

The background of the slide is a grayscale image of various financial charts and graphs. It includes line graphs with data points, bar charts, and numerical values. Some visible text in the background includes "30 year yield", "10040", "9930", and "10000".

Rising to Asia's Challenge: Enhanced Role of Capital Markets

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Summary

Until the financial crisis hit in 1997, the Asian economies looked strong and sound. The crisis has exposed various structural weaknesses in the region's capital markets. To understand better the causes of the crisis and to provide a useful basis for designing and implementing preventive measures, re-focused country strategies, and more robust financial systems, the Asian Development Bank (ADB) undertook a study of the financial markets in nine member countries. The countries studied were the People's Republic of China (PRC), India, Indonesia, Korea, Malaysia, Pakistan, Philippines, Thailand, and Viet Nam. The project, entitled Regional Technical Assistance (RETA) 5770, dealt with three major areas: (i) macroeconomic policies, (ii) banking sector policies, and (iii) capital market policies. The present study is on the capital markets in the region.

Capital-Market Policy Issues

Although the different stages of development of the capital markets do not allow ready generalizations of policy issues and recommendations for the nine member countries, six common policy issues might be considered by capital market policymakers and regulators in the region. These issues are:

- development of long-term bond markets,
- improvement of corporate governance,
- reinforcement of regulatory and supervisory arrangements,
- expansion of the investor base,
- further improvement of the equity-market infrastructure, and
- re-evaluation of market volatility controls.

Major Policy Recommendations

DEVELOPMENT OF LONG-TERM BOND MARKETS

Compared with the equity markets, the bond markets in the region are underdeveloped. An economy

with underdeveloped long-term bond markets pays a high price in foregone benefits. First, long-term contractual savings institutions (pension and provident funds, insurance companies, and open- and closed-end investment companies) cannot complement the banking institutions in savings mobilization. Second, underdeveloped markets for fixed-income securities limit the scope of asset securitization and thus its usefulness to banks in financial distress which seek to improve their capital adequacy and liquidity ratios. Third, reckless managers who tend to waste excess cash available in the firm are not subjected to monitoring of corporate debt. At least four impediments to the development of the region's long-term bond markets have been identified: (i) lack of benchmark yield curves, (ii) restricted supply of quality bond instruments, (iii) limited demand, and (iv) inadequate market infrastructure.

Policy recommendations for primary bond markets. Five major policy measures (which are not meant to be exhaustive) are recommended for the creation and promotion of the primary bond markets in the region:

- Introduce government-issued bills, notes, and bonds to create benchmark risk-free interest rates and yield curves; if not, consider using mortgage-backed securities with risk enhancement to provide surrogate benchmark rates.
- Enforce competitive-auction rules for government-issued securities, with minimal government intervention in pricing; consider using both multiple-price, sealed-bid and uniform-price, sealed-bid auction techniques.
- Establish a primary dealer system.
- Consolidate the issuance of securities by the government and public enterprises to avoid issuing a large number of small issues, and establish regularity of issuance.
- Foster a "ratings culture" and upgrade the capacity of credit-rating agencies to international standards.

Policy recommendations for secondary bond markets. The secondary markets for government-issued and corporate bonds in the region are illiquid. Five recommendations are made to promote the secondary bond markets:

- Create repurchase agreement (repo) markets, if none exists.
- Create interdealer broker (IDB) markets, if none exists.
- Eliminate captive demand for government-issued securities.
- Revamp bond clearing and settlement systems.
- Create bond futures and interest-rate futures.

IMPROVEMENT OF CORPORATE GOVERNANCE

Corporate governance had been overlooked by market regulators and investors until the Asian financial crisis broke out. Poor corporate governance is a critical underlying cause of the difficulties of the banking and corporate sectors in the affected economies. To strengthen both internal and external monitoring within an adequate legal and institutional framework, comprehensive reforms are needed. The reforms must: (i) ensure competitive capital markets (especially for corporate financing), with minimal government interference; (ii) provide solid legal protection for investors (shareholders and creditors); and (iii) define and enhance the role of outside shareholders. Two major recommendations are intended to deal with the problem of poor corporate governance:

- Minimize the role of government, which may hinder good corporate governance in the capital market.
- Maximize legal protection for creditors and for minority and outside investors.

REINFORCEMENT OF REGULATORY AND SUPERVISORY ARRANGEMENTS

Regulation is hampered by poor enforcement and rising monitoring costs because it is (i) fragmented, (ii) too merit-based, and (iii) does not make enough

use of self-regulatory organizations (SROs). Structural fragmentation and ambiguity of coverage are common regulatory weaknesses not only in the region but also in advanced economies like the US. Four recommendations are proposed to remedy these weaknesses:

- Redefine the regulatory structure of the capital market to avoid regulatory fragmentation and overlaps.
- Shift from merit-based regulation to disclosure-based regulation.
- Promote and fully utilize SROs to foster market-based regulation.
- Enforce rules and regulations more vigorously.

EXPANSION OF THE INVESTOR BASE

The rapid growth of capital markets in the region has not created an adequately broad investor base. Stimulating market activity on the demand side of the capital markets should be an important goal of governments, once a well-functioning legal and regulatory framework and an adequate market infrastructure are in place. Government policies and incentives should ensure the existence of a viable and effective community of institutional investors to promote and deepen the capital markets, particularly the markets for long-term debt. In this regard, governments must provide a facilitating environment for all types of contractual savings institutions, including contributory pension, trust and mutual funds, and insurance companies. Three major recommendations are made with respect to (i) regulations, (ii) mutual funds, and (iii) deregulation of the asset management industry.

- Review thoroughly and rationalize the regulations for contractual savings institutions.
- Mobilize retail savings by promoting mutual funds.
- Deregulate the asset management portfolios of investment trust companies (ITCs) and insurance companies.

FURTHER IMPROVEMENT OF THE EQUITY-MARKET INFRASTRUCTURE

The most critical issue for the equity markets in the region is how their infrastructure can be improved to make the markets more liquid. Some areas that directly and indirectly affect market liquidity are central depository functions, securities borrowing and lending (SBL), an alternate trading method for thinly traded stocks, and fixed commission rates. Two recommendations are proposed for the further improvement of the equity-market infrastructure:

- Improve central depository functions to allow immobilization and dematerialization of securities, and eliminate legal impediments to the adoption of these critical measures and to SBL.
- Revise the listing rules and consider call-market trading to improve the liquidity of thinly traded stocks, and relax the fixed-commission regime.

RE-EVALUATION OF MARKET VOLATILITY CONTROLS

Capital-market regulators, concerned about extreme price volatility, have introduced several volatility-controlling devices. In general, these devices may be grouped into four major categories: (i) margin regulations, (ii) circuit breakers, (iii) price stabilization funds, and (iv) securities transaction taxes. Since the market collapse of October 1987, the adequacy and effectiveness of these volatility controls have received considerable attention. The use of these mechanisms in different countries has produced varied results and, in many cases, has not shown them to be effective. Market regulators must therefore carry out policy decisions regarding market volatility with little supporting evidence, but with potentially major disruptive effect on price discovery and, hence, on market efficiency. Unlike other volatility controls that have both advocates and critics, government intervention in the stock/derivatives market has never been perceived favorably by market participants and academicians. The consensus is that government intervention, whether direct or indirect, gen-

erates very little benefit, while costing too much. Two recommendations are made with respect to market volatility controls and government intervention in the market:

- Make a thorough study on the efficacy of various mechanisms for reducing market volatility, using local market data.
- Refrain from direct or indirect intervention in the equity and derivatives markets with the use of funds from financial institutions or price stabilization funds.

Introduction

East Asia, particularly those economies that were most severely affected by the financial crisis, had a commendable and consistent record of rapid economic growth, leading to significant social progress. Rapid growth, in combination with relative economic openness, attracted significant capital inflows which led to further growth. With savings rates in the range of 35–40 percent of gross domestic product (GDP), these economies, too, had access to a large pool of domestic resources. However, these capital flows were not managed properly, as the crisis, which has highlighted weaknesses in the financial and real sectors, has demonstrated.

Table 1 presents data for 1996–1998 on the absolute levels of market capitalization in the economies studied. All these economies have yet to bounce back to their capitalization levels at the end of 1996. The equity markets in Indonesia and Malaysia experienced substantial losses between 1996 and 1998. Capitalization levels dropped from US\$307 billion to US\$99 billion in Malaysia, and from US\$91 billion to US\$22 billion in Indonesia. Over the same period, equity market capitalization in the five economies slumped by a total of over US\$410 billion, an amount equivalent to the combined GDP of Indonesia, Korea, and Malaysia in 1997. The domestic weaknesses, as reflected by lowered investor confidence, were compounded externally by some countries' attempts, supported by an independent monetary policy, to keep

their exchange rates below their real effective levels. It was therefore no surprise when, following the contagion that began on 2 July 1997, the capital that had flowed in large volumes into these economies before the crisis was just as quickly gone.

State of Development of the Bond Markets

Compared with the equity markets, the region's bond markets are underdeveloped. An economy with an

underdeveloped long-term bond market pays a high price in the form of foregone benefits. There are at least three types of benefits lost to the economy without well-functioning long-term bond markets. First, long-term contractual savings institutions (pension and provident funds, insurance companies, and open- and closed-end investment companies) cannot complement banking institutions in savings mobilization. This role of contractual savings institutions is critically important when structural weaknesses are revealed

Table 1: Equity Market Index and Market Capitalization

Item	31 Dec 1996	30 June 1997	31 Dec 1997	31 Dec 1998
Market Index				
China, People's Republic of	919.4	1,250.3 (35.99)	1,181.1 (-5.53)	1,146.7 (-2.91)
India	305.1	403.7 (32.32)	354.5 (-12.19)	314.0 (-11.44)
Indonesia	637.4	724.6 (13.68)	401.7 (-44.56)	398.0 (-0.91)
Korea, Republic of	651.2	745.4 (14.47)	376.3 (-49.52)	562.5 (49.47)
Malaysia	1,238.0	1,077.3 (-12.98)	594.4 (-44.83)	586.1 (-1.39)
Pakistan	1,354.6	1,565.7 (15.58)	1,746.3 (11.53)	945.2 (-45.87)
Philippines	3,170.6	2,809.2 (-11.40)	1,891.3 (-32.67)	1,968.8 (4.10)
Thailand	831.6	527.3 (-36.59)	372.7 (-29.32)	355.8 (-4.53)
Viet Nam	na	na	na	na
Market Capitalization (US\$ billion)				
China, People's Republic of	113.76	194.69 (71.14)	206.37 (5.99)	235.61 (14.17)
India	122.61	164.38 (34.07)	128.47 (-21.85)	112.24 (-12.63)
Indonesia	91.02	106.75 (17.28)	29.11 (-72.73)	21.83 (-25.01)
Korea, Republic of	138.82	153.41 (10.51)	41.88 (-72.70)	114.2 (172.68)
Malaysia	307.18	282.95 (-7.89)	93.61 (-66.92)	98.55 (5.28)
Pakistan	10.64	11.61 (9.12)	10.97 (-5.51)	6.23 (-43.21)
Philippines	80.65	74.38 (-7.77)	31.36 (-57.84)	35.09 (11.89)
Thailand	99.83	62.34 (-37.55)	23.54 (-62.24)	34.54 (46.73)
Viet Nam	na	na	na	na
Total	964.51	1,050.51 (8.92)	565.31 (-46.19)	658.29 (16.45)

na = not available.

Figures in parentheses represent the rates of change from the previous period.

Sources: Asian Development Bank, Bloomberg online database, IFC: *Emerging Stock Markets Factbook 1998*.

in the banking sector. Second, asset securitization, or the sale of performing as well as nonperforming assets, becomes a meaningless concept. The process would have provided banks in financial distress with a critical opportunity to restructure their assets and improve their capital adequacy and liquidity ratios. Third, another foregone benefit is a valuable monitoring function of corporate debt over reckless managers who tend to waste “free cash flow.”¹ Jensen (1986) was the first to recognize this unique role of corporate debt. According to his “debt monitoring” hypothesis, “conflicts of interest between shareholders and managers become severe when the corporation generates substantial free cash flow. The problem is how to motivate managers to disgorge the cash rather than investing it at below the cost of capital. The creation of debt enables the managers to bond their promise to pay out future cash flows.” Thus, an adequate level of corporate leverage provides discipline to management through the bond market, and positive benefits to shareholders, by reducing the free cash flow available to management.² In view of the grossly inadequate corporate governance system, a fully developed debt market would have helped restrain management from wasting excess liquidity on projects that did not warrant investment. Four impediments to the development of long-term bond markets are: (i) lack of benchmark yield curves, (ii) limited supply of quality bond instruments, (iii) limited demand, and (iv) inadequate market infrastructure.

Corporate Governance

In a path-breaking article on the theory of agency costs, Jensen and Meckling (1976) defined a firm as a “nexus of contracts,” in which various stakeholders maximize their own self-interests before they contract equilibrium arrangements. Shareholders (both insiders and outsiders) often encourage managers to undertake risky investment projects at the expense of creditors to maximize the market value of equity. Creditors strive to get their loans repaid on

time by exerting pressure on managers to undertake less risky projects. Managers want to maximize their job security and benefits, which may be tied to the size of the firm rather than to shareholders’ wealth. Inside shareholders consider the firm as their personal property, while outside majority shareholders would like to have better control over managers or to strike a deal with inside shareholders for windfall gains. Minority shareholders look for the same type of windfall gains as free riders. Good corporate governance helps balance all these conflicting self-interests and to achieve equilibrium contractual arrangements for the various stakeholders. Poor corporate governance, on the other hand, allows some stakeholders to benefit more than what is justified at the expense of other stakeholders. The financial sector does have severe operational and oversight weaknesses, as the crisis has revealed, but many seem to be in broad agreement that poor private-sector governance in the real economy was equally to blame. The internal weaknesses reflect a combination of factors: (i) entry and exit barriers, which shielded the financial sectors from true competition; (ii) inadequate internal and external monitoring of management decisions, insulating owners/managers from market discipline; and (iii) poor compliance with international prudential norms. Moreover, ineffective regulation and supervision and lack of the necessary skills to conduct proper risk assessments allowed excessive lending, resulting in overcapacity in real estate and other overleveraged corporate sectors. The weaknesses in the pricing of risk and risk management were aggravated by the implicit understanding that the government would support financial institutions or large corporations in difficulty. These institutional inadequacies in the various economies affected by the crisis played a major role in transforming what started as currency depreciation into a deeper financial crisis.

Corporate governance had been overlooked by market regulators and investors until the Asian financial crisis broke out. Poor corporate governance

has been singled out as one of the most critical underlying causes of the difficulties faced by the banking and corporate sectors in the affected economies. Gradual but decisive reforms are needed to correct these weaknesses. Corporate governance issues are evaluated from three standpoints: (i) lack of competitive capital markets; (ii) inadequate legal protection for investors, both shareholders and creditors; and (iii) poorly defined and marginal role of outside shareholders.

Regulatory and Supervisory Arrangements

According to the International Organization of Securities Commissions (IOSCO), securities markets are regulated to achieve three major objectives: (i) to protect investors; (ii) to maintain fair, efficient, and transparent markets; and (iii) to reduce systemic risk.³ The serious disruptions in the banking and corporate sectors that have resulted from the reversals of capital flows have cast doubt on the readiness and effectiveness of regulatory and supervisory arrangements. Beset by enforcement problems and rising monitoring costs, the regulatory frameworks in the region have revealed three key weaknesses: (i) fragmented structure and coverage, (ii) overemphasis on merit-based regulation, and (iii) underutilization of SROs. A major recommendation proposed in this study is the adoption of disclosure-based regulation, which is consistent with market-based regulation.

Investor Base

The rapid growth of equity markets in the region has not adequately broadened the investor base. Investors in the region's capital markets are predominantly individuals; institutional investors are few. The creation of a legal and regulatory environment that is conducive to the growth of contractual savings institutions appears to be the most important policy agenda for the governments in the region. The asset management industry has yet to develop fully, with appropriate quality controls and external supervision.

Institutional investors will help revive the depressed equity markets and the nascent bond markets. They will also help improve corporate governance by forcing the adoption of adequate disclosure and accounting standards. The governments in the region should make a special effort to give more operational freedom to portfolio managers of institutional investors. They should not try to divert institutional investors' funds for market stabilization programs that are either futile or costly, or both.

Equity-Market Infrastructure

Computerized trading has been introduced in the region's equity markets; however, several areas need further improvements. Clearing, settlement, and depository functions must be developed further and reinforced. Immobilization and dematerialization would do away with the physical movement of securities certificates. Delivery versus payment (DVP) would minimize counterparty principal risk. Given the chronic illiquidity of most listed stocks on the region's stock exchanges, trading methods must be carefully evaluated to improve market liquidity and depth for better price discovery. To make the market more liquid and expedite clearing and settlement, a legal framework for SBL must be created, as the first step toward the development of markets for equity derivatives.

Market Volatility Controls

Many forms of volatility controls have been introduced in the region's capital markets. Among the more popular means used to keep prices from falling during panic selling are margin regulations, circuit breakers (including trading halts, price limits, and contingent restrictions on certain types of orders), stock-market stabilization funds, and securities transaction taxes. The efficacy of these devices in lowering volatility and correcting large order imbalances is debatable. Even if they do reduce volatility, the benefits of reduced volatility might well exceed the cost of interrupting the price discovery process. As

for stock-market stabilization funds, their objective of sustaining share prices conflicts with market efficiency. Very often, government intervention in the market works in the short run but at far too great cost to capital-market development.

In terms of the relative development of their capital markets, the countries in the study range from the PRC and Viet Nam, where the markets are at an early stage of development, to India, Korea, and Malaysia where recent initiatives have been taken to develop the capital markets. In the PRC and Viet Nam, centralized planning, state-directed credit, and administered interest rates continue to impede efficient resource allocation. Further development of the capital markets in these two economies will be determined by the degree of their success in restructuring state-owned enterprises (SOEs) and the large state-owned banks. Wide-ranging legal and regulatory reforms are also essential if these transitional economies are to move away from bank-dominated systems.

In India, major obstacles remain in the areas of disclosure, transparency, governance, and investor protection. The governments of India, Korea, and Malaysia need to turn their attention to the development of debt markets.

Malaysia's recent policy measures on capital and exchange controls are likely to adversely affect capital inflows and investor confidence. Investor sentiment—both foreign and domestic—has, however, turned markedly positive since the end of the first quarter of 1999, as a result of the strides the country has made in economic and financial recovery since controls were introduced. Among other things, there has been a continuing decline in yield spreads on international issues of sovereign-rated Malaysian bonds. While the crisis has dealt the equity markets a serious setback, their recent performance points to rising confidence in the country's economic outlook. Still, despite modest success in the issuance of Cagamas (National Mortgage Corporation) bonds, Malaysia is in need of more structured reforms to develop and deepen its bond markets.

The policy focus in India and Thailand of relying on domestic resources for development financing, and the evident determination of the affected economies to deal with the macroeconomic and structural problems that led to the crisis, indicate good prospects for recovery in the region's capital markets. Indonesia, Korea, and Thailand must urgently strengthen their regulatory framework (particularly enforcement), corporate governance, and accounting and disclosure standards. The PRC and Viet Nam, with their banks in poor financial health, need to place the highest priority on strengthening their financial systems. Pakistan and the Philippines also require wide-ranging reforms to remove the impediments to the growth of their capital markets.

Policy Issues

The financial crisis has uncovered fundamental weaknesses in the capital markets of Asian countries. The weaknesses identified by the ADB research team formed the basis for a matrix of policy issues and recommendations which is attached as an appendix. Despite the different stages of development of the capital markets in the nine countries studied, which do not allow easy generalizations, the following six policy issues have been identified as common to the countries and may be considered by capital-market policymakers and regulators in the region:

- Development of long-term bond markets,
- Improvement of corporate governance,
- Reinforcement of regulatory and supervisory arrangements,
- Expansion of the investor base,
- Further improvement of the equity market infrastructure, and
- Re-evaluation of market volatility controls.

Development of Long-Term Bond Markets⁴

Most lending to the private sector in the region continues to take the form of short-term bank credit, and only piecemeal efforts have been made to de-

velop long-term bond markets. As shown in Table 2, at the end of 1997, bank loans in the nine Asian economies studied amounted to about 79 percent of their combined GDP; capital-market borrowing using long-term corporate bonds amounted to a mere 9.82 percent. In the PRC, for example, Lardy (1998) reports that banks accounted for between three fourths and nine tenths of all financial intermediation between savers and investors in 1987–1996. According to Shin (1998b), only 18 percent of the outstanding debt of Korea's manufacturing sector at the end of 1997 was financed with bond issues, while the rest relied on bank financing. Although the Asian financial crisis was caused largely by structural factors, macroeconomic policies adopted by the Asian economies did not particularly help in the development of fixed-income securities markets.⁵ In 1993–1996, the Asian economies sterilized their large capital inflows by building up their foreign-exchange reserves, boosting domestic interest rates, and widening spreads between domestic and international interest rates

(Stiglitz 1998). At the same time, the Asian economies resorted to pegged exchange rates, which severely strained their export competitiveness as real exchange rates appreciated with the US dollar beginning in 1995.⁶ Taking advantage of interest-rate differentials and pegged exchange rates, domestic corporations borrowed heavily offshore.

In retrospect, the underdeveloped state of the capital markets, especially the long-term bond markets, was largely responsible for the Asian financial crisis because local corporations had to rely on offshore sources of funds. Structural weaknesses in their banking sector—lax supervision, nonautonomous management, and poor corporate governance—hampered any efforts by the Asian economies to channel their large savings amounting to 30–40 percent of GDP into long-term productive investments. When sudden reversals and flight of international capital hit these economies, the massive foreign-exchange losses exacerbated a corporate liquidity crisis of systemic proportions unprecedented in the recent

Table 2: Bank Loans, Corporate Bonds, and Equities in Selected Asian Countries, December 1997 (US\$ billion)

Country	Outstanding Bank Loans	Outstanding Corporate Bonds	Equity Market Capitalization
China, People's Republic of	965.19 (105.0)	na	206.37 (22.5)
India	80.40 (23.5)	30.98 (9.1)	128.47 (37.6)
Indonesia	80.82 (60.2)	2.01 (1.5)	29.11 (21.7)
Korea, Republic of	118.17 (47.6)	53.16 (21.4)	41.88 (16.7)
Malaysia	108.36 (153.20)	11.96 (16.9)	93.61 (132.3)
Pakistan	15.46 (27.2)	0.62 (1.1)	10.97 (19.3)
Philippines	43.83 (72.3)	7.60 (12.5)	31.36 (51.7)
Thailand	128.26 (125.5)	3.86 (3.8)	23.54 (23.0)
Viet Nam	5.60 (21.2)	na	na
Total	1,546.09 (78.89)	110.19 (9.82)	565.31 (29.24)

na = not available.

