Asia Bond Monitor 2006

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The *Asia Bond Monitor* (ABM) reviews the development of emerging East Asian local currency bond markets. It examines market size and composition, market liquidity, and yields and returns. Recent policy reforms are also highlighted. The ABM covers the Association of Southeast Asian Nations member countries plus the People's Republic of China; Hong Kong, China; and the Republic of Korea.

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Emerging East Asian Local Currency Bond Markets: A Regional Update

Highlights

Bond Market Development in 2005 and Outlook for 2006

- Emerging East Asian local currency bond markets increased in absolute size as well as in percentage of GDP in 2005.
- However, 2005 growth for both government and corporate bond markets was moderate relative to growth in 2004.
- Fiscal consolidation reduced government bond market growth in most major emerging East Asian economies, with the key exception of the PRC.
- Turnover ratios in government bond markets remained relatively stable in 2005, while those in corporate bond markets generally fell from their already low levels.
- Despite the general increase in short-term interest rates, all emerging East Asian yield curves flattened.
- With declining bond prices—and despite rising yields—2005 bond index returns were down on average from 2004 in many markets.
- Going forward, the key policy challenges for bond market development include increasing bond market liquidity, providing timely information about issuers to investors, and diversifying the investor base.

Financial Deepening in Emerging East Asia—An International Perspective

- While financial deepening is advancing worldwide, emerging East Asia compares well with the international benchmark, and generally outperforms the rest of the world.
- Adjusted for per capita income levels, most emerging East Asia's banking sectors—particularly in PRC, Malaysia, and Thailand—show a degree of deepening well above the international norm, particularly compared with some developed markets.
- In terms of equity market deepening, Hong Kong, China; Malaysia; and Singapore clearly outperform developed economies while all other emerging East Asian markets fall in the average performance category.
- Emerging East Asia's bond market deepening is less impressive than its banking sectors as well as equity market deepening, with only Malaysia showing above-average performance. Still, emerging East Asia's bond markets, particularly corporate bond markets have been deepening over time relative to the international benchmark.
- The financial sectors of emerging East Asian economies remain somewhat unbalanced in favor of banks, but this is true for most economies, not only among emerging markets, but among developed markets as well.

Acronyms and Abbreviations

ABF	Asian Bond Fund
ABM	Asia Bond Monitor
ABMI	Asian Bond Markets Initiative
ADB	Asian Development Bank
ALBI	Asian Local Bond Index
ARIC	Asia Regional Information Center
ASEAN	Association of Southeast Asian Nations
BAPEPAM	Indonesia Capital Market Supervisory Agency
BIBOR	Bangkok Interbank Offered Rate
BIS	Bank for International Settlements
BOT	Bank of Thailand
CAGAMAS	National Mortgage Corporation
CHIBOR	China Interbank Offer Rate
CSI	contractual savings institution
EU	European Union
FIE	Fixed Income Exchange
GDP	gross domestic product
HIBOR	Hong Kong Interbank Offered Rate
IFS	International Financial Statistics
IMF	International Monetary Fund
JBIC	Japan Bank for International Cooperation
JIBOR	Jakarta Interbank Offered Rate
KLIBOR	Kuala Lumpur Interbank Offer Rate
KORIBOR	Korea InterBank Offered Rate
LCY	local currency
OECD	Organisation for Economic Co-operation and Development
PHIBOR	Philippine Interbank Offered Rate
RICA	Revised Investment Company Act
RMBS	residential mortgage-backed securities
SIBOR	Singapore Interbank Offered Rate
SME	small- and medium-sized enterprise
ThaiBMA	Thai Bond Market Association
TIBOR	Tokyo Interbank Offered Rate
YTD	year-to-date

Note: To conform with market practice, the Asia Bond Monitor uses three-letter official ISO currency codes rather than ADB's standard symbols.

Definitions of Government and Corporate Debt in Local Currency Bond Markets

The Bank for International Settlements (BIS) International Financial Statistics (IFS) database maintains data on domestic debt securities for 40 markets, primarily Organisation for Economic Co-operation and Development (OECD) countries along with some emerging markets.

AsianBondsOnline generally follows the definitions of government debt utilized in the BIS IFS database. Debt securities data include all long-term bonds and notes, treasury bills, and other short-term notes. Government debt in domestic bond markets includes only obligations of the central government, local governments, and the central bank of each specific market.

According to the BIS definition, domestic debt securities are defined as those that have been issued by residents in domestic currency and targeted at domestic investors. AsianBondsOnline adjusted the BIS statistics to include securities issued by foreign issuers in domestic currency and includes these amounts in total outstandings. Any issues in local currency targeted for foreign investors are also added to total outstandings. For example, "Samurai" bonds are included as part of the total for Japan, as are issues of nonresident issuers in financing hubs such as Singapore.

Corporate issuers therefore include both public and private companies—including international entities. Financial institutions are also included under corporate debt and include public and private sector banks and other financial institutions. A wholly or majority-owned government entity operating commercially or as part of the financial system is therefore defined as corporate debt, as are bonds issued by ADB and other multilateral institutions.

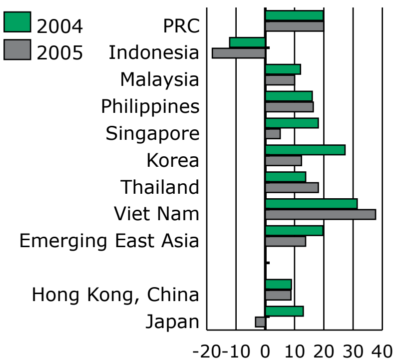
Emerging East Asian Local Currency Bond Markets: A Regional Update

Bond Market Development in 2005 and Outlook for 2006

Size and Composition

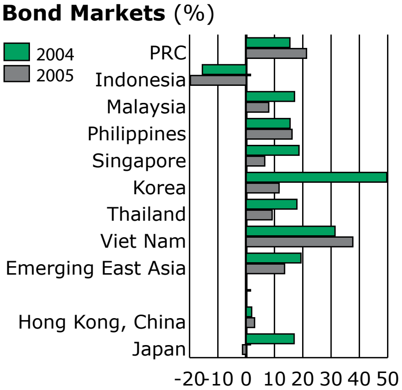
Emerging East Asian local currency bond markets increased in absolute size as well as in percentage of GDP in 2005.

Figure 1: **Growth of Emerging East Asian Local Currency Bond Markets** (%)



Sources: Bank for International Settlements, International Financial Statistics (Tables 16A and 16B and local currency portion of Table 11), except Hong Kong, China (Hong Kong Monetary Authority); Singapore (Monetary Authority of Singapore); and Viet Nam (Ministry of Finance); AsianBondsOnline estimates.

Figure 2: **Growth of Emerging East Asian Local Currency Government Bond Markets** (%)



Sources: Bank for International Settlements, International Financial Statistics (Tables 16A and 16B and local currency portion of Table 11), except Hong Kong, China (Hong Kong Monetary Authority); Singapore (Monetary Authority of Singapore); and Viet Nam (Ministry of Finance); AsianBondsOnline estimates.

Aggregate local currency bonds outstanding in emerging East Asia[1] reached USD1.7 trillion in 2005, up from USD1.5 trillion in 2004—a 14% increase (Table 1)—lower than the 2004 figure of 20% and the 22% growth rate for 1997–2003 (Figure 1).

This moderation in growth was sharpest in the Republic of Korea (Korea), followed by Singapore and Malaysia. In comparison, growth in local currency bonds outstanding remained largely unchanged in the People's Republic of China (PRC) and the Philippines, while in Thailand and Viet Nam, growth in 2005 exceeded 2004 figures. Indonesia was the exception, with local currency bonds outstanding continuing the decline experienced in 2004.

Yet, throughout emerging East Asia (again with the exception of Indonesia), bond market[2] growth was higher than growth in gross domestic product (GDP), moving the bond-to-GDP ratio higher. For the region as a whole, the ratio increased from about 43% in 2004 to slightly above 48% in 2005 (Table 2). Still, the economy with the highest ratio of local currency bonds outstanding to GDP saw a marginal decline—Malaysia (from 94% to 93%). Singapore also declined from 74% to 71%. Korea saw virtually no growth. Thailand and the Philippines, both in the middle range, grew marginally—Thailand from 42% to 46%; the Philippines from 41% to 42%. The PRC showed the most significant growth (from 27% to 35%), while Indonesia the most significant decline (from 23% to 17%). Viet Nam, only recently developing its bond markets, increased its bonds-to-GDP ratio (from 8% to 10%).

Fiscal consolidation reduced government bond market growth in most major emerging East Asian economies, with the key exception of the PRC.

Government bond market growth in 2005 was 14% compared with the 2004 growth of 19%, as better-than-projected revenue collections and fiscal consolidation reduced the need for public sector issuance (Figure 2).

[1] In this section emerging East Asia is defined as People's Republic of China, Indonesia, Korea, Malaysia, Philippines, Singapore, Thailand, and Viet Nam.

[2] Unless otherwise specified, emerging East Asia's government and corporate bond markets refer to local currency bond markets.

Table 1: **Size and Composition of Emerging East Asian Local Currency Bond Markets**

	1997		2004		2005		Annual Growth Rate (%)		
	Amount ($ billion)	% share	Amount ($ billion)	% share	Amount ($ billion)	% share	1997 - 2003	2004	2005
PRC									
Total	116.40	100.0	527.70	100.0	633.03	100.0	24.83	19.82	19.96
Government	67.40	57.9	331.80	62.9	402.53	63.6	27.34	15.45	21.32
Corporate	49.00	42.1	195.90	37.1	230.50	36.4	20.90	28.04	17.66
Indonesia									
Total	4.60	100.0	57.70	100.0	47.26	100.0	55.76	(12.18)	(18.09)
Government	0.90	19.6	50.80	88.0	40.78	86.3	101.42	(15.47)	(19.72)
Corporate	3.70	80.4	6.90	12.0	6.48	13.7	7.15	23.21	(6.10)
Korea									
Total	130.37	100.0	567.70	100.0	637.86	100.0	22.76	27.24	12.36
Government	21.60	16.6	170.50	30.0	190.33	29.8	31.93	49.69	11.63
Corporate	108.77	83.4	397.20	70.0	447.53	70.2	20.46	19.54	12.67
Malaysia									
Total	57.00	100.0	110.70	100.0	121.79	100.0	9.60	12.02	10.01
Government	19.40	34.0	47.30	42.7	51.07	41.9	13.00	17.08	7.97
Corporate	37.60	66.0	63.40	57.3	70.72	58.1	7.62	8.52	11.54
Philippines									
Total	16.92	100.0	35.30	100.0	41.08	100.0	10.27	16.03	16.38
Government	16.60	98.1	35.00	99.2	40.67	99.0	10.55	15.51	16.20
Corporate	0.32	1.9	0.30	0.8	0.41	1.0	(14.79)	144.91	37.78
Singapore									
Total	23.77	100.0	79.39	100.0	83.43	100.0	18.92	18.09	5.08
Government	13.05	54.9	44.02	55.4	46.91	56.2	19.03	18.66	6.56
Corporate	10.73	45.1	35.37	44.6	36.52	43.8	18.78	17.40	3.25
Thailand									
Total	10.47	100.0	68.00	100.0	80.32	100.0	33.68	13.79	18.11
Government	0.30	2.9	36.20	53.2	39.52	49.2	116.27	17.92	9.17
Corporate	10.17	97.1	31.80	46.8	40.80	50.8	19.12	9.43	28.30
Viet Nam									
Total	-	-	3.78	100.0	5.20	100.0		31.39	37.68
Government			3.78	100.0	5.20	100.0		31.39	37.68
Corporate	-	-	-	-	-	-			
Total Emerging East Asia									
Total	359.53	100.0	1,450.27	100.0	1,649.97	100.0	22.44	19.72	13.77
Government	139.25	38.7	719.40	49.6	817.00	49.5	27.66	19.35	13.57
Corporate	220.29	61.3	730.87	50.4	832.96	50.5	18.46	20.09	13.97
Hong Kong, China									
Total	45.78	100.0	78.24	100.0	85.09	100.0	7.80	8.90	8.76
Government	13.12	28.7	15.78	20.2	16.24	19.1	2.79	1.94	2.97
Corporate	32.66	71.3	62.46	79.8	68.85	80.9	9.52	10.81	10.23
Japan									
Total	4,607.89	100.0	9,402.89	100.0	9,089.96	100.0	10.36	12.97	(3.33)
Government	2,382.68	51.7	6,891.74	73.3	6,802.89	74.8	16.29	16.94	(1.29)
Corporate	2,225.21	48.3	2,511.15	26.7	2,287.06	25.2	1.48	3.32	(8.92)

Notes:
1. 2005 data are AsianBondsOnline estimates.
2. Corporate bonds include issues by financial institutions.

Sources: Bank for International Settlements, International Financial Statistics (Tables 16A and 16B and local currency portion of Table 11), except Hong Kong, China (Hong Kong Monetary Authority), Singapore (Monetary Authority of Singapore); and Viet Nam (Ministry of Finance); AsianBondsOnline estimates.

Table 2: **Size and Composition of Emerging East Asian Local Currency Bond Markets** (% of GDP)

	Amount Outstanding			
	1997	**2003**	**2004**	**2005**
PRC				
Total	12.22	26.84	27.32	34.85
Government	7.07	17.51	17.18	22.16
Corporate	5.14	9.32	10.14	12.69
Indonesia				
Total	1.94	27.62	22.80	16.82
Government	0.38	25.17	20.07	14.52
Corporate	1.56	2.35	2.73	2.31
Korea				
Total	25.07	73.33	83.34	83.03
Government	4.15	18.72	25.03	24.77
Corporate	20.92	54.61	58.31	58.26
Malaysia				
Total	56.36	95.06	93.56	93.24
Government	19.18	38.86	39.98	39.10
Corporate	37.18	56.20	53.58	54.14
Philippines				
Total	20.50	38.45	41.00	42.02
Government	20.11	38.29	40.65	41.60
Corporate	0.39	0.15	0.35	0.42
Singapore				
Total	24.79	72.49	73.80	71.47
Government	13.60	40.00	40.92	40.18
Corporate	11.19	32.49	32.88	31.29
Thailand				
Total	6.65	41.80	42.09	46.43
Government	0.19	21.47	22.40	22.84
Corporate	6.46	20.33	19.68	23.58
Viet Nam				
Total	-	7.27	8.32	9.85
Government	-	7.27	8.32	9.85
Corporate	-	-	-	-
Total Emerging East Asia				
Total	16.54	41.11	42.85	48.02
Government	6.41	20.46	21.25	23.78
Corporate	10.13	20.65	21.59	24.24
Hong Kong, China				
Total	26.38	45.23	47.09	48.02
Government	7.56	9.74	9.50	9.17
Corporate	18.82	35.49	37.60	38.85

Notes:
1. 2005 data are AsianBondsOnline estimates.
2. Corporate bonds include issues by financial institutions.
Sources: Bank for International Settlements, International Financial Statistics (Tables 16A and 16B and local currency portion of Table 11), except Singapore (Monetary Authority of Singapore); and Viet Nam (Ministry of Finance); Asia Regional Information Center (ARIC) for GDP; AsianBondsOnline estimates.

