Financing for Development:
Capital markets as a source of finance for development after the Asian currency crisis

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Executive Summary

1. This paper reviews capital market development in the Asia Pacific region following the Asian currency crisis that began in July 1997. It identifies and discusses the issues pertinent to capital market development as a means of financing for economic flow. Our objectives are to provide a general view on the functions that capital markets played 1997 through the first half of 2000, and to point out the strengths and weaknesses of capital market sectors in this region.

2. The majority of Asia-Pacific economies have seen significant recovery in 1999. In general, the rebound in local stock markets is consistent with overall economic recovery. However, there is compelling evidence that the strong stock market performance is focused on a handful of large corporations that maintain strong profitability and healthy balance sheets. At the same time, however, listed companies with small capitalization still suffer from stringent constraints in their ability to raise funds.

3. The limited scope of economic recovery is perhaps attributable to the region's poor financial infrastructure, lack of information transparency, and weak corporate governance for listed companies. While general economic conditions improve, many smaller companies are not enjoying an upturn in their business and profitability because of limitations in their financing ability.

4. The heavy reliance in external (foreign exchange) funding in some countries as a principal means of financing has also resulted in dampened economic development. Investor confidence from international investors remains weak. Furthermore, the lack of local capital markets with sufficient market depth means that significant movements of capital into or out of certain countries will lead to distortions in the cost of capital, this will affect long-term economic development.

5. In general, market operations and regulatory systems in the region are fragmented. In order to build a consistent legal and regulatory framework that will improve investor protection, encourage adequate disclosure of information, and foster best practices of listed companies and financial intermediaries, there is a strong need to call for more cooperation among the respective regulatory bodies.

6. It is also desirable to further develop the trading and settlement mechanisms in terms of efficiency and effectiveness, so that the systematic risk of securities transactions is minimized. Other recommended measures include the reduction in the settlement process by the dematerialization of stock certificates (or scripless stock transactions), and continuing investor education.

7. Traditionally, companies rely on bank financing as an important source of funding, and bond markets are poorly developed in the region. Such circumstances lead to a "cause-and-effect" problem in the promotion of active bond markets: liquidity is low (and hence transaction costs is high) through lack of investor interest, and investors

are not interested because liquidity is low. Another contributing factor to the poor bond market development is that governments exert significant intervention in the funding process (such as housing) through the provision of subsidies. Such activities lead to a distorted picture in the risk and return balance of debt securities, making the yields of bonds unattractive to investors.

8. The first step in the development process should be the promotion of a market infrastructure that effective bond pricing and enhances information disclosure of issuing firm's encourages. Such measures include establishing a benchmark yield curve, encouraging high-quality issuers to issue bonds locally, and the establishment of credible credit agencies.

9. Derivative securities markets suffered a setback following the outbreak of the currency crisis. With the exception of a few actively traded products, the liquidity of derivative securities has declined significantly. Also, a significant portion of the derivative instruments is traded over-the-counter. The lack of a well-accepted benchmark, and institutional structure in the settlement system, create obstacles for developing such financial products.

10. Several countries in the region introduced NASDAQ-style stock markets within their national stock exchanges that allow young firms to be listed and raise equity funding. Over the period studies, companies listed were mainly engaged in technology sectors that include computer hardware and software, telecommunications, and the Internet. Up to the first quarter of 2000, these markets had shown strong growth, and companies were enthusiastic to apply for a listing position. However, performance in these markets has weakened significantly following the decline in the NASDAQ market.

A. Domestic stock markets: experience and future prospects

A.1 General economic development

1. Macroeconomic indicators in the Asia-Pacific region suggest that Asian economies have recorded impressive economic growth since 1999. As at 2000, all economies in the region have returned to positive economic growth. Based on GDP growth figures, 1998 was the worst year in terms of GDP growth, with Indonesia and Thailand suffering the most intense contractions in their economies (-13.7% and –8.0%, respectively). As at 2000, Indonesia and Thailand report +2.0% and +2.5% GDP growth, respectively. Other Asia-Pacific economies show more positive growth rates.

2. The stock markets in these economies show performance that is consistent with the general economic development. Tables 1 and 2 provide some perspective of the growth of equity markets in the region. Table 1 provide some statistics of the size of the respective stock markets, and Table 2 shows the level of stock market trading activities in these markets. In general, almost all of the markets in the region, including those that were most severely affected by the Asian currency crisis, recovered to levels that exceed respective levels in 1990.

3. Despite this general trend, the Tables show that the relative sizes of the stock markets (as a percentage of GDP) in Japan and Korea actually fell over the period 1990 through 1999. In the case of Japan, 1990 was the year that asset prices reached a peak, and was generally described as the Japanese stock market bubble. The Japanese stock market remained fairly weak since the decline that began in 1990. In the case of Korea, stock market recovery was very significant. However, since 1997, the volatility of the stock market has been high as Korean corporate environment undergoes a phase of consolidation and restructuring.

4. In addition, Table 2 shows that stock market trading activities declined in Japan and Indonesia. As illustrated by the turnover ratio (i.e., the ratio of value of stocks trades versus the total capitalization of all stocks outstanding), stock trading in Japan declined slightly from 43.8% in 1990 to 40.7% in 1999. The turnover ratio for

Indonesia, on the other hand, dropped significantly from 75.8% in 1990 to 47.0% in 1999. Such a sharp decline is probably due to the withdrawal of international investment funds from Indonesia subsequent to the outbreak of the Asian currency crisis. As of 1999, political uncertainty in Indonesia remains high, and foreign funds have not returned to the country.

5. It is generally expected that economic recovery will continue in 2000. For example, Hong Kong (which has exhibited a relatively slow recovery) reported a growth rate of 14.3% in the first quarter of 2000 on a year-to- year basis. This impressive growth rate partly reflects a "comparison effect" in the economic recovery process. In particular, Hong Kong suffered from a significant contraction in local aggregate demand that was aggravated by steep deflation. In 1998 Hong Kong GDP growth was –5.1%, contributing to a low comparison base. The recovery in Hong Kong is also enhanced by an improvement in external trade that showed an increase in excess of 20% in 1999. Given that demand from Western economies, especially from the United States, remains strong, recovery in the Asia-Pacific region can be expected to sustain.

A.2 Extent of economic recovery

6. Despite the recovery in the general economy, many corporations cannot enjoy its benefits. In particular, most Asian corporations have difficulties raising funds. This is derived from three factors: (1) banks and other financial institutions have become more reluctant to approve new loans and/or rolling over existing credit lines; (2) alternative means of financing (e.g., structured financing and syndicated loans) have become almost unavailable; and (3) the weak performance of individually listed companies making it difficult for them to raise funds through the capital market.

7. The difficulty in the financing process appears to be a manifestation of information asymmetry in Asian corporations. As a result of the Asian currency crisis, there is a general decline in the credit standing of borrowers. Given the lack of credible

information, lenders and investors tend to focus on corporations with a higher level of credit. The Corporations that are unable to prove their creditworthiness suffer from deterioration in funding sources. The more seriously affected firms are listed companies with small capitalization (which suffer from a lack of investor interest), and small and medium enterprises (which suffer from reluctance from banks to provide financing).

8. An example is blue chip companies that enjoy significantly better performance than the broader market index in Hong Kong. The Hang Seng Index (HSI) of Hong Kong comprises 33 blue chip stocks, whereas the All Ordinary Index (AOI) is an aggregation of all listed companies (approximately 700 as at 1999) in Hong Kong. In terms of market capitalization, the 33 HSI constituent companies represent approximately 70% of the total market size. For the period January 1997 through June 2000, the HSI has increased by 52% while the AOI has risen by merely 22%.

9. Among the HSI constituent stocks, China Mobile (previously China Telecom) and Hutchison Whampoa are among the largest companies. From 1997 through June 2000, stock prices of these two companies have increased by 500% and 200%, respectively. It should be noted that the operations of China Mobile is primarily carried out in China rather than in Hong Kong. Similarly, Hutchison Whampoa has a substantial amount of investments in telecom and port facilities that are not in Hong Kong.

10. The discrepancy in stock price performance illustrates the fact that only a handful of "good-name" companies are regarded by investors as the drivers of the recovery. The remainders of the corporations, however, are still constrained in their ability to raise funds to invest in profitable projects.

A.3 Financial infrastructure

11. Financial infrastructure refers to the environment in which financial transactions are carried out. It involves legal and regulatory framework, financial institutions, and trading mechanisms.

12. An important component of the financial structure is it’s trading, clearing, and settlement systems. The significance of an efficient and effective trading environment is that the system will enhance investor participation and reduce systematic risk such as the inability to complete a trade. These benefits will translate into higher liquidity levels and reduced capital costs for listed companies. Improvements in local stock markets will also stimulate local investors to hold stocks, thereby reducing the dependence on foreign capital.

