Asia Bond Monitor 2008

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The *Asia Bond Monitor* (ABM) reviews recent developments in East Asian local currency bond markets along with the outlook, risks, and policy options. In this issue, a theme chapter examines bond market development in India. The ABM covers the 10 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 Developments in the Second Half of 2007

- Emerging East Asia's local currency (LCY) bonds outstanding expanded at an annual 21% rate in the second half of 2007.
- LCY government bond markets grew 21% in 2007, largely driven by central bank sterilization and fiscal stimulus.
- LCY corporate bond markets expanded 20% in 2007, illustrating the limited initial impact of the global credit crisis.
- Turnover increased in most emerging East Asian government markets in 2007, but was weak in most corporate markets.
- Heightened inflation risks and fears of an external demand shock led to increased volatility in yield curves in 2007.
- The ABF Pan Asian Bond Index gained 8% in 2007 in US dollar terms, partly lifted by stronger regional currencies, lower than the 13.6% return in 2006.
- Reforms in 2007 concentrated on the secondary market: key themes were better risk management, price discovery, and creating a wider array of fixed-income assets for investors.

Outlook, Risks, and Policy Challenges

- The global economy is expected to slow moderately in 2008 as the US economy weakens, credit conditions tighten, and inflationary pressures continue.
- Despite the worsening external economic environment facing emerging East Asia, GDP growth, while moderating, is expected to remain robust.
- The outlook for 2008 is for continued bond market growth, but at a slower pace. Credit tightening has not been as severe in Asia, although corporate yields are higher than in mid-2007 and some borrowers have delayed bond issues, relying instead on short-term bank finance.
- Three main risks to the outlook are (i) a deep or protracted US economic contraction; (ii) continued financial market volatility places pressure on market participants to cover rapidly shifting positions, increasing possible new credit disruption that could affect both global and regional financial markets; and (iii) inflation exerts greater pressure on regional economies, constraining policy options amid slowing growth.
- Five policy challenges are to (i) bolster investor confidence by strengthening legal protection and thus certainty, improve standards of corporate governance and transparency, and

Continued overleaf

Acronyms, Abbreviations, and Notes

ABCP	asset-backed commercial paper
ABF	Asian Bond Fund
ABM	Asia Bond Monitor
ABS	asset-backed securities
ADB	Asian Development Bank
ASEAN	Association of Southeast Asian Nations
BIBOR	Bangkok Interbank Offered Rate
BNM	Bank Negara Malaysia
BNMN	Bank Negara Monetary Notes
BSP	Bangko Sentral ng Pilipinas
CBLO	Collateralized Borrowing and Lending Obligation
CCIL	Clearing Corporation of India Ltd.
CDS	credit default swap
CHIBOR	China Interbank Offered Rate
CSRC	China Securities Regulatory Commission
DvP	delivery versus payment
ECB	European Central Bank
EU	European Union
FRBM	Fiscal Responsibility and Budget Management Act
FSC	Financial Supervisory Commission
GDP	gross domestic product
HIBOR	Hong Kong Interbank Offered Rate
IMF	International Monetary Fund
JIBOR	Jakarta Interbank Offered Rate
KLIBOR	Kuala Lumpur Interbank Offered Rate
Korea	Republic of Korea
KORIBOR	Korea Interbank Offered Rate
LCY	local currency
LIC	Life Insurance Corporation of India
MGS	Malaysian Government Security
MBS	mortgage-backed securities
MSB	Monetary Stabilization Bond
NDS	Negotiated Dealing System
NSE	National Stock Exchange
OECD	Organisation for Economic Co-operation and Development
OREI	Office of Regional Economic Integration
OTC	over–the-counter
PHIBOR	Philippine Interbank Offered Rate
PRC	People's Republic of China
RBI	Reserve Bank of India
REIT	real estate investment trust
repo	repurchase agreement
RMBS	residential mortgage-backed securities
SEBI	Securities and Exchange Board of India
SEC	Securities and Exchange Commission
SGS	Singapore Government Securities
SHIBOR	Shanghai Interbank Offered Rate
SIBOR	Singapore Interbank Offered Rate
SIVs	structured investment vehicles
SLR	Statutory Liquidity Reserve
SOE	state-owned enterprises
SPV	special purpose vehicle
SRO	self-regulating organization
SWF	sovereign wealth fund
TIBOR	Tokyo Interbank Offered Rate
UK	United Kingdom
US	United States
US Fed	United States Federal Reserve
YTD	year-to-date

bp = basis points

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

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adhere to international accounting standards; (ii) reduce constraints to market entry, investment, and encourage investor diversity to promote greater demand for local currency bonds; (iii) develop derivative and swap markets to broaden the investor base, increase market liquidity, and allow a wider dispersal of risk; (iv) improve data compilation and comparison; and (v) strengthen broader arrangements for regulatory oversight and regional cooperation in the areas of information-sharing and in coordinated actions to maintain financial stability.

India's Bond Market—Developments and Challenges Ahead

- India's government bond market has grown steadily in size, largely due to the need to finance the fiscal deficit and is comparable to many government bond markets in emerging East Asia.
- The corporate bond market is less developed than most in emerging East Asia, with private placements dominating.
- The turnover ratio for government bonds is lower than most of emerging East Asia—the corporate ratio compares well, but the small number of outstanding bonds means the secondary market is small and illiquid.
- Like in many emerging East Asian bond markets, the investor base remains narrow in both government and corporate bond markets, with limited foreign participation.
- Mandatory minimum holding requirements on banks, insurance companies, and pension funds renders the market "captive" and constrains the development of a truly competitive bond market.
- Regulatory responsibility in India's bond markets is fragmented—and there is the perception among market participants that regulators tend to be at cross-purposes.
- To address the lack of bond market liquidity, authorities could (i) ease investment mandates on contractual savings institutions to hold bonds to maturity; (ii) allow less-restricted development of derivatives and swap markets; (iii) consolidate the outstanding stock of government bonds; and (iv) relax exchange controls on bonds to facilitate investment by foreign investors and broaden the domestic investor base.
- To develop the corporate bond market, authorities could (i) reform the relevant tax structure particularly relating to the stamp duty and (ii) revamp the disclosure requirements for corporate public offers.
- Initiatives underway to streamline and consolidate the supervisory and regulatory structure of India's local currency bonds markets should contribute to a more level playing field.

Emerging East Asian Local Currency Bond Markets: A Regional Update

Bond Market Developments in the Second Half of 2007

Global Bond Market Developments

Defaults from poor-quality borrowers in the US have continued to erode US bank capital and raise an "uncertainty" premium in the world's capital markets.

The first half of 2007 was characterized by continued strong global economic and bank loan growth. However, by the second half a surge in default rates among subprime mortgages in the United States (US) began to erode bank capital in several major lending markets. The first signs of trouble occurred at end-January 2007, when a brief, but significant, correction in the Shanghai equity market sent tremors through all major markets. Default rates in the US subprime market were already rising at the time but were limited to local mortgage financers in half a dozen states. Four months later the stress began to appear in the interbank funding market, causing another brief market correction in global bond and equity markets. The problem became public when two major funds were rescued by their sponsor in June and then declared bankrupt in July.

Despite US Federal Reserve (US Fed) intervention, lowering policy rates, and expanding refinancing programs, default rates in the subprime sector continued to rise quickly and force fund closures, ratings downgrades and bank margin calls. Highly-leveraged funds were forced to sell high-grade securities to meet the margin calls, thus contaminating AAA mortgage-backed securities (MBS) and spreading the wave of de-leveraging across the US financial system. Regulators allowed the subprime and Alt-A sectors of the US mortgage market to grow so quickly in the beginning in 2005 and 2006 that they totaled one-third of the entire US mortgage market by June 2007. The effects of higher credit costs and credit rationing to poor-quality borrowers were magnified by high levels of leverage to a level able to decimate US bank capital. By early 2008, some analysts were putting the cost at multiples of 10% of bank capital. The capital of monoline insurers, which had strayed from municipal-bond guarantees to insuring the senior portions of MBS and other securitized deals, had been exhausted by end-2007. The prospect of an inability to refinance quickly meant risk contagion began to spread to the vast US municipal market in January 2008.

The asset-backed commercial paper market seized up in August 2007 and began to rapidly force assets back on to bank balance sheets, over USD400 billion, by the end of March 2008. The combined surprise of losses to bank capital and calls on the balance sheet meant a bank's self-interest would be served by cutting lending so that only core clients could still access regular credit. Moral suasion and wider credit provisions from the central bank had little effect by now and a significant slowing of credit growth in 2H07 led corporations in the US and some of its import markets to delay spending and hiring plans. Signs of a US recession were rife by end-2007 and economic growth rates were further downgraded around the world. In spite of the Fed's continued aggressive rate-cutting through 1Q08 and extraordinary lending programs to securities companies (as opposed to its mandate with banks), financial firms also continued hoarding cash and restricting credit lines.

The Asian local currency bond markets were initially beneficiaries of the US credit crunch, as investors sought attractive yields outside US markets. The debate over a so-called decoupling of Asia's credit and trade markets from those in the US quickly ensued. However, risk aversion grew, and gradually became strong enough for foreign investors to begin net withdrawals from most of emerging Asia's capital markets. Asia's offshore bond issuance market went into hibernation in August 2007 and the region's securitization markets have almost frozen since. Expect credit growth to slow significantly across Asia in 2008 because of the transmission effects through both US capital and current accounts. High and rising inflation confronts domestic central banks with the same dilemma the US Fed faces: whether to fight inflation by raising policy rates and guarantee a recession or to boost liquidity in the hope of restarting credit growth, at the cost of much higher inflation.

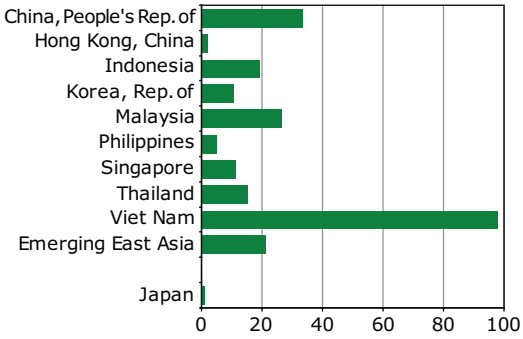
Size and Composition

Emerging East Asia's local currency bond markets expanded rapidly in the second half of 2007, with an annual 21% growth in bonds outstanding.

Growth in the value of local currency (LCY) debt instruments outstanding accelerated across emerging East Asia[1] during 2007, reaching USD3.7 trillion, 21.1% above the USD2.9 trillion

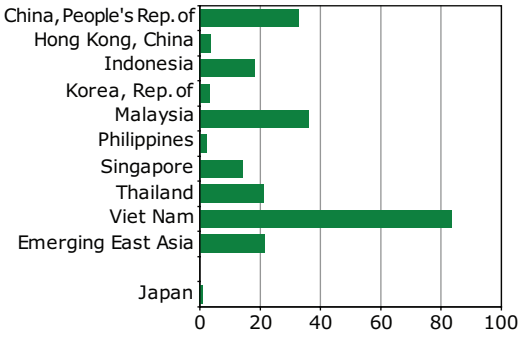
[1] In this report, emerging East Asia is defined as People's Republic of China (PRC); Hong Kong, China; Indonesia; Republic of Korea (Korea); Malaysia; Philippines; Singapore; Thailand; and Viet Nam.

Figure 1: **Growth of Emerging East Asian Local Currency Bond Markets in 2007** (%)



Sources: People's Republic of China (ChinaBond); Hong Kong, China (Hong Kong Monetary Authority); Indonesia (Indonesia Stock Exchange and Bank Indonesia); Republic of Korea (KoreaBondWeb); Malaysia (Bank Negara Malaysia); Philippines (Bureau of the Treasury and Bloomberg LP); Singapore (Monetary Authority of Singapore and Bloomberg LP) ;Thailand (Bank of Thailand); Viet Nam (Bloomberg LP); and Japan (Japan Securities Dealers Association).

Figure 2: **Growth of Emerging East Asian Local Currency Government Bond Markets in 2007** (%)



Sources: People's Republic of China (ChinaBond); Hong Kong, China (Hong Kong Monetary Authority); Indonesia (Indonesia Stock Exchange and Bank Indonesia); Republic of Korea (KoreaBondWeb); Malaysia (Bank Negara Malaysia); Philippines (Bureau of the Treasury); Singapore (Monetary Authority of Singapore); Thailand (Bank of Thailand); Viet Nam (Bloomberg LP); and Japan (Japan Securities Dealers Association).

outstanding at end-2006 (**Table 1**). During the last 6 months of 2007, net issuance increased 10.3%, the result of a surge in treasury and central bank bills to absorb excess liquidity stemming from inflows of foreign portfolio investment. Viet Nam had the highest growth rate for the year (98%), followed by the People's Republic of China (PRC) (33%); Malaysia (27%); Indonesia (19%); Thailand (16%); Singapore (12%); Republic of Korea (Korea) (11%); Philippines (5%); and Hong Kong, China (2%) (**Figure 1**). [2]

Bond market growth exceeded the expansion in gross domestic product (GDP) in 2007—except in Hong Kong, China; Indonesia; Philippines; and Singapore. The ratio of LCY bonds outstanding to GDP for the region continued to trend upward from 60% at end-2006 to 62% at end-June 2007 to 63% at the end-2007 (**Table 2**).

During the second half of the year currency market activity increased, with most regional currencies strengthening further against the US dollar. Only the Korean won, Indonesian rupiah and the Hong Kong dollar, which had widened its trading band around the US dollar peg rate in May 2005, weakened in that period (**Table 3**). Portfolio inflows accelerated slightly during the second half as risk-adjusted returns in many regional markets appeared more attractive than those in the United States (US) and Europe.

Local currency government bond markets expanded 21% in 2007, fed by (i) central bank issuance aimed at sterilizing excess liquidity and by (ii) fiscal stimulus during the second half to address concerns of slowing global growth.

Emerging East Asia's LCY government bond markets grew 21.4% in 2007 (**Figure 2**), reaching 46% of aggregate GDP. Sustained open-market operations by central banks contributed to most of the growth. In several markets, governments issued new debt to fund adjusted budgets and to accelerate planned expenditures in an effort to counteract an expected slowdown in export demand and to reduce the impact of any fallout from the global credit crunch.

[2] Growth figures based on local currency values, not the USD values shown in Table 1.

Table 1: **Size and Composition of Emerging East Asian Local Currency Bond Markets** (in USD billions)

	2005		2006		1H07 (1Jan–30 Jun)		2007		Growth Rate (%)			
	Amount (USD billion)	% share	Amount (USD billion)	% share	Amount (USD billion)	% share	Amount (USD billion)	% share	2005	2006	1H07	2007
China, People's Rep. of												
Total	899.24	100.00	1,184.12	100.00	1,368.42	100.00	1,689.83	100.00	40.57	27.35	12.72	33.42
Government	835.18	92.88	1,078.57	91.09	1,250.79	91.40	1,533.12	90.73	35.85	24.90	13.12	32.89
Corporate	64.07	7.12	105.55	8.91	117.63	8.60	156.71	9.27	157.13	59.35	8.70	38.80
Hong Kong, China												
Total	85.59	100.00	96.19	100.00	99.20	100.00	97.98	100.00	9.18	12.72	3.66	2.15
Government	16.34	19.09	16.94	17.62	17.20	17.34	17.52	17.88	3.37	4.01	2.02	3.69
Corporate	69.25	80.91	79.25	82.38	82.00	82.66	80.46	82.12	10.65	14.77	4.01	1.82
Indonesia												
Total	54.15	100.00	76.72	100.00	87.04	100.00	87.55	100.00	(5.28)	29.64	13.84	19.27
Government	48.27	89.15	69.88	91.09	78.55	90.25	79.14	90.39	(5.69)	32.46	12.79	18.36
Corporate	5.88	10.85	6.84	8.91	8.49	9.75	8.41	9.61	(1.75)	6.48	24.54	28.55
Korea, Rep. of												
Total	983.53	100.00	1,192.72	100.00	1,286.33	100.00	1,313.81	100.00	14.20	11.66	7.11	10.87
Government	583.07	59.28	702.88	58.93	736.16	57.23	722.11	54.96	21.32	11.00	4.01	3.40
Corporate	400.45	40.72	489.84	41.07	550.17	42.77	591.69	45.04	5.20	12.63	11.54	21.58
Malaysia												
Total	106.70	100.00	121.38	100.00	139.15	100.00	164.16	100.00	9.67	6.19	12.19	26.77
Government	52.25	48.97	61.00	50.26	76.52	54.99	88.61	53.98	8.04	8.99	22.74	36.15
Corporate	54.45	51.03	60.37	49.74	62.63	45.01	75.55	46.02	11.27	3.50	1.52	17.28
Philippines												
Total	41.66	100.00	46.36	100.00	49.74	100.00	58.02	100.00	9.73	2.73	1.15	5.30
Government	40.20	96.50	43.50	93.83	45.38	91.23	52.84	91.07	8.30	(0.11)	(1.65)	2.21
Corporate	1.46	3.50	2.86	6.17	4.36	8.77	5.18	8.93	72.76	81.29	43.70	52.34
Singapore												
Total	83.10	100.00	99.39	100.00	106.89	100.00	118.11	100.00	5.90	10.35	7.26	11.53
Government	46.90	56.44	55.92	56.26	60.90	56.98	68.13	57.68	8.03	10.00	8.62	14.34
Corporate	36.20	43.56	43.47	43.74	45.98	43.02	49.98	42.32	3.26	10.80	5.50	7.91
Thailand												
Total	78.84	100.00	112.01	100.00	136.51	100.00	153.93	100.00	24.69	22.75	8.98	15.52
Government	54.29	68.86	74.58	66.58	93.18	68.26	107.47	69.82	29.01	18.69	11.72	21.14
Corporate	24.55	31.14	37.44	33.42	43.33	31.74	46.45	30.18	16.10	31.73	3.51	4.31
Viet Nam												
Total	4.30	100.00	4.93	100.00	7.08	100.00	9.79	100.00	14.52	15.57	44.23	98.11
Government	4.20	97.52	4.50	91.28	6.41	90.57	8.28	84.54	12.24	8.17	43.11	83.48
Corporate	0.11	2.48	0.43	8.72	0.67	9.43	1.51	15.46	466.67	306.16	56.02	251.33
Total Emerging East Asia												
Total	2,337.11	100.00	2,933.82	100.00	3,280.36	100.00	3,693.19	100.00	22.02	18.12	9.75	21.10
Government	1,680.70	71.91	2,107.77	71.84	2,365.09	72.10	2,677.23	72.49	25.73	18.31	9.96	21.40
Corporate	656.41	28.09	826.05	28.16	915.26	27.90	1,015.95	27.51	13.32	17.62	9.19	20.34
Japan												
Total	7,046.41	100.00	7,096.10	100.00	6,843.13	100.00	7,653.25	100.00	8.55	1.83	(0.24)	1.18
Government	6,302.54	89.44	6,389.17	90.04	6,154.61	89.94	6,879.28	89.89	10.29	2.51	(0.35)	1.02
Corporate	743.87	10.56	706.93	9.96	688.52	10.06	773.97	10.11	(4.23)	(3.90)	0.76	2.72

Notes:
1. Calculated using data from national sources.
2. Corporate bonds include issues by financial institutions.
3. Bloomberg end-of-period LCY/USD rates are used.
4. Growth rates are calculated from LCY base and do not include currency effects.
Sources: People's Republic of China (ChinaBond); Hong Kong, China (Hong Kong Monetary Authority); Indonesia (Indonesia Stock Exchange and Bank Indonesia); Republic of Korea (KoreaBondWeb); Malaysia (Bank Negara Malaysia); Philippines (Bureau of the Treasury and Bloomberg LP) ; Singapore (Monetary Authority of Singapore and Bloomberg LP) ; Thailand (Bank of Thailand); Viet Nam (Bloomberg); and Japan (Japan Securities Dealers Association).