Figures in parentheses represent % of GDP.

Sources: 1998 ADB *Key Indicators of Developing Asian and Pacific Countries*, Vol. 29; ADB Reports (1998): Mortgage-Backed Securities Markets in Selected Developing Member Countries (unpublished); member government authorities.

economic history of the region. Clearly, one important lesson from this crisis is that alternative domestic sources of long-term capital could have minimized reliance on short-term foreign capital.

Four institutional impediments to the development of long-term bond markets in the region are (i) lack of benchmark yield curves, (ii) limited supply of quality bond instruments, (iii) limited demand, and (iv) inadequate market infrastructure.

LACK OF BENCHMARK YIELD CURVES

It cannot be overemphasized that domestic bond markets, particularly the markets for corporate bonds, cannot develop without an appropriate and reliable benchmark yield curve.⁷ Government authorities in the region realize the importance of a benchmark yield curve in pricing long-term corporate bond issues and have been making special efforts to create one. The most remarkable success story is that of the Exchange Fund Note (EFN) program of the Hong Kong Monetary Authority (HKMA). The program began in 1993 with EFNs of relatively short-term two- and three-year maturities, but EFNs of seven- and ten-year maturities were introduced later. The EFN program has succeeded for the following reasons: (i) the HKMA provides a central bank discount window for the notes, (ii) the HKMA uses EFNs as a monetary policy instrument to adjust interbank liquidity,⁸ and (iii) EFNs are issued regularly.

The governments of other Asian economies have had mixed success in their efforts to create a benchmark yield curve. Cagamas Berhad in Malaysia, which was created in 1987, intended to use Cagamas bonds to generate a proxy benchmark yield curve. However, Bank Negara Malaysia (BNM), the central bank, designated the bonds as eligible liquid assets for the liquid asset requirements of financial institutions. The bonds became much in demand, and the funding costs of the low-income housing projects dropped, at the expense of Cagamas bonds becoming illiquid instruments in the secondary market, making them inappropriate for benchmarking (Pardy

1998). In March 1996, Cagamas introduced "tier 2" bonds for housing mortgage loans of more than RM100,000. These bonds were not designated as eligible liquid assets but were discontinued in February 1997, after four issues, mainly because of BNM's concern about the overheated property market. Then in September 1997, the government introduced Khazanah bonds,⁹ three-year zero-coupon bonds that were not classified as liquid assets for financial institutions. The proceeds from the bonds are to be invested only in domestic securities or other domestic assets. The concept is noble in two respects: first, Khazanah bonds are consistent with Islamic principles since no interest income is involved; and second, they can be issued even if the government, because of fiscal surpluses, does not really need to borrow. So far, Khazanah bonds have been issued three times; two other planned issues were canceled because of local credit conditions. Although the Khazanah bond program was patterned after the HKMA's EFN program, what made the two cases different was the absence of an active BNM discount window and the ineligibility of Khazanah bonds for discounting purposes. Pardy (1998) therefore questions the usefulness of Khazanah bonds as benchmark instruments.

In Korea, the maturity structure of government-issued securities is not carefully planned. Bond-market participants, moreover, use the yields on various types of bonds of differing maturities as benchmark interest rates. Official publications of the Korea Securities Dealers Association disclose the yields on a number of instruments to aid in benchmarking (Shin 1998a). These instruments are (i) three-year Treasury bonds, (ii) national housing bonds of types 1 and 2, (iii) five-year regional development bonds, (iv) one-year monetary stabilization bonds, (v) one-year financial debentures issued by the Korea Development Bank, and (vi) three-year nonguaranteed corporate bonds with a credit rating of A+.¹⁰ A true benchmark yield curve based on Treasury issues with differing maturities is urgently needed.

Private securities in the Philippines, including long-term mortgages, are priced in reference to Treasury bills, even if the short-term maturity of Treasury bills makes them ineligible for use as benchmarks for fixed-income securities with longer-term maturities. Reside (1998) indicates that the practice is deeply ingrained in the local market. Primary-market yields of Treasury bills reflect local credit conditions, but secondary-market yields are not readily available because of limited liquidity in the secondary market.

Indonesian market participants also rely on either or both short-term deposit rates (three- to six-month rates) of state-owned banks and Sertifikat Bank Indonesia (short-term notes issued by the central bank) for bench-marking. The PRC and Thailand have yet to create viable risk-free securities as benchmark instruments.

LIMITED SUPPLY OF QUALITY BOND ISSUES

The limited supply of quality debt securities is another constraint to the development of the fixed-income securities markets. The shortage of viable debt instruments is due to the following: (i) the poor credit standing of issuing corporations, (ii) statutory restrictions on the issuance of fixed-income instruments, (iii) repressive regulations, and (iv) the availability of lower-cost bank financing.

Poor credit standing of issuing corporations. PEFINDO Rating Agency of Indonesia, for example, reports that less than one third of bond issues in Indonesia before the crisis carried a rating above investment-grade, and that no publicly rated entity had received PEFINDO's highest rating.¹¹ As of June 1997, the interest coverage ratio of nonfinancial corporations in Korea was 1.36. This means that operating income (or earnings before interest and taxes) was 1.36 times greater than interest expenses. In comparison, a ratio of 3.00–5.00 was arrived at for a sample of Organisation for Economic Cooperation and Development members. The International Monetary Fund (IMF) estimates that a 5-percentage-point increase in interest rates will lower this coverage

ratio to around 0.86.¹² Under the IMF program, Korean interest rates were raised by 5.5 percentage points from the precrisis average of 12.5 percent to the postcrisis average of 18.0 percent, indicating the financial health of Korean corporations. Companies listed on the Stock Exchange of Thailand (SET) were also highly leveraged financially. At the end of 1997, the average debt-to-equity ratio was 450 percent for Thailand, versus 194 percent for Japan, 160 percent for Malaysia, 90 percent for Taipei, China, and 106 percent for the United States (US). The probability of bankruptcy for Thai corporations was about 40 percent, on the average.¹³ SOEs in the PRC were highly leveraged as well. The average debt-to-equity ratio for all SOEs in 1994 was 300 percent; by 1995, the ratio had climbed to 566 percent. Unfortunately, more up-to-date information is unavailable, but considering the nonperforming loan ratios of the PRC's four largest state-owned banks—22 percent in 1995 and 25 percent in 1997—the debt-equity ratio of SOEs must have similarly deteriorated.¹⁴

Statutory restrictions and financial regulations on the issuance of bond instruments. Another reason for the limited supply of viable fixed-income securities is statutory restrictions and financial regulations. In Asian economies, the company law or commercial code often stipulates the amount of corporate debt that can be raised, basing the amount on a company's net worth. Some economies also prescribe the minimum size of new debt issues, thus effectively keeping small corporate borrowers out of the corporate bond markets. In a capital market that is functioning normally, financial leverage decisions should be left to individual corporate issuers and underwriters, and should not be regulated by the government. The government can, however, improve the legal framework to establish priority among different types of creditors and speed up litigation of corporate bankruptcies. In Korea, corporate debt issues must usually be guaranteed by third-party financial institutions (banks and securities companies). In 1997, as much as 85 percent of Korean corporate bonds

were guaranteed. A financial institution guaranteeing a corporate bond issue usually requires the issuer to provide collateral in the form of real estate. An issuer who does not own real estate must first secure the property before seeking a guarantee. For obvious reasons, more nonguaranteed bonds were issued after the crisis. About 45–55 percent of new issues since March 1998 have been nonguaranteed.

Repressive regulations. Repressive regulations are another reason why the supply of fixed-income securities is limited. In Malaysia, the Banking and Financial Institution Act defines the issuance of bonds as a deposit-taking activity which therefore needs the prior approval of the central bank. All new debt issues must first be approved by the BNM and then by the Securities Commission (SC). This dual approval frequently causes long delays, and the greater interest-rate risk involved discourages local corporations from using capital-market financing. The BNM, on the other hand, strives to be a prudent regulator of the banking sector, and uses this approval process to meet its broader monetary policy objectives. However, this policy has had a stifling effect on the corporate debt market and raises further questions about the effectiveness of this BNM policy (Pardy 1998) or the validity of BNM's role in the approval of corporate bond issues (Shimomoto 1998). A similar difficulty arising from mixing approval decisions on the issue of corporate debt with broader economic policy objectives is observed in the PRC. SOE bond issues must be approved by the State Planning Council and the local branch office of the People's Bank of China (PBC), the central bank. Centralized regulation, however, has not necessarily been successful (Nam, Park, and Kim 1998a). In the Philippines, the role of the Securities and Exchange Commission (SEC) in approving bond issues appears to go beyond that of a listing or issuing authority. The SEC requires corporate issuers to satisfy certain financial ratios before it gives approval. Wells (1998) points out that this should be the task of investors, with the help of bond-rating agencies, rather than the SEC's responsibility. In Thailand, necessary

reforms are being undertaken to eliminate the legal restrictions that impeded the development of long-term bond market. For example, the central bank no longer requires commercial banks to hold government bonds or SOE bonds as a condition to opening new branches. Likewise, a minimum net worth of B500 million is no longer required for companies seeking to issue bonds (Werner 1998).

Availability of lower-cost bank financing. Relationship-based bank financing has been a dominant form of financing in the region. Very often, bank financing is easier to secure and cheaper than capital market financing on account of imperfections common in the capital markets. As a result, high-quality borrowers, particularly large companies, rely on bank financing or offshore capital market financing, as was observed in Indonesia, Korea, and Thailand.

LIMITED DEMAND FOR BONDS

The limited demand for fixed-income securities in the Asian economies may be attributed to the captive nature of the primary markets, in view of the controlled or administered interest rates. Although interest rates have largely been deregulated, for government-issued securities a substantial gap exists between primary-market yield and secondary-market yield. Some Asian governments therefore still rely on the captive demand from financial institutions and nonbank financial institutions (especially pension/provident funds) for government bonds in the primary markets. Korea is a good case in point. In the past, Korean government bonds were issued through "competitive" bidding wherein awards were made first to the lowest and then to successively higher-yield bids. However, the highest bids must be lower than the rate set by the Korean government. If the total award was lower than the total planned issue, then the syndicate was obliged to buy the rest of the issue at an annual yield that was 0.1 percent lower than the average yield of successful bids. As the preset rate was lower than the market interest rate, the primary market yield failed to reflect the conditions in the credit market.¹⁵

In Korea, individuals are also forced to purchase government-issued bonds at low yields. When they register their new homes and cars, they are obliged to buy national housing bonds and subway bonds. The result is a bewildering array of more than a dozen government-issued bonds, as the government allows a number of special accounts and funds to issue bonds for the convenience of forced subscriptions. Too many issuers and different types of government bonds create additional difficulties in developing the fixed-income securities market. First, some bond issues are too small to maintain respectable liquidity. Second, issues are irregular, but are clustered near the end of the year. Third, maturities and yields are not carefully planned to lead to the creation of a benchmark yield curve.

The captive nature of primary-market activities is not unique to Korea. This is a common problem in Asia. Another interesting method of lowering effective yield is found in the PRC. Most Chinese bonds are redeemed at maturity at an amount consisting of the principal plus accumulated simple interest based on the stated coupon rate. For example, a two-year bond with a coupon rate of 13 percent would pay RMB1,260. The effective yield becomes only 11.9 percent, as opposed to the market interest rate of 13 percent (Nam et al. 1998a). The Chinese government also dictates the yield on bonds issued by SOEs. To minimize competitive pressure on Treasury issues, it stipulates that yields on SOE-issued bonds cannot exceed yields on Treasury bills and cannot be more than 1.4 times the yield on bank deposits. Once institutional investors purchase the bonds, they cannot sell them unless they are willing to take large capital losses. Thus, distorted yields in the primary market and captive demand from those who are unwilling to trade their securities are the main reasons for the extreme illiquidity in the secondary market. One lesson can be learned from Japan. The primary and secondary markets for Japanese government bonds became active in 1977. This was when the Japanese government stopped relying on captive financial in-

stitutions and began offering new issues of government securities in an open, competitive manner (Rhee 1993).

INADEQUATE BOND-MARKET INFRASTRUCTURE

To develop further and expand, the bond markets in the region require substantial improvements in their infrastructure, particularly in the following: (i) competitive auctions, (ii) a secondary-market trading system that can disseminate real-time price and volume information, (iii) bond clearing and settlement, (iv) the role of credit-rating agencies, and (v) instruments for hedging long- and short-term interest-rate risk.

Competitive auctions. PRC, India, Indonesia, Korea, Pakistan, and Thailand have yet to introduce a truly competitive auction system for government securities. Forced subscriptions, allocations among underwriting syndicates, preset maximum yields, and similar restrictions must be eliminated to minimize distortions in the term structure of interest rates.¹⁶ Korea has attempted competitive auctions for selected issues of monetary stabilization bonds, but relies mostly on underwriting syndicates for the convenience of the allocation scheme.

Secondary-market trading. Secondary-market trading of fixed-income securities differs from one country to another in the Asian region. Fixed-income securities are traded over the counter (OTC) in most Asian economies except the PRC and Thailand.¹⁷ Except for the markets for government-issued securities in Hong Kong, China; Singapore; and Taipei, China, the secondary markets for government and corporate bonds are illiquid. Table 3 presents summary statistics on the region's bond markets. A useful example is the Thai Bond Dealing Center (TBDC) in which OTC activities were formalized to facilitate quote-driven trading, listing, and surveillance activities just as in the National Association of Securities Dealers Automated Quotation (NASDAQ) system. Before the TBDC was created, there was negligible secondary-market trading of debt instruments on the

SET. The TBDC's significant contribution to the promotion of secondary-market activities indicates that appropriate infrastructure can greatly increase market liquidity. With the introduction of primary dealership, the Korean government plans to create an interdealer bond market to facilitate trading among primary dealers. The interdealer market will also be used to improve the price and volume quote system on a real-time basis.

Clearing and settlement. Unlike equity instruments traded on the stock exchanges, very little has been done for the clearing and settlement of bonds, largely because bond trading is confined to the OTC market.

Bond-rating agencies. Although most Asian economies now have bond-rating agencies, the deepening financial crisis has cast doubt on the credibility of these agencies. Credit-rating agencies in Indonesia, Korea, Philippines, and Thailand have been heavily criticized for their inadequate evaluation of the creditworthiness of issuers. Hong Kong, China and Singapore do not have local bond-rating agencies, but allow foreign agencies to enter the market with few entry restrictions. Rating agencies in Indo-

nesia and Thailand experienced serious setbacks as many domestic companies withdrew from the rating maintenance program and the local debt markets languished under high domestic interest rates. Effective and credible rating agencies are needed to foster a ratings culture and to promote sound financial markets. By alleviating information asymmetries, they play a critical role in ensuring that resources are allocated efficiently.¹⁸

Mariano (1999) raised an interesting question regarding regulation- and market-driven demand for rating services. In the US, bond issuers solicited ratings even before regulations were instituted; in the region, on the other hand, the demand for rating services has been primarily regulation-driven as governments require issuers to obtain ratings. Although governments intend to foster a new "infant" industry and a "ratings culture," a critical question is how long governments should continue micromanaging this particular segment of the capital market. The elimination of monopolies on the rating business in a single country is already under way, but barriers to the entry of international rating agencies still ex-

Table 3: Outstanding Bonds, Trading Value and Turnover Ratio, December 1997 (US\$ billion)

Country	Outstanding Bonds	Government Bonds	Corporate Bonds	Trading Value	Turnover Ratio (%)
China, People's Republic of	65.22 (7.10)	65.22 (7.10)	na	185.54	284.8
India	93.76 (27.44)	62.78 (18.37)	30.98 (9.07)	28.97	na
Indonesia	4.91 (3.66)	2.90 (2.16)	2.01 (1.50)	2.51	32.0
Korea, Republic of	131.57 (52.97)	78.41 (31.57)	53.16 (21.40)	169.12	128.50
Malaysia	30.81 (43.55)	18.55 (26.64)	11.96 (16.90)	15.71	36.9
Pakistan	6.40 (11.26)	5.78 (10.17)	0.62 (1.09)	na	na
Philippines	14.10 (23.26)	6.50 (10.72)	7.60 (12.54)	42.55	222.5
Thailand	11.50 (11.25)	7.57 (7.41)	3.86 (3.78)	3.39	19.5
Viet Nam	na	na	na	na	na

Outstanding bonds include both government-issued and corporate bonds with the exception of the PRC for which only government-issued bonds are reported; figures in parentheses represent % of GDP; na = not available.
Sources: 1998 ADB *Key Indicators of Developing Asian and Pacific Countries*, Vol. 29; ADB Reports (1998): *Mortgage-Backed Securities Markets in Selected Developing Member Countries* (unpublished); member government authorities.

ist. Are the region's capital markets ready for market-driven demand? In view of the many financial sector problems caused by information asymmetry before and during the current crisis, there will be greater demand for quality information. The demand for rating services will force issuers to obtain ratings to satisfy investors, whether or not they are required to do so by government. Governments should simply provide a level playing field where both domestic and international rating agencies can compete.

Interest-rate hedging. Malaysia (in 1995), Korea (in 1996), and Taipei, China (in 1997) also created financial derivatives markets like Hong Kong, China and Singapore. However, the countries in the region mainly use financial derivatives, in particular equity index futures, to hedge equity investments. No hedging instruments for short- and long-term interest rates have been introduced except in Malaysia, where futures in the three-month Kuala Lumpur interbank offered rate (KLIBOR) are traded on the Commodities and Monetary Exchange. As of April 1999, the Korea Futures Exchange was expected to trade futures contracts on certificates of deposit, gold, and the US dollar.

Improvement of Corporate Governance

Prowse (1998) has suggested that good corporate governance should be built on at least three cornerstones: (i) competitive capital markets (especially for corporate financing) with minimal government interference; (ii) solid legal protection for investors (shareholders or creditors, or both); and (iii) a well-defined and enhanced role for outside shareholders. One important lesson learned from the ongoing crisis is that the Asian economies, whether affected directly or indirectly by the crisis, did not succeed in creating those three cornerstones. Efforts made before the crisis were not comprehensive enough to demonstrate the beneficial effects of the desired improvements.

COMPETITIVE CAPITAL MARKETS

Competitive capital markets warrant discussions on two distinct models of corporate finance: capital market-based financing and relationship-based financing.¹⁹ Webb (1998) suggests that capital market-based financing originated in the US and the United Kingdom (UK), where financial markets are liquid and the ownership structure is dispersed. Relationship financing is a characteristic of bank-dominated economies, such as Germany and Japan, where capital markets are less developed, the equity ownership structure tends to be concentrated,²⁰ and debt financing also tends to be concentrated around a limited number of creditors, usually banking institutions. In capital market-based financing, the main conflicts are between shareholders and managers, between outside investors (creditors and shareholders) and managers, and, to a lesser extent, between major shareholders and minority shareholders. In relationship-based financing, minority shareholders are weak stakeholders, and major shareholders tend to dominate corporate decision making for their own benefit, at the expense of minority shareholders. The role of directors is limited, as is the role of mergers and acquisitions in capital markets. The key features of the two models of corporate finance are compared in Table 4.

The impact of the government's presence in capital markets on corporate governance is subject to controversy. For example, the Korean government was instrumental in shaping the *chaebol*, the Korean conglomerates. Korean authorities decided to pursue a policy of export-oriented growth and used large industrial firms to achieve this goal. The government regulated interest rates, controlled credit allocation, and provided easy access to bank financing. Two major problems grew out of the Korean *chaebol* system. First, excessive diversification caused overinvestment and overleverage among corporations under the *chaebol*. Claessens et al. (1998a) report that extensive diversification is associated with the misallocation of capital investment toward less

Table 4: Corporate Financing

Item	Relationship Financing	Capital-Market Financing
Share of control-oriented finance	High	Low
Finance markets	Small, less liquid	Large, highly liquid
Share of all firms listed on exchanges	Small	Large
Ownership of debt and equity	Concentrated	Dispersed
Investor orientation	Control-oriented	Portfolio-oriented
Shareholder rights	Weak	Strong
Creditor rights	Strong for close creditors, weak for arm's-length creditors	Strong
Dominant agency conflict	Controlling vs. minority investors	Shareholders vs. management
Role of board of directors	Limited	Important
Role of hostile takeovers	Very limited	Potentially important
Role of insolvency	Potentially important	Potentially important

Source: Webb (1998).

profitable and more risky business segments. The misallocation, they found, was more pronounced in Korea and Malaysia than in any other economies in Asia. The second problem arose from the fact that a heavy government presence in capital markets is not conducive to good corporate governance. The main creditors of the *chaebol*, commercial banks and other nonbank financial institutions, lacked their own established corporate governance practices and so were unable to exercise effective discipline and monitoring, unlike their counterparts in Germany and Japan. Webb (1998) has therefore argued that in Asia ownership concentration is typically both a symptom and a cause of weak corporate governance.

Governments have speeded up privatization since the early 1990s in the interest of developing the equity markets. Most privatization projects that succeeded did so because they generated revenues for the government and developed the equity markets. With more companies being privatized and share prices increasing in the early 1990s, the market capitalization of Asian markets expanded drastically, reflecting the development of the equity markets. However, privatization has failed to improve corporate governance. Although a privatized company is owned partially by dispersed shareholders, the majority of its shares are still controlled by the government. The government and government-controlled institutions

fill key leadership positions in the privatized company with government officials, incumbent as well as retired. Poorly qualified to compete and lacking experience in the private sector, these officials have not adequately contributed to the improved efficiency of the privatized companies.

LEGAL PROTECTION FOR INVESTORS (CREDITORS AND SHAREHOLDERS)²¹

Legal and regulatory protection for outside investors (creditors and shareholders) has yet to be improved. For example, although creditors' rights are fairly well defined in a number of Asian economies, strict enforcement is problematic and courts do not have the required expertise and practical knowledge to handle bankruptcy cases. Bankruptcy proceedings are protracted, taking at least two years to complete after the initial application. Basic ownership rights in some form must be protected to allow the proper exercise of the right to claim collateral and to monitor management. The rehabilitation plan for troubled companies must be better defined to speed up operational procedures and make them more effective. In the PRC, foreign creditors are concerned about the lack of transparency in the liquidation of Guangdong International Trust and Investment Corporation (GITIC) which began in October 1998. They have learned, for example, that GITIC transferred one of

its main assets to another provincial government-owned firm without disclosing the details. As the banking sector is a dominant force in the lending business, there exists a bias in favor of creditors, which may lead to the moral hazard of high-risk lending for financial institutions.