13. An example is the introduction of a continuous net settlement (CNS) procedure. Such a system allowing the clearing house to continually monitor the positions of its clearing members. In the case of Hong Kong, three separate clearing houses had been operating (one for the cash stock market and two for the derivative markets in futures contracts and options, respectively) up to March 2000. In 2000 efforts were made to form a unified clearing and settlement system by merging the three clearing houses.

14. In time, the combining of the clearing houses in now segmented securities markets will improve operations and market efficiency. Examples of the benefits include the provision of consolidated margin requirements for the cash market and its derivative products (which would reduce hedging costs and promote better risk management of traders), the implementation of net money settlement procedures, and the provision for uniformity in technical trading requirements such as collateral accepted and underlying legal documents.

15. Some investors in Asia follow a traditional practice of withdrawing share certificates and depositing them in their safes. This has several drawbacks, including printing, storage and processing cost, as well as risk of loss or theft. A solution to this problem

is the "dematerialization" of the securities certificates (or keeping the certificates in a scripless form). Dematerialization refers to the procedure in which the ownership interest is recorded in an electronic format and no physical certificates are issued.

16. While dematerialization offers operational advantages and saves costs, it also raises other concerns. Investors are unable to obtain their certificates subsequent to their purchase. To receive corporate communications or distributions, exercise voting rights, or prove their ownership interests in such shares, shareholders must rely on their financial intermediaries or have access to a centralized securities registration system based on dematerialization.

17. Advancements in information technologies have provided a host of solutions to improving the securities trading process. An example of such improvements is a straight through computerized trading system. Under such a system, investors can input their buy or sell orders from an access point (computer, mobile phone, or other devices). The orders are entered directly to the trading system of the stock exchange via the securities broker's trading system. In this way the time needed for the completion of the transaction and the subsequent settlement is significantly shortened.

18. A real-time settlement system can also help reduce the risk of participants. For example, the stock exchange can monitor the status of its clearing members, and each clearing member can impose an in house risk management system to reduce the risk to the company.

A.4 Convertible bond markets

19. Another consideration is to complement equity financing by developing viable convertible bond (CB) markets in Asia. Convertible bonds provide investors an option to exchange their bonds for newly issued equity of the CB issuing company. The general belief is that this conversion option allows the issuing firm to borrow at a rate that is below the market interest rate. In exchange for the lower interest income,

CB investors enjoy the upside potential if the issuing company performs well and its stock rises above the conversion price.

20. Finance theory suggests that CBs are suitable for high growth companies because they offer a solution to the information asymmetry problem between bondholders and shareholders. In essence, CB issuance allows the issuing firm to take risk and invest in profitable investments (thus resolving the agency problem to shareholders) and at the same time provide adequate compensation for the bondholders (in the form of upside potentials in the CB investment). From this standpoint, a CB market appears to be suitable for the Asian economies in which there are sufficient growth opportunities.

21. The development of Asian CB markets can be traced to Japanese warrant bonds in the 1980's and Korean CBs in the early 1990's. In general, these instruments allowed foreign investors to hold equity-like securities when the respective local markets imposed restrictions on foreign stock holdings. However, when the Asian equity markets began to open up to foreign investors, the attractiveness of the CB-like instruments was weakened.

22. In general, CBs are not popular among retail investors in Asia. On the one hand, investors can hold equity directly. On the other hand, the liquidity in the CB market is often low and investors are usually subject to a significant minimum transaction size. Furthermore, CBs are often traded over-the-counter and retail investors may find it difficult to access to pricing information.

23. The typical features of a CB can be illustrated by the following hypothetical example. Company A has its share listed on the Stock Exchange of Hong Kong with a current market price of $10 per share. A newly issued CB carries a total issue size of $50 million and a coupon rate of 4%, payable semi-annually. Each bond has a face value of $1,000 and a maturity of 5 years. The conversion price of the bond is $13. If the investor in a bond holds the bond until maturity, Company A will repay the face value

of $1,000 per bond in five years. Over this period, Company A will also pay bondholders a total of $40 per bond (i.e., 4% of face value) each year in two equal payments of $20 every six months. Bondholders can choose to convert their bonds into common shares of Company A at the (fixed) conversion price of $13 per share. That is, the total number of shares that each bond can convert into (called the conversion ratio) is $1,000 ÷ $13 = 76.92 shares. Thus bondholders will gain if the stock price of Company A rises above $13 because they can convert into the common shares at the lower conversion price. Conversely, bondholders will be paid a fairly steady coupon payment of 4% of face value should the stock price fails to rise above the conversion price over this period.

24. This example shows that the CB serves as an indirect means of holding the common stock of Company A. The upside of the CB investment lies in the fact that if the share prices of Company A rises above the conversion price, the value of the bond, with the right to convert into common shares, will be worth more. On the other hand, the CB also provides a "downside protection", since bondholders receive a steady interest income absent conversion.

25. However, bondholders may not like to hold the CB should they prefer to hold the common stock directly. Under normal market conditions, the trading of common shares are significantly more active than that of the CB. Because the common stock has higher liquidity, investors will find it easier and less costly to realize profits or limit losses by holding the common shares rather than the CB.

26. After the currency crisis, even institutional trading of CBs were reduced. The key issue is the lack of credit assessment in the region. Therefore, it is difficult to have a fare price for the instrument.

A.5 Rights issues

27. Rights issues refer to the selling of new shares on a pro-rata basis to existing shareholders. Prior to the currency crisis, rights issues contributed to a major source

of seasoned equity financing in Asia. It should be noted, however, that rights issues virtually disappeared in the United States, beginning in the 1980's.

28. Rights issues are usually initiated following positive performance of the stock. However, the general impact of a rights issue announcement is that the stock price will decline significantly. Studies in finance come to the conclusion that information problems between the major shareholder and the minority shareholders plays a significant role in the price decline following a rights issue. For example, the major shareholder (usually a corporate insider as well) knows when the stock price is overvalued. He or she will be more likely to initiate a rights issue if he or she believes that the stock price is higher. In this case, minority shareholders face a dilemma: if they subscribe the new shares, they will likely purchase overvalued shares; if they do not subscribe, their holdings in the common stock will be diluted, especially if the subscription price includes a significant discount from the current market stock price. Thus, a rights issue is often interpreted by minority shareholders as an indicator that the stock price is overvalued.

29. Compounding the information effect of rights issues is the fact that normally the actual usage of funds does not match the intended use claimed by the company. In general, the issuing firm has the flexibility to alter the actual usage subsequent to the issuance. The lack of proper monitoring in the use of funds adds to the information problem associated with rights issues. This issue applies to most types of equity financing. As rights issues are a common type of raising new equity in Asia, this issue carries significance in this context.

30. Subsequent to the outbreak of the currency crisis, rights issues have practically disappeared. In several cases the information effect of a rights issue was so negative that the stock suffered a dramatic decline following the announcement. Such an effect significantly increases the risk borne by the underwriter of the issue. As a result, companies tend to refrain from rights issues. Even if a firm tries to initiate a rights issue, it is difficult to arrange a suitable underwriter.

31. When the Asian markets began to recover in 1999, firms that possessed good stock price performance adopted alternative means of raising capital. For example, a firm may choose to place new shares to a group of institutional investors. Alternately, a firm can use a public offer to directly sell the new shares to general investors. These measures appear to have lesser information problems, and are, in general, better accepted by investors. As institutional investors are usually better equipped at assessing the risk and return profile of the issuing firm, the subscription by this group of informed investors provides a certification that the issuing firm is of high quality.

32. We note that a major contributing factor of the difficulty in raising capital is the information problem between the issuing company and the investors. This problem can be alleviated, at least in part, by improved information and good corporate governance. It would be beneficial to the Asian capital market to promote best practice in shareholder communication and corporate governance.

B. Domestic debt markets: experience and future prospects

B.1 General background

33. Asian countries are characterized by under-developed debt markets. Traditionally, corporations rely on bank loans to finance their business activities. When the capital markets began to develop in the 1980's and the 1990's, development in the equity markets (through Initial Public Offerings and secondary market trading on local stock exchanges) became the principal type of capital market activity for local investors. Table 3 provides summary statistics of outstanding amounts of bank loans, government bonds, corporate bonds, and equity market capitalization as at December 1997. The Table shows that with the exception of Korea, the debt markets in the region are small as compared with the bank loan market and the equity market.

34. However, the heavy reliance on bank financing leads to a significant mismatch in the maturity structure of corporation assets and liability. Since a significant number of corporations in the region require funding for long-term investments (such as

infrastructure projects), the dependence on short-term bank loan make many corporations, and regional economies as a whole, susceptible to economic swings.