Table 3: **2007/08 Appreciation (Depreciation) of Emerging East Asian Currencies** (%)

	Against USD	
Currency	**2007**	**2008 YTD**
CNY	6.73	3.99
HKD	(0.28)	0.18
IDR	(4.42)	2.10
KRW	(0.65)	(5.66)
MYR	6.48	3.45
PHP	17.29	(1.37)
SGD	6.34	4.26
THB	17.36	(5.52)
VND	0.25	(0.58)
JPY	6.38	11.58

Notes:
1. Appreciation (depreciation) is equal to -LN(end-of-period rate/start-of-period rate).
2. 2008 year-to-date (YTD) is as of 31 March 2008.
Source: Bloomberg LP.

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

	Amount Outstanding			
	2005	**2006**	**1H07** (1 Jan-30 Jun)	**2007**
China, People's Rep. of				
Total	39.47	43.83	46.06	50.00
Government	36.66	39.92	42.10	45.36
Corporate	2.81	3.91	3.96	4.64
Hong Kong, China				
Total	48.01	50.69	50.73	47.39
Government	9.16	8.93	8.79	8.47
Corporate	38.84	41.76	41.93	38.92
Indonesia				
Total	19.19	20.66	21.66	20.80
Government	17.10	18.82	19.55	18.80
Corporate	2.08	1.84	2.11	2.00
Korea, Rep. of				
Total	122.56	130.80	136.36	136.46
Government	72.66	77.08	78.04	75.00
Corporate	49.90	53.72	58.32	61.46
Malaysia				
Total	77.63	74.79	80.64	84.62
Government	38.02	37.59	44.34	45.68
Corporate	39.62	37.20	36.30	38.94
Philippines				
Total	40.67	37.66	36.39	35.97
Government	39.25	35.34	33.20	32.76
Corporate	1.42	2.32	3.19	3.21
Singapore				
Total	69.32	70.28	71.53	69.94
Government	39.12	39.54	40.76	40.34
Corporate	30.19	30.74	30.77	29.60
Thailand				
Total	45.59	50.71	53.38	54.06
Government	31.39	33.76	36.44	37.75
Corporate	14.20	16.95	16.95	16.31
Viet Nam				
Total	8.18	8.13	10.97	13.72
Government	7.97	7.42	9.94	11.60
Corporate	0.20	0.71	1.04	2.12
Total Emerging East Asia				
Total	56.63	60.08	62.00	63.13
Government	40.73	43.17	44.70	45.76
Corporate	15.91	16.92	17.30	17.37
Japan				
Total	165.37	166.02	164.20	165.35
Government	147.91	149.48	147.68	148.63
Corporate	17.46	16.54	16.52	16.72

Sources: People's Republic of China (ChinaBond). Hong Kong, China (Hong Kong Monetary Authority). Indonesia (Indonesia Stock Exchange and Bank Indonesia). Republic of Korea (KoreaBondWeb). Malaysia (Bank Negara Malaysia). Philippines (Bureau of the Treasury and Bloomberg LP). Singapore (Monetary Authority of Singapore and Bloomberg LP). Thailand (Bank of Thailand). Viet Nam (Bloomberg LP) for outstanding bonds, CEIC for GDP, and *AsianBondsOnline* estimates.

- In Viet Nam (83% growth in 2007), the LCY government bond market saw a surge in growth in 2007 as a result of significant changes to the issuance process. While the State Treasury of Viet Nam expanded its outstanding bonds by 16% during the year, the biggest increase came from bonds issued by the newly established[3] Viet Nam Development Bank (VDB), whose outstanding issues now comprise 30% of the public bond total. Although short term central bank bills comprise under 3% of total government debt as of end-2007, this is expected to increase as the State Bank of Viet Nam now uses these instruments as a policy tool to drain liquidity. For example, it issued VND20 trillion in short term bills (equivalent to 15% of end-2007 government bonds outstanding) to banks in March 2008, on a compulsory basis, as inflation rates soared. Rapid growth in new issuance is likely to continue, as the government increasingly relies on the LCY bond market to finance infrastructure development. The State Treasury intends to increase issuance in 2008 by 55% over its 2007 goal in order to meet its infrastructure targets.

- In Malaysia (36%), Bank Negara Malaysia (BNM), the central bank, continued its policy of issuing monetary notes (BNMNs) to absorb excess liquidity. The gradual improvement in the budget deficit—and the upgrading of the S&P's foreign-currency outlook for Malaysia to positive—has led to significant cross-border capital inflows, resulting in the MYR appreciating 6.5% against the US dollar during 2007. Conventional and Islamic BNMNs, first introduced in December 2006, now account for nearly 25% of total government debt as at end-2007. Malaysian Government Security (MGS) issuance has also increased, principally to help finance the infrastructure requirement of the 9th Malaysian Plan. The maturities of new issues of MGS were used to fill gaps in the existing government bond benchmark yield curve.

- Total PRC government bonds outstanding (33%) continued to rise in 2007. Bonds issued by government policy banks and other financial institutions—obligations guaranteed by the central government—are now classified as government

[3] The Viet Nam Development Bank (VDB), the successor to the Development Assistance Fund, was established in July 2006 to lend funds for infrastructure development and to provide medium- to long-term funds for basic industries. The strategic focus of the VDB appears similar to the People's Republic of China (PRC) China Development Bank, which issued in the PRC debt market until state-owned corporate entities developed the capacity to issue securities in their own name.

bonds.[4] Because of the restatement, bill issuance from the central bank constitutes 20% of the increase in government bonds outstanding, down from 50% in 2006. Aside from the reclassification, the largest component (88%) of new issues was in 10- and 15-year special-purpose notes to finance the newly-formed China Investment Corporation, the sovereign wealth fund of the PRC. This issuance program has also changed the maturity profile of government debt. At end-2007, government bonds with maturities of 10 years or more constituted 20% of total government bonds outstanding, twice the ratio of a year earlier.

- Thai government bond issuance (21%) accelerated during the year, with the central bank providing 80% of new public debt issuance. This included two large retail bond offerings during the second half—comprising 30% of the issuance total for 2007. Despite central bank measures to curtail foreign capital inflows into LCY-denominated debt instruments, the Thai baht appreciated 17% against the US dollar. Most of the foreign inflow went into the equity market, while local retail investors moved out. To absorb the increased liquidity, the central bank issued a range of notes in addition to retail savings bonds. After it announced in February 2008 the lifting of the previous restrictions on capital imports, net portfolio flows reversed direction and the THB fell 6% in the following four weeks.

- Indonesia (18%) has seen a steady acceleration in government bond issuance. In line with much of East Asia, the largest component of new bond issues was central bank and government bills—comprising 52% of the issuance total for 2007. The government also began lengthening maturities using a bond-switching program. This is a popular method of refinancing short-term notes into longer maturities. In an October 2007 switching auction, the government repurchased various series of bonds maturing in less than 5 years and

[4] Previous issues of the Asian Bond Monitor treated People's Republic of China (PRC) state-owned policy banks as corporate issuers, as is often done in command economies with little or no private sector. The data in tables 1 and 2 have been restated to classify policy banks and government-guaranteed financial institutions as government debt—as their risk and issuance pattern is more typical of a government agency than a commercial corporation. The reclassification means the size of the PRC corporate bond market is now restated as 9% of total LCY bonds outstanding at end-June 2007 instead of 33%. Adjusted by this reclassification, growth rates for PRC's corporate bond market were 157% instead of 32% in 2005, 59% instead of 35% in 2006, and 39% instead of 29% in 2007. Correspondingly, the restated government bond market growth has averaged a 1.7% per year lower rate than before reclassification.

encouraged investors to switch into higher-yielding bonds maturing in 2023. This resulted in small illiquid short-term securities being replaced by a larger and more liquid, 15-year benchmark bond. Like several other markets in the region, Indonesia has also been experimenting with retail bonds, offering two series in 2007. Constituting 0.03% of bonds outstanding, this represents a policy initiative to give retail access to savings products rather than a fundamental change in the issuance strategy. The government also continued offering zero-coupon bonds and launched a 5-year note in November.

- Singapore (14%) continued its program of shaping its LCY government bond yield curve to comply with a strategy of providing more long-term liquidity to help finance the region's investment needs. In addition to supporting its 15-year note series, the Monetary Authority of Singapore launched a new 20-year bond and a new series of 5-year notes. It re-opened existing notes in key maturities with over 20% of the year's issuance, further deepening the market. A significant part of the increase (58%) in the first half of 2007 was in short-term bill issuance. Despite the significant new supply, safe-haven interest from foreign investors pushed the Singapore dollar up more than 6% against the US dollar during the second half of the year.

- In Hong Kong, China (4%), the Hong Kong Monetary Authority proceeded with its 2006 plan to extend the maturity of the LCY yield curve beyond 10 years. It launched a new 15-year bond on a semiannual program and stopped issuing its 7-year note. There is still considerable work to be done in creating a liquid benchmark of 10 years or more, as 53% of the government market is still issued in its highly liquid bills market with another 39% issued in bonds with maturities of 1 to 5 years.

- Korea's government bond market's growth (3%) slowed as the government continued to try to reduce its public debt stock below 50% of GDP. Separating the central bank's Monetary Stabilization Bond (MSB) issues from the aggregate, the balance of benchmark bonds and bills grew by a somewhat stronger 6%. The MSB balance declined 7% during the second quarter as the liquidity excess subsided and buying pressure on the won reversed, resulting in almost

a 1% decline for the year—after appreciating 28% over the previous 3 years. This reduction of quantitative intervention was mirrored by an increase in price intervention, as the Bank of Korea, the central bank, raised its policy rate twice during the third quarter.

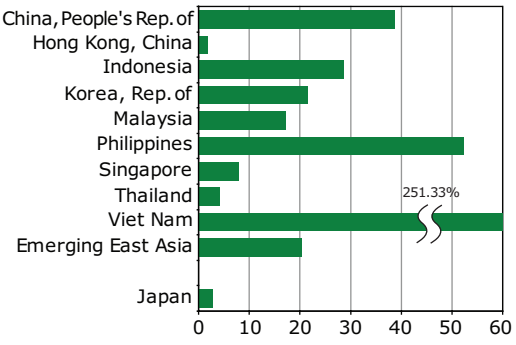
- The Philippine treasury market grew moderately (2%) in the second half of the year, after declining in the first half. Although the stock of traditional bonds and bills aimed at the primary market declined for the year as a whole, the introduction of retail treasury bonds in July 2007 offset this. Retail bonds now comprise 3% of the value of LCY government bonds outstanding. The one-off sale of several public assets in December 2007 reduced bond refinancing requirements by a further 3% of the end-2006 figure. Higher tax revenues helped reduce the final budget deficit to 0.1% of GDP, further reducing the need for government debt issuance. As a result of the reduced requirements for debt financing, the government concentrated issues in the 91-day bill market to maintain liquidity in this key benchmark maturity. The improved fiscal deficit also allowed the government to alter the composition of its total debt profile in favor of local currency—a buy-back program reduced the foreign currency bond stock by 8%.

East Asian corporate bond markets expanded 20% in 2007, as a much greater diversity of highly-rated issuers accessed the markets, suggesting that the initial impact of the global credit crisis was limited.

Regional aggregate growth in corporate bond markets was 2.7 percentage points greater than in 2006. Indonesia, Philippines, and Viet Nam have begun to harvest the fruit of years of policy reforms, with Viet Nam seeing its corporate bonds outstanding surpass 10% of the market total for the first time (**Figure 3**). In addition, Malaysia and Korea enjoyed a return to significant growth. During 2007, emerging East Asia's corporate bond market continued to grow as a percentage of GDP—to 17.4%.

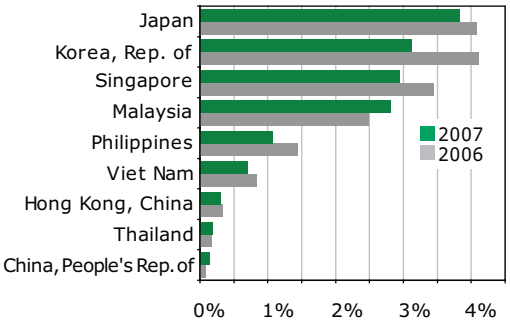
Because of difficult global credit conditions for structured transactions, it is not surprising that the picture for securitization of East Asian corporate bond markets is less clear. Aggregate issuance in the region grew 25% to USD18.3 billion during 2007 but it was concentrated in the first half and was far from uniform.

Figure 3: **Growth of Emerging East Asian Local Currency Corporate Bond Markets in 2007** (%)



Sources: People's Republic of China (ChinaBond); Hong Kong, China (Hong Kong Monetary Authority); Indonesia (Indonesia Stock Exchange and Bank Indonesia); Republic of Korea (KoreaBondWeb); Malaysia (Bank Negara Malaysia); Philippines (Bloomberg LP); Singapore (Bloomberg LP); Thailand (Bank of Thailand); Viet Nam (Bloomberg LP); and Japan (Japan Securities Dealers Association).

Figure 4: **Securitized Notes Outstanding, 2006 and 2007** (% of GDP)



Sources: People's Republic of China (ChinaBond); Hong Kong, China, Republic of Korea, Malaysia, Philippines, Singapore, Thailand, and Viet Nam (Bloomberg LP); Japan (Japan Securities Dealers Association, Rating and Investment Information Inc., Fitch Ratings, and Bloomberg LP) for securitized notes outstanding and CEIC for nominal GDP.

Much of the growth in size was in the PRC (73%) and Malaysia (27%), while the Korean market shrank by a third, and the Hong Kong, China market also contracted. Several markets saw the cancellation of deals in the pipeline and several transactions had to be prepaid and refinanced. In GDP terms the securitized bond markets in the PRC, Thailand, and Malaysia expanded while all others contracted (**Figure 4**).

- In Viet Nam (251% growth in 2007), over USD1.1 billion in new corporate bonds were issued during 2007. The majority of companies issuing bonds are listed, state-controlled enterprises involved with infrastructure construction. These operate as commercial enterprises with greater transparency than government–directed infrastructure projects. Moreover, the sector diversity of issuers was good, covering industries such as electricity generation, shipbuilding, and transportation, textile manufacturing, and (very recently) banks. One private-sector bank raised the equivalent of over USD100 million, or 7% of the total market outstanding as of end-2007. There was no new securitization activity during 2007.

- In contrast to its muted growth in government bonds, the Philippines (52%) saw very strong growth in corporate bonds, albeit from a low base. Most of this growth occurred in the first half of the year, when lower yields made it attractive for several corporations to replace some of their previous offshore foreign currency bonds with LCY notes. Major property developers and banks were the main issuers, consistent with the construction boom, which requires increasing amounts of credit. Due to difficult financing conditions, the securitization market paid out several notes—including one that financed a portion of the Metro Rail Transit (MRT-3) project in Manila. The market acquired no new assets, thus reducing its size relative to GDP to 1%.

- The PRC (39%) corporate bond market grew in both scale and diversity during 2007, but at a slower pace than in the previous 2 years. The fastest-growing sectors were bonds from private-sector companies (119%) and securitized assets (73%). The commercial paper market, equal to 28% of the total, grew 20% in 2007, which was its third year of operation. State-owned enterprise bonds—not counted in the corporate total—grew by 46% over the year.

- Indonesia's (29%) corporate bond market quadrupled its previous year's growth rate. Reforms to the secondary market—making its pricing more transparent—combined with tax incentives for listed companies, led to a significant increase the number of new issues. Clarification of accounting rules for mutual funds and for bank investments also created substantial new demand for LCY bonds. A decline in bond yields during the first half of the year also helped attract more issuers, especially in the popular 5-year tenor.