In Thailand, one of the most important obstacles to the restructuring of financially troubled companies is Article 94(2) of the Bankruptcy Act of 1940. This act prohibits a creditor who extends unsecured credit to an insolvent debtor from claiming for payment of that debt in subsequent bankruptcy proceedings. Creditors' willingness to extend unsecured financial assistance to debtors that are experiencing temporary liquidity problems is thus effectively curtailed.²² According to an informal tally, the Thai corporate sector has a total outstanding debt of US\$68 billion, as much as one third of which is considered "strategic" debt, which means that borrowers hide behind legal maneuvers in deliberately refusing to pay. A streamlined foreclosure bill passed in early February 1999 by the Thai Parliament will go to the Thai Senate where strong opposition may be expected. Critics call unconstitutional a stipulation in the bill that future court-imposed foreclosure rulings shall be deemed final, leaving debtors with no legal recourse for an appeal. The bill, so its critics claim, is biased in favor of creditors. In Indonesia, in the absence of effective bankruptcy procedures, debtors are not willing to come to the negotiating table. In Korea, although creditors vote on the reorganization plan, they have almost no voice in its design and have limited access to information. In Indonesia, Korea, and Thailand, outside shareholders must continuously fight inside shareholders who are usually the owners of the corporation. Controlling inside shareholders always attempt to maximize their wealth through business deals between family-controlled unlisted companies and the listed company, that is, through the sale of shares in the unlisted company in share swaps, the sale of properties, the favorable sale and purchase of goods

and services to and from unlisted companies, and payment guarantees by the listed company for the family-owned companies. Prowse (1998) therefore suggests that "the major challenge in East Asia's corporate governance is not how outside shareholders can control the actions of the managers, but how outside shareholders can exert control over big inside shareholders."

In all of the Asian economies studied, internal and external monitoring of management decisions is either lacking or weak. Internal monitoring has not been effective because ownership and management are not fully separated. External monitoring can be improved through mergers. Although many countries have the necessary laws and regulations for them, mergers and acquisitions have never been popular in Asia because Asians generally tend to avoid conflict, especially if they risk exposure to the public. Hostile takeovers are socially unacceptable in many Asian countries. In Korea, for instance, the government has disallowed hostile takeovers, implicitly or explicitly, to push more companies to go public at an early stage of capital market development.²³ In Thailand, hostile takeovers have rarely been feasible because raiders need the cooperation of major shareholders to acquire enough shares. Moreover, governments have regulated strategic industries either by managing SOEs or by allowing certain companies to monopolize the industries. This is another reason why mergers and acquisitions are not generally well received in Asia, except in Korea, where some *chaebol* have merged. In countries like India, Malaysia, Philippines, and Singapore, however, commercial banks have bowed to the demands of increasing competition as well as liberalization and deregulation by merging. Since the start of the crisis, mergers and acquisitions have been used to rescue banks in Indonesia, Korea, Malaysia, Singapore, and Thailand. Arguably, in some cases too much consolidation may not help improve efficiency and soundness, and could lead to monopolies and cartels.

BETTER-DEFINED AND ENHANCED ROLE FOR OUTSIDE SHAREHOLDERS

The role of outside shareholders as guardians of minority shareholders and monitors of corporate decision making is not well defined in Asia and has not been encouraged. Unlike in the UK and US, institutional investors are not dominant forces in Asia. Provident and pension funds invest mostly in government securities and other fixed-income instruments. Some mutual funds have emerged since the mid-1990s, but they are more interested in short-term capital gains. Their monitoring role has yet to be felt in corporate decision making. Market regulators in India might consider giving institutional investors voting rights that are now denied them. Until September 1998, Korean institutional investors such as ITCs could exercise their voting rights only through “shadow voting.” Foreign investors may improve corporate governance but in many countries economic nationalism keeps them from holding more than limited shares in listed family-controlled companies. Because of inadequate disclosure and low accounting standards, foreign investors prefer short-term investments. Minority shareholders cannot sue directors for violations of fiduciary duty or auditors for negligence. The legal framework for class-action lawsuits is either missing or inadequate in the region.²⁴

Reinforcement of Regulatory and Supervisory Arrangements

Governments have had a key role in the development of the capital markets, as in any other sphere. Slow progress or weaknesses on both the operational and regulatory fronts in some countries should therefore be attributed to less than vigorous promotion of capital markets vis-à-vis the banking sector by governments. Except for Viet Nam and to some extent the PRC, which still have to formulate the key regulatory policies for the capital markets, all the countries have most of the essential regulations. However, enforcement problems and rising monitoring costs hamper regulation and supervision

in the region. Among the most serious of these problems are: (i) fragmented regulation, (ii) overemphasis on merit-based regulation, and (iii) underutilization of SROs.

FRAGMENTED REGULATION

In general, despite differences in capital-market regulatory structure among the nine countries studied, there is a single market regulator and the stock exchanges operate their own trading facilities and govern their members. The responsibilities of the stock exchanges in the region vary depending on whether they follow the UK or the US model. In the UK tradition, the stock exchanges of Hong Kong, China and Singapore regulate offerings of securities (both seasoned and primary issues) and are also responsible for a wider range of market regulations (including surveillance) than in the US model. Market regulators in the US regulatory framework have broader responsibilities including enforcement of securities laws and investor protection, but leave market operation and promotion to the stock exchanges. This distinction has become less clear in recent years, however, as stock exchanges have taken on additional responsibilities in their capacity as SROs. Securities regulators are mainly responsible for ensuring that the licensing system for investment firms and securities houses is efficient and sound, and that these firms have enough capital to cover their risks. The regulations should also clearly specify the rules and responsibilities and rights of market participants (securities firms, issuers, and shareholders), and should contain appropriate measures for investor protection. The regulations must protect investors' rights, and safeguard their securities and resources against unfair practices. Overt or covert actions by securities companies or majority shareholders should be closely monitored, since opportunities for insider trading always exist or can be created. The regulations should provide for sound systems for vigilant trading and market surveillance, to constantly monitor trading practices and deal with violations of the law. The

following are therefore critical in formulating sound regulatory policies: (i) a sound legal framework; (ii) sound accounting, auditing, and disclosure standards; and (iii) efficient enforcement of securities regulations and market surveillance.²⁵

A sound legal framework is essential for enforcing and ensuring compliance with capital market regulations. While all Asian economies have fairly functional regulatory frameworks in place, some countries urgently need to strengthen the legal framework that supports the capital-market regulations. In the PRC, for example, the first comprehensive securities law was expected to take effect on 1 July 1999, almost eight years after the start of trading at the Shanghai and Shenzhen stock exchanges. The law, which has been under consideration for six years, is designed to consolidate the numerous regulations, rules, directives, and guidelines that have existed since the creation of the domestic capital markets. In Viet Nam, the provisions of the recently ratified Decree on Securities and the Securities Market need to be implemented. In all of the countries studied a larger and much more complex issue is the strengthening of bankruptcy laws.

A well-rationalized and simple regulatory environment, in which the key regulatory agencies are independent and responsibility overlaps are minimal, is essential for effective enforcement. A recent World Bank report (1995b) identified three types of regulatory fragmentation in the PRC: (i) vertical fragmentation between regulatory authorities at the central and regional levels, (ii) horizontal fragmentation between the licensing of financial intermediaries by the PBC and the monitoring of their secondary-market activities by the China Securities Regulatory Commission (CSRC), and (iii) functional fragmentation among government departments in the multiple approvals required for different types of securities. In addition, the CSRC has inadequate resources including the manpower required to set up regional offices. Regional regulatory authorities such as the Shanghai and Shenzhen securities exchange commissions re-

port to their respective municipal governments rather than to the CSRC, causing regulatory overlaps among the various units of the government. Frequently, some areas are overregulated while others are underregulated, resulting in "regulatory gaps."²⁶

In Malaysia, the BNM, the SC, and the Registrar of Companies have overlapping responsibilities in the approval of private debt securities, causing considerable delays. Similar regulatory overlaps are observed in India. For example, the Reserve Bank of India, not the Securities and Exchange Board of India (SEBI), regulates primary dealers in the government securities market, while SEBI regulates the securities markets.²⁷ In Korea, the Financial Supervisory Commission (FSC) was established to consolidate supervisory powers in one agency. However, there is room for conflicts between the FSC and the Ministry of Finance and Economy which licenses financial institutions to operate. In Thailand, as recommended by the ADB in 1998, the government is reviewing legislative amendments that will transfer licensing authority from the Ministry of Finance to the SEC.

In the Philippines, the main problem of the SEC stems from the wide range of its responsibilities which include company registration, arbitration of company disputes, and involvement in insolvency procedures on top of its normal capital-market functions. To make matters worse, the SEC has limited resources. But even if it had enough resources, its regulatory coverage must be redefined to improve its operational efficiency.

OVEREMPHASIS ON MERIT-BASED REGULATION²⁸

Some concerns have been expressed about the exceedingly prescriptive approach of the Philippine SEC to regulation. It does not lay down general principles and monitor adherence to those principles. Instead, it is too involved in the merit evaluation of each case. This problem is common among market regulators in the region that have relied heavily on merit-based

regulation. In this approach, the market regulator reviews each transaction according to its perceived merits. The evaluation is done in two stages: first, adequacy of disclosure is assessed; then, a value judgment is made on the merits of the transaction. Merit-based regulation assumes that the market regulator is better informed than investors and can better decide the merits of transactions on their behalf. However, the capital market is notorious for the problems of moral hazard and adverse selection caused by information asymmetry, which are far worse than what borrowers and lenders face in the banking sector (Mishkin 1996; Wyplosz 1998). Therefore, the regulator and the regulated play regulatory games. Market participants, always reluctant partners in this regulatory game, disclose as little as possible. The market regulator, for its part, tries to collect as much information as possible and seeks assurance of the quality of information from the regulated, thus increasing the cost of monitoring and compliance. The market regulator tends to put off deciding the merits of transactions in the effort to gather more quality information, and causes undue delays, operating inefficiency, corruption, and missed opportunities. Merit review adversely affects the attitude of market participants. Feeling that they have already met the government requirements, they lose the incentive to comply. Market participants also become too dependent on the market regulator for disclosure standards and quality of information, which should be determined by the market participants themselves. The cost of enforcement thus escalates.²⁹

An alternative to the merit-based approach is disclosure-based regulation which was first introduced in the US in 1933. It is based on the principle that the market rather than the regulator is best equipped to decide the merits of a transaction. Investors must take responsibility for their own investment decisions and are not protected from poor judgments. Responsibility for compliance is left to market participants, especially securities-market institutions. The market regulator is not trapped in a never-ending cat-and-mouse game in its search for more information on

which to base its merit assessment. Market discipline determines the merits of transactions as better-informed investors exercise greater vigilance. The US SEC, for example, does not rule on the quality of a share issue, but reviews prospectuses and proxy statements for initial public offerings (IPOs), unlike Asian market regulators and stock exchanges charged with IPO evaluation.

The Monetary Authority of Singapore (MAS), which has been evaluating the possibility of converting from merit-based to disclosure-based regulation, has looked into the effects of such a shift in three cases that are not allowed in merit-based regulation:³⁰

- IPOs that are exposed to significant risks and uncertainties that may affect their viability: In disclosure-based regulation, investors judge the merits of the offerings, subject to full disclosure of the issuer's vulnerability and risk.
- Share offerings where the uses of the funds to be raised are not specified or are considered inappropriate by the market regulator: In disclosure-based regulation, the issuer must disclose the use of the proceeds or the reasons for not doing so. The market regulator does not judge the merits of an offering and the use of the proceeds; rather, the issuer decides how to use its funds and investors judge the appropriateness of the use.
- A transaction between a listed company and parties related to its directors or substantial shareholders where it is not clear to the market regulator that the transaction is in the best interests of the company: In disclosure-based regulation, the company's shareholders, not the market regulator, judge whether the transaction is in the interests of the company, subject to full disclosure of the terms and conditions.

UNDERUTILIZATION OF SELF-REGULATORY ORGANIZATIONS

According to Greenspan (1997), no market is truly unregulated since the self-interest of the participants generates private market regulation. He further sug-

gests that private regulatory forces should gradually displace many cumbersome, and increasingly ineffective, formal regulatory structures. Although regulation by SROs and market-based self-regulation are not the same, Greenspan's suggestion is consistent with market-based regulation. Many advanced economies have shifted to market-based self-regulation, using SROs to complement traditional, top-down regulatory regimes. Dickie and Bond (1997) cite New Zealand's banking regulation as a model of the market-based approach in which banks are encouraged to disclose fully their performance and credit ratings to the public. This type of disclosure strengthens the incentives for banks and their managers to identify, monitor, and manage their risks, and places market pressure on banks to behave prudently. In the market-based approach, banks supervise and regulate themselves. Hence, the concept of SROs and full disclosure is the cornerstone of this new approach. The underlying principle is the same for market-based banking regulation and the disclosure-based capital-market approach (as discussed in the previous section). Two of IOSCO's 30 principles of securities market regulation are related to SROs: (i) The regulatory regime uses SROs to the extent appropriate to the size and complexity of the market; and (ii) SROs should be subject to the oversight of the regulator and should observe standards of fairness and confidentiality.

The PRC needs a well-designed framework for promoting SROs. The two official exchanges (the Securities Trading Automated Quotations System and the National Electronic Trading System) and the Securities Association of China are referred to as SROs, but there is concern that none of them adequately performs the functions of an SRO. In Viet Nam, although self-regulating stock exchanges would eventually be desirable, the capital market must first develop and mature before organizations can be granted SRO status. In India, the SEBI Act of 1992 has introduced the SRO concept in the capital market, but a well-developed framework is lacking, and the scope

and functions of SROs are unspecified. The organized stock exchanges are the only securities market-related SROs in India with an established framework. Korea's FSC is amending the relevant rules and regulations to allow SROs to deal with IPO issuance. Pakistan has four main types of SROs: stock exchanges, the Mutual Fund Association of Pakistan, the Leasing Association of Pakistan, and the Modaraba Association of Pakistan.³¹ The last two used to be regulated by the State Bank of Pakistan but are now under the jurisdiction of the new Securities and Exchange Commission of Pakistan (SECP) (formerly the Corporate Law Authority).³² In Thailand, the SEC should step up its efforts to grant SRO status to the SET and the TBDC. In the Philippines, the SEC and the Philippine Stock Exchange (PSE) must reach a clear understanding of the SRO status of the PSE.

Expansion of the Investor Base

Stimulating market activity on the demand side of the capital markets should be an important goal of governments in promoting capital markets, once a well-functioning legal and regulatory framework and adequate market infrastructure are ensured. Appropriate government policies and incentives should be in place to ensure that a viable and effective institutional investor community exists to promote and deepen the capital markets, in particular the long-term debt markets. Pension systems can contribute significantly to the development of bond markets. Pension funds can support capital markets as a funding alternative to banking sector intermediation in crisis-affected economies with defined contributory (DC), as opposed to pay-as-you-go (PAYG), systems. At present, the region's economies do not yet make the best use of this source of funds, given the low reach and undercoverage of their pension systems. In general, governments must provide a facilitating environment to promote the growth of all types of contractual savings institutions, including contributory pension, trust, and mutual funds.

Recent efforts of some Asian economies to strengthen their pension systems by increasing their long-run fiscal sustainability have not succeeded because of many factors, including the following: (i) the current dependence on defined benefit (DB) schemes, (ii) the absence of a sound regulatory and legal framework which would ensure that the savings of workers in any DC scheme are invested to yield adequate returns, and (iii) less-developed annuities markets. Reforms intended to strengthen pension systems would promote the capital markets, although the very shallowness of the capital markets has stymied such reforms in many economies.

REFINEMENT OF CONTRACTUAL SAVINGS REGULATIONS

In order for contractual savings institutions to support capital markets, reforms in institutional policies and in regulations are needed. A wide variety of pension arrangements can be found across the region's economies, including PAYG and a mixture of DB and DC schemes. India, Malaysia, and Pakistan have had provident fund systems for a significant length of time, and these have catalyzed the growth of capital markets. Pension systems in general should be reformed to incorporate sizable funded components. However, there must first be a sound legal and regulatory framework to ensure that the accumulated funds can be safely invested. Governments should also offer incentives, such as tax benefits, to pension funds and other contractual savings institutions that invest in the domestic capital markets.

In the PRC, the investment policies of insurance companies should be rationalized, as investments in stocks by state-owned insurance companies are strictly controlled. Since the insurance companies do not have much discretion in investment decisions, their role as institutional investors is quite limited in the PRC. In the Indonesian capital markets, pension fund schemes have shallow penetration and a distorted portfolio allocation relative to their long-term liabilities. Their assets are almost exclusively invested in

short-term fixed-interest assets. Insurance companies have also invested largely in short-term deposits for lack of suitable long-term assets and because of the high interest rates before the crisis. In Malaysia, institutional investors do not invest adequately in long-term instruments, particularly private debt securities.

The Philippines has no framework for private pension schemes. A significant share of the two funded state schemes is invested in government debt securities. This raises a separate issue of whether the pension system, which represents future claims on government revenues, is funded at all. By implication, therefore, facilitating the development of a corporate bond market would contribute significantly to the financial sustainability of pension schemes in the Philippines. Pakistan's position is similar, as a major share of contractual savings finances government debt.

Thailand has three types of formal pension schemes: (i) social securities (under the social security system), (ii) government pensions, and (iii) provident funds.³³ In December 1998, the Thai Cabinet agreed to authorize the SEC to supervise and regulate private provident funds (which were previously under the Fiscal Policy Office of the Ministry of Finance) to ensure the standards of asset management businesses. As a result, the Provident Fund Act and the SEC Act were amended to include provident funds among securities businesses and to harmonize the rules and regulations for all types of asset management businesses.³⁴ The current regulatory framework is fragmented, with three different agencies overseeing the different schemes; as a result, regulations concerning benefits, accounting rules, and asset management differ across the pension funds. Further, pension fund managers do not undertake mark-to-market valuation. Among the three pension types, the provident fund sector is at a nascent stage and needs government incentives.

PROMOTION OF MUTUAL FUNDS

Collective investment vehicles such as mutual funds can contribute significantly to the development of

domestic capital markets by allowing small investors to purchase shares in a relatively low-risk and diversified fund. Relaxing the impediments that are keeping individuals or retail investors out of the capital markets will deepen those markets. However, in many economies in which the financial systems are dominated by banks, mutual funds have grown slowly because of the perceived threat that they pose to banking sector deposits. This seems to be the case in the PRC, where the current policy and regulatory framework has not been conducive to the growth of the mutual fund industry. India, where mutual funds have existed since 1964, needs to develop the sector further by providing incentives and allowing the entry of foreign funds to increase competition. Korea, which introduced the mutual fund industry in 1998, has so far allowed only closed-end funds. Collective investment funds in Korea may be grouped into three types: (i) those managed by ITCs, (ii) those managed by the newly defined investment trust management companies (ITMCs), and (iii) those managed by securities investment companies known as mutual funds in Korea.³⁵ ITMCs were introduced in 1996 to promote contractual funds. To develop the mutual fund industry, Pakistan has exempted private-sector mutual funds from tax. A private-sector mutual fund started operating in December 1997; in the public sector, 26 mutual funds exist. Thirteen closed-end investment companies are operating in the private sector. Before 1991, there were only two licensed investment advisers in Pakistan, but the number has since increased to 81.

In the Philippines, mutual funds have targeted primarily the less-well-off sources of capital, as against the high-net-worth individuals who are attracted by the high deposit rates offered by the Common Trust Fund (CTF) schemes of banks. But this strategy is likely to lead to problems, as the portfolios of the less well-off are not suited for equity investments in which mutual funds specialize. In Thailand, the regulatory framework is being strengthened to promote transparency, disclosure, and investor protection. Moni-

toring and enforcement are strictly implemented. Each mutual fund management company and private fund management company must have a compliance office as an internal check-and-balance mechanism.

DEREGULATION OF THE ASSET MANAGEMENT INDUSTRY

The asset management industry, particularly the ITCs, plays a vital role in the development of the capital markets. In the PRC, while the contribution of ITCs has been significant, the top five companies control more than 50 percent of the industry's assets. In Korea, the recent financial problems of ITCs underscore the need to revitalize the asset management industry in order to increase its contribution to the capital markets. The poor performance of ITCs has been blamed on the practice of book-value accounting in fund valuation, and on the weak governance and internal control systems in most ITCs.

In general, in all the economies studied, there are limitations on the asset allocation of ITCs, mutual funds, and other asset managers. Periodic policy and institutional reviews must be conducted and the impediments removed. Some Asian economies, for example, have regulatory restrictions on the types of instruments that institutional investors and asset managers can hold. In the Philippines, the concern is what to do about the lack of transparency and regulatory control over the CTFs, which are generally managed by banks. As noted earlier, CTFs have limited the growth potential of mutual funds to some extent. Appropriate incentives, such as nondiscriminatory tax treatments, are needed in many economies.

INCREASED ROLE OF INSURANCE COMPANIES IN CAPITAL MARKETS

To realize the potential contribution of the insurance sector to capital-market development, the governments must review their policies regarding the portfolio composition of insurance firms. In the PRC, the policy issue is the lack of freedom of insurance

firms in investment decisions. In Malaysia, institutional investors, including insurance companies, must comply with the statutory requirements that apply to commercial banks, and invest in eligible securities (mostly government and Cagamas bonds).

Further Improvement of Equity-Market Infrastructure

RISK MANAGEMENT IN CLEARING AND SETTLEMENT

The region's equity markets grew in trading value by an average of 30 percent yearly during the last decade. This rapid growth has not always been good news. In the Hong Kong, China market in October 1987, for example, trading activities outstripped the capacity of risk-control mechanisms built for the clearing and settlement system at the time and eventually led to the crash of the equity index futures and underlying cash markets.³⁶ This experience was not unique to Hong Kong, China. Strains in clearing and settlement systems were apparent in a number of advanced markets including the UK and the US.³⁷ As a result, increasing attention during the last decade has been focused on improving the effectiveness of risk management in clearing and settlement.

In retrospect, the market break of October 1987 brought out two important lessons (Rhee 1995). First, there are two dimensions to the efficiency of securities markets: informational efficiency and operational

efficiency. The former implies that security prices fully reflect all available information relevant to determining their value, while the latter requires the optimal functioning of the operating system of financial markets. The second lesson is that operational efficiency cannot be assumed. Before 1987, modern finance theory had concentrated on the informational efficiency of securities markets, while taking operational efficiency for granted. The experience of Hong Kong, China showed that the cost of failure in the operating system could equal or even exceed the social cost associated with informational inefficiency. The core of operational efficiency is clearing and settlement in support of smooth securities transactions.

Except for Singapore, Taipei, China, and Thailand, organized stock exchanges in the countries studied do not impose position limits. In contrast, in financial derivatives markets, position limits are an important financial safeguard for clearing and settlement entities.