35. Prior to the Asian currency crisis, financial institutions in the region actively raised foreign exchange debts and swapped into the local currency. Such activities provided a relatively low-cost source of funding for local financial institutions. However, the availability of external funding was drastically reduced, if not curtailed, when investor confidence in the region weakened during the currency crisis. The shortage of funding caused a chain-reaction effect that ultimately brought hardship on local economies and hindered economic development.

36. The lack of a high-quality investment market (such as a bond market) in many Asian countries means that local economies are prone to sudden and short-term changes in investor confidence. When confidence in a particular country dissipates, investors (local and foreign) do not possess a more secure and stable investment alternative to hold on to. Flight for quality leads to the withdrawal of funds from a given country, or the region entirely. The effect of capital flight is especially significant in Asian economies because of the heavy reliance of financial institutions and corporations (such as infrastructure developers) on short-term foreign exchange debts. When foreign funds are withdrawn from a particular economy, banks and corporations are faced with real risks of insolvency even if their asset quality is healthy in the long run.

37. Thus, the presence of a high-quality bond market with sufficient market depth would likely enhance long-term economic development and significantly reduce the probability of future currency crises.

38. However, the current status of capital market development is still not favorable for the development of debt markets. Factors leading to the slow development include poor financial infrastructure, the lack of benchmark bonds, fragmented capital markets, and the lack of competitive credit markets in many countries.

B.2 Overview of debt market development

39. Table 4 provides summary information of the market value of listed bonds in nine Asian countries. The Table shows that Japan has the most active bond market with a size that accounts for some 85% of the entire Asian bond market. Korea is the second largest market, with a size of approximately 6% that of Japan. Singapore is the only other Asian major debt market, and all other markets in publicly listed bonds are small.

40. It should be noted, however, that in many economies bonds are not publicly traded but rather traded over-the-counter among investors that are comprised similarly of banks and financial institutions. Because of this fact, it is difficult to obtain reliable information on the actual size of the bond market.

B.3 Efforts to promote Asian bond markets

41. There exist recent efforts by Asian countries and economies to promote the development of a local debt market. Following the IMF bailout of Korea in 1997, a series of steps was taken to reform the capital markets in Korea. Such steps included the promotion of a more well-developed secondary market for bonds, including reform of the bond issuing procedure, introduction of new debt market products (such as repurchase agreements), and reorganization of the secondary bond market.

42. There were also efforts to promote participation from retail investors. In September 1999 the Hong Kong Monetary Authority (the *de facto* central bank of Hong Kong) and the Stock Exchange of Hong Kong arranged to list Exchange Fund Notes (similar to Treasury notes issued by the U.S. Treasury) on the Stock Exchange of Hong Kong. Under this arrangement, the board lot size was reduced to a face value of HKD 50,000 (USD 6,410), to promote retail investor participation.

43. The case of the Philippine Treasury securities is another example of the promotion of a local high-quality bond market with sufficient market depth. Starting in 1995, the

Philippine Bureau of the Treasury began to introduce improvements in market infrastructure for a bond market with a view to promote the remote market for Treasury securities. Measures included the launch of an electronic auction system in 1995 and the introduction of scripless government securities in 1997. These improvements paved the way for an efficient and transparent trading system for Treasury securities.

44. In 1998 the Philippine Treasury introduced the Small Investor Program (SIP) to encourage Philippine citizens to hold (and trade) local government securities. In November 1998, the denomination of the Treasury bills (short-term government securities with maturities within one year) was reduced. As a result, the basic trade size of these securities was reduced from Peso 10 million to Peso 25,000 to Peso 100,000. In June 1999 this program was extended to Treasury bonds (maturities from two years to 20 years).

45. The trading system of the SIP includes a settlement bank (Landmark Bank of the Philippines) as a central point of trading activities. In essence, investors deposit funds in their accounts at the settlement bank. When they buy (sell) a particular issue of securities, the funds are deducted (added) from (to) their deposits accounts and the respective securities are added (removed) to (from) their Treasury securities accounts. Thus investors can trade Treasury securities in small sums in an efficient (electronic trading) and low cost (scripless to streamline the settlement procedures). This year, Philippine Treasury plans to arrange the Treasury issues to be listed on a newly established Bond Exchange to further promote the SIP.

B.4 Recent market developments

46. As a direct result of the Asian currency crisis, bond issuance and bond trading declined significantly in the second half of 1997 and 1998. Table 5 summarizes listed bond turnover in the region. The available data suggests that the entire region (including Japan) suffered from a sharp decline in bond turnover. Secondary market activities picked up in 1999. In some countries, most notably Korea, Singapore and

Taiwan, bond turnover appears to have recovered to pre-currency crisis levels. However, bond markets in other less-developed bond markets remain weak.

47. Bond issuance also declined sharply in 1998 and began to pick up in 1999. In many markets, however, bond issuance has still not recovered to pre-currency crisis levels.

48. An obvious trend is that the bonds issued in 1997 and 1998 are of significantly shorter maturity. In other words, Asian bond markets are still unable to provide a stable source of long-term funds to corporations. The literature attributes this trend to several factors, including the general decline in credit standing of Asian corporations, the lack of pertinent financial information of borrowers, and the inadequacy of investor protection in several Asian countries.

B.5 Measures to enhance long-term bond market development

49. Demand is weak for long term fixed income securities among local investors. This phenomenon is probably associated with under-developed systems of retirement benefits. In many Asian countries, there is no national retirement system that foster regular contribution of funds from employers and employees. The provision of retirement benefits is voluntary from the employer's perspective). Lack of investor demand leads to illiquid markets and high transaction costs. This in turn weakens incentives for issuers to sell bonds. In the case of Hong Kong, high-quality private issuers typically raised debt financing in Luxembourg, where institutional demand for fixed income is higher and liquidity higher.

50. One possible measure to enhance bond market development is to adopt a nationwide retirement benefit system. For example, Hong Kong will launch a mandatory pension fund (MPF) scheme for all employees. Under this defined benefit scheme, employees need to contribute 5% of their monthly income (subject to a certain ceiling), while the employer contributes another 5%. The funds will be invested in qualified MPF programmes provided by approved MPF providers. There are investment guidelines for MPF providers, including the portion that is to be invested locally, and the

portions that should be invested in fixed income securities. In the long run, funds from MPF programs will likely increase the demand for bonds and promote bond market development. However, the MPF scheme is unlikely to show immediate results since it will take time for MPF contribution to grow.

51. It is estimated that annual pension fund contributions will amount to more than HK$ 10 billion (US$ 1.3 billion), or around 1% of GDP in the initial year of operation, growing to around HK$ 60 billion (US$ 7.74 billion) when the scheme matures. Part of the fund will be invested in the equity market.

52. The Asian currency crisis led to a dry up of liquidity for Asian bonds. In particular, issuers appeared to show a polar development in terms of credit standing. Investors typically hold high credit standing bonds, and refrain from investing in low credit standing bonds. In either case, the secondary market is significantly reduced.

B.6 Impediments to bond market developments

53. In spite of the obvious benefits, there are numerous impediments to viable bond market in Asia. As discussed previously, there exists a "cause-and-effect" problem in the process of market development. Outlined below are issues that are pertinent to the basic framework in which healthy bond markets need to strive. In general, these factors are also applicable to equity market developments.

54. Fragmented markets. Unlike the United States, Asian economies are comprised of several economies with their own language, culture, customs, and legal framework. Hence, the accounting information in one country cannot automatically be translated into that of a second country. This factor contributes to fragmented capital markets, making regional investment difficulty and sometimes risky. As none of the economies (except Japan and China) are sizable enough to provide economies of scale in information processing, bond market development will be difficult. As such, it seems more rational to improve a common set of backgrounds and standards so that

regional development can go hand in hand, and each economy will benefit from this mode of development.

55. Lack of disclosure. Apart from the difference in the accounting standard, the quantity and quality of information disclosed to investors are limited. The consequence is that investors inherently assume that the investment is risky and requires a steep risk premium. It would be beneficial if sufficient and relevant information is made accessible to investors, either through a mandatory or a voluntary process.

56. Government intervention. Traditionally, governments in Asia have a tendency to offer subsidies to activities that fit policy considerations. An example is the provision of low-cost home financing arrangements. In this manner the return on the relevant instrument (e.g., mortgage products in the case of housing) is distorted and can substantially deviate from the market rate of return. If such instruments are suitable for developing a viable capital market (such as securization of home mortgages), the distortion in the rate of return prohibits the development of such a market. The reduction and ultimately the elimination of government intervention will contribute to the more smooth development of viable capital markets.

57. Absence of benchmark securities. Typically, fixed-income securities are short term in nature. Therefore, it is impossible to construct a good benchmark yield curve from which efficient bond pricing can be done. It would be desirable if high quality bonds with longer maturities were made available.