- In Korea (22%), the corporate bond market growth continued to accelerate in 2007, led by financial institutions, whose bonds outstanding grew 29%. Increasing competition for deposits from securities companies offering cash-management accounts over the last year has forced banks to raise more funds from the short-term bond market—both onshore and offshore. The majority of corporate issues remained at 2- and 3-year tenors. The asset-backed securities market declined throughout 2007, falling rapidly during the second half in response to increased worries about the reliability of ratings in the face of rising default rates on credit cards and other loans. It was the second-weakest-performing securitization market in the region during 2007, after several years of strong growth.

- Malaysia's (17%) corporate bond market grew at a faster pace than in the last 2 years, but only half the rate of the government bond market. Islamic securities comprised 61% of the new bonds, including some issues by property developers from the Middle East and other foreign companies. In both the conventional and Islamic markets, financial issuers accounted for the largest portion of the increase, with infrastructure—especially utilities—next. A significant factor in corporate bond market growth and its appeal to foreign issuers in 2007 has been the rapid expansion of coverage by the independent bond-pricing agency, Bondweb Malaysia Sdn Bhd, established in 2006. Several new corporate market issues were in the form of securitized notes, which contributed to the 27% growth in that sector during the year.

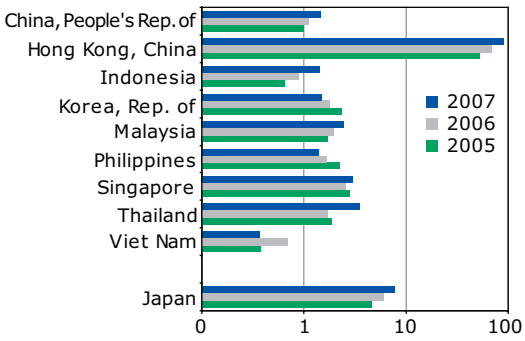
- In Singapore (8%), the corporate bond market growth was similar to 2006 but remained below the growth in the government bond market. Financial market uncertainty during the second half of 2007, discouraged many potential

issuers as credit spreads widened. The number of foreign issuers also dropped off slightly. While property developers and real estate investment trusts (REITs) provided most of the new supply during the first half, banks became the main issuers in the second half of the year. The shoring up of capital with subordinated bonds became more common while some issuers began to rely on the equity market's strength to issue convertible bonds as a way to lower yields. Several new REITs planned for the second half of the year were delayed by market turbulence. While the stock of LCY securitized instruments increased slightly it did not match the growth in GDP.

- Thailand's (4%) corporate bond market grew slower than in the previous 2 years—despite a significant decline in market yields during the first half of 2007. Many issuers appeared to still be waiting for a clear sign that yields had bottomed out when the market reversed direction in August. Under the influence of falling rates and surging foreign portfolio inflows, the equity market became a more attractive source of funds during the first 9 months of the year. The securitization market in Thailand expanded 13% in 2007 to 0.2% of GDP.

- Hong Kong, China (2%) saw slower growth in its LCY corporate bond market than in its much smaller government market. Banks and property companies were the largest issuers, with a number of banks from around the region taking advantage of the low LCY yields available during the second half of the year. These deals tended to be in 2- and 3-year maturities, with a substantial number of banks also issuing HIBOR-based floating rate notes to take advantage of the liquid LCY swap market. In addition, a growing number of PRC banks and companies issued bonds in the LCY market before swapping part of those issues into CNY. Without any new securitization deals the LCY market for securitized notes eroded slightly during the year.

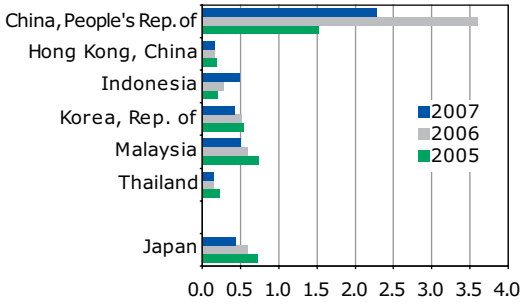
Figure 5: **Government Bond Turnover Ratios**[1]



[1] Calculated as LCY trading volume (sales amount only) divided by average LCY value of outstanding bonds during each full-year period.

Sources: People's Republic of China (ChinaBond); Hong Kong, China (Hong Kong Monetary Authority); Indonesia (Indonesia Stock Exchange); Republic of Korea (KoreaBondWeb); Malaysia (Bank Negara Malaysia); Philippines (Bureau of the Treasury); Singapore (Monetary Authority of Singapore); Thailand (Thai Bond Market Association); Viet Nam (CEIC) and Japan (Japan Securities Dealers Association).

Figure 6: **Corporate Bond Turnover Ratios**[1]



[1] Calculated as LCY trading volume (sales amount only) divided by average LCY value of outstanding bonds during each full-year period.

Sources: People's Republic of China (ChinaBond); Hong Kong, China (Hong Kong Monetary Authority); Indonesia (Indonesia Stock Exchange); Republic of Korea (KoreaBondWeb); Malaysia (Bank Negara Malaysia); Thailand (Thai Bond Market Association) and Japan (Japan Securities Dealers Association).

Turnover

Turnover, a measure of market liquidity, increased in most emerging East Asian government markets in 2007, but remained weak in most of the region's corporate markets.

Government bond market turnover in emerging East Asia generally rose in response to deepening yield curves and a combination of falling yields in the first 6 months of the year and a flight to safety in the second half. A shortage of new bond supply reduced government bond turnover ratios in Korea and the Philippines, while a surge in the supply of new higher-yielding corporate paper severely reduced turnover in government securities in Viet Nam (**Figure 5**).

The region's corporate bond market turnover fell in the PRC, Korea, and Malaysia, which all experienced moderate declines in corporate liquidity as yields, and credit spreads rose during the year. There was little change in corporate turnover ratios in Hong Kong, China; or Thailand. But Indonesia had a healthy increase in liquidity on the back of accelerating issuance and renewed investor interest. (**Figure 6**).

- In the PRC, bond market turnover was mixed in the midst of turbulent market conditions—inflation increased to 4.8%, interest rates rose by more than 1%, and equity markets surged 126% on the Shanghai Stock Exchange by October 2007, before pulling back 21% by the end of the year. Government bond market turnover rose 30% to 1.46 times the average value of bonds outstanding for the year. Despite the issue of more long-dated corporate bonds and a more diversified issuers base, corporate trading fell 37% to a ratio of 2.29 for the year, compared with the very high 3.60 ratio in 2006. New corporate bond supply from power generators, airlines, and property developers met good demand from insurance companies, who are principally buy-and-hold investors, and mutual funds. Ninety-four percent of corporate bond trading is done on the interbank bond market, under central bank supervision. The rest is traded on the Shanghai Stock Exchange, where outright trading in corporate bonds remains subdued. However, insurance and securities companies and mutual funds use the exchange increasingly to execute repurchase agreements for Treasury

bonds—exchange based turnover of repos in 2007 nearly equaled that of Treasury bond turnover on the interbank market.

- In Hong Kong, China the combination of active equity issuance, particularly for PRC-based firms—and increasing financial integration with PRC markets—led to rapid capital flows to and from local markets. The depth of the local money market (96% of government securities turnover) accommodated this turbulence with relatively little disturbance to the real economy. The magnitude of these flows appeared in a 31% rise in the already high turnover levels for government securities—to 91 times the average value outstanding. Bills market turnover rose 31% to 163 times average bills outstanding while the notes market turnover rose 110% to 9 times average notes outstanding. A rise in both foreign currency and LCY corporate bond issuance also supported a moderate increase in the corporate market's turnover, to 0.17 times the average value outstanding.

- Indonesia continued its strong increase in bond market liquidity during 2007. Improved price transparency and consistent accounting treatment were the biggest factors in investor's willingness to trade the market rather than purchasing bonds and holding them to maturity. October's switch auction also stimulated trading by repricing a large group of outstanding bonds against a specific offer. Such repricings tend to draw other investors into the market in search of similar yields. Turnover in the government sector rose 64% to 1.44 times the average value of bonds outstanding, while corporate bond market liquidity improved by a similar amount to 0.49 times.

- Korean bond market turnover in 2007 continued its declining trend, observed since 2002. Bond futures contracts trading volume has also fallen considerably while futures monthly open interest[5] is rising—suggestive of changing investor behavior to a more passive portfolio management style. While higher interest rates caused trading to contract, high levels of un-invested cash during the first half allowed new issues to be purchased by investors without significant sales of older issues to raise cash. The pattern of passive investing was

[5] Open interest in government bond futures is the outstanding number of bond futures contracts at the end of the trading period.

further supported by the relatively short maturity of bonds and the fact that more than half the year's new supply of bonds were issued during the first half. There is little incentive to actively switch bonds from portfolios if there is a lack of fresh supply of longer dated instruments. Government bond turnover fell to 1.49 times the average value of outstanding bonds, while the corporate sector also fell to 0.43 times.

- In Malaysia, turnover rose 26% to 2.47 times average value of outstanding bonds, led during the second half of the year by BNMN issues, actually meant to absorb excess liquidity. BNMN turnover doubled to 3.73 times their average value. Trading in longer-term government bonds also improved after a switch auction allowed investors to trade in older notes for new issues focused on the benchmark 3-, 5-, and 10-year maturities. By comparison, the corporate bond market saw turnover decline for a second year—by 14% to 0.51 times the 2007 average value outstanding. The steepening yield curve during the second half created some opportunities for traders, but overall the market's liquidity declined over the period because of increased uncertainty. Rapid MYR appreciation during the second half brought some new buyers of short-term notes to the market, but the bias of most investors remained toward holding positions until maturity, especially in the corporate sector.

- Philippine government bond market turnover declined for a second year to 1.41 times the average value of bonds outstanding, amid weak overall growth in supply and several fiscal and monetary policy adjustments. After falling during the first quarter of 2007, interest rates rose over the rest of the year, deterring some traders. The absence of a regular Bureau of the Treasury issuance calendar discouraged trading as only 91-day bills were consistently offered to the market. The bond supply aimed at institutional investors declined for a second consecutive year, making it difficult for investors to trade. The phasing in of regulatory changes to over-the-counter trading rules (OTC rules) in 2007 may also have contributed to the drop in turnover ratio.

- Singapore's investors and traders responded to the increased supply of benchmark government bonds with a commensurate increase in trading. Turnover rose 15% to 2.99 times the average value of government bonds outstanding during the

year. The impact of the subprime credit crisis was evident during the second half and new bond issues were virtually limited to government markets. Trading of new corporate issues slowed and traders and investors sought refuge in low risk government debt.

- In Thailand, new bonds issued by the central bank had the highest turnover ratio—7.28 times the average value outstanding. This helped lift overall government bond turnover 110% to 3.53 times. This may have drawn some liquidity away from the corporate market, but a steep decline in market yields during the first half balanced this trend, keeping corporate market turnover at the same rate as in 2006—0.15 times the average value of bonds outstanding.

- Trading in Viet Nam's government bonds slowed by almost 50%, returning to its 2005 level of 0.37 times the average value of government bonds outstanding. Despite an 83% increase in the stock of tradable bonds during the year, government interest rate ceilings frequently made the bonds unattractive. This was resolved in November 2007 when the government removed rate ceilings and allowed the market to set rates. Market yields rose 40bp to 120bp within a matter of weeks and trading activity surged.

Bond Yields

Heightened inflation risk and fear of an external demand shock led to increased volatility in LCY yield curves in 2007, when the trend was toward steeper yield curves.

Domestic and imported inflation began to appear in many markets, even as some central banks were still easing interest rates during the first quarter of the year. These inflationary expectations led most yield curves to steepen by the end of March 2007, with the exceptions of Thailand and Malaysia, where demand for longer-dated debt instruments was still strong and yield curves flattened. However, by the end of the second quarter, these yield curves had also steepened. By mid-year interest rates in most markets were higher than end-2006 and most yield curves had steepened considerably. The exceptions were Indonesia, which continued to ease policy rates, and the Philippines, which saw its yield curve

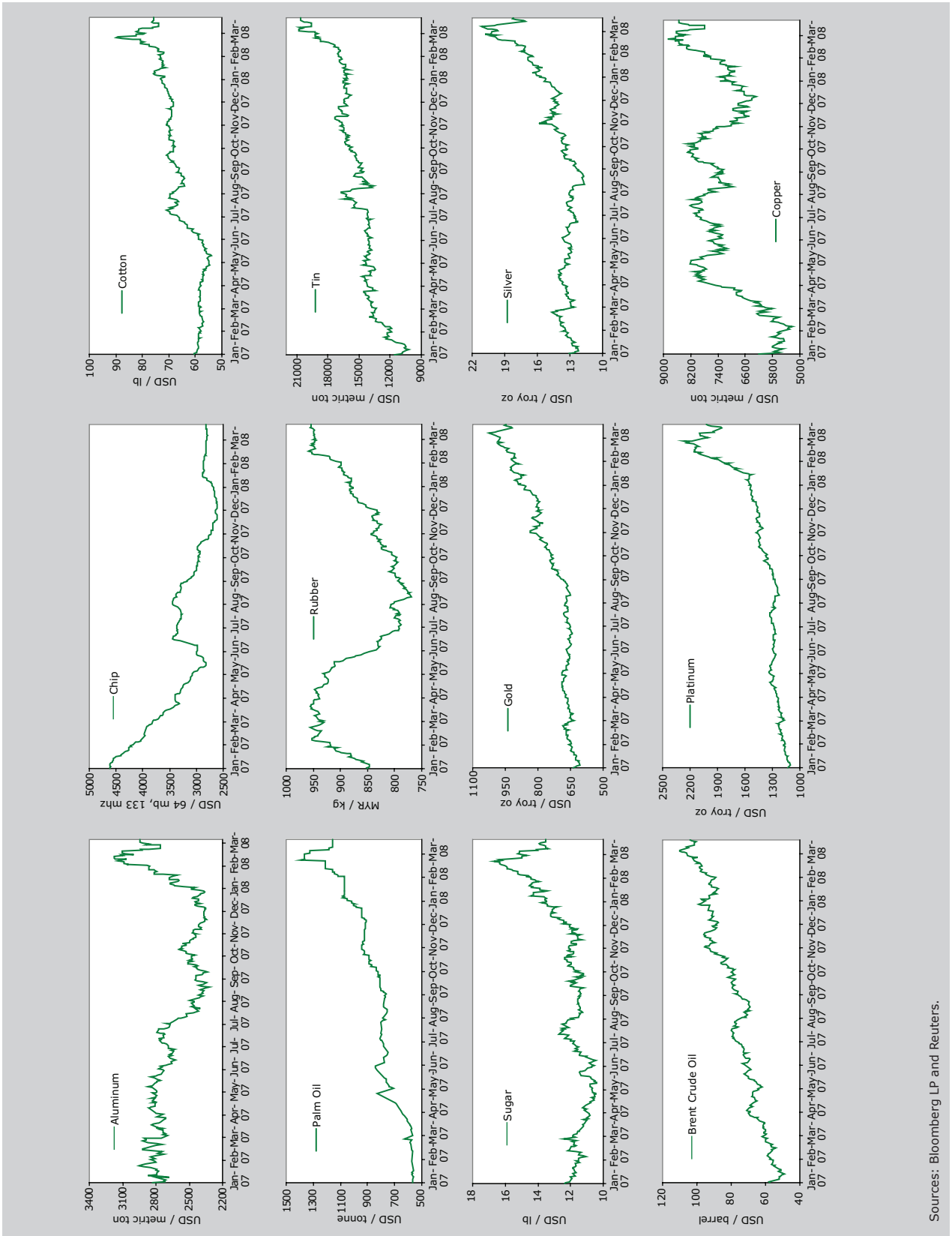
flatten because of a tightening policy during the second quarter. External credit tightening—triggered by the US credit squeeze and the subsequent fear of a demand shock—caused yields in some markets to follow the US and fall again during the second half (Philippines; Singapore; and Hong Kong, China). But a majority of markets remained more worried about inflation as higher prices for crude oil and food such as grains and palm oil carried through to producers and consumers (PRC, Indonesia, Korea, Malaysia, and Thailand) (**Figure 7**). Short-term interest rates rose in the fourth quarter of 2007 in all markets except Hong Kong, China and Singapore, where they fell. Over the first quarter of 2008 the US Fed's drastic rate cuts pulled short-term rates down in all markets but the Philippines—although the extent of the rate reductions varied. With the exception of the PRC and the Philippines, yield curves in 2008 have steepened from a year earlier **(Figures 8, 9)**.

- In the PRC continuously rising inflation became a major concern of the central bank, which employed increasingly aggressive tightening measures. Policy rates rose more than 100bp during the first half and the yield curve, as indicated by the 2–10 year yield curve spread,[6] steepened almost 40bp. As the central bank tightened more aggressively in the second half and foreign investment inflows slowed, short-term rates rose much faster than 10-year yields, causing the yield curve to flatten by 40bp. After the US Fed aggressively cut its rates in 1Q08, the CNY yield curve flattened to 22bp below where it was in January 2007.