Higher interest rates and volatile trading conditions in some markets also contributed to the growth moderation. While growth (in USD terms) was higher from 2004 levels in the PRC (21%) and the smaller markets of the Philippines (16%) and Viet Nam (38%), the rest of the region experienced a slowdown. The slowdown in Korea was the sharpest (from nearly 50% in 2004 to 12% in 2005). Growth moderated in Thailand, Malaysia, and Singapore, while in Indonesia the level of bonds outstanding contracted by nearly 20%. In comparison, in the more developed market of Hong Kong, China, government bond market growth increased from 2% to 3%.

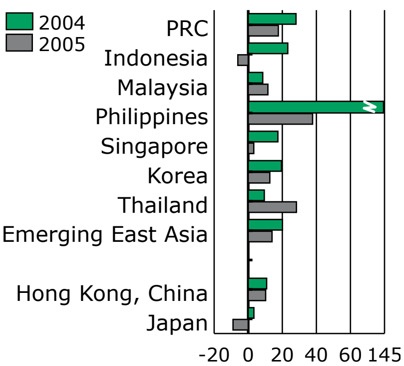
- In the PRC, 2005 growth was driven by new issuance in treasury bonds (RMB692.4 billion) with RMB10 billion earmarked for funding rural infrastructure. The government reduced new issuance of long-term special bonds by RMB30 billion—to RMB80 billion—to curb investment in industries such as construction, ports, and power generation.
- In Viet Nam, the strong 2005 growth was due to increased allocation for infrastructure and other public investment. The government issued bonds worth VND30 trillion—equivalent to the total gross government issuance for 2001–2004.
- The Philippine government's policy of issuing peso-denominated debt instead of increasing its levels of foreign debt added to local currency bond market growth. A combination of falling yields and exchange rate appreciation made peso bonds attractive to both overseas investors and overseas Filipino workers.
- In Korea, the stable currency ensured that Monetary Stabilization Bond issuance in 2005 was well below 2004 levels. Better-than-projected corporate tax receipts also reduced the need to issue revenue bonds.
- Thailand's government bond and bill issuance totaled THB1.7 trillion—largely to finance infrastructure—with THB968 billion Bank of Thailand (BOT) bonds with maturities below two years, used to adjust market liquidity. Because of rising interest rates, investors preferred more liquid government bonds with shorter maturities.
- In Malaysia, the moderation in the growth of ringgit-denominated bonds was due to improved revenue collection, allowing the government to limit domestic bond issuance in 2005 to MYR31.5 billion, 20% below expectations.
- Singapore's 7% bond market growth was skewed toward issuance of government bills rather than bonds. New issuance of government bonds fell SGD1 billion from the 2004 level of SGD12.9 billion, while Treasury Bill issuance increased by SGD7 billion to SGD71 billion.
- Indonesia's need to raise interest rates to stabilize the rupiah challenged domestic bond issuance policy. The government issued a total of IDR43 trillion in 2005, of which about IDR23 trillion were

USD-denominated international issues (see Box 1). To restore confidence in its local mutual fund industry, the government used fiscal consolidation, with a portion of the proceeds to retire hedge bonds and government issues maturing between 2007–2009. This reduced local currency government bonds outstanding by 20%.

Corporate bond market growth in the region also moderated in 2005, with the exception of Malaysia and Thailand.

Corporate bonds outstanding grew by 14% during 2005 for emerging East Asian markets taken together, down from 20% for 2004 and a 19% average annual growth from 1997 to 2003. Exceptions to this slowdown in corporate bond market growth were Malaysia and Thailand. While most governments attempted to stimulate corporate bond markets—particularly as infrastructure projects increased corporate demand for long-term funds—higher interest rates in several markets contributed to a reluctance by corporations to increase debt last year (Figure 3).

Figure 3: **Growth of Emerging East Asian Local Currency Corporate Bond Markets** (%)



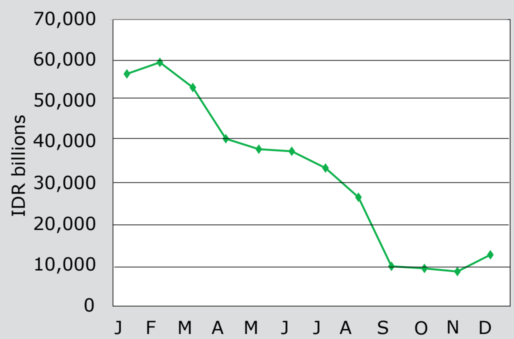
Sources: Bank for International Settlements, International Financial Statistics (Tables 16A and 16B and local currency portion of Table 11), except Hong Kong, China (Hong Kong Monetary Authority); Singapore (Monetary Authority of Singapore); AsianBondsOnline estimates.

- The strongest growth was in the Philippines (38%), but it was well below the 2004 level (145%), which, despite coming from an extremely low base, also largely mimics the government's policy favoring greater peso-denominated debt over an excessive reliance on foreign currency debt.
- Thailand was one of two markets to show higher growth in corporate bonds outstanding (28% in 2005, up from 9% in 2004). This was in part due to new issuance skewed to short- and medium-term maturities, with over 80% less than five years, as issuers were unwilling to issue for longer maturities due to higher interest rates.
- In the PRC, despite the slowdown in corporate bond market growth from the 2004 level (to 18% from 28%), the market grew almost at pace with the government bond market. New rules issued in 2004–2005 encouraged corporate direct financing via bond issuance, and regulations for accessing capital markets by issuers continued to be eased.[3] The government also revised rules covering foreign exchange trading and market making which should aid corporations in proactively managing cash flows.
- Korea's total corporate bond growth fell (from 20% to 13%), as industrial companies decreased new issuance by over 15% due to rising yields. Still, there was a 14% surge in debt issuance by credit card companies, which saw a significant turnaround in earnings and asset quality.
- Malaysia was the other market showing higher growth (from 9% to

[3] Box 1: Bond Market Reforms in the People's Republic of China, Asia Bond Monitor, November 2005.

Box 1: **Indonesia's Mutual Fund Industry**

Ownership of Government Bonds by Mutual Funds, 2005
(in rupiah billions)



Source: Bank Indonesia.

Indonesia's local currency bonds were one of the best performing asset classes in emerging East Asia in 2003–2004 with returns in local currency terms exceeding 15%. This encouraged Indonesian mutual funds to increase holdings of fixed-income securities, with the result that by end-2003, over 80% of mutual fund investment was in local currency fixed-income assets. This made these funds highly exposed to interest rate risk. In 2005, rising interest rates depressed asset prices, and concerns over declining fund values triggered the wave of mutual fund redemptions. Amid tremendous pressure on investment managers to sell mutual fund assets, other investors retreated, resulting in a shortage of buyers and wide bid-ask spreads. Prices dropped even further in the sagging market—the secondary market in Indonesia was too thin and illiquid to accommodate sellers of less liquid assets, particularly high-yield corporate instruments.

Further sharp increases in interest rates—and wide-scale redemptions—saw these assets drop by 80% in value over seven months—from USD11.1 billion in February 2005 to USD3.5 billion in September.

Given the huge redemptions, the government acted swiftly and decisively, using intermittent bond buybacks to lend liquidity to the market. In addition, the Indonesia Capital Market Supervisory Agency (BAPEPAM) requested Bank Indonesia to allow investment manager-related banks to buy mutual fund portfolios and units to address the liquidity shortage in the market. Prior to the redemption rush, banks were not allowed to act as "standby" buyers and intervene in the mutual funds market.

BAPEPAM also temporarily suspended the registration of new fixed-income mutual funds effective October 2005, pending a full review of regulations on the transparency of fixed-income transactions. They are also examining measures to improve secondary market liquidity.

One of the criticisms leveled at mutual funds was that small investors were unaware of the exposure of mutual funds to investments in bonds, and more particularly illiquid corporate debt. In an innovative move, bonds listed on the Surabaya Stock Exchange were converted into retail units beginning late November 2005, and the government followed suit when it unveiled plans to start issuing retail treasury bonds this year. By granting greater retail access to bonds, small investors will be able to "self manage" their savings in future.

12%). Increased demand for residential mortgage-backed securities (RMBS) was one reason, while contractual savings institution (CSI) assets grew by over 7%, also increasing demand for more generic domestic fixed-income assets.

- Singapore's corporate bond market growth is estimated to have fallen (from 17% to 3%), largely in tandem with the decline in government issuance.
- In Indonesia, corporate bonds outstanding declined (from a 23% increase in 2004 to a negative 6% in 2005). During the August–October mini-currency crisis, short-term interest rates increased 500 basis points, and several new corporate issues were postponed. New issuance revived somewhat after interest rates increased and the currency stabilized in the latter part of the year.

- In comparison with East Asia's emerging markets, Hong Kong, China's corporate bond market continued to maintain stable growth at 10% in 2005. Bond issuance was mainly derived from foreign issuers and authorized financial institutions. Among foreign issuers, an increasing number of PRC enterprises issued HKD-denominated bonds.

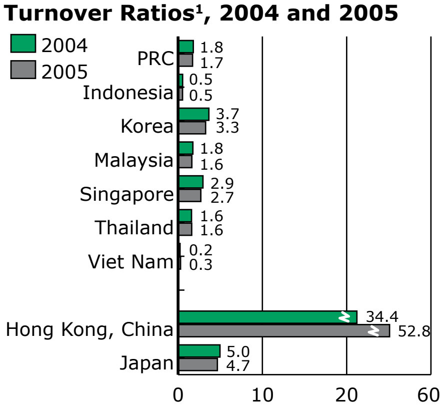
Against the backdrop of last year's moderation in growth and the need for further fiscal consolidation in several countries, most emerging East Asian governments are expecting only a modest increase in public debt issuance for 2006.

- The PRC will continue to offer bonds on a rolling basis in 2006, depending on open market operation requirements and deficit financing needs. However, the government is further reducing issuance of long-term special bonds as part of a strategy to slowly withdraw from proactive fiscal policy.
- Indonesia expects to raise IDR25 trillion (USD2.7 billion) in net proceeds from the sales of IDR-denominated and overseas bonds in 2006, up 10% from 2005. International US dollar-denominated bond issues have raised USD2 billion (IDR18 trillion). This will likely reduce pressure on domestic market issuance, although Indonesia may look to retire more short-term domestic debt if conditions prove favorable. The government's first *sharia*-based (Muslim law-based) *sukuk* (or financial certificate) issue is scheduled for 2006 to address the demand for Islamic instruments.
- Korea plans to sell KRW756 trillion (US$77.7 billion) in treasury bonds during 2006, which includes KRW1 trillion (USD1 billion) in foreign currency-denominated bonds. Another KRW9 trillion (USD9.4 billion) will be issued to finance state-run home-building projects. The government will also lengthen the benchmark curve by reducing supply of 3-year bonds and issuing 10% of its total 2006 issuance in 20-year Treasury Bonds.
- Malaysian analysts expect continued strong revenue collection will likely limit gross issuance of domestic government debt in 2006 to its 2005 level of approximately MYR32 billion (USD9 billion).
- Philippine local currency government debt issuance is predicted to be PHP310 billion (USD6 billion) for 2006, composed of PHP88 billion (USD1.7 billion) in Treasury Bills and PHP222 billion (USD4.3 billion) in Treasury Bonds. The government announced a bond exchange program in January 2006 aimed at further concentrating issue size and creating larger and more liquid government benchmark issues in the three- to seven-year maturity segment.
- For Singapore, advanced government projections are not available for

2006. As Singapore does not normally run fiscal deficits, government securities are issued only for purposes of providing an investment alternative and to provide a benchmark for corporate securities. Issue size is only determined close to the auction date in response to these factors. Market analysts' projections are for SGD2–3 billion for new issues and SGD0.5–1.5 billion for re-openings.

- Thailand budgeted THB1.8 trillion (USD45.5 billion) for infrastructure investment for 2005–2009, to be partly funded by debt. This will continue to ensure a healthy supply of government paper in 2006. Asset-backed securities may also be issued as part of the financing package. A Thai Bond Market Association (ThaiBMA) survey conducted among underwriters predicts that government bond issuance will increase 55% from the 2005 level.
- Viet Nam plans to issue bonds worth between VND15 trillion (USD950 million) and VND18 trillion (USD1.1 billion) in 2006 as part of its continuing infrastructure investment program.
- The Hong Kong, China market expects Exchange Fund Bills and Notes issuance to remain stable, with outstanding government bond growth at similar levels as in recent years, as the government expects to record a surplus of HKD625 million (USD80 million) on its operating account and HKD5.6 billion (USD717 million) on its consolidated account during 2006/07.

Figure 4: **Government Bond Turnover Ratios[1], 2004 and 2005**



[1] Calculated as LCY trading volume (sales amount only) divided by year-end LCY value of outstanding bonds.
Sources: PRC (ChinaBond.com); Indonesia (Bank Indonesia and Surabaya Stock Exchange); Korea (KoreaBondWeb); Malaysia (Bank Negara Malaysia); Singapore (Monetary Authority of Singapore); Thailand (Thai Bond Market Association), Viet Nam (Ministry of Finance and Ho Chi Minh City Securities Trading Center); Hong Kong, China (Hong Kong Monetary Authority), Japan (Japan Securities Dealers Association).

Market Liquidity

Turnover ratios in government bond markets remained relatively stable in 2005, while those in corporate bond markets generally fell from their already low levels.

In emerging East Asian government bond markets, 2005 saw turnover ratios remaining largely unchanged from 2004. In contrast, Hong Kong's turnover ratio vaulted upwards from 34.4 in 2004 to 52.8 in 2005, due to a variety of economic issues that increased capital inflows and speculative trading (Figure 4).

Ratios inched upwards in Viet Nam (from 0.2 to 0.3), remained virtually identical in Thailand (1.6) and Indonesia (0.5), and were marginally lower in Korea (from 3.7 to 3.3), Singapore (from 2.9 to 2.7), PRC (from 1.8 to 1.7), and Malaysia (from 1.8 to 1.6).