58. Starting September 1999, The Bank of Thailand (BOT) began taking steps to introduce a benchmark yield curve which is instrumental to the development of the Thai bond market. The BOT auctions baht-denominated Treasury bills so that the yields for lower maturities can be determined.

B.7 Credit agencies

59. A solution to the information asymmetry problem is to have issuers analyzed and rated by a credible credit agency. The role of the credit agency is to provide an objective analysis of the borrowing firm. Potential lenders can then derive valuable pricing information and assess the risk of holding the bonds issued or making loans to the borrowing firm.

60. Table 6 provides a summary of the local credit agencies in the Asia-Pacific region. Since the early 1980s, many countries have established national credit institutions. In some countries, it is required by law that debt issuers be rated by designated credit agencies.

61. However, the existing arrangement does not seem to provide sufficient information for lenders and effectively promote the bond market. This phenomenon may be due to a number of reasons. For example, most credit agencies are either government departments or are affiliated to government. When state-owned enterprises issue bonds, the credit agency may be reluctant to rate the borrowing firm negatively.

62. In addition, the quantity and quality of financial and non-financial information may be inadequate for the credit agency to provide a comprehensive and timely analysis of the borrower's situation.

63. In some countries, borrowers tend to get around the credit rating procedure by issuing alternative types of debt. For example, the majority of bonds issued in Korea are guaranteed bonds backed by holding companies. In this way, issuing (subsidiary) companies need not obtain a credit rating, and hence is not required to disclosure the relevant pricing information.

64. To sum up, separate national credit agencies do not appear to provide credible information on borrower quality for international investors. In the more developed capital markets of Hong Kong and Singapore, there are no local credit agencies, and

issuing firms tend to use the service of international credit agencies such as Moody's and Standard and Poor.

65. International credit agencies play a significant role in the capital markets of Asia-Pacific economies as their analyses are often taken by international investors as an authoritative and objective measure of a particular local market. For example, the downgrade of a particular country's economic outlook is often interpreted as a significant piece of negative information.

66. International credit agencies provide analyses on the risk profiles of given countries, industries, and specific firms. They employ both quantitative (including a set of comparative statistics of key economic variables) and qualitative measures (including openness of government policies and other non-quantitative areas) to help them arrive at a final decision on the risk profile.

C. The "new economy" and capital markets for emerging firms

C.1 Background

67. Since 1995, there has been accelerated development in the areas of technology, media, and telecom (TMT) in the United States. Such economic activities, which are generally described as information technology (IT) related activities, contribute to a significant portion of economic growth in the U.S. and have stimulated the development of similar activities in other economies.

68. A notable trend is that many technology companies obtain their listing positions from the NASDAQ market. A characteristic of the NASDAQ is that a listing firm does not necessarily need to report operating profits when applying for a listing position. Over the last five years the NASDAQ has repeatedly demonstrated to be a principle platform from which successful IT companies obtain their financing. Encouraged by this development, efforts are also made in Asia to develop NASDAQ-like stock markets.

C.2 Recent developments

69. Korea was the first economy to launch a market for emerging companies. In July 1996 KOSDAQ, modeled after the US's NASDAQ was founded. Companies listed on KOSDAQ have shown dazzling performance since its introduction. The KOSDAQ index has risen by about 300% since the end of 1998, outperforming the main board of the Korea Stock Exchange by a significant margin. At the same time, total market capitalization increased by almost tenfold.

70. The average daily trading value has grown from KRW 5.5 billion at the end of 1998 to more than KRW 5 trillion in the first quarter of 2000. There are more than 480 registered companies on the KOSDAQ with a total market value exceeding KRW100 trillion.

71. The Korea Securities Dealers Association reported that another 300 new firms would be listed on KOSDAQ in 2000. Despite the argument that share prices of KOSDAQ stocks are overvalued, the KOSDAQ is expected to become even more active and record further growth. In particular, KOSDAQ is expected to be one of the main beneficiaries from the long-term development of South Korea's technology industry.

72. Several other countries joined Korea to introduce similar NASDAQ-like stock markets. These markets are generally known as the "second board" markets or the Growth Enterprise markets (GEMs). Singapore, Malaysia, and Hong Kong have successful launched their own version of the GEM. In addition, Japan also launched the MOTHERS market along similar structural lines.

73. The Hong Kong GEM was established in November 1999. In the first three months of trading, 18 companies were listed on GEM. By March 2000, market capitalization had increased 15 times to HKD 86.7 billion. Such a rapid growth was made possible by the general bullish environment for technology stocks in Hong Kong, and the successful IPOs of two large GEM companies. TOM.com and SunEVision are

spinoffs from the two leading property developers Cheung Kong (and its subsidiary Hutchison Whampoa) and Sun Hung Kai Properties, respectively.

74. For the six companies that were listed on GEM in the first two months of 2000, five were oversubscribed with subscription ratios ranging from 1.5 times (Far Eastern Polychem Industries Ltd.) to 669 times (TOM.com). The Stock Exchange of Hong Kong predicts that the total market capitalization of GEM will reach HKD 100 billion by November 2000. In reality, this target was achieved within 4 months of its launch.

C.3 Risk factors

75. It should be noted, however, that GEM markets are intrinsically much more volatile than the respective major board markets. Since the listed companies usually do not have a tractable operating record and lack earnings, they are susceptible to swings in the performance of the NASDAQ in the U.S.

76. There is a lack of generally accepted means of valuation in technology stocks, since most of these stocks do not have earnings records. Since valuations are based upon expectations and expectations that may change substantially, investments in GEM stocks are generally of a high level of risk.

77. As most of the GEM-listed companies are related to the recently emerged Internet market, it is plausible that a number of companies lack the managerial capabilities to run a rapidly growing company. In addition, it is also plausible that some of the firms do not have a well-developed business plan and lack a solid revenue base to support operations.

78. The significant decline in the NASDAQ in the second quarter of 2000 has led to a sharp decline in the stock market performance and the financing activities of GEM. Compounded with this negative factor, the winding up of some major Internet companies in the U.S. and in Europe made investors very cautious in holding GEM

stocks. The rapid retreat of the GEM market means that firms that rely on further equity financing may be prone to failure due to the inability to raise additional funds.

79. Basically, the development of GEM markets is associated with a general bullish sentiment on the Internet market. It is conceivable that some companies are trying to take advantage of the high valuation of Internet stocks and raise funds to do other business. In other words, the future development of these markets may be affected by the fact that some firms do not target for long-term development in their operations, but are opportunists out to capture gains in inflated stock prices.

D. Recommendations

D.1 General comments

80. The Asian financial crisis has called for developments in financial infrastructure in the Asia-Pacific region. During the crisis, many economies in the region suffered from a rapid outflow of capital, which led to chain reactions in capital markets. These are detrimental to economic growth.

81. We identify that a potential reason for the damages of the currency crisis is the heavy reliance on external financing in many economies. Based on this conjecture, we suggest that an effective means of promoting long-term economic development and preventing future crises is to develop local capital markets as a source of financing for economic development.

82. Despite the numerous difficulties we have discussed in this report, we hold the belief that establishing capital markets with sufficient depth is achievable due to several reasons. First, the saving rate in Asia has been high, at about 30 percent. The high savings rate should provides sufficient funding sources to support mature capital market markets.

83. Second, it is conceivable that economic growth will continue to be significant in the region. The last two years have seen many Asia-Pacific economies demonstrating

remarkable recoveries from previous setbacks. As regional economies continue to grow at a high rate, successful firms will likely emerge and asset quality in general will improve.

84. Last but not least, many governments in the region have paid serious attention to the significance of the capital market in the economic development process. Such improved awareness provides a solid foundation in which governments can cooperate and work towards identifying and implementing means to enhance capital market developments.

D.2 Legal and regulatory framework

85. A good regulatory framework needs to be established, in order to provide equity and debt market development. The general framework should aim at setting relevant laws and ordinances, making requirements for relevant financial institutions, and developing enforcement measures to implement these laws.

86. In general, a good regulatory framework should promote self-regulation and self-monitoring of financial institutions. The regulatory framework should leave sufficient room for the market participants to act in a flexible manner. At the same time, the system should include measures to that encourage good practice.

87. The underlying principles include increased transparency of disclosure, enhancement of corporate governance, and recognition of the accountability of regulators. The effect of good regulation is a market infrastructure that promotes investor (especially creditor) protection, has an effective judicial system, and facilitates high-quality economic information. Table 7 provides a summary of the three areas of good market infrastructure and how the individual countries rate in these areas.

D.3 Information transparency

88. With the exception of Hong Kong, Malaysia and Singapore that use British accounting standards, standards vary from country to country. It would be a positive

step to use these regional accounting and regulatory bodies agree on a common set of disclosure standards.