- Hong Kong, China's yield curve steepened until the third quarter, closely tracking yield curve movements in the US—largely because of the Hong Kong dollar currency peg. Heightened inflation concerns drove bond pricing and yields up 100bp in 10-year bonds, but by less at the shorter maturities. As a result, the yield curve spread steepened from 20bp at end-2006 to 41bp at mid-year 2007. The credit squeeze in the US caused local markets to tighten somewhat—despite the ample liquidity inflows for subscriptions to equity listings of PRC companies. Stock and equity issuance slowed

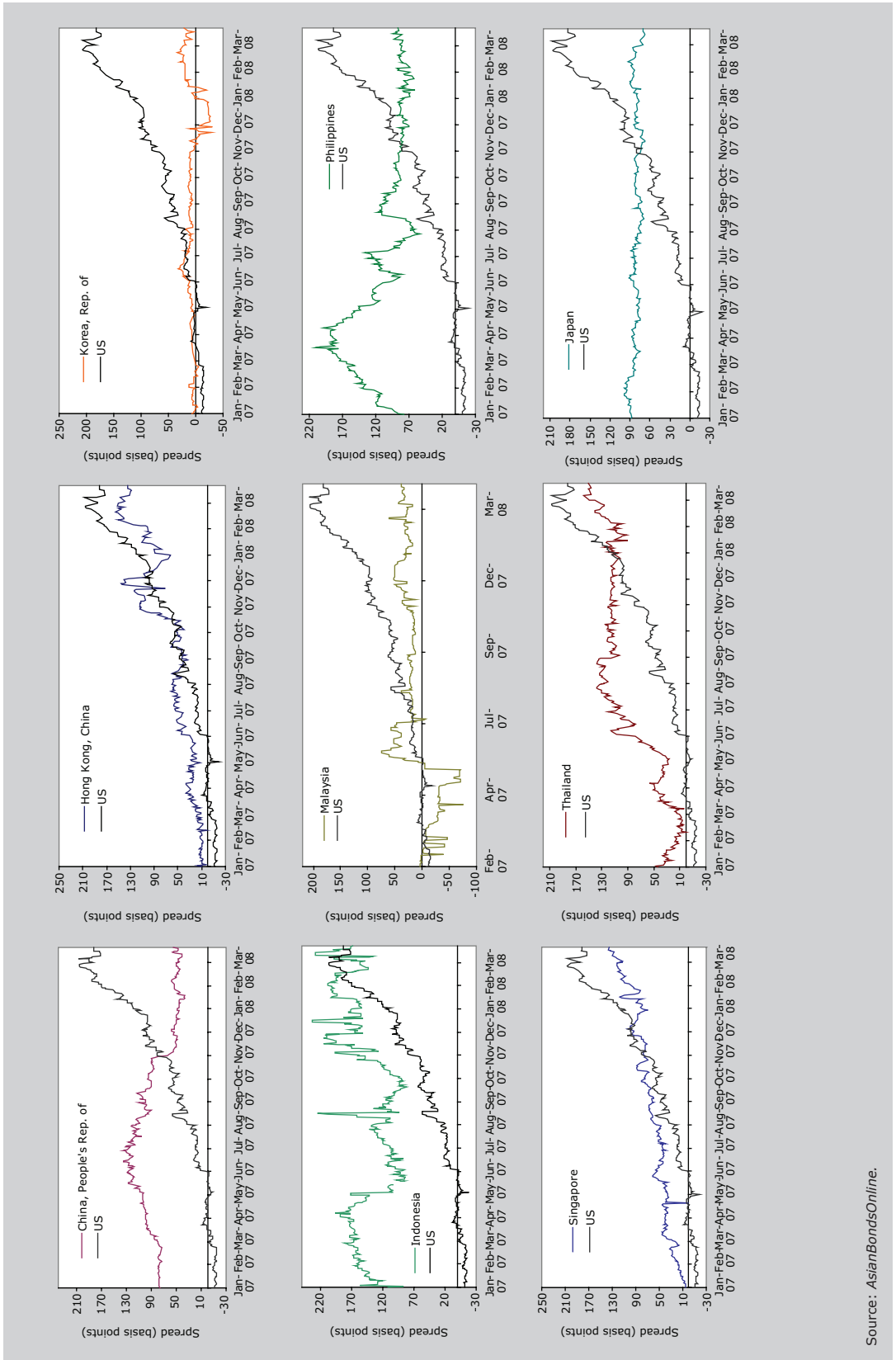
[6] In any discussion of yield curve movements the 2-10 year yield spread is used. The spread is calculated by subtracting the yield on the 2-year local currency government bond from the yield of the 10-year local currency government bond. If the result is positive, the yield curve is said to be normal. If the result is negative the yield curve is said to be inverted. The greater the absolute number, the "steeper" the slope of the curve. Yield curves can be normal, flat, or inverted. Both normal and inverted curves can be steep.

Figure 7: **Commodities Daily Trading Prices** (USD)



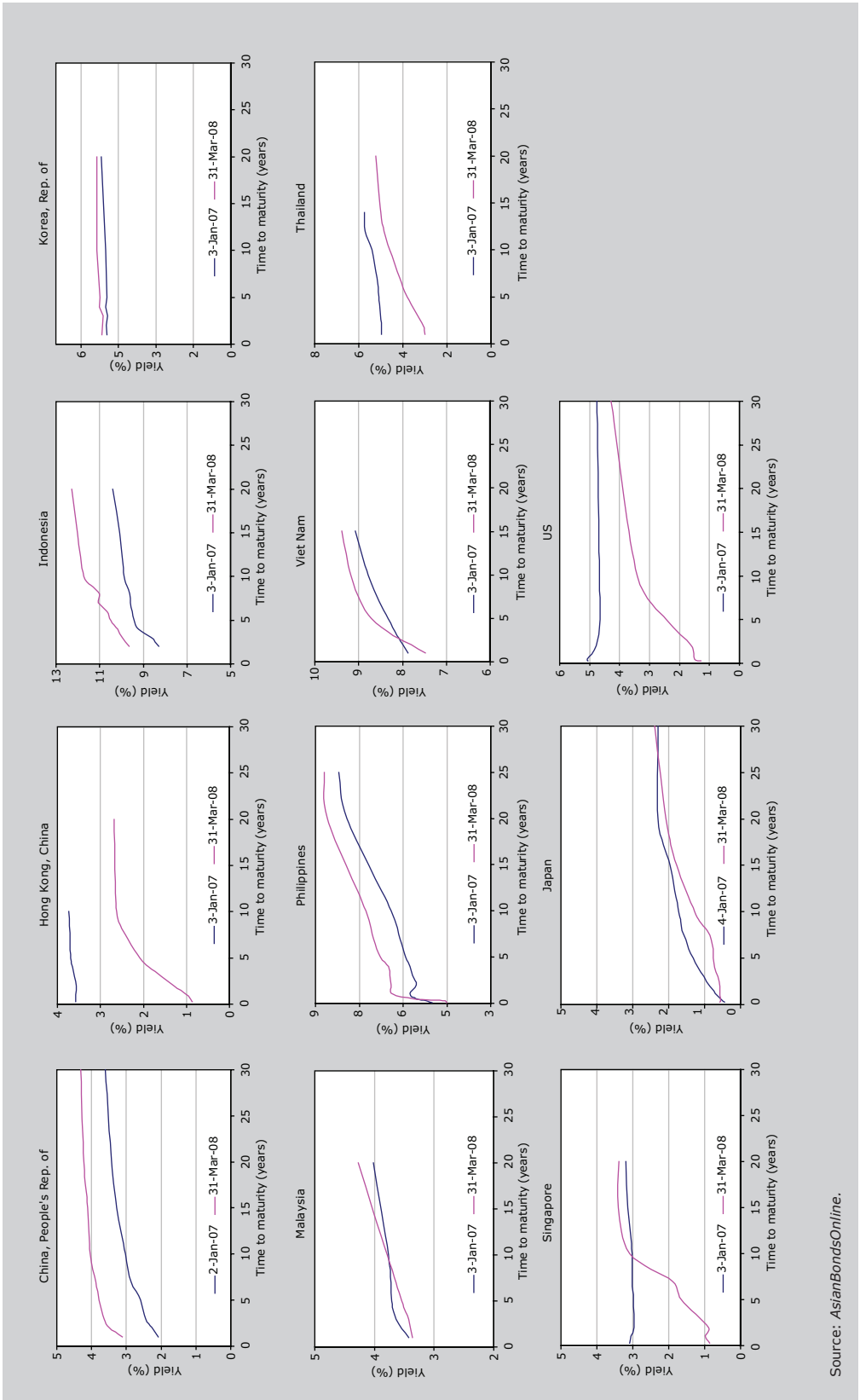
Sources: Bloomberg LP and Reuters.

Figure 8: **Interest Rate Spread—2-Year and 10-Year Local Currency Bonds**



Source: *AsianBondsOnline*.

Figure 9: **Benchmark Yield Curves—Local Currency Government Bonds**



Source: *AsianBondsOnline*.

dramatically as a result of the darkening global mood and initial public offering—related balances in banks drained away. Successive policy rate cuts by the US Fed led the Hong Kong Monetary Authority to follow and local rates fell by as much as they had risen earlier. However, uncertainty and increasingly volatile cash balances to and from the PRC meant that the Hong Kong, China yield curve spread fluctuated more wildly than the US yield curve in the latter part of 2007. From the beginning of 2007 until end-March 2008, the local currency yield curve has steepened by 115bp while the US yield curve steepened 188bp during the same period. Persistent worries over inflation continue in the face of an economic slowdown.

- In Indonesia, the monetary easing beginning in 2006 continued through most of 2007, as the central bank reduced its policy rate by a total of 150bp in six increments of 25bp. During the first half, demand for longer-dated bonds was strong as the market expected more rate cuts and the yield curve spread flattened by 39bp. Although money-market rates continued to follow the policy rate lower in the third quarter, bond yields increased 25–75bp in response to concerns about global credit conditions. From a low of 93bp in the 2–10yr yield curve spread in September 2007, it has steepened to 189bp by the end of March 2008, the result of long-term yields rising by over 150bp. Half of that 96bp steepening occurred following the US Fed's drastic rate cuts.

- Korean bond yields rose slightly across the yield curve during the year. The central bank's efforts to restrain excess liquidity first with quantitative, and later with policy rate, intervention raised interbank rates 21bp over the first half of 2007. A sudden 20bp steeping of the yield curve during the second quarter was prompted by rising inflation and early warnings of property defaults in the US. When the central bank raised its policy rates in two increments of 25bp during the third quarter, the yield curve flattened by 50bp and was inverted by year-end as fears switched from inflation to economic slowdown. When the US Fed cut rates aggressively in January 2008, the Korean yield curve normalized from its inverted slope of -23bp to 19bp, reflecting a significant decline in the demand for short-term funds in the economy. The longer-term yields rose in response to a steady and rapid rise in inflation, which almost doubled during the last 6 months of 2007.

- In Malaysia, the yield curve was almost flat for the first 9 months of the year due to strong demand for longer-dated bonds by international investors expecting a combination of currency appreciation and lower short-term rates. In response to the central bank's active issuance of BNMNs to absorb liquidity, the yield on short- to medium-term notes fell slightly over the course of the year. Longer-dated bond yields fell slightly during the first half, in line with the short-term market, before rising 47bp to finish the year above 4%, in response to growing concerns about inflation. As a result, the yield curve steepened by 37bp during the last 3 months of 2007. Yet, growing concerns over slowing external markets and increased political tensions at home pulled long-term yields back down 34bp and flattened the yield curve by 14bp over 1Q08.

- In the Philippines, excess liquidity in the banking system during the first quarter of 2007 caused short-term bond yields to fall significantly and the 2-10yr yield curve spread steepened from 82bp to 211bp. In the second quarter, the central bank adopted a tightening stance to battle excess liquidity, but after the US Fed began cutting rates because of the credit crisis, the Bangko Sentral ng Pilipinas (BSP) reversed direction and began easing. The BSP cut its policy rate four times during the second half. Short-term rates fell more slowly than 10-year yields largely due to limited supply of long-dated bonds. As a result the yield curve flattened to 81bp by end-March 2008 from the highs of 211bp seen a year earlier. Despite falling yields and a flattening yield curve, the interest rate differential between the Philippines and the US has contributed to the peso's 17% appreciation during 2007.

- Low inflation in Singapore during most of the first half of 2007 led to a decline in short-term rates by more than 50bp. The government increased its sales tax by two percentage points in July, just as high food prices reached the local markets and before US markets began to falter in the face of property defaults. The domestic interbank market tightened briefly, but Singapore was seen as a regional safe haven and new funds poured in from abroad, driving short-term yields down another 50bp in the second half and the currency up 6.3% for the year. As a result of large amounts of surplus short-term cash moving into short-term government bonds, the

yield curve steepened by 80bp over the course of the year and another 130bp in the first quarter of 2008, even though short- to medium-term yields fell by over 50bp.

- Thailand's central bank cut its policy rate by 150bp in four increments during the first half of 2007 to stimulate domestic demand as export growth slowed and the currency appreciated. The yield curve steepened by 83bp to 126bp, reflecting the market's preference for short-term instruments. While the steepening yield curve may have represented increased inflationary expectations, the appreciating currency—12% against the US dollar in the same period—held down import costs and inflation became less of an issue. However the external market's turbulence and the approaching domestic election began to change risk perceptions and led to yields rising across the curve during the second half. Short-term yields rose faster than long-term yields, flattening the yield curve by 17bp. In January 2008, the central bank eased rates to counter the strong currency with yields falling nearly 100bp. Longer-dated bond yields fell more than short-dated bond yields due to speculation that the reserve requirement on debt instruments purchased by international investors would be abolished, as happened in late February 2008. After that capital account relaxation, long-term yields rose by almost 50bp and the yield curve steepened to a level 100bp higher than in January 2007.

- In Viet Nam, the continued high economic expansion brought large amounts of money into the markets from abroad. The central bank's task of controlling inflation was further complicated by high levels of foreign currency liquidity within the domestic market. In the first half of 2007, the measures used were limited to quantitative tightening and attempts at moral suasion, but the rising cost of finance was insufficient to slow the economy. A protracted debate ensued between government factions who were more worried about inflation and those preferring a policy of cheaper finance, which delayed a clear policy direction until the fourth quarter. By end-2007, the central bank finally lifted its lending rates and issued its own bills to join the Treasury in trying to soak up some of the excess liquidity. Bank reserve requirements were also lifted. As a result of these measures market yields, as indicated by successive new bond issues, increased almost 200bp over the course of the year and the yield curve steepened by over 50bp in the year to end-March 2008.

Bond Index Returns

In a roller-coaster year, the combination of falling yields and stronger currencies lifted the Pan-Asian Index to an 8.0% return in US dollar terms for 2007, lower than the 13.6% performance during the previous year.

- The ABF Pan-Asian Index returned 8.0% over the course of 2007, considerably behind its 13.6% performance in 2006 (**Table 5**). Returns were also behind the less volatile US government market index return of 8.6%. Falling yields and further currency strengthening against the weak US dollar produced very strong returns of 3.9% in the first quarter of 2008. The performance mirrors January 2007 when falling yields and rising currencies produced similarly attractive returns. It is unlikely that these are sustainable unless the USD continues to weaken and there are further reductions in local currency interest rates, which are presently highly dependent on US Fed moves.

- As currencies strengthened over the year, half the markets in the index turned in strong US dollar returns despite middling LCY returns. In 2007, unhedged US dollar returns include a significant foreign currency element in the returns of Malaysia (9.4%) Singapore (11.5%), Thailand (13.4%), and

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

Market	Modified Duration (years)	2007 Returns (%)		2008 YTD Returns (%)	
		Local Currency Bond Index	USD Unhedged Total Return Index	Local Currency Bond Index	USD Unhedged Total Return Index
China, People's Rep. of	4.15	(2.12)	4.54	2.08	6.14
Hong Kong, China	3.48	5.91	5.61	4.36	4.55
Indonesia	4.32	9.84	5.51	(4.28)	(2.48)
Korea, Republic of	3.38	2.36	1.73	3.44	(2.19)
Malaysia	4.49	3.05	9.37	1.80	5.18
Philippines	4.39	6.21	23.41	(0.51)	(1.50)
Singapore	5.18	5.05	11.46	2.64	6.66
Thailand	4.94	6.66	13.44	3.48	10.213
Pan-Asian Index	4.19	NA	8.03	NA	3.92
US Govt 1–10 years	3.65		8.59		4.50

Notes:
1. Market bond indices are from iBoxx ABF Index Family. 2008 YTD is year-to-date returns as of 31 March 2008.
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 31 March 2008.
Sources: *AsianBondsOnline*, Bloomberg/EFFAS for US Government Bond Index.

Philippines (23.4%). Indonesia; Korea; and Hong Kong, China all lost some return due to weakening currencies. Indonesia had attractive LCY returns to start with (9.8%) as a result of central bank easing, but lost 4.3% due to the weakening rupiah. The PRC was the worst performer in LCY terms, losing 2.12% because of steady tightening throughout the year, but its solid currency gains (6.7%) produced positive returns in USD unhedged terms of 4.5%.

Institutional and Regulatory Developments

Reforms in 2007 concentrated on the secondary market, with the key themes: the establishment of better risk management tools, better price discovery, and greater choice of fixed-income assets for local and international investors.

While yield curve extension and consolidation in government debt markets continued over the past year, regulators have begun supplementing these reforms with initiatives aimed at raising the efficiency of the secondary markets for both government and corporate bonds. These include introducing derivatives and term repurchase agreements to improve risk management capacity in their markets, implementing new execution platforms and standards for trading and reporting to aid price discovery, and increasing the range of investable assets available to nonresidents and residents. Expanding the range of domestic and nonresident investors has also been a priority.