Investor protection funds are fairly common among the region's stock exchanges. Only two countries—New Zealand and the Philippines—do not have such funds. The magnitude of the funds shows a wide range of distribution: US\$110 million in Australia; US\$45.9 million in Hong Kong, China; US\$123 million in India; US\$7.8 million in Indonesia; US\$54 million in Japan; US\$72 million in Korea; US\$132 in

Table 5: Equity Market Capitalization, Trading Value, Turnover Ratio, and Listed Companies, December 1997

Country	Market Capitalization (US\$ billion)	Trading Value (US\$ billion)	Turnover Ratio (%)	No. of Listed Companies
China, People's Republic of	206.37	369.57	231.00	764
India	128.47	53.95	41.60	5,843
Indonesia	29.11	41.65	64.20	282
Korea, Republic of	41.88	170.24	172.30	776
Malaysia	93.61	147.04	72.60	708
Pakistan	10.97	11.48	103.70	781
Philippines	31.36	19.78	34.80	221
Thailand	23.54	23.12	39.20	431
Viet Nam	na	na	na	na

na = not available.

Source: IFC: *Emerging Stock Markets Factbook 1998*.

Malaysia; US\$2.6 million in Pakistan; US\$200 million in Taipei, China; and US\$60.8 million in Thailand.³⁸

Unlike financial futures markets, the marking-to-market feature is not common among the region's stock exchanges. Only four countries (Hong Kong, China; India; Pakistan; and Thailand) mark to market as part of risk management. Australia uses the feature only when settling failed trades. Recently approved capital adequacy rules in Malaysia make marking to market an integral part of the risk management system of the Kuala Lumpur Stock Exchange (KLSE). Hong Kong, China; India; Korea; Pakistan; and Thailand impose collateral requirements. All the countries, except for Australia, have adopted participant guarantees or loss sharing, or both.

Recognizing the lack of uniformity and uneven quality of clearing and settlement practices in the various Asian countries, the Group of Thirty (G-30) (1989), an international group of capital-market institutions in the private sector, decided to recommend industry standards after the October 1987 market collapse. Nine of the recommendations pertained to the clearing and settlement systems of national equity markets. The revised version of the G-30 recommendations, as summarized in Box 1, have been endorsed by the Executive Board of the International Society of Securities Administrators (ISSA) (1995).

Table 6 summarizes the current state of clearing and settlement systems at 13 stock exchanges in the Asia-Pacific region. Some countries that were not part of the ADB study are included in the table for comparison. The G-30 recommendations are shown in the first column.

Trade comparison between direct market participants. Indonesia, Japan, Malaysia, Philippines, Singapore, Taipei, China, and Thailand report that trade comparison and verification are done either on real-time basis or on day T+0. All countries in the region meet the T+1 standard recommended by the G-30. A report of the Fédération Internationale des

Bourses de Valeurs (FIBV) (1996) indicates full integration or real-time links for trade verification and confirmation (in over 90 percent of the cases) in compliance with the G-30 recommendation for T+1 trade comparison between direct market participants. As the trading system is computerized and linked to the clearing and settlement system at an increasing number of exchanges, trade comparisons can be completed within the first hour of trading, as reported by about one half of responding exchanges.

Participation of indirect market participants. Although almost two thirds of FIBV members do not have centralized trade confirmation involving indirect market participants (mainly institutional investors), Korea; Malaysia; Singapore; and Taipei, China report that trade comparison among indirect market participants is done on real-time basis. Other countries in the region, except India and the Philippines, appear to have met the T+1 recommendation of the G-30.

Central securities depository. All the stock exchanges in the region operate central securities depositories (CSDs). An exception is Indonesia.³⁹ This observation is consistent with the FIBV's finding that CSDs operate in 83 percent of the responding exchanges. In some exchanges, all physical scrips are stored at the CSDs, but the overall storage ratio is 65 percent. The degree of immobilization (the storage of securities certificates in a vault to eliminate physical movement of certificates in ownership transfers) ranges from 8 percent in India to 100 percent in Singapore. Dematerialization (which eliminates physical certificates so that securities exist only as computer records) has yet to be implemented among the region's exchanges. Korea has been working on its own dematerialization program since 1991 but it may take another 10 years to complete.

Trade netting. Surprisingly only the stock exchanges in Australia and Hong Kong, China use continuous net settlement (CNS), among the 13 Asia-Pacific countries surveyed. However, multilateral netting is common among all the countries except Pakistan. According to the FIBV report (1996),

Table 6: Current Status of C&S Systems in Practice at 13 Stock Exchanges in the Asia-Pacific Region

Item	G-30 Recommendations	Australian Stock Exchange	Stock Exchange of Hong Kong	National Stock Exchange of India	Jakarta Stock Exchange	Tokyo Stock Exchange	Korea Stock Exchange
Comparison of Trades Among Direct Market Participants	T + 1	T + 1	T + 0	T + 1	T + 0 and T + 1	T + 0	T + 0
Comparison of Trades Among Indirect Market Participants	T + 1	T + 1	T+1	Partially Done	T + 0 and T + 1	T + 1	T+1 through Institutional Affirmation and Settlement System
Central Securities Depository (CSD)	Yes	Major commercial banks and ASX member brokers offer custodian nominee service. Clearing by Clearing House Electronic Sub-register System.	Central Clearing and Settlement System (CCASS)	National Securities Clearing Corp.	Being planned. PT Kliring Deposit Efek Indonesia provides clearing service.	Japan Securities Depository Center. Japan Securities Clearing Corporation is entrusted with clearing and settlement.	Korea Securities Depository (KSD) (KSD also provides clearing service.)
Immobilization ^a	Yes	Yes (60%)	Yes (54%)	Yes (8%)	No	Yes (20%)	Yes (70%)
Dematerialization ^b	Encouraged	No	No	No	No	No	No
Pledging with the CSD ^c	Yes	Yes	Planned	No	No	Yes	Yes
Trade Netting System	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Multilateral Netting ^d	Recommended	Yes	Yes	NR	Yes	Yes	Yes
Continuous Net Settlement ^e	Highly Recommended	Yes	Yes	NR	No	No	No
Delivery versus Payment (DVP) Method	Yes	Yes	Yes	No	No	Yes	Yes
"Same Day" Fund Convention	Yes	Yes	Yes	No	No	Yes (from Dec 1997)	"Next Day" Fund (checks vs. securities delivery)
Rolling Settlement System	T + 3	T+5 (T + 3 July 1998)	T + 2	T + 23	T + 5	T + 3	T+2
Securities Borrowing and Lending	Yes	Yes	Yes	No	No	Yes	Yes
International Securities Identification Number System	Yes	Yes at participants' option	Yes	No	Yes	Yes	Yes

NR = Not reported.

^a The storage of securities certificates in a vault in order to eliminate physical movement of certificates/documents in transfers of ownership.

^b The elimination of physical certificates of documents of title which represent ownership of securities so that securities exist only as computer records.

^c Pledging is a procedure within the CSD that allows securities to be used as collateral to secure loans, options/futures contracts, and other forms of credits.

^d A netting system in which all trades in the same security are grouped into a final long or short position for each participant. In this type of netting, the trading counterparty may change.

^e In a continuous net settlement system, daily netting is employed and all open trades at the end of a day are then offset against the next day's trades.

Source: Rhee (1998).

Kuala Lumpur Stock Exchange	New Zealand Stock Exchange	Karachi Stock Exchange	Philippine Stock Exchange	Stock Exchange of Singapore	Taiwan Stock Exchange Corporation	The Stock Exchange of Thailand
Real-Time Basis	Yes	T + 1	T	Real-Time Basis	Real Time Basis on T + 0	T + 0
Real-Time Basis	Yes	T + 1	T + 0 to T + 4	Real-Time Basis	Real Time Basis on T + 0	T + 1
Securities Clearing Automated Network Services Sdn Bhd provides clearing	Austra Clear New Zealand System	CSD	Yes	The Central Depository (Pte) Ltd., the Securities Clearing & Computer Services (Pte) Ltd. provide clearing service for equity and the Options Clearing Company (Pte) Ltd. offers clearing service for stock options.	Taiwan Securities Central Depository Co. also provides clearing service.	Thailand Securities Depository also provides clearing service.
Yes (67%) No No	Yes No No	Yes No Yes	Yes (59%) Encouraged Yes	Yes (100%) No No	Yes (60%) No Yes	Yes (39%) No Yes
Yes Trade for Trade Trade for Trade	Yes NR NR	Yes No Allowed during an accounting period as notified by exchange	No Trade for Trade Trade for Trade	Yes Yes No	Yes Yes No	Yes Yes No
Yes	Yes	Yes	Yes	Yes	Yes	Yes
Yes, at direct market participants' level only (i.e., brokerage)	Yes	Planned through Central Depository Company	Yes	Yes	Yes	No (checks vs. securities delivery)
T + 5	T + 5	No - in specific cases	T + 4	T + 5	T + 2	T + 3 for SET and BSDC members; T + 2 for BDC Members
Yes	No	No	Planned	No	Yes	Yes
Yes (January 1998)	Yes	In process	Planned	Yes	Yes	Yes (since 1995)

Box 1: G-30 and ISSA Recommendations on Clearing and Settlement**Recommendation 1: Trade Comparison between Direct Market Participants**

G-30: By 1990, all comparisons of trades between direct market participants should be accomplished by T+1.

ISSA: All comparisons should be accomplished by T+0. Matched trade details should be linked to the settlement system.

Recommendation 2: Participation of Indirect Market Participants

G-30: By 1992, indirect market participants should be members of the T+1 trade comparison system.

ISSA: Indirect market participants should achieve positive affirmation of trade details on T+1.

Recommendation 3: Central Securities Depository

G-30: By 1992, each country should have a central depository function in place.

ISSA: Each country should have in place an effective and fully developed central securities depository, organized and managed to encourage the broadest possible direct and indirect industry participation. The range of depository eligible instruments should be as wide as possible. Immobilization or dematerialization of financial instruments should be achieved to the utmost extent possible. If several CSDs exist in the same market, they should operate under compatible rules and practices, with the aim of reducing settlement risk and enabling efficient use of funds and available cross-collateral.

Recommendation 4: Trade Netting

G-30: Each country should study whether a trade netting system would be beneficial and, if so, implement it by 1992.

ISSA: Each market is encouraged to reduce settlement risk by introducing either real-time gross settlement or a trade netting system that fully meets the "Lamfalussy-recommendations."

Recommendation 5: Delivery Versus Payment

G-30: DVP should be employed as the method for settling all securities transactions and should be in place by 1992.

ISSA: DVP should be employed as the method of settling all securities transactions, where DVP is defined as simultaneous, final, irrevocable, and immediately available exchange of securities and cash on a continuous basis throughout the day.

Recommendation 6: Same-Day Funds

G-30: All securities administration and settlement payments should be made consistent across all instruments and markets by adopting the "same-day funds" convention.

ISSA: No change.

Recommendation 7: Rolling T+3 Settlement

G-30: A "rolling settlement" system should be adopted by all markets. Final settlement should occur on T+5 by 1990 at the latest and on T+3 by 1992.

ISSA: A rolling settlement system should be adopted by all markets. Final settlement for all trades should occur no later than by T+3.

Recommendation 8: Securities Borrowing and Lending

G-30: Securities borrowing and lending should be encouraged as a method of expediting the settlement of securities transactions. Existing regulatory and taxation barriers that inhibit the practice of lending securities should be removed by 1990.

ISSA: Securities borrowing and lending should be encouraged as a method of expediting the settlement of securities transactions. Existing regulatory and taxation barriers that inhibit the practice of lending and borrowing securities should be removed by 1990.

Recommendation 9: ISIN Numbering System

G-30: By 1992, each country should adopt the standard for securities messages developed by the International Organization of Standardization (ISO Standard 7775). In particular, countries should adopt the ISIN numbering system for securities as defined in the ISO Standard 6166, at least for cross-border transactions. These standards should be universally applied by 1992.

ISSA: By 1992, each country should adopt the standard for securities messages developed by the ISO Standard 7775. In particular, countries should adopt the ISIN numbering system for securities issues as defined in ISO 6166.

12 percent of responding FIBV members use no netting, while 6 percent use bilateral netting, a rudimentary form. The other exchanges use multilateral netting.⁴⁰ Although the G-30 strongly recommended the adoption of CNS, relatively few exchanges have done so, as the ADB study has shown.⁴¹

Delivery versus payment. DVP is most crucial in reducing counterparty principal risk in the region. India and Indonesia, however, do not use the DVP system. Although simultaneous, final, and irrevocable DVP is the most effective in containing principal risk, only 9 percent of FIBV members rely on this approach. Most exchanges (53 percent) use “batch” DVP (in which deliveries and payments are settled on a net basis at the end of the processing cycle) together with settlement guarantees. Surprisingly, a few exchanges have no direct link between delivery and payment, exposing their clearing and settlement systems to principal risk. Common settlement guarantee schemes are: insurance, margin/collateral, and participant guarantees. Other indirect guarantee mechanisms suggested by FIBV members are position limits and capital adequacy testing.

Same-day funds. The “same-day” fund convention has yet to be adopted in India, Indonesia, Korea, Pakistan, and Thailand. Japan adopted it in December 1997. Although the G-30 recommended the use of “same-day funds” for all instruments, the FIBV questionnaire was more concerned with the use of automated fund transfers and the availability of credit for settlement. It is not clear whether “same-day funds” rather than “next-day funds” are implied in automated transfer. Checks are widely used in settlement.

Rolling T+3 settlement. Several exchanges in the region still use T+5 settlement. These include Indonesia, Malaysia, New Zealand, and Singapore. Australia changed over to the T+3 rolling settlement system in July 1998. The Philippines uses T+4 settlement. India has yet to shorten its settlement cycle from T+23 to T+3. Hong Kong, China; Korea; and Taipei, China use T+2 settlement. About two thirds of FIBV member exchanges have adopted a rolling

T+2 or T+3 settlement schedule, making the G-30 recommendation for T+3 settlement an industry standard, while the remaining exchanges operate on a rolling T+4 or T+5 schedule. Average nonsettlement (or “fail”) rates range from 0 to 15 percent, with an average of 2.5 percent for responding exchanges. An important related issue is the frequency of settlement processing cycles per day. Three fourths of the responding exchanges operate one settlement cycle per day and have yet to adopt multiple daily processing cycles which would improve overall system performance.

Securities borrowing and lending. The G-30 recommendation for SBL has yet to be widely adopted. The practice is allowed in only one half of the responding exchanges. It has not been introduced in India, Indonesia, New Zealand, Pakistan, Philippines, and Singapore. In the 1970s, Korea and Taipei, China set up SBL systems similar to the Japanese system. After a trial period, the Stock Exchange of Hong Kong, China has expanded short-selling activities. Malaysia established a domestic market in securities borrowing and introduced rules on regulated short selling in December 1995. However, these were suspended with the onset of the crisis, to be resumed at an appropriate time. Thailand completed its SBL framework in 1997 and passed the necessary tax amendments in 1998 with the condition that the loan transactions must be conducted through the Thailand Securities Depository (TSD) or a licensed SBL intermediary. Banks and finance companies (if permitted by the Bank of Thailand [BOT]) and securities firms may apply for a SBL license.⁴²

International Securities Identification Number (ISIN) system. The introduction of the ISIN system is in the planning stage in India and Pakistan, while Malaysia and the Philippines will introduce it soon. Thailand adopted the system in 1995, and Korea, in 1996.

The most interesting finding of the risk management survey is the novation feature, where the clearinghouse becomes the counterparty to the buyer and

the seller of the original contract. Once novation is complete, the clearinghouse usually must make payment or delivery if a participant fails to meet its settlement obligations. In Japan; Malaysia; Philippines; and Taipei, China, there is no novation of contracts in the strict legal sense. Singapore reports that novation applies only to clearing members of the exchange. Although it is understandable that Malaysia and the Philippines, with their trade-for-trade settlement, do not have the novation feature, no significant differences in risk management systems are noted between countries with contract novation and those without it.

TRADING COST

Fixed commission rates for securities trading on stock exchanges have been deregulated in a number of countries since 1975, when the US market adopted negotiable commission rates. As capital markets became more integrated, freely negotiable commissions proliferated in many developed markets, including Canada (1983), Australia (1984), and UK (1986). Other developed markets reduced transaction costs or partially deregulated. In 1999, Japan deregulated its brokerage commissions on all trades.

Fixed commission rates still prevail in the region largely for the protection of small, undercapitalized brokers who rely heavily on commission income for their survival. Since these small brokers are also exchange members with the same voting rights as large brokers, the former group tends to resist the reduction of trading commission rates, as has been observed in India, Indonesia, Malaysia, Pakistan and Philippines. Table 7 summarizes the brokerage fees at the region's stock exchanges. For ease of comparison, the brokerage fees are shown in US dollars assuming a total investment of US\$10,000. Available information on other transaction costs, including stamp taxes, exchange fees, and registration fees, is included. Transaction costs are lowest in Thailand (US\$56) and the PRC (US\$64), and highest in India (US\$300) and the Philippines (US\$224). Between those two extremes are Korea (US\$80) and Malay-

sia (US\$106). Although brokerage fees and other related costs alone do not determine trading volume, the amounts are large for a one-way transaction. Capital-market regulators in the region have been encouraging small brokers to consolidate or merge with larger brokers to increase their capital base to a level that will allow adequate risk management and, more importantly, better diversification of their securities business. Diversification into other segments of the securities business will reduce the dependence of securities companies on trading commission income.

Table 7: Brokerage Fees and Other Costs, December 1998

Country	Investment of US\$10,000
China, People's Republic of ^{a,g}	64
India ^b	300
Indonesia ^c	104
Korea, Republic of ^c	80
Malaysia ^{d,g}	106
Pakistan ^e	100
Philippines ^f	224
Thailand ^b	56
Viet Nam	na

na = not available.

^a Brokerage fee and stamp duty. Registration fee of 0.1% of face value is not computed.

^b Brokerage fee and stamp duty.

^c Brokerage fee and transaction fee.

^d Brokerage fee, clearing fee and stamp duty.

^e Brokerage fee, stamp duty of 0.1% of face value is not computed.

^f Brokerage fee, transaction fee and PCD (clearing and settlement) fee.

^g Documentary stamp tax of P1.50 for every P200 of face value of the share is not computed.

^g For large-sized trades, the following are applicable in the PRC and Malaysia:

China, People's Republic of	Malaysia
0.6% up to RMB500,000	1.00% up to RM500,000
0.5% RMB500,001 to RMB5 million	0.75% RM500,001 to RM2 million
0.4% over RMB5 million	0.50% over RM2 million

Source: Asian Development Bank.

TRADING METHOD AND MARKET VOLATILITY

Trading in the world's capital markets is either (i) order-driven, or (ii) quote-driven. The New York and Tokyo stock exchanges are order-driven markets, while the London Stock Exchange and the NASDAQ are quote-driven markets. Most Asian capital markets are order-driven.⁴³ Order-driven systems use either the call-market or the continuous-auction method of trading, or a combination of both. In the call-market method, orders are batched for execution at a single price to maximize the number of shares traded. In the continuous-auction method,

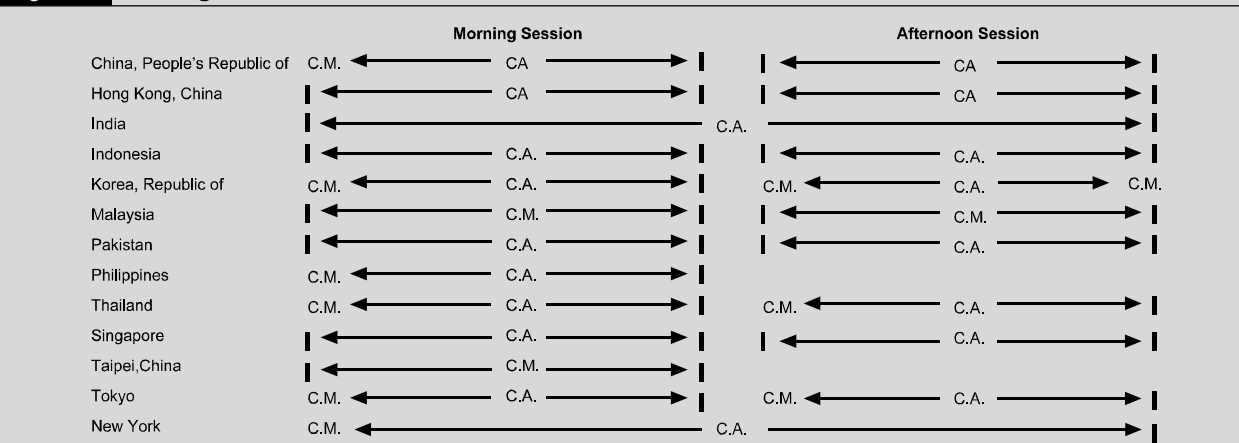
orders are executed whenever submitted bids and offers cross during a trading session. As shown in Figure 1, stock exchanges in Hong Kong, China; India; Indonesia; Pakistan; and Singapore use the continuous-auction method throughout the trading day. Stock exchanges in Malaysia and Taipei, China use the call-market method for price and order matching. Exchanges in the PRC, Korea, Philippines, and Thailand, like the New York Stock Exchange (NYSE) and the Tokyo Stock Exchange (TSE), use a combination of the two methods. The NYSE and the TSE rely on the call-market method to determine opening prices and the continuous-auction method during the rest of the trading session. As trading is becoming more automated, with less manual intervention, the call-market method has been gaining more support.

Since trading methods affect market volatility, the question of which trading method to adopt is of interest to market regulators, as well as to academicians interested in securities-market design. Price stability is the most important advantage of the call-market method over the continuous-auction method. The call-market method leads to superior price stabilization because batching orders over time eliminates price fluctuations caused by transactions bouncing between bid and ask quotes, and reduces price volatility induced by a random-order arrival sequence. In

addition, as trading orders accumulate over a fixed time interval, the impact of a single large order becomes less severe. The call market also represents an effective mechanism for dealing with problems of information asymmetry between informed and uninformed liquidity traders. The call-market method, by imposing delays, forces information traders to reveal, through order placements, the existence of information, which in turn helps reduce price volatility. However, this reduction in volatility entails price discontinuity and information costs, as reflected in market illiquidity.

Recent empirical evidence points to the advantage of the call-market method over the continuous-auction method. After comparing interday variances computed at every hour of the trading session, Gerety and Mulherin (1994) concluded that the call-market method, which is used to open trading on the NYSE, is not inherently destabilizing. On the basis of their investigation of securities listed on the Milan Stock Exchange, Amihud, Mendelson, and Murgia (1990) observed lower volatility under the call-market method than under the continuous-auction method. Using data on the Taiwan Stock Exchange, Chang, Hsu, Huang, and Rhee (1999) documented the following findings: first, significant differences in volatility exist between the two trading methods. Volatility

Figure 1: Trading Methods



Data for Viet Nam are not available. India data are based on the Mumbai Stock Exchange; its National Stock Exchange uses a call-market method for market opening prices and switches to the continuous-auction method after the market opens. Both the Shanghai and Shenzhen stock exchanges use the same method. Pakistan data are based on the Karachi Stock Exchange.
 C.M. = Call Market Method, C.A. = Continuous Auction Method.
 Sources: Chang, Hsu, Huang, and Rhee (1999) and ADB.

under the call-market method is, on the average, one-half of that under the continuous-auction method. Second, under the call-market method, heavily traded stocks experience a statistically more significant reduction in volatility than stocks that are less heavily traded. The call-market method was also found to reduce volatility without sacrificing liquidity. Comerton-Forde (1999) contrasted the opening call on the Australian Stock Exchange and the continuous-auction-based opening on the Jakarta Stock Exchange, and reported that the use of a call mechanism enhances market efficiency by lowering volatility and increasing liquidity at the open.