89. Efforts should also be made to ensure that all investors have access to the same set of sensitive information at the same time. As information technologies continue to improve, regulatory bodies should constantly review disclosure guidelines. This would ensure that corporate managers utilize the most efficient and effective means of communication to investors.

D.4 Market Infrastructure

90. Within each individual economy, government and regulatory bodies should review and enhance the effectiveness of the trading and settlement system. This would reduce transaction costs and trading risks.

91. On a regional scale, it may be meaningful to explore the possibility of establishing a common trading platform. For example, local exchanges can join forces to develop a trading and clearing system that allows investors to trade securities on a regional basis.

92. Another possibility is to develop a non-domestic currency trading system to minimize the impact of capital inflow and outflow. For example, Hong Kong is developing a trading system using the U.S. dollar as the clearing currency. This setup would encourage the trading of non-domestic currency debt securities listed on the domestic market. It would also reduce the impact of inflow capital on the exchange rate system. Given the experience of the U.S. dollar settlement system developed in Hong Kong, regional economies may consider setting similar trading systems so that, in the end, a common trading system will be available.

D.5 Corporate governance

93. Corporate governance has been weak among many Asian listed companies. Traditionally, many firms are closely held by family members who are typically

reluctant to disclose information on operations. There is a need to develop and promote the practice of good corporate governance in Asia.

94. The promotion of corporate governance in Asia must overcome barriers in a culture that sees investors remain passive. We recommend that the first step is adequate education for corporate managers. The regulatory body should draft the principles of best practice and guidelines to desirable conduct. Similarly, there should be suggestions and guidelines to investors concerning their role and rights. The relevant documentation should be distributed or made accessible to corporate managers and investors.

95. Guidelines should also be made to encourage communication between corporate insiders and shareholders. In addition, the regulatory body should see that price-sensitive information is disseminated in the proper manner. Efforts should be made to ensure that no insider dealing is carry out so as to protect minority shareholders.

96. At present, regulatory requirements vary widely among the economies in the region. It is desirable that more close cooperation among regional regulators is made to establish a common understanding on regulatory requirements. Such cooperative efforts will also enhance enforcement by filling the information gap, especially for cross-border transactions.

97. Another measure to promote corporate governance is to organize an award for good corporate governance. The basic idea is to select an Asian corporation that demonstrates best practice in corporate governance. A regional award will be given to a company recognize their achievements in this area. In this way regional regulators can set up solid examples of good practice and encourage other corporations to follow this path. In the long run, such efforts can enhance regional cooperation and attract interest from the international investment community.

D.6 Credit agencies

98. As discussed previously, separate national credit agencies suffer from a lack of conformity, and are weak in providing assurance to foreign investors. Therefore, it is desirable to establish a regional credit agency that can set up common credit assessments standards pertinent to the region standards, and perform unbiased analysis and disclosure.

99. In general, it is more desirable to have credit agencies that are independent from national governments to avoid the conflict of interest. These agencies should operate according to professionalism and should be financially independent from governments or groups of companies. It may be desirable to invite international credit agencies as founding members so that they can participate in the process of setting up criteria and assessment standards.

D.7 Investor education

100. Statistics show that the percentage of investors holding equity is low in the Asia-Pacific region. The percentage of investors holding other types of securities is even lower. Based on this fact, investor education is critical for the increase of general investor base and the empowerment of investors who want to perform the analysis of risk and return in the investment process. Investor education is especially important concerning the bond market, since Asian investors have a general reluctance to hold fixed-income securities.

101. Investor education should aim at building positive attitudes of investing as an integral component of managing one's finances and an important tool for planning for retirement and other major consumption.

D.8 Cooperation and alliance of stock exchanges

102. There is plenty of room for cooperation between stock exchanges, both among the Asia-Pacific region and with those of developed markets. Forming alliances with exchanges in the U.S. and the Europe will form a marketplace for 24-hour trading.

Further, the alliance will promote technological innovation for exchanges in the region that take advantage of latest IT developments.

103. As this year, seven NASDAQ-listed stocks were listed and traded on the Stock Exchange of Hong Kong (SEHK). The listing of these stocks formed a pilot program that may develop into the linkage of the SEHK with the NASDAQ and other major international stock exchanges.

104. Another notable joint venture is the alliance between Singapore International Monetary Exchange Limited (SIMEX), Chicago Mercantile Exchange (CME), and the Marche a Terme International de France (MATIF). This alliance allows the development of joint trading and clearing systems.

105. Prior to these recent efforts, the linkage among exchanges in the region has always been weak. This may be due to the difference in cultural background. A possible reason for the lack of linkage is that individual stock exchanges usually consider the other exchanges as competitors. A notable example is of the dispute between the Futures Exchange of Hong Kong and the SIMEX, on the launch of futures contracts on the Hong Kong Stock index in Singapore at the end of 1998.

106. Another possible source of cooperation among exchanges in the region is the construction of a regional (Asian) stock market index. Each economy can develop its country index (with a group of representative companies). Based on this classification, an index fund can be developed to represent each country. Combining the country indices (and hence country index funds) contributes to the Asian index (and index fund). The Asian index fund can be listed on all exchanges in the region simultaneously. In addition, futures contracts on the Asian index can be developed and traded on derivative markets in the region. This benchmark index will serve as an important indicator for that international fund community that invests in the region. The derivative products on the benchmark index will serve as a hedging tool for fund managers. The index will be mutually owned by all participating exchanges. Investors

should be able to buy the products in all participating exchanges. The trading rule and regulatory framework should be exactly the same to avoid regulatory arbitrage.

107. The availability of the Asian fund will encourage investor participation in the regional stock market as a whole. The fund will provide a low-cost diversification opportunity for investors. Furthermore, it will also serve as long-term funding to economies in the region.

108. It is also desirable to allow cross-listing of Asian stocks in the region. This development would probably be a long-term goal, as most Asian corporations are relatively less known to investors outside of their home countries. Also, investors have to face disclosure and regulatory standards across countries.

109. In the long run, it is possible to develop a Pan-Asia Electronic Trading Network on which all major Asian stocks will be traded. To achieve this goal, there must be a common trading platform and clearing system. This alliance among exchanges will further lower IT development costs. This will also enhance the depth and breath of our markets. Table 8 provides a summary of the main points of the Pan-Asia stock market index.

D.9 The Internet and online securities trading

110. As a final note, recent developments in Internet stock trading offer opportunities for development and cooperation among Asian stock markets. In the United States, Internet trading has been established as an efficient and reliable means of securities trading. The emergence of Internet brokerage companies brings significant pressure on the commissions charged by securities brokers. The result is that more investors have accessibility to trading, and can trade at a lower cost.

111. Table 9 shows a profile of online trading in Asia. In general, personal computer ownership and Internet penetration are still at the development stage. It is conceivable that in several Asian economies the growth in Internet usage will be

substantial in the next few years. Such rapid growth provides solid support for the development of Internet stock trading in these economies.

112. Korea is the most active Internet stock trading market with approximately 30-40% of stock transactions completed over the Internet. Internet trading is also active in Taiwan, with about 15% Internet trading. It is plausible that Hong Kong and Singapore will also pick up the trend of Internet trading in the next two or three years.

113. Overall, we see that the increase in Internet trading will put pressure on the commission rate charged by brokers. Such a pressure will be especially intense for markets with regulated commission rates such as Hong Kong. It is expected that commission rates will ultimately be deregulated in most of these markets. Such a change, with increasing trading ease using the Internet, will probably be associated with more investor participation.

114. It should also be noted that the Internet provides a desirable basis on which regional stock exchanges can cooperate. Investors can access pricing information in other markets conveniently. When a common trading platform across different markets is available, it can be expected that integration of investor activities will speed up.