- In the PRC, a number of reforms were enacted in the first half of the year and helped stimulate more corporate issuance, in spite of steadily rising yields. Many of the reforms focused on the interbank[7] market that operates under the central bank's supervision. Although the People's Bank of China— the PRC central bank—is not the securities regulator, it takes an active role in the bond market under its financial stability responsibilities. Since 2007, corporate bonds already listed on the exchanges could also be traded on the interbank bond market, replacing the previous system where some corporate

[7] The People's Republic of China interbank market is effectively an over-the-counter market, with over 5,000 participants including mutual funds and insurers.

debt securities were restricted to trading on exchanges.[8] These changes have yielded positive results for bond market turnover as trading locale is less restricted—94% of the increased corporate bond transaction volumes now take place on the interbank market. The Shanghai stock exchange's bond market, where securities firms are the executing agents for investors, has successfully repositioned itself to provide access to small trades by the investing public, and provide risk management tools such as repos. While OTC derivatives can be traded on the interbank market, other hedging tools such as exchange traded financial futures have been authorized and are now planned for later in 2008 if the repo market initiative continues to be a success. Focusing capacity-building efforts initially on a single platform for exchange-traded derivatives makes it easier for the regulator to monitor the market and learn from experience under a centralized approach—the quality of risk-pricing information is also improved. The PRC is moving toward a universal-bank approach—meaning that banks can deal in insurance products as well as securities on behalf of clients—and it is expected that the Shanghai exchange will grow in importance as participants require improved access to risk management products to hedge balance sheet risk. In February 2008, the China Banking Regulatory Commission and Financial Services Agency of Japan reached an agreement related to the Qualified Domestic Institutional Investor system signaling closer bilateral co-operation between financial services regulators. The State Administration of Foreign Exchange also announced plans to expand the quota for both foreign and domestic qualified institutional investors, which should enlarge the demand for domestic fixed-income securities.

- In addition to Hong Kong, China's many steps toward becoming a full-service offshore financial center for the PRC, it also aims to become another of Asia's Islamic finance centers. The Hong Kong Shariah Advisory Council was established to vet new instruments for compliance with Islamic code. The first such product is an Islamic China equity index fund launched in November, targeting Middle Eastern investors with PRC based assets. Other, similar funds are also being planned. An Islamic bond market has been touted to begin operation

[8] Article 1 of Announcement 2005 No. 30, issued by the People's Bank of China on 13 December 2005 provided that corporate bonds meeting certain requirements could be traded on interbank bond markets. The approval system was expanded in 2007.

sometime in 2008. These initiatives are strengthened as the HKMA has implemented a delivery-versus-payment (DvP) link with Bank Negara Malaysia, the Malaysian central bank. This system is an improvement on the previous payment-versus-payment system and will allow real-time settlement of MYR-USD trades in either market. The system should help develop the region's capabilities as an Islamic financing hub. The Hong Kong Monetary Authority also launched an electronic trading platform for government bonds in December 2007.

- Indonesia's central bank shifted its policy rate in January 2008 from its 1-month rate to an overnight rate and will become much more active in day-to-day liquidity management this year. It also plans to extend the maturity of the bills it offers to include 6- and 9-month certificates and will extend its Shariah-compliant bills out to 1- and 3-month maturities. The government plans to extend its debt switch-auction format to offer a range of longer-maturity bonds in exchange for the short-term notes tendered. In order to develop the structured finance market, Bapepam LK, the securities regulator has issued four regulations governing different aspects of the offering and management of REITs.

- In Korea's recent bid to become an Asian financial hub, its National Assembly passed the Capital Markets Consolidation Act in July 2007 to streamline financial regulations and liberalize capital flows. The plan to adopt a Korean version of the International Financial Reporting Standards by 2011 is one example of supporting measures. In preparation for further opening the capital account, the central bank and the Financial Supervisory Commission (FSC), the securities regulator, are establishing new monitoring and risk management functions. The FSA announced in October its plan to launch a 10-year bond futures contract in 2008. Its introduction will complement existing swap and interest-rate forward contracts and should help to encourage acceptance of longer-dated corporate bonds as well as allowing efficient hedging of the 10-year Treasury bond. The major regulatory benefit of creating a futures contract is that it allows the FSA to monitor system risk more precisely than it can through the over-the-counter derivative market.

- In Malaysia, the clearing arrangement between HKMA and Bank Negara Malaysia reinforces the impression that Middle Eastern funds will soon be able to access Shariah compliant products that can take advantage of PRC growth prospects. Combined with the HKMA's right (since December 2000) to clear USD payments locally, rather than wait 12 hours for New York daytime, the DvP link would allow US dollar investors from the Middle East to settle their ringgit investments in Malaysian daytime. The Securities Commission issued new guidelines in July on collective investment vehicles to allow direct distribution in Malaysia of funds from recognized jurisdictions. While Dubai became the first such recognized jurisdiction, the new DvP link suggests that funds from Hong Kong, China might soon follow.

- In the Philippines, the Securities and Exchange Commission (SEC) has phased in regulations governing OTC trading. From end-January 2008, all interdealer transactions are required to be reported through a self-regulating organization (SRO)—currently the Philippines Dealing Exchange is the only licensed SRO. Dealers and brokers are required to be members of an SRO before trading. The aim is to improve disclosure and transparency, although there have been difficulties implementing the rules, which have hurt turnover. The government is also planning a range of bond-related instruments to appeal to nonresident investors. The central bank recently approved the February issue of PHP2 billion (equivalent to 3.7% of current LCY bonds outstanding) in currency warrants. The warrants allow holders to convert US dollar bonds into the peso Treasury note of 2016. The major attraction of these warrants is that domestic banks can hold US dollar bonds with a risk weighting of zero for Basel purposes, while US dollar bonds otherwise carry a 100% weighting. This approach may relieve some of the buying pressure on the peso. Against this, the Bureau of the Treasury bought back USD1.8 billion worth of its foreign currency debt last year. In 2008, two public housing mortgage companies are investigating whether to refinance part of their portfolios with mortgage-backed securities. However, several pieces of enabling regulations remain to be issued or enacted. The same hurdles have so far discouraged use of the securitization law passed 2 years ago. Another bill under consideration in the Senate would regulate real estate investment trusts, but key aspects of the tax treatment are yet to be clarified.

- The Monetary Authority of Singapore issued a series of new guidelines for the REIT market after year-long consultations with participants. To improve distribution, the changes require greater clarity in the offering documents, more investor safeguards, and disclosure on the use of yield-enhancing arrangements. The latter often include higher-leverage levels in the final investment, the consequences of which may be hard for the final investor to understand. Promotional techniques that may have created a conflict of interest among different classes of investors, such as pre-listing discounts to institutional investors, will also be restricted. Investment rules now also stipulate that at least 75% of assets must be invested in income-producing property. One implication of these new rules is that REIT promoters were more interested in generating sales commissions with new offerings than in providing a sustainable flow of investments that were consistent with the advertised risk and return expectations.

- Thailand's National Legislative Assembly passed a major amendment to the Public Debt Management Act in November 2007, which allows the government to issue bonds when the budget is in surplus for refinancing and bond market development purposes. This makes the debt market supply more reliable and allows the Ministry of Finance to consolidate their issuance and raise benchmark size more effectively. As a result, the Ministry of Finance announced that the new 5- and 10-year Treasury bonds will be offered in larger, less frequent auctions to support easier distribution. It is also requiring primary dealers to make institutional-size firm, two-way quotes on both bonds at least once a day, late in the morning session with a minimum bid-ask spread of 5bp as a first step toward easier price discovery for investors. The Bank of Thailand, the central bank, is reforming its repurchase agreement (repo) market to shift it from one designed primarily for open market operations to control banking system liquidity to one that can finance portfolio investments. The bilateral repo market went into effect in October with four new dealers added to the nine previous ones. The ability to finance bond purchases or to affect short sales through repos provides an important risk management tool that encourages market liquidity. The combination of these new initiatives may have been a factor in the doubling of turnover within the government market last year. In February 2008, the Bank of Thailand also announced the abolition of

the December 2006 capital control requirement on foreign investor holdings of bonds.

- Viet Nam's bond market has evolved considerably over the past year. To help absorb excess liquidity produced by foreign investments, the central bank began issuing a range (1–12 month tenors) of bills on a continuous basis. The bills support monetary policy but, more importantly, offer an important ingredient in the country's nascent money market. In parallel, the Ministry of Finance stopped setting ceiling rates on its Treasury bonds, allowing the market to determine rates. This has boosted turnover considerably since November. It also plans to launch an online government bond market in 2008 not associated with the stock exchange but would list all types of government bonds traded on a dedicated exchange in Hanoi. Trading membership would be open to securities companies and all banks with offices in Viet Nam.

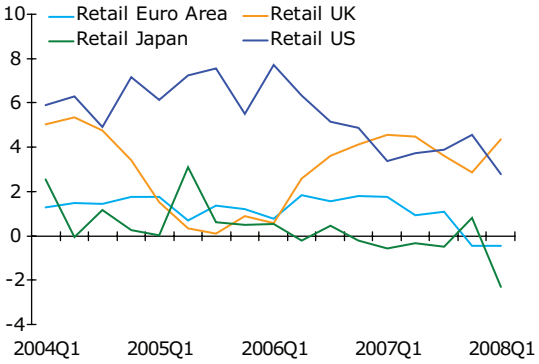
Outlook, Risks, and Policy Challenges

External Market Environment

The global economy is expected to slow moderately in 2008 in response to the effects of a weakening US economy, continuing workout of the US subprime-generated financial turmoil, tighter credit conditions, and rising inflation.

Economic growth in Organization for Economic Co-operation and Development (OECD) member states slowed to 2.7% in 2007, and a further deceleration is expected in 2008, the result of a sharper and broader slowdown in major industrial economies. The outlook for the United States (US) economy appears particularly uncertain with gross domestic product (GDP) growth falling to an annualized 0.6% in the final quarter of 2007. The economy grew by 2.2% over the full year and is forecast to decelerate to 1.5% this year. Many expect a contraction during the first 2 quarters of 2008, with considerable downside risk not ruling out a more severe and protracted contraction on the horizon.

Figure 10: **Retail Sales Growth** (%)



Source: CEIC.

The slowdown primarily reflects a period when widespread, aggressive risk-taking led to eventual credit deterioration. Since the late 1990s generally low interest rates led to an obsessive search for yield, increasing leverage markedly throughout the financial system. One result was a sustained rise in the prices of a broad spectrum of financial and real assets. The US subprime mortgage market—where risk was first repriced—may indicate where risk-taking had gone furthest.

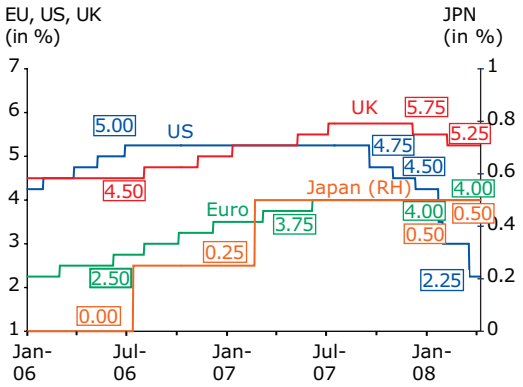
The substantial losses in subprime and other lower quality home mortgage sectors—perhaps only partly realized to date—along with a number of credit rating downgrades contributed to knock-on-effects across a broad range of financial markets and institutions. The ensuing general loss of confidence also contributed to losses in most global equity markets in the first quarter of 2008. Until then, equity markets had resisted the downward pressures from current financial market developments. Consumer spending—a significant component of US economic growth and global demand—is expected to dampen further in the months ahead due to factors such as slumping housing prices and stock markets, record high energy prices and slower job growth (**Figure 10**).

Driven by rising food and energy prices, headline inflation in the US hit a 16-year high of 4.1% in 2007 and in the eurozone a 15-year high in January this year. Against the backdrop of a historically strong euro, slowing US demand, tighter credit, heightened financial volatility, and stubbornly high inflation, GDP growth in the eurozone is expected to slow to 1.7% in 2008 from 2.7% in 2007.

Coordinated monetary responses and credit intermediation by the world's major central banks brought some relief to money markets; but continued tight credit conditions combined with higher inflation indicate broad market strain.

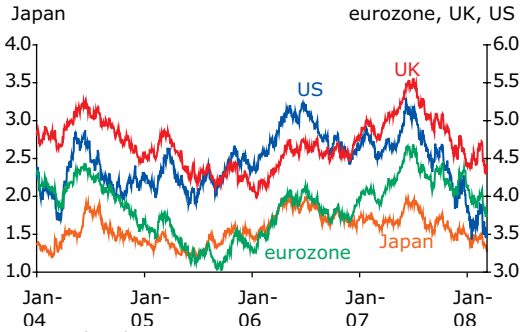
Recent economic performance, along with continued financial market deterioration, point to greater market strain than earlier anticipated. Major financial markets faced problems sparked by the evaporation of market liquidity for the most opaque and complex instruments—and by institutions most heavily exposed to these instruments. This prompted many monetary authorities to either lower benchmark borrowing rates or halt tightening

Figure 11: **Global Policy Rates** (%)



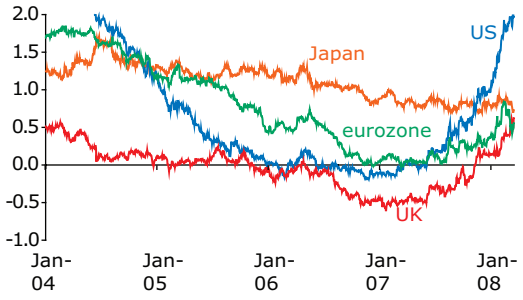
Source: Bloomberg LP.

Figure 12: **10-year Government Bond Yields** (% per annum)



Source: Bloomberg LP.

Figure 13: **10-year and 2-year Government Bond Yield Spreads** (% per annum)



Source: Bloomberg LP.

cycles—with the aim to ensure monetary policy objectives are met and to alleviate disruptions in the interbank market. Authorities were forced to use innovative approaches to inject liquidity and rescue failing institutions.

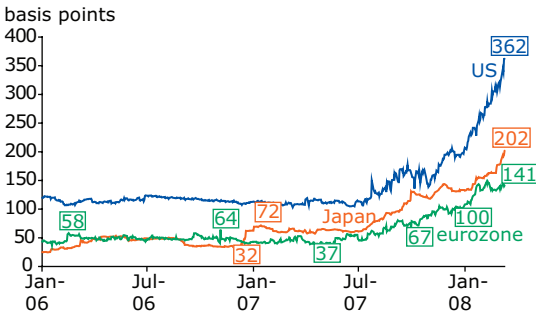
Continued cuts in the US Federal Reserve (US Fed) federal funds rate, the decision in March 2008 to provide up to USD200 billion in US Treasuries to primary dealers, and the corporate bailout—including Bear Sterns and Northern Rock—indicates authorities nervousness over the current situation. At the same time, both the Bank of Japan and European Central Bank (ECB) have kept interest rates unchanged (**Figure 11**). Some credit market segments remain under stress due to a lack of liquidity and heightened investor scrutiny**.** Attempts by monetary authorities to forestall or stem recession have also been complicated by higher inflation.

The current financial market dislocation has led to increased uncertainty over the extent and distribution of subprime-related losses—and to tightened credit standards for borrowers.

Subprime-related losses are continuing to grow among financial institutions and investors are requiring increasingly higher risk premiums on their holdings of mortgage-based and complex derivative securities. So far, banks worldwide have reported more than USD175 billion in write-downs and more losses are expected. Concern over the value of illiquid instruments and the large quantities of asset-backed commercial paper (ABCP) linked to US subprime mortgages has also led to a sharp rise in money market spreads and a marked decline in ABCP outstanding. The uncertainty over the distribution of the losses has resulted in a flight to quality to government bonds and led to tightening credit supply. The flight to quality since the August market sell-off has pushed US, euro, UK, and Japanese government bond yields substantially lower, but yield curves steepened on expectations of further easing (**Figures 12, 13**). Deteriorating credit conditions amid slowing global growth are also reflected in widening credit spreads on corporate debt (**Figure 14**).

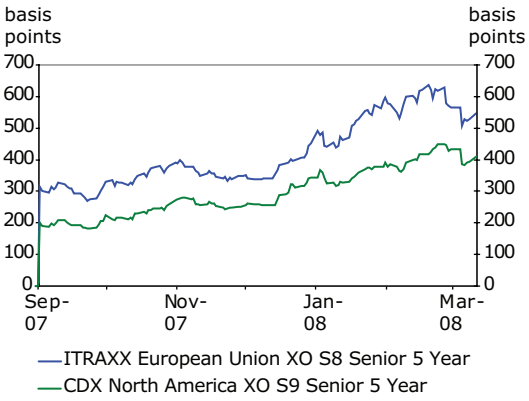
The tightening of financial conditions, with a diminished supply of secured credit and tighter lending standards for mortgages, is likely to add further pressure on already highly-indebted consumers, raising the specter of increased defaults. For

Figure 14: **Corporate Bond Spreads** (% per annum)



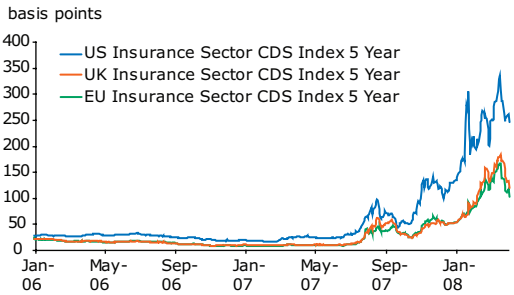
[1]Refers to the difference between yields of 5-year bonds issued by BBB-rated finance companies and yields of sovereign benchmark bonds of the same tenor.
Source: Bloomberg LP.

Figure 15: **CDX NAXO Crossover 5-year** (basis points)



Source: Thomson DataStream.