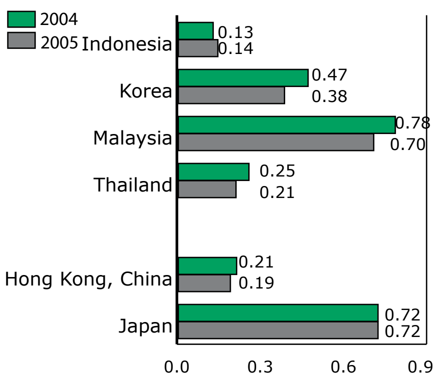
In Thailand, government securities trading was down early in 2005, but recovered later as investors began lengthening portfolio exposure in expectation of a slowdown in interest rate increases. In Viet Nam, turnover increased due to improvements in the transaction environment at the Hanoi

Security Trading Center, although this growth came from a low base.

Despite rising short-term interest rates in most markets in the region, portfolio managers and investors did not shorten portfolio maturity structures by actively selling, largely due to a flattening of yield curves. New issuance in Korea, Malaysia, and Singapore fell below early 2005 estimates, with fears of supply shortages also a possible factor in encouraging bondholders to retain existing portfolios. In the PRC, bonds proved an attractive funding vehicle for many financial institutions with excess short-term liquidity. This discouraged active positional trading. Considering the difficult trading environment in Indonesia, coupled with significant interest rate increases, the tiny drop in turnover there was, if anything, encouraging.

Corporate sector turnover fell in Malaysia, Korea, and Thailand, and was up marginally in Indonesia. In the region's developed markets, corporate bond turnover declined in Hong Kong, China and remained stable in Japan (Figure 5).

Figure 5: **Corporate Bond Turnover Ratios[1], 2004 and 2005**



[1] Calculated as LCY trading volume (sales amount only) divided by year-end LCY value of outstanding bonds.
Sources: Indonesia (Bank Indonesia and Surabaya Stock Exchange); Korea (KoreaBondWeb); Malaysia (Bank Negara Malaysia); Singapore (Monetary Authority of Singapore); Thailand (Thai Bond Market Association); Hong Kong, China (Hong Kong Monetary Authority); Japan (Japan Securities Dealers Association).

Demand for corporate assets in Malaysia remained high despite the uncertain interest rate environment, but limited supply also discouraged greater turnover. In Thailand, turnover was compromised by the bunching of maturities of new issues to less than five years—a disincentive for portfolio switching, as supply of longer-dated new issues was limited. In Indonesia, troubles in the mutual fund industry forced the disposal of corporate assets, although illiquidity, large bid-ask spreads, and the absence of buyers for high-yield paper limited the number of transactions.

Yields and Returns

Despite the general increase in short-term interest rates, all emerging East Asian yield curves flattened.

With the pace of monetary tightening accelerating in 2005—due to increasing inflationary pressures in some economies in the region—short-term interest rates generally increased. Interest rate hikes in the United States (US) and the euro area, global uncertainty over how long the rise in commodity prices would continue, and the effect this in turn would have on future monetary tightening and investors' desire to hold bonds also contributed to higher short-term interest rates in the region.

In Thailand and Singapore, increases in short-term interest rates have closely followed the timing of US Federal Reserve policy rate movements, while increases in short-term interest rates in Indonesia and Korea have been largely in response to domestic factors. Long bond yields in all of these markets are higher than they were at the beginning of 2005 (Table 3) (Figure 6). In other markets in emerging East Asia, actual or expected local currency appreciation, and the resultant capital inflows, has kept short-end domestic liquidity high, resulting in more limited rate increases. The PRC and Malaysia saw the smallest rise in short-term rates, while short-term interest rates in the Philippines fell. Long-dated bond yields in these markets are lower than at the beginning of 2005.

Despite the increase in short-term interest rates, all emerging East Asian local currency bond market yield curves flattened, as indicated by the 2–10year yield curve spreads (Figure 7). Currency appreciation and excess liquidity have ensured that changes in the shape of domestic yield curves have not been as sharp as in the US, where the US 2-10year spread inverted in February 2006.

Most emerging East Asian currencies appreciated against the US dollar in late 2005. The trend is continuing in 2006, with the Indonesian rupiah appreciating against the US dollar by over 6%, and the Thai baht, Philippine peso, and Korean won appreciating by over 3% (Table 4). Some currency strategists believe emerging East Asian local currencies are undervalued by up to 15%, and that net foreign capital inflows into the region's equity and bond markets will continue. These inflows have a major influence on the performance of many of the region's markets.

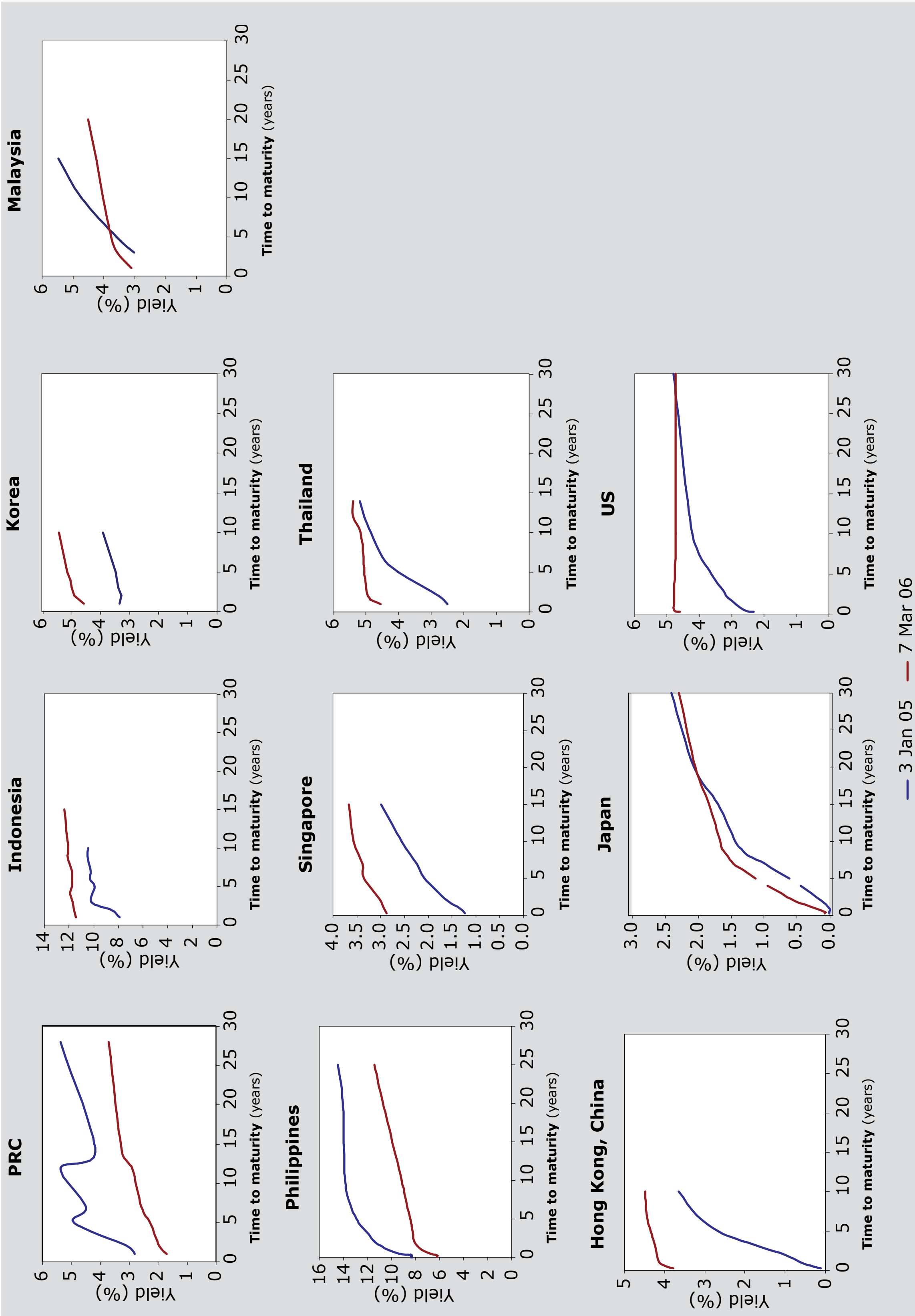
The following country-specific factors shaped emerging East Asian yields and yield curves in 2005 and in the first two months of 2006:

Table 3: **Short-term Interest Rates**

Market	Reference Rate	31-Dec-04	31-Mar-05	30-Jun-05	30-Sep-05	31-Dec-05	7-Mar-06
PRC	CHIBOR 1 Month	1.770	1.769	2.300	2.100	1.900	1.800
Indonesia	JIBOR 1 Month	7.444	7.455	8.326	11.683	13.596	13.125
Korea, Rep. of	KORIBOR 1 Month	3.25	3.30	3.30	3.42	3.80	4.03
Malaysia	KLIBOR 1 Month	2.81	2.80	2.84	2.88	3.13	3.40
Philippines	PHIBOR 1 Month	7.938	6.750	6.500	7.938	7.813	6.938
Singapore	SIBOR SGD 1 Month	1.375	1.938	2.000	2.330	3.188	3.375
Thailand	BIBOR 1 Month	2.270	2.448	2.653	3.695	4.295	4.610
Hong Kong, China	HIBOR 1 Month	0.276	2.532	3.399	4.178	4.096	4.061
Japan	TIBOR 1 Month	0.061	0.063	0.060	0.061	0.063	0.093
US	Federal Funds Target Rate O/N	2.250	2.750	3.250	3.750	4.250	4.500

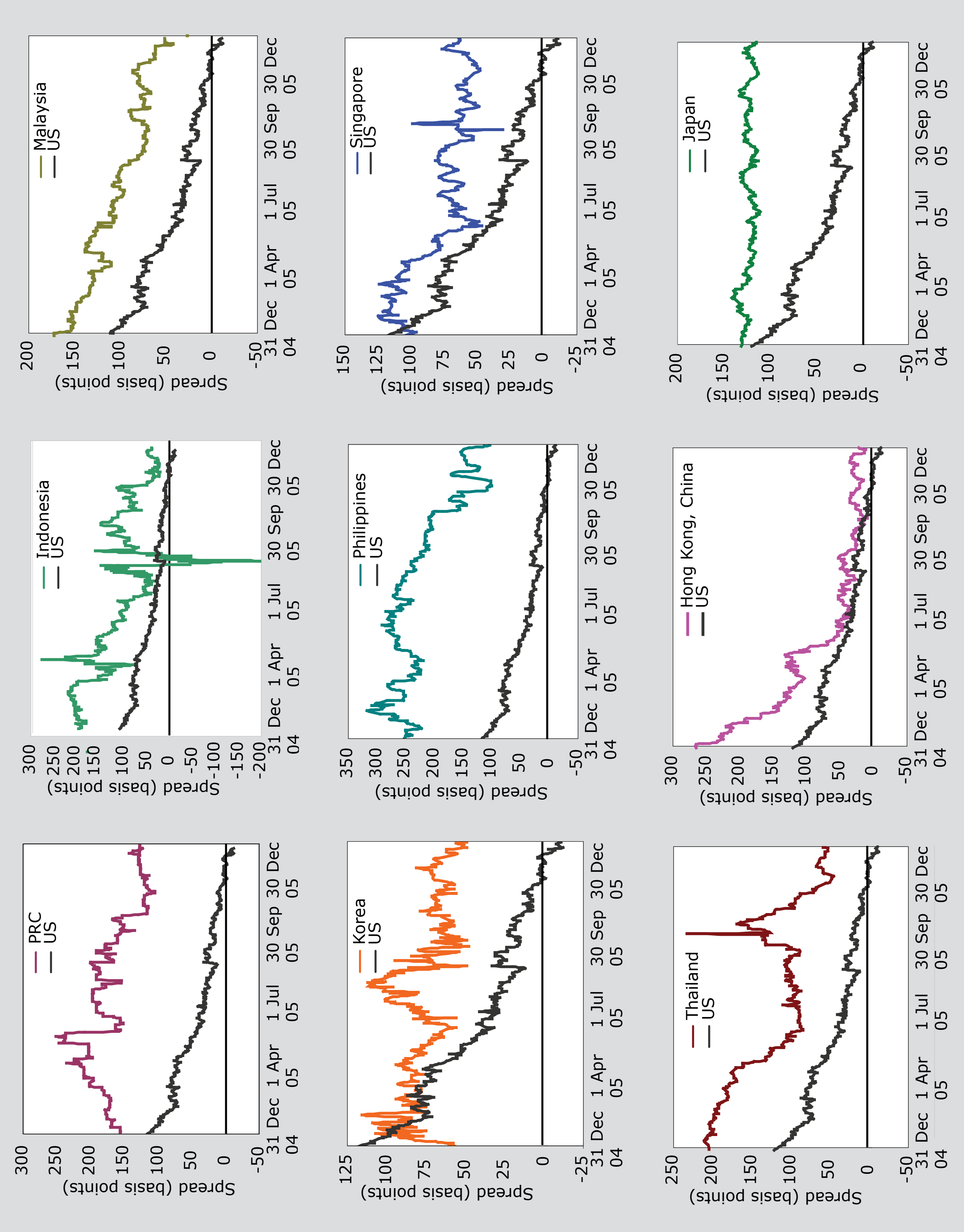
Source: Bloomberg LP except KORIBOR (Korea Federation of Banks).

Figure 6: **Benchmark Yield Curves - Local Currency Government Bonds**



Source: AsianBondsOnline.

Figure 7: **Interest Rate Spreads - 2-Year and 10-Year Local Currency Bonds**



Source: AsianBondsOnline.

Table 4: **2005 Appreciation (Depreciation) of Emerging East Asian Currencies** (%)

Currency	Against USD 2005	Against USD 2006 YTD
CNY	2.55	0.35
IDR	(5.71)	6.04
KRW	2.71	3.13
MYR	0.54	1.76
PHP	5.63	3.75
SGD	(1.82)	1.89
THB	(5.42)	4.88
VND	(0.92)	0.03
HKD	0.24	(0.09)
JPY	(14.06)	0.01

Notes:
1. Appreciation (depreciation) is computed for each year using natural logarithm of end-of-period rate/start-of-period rate.
2. 2006 YTD is appreciation (depreciation) as of 7 March 2006.
Source: Reuters.