Table 1. Stock Market capitalization

	Listed companies		$ millions		% of GDP	
Country	1990	1999	1990	1999	1990	1999
Bangladesh	134	211	321	865	1.1	2.4
China	14	950	2,028	330,703	0.5	24.1
Hong Kong	284	658	83,397	343,394	111.5	206.3
India	2,435	5,863	38,567	184,605	11.9	24.5
Indonesia	125	277	8,081	64,087	7.1	23.5
Iran	97	242	34,282	14,874	0.0	13.1
Japan	2,071	2,416	2,917,679	2,495,757	98.2	66.0
Kazakhstan	0	18	-	37	0.0	0.2
Korea	669	725	110,594	308,534	43.8	35.7
Malaysia	282	757	48,611	145,445	113.6	136.0
Mongolia	0	430	-	40	0.0	3.8
Nepal	0	104	-	267	0.0	5.6
New Zealand	171	135	8,835	89,373	20.5	169.1
Pakistan	487	765	2,850	6,965	7.1	8.5
Philippines	153	226	5,927	48,105	13.4	54.2
Russian Federation	13	207	244	72,205	0.0	7.4
Singapore	150	321	34,308	94,469	93.6	112.0
Sri Lanka	175	239	917	1,584	11.4	10.9
Thailand	214	392	23,896	58,365	28.0	31.4
Turkey	110	285	19,065	112,716	12.6	16.9

Source: 2000 World Development Indicators, International Finance Corporation, World Bank

Table 2. Stock Market Trading Volume

Country	Value Traded (% of GDP) 1990	Value Traded (% of GDP) 1999	Turnover ratio* 1990	Turnover ratio* 1999
Bangladesh	0.0	1.9	1.5	2.6
China	0.2	29.7	158.9	134.2
Hong Kong	46.3	123.7	43.1	54.4
India	6.8	15.0	65.9	84.4
Indonesia	3.5	10.3	75.8	47.0
Iran	0.0	1.2	30.4	9.3
Japan	54.0	25.1	43.8	40.3
Kazakhstan	0.0	0.0	0.0	0.0
Korea	30.1	43.0	61.3	355.8
Malaysia	25.4	39.8	24.6	39.8
Mongolia	0.0	1.6	0.0	0.0
Nepal	0.0	0.1	0.0	1.7
New Zealand	4.5	95.6	17.3	56.2
Pakistan	0.6	14.4	8.7	345.2
Philippines	2.7	15.3	13.6	46.5
Russian Federation	0.0	2.5	0.0	5.9
Singapore	55.4	60.1	0.0	50.5
Sri Lanka	0.5	1.8	5.8	12.9
Thailand	26.8	18.6	92.6	90.6
Turkey	3.9	34.5	42.5	102.8

* Turnover ratio is value of shares traded as percentage of capitalization
Source: 2000 World Development Indicators, International Finance Corporation, World Bank

Table 3. Outstanding bank loans, bonds, and equity markets in South East Asia, December 1997 (USD billion)

Country / Economy	Bank loans	Government bonds	Corporate bonds	Equity market
Indonesia	60.20	2.16	1.50	21.68
Korea	47.60	31.57	20.40	16.86
Malaysia	165.80	26.64	16.90	132.30
Philippines	72.30	10.72	12.50	51.73
Thailand	125.50	7.41	3.80	23.04

Source: Reside, Rhee, and Shimomoto, "The feasibility of creating mortgage-backed securities markets in Asian countries", p.7, Asian Development Bank, 1999

Table 4. Market Value of listed Bonds at Year End (USD million)

	1994	1995	1996	1997	1998	1999
Hong Kong	NA	NA	NA	NA	110,438	98,910
Indonesia	444	405	339	109	50	21
Japan	3,539,282	3,886,535	3,821,540	3,600,291	4,472,648	5,263,913
Korea	129,990	162,421	208,167	132,222	277,788	321,697
Malaysia	3,865	3,497	3,444	1,788	1,310	1,753
Philippines	-	-	6	4	0	0
Singapore	153,232	150,539	161,239	171,626	182,946	198,939
Taiwan	30,320	31,813	36,750	32,919	36,578	44,284
Thailand	2,681	1,945	927	351	352	155

Source: International federation of Stock Exchanges, web site www.fibv.com
NA : *Not Available*   - : Not Applicable

Table 5. Listed Bond Turnover in Asian Exchanges (USD million)

	1994	1995	1996	1997	1998	1999
Hong Kong	0	47	41	23	14	18
Indonesia	-	-	-	-	-	-
Japan	167,759	260,841	206,668	155,623	72,638	53,875
Korea	1,458	1,855	1,710	4,103	11,383	247,177
Malaysia	879	375	278	908	139	1,032
Philippines	-	-	-	-	-	-
Singapore	7,003	3,977	2,840	3,883	876	3,909
Taiwan	303	70	365	683	1,227	1,683
Thailand	22	4	0	0	0	0

Source: International federation of Stock Exchanges, web site www.fibv.com

NA : Not Available *- : Not Applicable*

Table 6. Summary information of local credit rating bureaus in Southeast Asia

Country / Economy	Credit rating agency	established
Hong Kong	NA	NA
Indonesia	Pefindo Credit Rating Agency	1995
Korea	Korea Management Consulting and Credit Rating Corporation (KMCRC)	1983
	Korea Investors Service	1985
	National Information and Credit Evaluation Corporation (NICE)	1986
Malaysia	Rating Agency Malaysia Berhad	1990
	Malaysian Rating Corporation Berhad (MARC)	1995
Philippines	Credit Information Bureau Inc.	1982
Singapore	NA	NA
Thailand	Thai Rating and Information Services (TRIS)	1993

Source: collected from various chapters, Reside, Rhee, and Shimomoto, "The feasibility of creating mortgage-backed securities markets in Asian countries", Asian Development Bank, 1999

NA : *Not Applicable*

Table 7. Indicators of good financial infrastructure

Country	Creditor rights *	Judicial system effectiveness**	Quality of information***
Hong Kong	HIGH	HIGH	HIGH
Indonesia	LOW	LOW	LOW
Korea	MEDIUM	MEDIUM	MEDIUM
Malaysia	MEDIUM	MEDIUM	MEDIUM
Philippines	LOW	LOW	MEDIUM
Singapore	HIGH	HIGH	MEDIUM
Taiwan	LOW	MEDIUM	MEDIUM
Thailand	MEDIUM	LOW	MEDIUM

Source: Raw data from Herring and Chatuscripitak, "The case of the missing market: The bond market and why it matters for financial development", pp. 15-17, Asian Development Bank Institute Working Paper # 11, July 2000. The original paper provides a list of indicators for each of the three criteria for good financial infrastructure. This table simplifies the entries as high (all or most of indicators are above average); medium (mixed scores of above and below average); and low (all or most scores are below average).

* Indicators for creditor rights include: contract enforceability, automatic stay on secures assets, secured creditors paid first, restrictions on autonomous reorganization, management does not stay in reorganization, creditor rights, and legal reserved required to continue operations

** Indicators for effectiveness of judicial system include: efficiency of judicial system, rule of law, corruption, bureaucratic quality, risk of expropriation, and risk of contract repudiation

*** Indicators for quality of information include: accounting standards, and index of restriction on the Press

Table 8. Proposal for construction of Pan-Asian stock market index

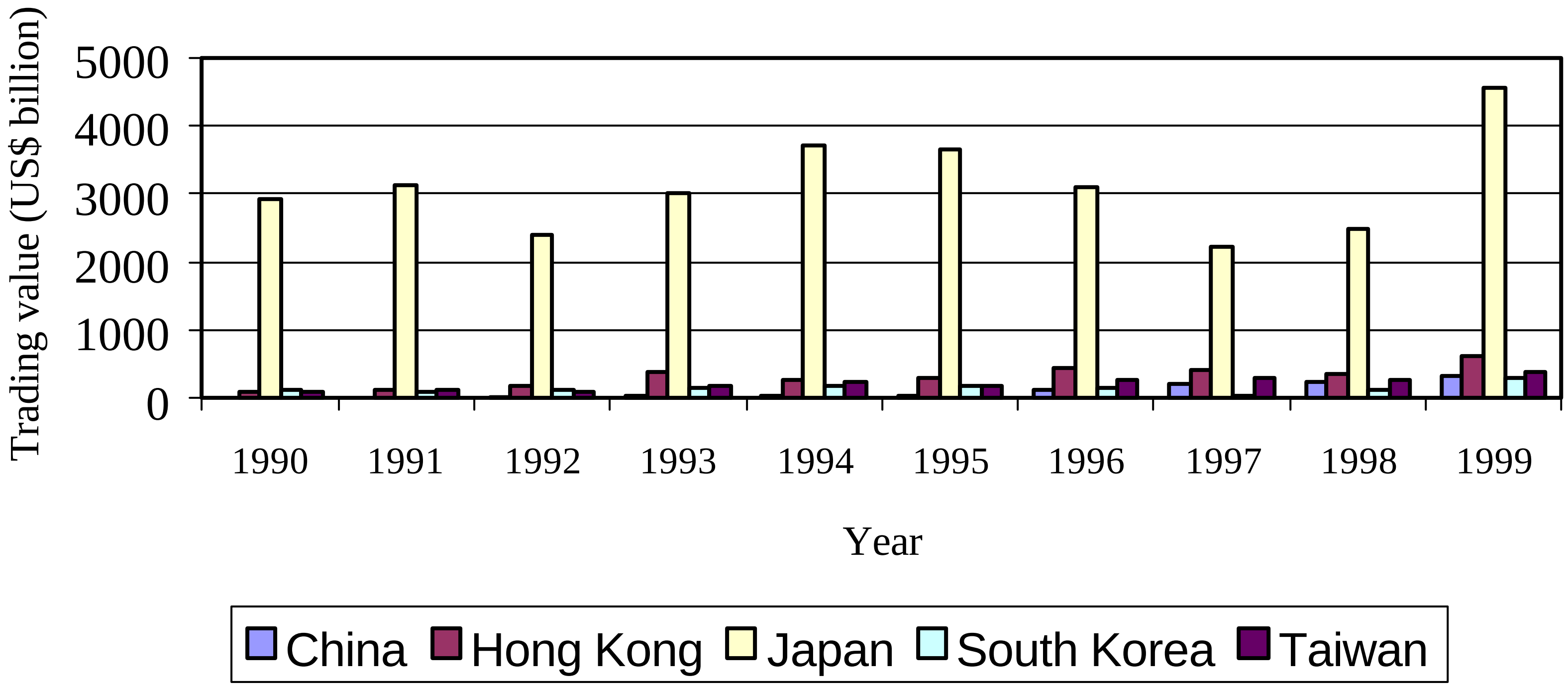
Objectives	**1. To provide an efficient benchmark of the level of equity markets in the Asia-Pacific region** **2. to facilitate the formation of index-linked investment tools to invest in high-quality Asian equity markets**
General Architecture	**1. Asian stock market index as weighted average of respective individual market indices** **2. Each market constructs a home market index with guidelines agreeable to all other member markets** **3. Composition of Asian market index includes list of high-quality stocks and their respective weights according to the construction of the index**
Construction and Ownership of index	**1. All member markets agree on the weights and/or formulas at the regional level** **2. Each country forms its own home market formula** **3. jointly managed and owned by all markets**
Alliances and cooperation	**1. Form organizational setup to facilitate alliances and cooperation among individual markets** **2. promote cross-listing of stocks within the region**
Index funds	**1. Each country to develop a benchmark index fund to allow international and local investors to invest in well diversifies, high quality stocks** **2. create Pan-Asian funds comprised of fixed weights of each individual country index funds**