Figure 16: **CDS Spreads for Insurance companies**



Source: Thomson DataStream.

example, some highly indebted European and US companies are facing growing difficulties in refinancing borrowings. The cost of protecting corporate bonds—as measured by crossover credit default swap (CDS) spreads—from default, increased with perceptions of credit quality deteriorating at a time when the corporate earnings outlook is under pressure from financial market turbulence (**Figure 15**). The temporary affirmation of AAA ratings for monoline insurers MBIA and Ambac has eased pressures on this specialized sector, but their still-high CDS spreads for insurance companies show market participants' doubts about the sustainability of their credit ratings and the lingering risk of another round of defaults (**Figure 16**). Delinquency rates also continue to climb in both the US residential mortgage and construction loan markets—sectors that have been hardest hit by the economic uncertainty—and are increasing on US commercial loans and credit card loans as the quality of other bank assets worsen (**Figure 17**).

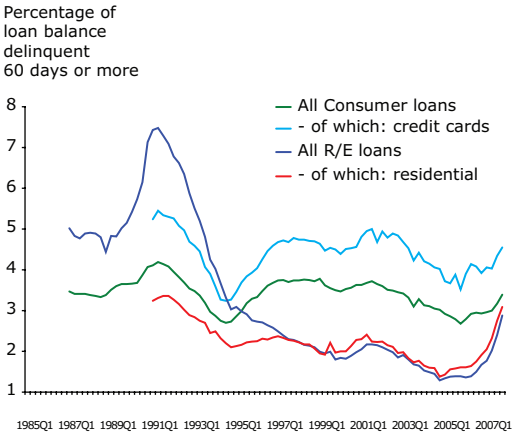
The recent global financial market turbulence uncovered the need for better oversight, enhanced transparency and strengthened risk management.

The importance of fluid, effective and efficient financial systems in today's global economy—with high prevailing debt levels and a myriad of instruments to spread and manage risk—is essential to avoid a further unwinding of financial markets that could contribute to further deterioration of economic conditions. Authorities, regulators, and market players have coalesced around three general trends that need to be addressed:

- The effectiveness of the fragmented US system of financial regulation has come under increased scrutiny as the consequences of the meltdown in the US subprime mortgage market and as the resulting global market turmoil continues to unfold. The blueprint for regulatory reform[9] released by the US Treasury 31 March recommends a regulatory model structured by regulatory objective rather than by the type of financial institution. The idea is to allow for an easier, faster, and more flexible response to an ever-evolving and increasingly complex marketplace. Three top level regulators would suffice: (i) one to focus on market stability across the entire financial sector; (ii) another to ensure the safety and soundness

[9] US Treasury, Remarks by Secretary Henry M. Paulson, Jr. on Blueprint for Regulatory Reform, March 31, 2008. hp-897

Figure 17: **Loan Delinquency Rate at US Banks** (in % of loan balance)



Source: US Federal Reserve.

of institutions supported by a US federal guarantee, and (iii) the third to focus on protecting consumers and investors.

According to US Treasury Secretary Henry Paulson, the current US regulatory structure has not been built to address modern financial systems—with its diversity of market participants, innovation, complexity of financial instruments, convergence of financial intermediaries and trading platforms, global integration, and interconnectedness among financial institutions, investors, and markets. With financial services companies becoming larger, more complex, and thus more difficult to manage, the current regulatory system tends to be reactive—a pattern of creating regulations as a response to market innovations or to market stress.

Because of the effects of globalization on the transmission of shocks across international markets, the process of reviewing broader arrangements for regulation and supervision should not be the sole responsibility of the US. Regulatory reform is likely to generate controversy and debate among financial market regulators worldwide. But this is essential to ensure long-term financial market stability and economic growth.

- Sovereign wealth funds' (SWFs) recent capital injections into several financial institutions—for example, into US and other Group of Seven (G7) financial institutions—were stabilizing factors in the turmoil (**Box 1**). They came at a critical time, when risk-taking capital was scarce and market sentiment was pessimistic. But, the growing role of SWFs has raised questions regarding the smooth functioning of financial markets. They have also raised investment policy questions, including concerns in recipient countries about protecting national security and transparency. Central to the current debate on SWFs primarily reflects the desire of recipient countries to be given adequate information about SWF governance, objectives, and strategies. The concern is that SWF investments may be driven partly by non-commercial strategic interests, and could bring about a protectionist reaction as a result, if there is less than complete and robust information.

- Risks inherent in complex instruments and relevant risk-management standards have been addressed in a wide variety of forums. But these instruments continue to expose

Box 1: **Why All the Fuss about Sovereign Wealth Funds?**

Sovereign Wealth Funds (SWFs) have been around for more than 50 years. What has peaked observers' interest are the economic and governance settings under which they operate, the source of the finances they control, and in some cases an unease with national funds controlling private sector assets.

Interest—and some concern—over SWFs has increased in several OECD economies where recent capital infusions into prominent banks signaled a portfolio shift in fund use from maintaining liquid debt instruments to buying strategic transnational equity holdings. This prominence also reflects the increase in both the number and size of SWFs. Their growing presence has indirectly created a material investor group of governments. With huge investible sums available, the potential to influence the efficiency of global markets and commercial activity generally has become an issue. Estimates suggest that the aggregate size of SWFs exceeds USD2-USD3 trillion—influential perhaps, but merely a fraction of the USD100 trillion capitalization of all global debt and equity securities.[1]

Broadly speaking, SWFs are investment vehicles owned or controlled by state agencies such as central banks, state investment companies, state pension funds, and oil funds. Globally there may be as many as 40 SWFs. They are typically categorized according to the source of funds, based on commodity or non-commodity revenues. Many SWFs deploy wealth generated from taxes or fees associated with commodity or natural resource exports, while non-commodity funds are typically used to more effectively manage excess foreign exchange reserves.

Many SWFs were created with national economic welfare in mind to (i) help insulate budgets and economies of commodity exporters from volatile commodity prices; (ii) preserve wealth for future generations; and (iii) achieve returns higher than those expected from traditional international reserve management.

The rapid build-up of the Asia's foreign exchange reserves since the Asian crisis have, for example, led to widespread calls for more active management of the region's excess reserves. In response, governments across the region have begun establishing SWFs,[2] signaling a strategic shift from passive liquidity management to active profit-seeking investment in managing excess reserves.[3]

SWFs invest across a varied range of asset classes and, similar to commercial sector fund managers, use an assortment of investment strategies. Some are broadly diversified and hold small stakes in a variety of firms. But a minority is accustomed to buying strategic stakes in domestic or foreign targets. Others invest only in sovereign or quasi-government bonds. Most tend to outsource a portion of their resources to third-party fund managers. As opposed to commercial funds, SWF performance is more likely to be judged in terms of absolute returns or relative to an interest rate index, although many will use popular commercial index benchmarks for comparative assessments. SWFs tend not to be active investors, except in relation to management of liquid debt instruments. The majority generally do not seek controlling stakes in foreign companies, though some SWFs have sought control of private equity funds.

In the search for greater yield, SWFs' portfolios have diversified from traditional low risk and highly liquid assets—such as government bonds—to other assets such as securities and derivatives. This could increase liquidity in less active market segments. As long-term sources of investment, SWFs can provide a stabilizing effect on some firms. Their ability to prop up or come to the rescue of troubled firms—certain US banks may be recent examples—SWFs can arguably be contributors to financial system stability.

Transparency is central to the current debate on transnational SWFs—primarily reflecting the desire of host states and investment targets to receive sufficient details on SWF governance, objectives, and strategy. The concern is also that SWF investment may be driven partly by noncommercial strategic interests, raising the possibility of a protectionist rebuff. As usual, sound policy is best founded on complete and robust information.

SWF investment affects the legitimate interests of both investing and host countries. As such, a global dialogue in which interests of both investing and host countries are fully and fairly represented would benefit both parties. Several efforts are being taken to address these issues, including discussions by the US Treasury Department,[4] the International Monetary Fund, the World Bank, the

[1] The International Monetary Fund estimates that the total size of SWFs has the potential to grow to USD6-USD10 trillion by 2013.

[2] Singapore's funds—Temasek Holdings and Government of Singapore Investment Corporation—are the oldest in the region and widely thought to have been exceptionally successful in terms of investment performance. Examples of new Asian sovereign funds include China Investment Corporation and Korea Investment Corporation, established in September 2007 and July 2005, respectively. Singapore's funds and the newer Asian funds are all non-commodity funds derived from receipts from the export of manufactured goods and services

[3] The China Investment Corporation is responsible for managing part of the People's Republic of China's foreign exchange reserves with USD200 billion United States dollars of assets under management. This sovereign wealth fund officially began operations in September 2007. It bought a USD3 billion stake of Blackstone Group in June and a 9.9% stake of Morgan Stanley worth USD5 billion on 19 December 2007.

[4] Financial Services Subcommittee on Domestic and International Monetary Policy, Trade and Technology, and the Subcommittee on Capital Markets, Insurance, and Government Sponsored Enterprises Hearing. Foreign Government Investment in the U.S. Economy and Financial Sector, Wednesday, 5 March 2008.

OECD[5] and others to develop voluntary codes of SWF best practices, building on accepted standards of practice for international reserve management. Regional institutions can also help draw Asian governments together to discuss SWFs and their role within the region. An increase in the quality and quantity of information about SWF activity could help allay nationalistic concerns, and lessen expectations that their actions, or rumors of actions, would increase market volatility and become destabilizing. The same discussions may also help avoid discriminatory rules that penalize SWFs in favor of commercial investors.

[5] Sovereign Wealth Funds and Recipient Country Policies, Report of the OECD Investment Committee to G7 Ministers, 4 April 2008.

Box 1 Table 1: **Disbursements by Sovereign Wealth Funds**

Economy	Fund Name	Launched	UD$ billion	% of 2006 GDP
UAE (Abu Dhabi)	ADIA	1976	625.0	520.70%
Norway	Norway Government Pension Fund	1990	322.0	102.60%
Singapore	GIC	1981	215.0	169.00%
Kuwait	Kuwait Investment Authority	1953	213.0	268.70%
China, People's Rep. of	China Investment Corporation	2007	200.0	8.00%
Russia	Russia Stabilisation Fund	2004	127.5	14.20%
Singapore	Temasek	1974	108.0	84.90%
Qatar	Qatar Investment Authority	2005	60.0	185.30%
US (Alaska)	Permanent Reserve Fund	1976	40.2	0.30%
Brunei	Brunei Investment Authority	1983	30.0	309.40%
Korea	KIC (Korea Investment Corporation)	2005	20.0	2.20%
Malaysia	Khazanah Nasional BHD	1993	17.9	12.30%
Venezuela	National Development Fund	2005	17.5	10.50%
Canada (Alberta)	Alberta Heritage Savings	1976	16.4	1.30%
Taipei,China	National Stability Fund	2001	15.2	4.00%
Kazakhstan	National Fund	2000	14.9	15.60%
Chile	Economic & Social Stability Fund	2006	9.7	7.60%
UAE (Dubai)	Istithmar	2003	8.0	6.70%
UAE (Dubai)	DIC	2004	6.0	4.00%
Oman	State General RF	1980	6.0	16.00%
Total			2072	

Source: Standard Charterd Bank

investors to significant losses as interest rates, foreign-exchange rates, and other market indexes change. Recent lapses in risk management, oversight, and prudence in risk-taking—such as with Société Générale[10]—have reinforced the need for continued strengthening of risk management practices, especially given the problems in capturing credit and liquidity risks.

While the shift from the originate-and-hold to an originate-and-distribute banking model has many advantages, the US subprime problems highlighted several weaknesses. The traditional originate-and-hold strategy involved originating loans and holding them on balance sheets until they were repaid or written off. With the shift to the originate-and-distribute strategy, banks can spread the underlying risk of the original loans to final investors such as pension funds, insurance companies, hedge funds, mutual funds, and other banks. This unbundling and repackaging credit risk enables market participants to assume exposures in accordance with their risk appetites and capacities. This risk diversification contributes to the efficiency and stability of the global financial system. However, it is critical that both originating and investing firms understand the risks in transactions relating to credit risk transfer. During the recent financial market turmoil, the originate-and-distribute strategy may have contributed to reduced incentives for banks to undertake adequate credit risk assessment at the time of origination, assuming that the risk would be offloaded later. Moreover, the markets for credit risk transfer are especially vulnerable whenever there is impaired market liquidity.

Regional Economic Trends and Outlook for 2008

Despite the worsening external economic environment facing emerging East Asia, GDP growth, while moderating, is expected to remain robust.

Emerging East Asian economies face strong headwinds as external demand weakens, global oil and commodity prices remain elevated, the global IT recovery is delayed, and

[10] Societe Generale SA's oversight procedures were in 2007 called into question after the discovery of a trader's unauthorized bets causing a EUR4.9 billion (USD7.7 billion) trading loss for the bank.

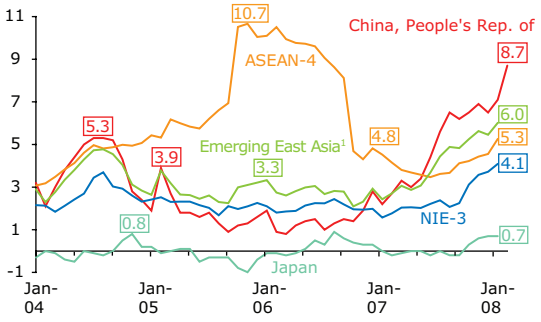
subprime-generated financial turmoil continues. The region's economies have so far weathered these external shocks relatively well—due to sound economic policies, external balances and regional financial market conditions. There has been limited and indirect exposure to US subprime-related losses. Together with improved macroeconomic fundamentals and prudent economic management, aggregate GDP growth is expected to moderate yet remain robust in 2008. This resilience, however, could be further tested in the coming months as uncertainty over global financial turbulence continues.

In Japan, GDP is expected to slow significantly in 2008 as exports show signs of slowing and the JPY continues to strengthen against the US dollar. In the People's Republic of China (PRC) a gradually appreciating CNY; continued monetary tightening; and an expected deceleration in the growth of external demand should lead to some cooling of the economy. However, the offsetting stimulus of increased public spending—especially related to the 2008 Olympic Games and to efforts to encourage the rural economy—should sustain relatively rapid growth throughout the year.

Inflation continues to rise across the region, largely due to record oil and other high commodity prices, but also due to strong domestic demand in economies such as the PRC.

Headline inflation (**Figure 18**) continues to pick up across the region, largely due to resurgent food, oil and other commodity prices, and strong domestic demand. Consumer price inflation reached multiple-year highs in several economies in the region, including a 25-year high in Singapore (6.6%); an 11-year high in the PRC (8.7%) and Viet Nam (15.7%); and a 10-year high in Hong Kong, China (3.8%). Japan's inflation also edged into positive territory (0.7%) in January 2008. Overall, relatively tight labor markets and higher food and energy prices are expected to increase inflationary pressures throughout the region in 2008.

Figure 18: **Regional Inflation—Headline Rates** (y-o-y, %)



[1]Includes People's Republic of China, NIE-3 and ASEAN-4.
Source: OREI staff calculations based on CEIC data.

Perhaps the most immediate and visible impact of the subprime fallout in the region has been an increase in volatility in securities markets across the region.

The region's financial markets have already tumbled twice since the beginning of the year (in mid-January and early March) and some of the region's largest financial markets—including the PRC; Hong Kong, China; Japan; and Republic of Korea (Korea) were affected by the March sell-off. The decline resulted from several factors, including some liquidation of portfolio holdings by foreign financial institutions, global market uncertainty, and also by more realistic risk evaluation in global financial markets as a whole, and an adjustment in the expected returns of underlying investments. Also, domestic credit—supported by ample domestic savings—continues to provide resources for investment even as portfolio equity and bond flows taper off.

Capital outflows from Asian economies have helped stabilize mature markets. Notable examples are the large injections of funds into major G7 banks from several Asian-based SWFs, which helped stabilize some bank share prices. But as global financial turmoil spreads further malaise, heightened anxiety threatens to trigger a sharp withdrawal of financial flows from the region. With the two largest regional economies—Japan and the PRC—showing signs of slowing, concerns are mounting that continued financial volatility might weaken the growth momentum in regional demand and overshadow current robust growth performance.

Early in the recent credit tightening, emerging East Asian local currency bond markets benefited as investors sought attractive yields outside the US. But amid growing risk aversion, the illiquidity of the region's markets is a limiting factor (Box 2).

At the initial stages of the recent credit tightening, emerging East Asian local currency bond markets benefited as investors sought attractive yields outside US markets. However, with growing risk aversion, foreign investors began withdrawing from most of the region's bond markets. The pace of government and corporate issuance in the region has slowed but not to the same extent as the reduction in global bond issuance. The region's offshore bond issuance market has slowed markedly and securitization markets have largely dried up.

Box 2: **What's Needed to Build Liquidity—an *AsianBondsOnline* Survey**

The November 2006 edition of the *Asia Bond Monitor* published an *AsianBondsOnline* survey of various measures of liquidity across the region. The survey was updated during the first quarter of 2008 and is presented below. Some 40 market makers and operations experts from exchanges, bond platforms, or depositories from emerging East Asian economies responded to questions concerning their specific markets. In the two surveys, participants compared market conditions for 2006 and 2007. Respondents were also asked to make qualitative judgments on the effectiveness of certain initiatives in raising liquidity in both government and corporate local currency bond markets. The survey also polled market makers on use of derivatives markets, repurchase agreement markets, and their foreign currency bond exposure. This section summarizes the survey results (Table B2-1) based on a scoring system that ranges from 4 ("very important") to 0 ("don't know/ not applicable"). A score approaching 4 suggests that most market makers feel significant attention is needed in a particular category in order to foster improvements in overall liquidity. Lower scores mean that market makers assign less importance to these initiatives in their markets.