- The PRC continues to attract capital inflows, partly a result of financial sector liberalization, but also because of the continued strong economic growth. Short-term funding rates have eased slightly since January 2005, encouraging investment in longer-dated RMB government bonds with the 2–12year RMB government yield curve spread declining from 230 basis points in January 2005 to 93 basis points in March 2006.
- In Korea, the 3–10year KRW government bond yield curve spread declined marginally from 62 basis points to 42 basis points. The strong performance of the equity market encouraged foreign capital inflows in the latter part of the year as the export sector performed better than early 2005 projections.
- In Malaysia, neither equity prices nor the ringgit saw the same appreciation as other markets in emerging East Asia. However, investment capital continued to move into fixed-income instruments with the 3–10year domestic government bond yield curve spread declining from 172 basis points to 48 basis points.
- Philippine short-term funding rates fell substantially during 2005. Foreign capital inflows added to both equity and domestic bond markets, and improvement in local currency government bond liquidity added to investor confidence. The 2–10year PHP government bond yield curve spread declined from 250 basis points to 106 basis points.
- In Thailand, short-term funding rate increases closely followed the US Federal Reserve's actions. The 2–10year THB government bond yield curve spread declined from 210 basis points to 23 basis points. The lack of supply of corporate paper with maturities above five years also encouraged buying of longer-dated government bonds.
- In Indonesia, despite the sharp rise in short-term interest rates and pressure on the IDR exchange rate in the middle of the year, the 2-10year IDR government bond yield curve spread declined from 190 basis points to 54 basis points. Most of the yield curve flattening took place after November 2005 as the rupiah recovered.
- In Singapore, the 2-10year SGD yield curve spread declined from 130 basis points to 56 basis points. The decline may have been greater except for the forthcoming re-opening of the SGD 10-year government bond issue, which will ensure greater supply of long-term bonds.
- In Hong Kong, China by comparison, the 2-10year HKD yield curve spread declined from 265 basis points to 29 basis points, closely following moves in US interest rates due to the pegged exchange rate regime.

Bond Index Returns

With declining bond prices—and despite rising yields—2005 bond index returns were down on average from 2004 in many markets.

The iBoxx ABF Pan-Asia Index of local currency bonds returned 2.6% on an unhedged USD basis. A US Treasury Index of similar duration returned 1.5% in 2005 (Table 5). In local currency terms, the Philippines had the highest return (20.9%), followed by the PRC (12.0%) and Malaysia (5.2%). Returns for Thailand were also mildly positive (0.6%), while all other markets showed small negative returns. After generating one of best performing local currency bond market returns in 2004, Indonesia had the lowest return in 2005 (-1.3%).

The iBoxx ABF Pan Asia Index is showing positive returns through 3 March 2006, largely due to further reductions in Indonesian and Philippine local currency bond yields and appreciating local currencies.

Because iBoxx returns are only available from 1 January 2005, a composite East Asian local currency bond index using HSBC Asian Local Bond Index (ALBI) weightings is used to compare prior return performance from 2001

Table 5: **iBoxx ABF Index Family Returns**

Market	Modified Duration (years)	2005 Returns (%)		2006 YTD Returns (%)	
		LCY Bond Index	USD Unhedged Total Return Index	LCY Bond Index	USD Unhedged Total Return Index
PRC	4.68	11.956	14.478	0.963	1.380
Indonesia	3.32	-1.278	-6.869	7.904	14.733
Korea, Rep. of	3.04	-0.612	1.690	1.617	5.629
Malaysia	3.94	5.193	5.725	1.011	2.954
Philippines	3.24	20.888	26.691	5.109	8.640
Singapore	4.66	-0.713	-2.557	-0.951	1.733
Thailand	4.88	0.568	-4.879	2.174	8.291
Hong Kong, China	3.33	-1.582	-1.301	0.325	0.263
Pan-Asian Index	3.88	NA	2.569	NA	4.174
US Govt 1–10 years	3.42		1.512		-0.415

Notes:
1. Market bond indices are from iBoxx ABF Index Family. 2006 YTD is year-to-date returns as of 3 March 2006.
2. Annual return is computed for each year using natural logarithm of year-to-date index value/beginning year index value.
3. Duration is as at end-2005.
Source: AsianBondsOnline, Bloomberg/EFFAS for US Government Bond Index.

(Table 6). In 2005, the index returned 3.2% compared with a 2004 return of 11.8%. Reductions in 2005 returns were largely due to higher interest rates in East Asian markets.

Institutional and Regulatory Developments

Governments across the region continue to promote product innovation and improved market access for bond issuers.

Managed contractual savings institution (CSI) assets continue to grow, creating a steady demand for fixed-income investments. Lack of supply, both in terms of the number of issuers and in diversity of credit quality, has hampered the development of well-functioning bond markets in emerging East Asia. In 2006, a number of government initiatives, both regional and in specific markets, are aimed at addressing these supply issues.

While the specifics of these initiatives vary across markets, they can be classified into five major categories: (i) internationalizing the issuer base; (ii) increasing securitization issues (most markets); (iii) regulatory reforms to clear issuer bottlenecks; (iv) credit enhancements under the Asian Bond Markets Initiative (ABMI); and (v) promoting Islamic instruments.

Table 6: **HSBC Local Currency Bond Indexes: Annual Returns**

Market	Average Duration (years)	Annual Returns (%) In Local Currency					Annual Returns (%) In US Dollars				
		2001	2002	2003	2004	2005	2001	2002	2003	2004	2005
PRC	4.55	7.682	4.050	0.132	(3.102)	13.323	7.694	4.044	0.135	(3.099)	16.248
Indonesia	3.29	9.469	45.536	14.785	19.063	(0.624)	1.838	70.277	20.890	9.446	(6.142)
Korea	3.09	6.545	10.241	5.402	8.915	(1.858)	2.611	22.123	4.864	23.037	0.840
Malaysia	3.96	9.001	2.951	(0.537)	6.850	4.363	8.987	2.978	(0.550)	6.863	4.943
Philippines	3.12	17.713	17.233	10.209	4.072	17.053	14.063	12.859	6.653	3.158	23.836
Singapore	4.63	5.487	9.035	(1.313)	6.699	(0.673)	(0.858)	16.013	0.726	10.513	(2.465)
Thailand	4.93	9.144	10.087	(1.698)	3.863	0.645	7.095	12.896	6.744	5.825	(4.680)
Composite Bond Index	3.81						4.645	20.695	5.123	11.753	3.161
Hong Kong, China	3.44	8.601	9.779	4.339	4.898	(1.372)	8.626	9.768	4.808	4.815	(1.751)

Notes:
1. Market bond indexes are from HSBC's Asian Local Bond Index. The Composite Bond Index was computed using HSBC's current weights and normalized to include the markets listed above.
2. Average duration as of 31 December 2005.
3. Annual return is computed for each year using natural logarithm of year-end index value/beginning-year index value.
Sources: HSBC, Bloomberg LP.

- At the regional level, there are ongoing discussions on the need for a regional credit enhancement mechanism—to improve access of lower-rated entities to markets, thus raising supply of bonds. The possibility of a third Asian Bond Fund (ABF), emphasizing enhancement rather than increased purchases of Asian local currency debt has been mentioned as one possible mechanism.
- In the PRC, the rapid pace of reform in financial market infrastructure continues to raise bond supply, allowing more corporations to tap the bond market for funds, thus reducing reliance on bank financing. In a landmark decision, the authorities have allowed the Three Gorges Company to issue bonds without a guarantee from a state bank. A pilot securitization program was successfully launched in January 2006 with the China Development Bank's collateralized loan obligation. A second RMB5.9 billion (USD719 million) issue is planned for the near future.
- In Indonesia, PT Summit Oto Finance, the auto-financing arm of Sumitomo Corporation, issued the first credit-enhanced rupiah corporate bonds under the ABMI framework in March 2006. The issue was rated AAA on the basis of a commercial guarantee by BoT Mitsubishi UFJ, backed by a secondary guarantee from the Japan Bank for International Cooperation (JBIC). This follows the successful issue similarly structured for Isuzu Motor Company in Thailand in June 2004.
- In Korea, the government plans to consolidate the Securities and Exchange Act, Futures Trading Act, and other capital market-related laws under a single Act. To simplify issuance of innovative capital market instruments, legislation will be passed on practices specifically disallowed, rather than on restrictive provisions governing issue types allowed.
- In Malaysia, heavy demand for local currency debt from CSIs continues with the Malaysian National Mortgage Corporation's (CAGAMAS) latest issues of RMBS heavily oversubscribed. The government plans to expand access to ringgit debt markets for foreign sovereign and quasi-sovereign agencies to further address demand. Bond-pricing agencies to set guide prices for secondary bond market trades will also be introduced, to ensure that mark-to-market valuations are fair to investors. Rules governing local credit rating agencies will also be tightened.
- In the Philippines, a broad range of reforms awaiting regulatory approval is aimed at developing the local currency-denominated corporate market (see Box 2).
- Singapore continues to internationalize its issuer base with the first Singapore dollar bond offerings by such Middle Eastern and Kazakh borrowers as Abu Dhabi Commercial Bank and Kazkommertsbank. Issuer diversity is also being encouraged as universities in Singapore

Box 2: **Helping Improve Philippine Capital Markets**

In tandem with reforms to improve the transaction efficiency of government bond markets, the Philippine government has started a regulatory agenda to reform key provisions of the legal system—ultimately aimed at improving the domestic investment environment. Significant steps include the elimination of the documentary stamp tax on secondary trading in February 2004 and passage of the Securitization Law in March 2004.

The Philippine domestic bond market is characterized by a narrow investor base limited to a few institutional investors. Awaiting approval is the Revised Investment Company Act (RICA), which aims to enhance and rationalize regulations for investment companies, to broaden the investor base. RICA eliminates restrictions over foreign ownership of investment companies; opens mutual fund operations to foreigners; and allows mutual funds to sell securities by public offering, provided these funds are invested in the Philippines.

The dearth of corporate bond issues in the domestic market stems largely from the lack of a critical market infrastructure to facilitate primary and secondary market trading. The launch of the Fixed Income Exchange (FIE) in 2005 aims to boost market liquidity by providing a price discovery mechanism for secondary trading of domestic debt and other fixed-income securities. Full operation of the FIE is pending on completion of other regulatory requirements, including a code of conduct for interbank market trading, rules on the rights of retail investors, and clarification on third-party custodian rules.

The lack of innovative and diversified financial products in the market leaves investors and intermediaries with limited investment choices. The availability of a wider array of financial products would stir market activity by creating greater market depth, breadth, and liquidity. It would also enable the market to better satisfy investors' diversified appetite for risk. Remaining measures currently in the legislature include amendments to the Philippine central bank (Bangko Sentral ng Pilipinas) charter, clarifications to the Corporate Recovery Act, Personal Equity and Retirement Account (PERA) Bill, Credit Information System Act, a fully-revised Corporation Code of the Philippines, and an Insurance Code of the Philippines.

If these measures are passed and legally adhered to, they would help clarify investor rights and hopefully increase the confidence of international and local investors in Philippine capital markets.

plan to begin tapping the bond market for funding requirements. Small- and medium-sized enterprise (SME) participation in capital markets is also being encouraged under the SME Loan Scheme, which facilitates asset securitization.

- In Thailand, the first major municipal bond issues and hybrid debt will be offered in 2006. In February, Aeon Thana Sinsap issued the first Thai baht securitization with subordinated tranches, aimed at addressing investor's desire for lower-rated, higher-yielding paper. Additionally, high credit quality instrument demand remains strong with more foreign multilateral issuers expected this year. To ensure a consistent supply of quality debt instruments, the Securities and Exchange Commission has tightened disclosure and ratings requirements for short-term instruments to bring them in line with other debt instruments. The Thai Bond Market Association (ThaiBMA) was also restructured to better disseminate information on new issues, and to act as an impartial securities pricing agency.
- In Viet Nam, several corporations are expected to issue local currency-denominated bonds, adding to current corporate bonds outstanding of VND2 trillion (USD125 million). The Ministry of Finance has also requested a study of insurance industry reforms to mobilize more capital in the market. It is anticipated that this will lead to significantly increased demand for new issues of local currency corporate debt.

Larger enterprises such as Vietnam Airlines, Petro Vietnam, and Electricity of Viet Nam are expected to follow the sovereign lead, issuing US dollar-denominated bonds internationally in 2006.

- Several initiatives are also underway to further promote the debt market in Hong Kong, China. These are geared toward increasing the use of the existing linkage with the central securities depository in the PRC, and the development of a retail bond market with increasing availability of more efficient bond pricing information.

Policy Challenges for Bond Market Development

Despite increases in bonds outstanding, market liquidity is low.

Bond market turnover ratios have shown little improvement in both government and corporate sectors despite the significant deepening of the bond market. Even in markets where government bond market liquidity is relatively high, such as Hong Kong, China; and Korea, there has been no corresponding increase in corporate bond market liquidity. An increase in transaction volume improves market efficiency as it assists participants to assess the risk premium of similar securities. Against this backdrop, there is merit in:

- encouraging governments—as a policy priority—to take steps to improve liquidity in both in both government and corporate bond markets.
- establishing “bond pricing platforms” to set price guidance for both liquid and illiquid issues.
- encouraging more immediate transaction disclosure. While most markets publish trade data on a daily or weekly basis, the existence of more reliable intraday data can increase turnover. Data need not be live, as this can reduce the effectiveness of primary dealers, but could be slightly delayed (e.g., 30 minute delayed data). Publication of more extensive information such as market depth and bid/offer data could aid turnover.
- accelerating derivative instrument development and exchange-traded debt instruments. A successful over-the-counter or derivatives market can increase transactions in bond markets as investors and traders hedge the interest rate and credit risk components of physical bonds. Effective hedging mechanisms can encourage asset managers to transact in larger parcels of bonds and assume greater portfolio risk.

Timely information about issuers, which has grown significantly in recent years, needs further improvement.

While there has been significant improvement in terms of the availability of information about issuers, it has varied across the emerging East Asian region. Investors do not have access to the same depth of information in all markets. Additional disclosure comes with a cost, and thus needs to be considered. There is, therefore, a need for:

- encouraging governments to consider steps to improve the quality of credit rating agencies on a country or regional basis, and to induce them to report more frequently.
- making yearly ratings guidance compulsory for issue sizes above a certain threshold. Ratings agencies might be required to publish an issue note as part of the ratings process.
- encouraging governments to require issuers to increase the reporting frequency of materially important information to the bond market. This would place the onus on the issuer to provide this information rather than the agency.

Investor diversity remains low, potentially compressing risk premiums and limiting bond market development.

The investor base tends to be limited to dominant investor classes, such as government-controlled CSIs, insurance companies, or commercial banks. Their holdings of local currency bonds are normally proscribed by regulation. As savings and pension plans grow, CSI demand for new fixed-income securities investment remains high and in some cases outstrips bond market growth. Under these conditions, there is very little incentive to trade, and buy-to-hold investment strategies are employed. Voracious asset demand has the effect of crowding out new investors such as bond and hedge funds that tend to employ different trading strategies; and compounds the illiquidity of the market as bonds are held in portfolio until maturity and not traded. Government measures to diversify the investor base include:

- encouraging new investor classes, including international financial intermediaries and local institutional investors, to enter the market without undue concentration by such investor groups. International investor classes tend to have different investment criteria and trading strategies to local investors, ensuring a divergence of views that can stimulate turnover.
- encouraging wider investor diversification by providing more equal treatment regarding transaction-related requirements and taxation.