Table 9. Online stock broking, end of 1999

	Internet users (million)	Internet Penetration (%)	Number of Internet Brokers	Commission Rates
Hong Kong	2.0	29.1	8	Regulated
Japan	14.0	11.0	33	Deregulated
Korea	6.7	14.3	21	Deregulated
Malaysia	0.8	3.7	NA	Regulated
Philippines	0.6	0.8	NA	Deregulated
Singapore	1.1	28.4	6	Partial
Taiwan	4.1	18.3	42	Deregulated
Thailand	0.8	1.2	NA	Regulated
U.S.A.	58.0	21.0	100	Deregulated

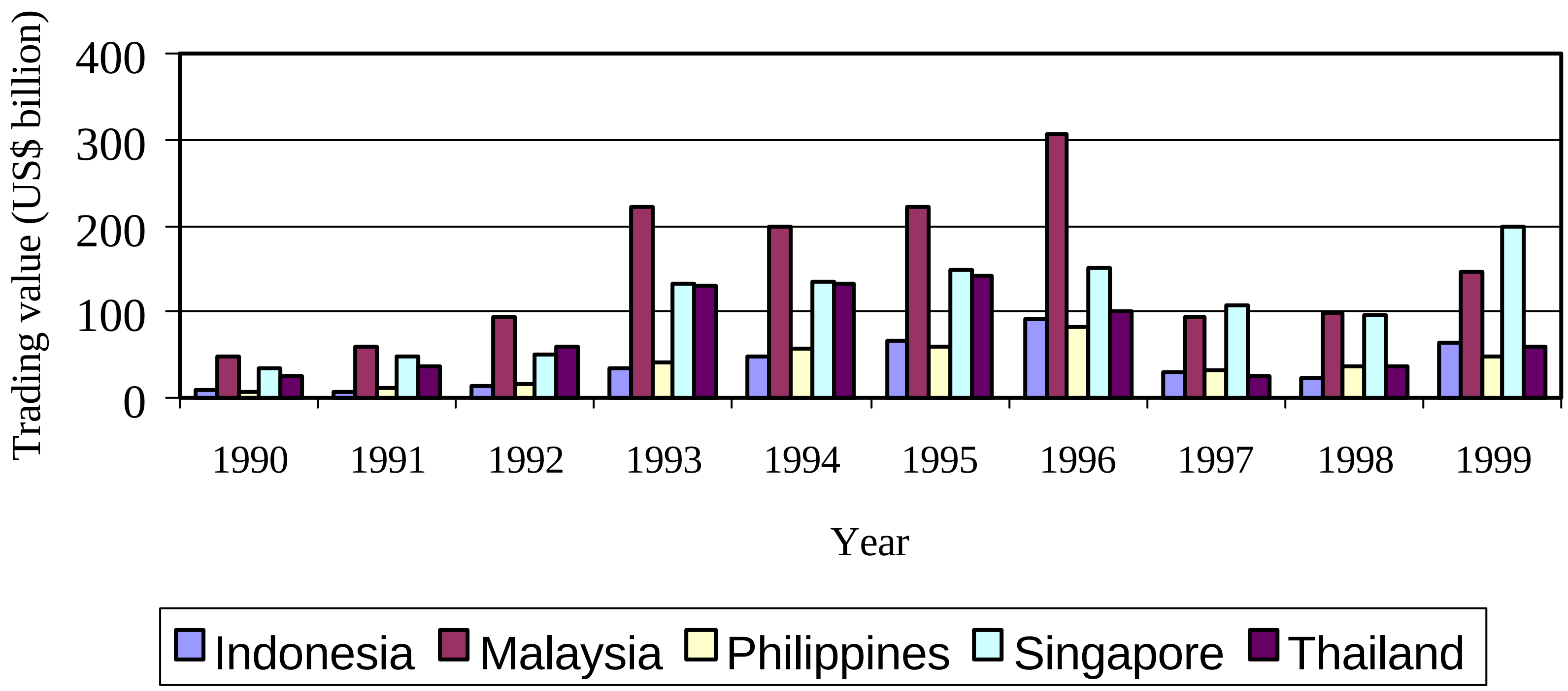
NA: *Not Applicable*
Source: Lehman Brothers, October 1999