Because Asian stock exchanges are generally illiquid, trading methods must be carefully evaluated in order to increase market depth especially for the majority of listed stocks that are thinly traded.

A lack of adequate instruments for hedging equity investments was blamed for the large capital losses suffered by many individual investors during the market downturn in PRC, Indonesia, Korea, and Thailand. Equity derivatives such as index options and futures and individual stock options have yet to be introduced in a number of Asian economies to enhance liquidity in the underlying cash market. Stock index futures or options or both are now available in Hong Kong, China; Korea; Malaysia; Singapore; and Taipei, China. The SET plans to trade equity index options in the third quarter of 1999. The options will be traded initially on the SET, but will be transferred to a derivatives exchange once the Thai Parliament approves the proposed legislation on derivatives markets.

Re-evaluation of Market Volatility Controls

Extreme price volatility is a matter of concern to capital-market regulators. A number of volatility-reducing devices have therefore been introduced. In general, these devices may be grouped into four major categories:

- Margin regulations,
- Circuit breakers,
- Price stabilization funds, and
- Securities transaction taxes.

Since the market collapse of October 1987, considerable attention has been focused on the adequacy and effectiveness of these volatility-controlling mechanisms.

MARGIN REGULATIONS

Margin regulations on stock transactions were introduced in the US in 1934 in the belief that margin requirements would discourage investors from excessive speculation. The Federal Reserve Board set the initial margin requirement at 50 percent of the market value when buying stocks on margin or selling stocks short. Although the Federal Reserve Board is authorized to set maintenance margins, it has chosen not to do so. Stock exchanges and the National Association of Securities Dealers set maintenance margins. Maintenance margins at the NYSE are 25 percent for long stocks, 30 percent for short stocks, and 10 percent for long stocks that are offset by shorts in the same security. If the stock price goes up after the initial purchase, the investor can withdraw the differential from his margin account or use it to buy more stocks. If the price drops and the investor's equity position falls below the predetermined maintenance margin, the investor must add funds to the margin account. The Federal Reserve Board changed the initial margin requirements 23 times between 1934 and 1974.⁴⁴ These requirements have remained unchanged since 1974, after the Federal Reserve Board concluded that margin requirements had no reliable effects on market volatility. Yet Hardouvelis (1988, 1990) and Hardouvelis and Peristiani (1990) subsequently compiled empirical evidence in support of the view that margins do have an economic impact on volatility.

Evidence reported by Hardouvelis (1988, 1990) has been reexamined by various academicians. According to Hsieh and Miller (1990), Hardouvelis fo-

cused on a spurious relationship. Controlling for this spurious relationship, they found no significant relationship between margin requirements and market volatility. Similar results were reported by Salinger (1989) and Schwert (1989).

Although academic studies have questioned its effectiveness, margin regulation has been used extensively as a policy tool to control volatility in some Asian countries (such as Japan; Korea; Taipei, China; and Thailand). Margin trading has expanded rapidly in Korea, Malaysia, and Thailand since the early 1990s. As margin regulations affect market volatility by influencing demand and supply, capital regulators and central banks control credit ceilings to sustain share prices.

CIRCUIT BREAKERS

Circuit breakers have been used in various markets to control price volatility. They include (i) trading halts, (ii) daily price limits, and (iii) contingent restrictions on certain types of orders. Circuit breakers curb volatility and provide time for rational reassessment in times of panic selling. Trading halts are temporary suspensions of trading usually imposed by exchanges at the request of listed companies, market regulators, or market-makers pending important announcements or in the presence of extreme order imbalances or both. Daily price limits define upper and lower price bounds outside which trading cannot take place. Contingent restrictions are usually imposed for better coordination between the financial derivatives markets and the underlying cash market.

Trading halts. In the US, the SEC and the stock exchanges are authorized to halt trading. At the NYSE trading halts are usually called when there is: (i) a substantial imbalance of buy or sell orders, or (ii) a significant news announcement to be made. The first type of halt is initiated by specialists; the second type is initiated by the listed company, the exchange, or specialists. The SEC initiates trading halts in any or all securities when it suspects a violation of securities laws. In general, NYSE-initiated

halts (which occur about three times a day) are designed to reduce the specialist's market-making risk exposure, while SEC-initiated halts (which average about 80 per year) are regulatory actions intended to protect investors. Lee, Ready, and Seguin (1994) investigated 852 trading halts on the NYSE in 1988. They found that trading halts increase (rather than reduce) both volume and volatility. Specifically, they reported that volume is 230 percent larger than normal in the first full trading day after a halt and volatility is 50–115 percent higher. These findings are robust across different types of halts, different types of news events, and different times of the day when the halts are called. Lee et al. (1994) produced little evidence in support of a hypothesis that trading halts reduce "noise" trading by facilitating information transmission.

Stock exchanges in the region impose trading halts if the trading of listed securities is likely to be other than "fair and orderly." Hence, trading halts in Asia are very similar to exchange-initiated suspensions at the NYSE.

Daily price limits. Daily price limits have been adopted by many Asian stock markets to prevent large swings and excessive fluctuations in stock prices. They are also common features in many futures markets in the US, but are not found in the US cash markets. Table 8 summarizes price limits in the region's stock markets. No price limits are imposed in Hong Kong, China; Indonesia; and Singapore, while other countries establish daily price limits usually on the basis of the previous day's closing price.

Advocates of price limits claim that price limits decrease volatility, counter overreaction, and do not interfere with trading activity.⁴⁵ Critics claim that price limits cause higher volatility on subsequent days, prevent prices from efficiently reaching their equilibrium, and interfere with trading because of the limitations they impose.⁴⁶ Kim and Rhee (1997), using TSE data, recently provided strong support for the position of critics who question the effectiveness of price limits. They compared two groups of stocks:

Table 8: Daily Price Limits, as of December 1998

Country	Daily Price Limits ^a		
China, People's Republic of	10% of previous day's closing price		
Hong Kong, China	No price limits		
India		% of Previous Day's Closing Price	Quoted Share Price
	Group A ^b	10%	Over Rs20
		no limit	Below Rs20
	Groups B1 ^c and B2 ^d	25%	Rs10–20
		50%	Rs1–10
		75%	Up to Rs1
Indonesia	No price limits		
Korea, Republic of	15% of previous day's closing price		
Malaysia	30% of previous session's closing price		
Pakistan	25% (or Rs5, whichever is higher) of opening price		
Philippines	Upper Limit: 50% of previous day's closing price Lower Limit: -40% of previous day's closing price		
Singapore	No price limits		
Taipei, China	7% of previous day's closing price		
Thailand	30% of previous day's closing price		
Viet Nam	na		

na = not available.

^a Daily price limit is subject to change even within the day.

^b Large companies with very high liquidity.

^c The next large companies (with equity of Rs 30 million or above) with high liquidity.

^d Small companies (with equity below Rs 30 million) with low trading volume.

Source: Asian Development Bank.

stocks that reached price limits and stocks that did not hit the limits. They found that the first group of stocks did not regain their normal volatility as quickly as the second group (volatility-spillover effect), that price continuations occurred more frequently among stocks that hit the limits than among stocks that did not (delayed-price-discovery effect), and that trading activities on the day after the limit day increased for the first group of stocks but decreased drastically for the second group of stocks (trading-interference effect).⁴⁷

Contingent restrictions. The NYSE reports three categories of circuit breakers (see Box 2). The first one is Rule 80A which defines index-arbitrage-related tick rules. When the Dow-Jones Industrial Average (DJIA) moves 50 points or more from the previous day's close, index arbitrage orders in component stocks of the Standard & Poor's 500 Stock Index (S&P 500) are subjected to a tick test. Sell orders may be executed only on a plus or zero-plus

tick, and buy orders only on a minus or zero-minus tick. Rule 80A was triggered an average of 20–30 times per year between 1990 and 1995. However, as the level of DJIA increased, the frequency of Rule 80A triggers increased dramatically. For example, there were 303 triggers in 1997 and 366 in 1998. Therefore, in November 1998, the NYSE board of directors approved a proposal that the 50-point trigger be replaced by a 2 percent trigger. The proposal has yet to be approved by the US SEC. The second NYSE circuit breaker is the sidecar arrangement. When the S&P 500 futures contract declines 12 points from the previous close, all program trading orders entered in the NYSE SuperDot, an order delivery system, are diverted to a separate blind file for five minutes.⁴⁸ The third circuit breaker is Rule 80B which defines market-wide trading halts. Unlike the first two circuit breakers, this last one is related to the futures markets. Market-wide trading halts are triggered for different lengths at 10, 20, and 30 per-

cent movement of the DJIA. These percentage trigger points were approved only in April 1998. The previous Rule 80B defined 350 points and 550 points of DJIA as the trigger points. Rule 80B was triggered only once in the past. The effectiveness of this type of market-wide trading halt is questionable, considering the experience of Hong Kong, China and New York. The four-day trading suspension in Hong Kong, China in October 1987 did not prevent the market from declining more than 30 percent when trading resumed on 26 October. A de facto trading halt provided by the weekend closing that began 4 p.m., Friday, 16 October 1987, and lasted until 9:30 a.m., Monday, 19 October, did nothing to prevent the market collapse in New York.

PRICE STABILIZATION FUNDS

Direct market intervention by the government of Hong Kong, China in August 1998 was most controversial. The government spent HK\$118 billion (US\$15.2 billion) to purchase about 7.3 percent of all Hang Seng Index component stocks. According to HKMA Chief Executive Joseph Yam, the intervention was not intended to prop up the stock and futures markets. Rather it was targeted at a “double play” by speculators (including hedge funds) that took advantage of the automatic adjustment mechanism in the currency board system of Hong Kong, China. As heavy selling pressure on the Hong Kong dollar increases, local interest rates automatically rise under the currency board system and this creates profit opportunities for short positions in the equity and index futures markets. In Taipei, China, a stabilization fund began trading in November with a total of NT\$283 billion (US\$8.77 billion).⁴⁹ Large government pension and insurance funds, the postal savings system, state-owned corporations, and private companies with close ties to the government contributed to Taipei, China’s stabilization fund. This marked the second time that the government had organized such a rescue fund since the PRC military exercise of February 1996. This type of market intervention us-

ing stock-market stabilization funds is not new in this region. The Korean and Thai governments also employed an indirect method of market intervention by setting up stock-market stabilization funds with contributions from securities companies, insurance companies, banks, institutional investors, and listed companies in the early 1990s. Although the effectiveness of this type of indirect market intervention has yet to be examined carefully, market participants are ambivalent about this market stabilization measure. Rhee and Chang (1992) argued that while the funds might increase short-term market liquidity and enhance the role of institutional investors, participating financial institutions stand to lose far in excess of the benefits from the operation of the funds.

Schwartz (1988) pioneered an idea to reduce excessive short-term price volatility. The idea calls for listed companies themselves to buy (or sell) a given amount of stocks if the stock price declines (or increases) by more than a certain percentage without government intervention. The advisability of involving listed companies in market making in such a manner is, however, doubtful. Unfortunately, very little empirical work has been done to arrive at any meaningful conclusion on the role of stabilization funds in moderating price volatility.

SECURITIES TRANSACTION TAXES

Schwert and Seguin (1993) provided an overview of the costs and benefits of securities transaction taxes. Proponents of securities transaction taxes argue that it would (i) decrease volatility because “noise” traders (who trade for reasons other than information about the underlying securities) will be discouraged from trading, (ii) reduce excess speculation as well, (iii) lengthen investors’ expected holding periods, and (iv) increase government revenue. Critics of securities transaction taxes claim, on the other hand, that such taxes would (i) increase investors’ after-tax required rates of return, thus raising the cost of capital; (ii) impose a tax burden on the investing public and not just speculators and noise traders, which would

Box 2: NYSE Circuit Breakers**Rule 80A (Index Arbitrage Tick Test)**

- When the DJIA moves 50 points or more from the previous day's close, index arbitrage orders in component stocks of the Standard & Poor's 500 Stock Index (S&P 500) are subjected to a tick test.
- In down markets, sell orders may be executed only on a plus or zero-plus tick; in up markets buy orders may be executed only on a minus or zero-minus tick.
- The rule applies for the remainder of the day unless the DJIA moves back within 25 points of the previous day's close.
- Since its adoption in October 1988, Rule 80A was triggered:
 - 23 times on 22 days in 1990,
 - 20 times in 1991,
 - 16 times in 1992,
 - 9 times in 1993,
 - 30 times on 28 days in 1994,
 - 29 times on 28 days in 1995,
 - 119 times on 101 days in 1996,
 - 303 times on 219 days in 1997, and
 - 366 times on 227 days in 1998.
- On 5 November 1998, the NYSE Board of Directors approved a revision to Rule 80A to replace the 50-point trigger with a 2 percent trigger. The 2 percent is computed on the basis of the average closing value of DJIA for the last month of the previous quarter (rounded to the nearest 10 points). This trigger rule remains in effect for the remainder of the day unless the DJIA advances to a value of at least one half of the 2 percent below its previous close in a declining market or retreats to a value of at least one half of the 2 percent in an advancing market.

Sidecar

- When the S&P 500 futures contract declines 12 points (approximately 100 DJIA points) from the previous day's close, all program trading market orders* entered into in SuperDot for NYSE-listed component stocks of the S&P 500 are diverted to a separate blind file for five minutes.
- After the five-minute period, buy and sell orders become eligible for execution. If orderly trading in a stock cannot resume, trading in that stock is halted and imbalance information will be publicly disseminated.
- The five-minute sidecar rule does not apply in the last 35 minutes of trading.
- Since its adoption in October 1988, the five-minute sidecar was triggered:
 - 5 times in 1990,
 - twice in 1991,
 - once in 1992,
 - not once in 1993,
 - once in 1994,
 - once in 1995,
 - 11 times in 1996,
 - 37 times in 1997, and
 - 57 times in 1998.

Rule 80B (Market-Wide Trading Halt)

- A market-wide trading halt is triggered at 10, 20, and 30 percent of the DJIA, calculated at the beginning of each calendar quarter, using the average closing value of the DJIA for the prior month (rounded to the nearest 50 points). This took effect on 15 April 1998.
- The halt for a 10 percent decline would be one hour if it occurred before 2 p.m. and for 30 minutes if it occurred between 2 and 2:30 p.m., but would not occur at all after 2:30 p.m.
- The halt for a 20 percent decline would be two hours if it occurred before 1 p.m., and for one hour if it occurred between 1 p.m. and 2 p.m., and would close the market for the rest of the day after 2 p.m.
- If the market declined by 30 percent at any time, trading would be halted for the remainder of the day.
- Under the previous Rule 80B trigger points (in effect since October 1988) for a market-wide trading halt, a decline of 350 points in the DJIA halted trading for 30 minutes and a drop of 550 points, one hour. These trigger points were hit only once on 27 October 1997, when the DJIA was down 350 points at 2:35 p.m. and 550 points at 3:30 p.m., shutting the market down for the remainder of the day.

*The purchase or sale of a basket of 15 stocks or more, valued at one million dollars or more.

Sources: *New York Stock Exchange Fact Book 1997* and press releases, various dates, 1998 and 1999.

not be evenly distributed among the taxpayers; (iii) affect the relative costs of holding and issuing different classes of securities (short-term commercial paper, for example, would be affected more adversely than other instruments because of high turnover, while Treasury securities are not usually subject to transaction taxes); (iv) cause market inefficiency because the taxes may lower market liquidity; and (v) complicate transaction charging because of the diversity of derivatives and hybrid instruments.⁵⁰

The effect of stock transaction taxes on market volatility is of major interest for the purposes of this study. Beginning with Keynes (1936), a number of renowned researchers, including Tobin (1978) and Stiglitz (1989), have suggested that transaction taxes can discourage noise traders from active trading in the market and reduce price volatility. However, Schwert and Seguin (1993) and Kupiec (1996) argue that the tax may actually increase volatility. Therefore, the relationship between transaction taxes and market volatility remains an empirical question, as yet unresolved. Four empirical studies by Roll (1989), Umlauf (1993), Jones and Seguin (1998), and Hu (1998) documented interesting evidence on the relationship. Roll reported no relation between the two on the basis of the experience of 23 countries. Umlauf (1993) using the Swedish experience and Jones and Seguin (1998) using the US experience report that the reduction in brokerage commissions lowers price volatility. Hu (1998) examined 14 tax-rate changes that occurred in Hong Kong, China; Japan; Korea; and Taipei, China in 1975–1994. Hu’s evidence does not support the hypothesis that transaction taxes can reduce noise trading and price volatility.

One lesson from academic research findings is that market volatility controls are not particularly helpful in moderating volatility. Such controls must be carefully reevaluated before they are introduced. The disruption in the price discovery process could prove to be far more costly than the potential benefits one would hope to achieve.

Major Policy Recommendations

Development of Bond Markets

A number of steps must be taken to create primary markets and to strengthen secondary markets for government-issued and corporate bonds. For the primary markets, the following urgent measures (among others) are recommended for consideration:

- Introduce government-issued bills, notes, and bonds to create benchmark risk-free interest rates and yield curves; if not, consider using mortgage-backed securities with risk enhancement to provide surrogate benchmark interest rates.
- Enforce competitive-auction rules for government-issued securities with minimal government intervention in pricing; consider using both “multiple-price, sealed-bid” and “uniform-price, sealed-bid” auction techniques.
- Establish a primary dealer system.
- Consolidate the issuance of securities by the government and public enterprises to avoid issuing a large number of small issues, and establish regularity in the issue cycle.
- Foster a “ratings culture” and upgrade the capacity of credit-rating agencies to international standards.

Introduce government-issued bills, notes, and bonds to create benchmark risk-free interest rates and yield curves; if not, consider using mortgage-backed securities with risk enhancement as surrogate benchmark interest rates

In the US market, Treasury bills are extremely liquid, short-term instruments that mature three, six, or twelve months from the date of issue. They are issued weekly on a discount basis. Treasury notes are issued at par at fixed interest rates, and typically mature in one to five years. Treasury bonds are identical to Treasury notes except for their maturity which usually runs beyond five years. Treasury securities’

yields-to-maturity provide the term structure of interest rates or yield curves that are used in benchmarking for the valuation of corporate bonds, common equities, and derivative instruments. India, Korea, and Malaysia are offering government issues with longer maturities (ranging from 5 to 15 years), but these do not serve as real benchmark yields because of the lack of secondary market trading. The Philippines must issue long-term Treasury notes and bonds to expand risk-free interest rates into longer maturities. Treasury bills are active in the primary market, but secondary market yields are not available because of lack of trading in the secondary market.

Countries that cannot issue Treasury securities may create surrogate benchmark interest rates using mortgage-backed securities with appropriate credit enhancement. The potential for mortgage-backed securities in the region is large. Table 9 presents the size of housing loans relative to GDP. Thailand has the highest ratio of 16.4 percent, followed by Korea (12.8 percent), Malaysia (7.7 percent), and Philippines (6.6 percent). It is unrealistic to expect all housing loans to be securitized; but, depending on how the mortgage-backed securities market is promoted, each of the region's economies can capture a large portion of the housing market for securitization.

Table 9: Outstanding Housing Loans in Selected Countries

Country	Housing Loans (US\$ billion)	% of GDP
China, People's Republic of	22.18 ^a	2.41
India	2.74 ^b	0.80
Indonesia	3.52 ^a	2.62
Korea, Republic of	31.85 ^c	12.83
Malaysia	8.48 ^b	7.70
Pakistan	0.60 ^d	1.05
Philippines	3.98 ^{de}	6.57
Thailand	16.78 ^c	16.43
Viet Nam	na	na

^a As of end-1996.

^b As of March 1997.

^c As of 1997.

^d As of June 1997.

^e The figure is for real estate loans which may be greater than housing loans.

Sources: ADB Reports: Mortgage-Backed Securities in Selected Developing Member Countries (Unpublished); IMF: International Financial Statistics, November 1998.

Enforce competitive-auction rules for government-issued securities with minimal government intervention in pricing; consider using both "multiple-price, sealed-bid" and "uniform-price, sealed-bid" auction techniques

In creating benchmark yield curves, the most critical requirement is the enforcement of "competitive" auction rules so that the primary market yields reflect credit-market conditions. Under the "multiple-price, sealed-bid" auction method, participants submit sealed bids and pay the price they bid. The government accepts the bids at gradually lower prices until the price at which the auction is fully subscribed is reached.⁵¹ As a result, successful bidders for a security may pay different prices for that security. These multiple-price awards result in "winner's curse," which means that the highest bidder wins the auction by paying the highest price, only to find that the price paid is higher than the consensus price. Aware of this curse, bidders tend to shade their bids below the maximum that they are actually willing to pay.⁵² Winner's curse also puts a premium on market information. Thus, bidders are forced to bid through primary dealers to avoid bidding above the market consensus. Knowing the intentions of the largest bidders will give primary dealers an information advantage. Under the multiple-price auction system, whoever appears to monopolize market information can dominate or even corner the market. Since Salomon's "short squeeze" scandal was revealed in mid-1991, this technique has been criticized for failing to minimize financing costs to the Treasury and for encouraging manipulative behavior in the marketplace. As an alternative, the "uniform-price, sealed-bid" auction (a Dutch auction) is advocated.⁵³ In this type of auction, all bidders whose tenders are accepted pay the same price for a given security. This price is the lowest of the accepted prices bid (or the highest of the accepted yields). Some bidders whose tenders are accepted therefore pay less than their actual bid. Australia, France, and New Zealand now use multiple-price (or multiple-yield), sealed-bid

auctions to sell marketable securities, while Belgium, Canada, Italy, Japan, and Netherlands use it for some portions of the sale of marketable securities. Uniform-price, sealed-bid auctions are used in Denmark, Switzerland, and UK. In 1992, the US Treasury started using uniform-price auctions for all auctions of two-year and five-year notes. Two studies conducted by the Treasury indicated that these auctions produced marginally greater revenue on the average for the US government.⁵⁴ In May 1998, the US Treasury announced that it would consider single-price auctions for 30- and 10-year bonds. In view of the current changes in the US Treasury securities markets, it will be desirable to experiment with both types of auction techniques to assess the degree of success in each member country (see Box 3).