Financial Deepening in Emerging East Asia[4]—An International Perspective

There is a general perception that although emerging East Asia has done well in developing world class export sectors and industries that have been the engines of economic growth for decades, it has generally been less successful in deepening financial markets. According to this view, both the size and composition of financial markets in emerging East Asian economies should compare poorly with developed countries. For example, a study by McKinsey Global Institute cites Asia's low share of the world's financial assets compared with the US, UK, Eurozone, and Japan.[5] Emerging East Asia's 3% share of the world's USD 44 trillion local currency bonds outstanding in 2004 compares poorly with the US (44%), EU15 (26%), and Japan (20%).

Similarly, it is well known that various other indicators of emerging East Asia's financial deepening—such as total financial assets, banking assets, equity market capitalization, and local currency bonds outstanding—are low in comparison with developed countries. It has also been argued that emerging East Asian economies have heavily bank-dominated financial sectors, and that their capital markets—especially bond markets—are small in size compared with banking sectors.

While it is true that compared with their developed counterparts, emerging East Asian economies are characterized by a lower degree of financial deepening, heavily bank-dominated financial sectors, and small equity and bond markets, such comparisons are problematic because they ignore differences in the degree of economic development. It is reasonable to expect the degree of financial deepening to be dependent on the stage of an economy's overall development—countries at higher stages of economic and institutional development are likely to have bigger financial markets than those at lower stages. Therefore, an objective comparison should adjust financial market indicators to the level of economic development before making inter-country comparisons or reaching conclusions over the size and composition of financial markets.

A commonly used proxy for measuring the level of economic development is a country's per capita GDP. Hence, one way of comparing financial deepening across countries is to, first, develop an inter-country benchmark of the relationship between various indicators of financial deepening on the one hand and the level of per capita income on the other, and second, compare how individual countries perform in comparison with the defined international benchmark.

[4] In this section, emerging East Asia covers PRC; Hong Kong, China; Indonesia; Korea; Malaysia; Philippines; Singapore; Thailand; and Viet Nam.
[5] McKinsey & Company, "Mapping the Global Capital Market 2006," January 2006.

This section uses such an approach to compare emerging East Asia's financial deepening from an international perspective. Using several indicators of the size and composition of the financial markets of 46 countries—including both Organisation for Economic Co-operation and Development (OECD) and emerging market economies (see Table 7 for a list of countries and their corresponding symbols)—international benchmarks of the relationship between various financial market indicators and per capita GDP are statistically derived. The positions of emerging East Asian economies vis-à-vis such income-adjusted benchmarks are then used to see how emerging East Asian economies compare with other economies worldwide. Two sample periods with three-year average figures for 1995–1997 and 2002–2004 were used for deriving these international benchmarks. The 1995–1997 period was chosen to represent the years immediately preceding the 1997–1998 Asian financial crisis, while the 2002–2004 period represents the most recent sample period. These three-year averages, instead of yearly figures, are used to minimize yearly volatilities that may be present in the data. Comparisons across the two sample periods assess (i) whether the international benchmarks themselves have shifted over the two periods, and (ii) how emerging East Asian economies have performed over time in terms of financial deepening indicators.

Economies close to the international benchmark[6] are categorized as average performers, those above the benchmark as above-average performers, while those below the benchmark as below-average performers.

A note of caution is necessary in interpreting the cross-country comparisons presented here. Comparisons are limited to the size and composition of financial markets, and do not cover the "quality" of these markets. To assess emerging East Asian financial market quality, it is important to examine issues such as (i) the efficiency with which these markets conduct financial intermediation, (ii) the degree of market liquidity, (iii) the regulatory and supervisory framework governing the markets, and (iv) prudential, accounting, and auditing structures within the markets, among others. These issues, although crucial in assessing the strength of emerging East Asian financial markets, are beyond the scope of the statistical comparisons presented here and may be a subject for future considerations.

[6] These are economies within one standard deviation of the cross-country regression of the relevant financial market indicator on per capita GDP.

Table 7: **List of Countries Selected as Sample**

Symbol	Country	Region	Classification in this study
AU	Australia	AU / NZ	Mature Market
NZ	New Zealand	AU / NZ	Mature Market
CN	China, PR	East Asia	Emerging East Asia
HK	Hong Kong, China	East Asia	Emerging East Asia
ID	Indonesia	East Asia	Emerging East Asia
JP	Japan	East Asia	Mature Market
KR	Korea, Rep. of	East Asia	Emerging East Asia
MY	Malaysia	East Asia	Emerging East Asia
PH	Philippines	East Asia	Emerging East Asia
SG	Singapore	East Asia	Emerging East Asia
TH	Thailand	East Asia	Emerging East Asia
IN	India	Rest of Asia	Rest of Asia
LB	Lebanon	Rest of Asia	Rest of Asia
PK	Pakistan	Rest of Asia	Rest of Asia
AT	Austria	EU15	Mature Market, Eurozone
BE	Belgium	EU15	Mature Market, Eurozone
FR	France	EU15	Mature Market, Eurozone
NL	Netherlands	EU15	Mature Market, Eurozone
PT	Portugal	EU15	Mature Market, Eurozone
DK	Denmark	EU15	Mature Market
FI	Finland	EU15	Mature Market, Eurozone
DE	Germany	EU15	Mature Market, Eurozone
GR	Greece	EU15	Mature Market, Eurozone
IE	Ireland	EU15	Mature Market, Eurozone
IT	Italy	EU15	Mature Market, Eurozone
UK	United Kingdom	EU15	Mature Market
ES	Spain	EU15	Mature Market, Eurozone
SE	Sweden	EU15	Mature Market
CZ	Czech Republic	EU	Emerging Market, Eastern Europe
HU	Hungary	EU	Emerging Market, Eastern Europe
PL	Poland	EU	Emerging Market, Eastern Europe
SK	Slovakia	EU	Emerging Market, Eastern Europe
TR	Turkey	Rest of Europe	Rest of Europe
IS	Iceland	Rest of Europe	Mature Market
NO	Norway	Rest of Europe	Mature Market
RU	Russia	Rest of Europe	Emerging Market, Eastern Europe
CH	Switzerland	Rest of Europe	Mature Market
CA	Canada	North America	Mature Market
US	United States	North America	Mature Market
MX	Mexico	North America	Emerging Market, Latin America
AR	Argentina	Latin America	Emerging Market, Latin America
BR	Brazil	Latin America	Emerging Market, Latin America
CL	Chile	Latin America	Emerging Market, Latin America
CO	Colombia	Latin America	Emerging Market, Latin America
PE	Peru	Latin America	Emerging Market, Latin America
ZA	South Africa	Africa	Africa

Financial Market Deepening

While financial deepening is advancing worldwide, emerging East Asia is generally outperforming the rest of the world.

The first exercise is to examine the relationship between the degree of financial deepening—defined as the size of financial market (sum of the banking sector, equity market, and bond market) relative to GDP—in the vertical axis, and per capita GDP in the horizontal axis. The international benchmark is given by a linear regression line. With three emerging East Asian economies around the international benchmark and four others falling in the above-average category, the region's performance in financial market deepening in 2002–2004 is average to above-average (Figure 8-a). Emerging East Asian economies that performed above-average are Hong Kong, China; Malaysia; Thailand; and PRC. Philippines, Korea, and Singapore are within the average performance range. Only Indonesia performed below-average in terms of overall financial deepening. Among the above-average performers, Hong Kong, China and Malaysia stand out as exceptional cases—positioned way above the international benchmark.

Compared with 1995–1997 (Figure 8-b) the results show several changes within the region. The economies with above-average financial market deepening in 1995–1997 included the Philippines (though only slightly above), while the PRC was well within the average range with Indonesia toward the lower end. Malaysia; Hong Kong, China; and Thailand performed above-average, with Korea and Singapore average, only slightly below the benchmark. Indonesia's shift from being an average performer in 1995–1997 to being a below-average performer in 2002–2004 may reflect the closure of several banks and financial institutions as a result of the 1997 crisis.

Outside emerging East Asia, the US strongly outperforms other economies in financial deepening in both the 2002–2004 or 1995–1997 periods. Several developed markets that might be expected to show above-average results in financial deepening actually performed merely average (e.g., Australia, Germany, Japan, and UK).

Figure 8-a. **Financial Market Deepening**
(2002-2004 Average)

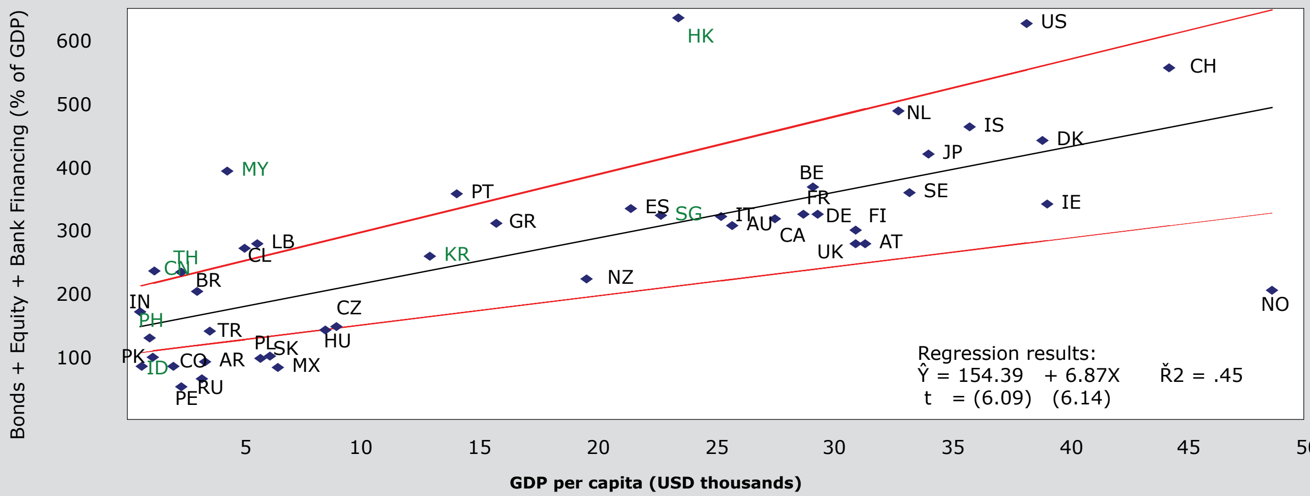
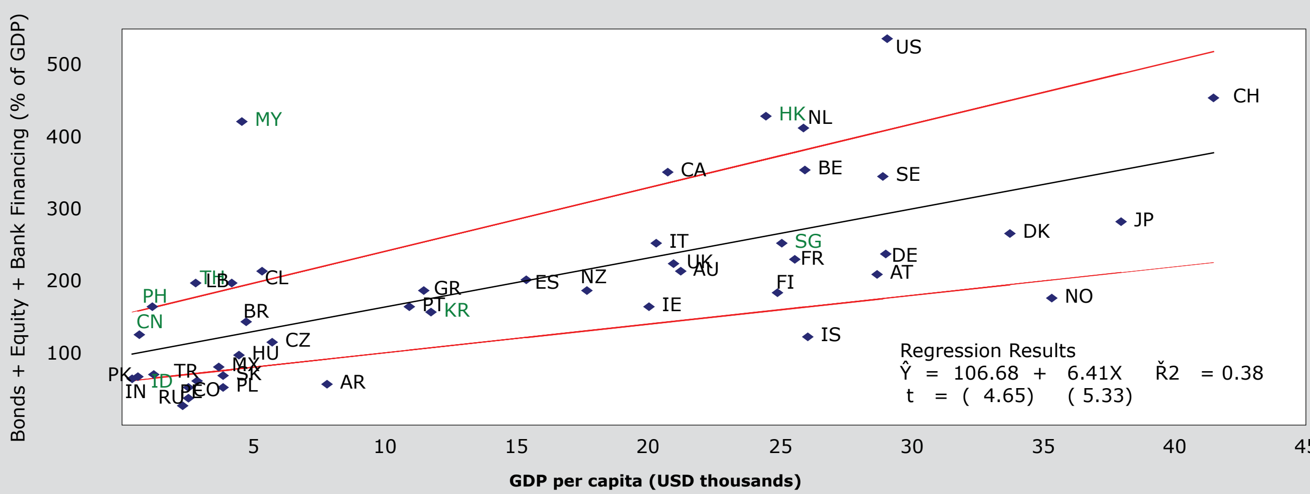


Figure 8-b. **Financial Market Deepening**
(1995-1997 Average)



Banking Sector Deepening

Adjusted for per capita income levels, most emerging East Asia's banking sectors—particularly in PRC, Malaysia, and Thailand—show a degree of deepening well above the international norm, particularly compared with some developed markets.

The second exercise is to study the relationship between banking sector deepening and per capita GDP. With four emerging East Asian economies around the benchmark and three performing above-average, the region's performance in banking sector deepening in 2002–2004 can be considered average to above-average (Figure 9-a). The economies with banking sectors performing above-average in 2002–2004 are PRC, Malaysia, and Thailand. Korea; Hong Kong, China; Philippines; and Singapore performed within the average range, with only Indonesia's banking sector performing below-average. In 1995–1997, the situation was basically the same, except for Indonesia's banking sector, which was then an average performer (Figure 9-b). This again can be explained by the 1997 crisis, which led to a shrinking of Indonesia's banking sector.

Once again, the US exhibited a banking sector well above the international benchmark, both in 2002–2004 and in 1995–1997. Again, several developed markets one would expect to show above-average banking sector deepening were within the average performance category, both in 2002–2004 and in 1995–1997 (e.g., Australia, Germany, Japan, and UK).

Capital Market Deepening

The performance of emerging East Asia's capital markets is less impressive than its banking sector, yet robust.

The third exercise is to examine the relationship between capital market deepening—the sum of equity and bond markets as a ratio of GDP—and per capita GDP. Emerging East Asia's performance in capital market deepening in 2002–2004 is average in most of the region's economies (Figure 10-a). Once again, there are two notable exceptions to this average performance. Hong Kong, China is the best performer of all 46 economies surveyed in 2002–2004, with Malaysia also performing well above-average. All the remaining emerging East Asian markets produced average results. The situation in 1995–1997 is just as interesting (Figure 10-b), with Malaysia outperforming Hong Kong, China in the above-average category. The Philippines performed slightly above-average in this precrisis period, with all the other emerging East Asian markets showing average capital market deepening.

Interestingly, in 2002–2004 many developed markets expected to post above-average performance in capital market deepening fell in the average performance range, including the US. In 1995–1997, the situation was the same, except for the US, which was then the top performing market. The effects of the 2000 collapse of technology stocks and the emergence of corporate governance issues with the collapse of several major US firms may have been responsible for the somewhat lower US performance in 2002–2004.

