCs  asset management companies
ASCU  ASEAN Surveillance Coordinating Unit
ASEAN  Association of South East Asian Nations
ASEAN+3  ASEAN + Japan, PRC, Korea
ASEAN4  Malaysia, Indonesia, Thailand, Philippines
ASEAN5  Malaysia, Indonesia, Thailand, Philippines, Viet Nam
ASP  ASEAN+3 surveillance process
BB  bank-based
BHCs  bank holding companies
BIS  Bank for International Settlements
CAD  capital account deficit
CAR  capital adequacy ratio
CCL  Contingent Credit Line
CDRAC  Corporate Debt Restructuring Advisory Committee
CEO  chief executive officer
CES  constant elasticity of substitution
CET  constant elasticity of transformation
CGE  compatible general equilibrium
CI  consistency index
CLOB  Central Limit Order Book
CMI  Chiang Mai Initiative
CNWTO  PRC joins WTO
CR  consistency ratio
DFL  domestic financial liberalization
EAFTA  East Asia free trade area
ELT  embodied labor trade
EMEs  emerging market economies
EPZ  export processing zone
ER  exchange rate
EU  European Union
FDI  foreign direct investment
FRA  Financial Sector Restructuring Authority
FSC  Financial Supervisory Commission
FSL  financial sector liberalization
FTA  free trade agreement
FTL  Fair Trade Law
GADP  government antidiversion policy
<table>
<thead>
<tr>
<th>Acronym</th>
<th>Description</th>
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<tbody>
<tr>
<td>GTAP</td>
<td>Global Trade Analysis Project</td>
</tr>
<tr>
<td>GTL</td>
<td>global trade liberalization</td>
</tr>
<tr>
<td>HCI</td>
<td>heavy and chemical industries</td>
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<tr>
<td>IBRA</td>
<td>Indonesian Bank Restructuring Agency</td>
</tr>
<tr>
<td>ICT</td>
<td>Information and Communication Technology</td>
</tr>
<tr>
<td>IIT</td>
<td>intra-industry trade</td>
</tr>
<tr>
<td>IMF</td>
<td>International Monetary Fund</td>
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<tr>
<td>INDRA</td>
<td>Indonesian Debt Restructuring Agency</td>
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<tr>
<td>IPO</td>
<td>initial public offering</td>
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<tr>
<td>IQFS</td>
<td>informational quality of financial systems</td>
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<tr>
<td>IT</td>
<td>information technology</td>
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<tr>
<td>K/L</td>
<td>capital per worker</td>
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<tr>
<td>KAMCO</td>
<td>Korea Asset Management Corporation</td>
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<tr>
<td>KAO</td>
<td>capital account opening</td>
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<tr>
<td>KDIC</td>
<td>Korea Deposit Insurance Corporation</td>
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<tr>
<td>LDUF</td>
<td>learning, doing, using and failing</td>
</tr>
<tr>
<td>MB</td>
<td>market-based</td>
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<tr>
<td>MERCOSUR</td>
<td>Southern Common Market</td>
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<tr>
<td>MHP</td>
<td>minimum holding period</td>
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<tr>
<td>MITI</td>
<td>Ministry of International Trade and Industry</td>
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<tr>
<td>MNCs</td>
<td>multinational companies</td>
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<tr>
<td>NAFTA</td>
<td>North American Free Trade Agreement</td>
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<tr>
<td>NEAFTA</td>
<td>Northeast Asian free trade area</td>
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<tr>
<td>NGOs</td>
<td>nongovernment organizations</td>
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<tr>
<td>NIE3</td>
<td>Hong Kong, China; Korea; Singapore</td>
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<tr>
<td>NIEs</td>
<td>Newly Industrializing Economies</td>
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<tr>
<td>NPLs</td>
<td>nonperforming loans</td>
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<tr>
<td>OECD</td>
<td>Organisation for Economic Co-operation and Development</td>
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<tr>
<td>OTC</td>
<td>over-the-counter</td>
</tr>
<tr>
<td>PAC3</td>
<td>Pacific Trilateralism (PRC, Japan, US)</td>
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<tr>
<td>PRC</td>
<td>People’s Republic of China</td>
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<tr>
<td>PSI</td>
<td>private sector investment</td>
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<tr>
<td>PSPD</td>
<td>People’s Solidarity for Participatory Democracy</td>
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<tr>
<td>R&amp;D</td>
<td>research and development</td>
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<tr>
<td>RCA</td>
<td>revealed comparative advantage</td>
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<td>RFA</td>
<td>regional financial arrangement</td>
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<td>RHS</td>
<td>right-hand side</td>
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<td>RI</td>
<td>random index</td>
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<tr>
<td>ROW</td>
<td>rest of the world</td>
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<tr>
<td>SAM</td>
<td>social accounting matrix</td>
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<tr>
<td>SMEs</td>
<td>small and medium enterprises</td>
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<tr>
<td>SOCBS</td>
<td>state-owned commercial banks</td>
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<tr>
<td>SOEs</td>
<td>state-owned enterprises</td>
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<tr>
<td>SRF</td>
<td>Supplementary Reserve Facility</td>
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<tr>
<td>Abbreviation</td>
<td>Description</td>
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<tr>
<td>TFP</td>
<td>total factor productivity</td>
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<td>TMAC</td>
<td>Thai Asset Management Corporation</td>
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<tr>
<td>TMP</td>
<td>tight money policy</td>
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<tr>
<td>UB</td>
<td>universal banking</td>
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<tr>
<td>UK</td>
<td>United Kingdom</td>
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<tr>
<td>URR</td>
<td>unremunerated reserve requirements</td>
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<tr>
<td>WAP</td>
<td>working age population</td>
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<td>WTO</td>
<td>World Trade Organization</td>
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