Establish a primary dealer system

Two critical functions of primary dealers are (i) market making, and (ii) trading of Treasury securities. They also provide information and trading advice to customers and manage an inventory of Treasury securities as they buy and sell as principals (in the capacity of dealers, not agents).⁵⁵ To create a truly competitive and liquid primary market, market making should be allowed and encouraged. To this end, primary dealer systems should replace underwriting syndications.⁵⁶ Entry standards and capital adequacy requirements must be clearly defined and enforced for adequate risk management related to market-making activities. The government of India has created a primary auction market for government securities by establishing a network of six primary dealers. However, the auction process is not

Box 3: Auction Techniques of US Treasury Marketable Securities

All US Treasury marketable securities are sold in auctions that are conducted on a yield basis. The Treasury has a regular, predictable schedule for offering marketable securities, which is well known to market participants. The details are usually announced about one week prior to an auction and the settlement date occurs from a few days to about one week after an auction depending on holidays.

The Treasury does not set a maximum acceptable yield nor does it add to or reduce the announced size of an offering after the offering is announced. The Treasury accepts competitive and noncompetitive bids at auctions. Noncompetitive bids are accepted from the public for up to US\$1 million of Treasury bills and up to US\$5 million of notes and bonds. All noncompetitive bids are awarded in full at the auction yield determined by the competitive bidders.

Competitive bidders submit tenders stating the yield (discount rate for bill auction) at which the bidder wants to purchase the securities. The bids are ranked from the lowest to the highest yield required to sell the amount offered to the public. In the multiple-price auction technique, awards are made at successively higher yields until the amount allotted for competitive tenders is fulfilled, with awards at the highest yield prorated. Successful competitive bidders pay the price equivalent to the yield that they bid. Because of this feature, "winner's curse" occurs because the top winning bidder pays a higher price than the next winning bidder. In an auction of Treasury notes or bonds, the coupon rate (interest rate promised by the Treasury to holders of Treasury notes and bonds) is based on the average yield of accepted competitive bids.

The uniform-price auction is conducted in the same way, except that all accepted bids are filled at the highest yield of accepted competitive tenders.

One aspect unique to the Treasury market is the existence of the when-issued (WI) market. Market participants can begin trading Treasury securities as soon as the details of an issue have been announced. From the time of the announcement until the securities are issued, usually a period of about a week and a half, the issue is said to trade on a "when, as, and if issued" basis. Prior to auctions, WI securities are quoted for trading on a yield basis because a coupon is not determined until after an auction is completed. After auctions, they are quoted on a price basis. The WI market serves as an important price discovery mechanism that allows bidders to gauge the demand for an issue.

The multiple-price auction method has been used since 1929 for Treasury bills and notes and since 1970 for bonds. In September 1992, the Treasury introduced a uniform-price auction method for two-year and five-year notes.

Sources: Malvey, Archibald and Flynn (1995); Malvey and Archibald (1998).

yet fully transparent and hedging instruments available for dealers are limited, with uncertainties over the volume of bonds to be auctioned off. In some Asian economies, including PRC, India, Pakistan, and Viet Nam, interest rates must be deregulated to make the primary market yield reflect credit conditions in the market. There must be greater reliance on market forces, more transparency, and greater use of open-market operations. In particular, the auction process must be made more transparent to make the primary dealer system viable.

Consolidate the issuance of securities by the government and public enterprises to avoid a large number of small issues, and establish regularity in the issue cycle

Public bonds in the region are issued not only by the Treasury but also by the central bank and other government units. As a result, a large number of small issues are offered, and liquidity in the primary and secondary markets suffers. All these different issues may be consolidated into Treasury issues with differing maturities and standard features. To eliminate any crowding effects with clustered offerings, regularity in the issue cycle must be established and strictly followed. Concerted efforts by governments in this direction may be attributed to the success of the Exchange Fund bills market in Hong Kong, China and the Treasury securities market in Taipei, China.

Foster a "ratings culture" and upgrade the capacity of credit-rating agencies to international standards

A "ratings culture" must be created to restore investor confidence in the aftermath of the crisis. The member governments should promote a competitive environment for rating business among domestic and international rating agencies to improve the quality of rating reports.

The secondary markets for government-issued and corporate bonds in the region are illiquid. In general,

the lack of liquidity may be attributed to the following: (i) investors in bonds usually hold them until maturity, (ii) price and volume information is not made available in real time, (iii) there are no market-makers, and (iv) credit-rating systems need to gain more credibility. The following recommendations are made to promote secondary markets in the region:

- Create repo markets, if none exists.
- Create IDB markets, if none exists.
- Eliminate captive demand for government-issued securities.
- Revamp bond clearing and settlement systems.
- Create bond futures and interest-rate futures.

Create repo markets, if none exists

Repo markets in the region are not truly like repo markets in advanced economies. The repo market in Korea, for example, does not function as a funding market. Thailand has yet to develop a repo market with the new operating framework being considered by the Thai SEC. Lack of standardization and settlement procedures has not allowed repo transactions to develop beyond outright transactions. PRC, Indonesia, Korea, and Thailand plan to develop repo markets to enhance secondary market liquidity (see Box 4).

Create IDB markets, if none exists

An IDB compiles price information on best bids and offers, provided by its customer dealers, and makes this information available to the market. It earns a commission for arranging the trades. The IDB does not take positions in the market unlike its customer dealers. The identities of the customer dealers remain confidential to keep their trading strategies secret. The most important benefits IDBs can bring to a bond market are enhanced liquidity and transparency. Since some countries in the region do not have primary and secondary market dealers, a critical question is, can the IDB markets be created without primary dealers or secondary market-making dealers? The answer is yes, but the IDB markets

Box 4: Repo Markets

A repurchase agreement, also called a repo, is an agreement between a seller and a buyer of securities for the former to buy back the securities from the latter at a specified price and date. It is a short-term transaction in which government bonds, Treasury bills, money-market instruments, federal agency securities, and mortgage-backed securities are used as collateral. Government bonds and Treasury bills are the most popular instruments used in the repo markets. A reverse repurchase agreement, or a reverse repo, entails the purchase of securities to be sold at a specified price and future date.

In Asian economies, repo transactions occur: (i) between the central bank and commercial banks; (ii) among financial institutions; and (iii) between financial institutions and individuals, corporate entities, and other institutions (pension funds, provident funds, and other institutional investors). The first two are the most popular cases.

The central bank uses repos or reverse repos as monetary instruments (open-market operations) to regulate money supply and interest rates. In developed countries, market-makers provide liquidity to the financial market through repo transactions and central banks conduct open-market operations to regulate monetary supply. Unlike developed countries, many Asian economies use open-market operations as supplementary tools, since the interest structure has not been properly put in place. For Asian central banks, repos are generally considered as financial instruments used for controlling, to a limited extent, bank liquidity. Financial institutions, particularly commercial banks, can better regulate their liquidity and statutory securities positions through repo transactions, rather than through the outright purchase/sale of government securities. Most repo transactions cover a period ranging from overnight to seven days, but term repos (over 30 days) are also common.

Repos play a key role in enhancing secondary-market activity. Market makers or dealers rely on repos to finance their inventories. Yet in most Asian countries, this is not so as most dealers are not market-makers because of their lack of financing facilities.

Repo operations vary slightly among Asian markets because of differences in legal and tax systems. Institutional investors including contractual saving institutions tend to be buy-and-hold investors. Commercial banks and finance companies hold government securities to meet their statutory liquidity requirements, with few exceptions. The secondary markets in Asian countries are therefore small.

A bond lending/borrowing market in Japan, the *kashisai* market, is similar to the repo market. Unlike repo transactions, however, there is no transfer of bond ownership. There is transfer of ownership in *gensaki* transactions, in which Treasury bills mostly are traded under the conditions of repurchase agreements. While repo transactions are considered sources of collateral loans and are exempted from transaction tax in the US, *gensaki* transactions entail securities trading and are subject to transaction tax in Japan. The *kashisai* market has become more efficient and attractive after the upper limit on the interest rate charged on the cash collateral was lifted in 1996. Further, bond-lending market participants are exempted from payment of transaction tax. The *kashisai* market is now patterned after the US repo market where participants are corporate and public entities as well as financial institutions. As such, the *gensaki* market has shrunk and *gensaki* transactions are limited as short-term open money-market instruments. The major lenders are financial institutions which earn interest and fees on the bonds they hold, enhancing returns on their portfolio from the *kashisai* market.

Source: Asian Development Bank.

will function better with dealers.⁵⁷ In the absence of dealers, IDBs may be downgraded to brokers. An interesting example is the TBDC (formerly the Thai Bond Dealers Club) which was created in the absence of primary- and secondary-market dealers (Thailand has no dealer system). The club was a big success in providing liquidity to the secondary market until Thailand was hit by the financial crisis. The club was given a developmental role which was not allowed to IDBs. After the crisis, the club was upgraded to the status of a full bond exchange under the new SEC Act. While it may not be practically

feasible, independent IDBs can secure business licenses from the BOT and provide IDB services, which may conflict with TBDC operations. Monopoly of the IDB market by a single IDB is discouraged to promote competition and better service.⁵⁸ In November 1998, Singapore introduced two IDBs for a trial period of six months, with the possibility of adding two more at the end of that period. Six primary dealers in Singapore may use the new IDB markets. Hong Kong, China has seven IDBs serving the government bond market. Thirteen primary dealers in India have access to the IDB markets. Korea plans to

introduce IDB markets, and, motivated by this plan, the Korea Stock Exchange and the Korean Securities Dealers Association are planning their IDB activities. Thailand has yet to introduce IDBs. IDB markets usually facilitate the development of repo markets and are instrumental in the promotion of secondary-market liquidity.⁵⁹

Eliminate captive demand for government-issued securities

There is a need to review and rationalize policies on forced subscriptions and holding of bonds by financial institutions or primary dealers for statutory or other requirements. The member governments in the region must stop issuing bond instruments at below-market yield to do away with captive demand and interest-rate distortions which will disrupt the process of financial intermediation. They should also move toward implementing open-market operations, rather than adopting reserve and liquidity requirements, to develop the secondary markets. In this regard, Malaysia has announced a policy shift toward open-market operations which includes lower reserve requirements, a review of liquidity requirements, and a review of asset eligibility for compliance with liquidity requirements. The statutory reserve requirement, for one, has been reduced gradually to 4 percent from more than 10 percent in early 1998.

Revamp bond clearing and settlement systems

An evaluation of the bond-market infrastructure in the region revealed the need for an efficient DVP system in the clearing and settlement systems for securities. With the exception of India and Thailand, Asian economies have not developed a book-entry system for bond instruments.⁶⁰ To facilitate clearing and settlement, SBL should also be expanded to include bond instruments. The success of SBL depends on the commission costs and taxes. Very often, in underdeveloped markets, borrowing and lending transactions are deemed to involve a change in the title of the instruments such that the transactions are

taxable. The rigidity of this legal interpretation may kill SBL. High transaction costs may also spell the end of the practice, as has been observed in Korea. Korea introduced SBL for bonds in September 1998, but investor interest has so far been negligible because of the high transaction costs. The clearing and settlement systems for equity instruments must be expanded to include bond instruments, or a separate system for bonds must be created. Immobilization and dematerialization must also be achieved to take advantage of the essence of the clearing and settlement program.

Create bond futures and interest-rate futures

The creation of bond futures for long-term interest-rate hedging and interest-rate futures for short-term hedging is a prerequisite to the development of primary and secondary dealer systems. Without appropriate hedging mechanisms, market-makers will be exposed to interest-rate risk. For institutional investors who will play a key role in the long-term bond markets, hedging opportunities are extremely valuable. In the US, two popular medium- to long-term interest-rate futures are Treasury bond and Treasury note contracts, which are traded on the Chicago Board of Trade (CBOT). Treasury-note futures are available on the CBOT for three different maturities (two, five, and ten years), while Treasury-bond contracts have maturities of at least 15 years. Euro-dollar and Treasury-bill futures are the two most popular short-term interest-rate contracts traded on the Chicago Mercantile Exchange (CME). The Treasury-bill futures contract calls for the delivery of Treasury bills with a face value of US\$1 million and a time-to-maturity equal to the expiration of the futures contract. Like the Treasury-bill contract, the eurodollar contract has a 90-day maturity, and uses time deposits in foreign banks or foreign branches of US banks as the underlying asset. But unlike the Treasury-bill contract, the eurodollar contract is settled in cash. The LIBOR (London interbank offered rate), as determined by the CME clearinghouse, is the

settlement price used on the last day of trading. The eurodollar contract has become the most dominant instrument, surpassing in volume Treasury-bill contracts, which were the first short-term interest-rate futures contracts. The success of the eurodollar contract is partly due to its cash settlement feature. Among the region's economies, Malaysia is the only one with interest-rate futures. These are based on the three-month KLIBOR. The Korea Futures Exchange planned to launch futures contracts on certificate of deposit interest rates in April 1999 and on Treasury bonds in July.

Improvement of Corporate Governance

To strengthen corporate governance in the region, comprehensive reform measures should be undertaken. The reforms must be aimed at strengthening three cornerstones: (i) competitive capital markets (especially for corporate financing) with minimal government interference; (ii) solid legal protection for investors (shareholders or creditors, or both); and (iii) a well-defined and enhanced role for outside shareholders. The following recommendations are made to cope with underdeveloped corporate governance practices:

- Minimize the role of government which may hinder good corporate governance in the capital market.
- Maximize legal protection for creditors and minority as well as outside investors.

Minimize the role of government which may hinder good corporate governance in the capital market

Government should minimize its presence in the capital market, and limit its role to policymaking and neutral rule making to foster a better system of corporate governance. Prowse (1998) argues that the heavy hand of the government guarantees poor governance and an uncompetitive capital market. Implicit or explicit credit guarantees must stop to avoid

the problem of moral hazard. The privatization of government-owned enterprises and financial institutions must be sped up. Government must stop intervening in the capital market for the "national interest," using the funds available from public and private pension/provident funds and financial institutions. To protect the interests of the general public, to whom their funds belong, government-controlled institutions should be required to comply with strict standards of transparency, accounting, disclosure, and corporate governance. Whatever the government does must be minimal and transparent. Corporate and banking sector restructuring should be monitored by the government but not planned or implemented by it. The whole restructuring initiative should be left to the corporate and banking sectors. The government's responsibilities are to eliminate legal impediments to mergers and to promote competition in the capital market.

Maximize legal protection for creditors and minority as well as outside investors

Many listed companies in Asia are family-controlled, and family members hold management positions and act as board members. The families that own a majority of the company shares disclose as little information as possible to protect their interests. Moreover, there is no internal and external monitoring of management decisions. To protect outside investors (creditors and shareholders) against inside majority shareholders pursuing their own self-interest, the power of inside majority shareholders should be reduced by clearly defining the rights of outside investors. Legal and regulatory protection for outside investors must be strictly enforced. Within the corporation, the following measures will help to achieve this goal: (i) eliminate cross-shareholding, (ii) create an independent board of directors which should include outside independent directors, (iii) clearly spell out minority shareholders' rights and responsibilities, (iv) base directors' and managers' compensation and incentives on their accountability

and performance; (v) introduce independent auditors or an audit system, (vi) revise and reinforce bankruptcy and corporate laws to protect creditors' rights, (vii) promote mergers to exert pressure on inside majority shareholders, and relax the restrictions on foreign participation in domestic mergers, and (viii) encourage substantial shareholding by outsiders such as institutional investors.

Reinforcement of Regulatory and Supervisory Arrangements

Regulatory and supervisory arrangements in the region have been observed to suffer from serious problems of inadequate enforcement and rising monitoring costs. These problems may be attributed to three weaknesses in the regulatory processes: (i) fragmented regulatory structure and coverage, (ii) overemphasis on merit-based regulation, and (iii) underutilization of SROs. Fragmented regulatory structure and ambiguous regulatory coverage are commonly observed weaknesses not only in the region but also in advanced economies like the US. The following recommendations are proposed to remedy these weaknesses:

- Redefine the capital-market regulatory structure to avoid regulatory fragmentation and overlaps.
- Shift from merit-based regulation to disclosure-based regulation.
- Promote and fully utilize SROs to foster market-based regulation.
- Enforce rules and regulations more vigorously.

Redefine the capital-market regulatory structure to avoid regulatory fragmentation and overlaps

Enforcement cost increases with regulatory competition among the various capital-market regulatory bodies. Regulatory competition arises when regulation is fragmented and regulatory coverage is ill defined. Vertical, horizontal, and functional fragmentation was observed in the PRC and Malaysia and especially in Indonesia, Korea, and Thailand before the financial crisis. The closure of many Korean mer-

chant banks, Malaysian finance companies, and Thai finance and securities companies can be attributed in part to the poorly defined regulatory coverage of central banks, securities and exchange commissions, and ministries of finance. The responsibilities of the Philippine SEC are too broad and diverse to achieve an acceptable level of organizational efficiency; it has become the victim of its own consolidation of diverse and large amounts of work. In line with the recommendations made earlier to promote SROs, the independence of regulatory agencies in the countries covered should be enhanced. As an essential step in this direction, any fragmentation of oversight responsibilities among different agencies should be minimized and avoided. As a general rule, it is desirable to have a regulatory body that is operationally independent from the policy-setting arm of the government, though it could be accountable to the political process. It is nonetheless important to have cooperation and coordination between the regulatory and policy-setting functions.

Given the need for responsibilities to be clearly defined between agencies at the start, the duplication of duties between the CSRC, the PBC, and the regional and municipal bodies in the PRC, for example, should be minimized. As the regulatory body, the CSRC should be given more powers, including the power to license market intermediaries. In Korea, the Financial Supervisory Services (FSS) was established in early 1999. Although the new regulatory system appears to be different from the earlier one, the basic framework and content of the regulation have not significantly changed. In particular, all regulatory responsibilities should be left to the FSS, including the power to grant business licenses. There is a need to consolidate the requirements of BNM and the SC in Malaysia with regard to the issuance of private debt securities, and the SC should be given enhanced powers to regulate the private debt securities markets. In Indonesia, the issue is one of need for independence: the independence of BAPEPAM (Capital Market Supervisory Agency) should be in-

creased, by making it an independent body funded by the industry it regulates, but reporting to the Ministry of Finance. In the Philippines, the responsibilities of the PSE and the SEC must be streamlined, particularly with regard to surveillance and enforcement of business rules.

Shift from merit-based regulation to disclosure-based regulation

Disclosure-based regulation cannot function unless a strong regulatory framework is in place to protect the integrity of the capital market and investors. Within this framework, ex-post reviews are conducted to make sure that enforcement is adequate. Occasionally, ex-ante reviews (as in merit-based regulation) may be carried out to maintain disclosure standards rather than to assess the merits of the transaction. In a well-developed market within a disclosure-based environment, institutional investors help raise the standard of corporate disclosure and market discipline. In a merit-based environment, market regulators must set up necessary standards and impose market discipline on the participants. As a result, enforcement and compliance tend to be very costly in merit-based regulation. In addition, innovations by participants and efficiency in the market as a whole are not encouraged. Disclosure-based regulation can achieve the opposite.

Promote and fully utilize SROs to foster market-based regulation

Of the 30 principles of securities regulation prepared by the IOSCO, two are related to self-regulation (see Box 5). Principle no. 6 states that “the regulatory regime should make appropriate use of SROs that exercise some direct oversight responsibility for their respective areas of competence, to the extent appropriate to the size and complexity of the markets.” Principle no. 7 states that “SROs should be subject to the oversight of the regulator and should observe standards of fairness and confidentiality when exercising powers and designated responsi-

bilities.” It is encouraging that greater resources are allocated to the promotion of SROs and oversight over SROs in developed markets. The use of SROs will facilitate market-based regulation. Unfortunately, the region’s economies have been slow to rely on SROs for market-based regulation.

Enforce rules and regulations more vigorously

Poor enforcement of capital-market rules and regulations has been identified as one of the most critical weaknesses underlying the current crisis. In particular, the capital adequacy rule, margin regulations, marking-to-market rules, and disclosure rules, among others, were not strictly enforced in some member countries. Several reasons may be cited for this lax enforcement of rules and regulations. First, the regulatory framework was not clearly defined for nonbank financial institutions that play an important role in capital-market transactions. Second, the risky nature of capital-market institutions and their business transactions was not clearly understood by regulatory bodies. Third, the rule-making process was not sufficiently open and transparent. Hence, capital-market institutions could not air their concerns at the regulatory level.

Expansion of the Investor Base

The most important function of contractual savings institutions (pension/provident funds, life insurance companies, and ITCs) is shifting savings into long-term financial assets. With commercial banks dominating the financial system in the region’s economies, individual investors were deprived of long-term investment opportunities. Despite their potential, contractual savings institutions have not played a vital role in mobilizing savings and developing capital markets. Three major recommendations are made on: (i) the regulation of contractual savings schemes, (ii) the promotion of mutual funds, and (iii) the deregulation of the asset management industry:

- Review thoroughly and rationalize contractual savings regulations.

Box 5: IOSCO's 30 Principles of Securities Market Regulation**Principles Relating to the Regulator**

1. The responsibilities of the Regulator should be clear and objectively stated.
2. The regulator should be operationally independent and accountable in the exercise of its functions and powers.
3. The regulator should have adequate powers, proper resources, and the capacity to perform its functions and exercise its powers.
4. The regulator should adopt clear and consistent regulatory processes.
5. The staff of the regulator should observe the highest professional standards including appropriate standards of confidentiality.

Principles for Self Regulation

6. The regulatory regime should make appropriate use of self-regulatory organizations (SROs) that exercise some direct oversight responsibility for their respective areas of competence, to the extent appropriate to the size and complexity of the markets.
7. SROs should be subject to the oversight of the regulator and should observe standards of fairness and confidentiality when exercising powers and delegated responsibilities.

Principles for the Enforcement of Securities Regulation

8. The regulator should have comprehensive inspection, investigation, and surveillance powers.
9. The regulator should have comprehensive enforcement powers.
10. The regulatory system should ensure an effective and credible use of inspection, investigation, surveillance, and enforcement powers and implementation of an effective compliance program.

Principles for Cooperation in Regulation

11. The regulator should have authority to share both public and nonpublic information with domestic and foreign counterparts.
12. Regulators should establish information-sharing mechanisms that set out when and how they will share both public and nonpublic information with their domestic and foreign counterparts.
13. The regulatory system should allow for assistance to be provided to foreign regulators who need to make inquiries in the discharge of their functions and exercise of their powers.

Principles for Issuers

14. There should be full, timely, and accurate disclosure of financial results and other information that is material to investors' decisions.
15. Holders of securities in a company should be treated in a fair and equitable manner.
16. Accounting and auditing standards should be of high and internationally acceptable quality.