Figure 9-a. **Banking Sector Deepening**
(2002-2004 Average)

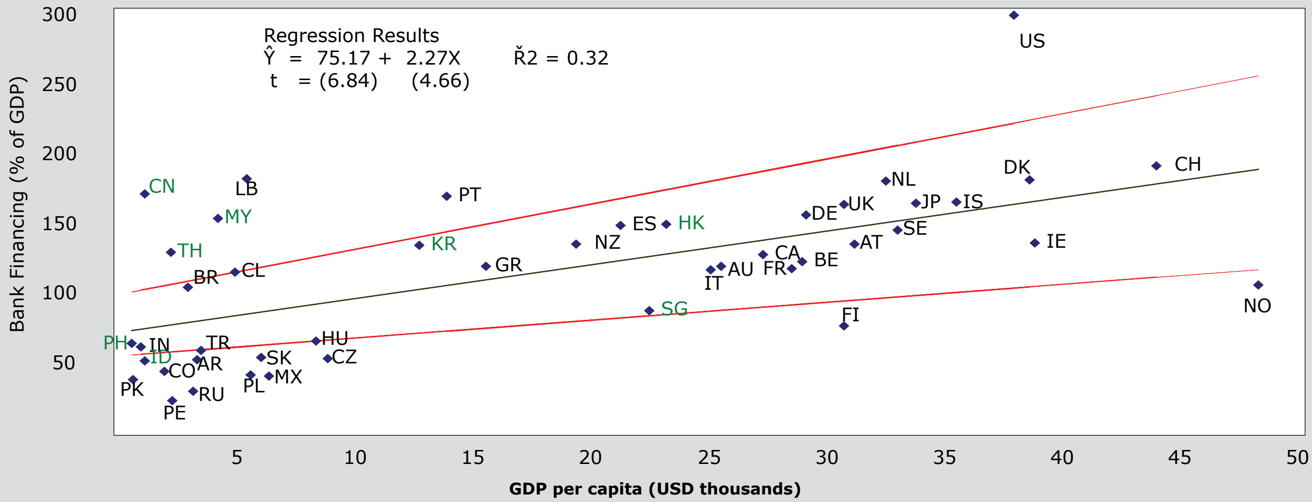
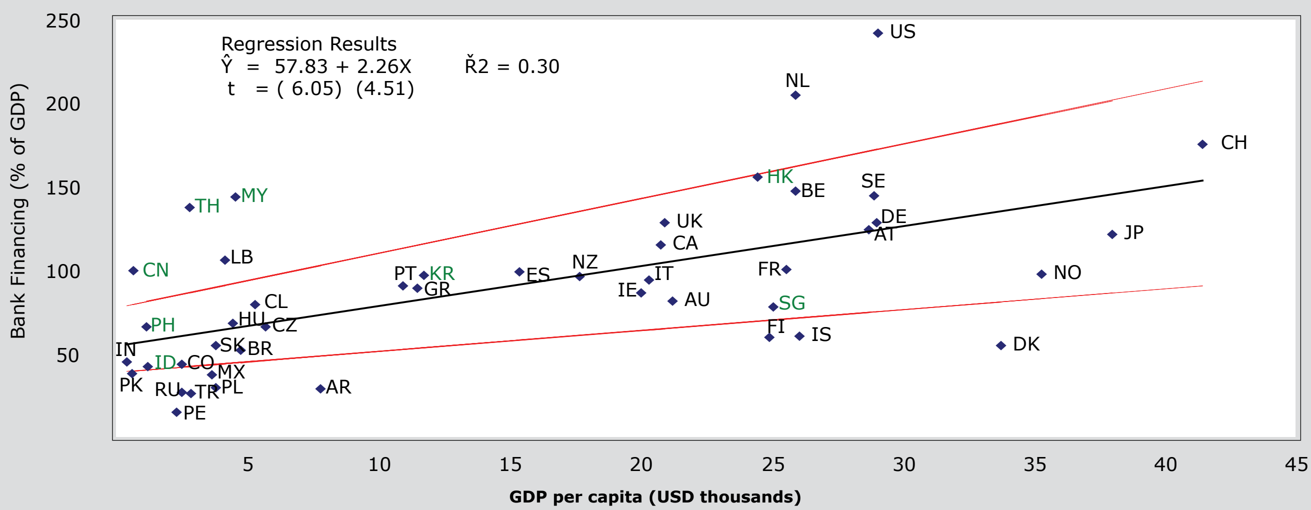


Figure 9-b. **Banking Sector Deepening**
(1995-1997 Average)



Equity Market Deepening

In terms of equity market deepening, Hong Kong, China; Malaysia; and Singapore clearly outperform developed economies while all other emerging East Asian markets fall in the average performance category.

In 2002–2004, many emerging East Asia's equity markets fell close to the international benchmark, with three markets above-average (Figure 11-a).

Figure 10-a. **Capital Market Deepening**
(2002-2004 Average)

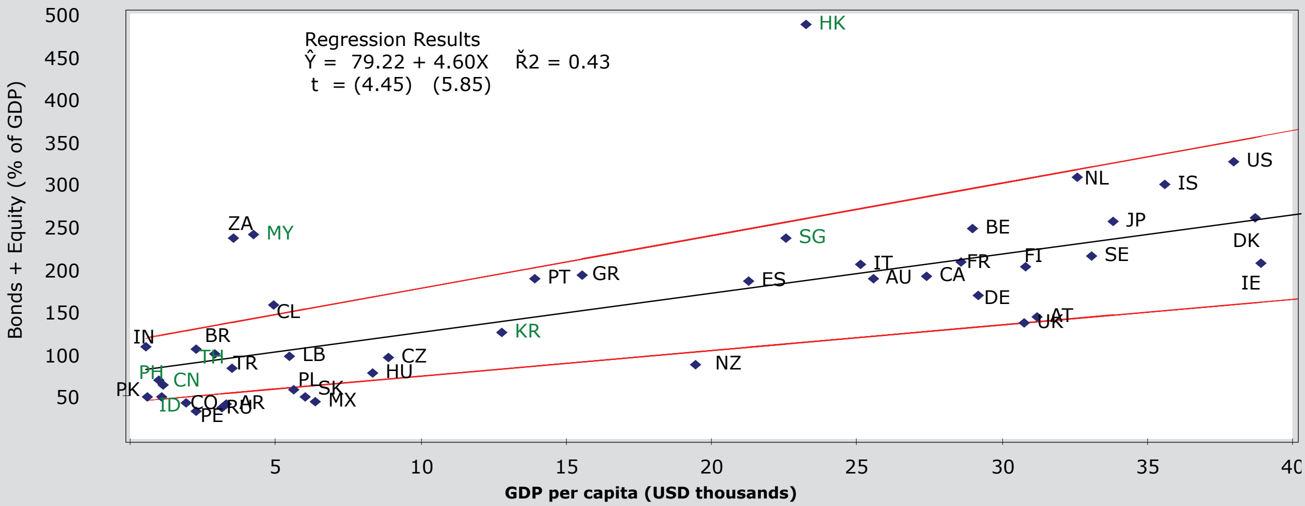
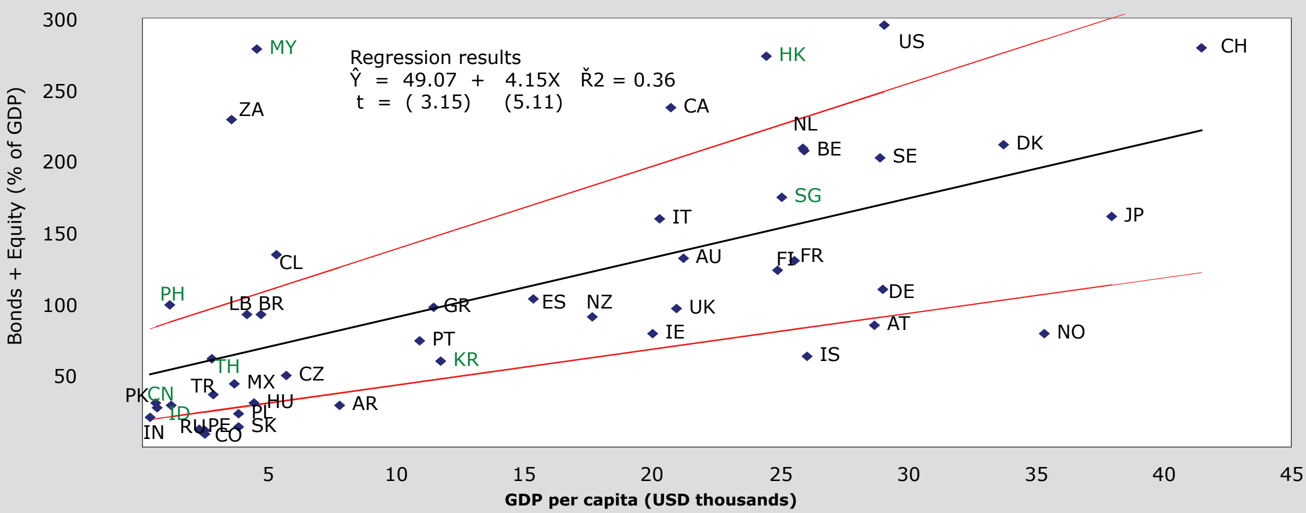


Figure 10-b. **Capital Market Deepening**
(1995-1997 Average)



Thus, the region's overall performance in equity market deepening falls in the average to above-average category. Hong Kong, China is again the top performer among all markets covered, with Malaysia and Singapore about equal, though within the above-average category. PRC, Indonesia, Korea, Philippines, and Thailand are around the benchmark. The situation is quite similar in 1995-1997 across emerging East Asian markets, with Hong Kong, China; Malaysia; and Singapore performing above-average in equity market deepening, along with the Philippines (Figure 11-b). PRC, Indonesia, Korea, and Thailand show average performance.

For developed markets expected to show above-average performance in equity market deepening, Australia, Germany, Japan, UK, and US are quite sobering in terms of their positions relative to the international benchmark in 2002–2004. Australia and the US, although above the benchmark, fall within the average range and thus are considered average performers in equity market deepening. For Germany, Japan, and UK, however, while these markets are within the average confidence interval, they are below the international benchmark. The positions relative to the benchmark in 1995–1997 was only slightly different, with the US near the top of the average category, only slightly below the upper end of the confidence interval that would have placed it as above-average. But the positions of the other developed countries were the same, with only Australia actually above the international benchmark, though well within the average category.

It is clear that Hong Kong, China; Malaysia; and Singapore outperformed nearly all developed economies in terms of equity market deepening both in 1994–1995 and 2002–2005.

Bond Market Deepening

Emerging East Asia's bond market deepening is less impressive than its banking sector and equity market deepening, with only Malaysia showing above-average performance.

Bond market deepening captures the sum of government and corporate bond market deepening. Among emerging East Asian economies, Malaysia is the only above-average performer compared with the international benchmark in bond market deepening in 2002–2004. With PRC, Indonesia, Korea, Philippines, and Thailand close to the benchmark and well within the confidence interval, emerging East Asia's performance in bond market deepening for the period can be considered close to average (Figure 12-a). Singapore is barely within the lower limit of the confidence interval. Hong Kong, China, however, is below the confidence interval and thus falls in the below-average performance category in terms of bond market deepening. Interestingly, Hong Kong, China's bond market is not a major contributor to its otherwise strong capital market deepening—in contrast to its equity market deepening. This finding further confirms that Hong Kong, China's capital market, as well as its overall financial market, is basically equity driven. Hong Kong, China's above-average performance in overall financial market deepening as well as capital market deepening is largely due to its large equity market. In 1995–1997, not only Hong Kong, China fell below the benchmark's lower confidence interval, but Singapore and Indonesia as well (Figure 12-b). Singapore's performance upgrade from below-average in 1995–1997 to average in 2002–2004 shows its significant

Figure 11-a. **Equity Market Deepening**
(2002-2004 Average)

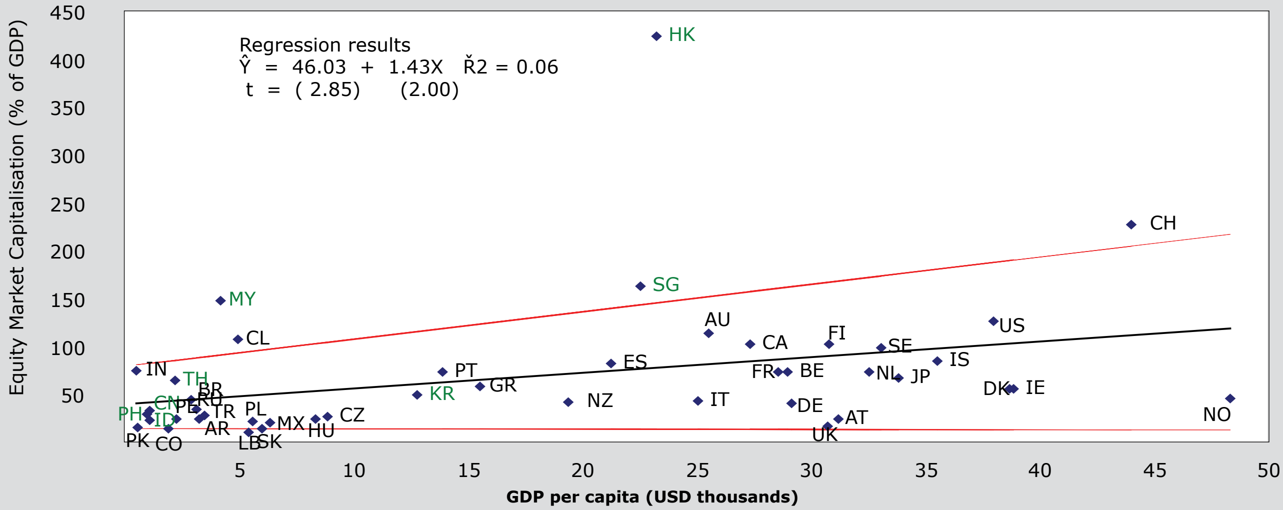
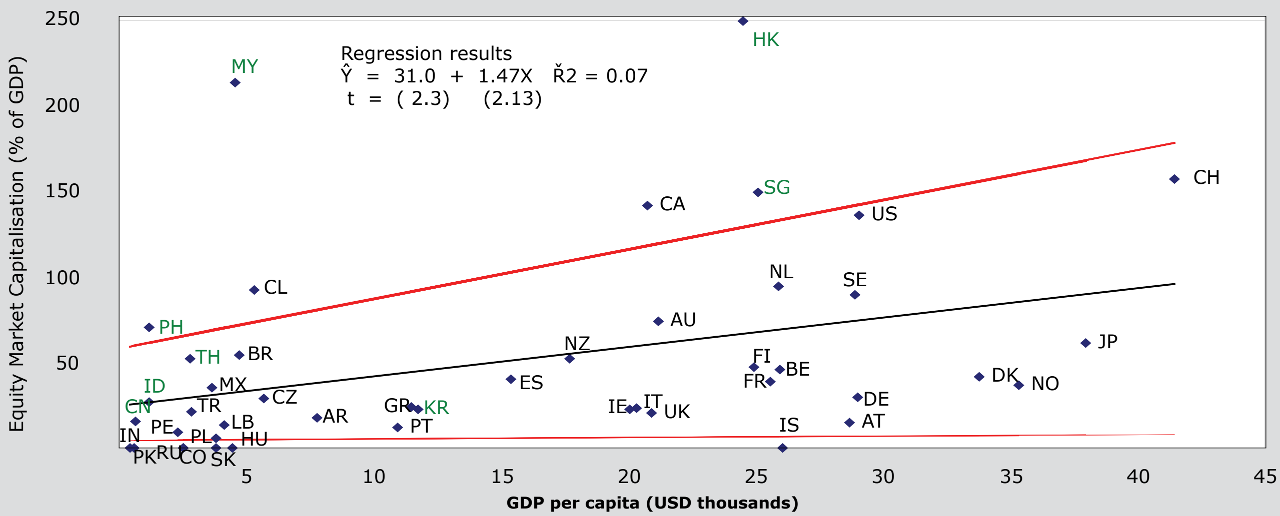


Figure 11-b. **Equity Market Deepening**
(1995-1997 Average)



contribution to the region's overall bond market deepening in recent years. Malaysia remained well above the benchmark in the precrisis period as well, illustrating the country's consistently above-average performance in bond market deepening.