Figure 1. Equity market capitalization - East and North East Asia 1990-1999



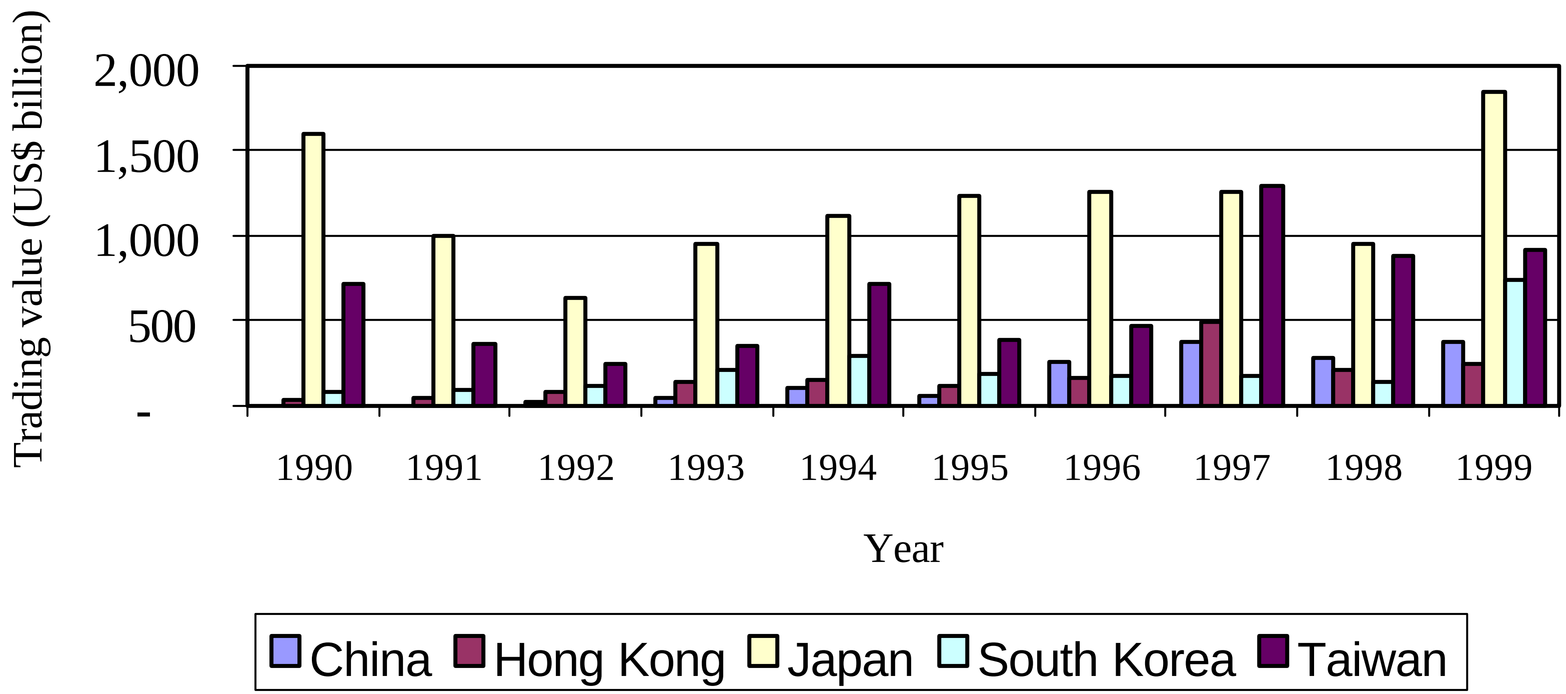
Standard & Poor's database

Figure 2. Equity market capitalization - South East Asia 1990-1999



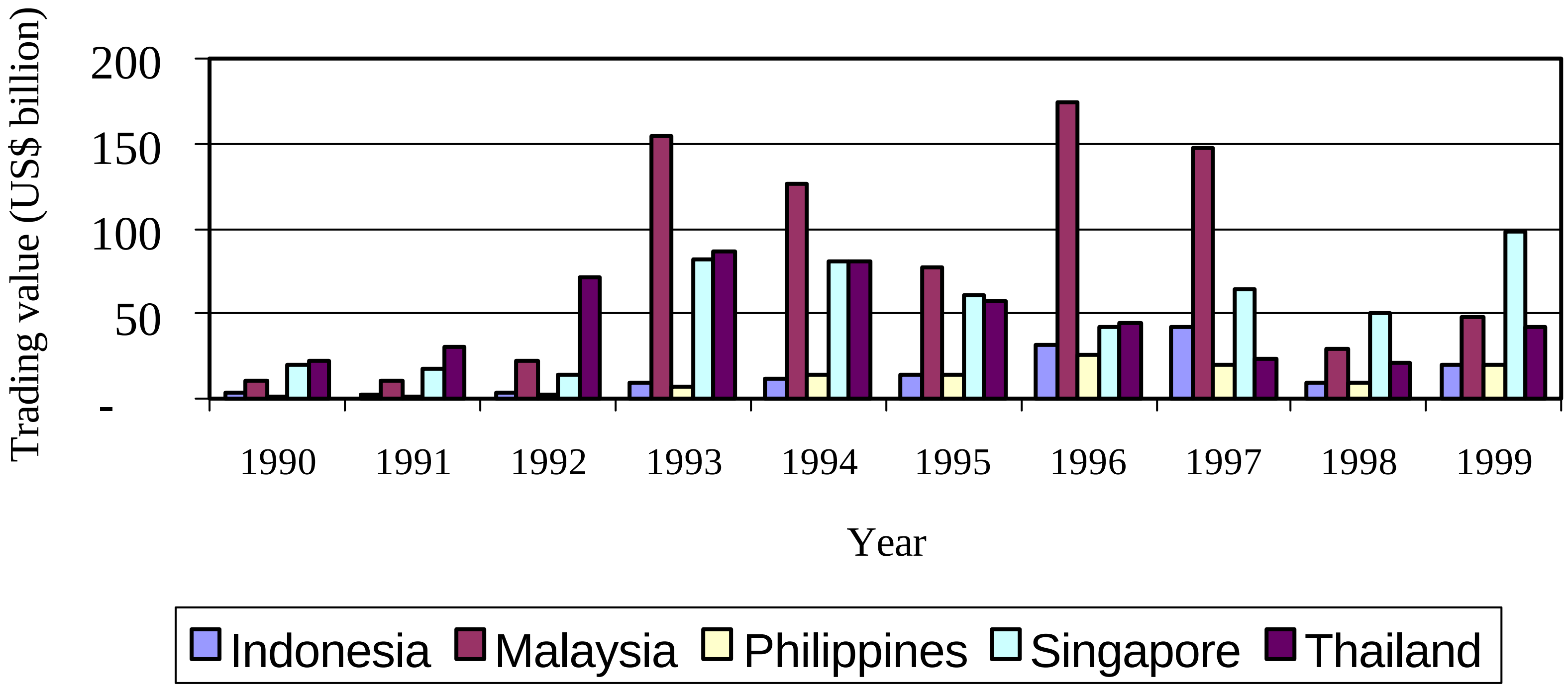
Source: Standard & Poor's database

Figure 3. Equity market trading value - East and North East Asia 1990-1999



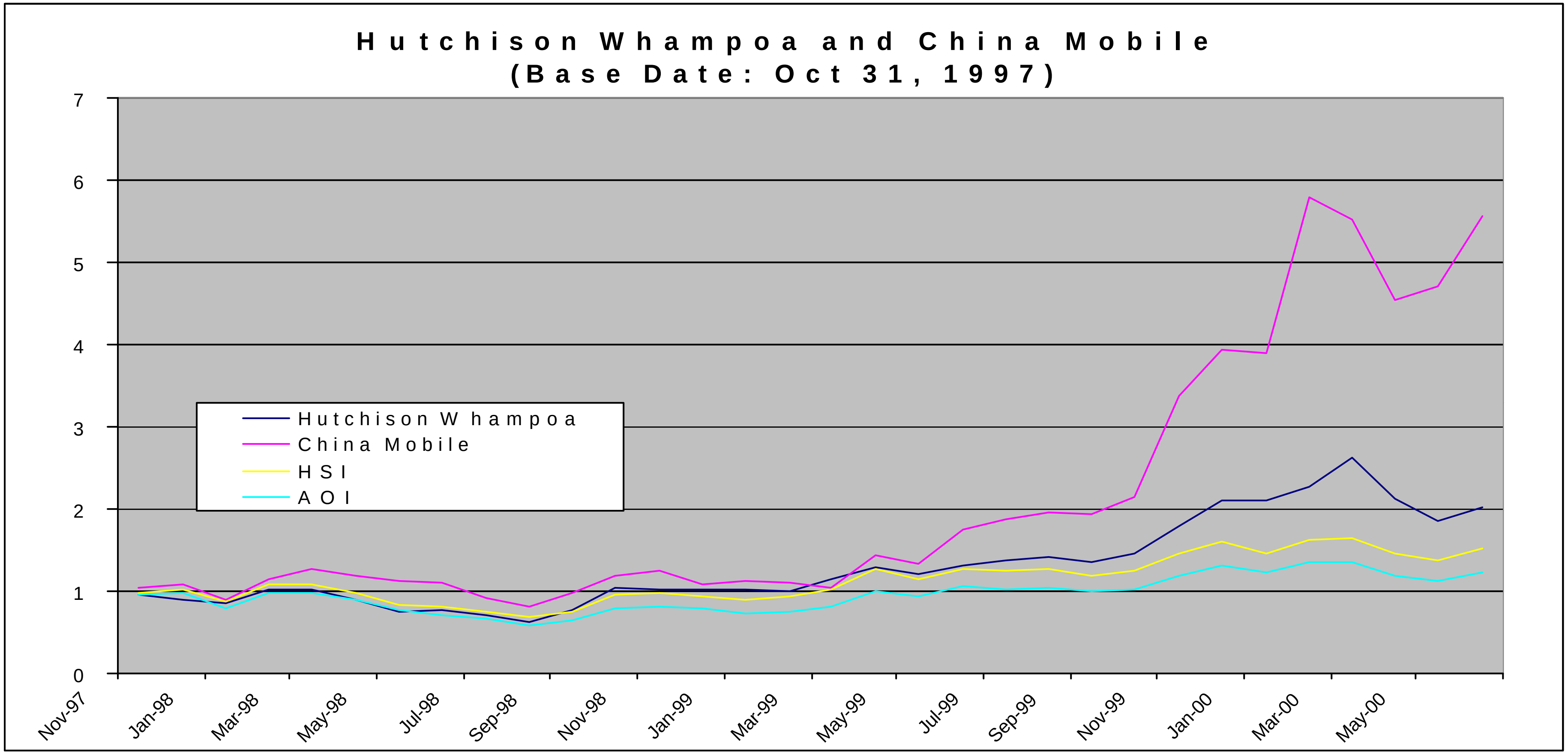
Source: Standard & Poor's database

Figure 4. Equity market trading value - South East Asia 1990-1999



Standard and Poor's database

Figure 5. Relative Performance of leading stocks vs. broader market indices in Hong Kong



Source: Datastreams