Principles for Collective Investment Schemes

17. The regulatory system should set standards for the licensing and regulation of those who wish to market or operate a collective investment scheme.
18. The regulatory system should provide for rules governing the legal form and structure of collective investment schemes and the segregation and protection of client assets.
19. Regulation should require disclosure, as set forth under the principles for issuers, which is necessary to evaluate the suitability of a collective investment scheme for a particular investor and the value of the investor's interest in the scheme.
20. Regulation should ensure that there is a proper and disclosed basis for asset valuation, pricing, and the redemption of units in a collective investment scheme.

Principles for Market Intermediaries

21. Regulation should provide for minimum entry standards for market intermediaries.
22. There should be initial and ongoing capital and other prudential requirements for market intermediaries.
23. Market intermediaries should be required to comply with standards for international organization and operational conduct that aim to protect the interests of clients and under which the management of the intermediary accepts primary responsibility for these matters.
24. There should be procedures for dealing with the failure of a market intermediary in order to minimize damage and loss to investors and to contain systemic risk.

Principles for the Secondary Market

25. The establishment of trading systems including securities exchanges should be subject to regulator authorization and oversight.
26. There should be ongoing regulatory supervision of exchanges and trading systems which should aim to ensure that the integrity of trading is maintained through fair and equitable rules that strike an appropriate balance between the demands of different market participants.
27. Regulation should promote transparency of trading.
28. Regulation should be designed to detect and deter manipulation and other unfair trading practices.
29. Regulation should aim to ensure the proper management of large exposure, default risk, and market disruption.
30. The system for clearing and settlement of securities transactions should be subject to regulatory oversight, and designed to ensure that it is fair, effective, and efficient and that it reduces systemic risk.

- Mobilize retail savings by promoting mutual funds.
- Deregulate the asset management portfolios of ITCs and insurance companies.

Review thoroughly and rationalize contractual savings regulations

In the PRC, insurance companies should be given greater freedom in investing their funds. The government should also provide favorable tax treatment for profits and losses in securities investments made by contractual savings institutions. At the same time, it is also essential to protect the customers of these institutions against the increased risk involved in participating in the capital markets by strengthening their capital bases and implementing capital-based risk management. Indonesia has a basic legal and fiscal framework for the provision of pensions, and has developed a wide range of pension schemes. However, the asset allocation of the pension funds is distorted with a major share of the funds being invested in savings deposits at commercial banks, a factor influenced by macroeconomic policies favoring high interest rates. While private-sector schemes have invested in equity and property assets, a good share of such assets may be those of the parent company operating the schemes. Unless corrective measures are taken, the distorted asset allocation will lead to serious problems for the pension schemes in Indonesia. In particular, the government should remove limitations on Jamostek investment allocations relating to investments in capital markets.

In Malaysia, there is a need to review the portfolio investment policies of the Employee Provident Fund, Permodalan Nasional Berhad, and other institutional investors to increase their investments in high-rated long-term instruments, in particular private debt securities. In addition, accounting systems should be changed from a book-cost-and-value basis to a market-value basis. In the Philippines, an appropriate legal, regulatory, and fiscal framework should be developed to introduce private pension schemes. The government should also consider increasing the share

of assets (45 percent at present) that can be invested in private securities. Further, tax incentives will be needed to encourage pension schemes to invest in the capital markets. With regard to the Philippine insurance industry, the rules on capital gains taxation are viewed as restrictive. It is also important, more so for insurance companies than for pension funds, that domestic bond markets be developed to ensure that life insurance companies do not invest all of their assets in foreign bond markets. In Thailand, it is imperative that the regulatory and supervisory functions be centralized and harmonized across the three different pension schemes. In addition, mark-to-market valuation should be introduced to enhance the transparency of investments made by contractual savings institutions, and tax incentives are needed to promote the provident fund sector.

Mobilize retail savings by promoting mutual funds

In the PRC, the central bank should review the assumption that any flow of funds from bank deposits to asset management companies will destabilize financial markets. Such a policy review, along with appropriate changes in the institutional and regulatory frameworks, is needed if the mutual fund industry is to develop. The new regulations on mutual funds at the national level should include, among other things, their form of incorporation, business scope, licensing requirements, qualifications for fund managers, and provisions for the protection of clients' property and custodial arrangements. Further, the mutual funds to be established can also be asked to contribute to an investor protection fund. As in the case of debt markets, the regulatory responsibilities of the PBC and the CSRC need to be clearly defined. In the Philippines, the government should discourage equity-type risky investments by retail funds, the units of which are held by relatively poorer individuals. Developing appropriate risk management systems in the industry will be essential. In Pakistan, mutual funds are allowed to float only one invest-

ment company or fund each. It is recommended that this restriction be lifted for those funds with a good performance record. Moreover, the mutual fund sector comprises only balanced funds with no specific sector or instrument specialization. The government should encourage the diversification of these funds into specialized funds, including fixed-income funds.

Deregulate the asset management portfolios of ITCs and insurance companies

An essential first step in promoting ITCs, mutual funds, and other important constituents of the asset management industry is to ensure that there are as few restrictions as possible on their portfolio allocation, to the extent permitted by prudential considerations. In the PRC, the issue is one of similarity of functions between ITCs and banks, resulting in a concern that ITCs may not manage risks as well as banks. A solution would be to review the statutory reserve requirements for deposits held by investors at the ITCs. At present, reserve requirements are imposed on “trusted” deposits but not on “entrusted” deposits, although the latter account for more than 60 percent of the total. There should be a clear distinction made between these two deposits for prudential purposes. Also important in the PRC is to review the reliance of ITCs on short-term borrowings and the resulting maturity mismatch. However, ITCs relied on short-term borrowings and other means because they were unable to utilize the domestic capital markets. Further, ITCs are not allowed to serve individual investors, another potential source of funds. Access to the capital markets and individual investors should be immediately reviewed by the CSRC. On the regulatory side, the responsibilities of the PBC and the CSRC again need to be clarified.

Korea, where the concern is primarily what to do with its poorly performing ITCs, should deregulate the ITC sector to foster competition, which is likely to strengthen accounting and financial governance standards. To ensure their financial soundness, ITCs

should also be required to comply with risk-based capital adequacy requirements. In the Philippines, the concern is what to do about the lack of adequate regulatory oversight over the CTFs. Given their unique role, they should be supervised by a special regulator appointed for the purpose.

To promote the development of insurance companies, economies should allow them more flexibility in their private equity investments, and lift artificial restrictions on their portfolio investment decisions. In the PRC, as stated earlier, greater freedom and tax incentives should be provided to insurance companies investing actively in the capital markets. In Malaysia, the eligible asset requirements should be reviewed to determine the feasibility of giving insurance companies greater freedom in their portfolio decisions. In the Philippines, there is a need to examine the effects of the capital gains tax on investments by insurance companies in small companies, as the yield may be low and the tax may stanch a valuable source of capital. The capital gains tax structure could be reformed to encourage investments by insurance firms in smaller companies.

Further Improvement of Equity-Market Infrastructure

Although the region’s bond markets have yet to develop basic infrastructure such as trading, clearing and settlement, and primary and secondary dealer systems, the equity markets are in far better shape. However, there are some areas that must be improved or strengthened. These are all linked to direct and indirect vehicles for promoting market liquidity. These areas include: central depository functions, SBL, trading of thinly traded stocks, and fixed commission rates. To further improve the equity-market infrastructure, the following recommendations are proposed for consideration:

- Improve central depository functions to allow immobilization and dematerialization of securities, and eliminate legal impediments to the adoption of these critical measures and to SBL.

- Revise the listing rules and consider call-market trading to improve the liquidity of thinly traded stocks, and relax the fixed commission regime.

Improve central depository functions to allow immobilization and dematerialization of securities, and eliminate legal impediments to the adoption of these critical measures and to SBL

With the exception of India, Indonesia, and Viet Nam, the region's capital markets have established central depositories following the recommendations of the G-30 and ISSA. Despite reports of progress by stock exchanges that operate central depositories, they have generally been slow to adopt immobilization. The completion ratios are: Hong Kong, China, 54 percent; India, 8 percent; Korea, 70 percent; Malaysia, 67 percent; Philippines, 59 percent; and Thailand, 39 percent (Rhee 1999). Dematerialization has not been adopted largely because of legal impediments in each country to eliminating physical certificates of title in favor of computer records. For efficient clearing and settlement, central depository functions must be strengthened. Immobilization and dematerialization will also: (i) eliminate forgery, (ii) curb illegal trading, (iii) improve efficiency in recording dividend payments, (iv) facilitate SBL, and (v) reduce costs in printing and delivering share certificates.

Revise the listing rules and consider call-market trading to improve the liquidity of thinly traded stocks, and relax the fixed-commission regime

Some stock exchanges in the region suffer from very thin trading. Usually, the top 30 companies account for 50–70 percent of the total trading volume on the stock exchanges. An extreme example is the Jakarta Stock Exchange where the 20 least active stocks (sorted by trading volume over the period January 1996 to June 1998) did not trade for 518 out of 615 trading days.⁶¹ (Another example is Pakistan's Karachi Stock Exchange, where the two largest listed companies account for about 90 percent of the trading volume of the exchange while they represent over

50 percent of the market capitalization.) The bottom half of all listed stocks, sorted by trading volume, account for only 27 percent of total volume of the Jakarta Stock Exchange's regular trades. This problem is not limited to Indonesia or the other countries affected by the financial crisis. Since there are a number of historical, institutional, legal, and firm-specific reasons that may explain this problem of illiquidity in the region's capital markets, it is impossible to come up with a single satisfactory solution. One area to examine is listing requirements. The Jakarta Stock Exchange requires that the total number of shareholders (individuals or institutions) be at least 200, while the Taiwan Stock Exchange imposes a 1,000-shareholder requirement for initial listing. The market capitalization of Taipei, China-listed companies is US\$288 billion, as opposed to US\$22 billion for Jakarta-listed companies. Another initial listing requirement is minimum paid-up capital. It ranges from US\$0.25 million in Indonesia to US\$15.8 million in Malaysia. The listing requirements should be made more conducive to a wider distribution of share ownership, which will help increase trading activities in thinly traded stocks. Many countries require a certain percentage of paid-up capital to be in the hands of the investing public, ranging from 25 percent in Hong Kong, China; Malaysia; Philippines; and Singapore to 30 percent in Korea and Thailand. Indonesia has no such requirement.

Governments and stock exchanges in the region can do more by educating small investors and by creating a nationwide online network of remote trading offices to make it easier for individual investors in remote regions to invest. An investment information center with a nationwide network could be established to improve understanding of the stock market among individual investors. To facilitate investment decisions, the center could provide investors with value-added information on listed companies, their industry, and the economy in general.

On the basis of empirical findings reported by Amihud et al. (1990), Chang, Hsu, Huang, and Rhee

(1999), and Comerton-Forde (1999), the region's stock exchanges may consider adopting a call-auction method for thinly traded stocks for which price fluctuations tend to be greater because of infrequent trading than for heavily traded stocks. Since the major advantage of the call-auction method over the continuous-auction method is price stability or lower volatility, the idea is worthwhile pursuing. The call-market method is also effective in dealing with the problem of information asymmetry between informed and uninformed traders. Information asymmetry is more severe for thinly traded stocks than for heavily traded stocks. Most important of all, the call-market method, by imposing forced delays in order matching, encourages traders to reassess order and information flows for better discovery of equilibrium prices. Thus, the call-auction method may be adopted for thinly traded stocks at the market open and at the close of the morning and afternoon sessions. A similar idea was proposed by Amihud and Mendelson (1989) and Cohen and Schwartz (1989) for NYSE-listed stocks. The call mechanism can readily be combined and integrated into the continuous-auction-based trading system. Already a number of stock exchanges in the region (those in PRC, Korea, and Thailand) use the call-market method for the morning and afternoon open and then switch to the continuous-auction method. As an alternative, the introduction of a quote-driven system with the help of market-makers might also improve the liquidity of thinly traded stocks, but combining a quote-driven system with the existing order-driven system will be a difficult challenge.

Fixed-commission rates need to be replaced by negotiable rates to help the domestic market remain competitive and to increase market liquidity. Singapore plans to liberalize brokerage commissions over the next five years, with freely negotiable commissions for trades exceeding S\$150,000 and fund manager trades starting 1 January 2000. From 1 January 2003, commissions for all trades will be freely negotiable. Small and undercapitalized securities companies or individual brokers must be en-

couraged to consolidate to overcome their resistance to such changes.

Re-evaluation of Market Volatility Controls

A number of volatility controls have been introduced in this region to cope with extreme intraday volatility. These mechanisms include:

- Margin regulations,
- Circuit breakers,
- Trading halts,
- Daily price limits,
- Contingent restrictions,
- Price stabilization funds, and
- Securities transaction taxes.

Using data on the US, Japanese, and Asian markets, academic research has evaluated the efficiency of the above mechanisms in moderating market volatility. The reported results are not consistent from one country to another and very often do not support the hypothesis that the above mechanisms are effective. As a result, market regulators are facing the difficult task of adopting some policy decisions on market volatility with little supporting evidence, but with the prospect of potentially ruinous effects on price discovery and market efficiency. The following recommendations pertain to market volatility-controlling mechanisms:

- Make a thorough study on the efficacy of various mechanisms for reducing market volatility, using local market data.
- Refrain from direct or indirect intervention in the equity and derivatives markets with the use of funds from financial institutions or price stabilization funds.

Make a thorough study on the efficacy of various mechanisms for reducing market volatility, using local market data

No two markets are identical because of different institutional settings and economic conditions and different sets of listed shares, and empirical evidence

from one market cannot be generalized to apply to another market. Therefore, it is important that any policy decisions on volatility-controlling mechanisms must be supported by empirical evidence based on local market data. At present, very little empirical work has been done to provide convincing results on a number of market mechanisms including margin regulations, trading halts, daily price limits, securities transaction taxes, and various types of circuit breakers. Hence, comprehensive research work on the efficacy of various volatility-controlling devices is warranted. The idiosyncratic features of each market must be taken into account in the research.

Refrain from direct or indirect intervention in the equity and derivatives markets with the use of funds from financial institutions or price stabilization funds

Unlike other volatility controls that have both advocates and critics, government intervention in the stock/derivatives market has never been perceived favorably by market participants and academicians. The consensus is that government intervention, whether direct or indirect, generates very little benefit, while the intervention itself is simply too costly. The government of Hong Kong, China justified its intervention as a response to a “double play” by either or both speculators and hedge funds under its currency board system. Many critics argued that the intervention in Hong Kong, China showed lack of confidence on the part of the government in its currency board, while the IMF (1998e), the Bank for International Settlements (BIS) (1998), and Brown et al. (1998) all say that blaming the hedge funds for the crisis was misleading. The BIS rejects accusations that hedge funds played a central role in triggering the Asian currency and stock-market crisis despite often-cited anecdotal reports. According to the BIS, there is evidence that hedge funds maintained considerable exposure to Asia at the start of 1997, but that their long positions were reduced before the crisis in favor of positions in Latin American countries.

Looking Forward

In its annual report for 1998, the BIS highlighted two major weaknesses that are common to the countries engulfed in the Asian financial crisis. The first was excessive expansion of bank credit which fueled overinvestment and led to the creation of unprofitable industrial capacity and asset price boom-and-bust cycles. The second weakness was a reliance on potentially volatile forms of external finance, notably short-term bank borrowing, which made domestic economies increasingly vulnerable to swings of sentiment in the international financial markets. As the banking sector suffered from its own fragility, characterized by lax regulatory supervision and poor corporate governance, the critical role of capital markets emerged as an important policy consideration not only for the crisis-affected economies but also for the vulnerable economies. Unfortunately, the region’s capital markets also had their share of weaknesses.

Six policy issues were identified and corresponding recommendations to address the weaknesses of the region’s capital markets were specified in this study. The policy issues are the following:

- Development of long-term bond markets,
- Improvement of corporate governance,
- Reinforcement of regulatory and supervisory arrangements,
- Expansion of the investor base,
- Further improvement of the equity-market infrastructure, and
- Re-evaluation of market volatility controls.

The most important area is the development of bond markets in the region. This important policy agenda was overlooked by government authorities simply because the capital markets seemed unimportant in relation to the large and seemingly well-functioning banking sector. The crisis highlighted one important lesson to remember. Short-term foreign capital cannot finance long-term projects. Domestic sources of long-term funds should have been

created. However, the development of long-term bond markets is not a policy agenda independent of all others. Unless corporate governance practices are improved, unless the investor base is expanded, and unless equity markets are further strengthened, the capital market cannot function well to complement the banking sector for the major goal of financial intermediation.

The crisis brought out an important question on the role of government. Stiglitz (1998) offered a perceptive observation: "The crisis was caused in part by too little or ineffective government regulation in some areas and too many or too misguided government administrative controls in other areas." In the context of capital-market policy issues, the governments in the crisis-affected countries were ineffective in creating the necessary legal framework for better corporate governance and long-term domestic bond markets. At the same time, there was too much government, dictating the resource allocation of financial institutions and bailing out inefficient and

virtually bankrupt banks and SOEs. In this chapter, a new regulatory philosophy is proposed: *a disclosure-based and market-based philosophy of market regulation*. This approach will transform market participants from reluctant partners to willing partners as far as compliance and disclosure of information are concerned. Under this approach, market regulators on behalf of their governments will not provide value judgment; market participants will do so for their own protection. Market regulators will not have to waste their limited resources on merit evaluations because these evaluations can be carried out by market participants themselves through full disclosure of information for their own benefit. This philosophy of regulation will also be essential for improving corporate governance because too much government is blamed for poor corporate governance. It is vital as well in minimizing information asymmetry, the cause of moral hazard and adverse selection problems that plagued the Asian economies before and during the crisis.

Notes

¹Free cash flow is cash flow in excess of that required to fund all projects with a positive net present value.

²Jensen's debt-monitoring hypothesis was elaborated by Harris and Raviv (1990) and Stulz (1990) and empirically tested by Maloney, McCormick, and Mitchell (1993) and Ferland and Rhee (1996).

³See IOSCO (1998).

⁴The discussion in this section is drawn from Rhee (1998).

⁵A useful exposition of various causes of the Asian financial crisis along with relevant references can be found in Radelet and Sachs (1998a, 1998b) and Boorman (1998).

⁶See Asian Development Bank (1998a), pp. 19–37.

⁷The lack of benchmark interest rates has been attributed to the fiscal surpluses enjoyed by most Asian economies before the crisis. However, a budget surplus is not sufficient justification. The region's economies still suffer from a shortage of clean water, electricity, and roads. Many environmental projects still have not begun. A budget surplus is nothing to be proud of when Asian economies have a huge infrastructure funding need. The lack of benchmark yield curves should instead be attributed to the lack of strong will on the part of the government.

⁸In the classic version of the currency board, neither monetary policy nor central bank is needed. Thus, the Hong Kong currency board does not exactly fit the classic version.

⁹Khazanah Nasional Bhd. is wholly owned by the Ministry of Finance of Malaysia.

¹⁰On 1 September 1998, the Korea Securities Dealers Association (KSDA) modified its public announcement system for benchmark yields since the mark-to-market principle has had to be applied to collective investment funds launched after 15 November 1998.

¹¹See Harianto (1998). The Capital Market Supervisory Agency (BAPEPAM) points out that ready access to bank financing was one reason why corporations with higher credit ratings did not issue debt in the local market.

¹²See International Monetary Fund (1998c).

¹³The probability of default is defined as Probability [(Earnings before interest and taxes + Depreciation + Amortization) < Interest Expenses]. See International Monetary Fund (1998g).

¹⁴According to Lardy (1998), about 85 percent of the total liabilities of SOEs are loans from the banking sector.

¹⁵At present, the preset rate reflects the market conditions.

¹⁶Hong Kong, China; Singapore; and Taipei, China have established competitive auction systems with primary dealers participating.

¹⁷Many bonds are listed on the exchange while traded in the OTC market in Korea. One practical reason is that ITCs are allowed to purchase only listed bonds (Nam et al. 1998b).

¹⁸See Mishkin (1996) for a discussion of moral hazard and adverse selection resulting from asymmetric information.

¹⁹Corporate governance and corporate finance are inseparable concepts because corporate finance determines who the stakeholders are and how their contractual arrangements are structured.

²⁰In the US capital markets, concentration of either equity or debt tends to improve the profitability of firms (Morck, Shleifer, and Vishny 1988; McConnell and Servaes 1990). However, in Asian economies where inside majority shareholders have dominance over management, concentrated ownership does not necessarily lead to improved profitability. According to Claessens, Djankov, Fan, and Lang (1998b), of the countries in the region, Thailand has the highest concentrated ownership (73 percent), followed by Indonesia (67 percent); Singapore (61 percent); Philippines (57 percent); Malaysia (53 percent); Hong Kong, China (53 percent); Korea (26 percent); and Japan (26 percent). The corporations in Taipei, China have the least ownership concentration (15 percent). Ownership concentration, these authors say, hurt both operational performance and market valuation across the region.

²¹The discussion in this section is drawn from a number of IMF reports: IMF (1998a, 1998b, 1998d, and 1998e).

²²The IMF recommended the repeal or modification of Article 94(2).

²³In February 1999, Korea abolished restrictions on tender offers to allow hostile takeovers and to promote foreign investment in local corporations.

²⁴In Thailand, minority shareholders have the right to sue directors for breach of fiduciary duties and due diligence, but must answer for their own expenses, nullifying the effectiveness of this right. According to the SEC, an amendment to the relevant law has been proposed to remedy this problem. In Korea, shareholder activism has been guided since the mid-1990s by the People's Solidarity for Participatory Democracy, which solicits proxies from minority shareholders, exercises voting rights at shareholders' meetings, and sometimes initiates representative suits for minority shareholders.

²⁵These elements are also part of the overall infrastructure needed to ensure the smooth functioning of capital markets. Legal and enforcement frameworks directly determine the success of regulatory policies.

²⁶See Blommestein and Rhee (1997).

²⁷See Cho (1999).

²⁸Discussions in this section are drawn from Monetary Authority of Singapore (1998a, 1998b).

²⁹Asymmetric information is not the only source of moral hazard and adverse selection problems. Moral hazard can occur if enforcement costs are high (Mishkin 1996).

³⁰See MAS (1998b).

³¹*Modaraba* is term financing devised in 1980 to comply with Islamic mode of financing.

³²Chou (1998) reports that these SROs must contend with an enormous amount of paperwork in reporting to the SECP. The Modaraba Association of Pakistan members cited 7 weekly and over 30 monthly reports.

³³Provident funds serve only the first pillar of social welfare and the third pillar of voluntary private savings. The second pillar of mandatory individual savings has not yet been adopted.

³⁴Both draft amendments are under consideration by the Council of State.