In the case of developed markets, only Japan shows above-average performance in bond market deepening, with the US barely within the average category. Germany and the UK are very close to the international benchmark, while Australia is within the below-average category. In 1995–1997, the US showed above-average performance in bond market

Figure 12-a. **Bond Market Deepening**
(2002-2004 Average)

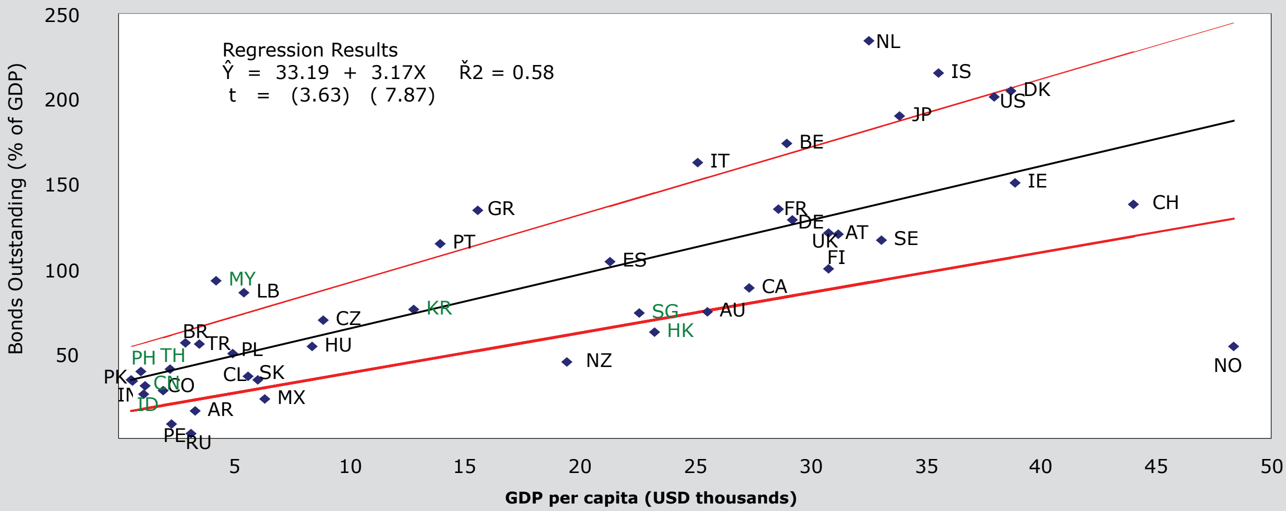
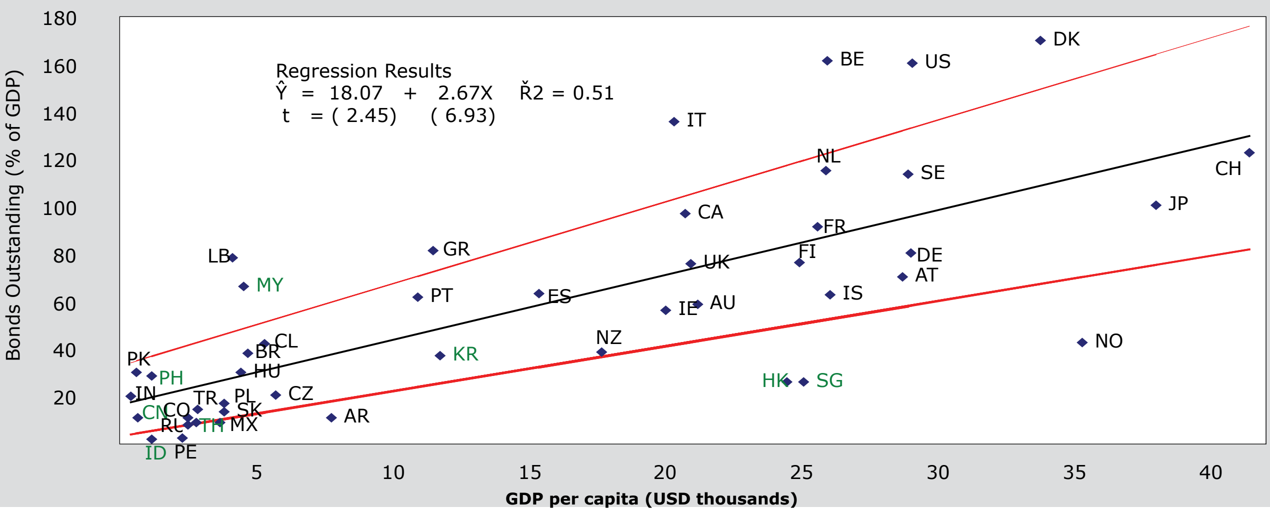


Figure 12-b. **Bond Market Deepening**
(1995-1997 Average)



deepening, while Japan was below the international benchmark but well within average performance. Australia, Germany, and UK all showed average performance as well. Again, it is interesting that Malaysia was already performing better in 1995–1997 than most developed markets in terms of bond market deepening.

Government Bond Market Deepening

In terms of government bond market deepening, most emerging East Asian economies were average performers; however, Korea, Singapore, and Thailand have shown improvements since the Asian financial crisis.

In 2002–2004, most emerging East Asian economies fell within the confidence interval of the government bond market benchmark (Figure 13-a). However, the PRC and Hong Kong, China were in the below-average international category in government bond market deepening. In 1995–1997, Hong Kong, China; Indonesia, Korea, Singapore, and Thailand performed below-average (Figure 13-b). The upgrade of Korea, Singapore, and Thailand to average in 2002–2004 reflects emerging East Asia's overall government bond market deepening.

Among developed markets, Japan is the top above-average performer while Germany, UK, and US were average performers, with Australia just within the below-average category.

Corporate Bond Market Deepening

In terms of corporate bond market deepening most emerging East Asian economies are average performers, except for Malaysia, which performed above-average.

In 2002–2004, all emerging East Asia fell under the average category in corporate bond market deepening, with the exception of Malaysia, which was above-average (Figure 14-a). Interestingly, international benchmarking shows that up to about USD8,000 per capita income, most economies do not have large corporate bond markets. Still, emerging East Asia already exhibits potential for corporate bond market development, with an average performance. Malaysia has a corporate bond market size corresponding to a per capita income level about four times its own. In 1995–1997, the situation was the same for emerging East Asian markets, except for Hong Kong, China and Singapore, which performed below-average (Figure 14-b). Back then, the US already showed an above average performance in corporate bond market deepening. Meanwhile, UK, Germany, Japan, and Australia all showed average performance in corporate bond market deepening.

Among developed markets, the US performs above-average in corporate bond market deepening in both periods. However, the performance of Australia, Germany, Japan, and UK are all average. Malaysia, and to some

Figure 13-a. **Government Bond Market Deepening**
(2002-2004 Average))

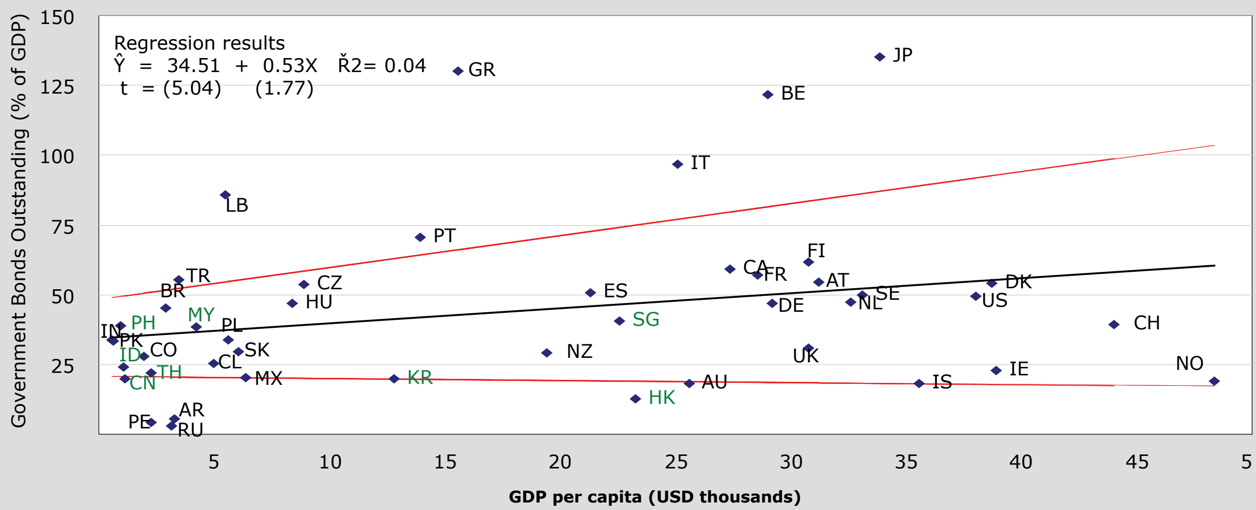
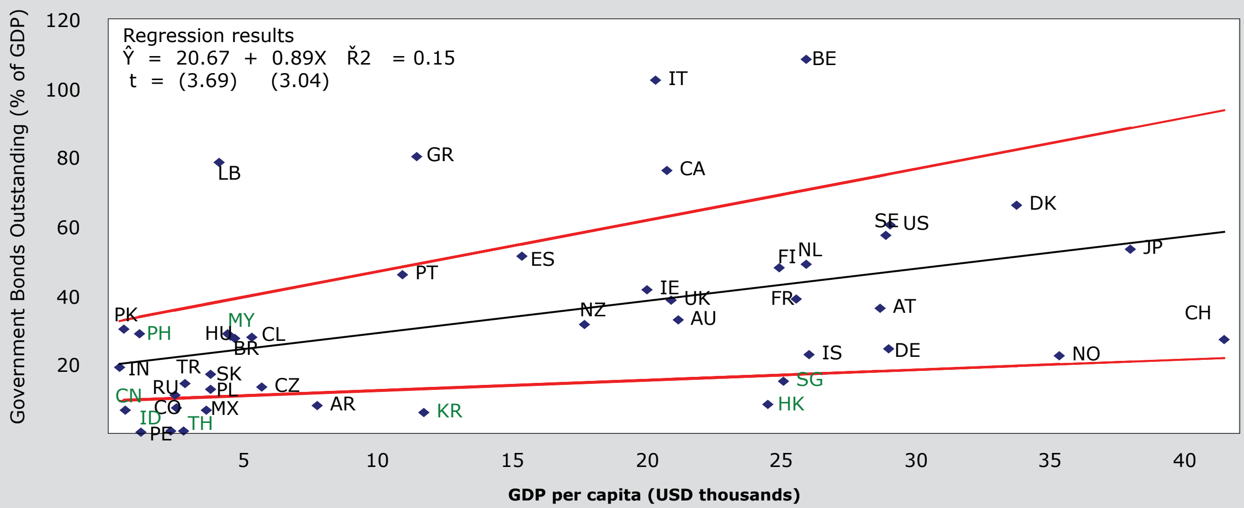


Figure 13-b. **Government Bond Market Deepening**
(1995-1997 Average)



extent Korea, are performing better than these mature markets in terms of corporate bond market deepening.

The financial sectors of emerging East Asian economies remain somewhat unbalanced in favor of banks, but this is true for most economies, not only among emerging markets, but among developed markets as well.