Table B2–1: ***AsianBondsOnline* Survey Results, 2007**

	Average Score	
Government Bond Market Reforms	**2007**	**2006**
Increasing diversity of investors	3.5	3.6
Increased availability of hedging products	3.5	3.2
Increasing intraday price transparency	3.1	2.8
Improving repurchase markets	2.9	3.2
Improvements to clearing and settlement	2.7	2.6
Mandatory bid-ask spreads by market makers	2.5	2.8
Corporate Bond Market Reforms	**2007**	**2006**
Increasing diversity of investors	3.4	3.5
Increased availability of hedging products	3.1	3.1
Greater access to credit derivatives	3.1	3.1
More consistent secondary market pricing	3.1	3.2
Increasing tax incentives	2.9	2.8
Credit rating harmonization	2.8	2.7
Introducing pricing agencies	2.7	2.6
Greater access to guarantees	2.6	2.4
Greater multilateral issuance	2.6	2.3

Source: *AsianBondsOnline.*

Some caution should be taken when comparing and interpreting the scores from the two surveys as both participants and the number of participants changed between the survey dates.

Increasing investor diversity scored highest in both government and corporate bond markets.

Increasing investor diversity remains the most important policy goal for developing liquid bond markets, in both government (3.5) and corporate (3.4) bond markets, highlighting concerns over the present narrow investor base. Scores were high regardless of the relative state of bond market development, with no market grouping assigning a rating less than 3.0 to the importance of this type of initiative. Over 58% of the respondents felt corporate bond markets were particularly illiquid, with buy-to-hold investors dominating the underwriting process, leading to bonds being rapidly absorbed into portfolios without secondary market turnover. Although this indicates healthy demand from the contractual savings sector, the illiquid secondary market makes it difficult to obtain a continuous market valuation of credit risk. Many respondents expressed the view that greater foreign participation in their markets would enhance liquidity as overseas investors based their investment decisions on different investment criteria to those of local investors.

Increasing availability of hedging tools was the second-most important factor for increasing bond market liquidity.

Greater access to hedging products was seen as important for increasing liquidity in both government and corporate bond markets, suggesting some urgency to fill unmet demand from market participants. The scores for improving repurchase markets (2.9) and for expanding the availability of hedging products (3.3) in the government market were also reflected in the corporate bond market, where the need to increase the availability of hedging products (3.1) and credit derivatives (3.1) scored high. While scores for the need to develop hedging products were evenly distributed among the economies, the scores for both repurchase markets and credit derivatives varied somewhat, reflecting less familiarity with these tools. Access to these products encourages a greater diversity of investor participants—as they allow dynamic hedging of interest rate and credit risks, which eventfully leads to greater pricing certainty and lower transactions costs. Markets with active futures, derivatives, and repurchase markets rated access to derivatives products as less important.

A greater level of diversity in derivative market contract tenors (maturities) reflects either more choice or more variety of users—in either case, more active markets. There were also more tenors indicated for currency hedging than for interest-rate hedging in these markets. This pattern held to a lesser extent in the less-established markets. The survey asked participants what tenors are liquid for a range of conventional derivatives—forward contracts, futures, swaps, and option contracts. The responses varied, as does the use of derivatives from market to market. On the whole, forwards and swaps contracts were most common, providing roughly two-thirds of market hedges, while futures and options were less commonly used since they are generally traded on commodity exchanges, which are not yet available in most markets.

Common uses for swap contracts are to hedge currency risk and to convert floating-rate interest to fixed-rate (or vice versa) for a bond, either for the issuer or the investor. This usage is reflected in the higher percentage of swap contracts with 2-year and 5-year (constituting 40–100% of swap liquidity) tenors across the region. For shorter maturities, forwards or futures are more commonly used.

Pricing certainty continues to be a concern.

More consistent secondary market pricing (3.1) rated second in importance in raising liquidity in corporate bond markets. Respondents from more developed bond markets generally saw consistent pricing by market makers as less important. Intraday price transparency (3.1) in the government market rated third in importance. Pricing in both the corporate and government bond market retained the same average rating as in the previous survey.

The relatively low scores for formal bond pricing agencies and credit rating harmonization suggest that market makers in the corporate bond market do not view them as a universal remedy to the market pricing issue. More highly developed bond markets tend to attach less importance to credit rating harmonization. Improvements to clearing and settlement (2.7) and introducing mandatory bid-ask spreads (2.5) were seen as less important in raising liquidity in government bond markets.

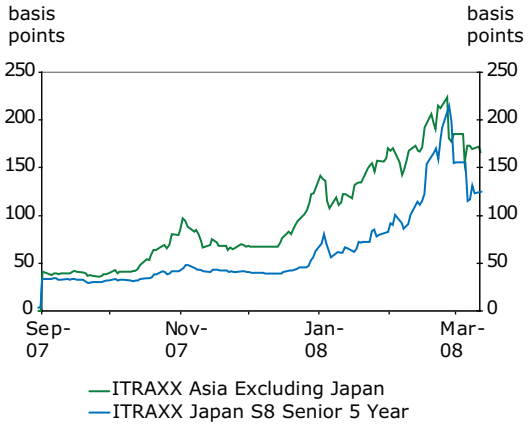
Views diverge on the value of tax incentives for increasing liquidity.

Market makers from low tax environments continue to attach relatively little importance to further tax reform. Tax incentives as an impediment to liquid bond markets ranked higher among market makers in the corporate bond market because corporate bonds are not a mandatory investment as government bonds are for many participants, making them more sensitive to after-tax yield than government bonds.

There is greater importance attached to regional initiatives to promote more liquid regional bond markets.

Multilateral institution's issuance (2.6) and guarantee mechanisms (2.6)—creating benchmark yield curves for corporate bond markets—which ranked low in both surveys in terms of impact on liquidity, have other tangible benefits, as they raise international awareness of a market's development, and also ensure greater issuer diversity. Thirty-four percent of the respondents said they do or would hold a high percentage (31% on average) of foreign currency assets, indicating the value of work on improving conditions for cross-border investment. Because nonresident investors choose to invest in a market's bonds mainly for their expected total return and for risk diversification, trading decisions will consistently differ somewhat from those of domestic investors. In this way, they provide a vital source of investor diversification, a key element in market liquidity and accurate risk pricing.

Figure 19: **iTraxx Asia ex-Japan Crossover 5-year**



Source: Thomson DataStream.

This is also seen in the iTraxx Asia ex-Japan Credit Default Swap, which measures how offshore financing costs have increased for a basket of issuers—including East Asian banks and nonbanks as well as governments (**Figure 19**). The higher CDS spreads for Asian debt compared with European and US high-yield spreads reflect rising concerns about deteriorating credit quality and the ability of Asian high-yield borrowers to refinance in the more difficult environment.

Credit tightening has not been as severe in Asia, although corporate yields are higher than in mid-2007 and some borrowers have delayed bond issues, relying instead on short-term finance.

Banks are also being extremely cautious in providing finance to corporate clients. Interbank risk premiums remain high in international markets because financial institutions are uncertain of each other's true credit quality. As risk premiums have risen substantially elsewhere, many Asian based corporations have shifted their bond issuance programs to domestic markets, resulting in some "crowding out" of second-tier borrowers. However, the existing pools of liquidity in local currency markets have ensured that the impact has been limited. It is expected that the Asian offshore markets will remain subdued into the second half of the year.

As long as inflation-fighting remains the region's central bank bias, domestic local currency bond markets are likely to see higher yields. The combination of an uncertain export sector and potentially higher interest rates would discourage companies from accessing credit markets until the economic outlook becomes clear. Governments are also likely to meet their recent promises of increased spending to support domestic demand, which should translate into higher levels of LCY government bond issuance.

Risks to the Outlook

Following the sharp deterioration in financial market conditions in the second half of 2007, downside risks to the outlook have increased considerably. It is likely that financial market conditions will be stressed for some time, with no regions escaping entirely unscathed. There are three main risks that—if they transpire

singularly or in combination—could cause problems with the global economy: (i) a sharper-than-expected and/or more protracted downturn in the US; (ii) financial disruption in another asset class; and (iii) sustained inflationary pressures. These vulnerabilities—heightened by the fact that recent financial events have undermined market confidence in several financial system participants—also weaken the ability of the global financial system to cope with an intensified or more broad-based financial crisis.

Global financial market disruption could worsen if the US economic contraction becomes protracted or deepens.

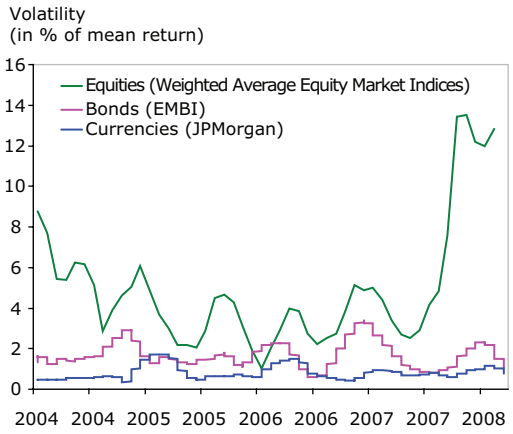
A deeper-than-expected US GDP contraction could instigate a more significant global economic downturn through trade and financial linkages. The slumping US housing market continues to spill over into business and the real sector and threatens to damage the US labor market. Heightened anxiety in financial markets over credit tightening could drag still-resilient business investment and household consumption into the morass. Consumers already face significant headwinds as household debt remains high, job prospects worsen, and rising inflation erodes real income.

Aggressive monetary easing by the US Fed also raises the specter of a further decline in the value of the US dollar, exacerbating current swings in global financial flows and markets. While a weaker dollar helps US trade perform better, adverse terms-of-trade effects would reduce exports from US trading partners and slow growth elsewhere. The dollar decline could also become more abrupt, risking a disorderly adjustment in global currency and financial markets, as underlying global payment imbalances emanating from the large US current account deficit remain significant. Should global investor appetite for dollar assets suddenly wane, a sharp contraction of US aggregate demand and a severe disruption in financial markets would have a significant impact on emerging East Asian markets and foreign exchange reserve holdings. Another related concern is that aggressive easing by the US Fed and the concomitant decline in dollar-value may risk fuelling inflation further, forcing the US central bank to cut short its monetary easing before a firm recovery takes hold.

Continued financial market volatility places pressure on market participants to cover rapidly shifting positions, increasing possible new credit disruption that could affect both global and regional financial markets.

Several forces have contributed to current financial market volatility: (i) a combination of payments imbalances, which continue to impact foreign exchange and capital markets; (ii) successive decreases in interest rates; (iii) higher energy and food prices; together with (iv) an increase in the risk of a recession in the US. Meanwhile, there has been an adjustment in equity markets of emerging economies resulting from a reassessment of the risks by investors.

Figure 20: **Increased volatility in Equities, Bonds and Currencies**



Source: Bloomberg LP.

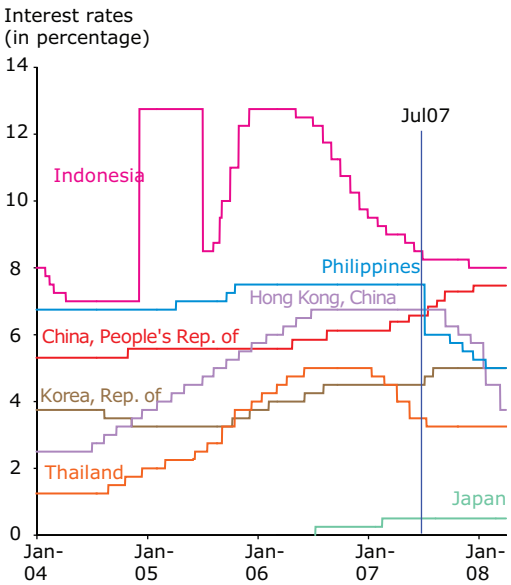
Financial markets may have to adjust to these new conditions that reflect reduced availability of cheap credit and to higher volatility in both debt and equity markets. Liquidity conditions are likely to remain tighter than in recent years, and the potential impact of financial market or economic shocks on firms is likely to be greater now than it was just one year ago. The ongoing fallout from the credit tightening and the uncertainty over the size of any potential demand shock on regional exports to the US—on top of further expected cuts in US dollar interest rates—reflects investor concern that more bad news is on the way concerning subprime mortgage write-downs. Financial markets can also take a turn to the worse if investors *en masse* decide to dump risky assets from their portfolios, pressuring the credit tightening further (**Figure 20).**

Economies in the region that experienced rapid increases in capital inflows and higher rates of credit growth over the past few years—including Indonesia, Korea, and Philippines—also remain vulnerable to a sudden reversal in capital flows. Recent swings in global financial flows and heightened volatility can be further exacerbated by a sudden unwinding of the yen carry trade or rapid currency movements in response to major US monetary policy movements.

Inflation continues to exert pressure on most regional economies where sustained increases in food and energy prices pose a significant risk, constraining policy options amid slowing growth.

Aside from high commodity prices, additional inflationary pressure emanates from higher asset prices as the region remains flush with liquidity due to strong private capital inflows. A dilemma confronts many monetary authorities—while accommodative policies may ease funding pressure for critical-but-impaired credit intermediaries, those same policies may stoke inflation. Aggressive tightening in the region to deal with inflation risks could fuel more capital inflows and asset price inflation, precipitating greater currency appreciation in the process (**Figure 21**).

Figure 21: **Regional Policy Rates**



Source: Bloomberg LP.

Higher prices and resulting higher production costs could reduce corporate real current and future cash flows, increasing volatility in equity markets, causing the value of long-term savings to decline, and widen bond spreads. Any decline in equity markets and bond portfolios would adversely affect corporate pension provisioning and cause associated balance sheets to deteriorate, and also reduce alternative funding sources available. Financial firms could see increasing losses as businesses struggle to meet debt obligations and a fall in consumer disposable and real incomes leave them unable to repay mortgages and unsecured loans. A significant commodity price shock could depress currencies of commodity-importing nations and lead to sharp movements in the price of emerging market debt. Despite the higher costs, higher inflation together with continued rate cuts could benefit some highly indebted consumers through eroding the real value of their debt.

Policy Challenges

Bond market development continues to be one of the most significant policy goals in Asia. It is widely considered an important step toward preventing another financial crisis. The world economy has, however, entered a difficult phase, with financial market turmoil spreading to the real economy. The rapid growth in complex instruments sold by banks to investors and the lack of transparent information about many contracts has exacerbated the loss of confidence in debt markets. To restore this confidence, concerted efforts are needed among policy makers in the region

and from monetary authorities, financial institutions, and credit rating agencies in individual economies. The challenge is to find a balance that fosters innovation without leaving the system too vulnerable to the excesses and risks that tend to accompany large structural change.

Against the backdrop of the recent turbulence, several systemic shortcomings have shown themselves, mostly in markets, but also in the regulatory and supervisory systems—both in mature and emerging markets. These include the need to (i) improve legal and regulatory frameworks to ensure certainty and transparency; (ii) remove constraints to market entry and investment and encourage broadening investor diversity (to promote greater demand for local currency bonds); (iii) develop derivative and swap markets; (iv) strengthen financial market infrastructure—including relevant data compilation and comparison; and (v) increase regional cooperation to better understand the links between changes in the real economy and those in financial markets—and in the wider ramifications of how continued uncertainty can affect regional financial stability.

Bolster investor confidence by strengthening legal protection and thus certainty, improve standards of corporate governance and transparency, and adhere to international accounting standards.

To encourage private and quasi-public corporations to issue local-currency bonds, government policies to facilitate the issuance of local bond issuance and promote the demand for local currency bonds will be needed. In particular, legal and regulatory frameworks should be established to make it possible for companies to issue other debt instruments for infrastructure and other securitized instruments. Discriminatory taxes, such as transaction taxes, must also be diminished and removed to make the trading of local currency bonds less costly. In addition, strengthening legal protection, improving standards of corporate governance and transparency, and enforcing international accounting standards are also needed to provide certainty and increase investor confidence in the local currency bonds. A governance structure that enforces contracts and resolves disputes in a reliable and speedy manner is crucial to developing financial markets. In recognizing the importance of internationally accepted standards and codes of practice, most Asian economies have taken steps to comply with the International Organization

for Securities Commission (IOSCO) principles for securities regulation to help the development of the capital markets and protect investors.

Regulatory capacities also need to be strengthened with regard to safeguarding against risks associated with non-transparent instruments and excessive risk-taking or herding behavior. Securities market regulation needs to enforce rules and regulations that can effectively protect investors; ensure that markets are fair, efficient and transparent; and reduce systemic risk.

Reduce constraints to market entry, investment, and encourage investor diversity to promote greater demand for local currency bonds.

Improving the regulatory environment, lowering cross-border transaction barriers, and encouraging more provident, pension, and insurance funds to participate can greatly encourage the participation of international financial intermediaries and foreign investors in regional bond markets. The further relaxation of capital and exchange controls and removal of transaction taxes, withholding taxes on interest, and taxes on capital gains earned by foreign investors are some measures that can facilitate this process (**Box 3**).

Develop derivative and swap markets to broaden the investor base, increase market liquidity, and allow a wider dispersal of risk.

Developing derivatives and swap markets is another critical measure for broadening the investor base and for increasing liquidity in both government and corporate bond markets. These markets allow a wider dispersal of risk as derivatives and swaps help reduce costs, enhance returns, and allow investors to manage risks with greater certainty and precision. Derivative and swap markets also help address exchange and interest rate risks. The development of inter-dealer platforms can also contribute to broadening investor diversity as they allow monitoring of trading activity and prices from several competing dealers.

Box 3: **Are There Ways to Broaden Investor Diversity?**

A diversified investor base for fixed-income securities is important for ensuring high liquidity and stable demand in the financial market.