³⁵The characteristics of the three types of funds are as follows:

Type	Characteristics	Closed-Ended	Open-Ended
ITC	Contractual type. ITC invests and manages, and sells participation (beneficial) certificates to investors	Yes	Yes
ITMC	Reformed contractual type but with greater separation of management from fund. ITMC cannot invest in securities and distribute certificates	Yes	Yes
Mutual Fund	Corporate type, with clear distinction between management and managed fund	Yes	Not yet

³⁶See Securities Review Committee (1988). Also see Table 5 for a summary of the activities in the region's equity markets.

³⁷See International Stock Exchange (1987), Brady Commission Report (1988), and New York Stock Exchange (1990).

³⁸Cross-country comparison and justification for the magnitude of clearing and settlement funds should be the subject of future research.

³⁹Indonesia plans to have scripless trading by the middle of the year 2000.

⁴⁰In multilateral netting, counterparties to transactions are usually charged for settlement, trade guarantees are required, and interday netting is not allowed.

⁴¹The CNS allows interday netting and usually requires a clearinghouse to interpose between the counter-parties.

⁴²So far, one securities firm has been granted such a license.

⁴³Rhee (1992) lists four main reasons why order-driven markets are popular in Asia: (i) the significant role of individual investors and the less significant role of institutional investors, (ii) distrust of deal making, (iii) less complicated regulatory considerations, and (iv) relatively low trading cost.

⁴⁴Shown below are the changes in initial margin requirements in the US market.

Effective Date	Rate (%)	Effective Date	Rate (%)	Effective Date	Rate (%)
15/10/34	45	17/01/51	75	10/07/62	50
01/02/36	55	20/02/53	50	06/11/63	70
01/11/37	40	04/01/55	60	08/06/68	80
05/02/45	50	23/04/55	70	06/05/70	65
05/07/45	75	16/01/58	50	06/12/71	55
21/01/46	100	05/08/58	70	24/11/72	65
01/02/47	75	16/10/58	90	03/01/74	50
30/03/49	50	28/07/60	70		

⁴⁵See Ma, Rao, and Sears (1989a, 1989b).

⁴⁶See Fama (1989); Lehman (1989); Miller (1989); and Kuhn, Kurserk, and Locke (1991).

⁴⁷Chan, Kim, and Rhee (1999) examined transaction data on stocks listed on the Kuala Lumpur Stock Exchange. Two major findings related to price limits were reported: (i) they are ineffective in reducing information asymmetry, and (ii) they worsen order imbalances during large information shocks.

⁴⁸According to the NYSE Report (1991), Rule 80A: (i) when triggered on the down side reduced sell-index arbitrage value per minute by 23 percent, and when triggered on the up side reduced buy-index arbitrage value per minute by 62 percent; (ii) did not appear to cause serious “decoupling” of the cash and futures markets; (iii) had no significant “magnet effect”; and (iv) produced mixed results in terms of its effects on short-term (minute-by-minute) volatility. Although the reported results are encouraging from the regulatory standpoint, further examination is warranted to confirm the conclusions because of the limited number of observations and the short study period. The analysis was based on 23 instances from August to December 1990.

⁴⁹It appears that Taipei, China’s market intervention goes beyond the stock market stabilization fund. According to a press report, the government plans to allow listed companies in financial difficulties to temporarily suspend trading in their shares on the stock exchange for as long as two months. In a bid to help stock financiers offload shares that they have seized as collateral, authorities will also provide a system for restricted trading outside the stock exchange.

⁵⁰Schwert and Seguin (1993), for example, raised a question on the tax base: should a futures position written on US\$1 million worth of Treasury bonds, which requires zero net investment, be taxed at zero or on the face value of US\$1 million?

⁵¹This price is called a “stop-out” price.

⁵²For details, refer to US Government (1992), a report on the government securities market prepared jointly by the Department of the Treasury, the Securities and Exchange Commission, and the Board of Governors of the Federal Reserve System.

⁵³See Friedman (1964), Smith (1981), and McAfee and McMillan (1987).

⁵⁴The comparison between the two auction methods may not be as straightforward as it sounds because an average yield of multiple-price auctions was contrasted to a stop-out yield of uniform-price auctions. See Malvey et al. (1995) and Malvey and Archibald (1998).

⁵⁵See Prebon Yamane Capital Markets (Asia) Limited (1998).

⁵⁶For corporate bonds, however, underwriting by syndicates appears to be the norm.

⁵⁷When the Thai Bond Dealers Club was founded in 1994, this question was debated, but the concept of IDB markets did not materialize because local dealers did not want to deal through brokers. With the Bank of Thailand planning to create a primary dealer system this year, the Thai SEC is preparing an appropriate regulatory framework for IDBs.

⁵⁸In the United States, six IDBs handle Treasury securities.

⁵⁹The discussion in this section owes to Vitrella (1998).

⁶⁰India relies on the Reserve Bank of India’s book-entry system while the TBDC relies on the Stock Exchange of Thailand system which is linked to the Bank of Thailand.

⁶¹See Chang, Hanafi, and Rhee (1999). Jensen’s debt-monitoring hypothesis was elaborated by Harris and Raviv (1990) and Stulz (1990) and empirically tested by Maloney, McCormick and Mitchell (1993) and Ferland and Rhee (1996).

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Appendix

Matrix of Capital-Market Policy Issues and Recommendations

Policy Issues	Policy Recommendations	Measures Taken by the Government
Development of Long-Term Bond Markets	<p>Introduce government-issued bills, notes, and bonds to create benchmark risk-free interest rates and yield curves; if not, consider using mortgage-backed securities with risk enhancement as surrogate benchmark rates.</p> <p>Enforce competitive-auction rules for government-issued securities, with minimal government intervention in pricing; consider using both "multiple-price, sealed-bid" and "uniform-price, sealed-bid" auction techniques.</p> <p>Establish a primary dealer system.</p> <p>Consolidate the issuance of securities by the government and public enterprises to avoid a large number of small issues, and establish regularity in the issue cycle.</p>	<p>Indonesia</p> <ul style="list-style-type: none"> The Government of Indonesia will issue a special bond to serve benchmark purposes. <p>Korea</p> <ul style="list-style-type: none"> MOFE announced that three-year bonds would be issued once a month, and bonds with maturity equal to or less than one year or longer than five years would be issued once every two months depending on the size of the issuance. <p>Malaysia</p> <ul style="list-style-type: none"> Khazanah bonds were first issued in September 1997 as basis for benchmark. <p>Philippines</p> <ul style="list-style-type: none"> GOP has issued 1- to 20-year Treasury notes and bonds with floating rates. <p>Thailand</p> <ul style="list-style-type: none"> Financial Institutions Development Fund (FIDF) and Property Loan Management Organization (PLMO) have mobilized funds by issuing bonds. Under the Financial Sector Reform Program Loan of the ADB, the Thai government has set a program and timetable for the issuance of long-term, market-oriented government bonds. <p>India</p> <ul style="list-style-type: none"> Primary auction market was created. Securities were competitively priced. <p>Malaysia</p> <ul style="list-style-type: none"> BNM introduced an auction system to put a pricing structure in place; government bonds are now issued by auction. <p>PRC</p> <ul style="list-style-type: none"> Nineteen institutions were appointed as primary bond dealers. <p>India</p> <ul style="list-style-type: none"> Six primary dealers were authorized by the Reserve Bank of India (RBI). <p>Korea</p> <ul style="list-style-type: none"> Primary dealer market will be introduced between 1999 and 2000. <p>Malaysia</p> <ul style="list-style-type: none"> Bank Negara Malaysia (BNM) introduced a primary dealer system. <p>PRC</p> <ul style="list-style-type: none"> Variety of bonds is being reduced but focus is on Treasury bills. <p>Korea</p> <ul style="list-style-type: none"> MOFE is consolidating Grain Security Fund with National Debt Management Fund into government-issued Treasury securities. Plan to issue government bonds on regular basis depending on maturity was announced on 20 August 1998.

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Matrix of Capital-Market Policy Issues and Recommendations (Cont'd)

Policy Issues	Policy Recommendations	Measures Taken by the Government
	<p>Foster a "ratings culture" and upgrade the capacity of credit-rating agencies to international standards.</p> <p>Create repurchase agreement (repo) markets, if none exists.</p>	<p>Viet Nam</p> <ul style="list-style-type: none"> Government is expected to increase issuance of Treasury bills; SBV may issue SBV bills to siphon off excess liquidity. Government is expected to vary Treasury bill and bond maturities. <p>Indonesia and Malaysia</p> <p>Second rating agency was created.</p> <p>PRC</p> <ul style="list-style-type: none"> Shanghai Stock Exchange is active in repo transactions. <p>India</p> <ul style="list-style-type: none"> Repo transactions are open-market operational tools and include trading of bonds among financial institutions. <p>Korea</p> <ul style="list-style-type: none"> Repo transactions among financial institutions exist. <p>Malaysia</p> <ul style="list-style-type: none"> Repo transactions among financial institutions exist. <p>Pakistan</p> <ul style="list-style-type: none"> Repo transactions are open-market operational tools and include trading of bonds among financial institutions. <p>Philippines</p> <ul style="list-style-type: none"> Repo transactions are open-market operational tools and include trading of bonds among financial institutions. <p>Thailand</p> <ul style="list-style-type: none"> BOT's repo market, set up in 1979, trades government bonds, government-guaranteed bonds, state enterprise bonds, BOT bonds, nonguaranteed state enterprise bonds which are triple-A rated, and FIDF bonds. Thai BDC plans a repo market.
	<p>Create interdealer broker (IDB) markets, if none exists.</p>	<p>PRC</p> <ul style="list-style-type: none"> Shanghai Stock Exchange was designed as an IDB market. <p>Indonesia</p> <ul style="list-style-type: none"> Surabaya Stock Exchange trades bonds using the Bond Dealing Center in Thailand as model. <p>Korea</p> <ul style="list-style-type: none"> Government will develop the IDB market. <p>Malaysia</p> <ul style="list-style-type: none"> BNM will develop the IDB market. <p>Thailand</p> <ul style="list-style-type: none"> Thai Bond Dealing Center was set up as an organized exchange.
	<p>Eliminate captive demand for government-issued securities.</p>	<p>India</p> <ul style="list-style-type: none"> RBI reduced statutory liquidity ratio from peak of 37.5% to 25.0% (1997).

Policy Issues	Policy Recommendations	Measures Taken by the Government
	<p>Revamp bond clearing and settlement systems.</p> <p>Create bond futures and interest-rate futures.</p>	<p>Malaysia</p> <ul style="list-style-type: none"> • Flexible and lower liquidity reserve policy was implemented in January 1999. <p>Pakistan</p> <ul style="list-style-type: none"> • SBP requires commercial banks to have a high liquidity ratio (15%). <p>Indonesia</p> <ul style="list-style-type: none"> • About a dozen large banks, including foreign banks, offer customer services. KDEI will soon immobilize bonds. <p>Malaysia</p> <ul style="list-style-type: none"> • SPEEDS (electronic funds and transfer system) was introduced in corporate bond market for unlisted bonds on 26 January 1996. • All PDS transactions will be scripless in the future. <p>Philippines</p> <ul style="list-style-type: none"> • Scripless settlement system for government securities has been introduced. <p>Thailand</p> <ul style="list-style-type: none"> • Clearing and settlements at the Thai Securities Depository Center (TSD) are based on the T+2 principle. <p>PRC</p> <ul style="list-style-type: none"> • Fourteen futures exchanges and 329 brokerage offices are dedicated solely to commodity futures trading. <p>Korea</p> <ul style="list-style-type: none"> • The Futures Trading Act of December 1995 covers futures trading. A new futures exchange is expected in 1999. <p>Malaysia</p> <ul style="list-style-type: none"> • Interest-rate futures market has been established. • Bond futures market was proposed. <p>Thailand</p> <ul style="list-style-type: none"> • Banks and other financial intermediaries directly buy and sell OTC options and futures.
<p>Improvement of Corporate Governance</p>	<p>Minimize the role of government, which may hinder good corporate governance in the capital market.</p> <p>Maximize legal protection for creditors and minority as well as outside investors.</p>	<p><i>See measures relevant to SROs below.</i></p> <p>India</p> <ul style="list-style-type: none"> • SEBI requires 50% of governing boards to be nonbroker public representatives, including an SEBI nominee. SEBI has a mechanism for redress of investor grievances against brokers. <p>Korea</p> <ul style="list-style-type: none"> • As of 25 May 1998, minority shareholders with 0.01% ownership are allowed to initiate a lawsuit against members of the board.

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Matrix of Capital-Market Policy Issues and Recommendations (Cont'd)

Policy Issues	Policy Recommendations	Measures Taken by the Government
		<ul style="list-style-type: none"> • A corporation must file a registration statement on the new issue offering, which includes information on investor protection. • Fair Trade Act was revised to reduce <i>chaebol</i> cross-guarantees over four years. • Korean National Assembly passed a law on 29 December 1998 allowing ITCs to exercise voting rights on entrusted shares. <p>Malaysia The government and relevant authorities, including the Securities Commission, have implemented and continue to implement measures to promote economic and financial recovery, including those aimed at protecting investors, and improving market transparency and corporate governance. These have included:</p> <ul style="list-style-type: none"> • Raising corporate governance standards. A high-level Finance Committee released on 25 March 1999 a report entitled "Corporate Governance in Malaysia" containing recommendations to improve the framework for corporate governance in Malaysia and to set best practices for the industry. The recommendations essentially seek to strengthen the statutory and regulatory framework for corporate governance; enhance the self-regulatory mechanisms that promote good governance; and identify training and education programs to ensure that the framework for corporate governance proposed by the Finance Committee is supported by the necessary human and institutional capital. • Strengthening of rules on related-party and interested-party transactions. The SC has strengthened rules on related-party and interested-party transactions and has directed the KLSE to incorporate several changes into its Listing Requirements. Changes have been made in relation to: widening the scope of rules; enhancing disclosure, voting rights, appointment of corporate advisors, and directors' responsibilities. In addition KLSE has been asked to revise its Listing Rules to stop possible abuses by large/controlling shareholders in connection with related-party transactions.

Policy Issues

Policy Recommendations

Measures Taken by the Government

- **Measures to resolve weaknesses in insider-trading laws.** The Securities Industry Act of 1983 was amended in 1998 to resolve weaknesses in insider-trading rules in Malaysia. Steps have also been taken to achieve transparency of ownership. Amendments to the Securities Industry (Central Depositories) Act of 1991 in October 1998 now prohibit persons from hiding behind their nominees by requiring securities accounts to be opened in the name of beneficial owners or authorized nominees.
 - **Strengthening of enforcement capabilities.** The powers of exchanges have been enhanced by recent amendments to the Securities Industry Act of 1983, which strengthen the ability of exchanges to take action against directors and others to whom the listing rules of the exchange are directed. In addition, the introduction of civil enforcement provisions in insider-trading legislation now allows an investor or regulator to claim compensation for losses suffered, while the introduction of civil penalties allows the Securities Commission to recover three times the insider's gain or the loss avoided.
 - **Establishment of best sales practice and compliance provisions.** These have been put in place in the business rules of KLSE and MESDAQ, the forthcoming Malaysian Exchange of Securities Dealing and Automated Quotation, to ensure that clients' interests are always maintained over and above that of stockbroking companies. Among other things, members must ensure appropriate checks and balances, practice proper corporate governance, establish "Chinese wall" procedures, and appoint compliance officers to secure effective internal controls and active segregation of duties between trading and operational functions within their respective stockbroking firms.
- Thailand**
- SET published the "Code of Best Practices for the Directors of Listed Companies" and "The Roles, Duties and Responsibilities of the Directors of Listed Companies."
 - SET also released "Audit Committee and Good Practice Guidelines" and guidelines for the preparation by listed companies of the sections in their annual reports on

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Matrix of Capital-Market Policy Issues and Recommendations (Cont'd)

Policy Issues	Policy Recommendations	Measures Taken by the Government
Reinforcement of Regulatory and Supervisory Arrangements	Redefine the capital market regulatory structure to avoid regulatory fragmentation and overlaps.	<p>“Management Discussion and Analysis,” “Directors’ Responsibilities,” and “A Statement on Corporate Governance.”</p> <ul style="list-style-type: none"> • SET requires the setting up of an audit committee as a key condition for listing or delisting . • Foreclosure laws were expected to be amended by October 1998.
	Shift from merit-based regulation to disclosure-based regulation.	<p>PRC</p> <ul style="list-style-type: none"> • Most regulatory functions were transferred from PBC to CSRC in December 1992. • CSRC’s functions duplicate those of the municipal securities regulatory agencies. It has no licensing authority (the PBC has maintained that authority) for exchanges or securities-market institutions under its jurisdiction. <p>India</p> <ul style="list-style-type: none"> • In 1992 the SEBI Act was enacted, giving SEBI statutory status as an apex regulatory body with overall responsibility for the capital markets. <p>Korea</p> <ul style="list-style-type: none"> • Regulatory duties of MOFE were transferred to FSC. <p>Malaysia</p> <ul style="list-style-type: none"> • BNM, SC, and concerned bodies are rationalizing fragmented regulatory framework for private debt securities.
	Promote and fully utilize self-regulatory organizations (SROs) to foster market-based regulation.	<p>PRC</p> <ul style="list-style-type: none"> • CSRC has addressed exchange’s need to enforce disclosure requirements. <p>India</p> <ul style="list-style-type: none"> • Mark-to-market valuation for banks was increased. <p>PRC</p> <ul style="list-style-type: none"> • SHSE and SZSE are SROs with limitations. <p>India</p> <ul style="list-style-type: none"> • SEBI Act of 1992 refers to SROs but their scope and functions are unspecified. <p>Indonesia</p> <ul style="list-style-type: none"> • Jakarta Stock Exchange and Surabaya Stock Exchange obtained SRO status. <p>Korea</p> <ul style="list-style-type: none"> • KSE and KSDA obtained SRO status. <p>Malaysia</p> <ul style="list-style-type: none"> • The SC is overseeing a major review of KLSE rules to enable the exchange to perform its role as a front-line regulator better. It expects to extend the front-line regulation program to other market institutions under its jurisdiction in due course. • KLSE obtained SRO status. <p>Pakistan</p> <ul style="list-style-type: none"> • KSE, LSE, and ISE obtained SRO status.

Policy Issues	Policy Recommendations	Measures Taken by the Government
Expansion of the Investor Base	<p>Enforce rules and regulations more vigorously.</p> <p>Review thoroughly and rationalize contractual savings regulations.</p>	<p>Philippines</p> <ul style="list-style-type: none"> • SRO status granted to PSE. <p>Thailand</p> <ul style="list-style-type: none"> • SET and TBDC have become SROs. <p><i>See policy measures under "Reinforcement of Regulatory and Supervisory Arrangements" above.</i></p>
	<p>Mobilize retail savings by promoting mutual funds.</p>	<p>PRC</p> <ul style="list-style-type: none"> • Government will introduce a new pension scheme. <p>Indonesia</p> <ul style="list-style-type: none"> • Jamostek has requested the government to review investment allocations. <p>Thailand</p> <ul style="list-style-type: none"> • SEC is expected to supervise provident and pension funds in 1999 to enhance their development. <p>Viet Nam</p> <ul style="list-style-type: none"> • MOL implemented social insurance system until December 1994; replaced in January 1995.
	<p>Deregulate the asset management portfolios of investment trust companies and insurance companies.</p>	<p>PRC</p> <ul style="list-style-type: none"> • State Council approved establishment of mutual funds in October 1997. • Listing of three mutual funds was allowed in May 1998. <p>India</p> <ul style="list-style-type: none"> • SEBI Mutual Funds Regulations were passed in 1993. <p>Indonesia</p> <ul style="list-style-type: none"> • Tax-exempt mutual funds have attracted investments from banks. Sixty percent of mutual fund capitalization was held by banks before the crisis. <p>Korea</p> <ul style="list-style-type: none"> • MOFE introduced the Securities Investment Law promoting mutual funds. <p>Pakistan</p> <ul style="list-style-type: none"> • Public-sector mutual funds are being set up. <p>Thailand</p> <ul style="list-style-type: none"> • Association of Investment Management Companies was set up and the related code of ethics was prepared. <p>Korea</p> <ul style="list-style-type: none"> • ITC deregulation plan was announced. Government plans to solve ITCs' financial problems. <p>Malaysia</p> <ul style="list-style-type: none"> • Ministry of Domestic Trade and Consumer Affairs lifted the restriction on foreign and institutional investment in corporate bonds (stipulated in section 47B of Companies Act of 1965) in June 1997. • EPF is now permitted to have broader portfolio for equities and private debt securities.

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Appendix

Matrix of Capital-Market Policy Issues and Recommendations (Cont'd)

Policy Issues	Policy Recommendations	Measures Taken by the Government
Further Improvement of Equity-Market Infrastructure	<p>Improve central depository functions to allow immobilization and dematerialization of securities, and eliminate legal impediments to the adoption of these critical measures and to securities borrowing and lending.</p>	<p>Pakistan</p> <ul style="list-style-type: none"> • Certificate course on fund management outlined for mutual funds. <p>Thailand</p> <ul style="list-style-type: none"> • Association of Investment Management Companies and related code of ethics established. <p>India</p> <ul style="list-style-type: none"> • Depositories Act has allowed dematerialization of securities and electronic transfer since 1996. • Establishment of National Securities Depository Ltd. was approved. <p>Korea</p> <ul style="list-style-type: none"> • KSD and MOFE are considering measures to enforce dematerialization schemes. <p>Malaysia</p> <ul style="list-style-type: none"> • Clearing and settlement systems have been improved after dematerialized depository system was introduced. <p>Pakistan</p> <ul style="list-style-type: none"> • NCSS and CDC merger is planned.
Re-evaluation of Market Volatility Controls	<p>Revise the listing rules and consider call-market trading to improve the liquidity of thinly traded stocks, and relax the fixed-commission regime.</p>	<p>PRC</p> <ul style="list-style-type: none"> • State Council allocates A-share quotas among companies submitted by provinces or ministries. <p>Indonesia</p> <ul style="list-style-type: none"> • JSE is reviewing the possibility of adopting the call-market system. <p>Thailand</p> <ul style="list-style-type: none"> • Market making was applied to order-driven system. • Short selling has been allowed (under supervision).
Re-evaluation of Market Volatility Controls	<p>Make a thorough study on the efficacy of various mechanisms for reducing market volatility, using local market data.</p> <p>Refrain from direct or indirect intervention in the equity and derivatives markets with the use of funds from financial institutions or price stabilization funds, or both.</p>	<p>Malaysia</p> <ul style="list-style-type: none"> • BNM is monitoring margin-trading financing; announced margin trading ceiling in April 1997. <p>Korea</p> <ul style="list-style-type: none"> • Price Stabilization Fund was set up in 1990. <p>Malaysia</p> <ul style="list-style-type: none"> • Government directed EPF, PNB, and Petronas to invest in the equity market to sustain share prices. <p>Thailand</p> <ul style="list-style-type: none"> • Price Stabilization Fund was set up.