Figure 14-a. **Corporate Bond Market Deepening**
(2002-2004 Average))

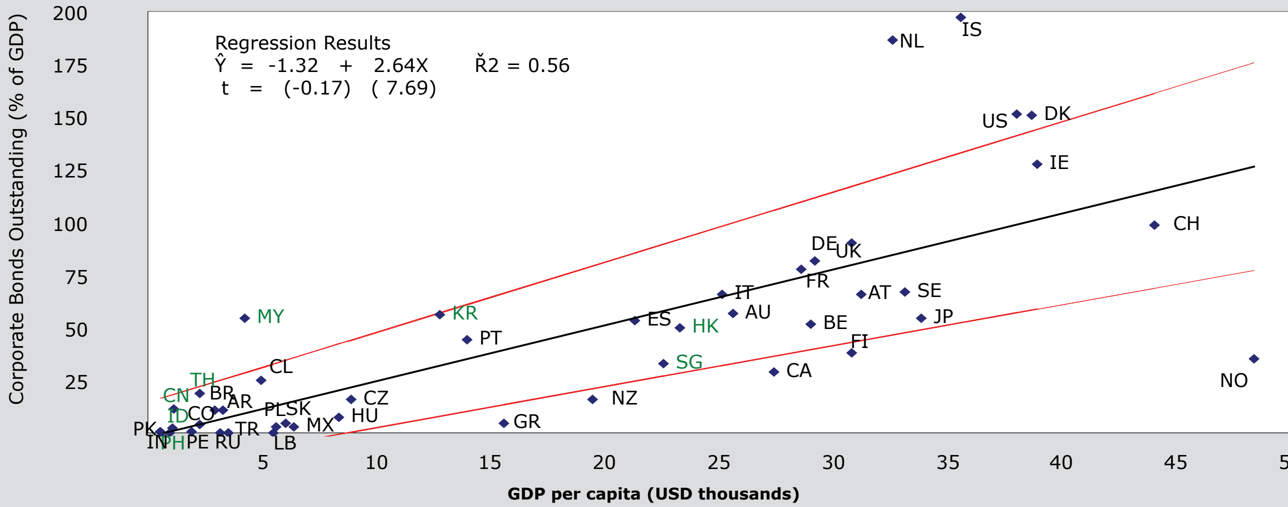
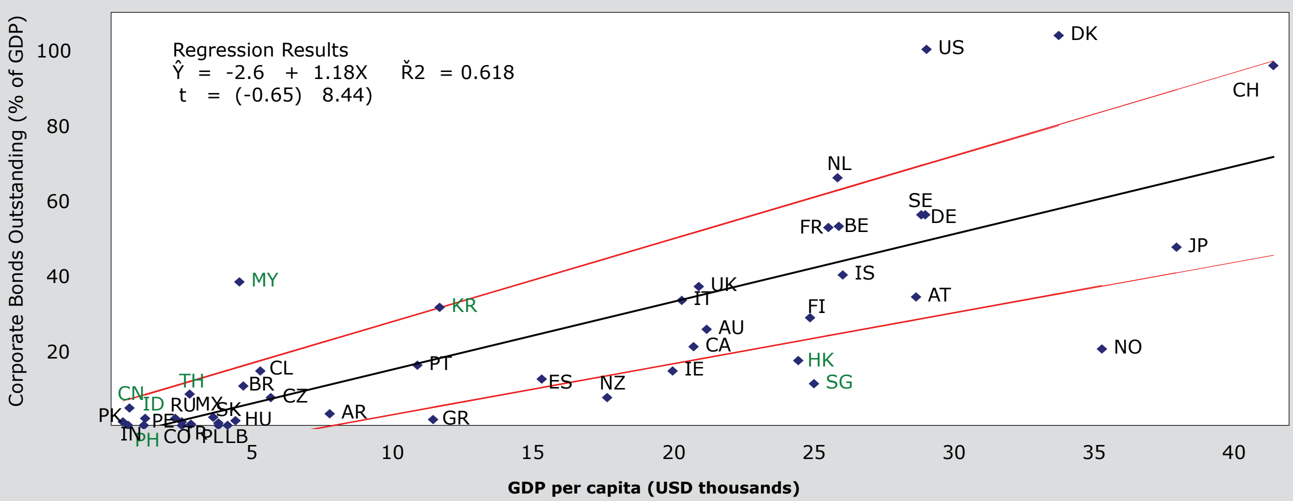


Figure 14-b. **Corporate Bond Market Deepening**
(1995-1997 Average)



The financial sectors of emerging East Asian economies remain somewhat unbalanced in favor of banks, but this is true for most economies, not only among emerging markets, but among developed markets as well.

One test of corporate bond market deepening is how corporate bond market activity compares with private bank financing activity in the economy. One indicator is the corporate bond/private bank financing ratio. For 2002–2004, most emerging East Asian economies, with the exception of Malaysia, fall around the international benchmark, indicating a relatively balanced financial sector (Figure 15-a). Malaysia has a bond market-biased financial system. But developed markets like Australia, Japan, UK, and US also fall around the international benchmark, indicating a relatively balanced bond market for private sector financing relative to bank financing. This was true as well in 1995–1997, though Hong Kong, China and Singapore had a bank-biased financial system (Figure 15-b).

On the whole, emerging East Asian economies will have to work harder to deepen corporate bond markets and need to explore policy initiatives to attain larger corporate markets, such as through those of the ABMI and the ABF.

East Asian Financial Market Deepening Compared with the Rest of the World

Financial deepening in emerging East Asia is moving ahead at a faster rate than in other parts of the world.

At the global level, the pace of financial deepening has increased since 1995–1997. Generally, upward shifts in the intercept and slope of the international benchmark indicate a deepening of financial markets, the banking sector, capital markets, equity markets, bond markets, government bond markets, and corporate bond markets (Table 8). Judged by the various indicators of financial deepening described in this section, most emerging East Asian economies have either eclipsed the worldwide acceleration in financial deepening, or have at least kept pace with it.

Further analysis utilizing a Chow test—measuring how significantly each type of global market has been deepening over time—shows statistically that only the financial market, capital market, and corporate bond market have been significantly deepening (Table 9). This suggests that financial and capital markets have been deepening from 1995–1997 to 2002–2004, in large part due to corporate bond market development.

Emerging East Asia's financial deepening is also proceeding at a faster pace than other emerging markets in the rest of the world. Emerging East Asia has more above-average performers in financial deepening compared with Latin America (Table 10) and Eastern Europe (Table 11).

In Latin America's emerging markets, Chile and Brazil have led the region in carrying out market-oriented reforms over the past 15 years, and thus performed above the international benchmark in the four broad areas of financial deepening. In bond markets, however, while government bond markets may be relatively advanced—due to high financing needs

Figure 15-a. **Corporate Bond/Private Bank Financing Ratio**
(2002-2004 Average)

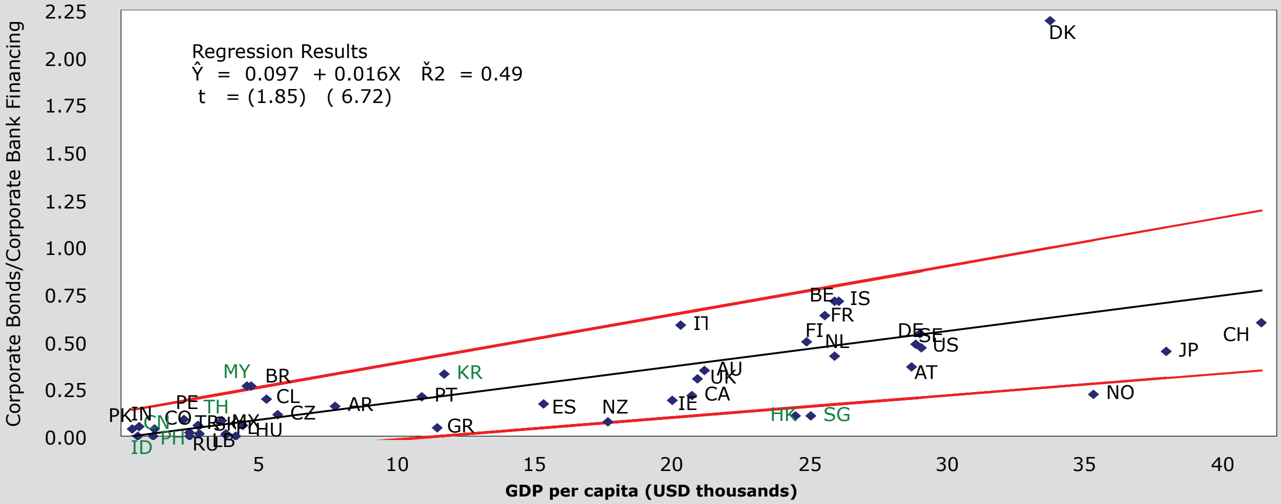
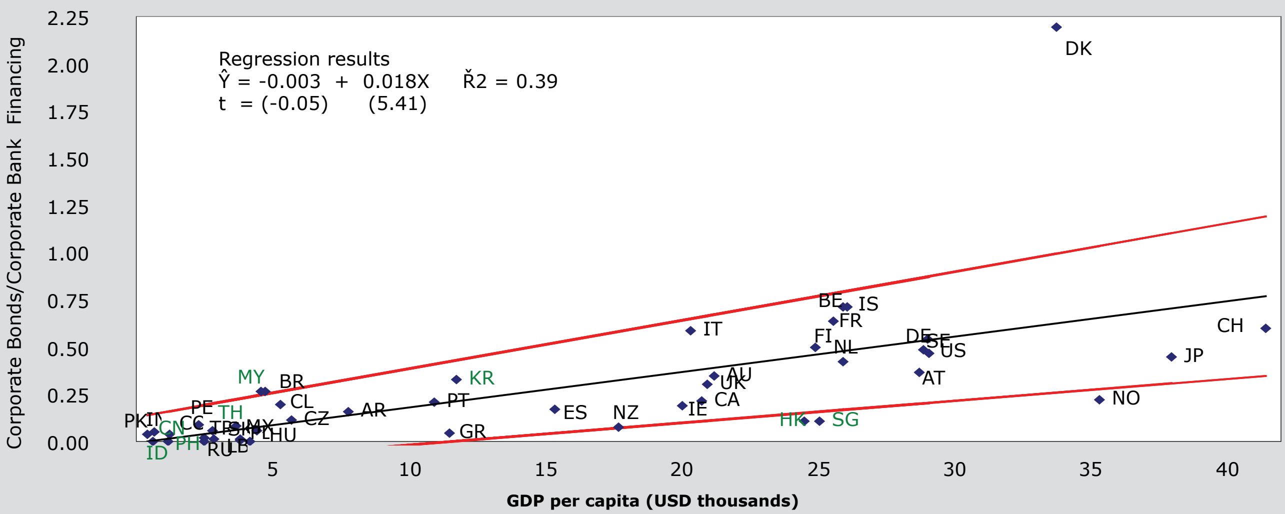


Figure 15-b. **Corporate Bond/Private Bank Financing**
(1995-1997 Average)



of the public sector—much of the domestic government bond issuance was either in US dollars or was US dollar-linked. Only Brazil was above the international benchmark in terms of local currency government bonds in 2002–2004. Latin America's corporate bond markets are far less developed, and with greater policy efforts to shift financing into local currency bonds—also in response to financial crisis—Argentina, Brazil, Colombia, and Chile performed above the benchmark in 2002–2004, the same number as in emerging East Asia.

In Eastern Europe, there have been many more fundamental policy issues to contend with as governments shifted toward market economies during the period. With the exception of government bonds in the Czech Republic, Hungary and Poland, none of the economies surveyed performed above the international benchmark in terms of financial deepening.

One reason emerging East Asia performed better is the conscious policy effort, both regionally and in specific economies, to deepen financial structures, particularly in response to the Asian financial crisis.

Table 8: **Worldwide Financial Markets Deepening**

	1995-1997	2002-2004	Emerging East Asian Performance: 2002-2004 Below International Benchmark	Emerging East Asian Performance: 2002-2004 Above International Benchmark
Financial Sector			ID*	HK*, MY*, TH*, CN*, KR, PH
Intercept	106.68	154.39		
Slope	6.41	6.87		
Banking Sector			ID*, SG, PH	CN*, MY*, TH*, KR, HK
Intercept	57.83	75.17		
Slope	2.26	2.27		
Capital markets			ID*, CN, PH	HK*, MY*, TH, SG
Intercept	49.07	79.22		
Slope	4.15	4.6		
Equity Markets			ID, PH, CN, KR	HK*, MY*, SG*, TH
Intercept	31	46.03		
Slope	1.47	1.43		
Bond Market			HK*, SG, ID, CN	MY*, PH, TH, KR
Intercept	18.07	33.19		
Slope	2.67	3.17		
Government Bonds			HK*, CN*, ID, TH, SG	MY, PH
Intercept	20.67	34.51		
Slope	0.89	0.53		
Corporate Bonds			HK, SG, PH	MY*, TH, CN, ID
Intercept	-2.6	-1.32		
Slope	1.18	2.64		

* Indicates 1 standard deviation or more from the international benchmark.

Table 9: **Chow Test Results**

No.	Regression Subject	Chow Statistics	
		Intercept	Slope
1	Financial Market Deepening	3.26 *	3.97 *
2	Banking Sector Deepening	2.22	2.07
3	Capital Market Deepening	3.25 *	3.11 *
4	Equity Market Deepening	0.87	1.19
5	Bond Market Deepening	3.88	4.12
6	Government Bond Market Deepening	1.42	1.67
7	Corporate Bond Market Deepening	3.05 *	2.97 *

* Statistically significant at 5% level.

Table 10: **Financial Deepening: Emerging East Asia Compared with Latin America, 2002-2004**

	Emerging East Asia Below International Benchmark	Emerging East Asia Above International Benchmark	Latin America Below International Benchmark	Latin America Above International Benchmark
Financial Sector	ID*	HK*, MY*, TH*, CN*, KR, PH	PE*, CO*, AR*, MX*	CL*, BR
Banking Sector	ID*, SG, PH	CN*, MY*, TH*, KR, HK	PE*, CO*, AR*, MX*	CL*, BR
Capital markets	ID*, CN, PH	HK*, MY*, TH, SG	PE*, CO*, AR*, MX*	CL*, BR
Equity Markets	ID, PH, CN, KR, JP	HK*, MY*, SG*, TH	PE*, CO*, AR*, MX*	CL*, BR
Bond Market	HK*, SG, ID, CN	MY*, PH, TH, KR	PE*, CO, AR*, MX*, CL	BR
Government Bonds	HK*, CN*, ID, TH, SG	MY, PH	PE*, CO, AR*, MX*, CL	BR
Corporate Bonds	HK, SG, PH	MY*, TH, CN, ID	PE*, MX,	AR, BR, CO, CL

* Indicates 1 standard deviation or more from the international benchmark.
PE - Peru, CO- Colombia, AR - Argentina, MX - Mexico, BR - Brazil, CL - Chile

Table 11: **Financial Deepening: Emerging East Asia Compared with Eastern Europe, 2002-2004**

	Emerging East Asia Below International Benchmark	Emerging East Asia Above International Benchmark	Eastern Europe Below International Benchmark	Eastern Europe Above International Benchmark
Financial Sector	ID*	HK*, MY*, TH*, CN*, KR, PH	RU*, PL*, SK*, HU, CZ	
Banking Sector	ID*, SG, PH	CN*, MY*, TH*, KR, HK	RU*, PL*, SK*, HU, CZ*	
Capital Markets	ID*, CN, PH	HK*, MY*, TH, SG	RU*, PL, SK*, HU, CZ	
Equity Markets	ID, PH, CN, KR	HK*, MY*, SG*, TH	PL, SK*, HU, CZ	
Bond Market	HK*, SG, ID, CN	MY*, PH, TH, KR	RU*, SK, HU	CZ
Government Bonds	HK*, CN*, ID, TH, SG	MY, PH	RU*, SK	CZ, HU, PL
Corporate Bonds	HK, SG, PH	MY*, TH, CN, ID	RU, HU, PL, SK, CZ	

* Indicates 1 standard deviation or more from the international benchmark.
RU - Russia, PL - Poland, HU - Hungary, CZ - Czech Republic, SK - Slovakia
Note: Poland is average (exactly along the benchmark) in bond market deepening.