In a 2008 survey—an update of the more encompassing 2006 *AsianBondsOnline* survey on market liquidity—market-makers in East Asia ranked increasing investor diversity as the most important step required to develop both government and corporate local currency bond markets. A heterogeneous investor base with different maturity horizons, risk preferences, and trading motives ensures active trading, which creates high liquidity. Investor diversity is, however, not simply a case of encouraging a larger pool of investors to participate in bond markets, particularly if they all invest in the same way. The "herd" mentality—investors enter and exit markets at the same time—does not create robust financial systems, as the recent experience with the US subprime mortgage crisis shows.

The current low level of turnover characterizing East Asian local currency bond markets could be enhanced through policies that encourage the development of a diverse investor base. The investor base in emerging East Asia tends to be dominated by government-controlled institutional investors, such as provident funds and insurance companies, who tend to operate relatively passive portfolio strategies. Once a bond is issued, it normally disappears into the portfolios of buy-and-hold investors. Foreign investors in local currency debt markets are generally more active, focusing their strategies on exchange rate differentials and relative growth prospects, for example. But foreign investors are notably missing from several markets in the region, where withholding taxes or the absence of hedging instruments such as currency swaps discourage participation. Hedge funds and funds like fixed-income cash management funds—which tend to trade more actively—largely avoid East Asian markets with low turnover except for opportunistic or directional trades.

Policies that encourage investment diversity

Developing derivative markets; examining the role of dominant investors; reevaluating regional cooperation strategies; and reforming tax systems are all critical measures that can encourage more provident, pension, and insurance funds to participate in East Asia's local currency bond markets. Reducing cross-border transactions barriers to encourage participation of international financial intermediaries and foreign investors in these markets would also help.

Derivative markets in general attract a wider array of investors—foreign investors in particular.

The importance of developing deep forward foreign exchange and interest rate swap markets is critical to widening the investor base generally and to attracting foreign investors in particular. The challenge is to create appropriate market instruments that entice investors to become market participants. Derivatives make it possible for both borrowers and lenders to customize their risk exposures and adjust them over time. They are a useful tool for risk management as they can help reduce costs, enhance returns, and allow investors to manage risks with greater certainty and precision. Effective hedging mechanisms can also encourage asset managers to transact larger parcels of bonds and assume greater portfolio risk, increase turnover in both derivatives and bond markets, and contribute to narrower bid-ask spreads. Transactions costs in derivative markets are generally lower and encourage investors to take short-term trading positions—wide bid-ask spreads and other transaction charges in physical bond markets discourage short-term trading.

Government-controlled institutional investor strategies must adapt to and support capital market development goals.

Dominant investor groups such as state-owned pension and mutual funds play an important role in the early stages of bond market development. They help mobilize savings and create a demand base for local currency debt securities. But it is a fine balancing act—as large investors can dominate new issues, restricting bond supply to the secondary market. Also, their relatively restrictive investment policies can compromise market innovation and reduce returns. Some jurisdictions—such as Hong Kong, China—outsource provident systems to a number of money managers to encourage diversity, while some Eastern European countries have broken up state-owned financial conglomerates along product lines. Even though counterintuitive, granting government pension funds investment flexibility—such as allowing limited offshore investment— can improve turnover in local currency debt markets and enhance a fund's risk-return characteristics with less exposure to local currency debt markets.

Taxing financial instruments has significant implications for financial market development.

Considering the importance of financial markets in the development of a national economy, it is important that tax policies are compatible with financial market development goals, while not seriously compromising principles of good taxation. Focusing tax strategies on promoting turnover of debt portfolios rather than taxing the investment vehicles themselves may prove to have greater effect. Tax free status for mutual funds in Thailand, for

instance, gave these funds an automatic tax advantage over other investment vehicles. However, it has hurt market turnover as mutual funds adopted passive investment strategies.

Do large retail markets encourage investor diversity?

Catering to the needs of retail investors is often seen as an essential part of the overall strategy to develop a more diversified investor base for government securities. However, the presence of more retail investors in bond markets does not automatically mean greater investor diversity. First, retail investors tend to prefer buy-and-hold strategies, similar to long-term institutional investors. They add little to the price-discovery process as there is little secondary market retail turnover.[1] Second, where a market's total government bond supply is limited by budget surpluses, special issues for retail investors can crowd out wholesale bond issues used to establish benchmark prices—further compromising liquidity. Third, retail bond issues can draw contributions away from the contractual savings industry if retail bonds are offered above wholesale market rates.

[1] A recent National Association of Securities Dealers (NASD) study found that while retail transactions account for approximately 60% of the number of transactions in US corporate bond markets, they constitute less than 4% of transactions volume in US dollar terms—a very small percentage of turnover. Anecdotal evidence suggests that East Asia's experience is very similar.

Improve relevant data compilation and comparison.

Recent financial market turmoil has highlighted the importance of adequate data in order to make reliable assessments of the risk in financial institutions and markets. Limited aggregated data on emerging East Asian bond markets has been a long standing problem. The analysis of local currency bond markets is particularly limited in the areas of currency composition and maturity, and coverage of corporate bond markets. While initiatives have been taken by international financial institutions, local bond markets are also encouraged to improve the quality, comparability, and consistency of local bond market data.

Strengthen broader arrangements for regulatory oversight and regional cooperation in the areas of information-sharing and in coordinated actions to maintain financial stability.

Just as the origins and the development of the financial turmoil lie in the interaction of macroeconomic and financial market policies, the resolution of the turmoil will require action in both areas. Continued cooperation among policy makers in the region and efforts in national economies to address issues of restoring confidence in financial markets offers the best hope for ensuring the stability of global financial markets. There is a need to strengthen cooperation in the areas of (i) the capacity of monetary and regulatory authorities to address near-term

stress and longer-term financial stability; (ii) information-sharing in monitoring and regulating financial institutions; and (iii) coordinated actions among agencies responsible for supervisory regulation and oversight.

To ensure that monetary and regulatory authorities have the capacity to react rapidly to changes, measures are needed to strengthen not only the capacity of monetary and regulatory authorities to address any near-term stress and longer-term financial stability, but also the broader arrangement for financial market oversight. This could include measures to reestablish counterparty confidence and soundness of financial institutions that would allow interbank markets to function normally, and for intermediation to continue. Risk management and stress-testing techniques need to be improved to avoid collective bad outcomes and to account for incentives for risk-taking.

National and cross-border financial stability arrangements for information-sharing in monitoring and regulating financial institutions could be strengthened. There needs to be greater convergence on what kind of institutions qualify for liquidity support, what kind of collateral to accept, and on the terms of liquidity provided. Auditors and supervisors will need to encourage greater consistency across financial institutions on how assets are valued and how write-downs are determined.

To facilitate effective, timely, and coordinated responses to financial system stress, measures could also be considered to strengthen coordinated actions among the agencies responsible for supervisory regulation and oversight, the provision of liquidity, and bank resolution.

India's Bond Market—Developments and Challenges Ahead

Market Development and Outlook

India remains bank-dominated but its financial system is transforming rapidly—equity and government bond markets have developed strongly, while corporate bond markets lag behind.

India's economy has expanded an average of about 8.5% annually for the past 4 years, driven by rising productivity and investment. After rising sharply in early 2007, inflation has ebbed, and the current account deficit has moderated. India's bright prospects have attracted record capital inflows, even amid heightened global uncertainty and slowing growth in the United States (US).

The Indian financial system is now in a process of rapid transformation marked by strong economic growth, increased market robustness, and a considerable increase in efficiency.[11] Bank and financial intermediation, however, remain undeveloped with respect to lending and deposits, and most banks remain largely controlled by public sector institutions, limiting the development of a true credit culture, the skills to assess credit risks, and a willingness to accommodate any but the lowest risk borrowers.

Overseas investors bought a net USD18.8 billion of stocks and bonds during January–November 2007, compared with the previous record of USD9.5 billion in the same period in 2006. Long-term interest rates hover around 8%. Real estate markets have been buoyant, although they have cooled recently, and the banking system remains sound and well capitalized. In March 2007, the capital adequacy ratio stood at 12.3%, well above the 8% minimum prescribed under the Basel I accord. Amid strong credit growth, the ratio of scheduled commercial banks' gross

[11] ADB has disbursed loans and technical assistance to develop India's capital market in areas that include, regulation and supervision of derivative instruments, development of secondary debt market, and development and reform of mutual fund industry, among others.

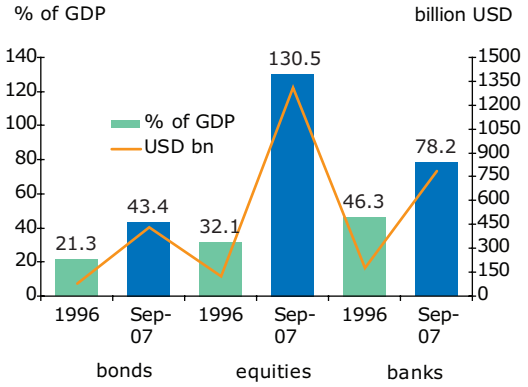
Table 6: **Indian and EEA Bond Markets as % of GDP** (1H 2007)

	Government	Corporate	Total
China, People's Rep. of	42.1	4.0	46.1
Hong Kong, China	8.8	41.9	50.7
Indonesia	19.6	2.1	21.7
Korea, Rep. of	78.0	58.3	136.3
Malaysia	44.3	36.3	80.6
Philippines	33.2	3.2	36.4
Singapore	40.8	30.8	71.5
Thailand	36.4	17.0	53.4
Viet Nam	9.9	1.0	11.0
India	38.3	3.2	41.6

Sources: *AsianBondsOnline*, Bank for International Settlements, Reserve Bank of India.

nonperforming loans (NPLs) to advances has fallen to 2.4% from 10.4% in March 2002.[12]

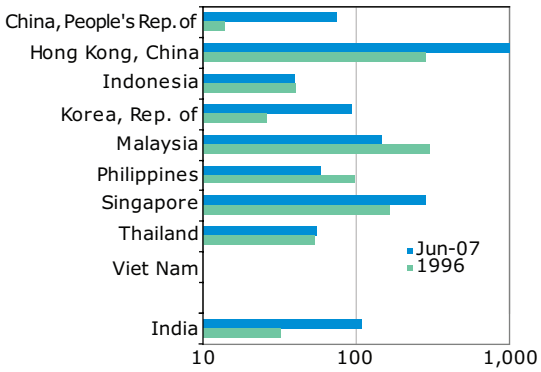
Figure 22: **Financial sector devleopment, India**



Sources: Bank Credit - CEIC. Equity - World Federation of Exchanges. Bonds - Bank for International Settlements.

India has developed a world-class equities market from relatively unpromising beginnings. Since 1996, the ratio of equity market capitalization to GDP has more than trebled to 130%, from 32.1% in 1996 (**Figure 22**)**.** During the same period the banking sector expanded to 78.2% of GDP from 46.3%**.** In contrast, the development of government and corporate bond markets has not been so fast: the bond market grew to a more modest 43.4% of GDP, from 21.3%. In June 2007, the government bond market represented 38.3% of GDP, compared with the corporate bond market, which amounted to just 3.2% of GDP (**Table 6**).

Figure 23a: **Equity Market Capitalization** (% of GDP)



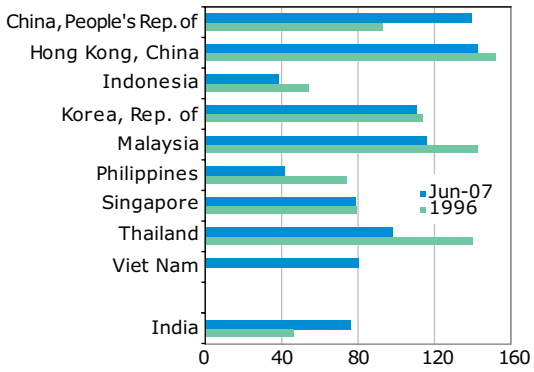
Sources: *AsianBondsOnline*, World Federation of Exchanges.

Trading in derivatives started in 2000 and the Indian market is now the tenth largest in the world for futures contracts on single stocks and indexes and the largest for futures on single stocks. Commodity markets have also developed. Three new markets were created in 2000, based on National Stock Exchange (NSE) architecture. However, of the 94 commodities traded, gold and silver account for half of turnover: by 2006 India's gold market had become the world's third largest derivative market for gold.

With the strong growth in equity markets, at a time when India's GDP has itself been increasing more rapidly, it is relatively larger than other emerging East Asia equity markets, with the exception of Hong Kong, China; Singapore; and Malaysia (**Figure 23a**). Equity trading generally expanded but languished in the early

[12] Source: Banking statistics—RBI Monthly Bulletin: December 2007.

Figure 23b: **Bank Assets** (% of GDP)



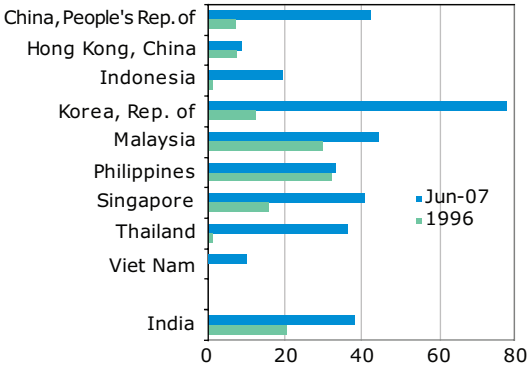
Sources: *AsianBondsOnline*, Reserve Bank of India, International Financial Statistics (IMF), CEIC.

2000s, when world equity markets were falling and Indian government debt was rising strongly.

India remains a bank-dominated market **(Figure 23b)**, and the relative importance of bank assets as a percentage of GDP has continued to grow partly as banking penetration has deepened with financial liberalization, and partly as a result of the ongoing need for deficit financing. However, the ratio of bank assets to GDP is still low by comparison with other emerging East Asian economies, indicating that India still has some way to go before its banking sector is fully developed. The same pattern is also seen in the People's Republic of China (PRC), which like India has a largely state-owned/controlled financial sector. Other emerging East Asia markets have seen a decline in banking assets as a percentage of GDP since 1996, reflecting greater diversification into other forms of finance, especially for corporate borrowers, following the Asian financial crisis.

India's government bond market has grown steadily—largely due to the need to finance the fiscal deficit—and is comparable to many government bond markets in emerging East Asia.

Figure 23c: **Government Bonds** (% of GDP)



Sources: *AsianBondsOnline*, Bank for International Settlements, Reserve Bank of India.

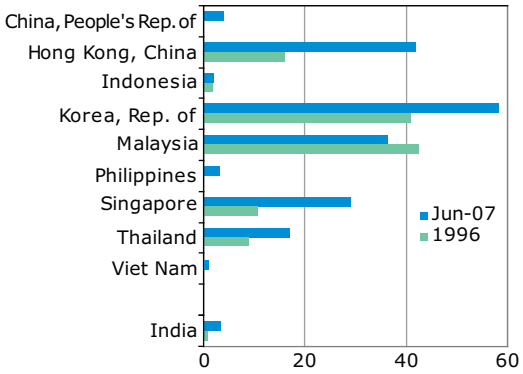
At 38% of GDP, the Indian government debt market compares well with markets such as Thailand, Singapore, Malaysia and PRC (**Figure 23c**). In absolute terms, however, given India's greater overall size, the Indian government bond market is considerably larger than most other emerging East Asian markets (**Table 7**).

Table 7: **Indian and EEA Bond Markets** (USD billion) (1H 2007)

	Government	Corporate	Total
China, People's Rep. of	1,250.79	117.63	1,368.42
Hong Kong, China	17.20	82.00	99.20
Indonesia	78.55	8.49	87.04
Korea, Rep. of	736.16	550.17	1,286.33
Malaysia	76.52	62.63	139.15
Philippines	45.38	4.36	49.74
Singapore	60.90	45.98	106.89
Thailand	93.18	43.33	136.51
Viet Nam	6.41	0.67	7.08
India	364.26	30.57	394.84

Sources: *AsianBondsOnline*, Bank for International Settlements, Reserve Bank of India.

Figure 23d: **Corporate Bonds** (% of GDP)



Sources: *AsianBondsOnline*, Bank for International Settlements, Reserve Bank of India.

The need to finance a large fiscal deficit has stimulated issuance and growth of the government bond market. Since 1992, deficit finance has relied increasingly on market borrowing rather than the previous policy of monetizing the deficit. The government market comprises approximately 104 issues with a total nominal value of about USD364 billion.

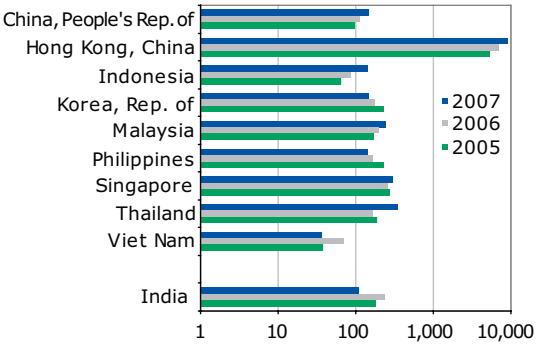
The corporate bond market is less developed than most in emerging East Asia, with private placements dominating.

At 3% of GDP, corporate bonds are comparable to levels in the Philippines and Indonesia where corporate finance is less well-developed, and with the PRC where state-ownership remains dominant (**Figure 23d**). That said, corporate bond markets remain small in much of the region, with the exception of Hong Kong, China and the Republic of Korea (Korea). Even in absolute terms India's corporate bond market is minuscule in relation to its economic size.

The role of various sources of corporate finance demonstrates that there is no single model for corporate finance—some economies rely more heavily on equity finance, while others more on bank finance. However, few rely so little on corporate bonds as India does.

The turnover ratio for government bonds is lower than in most markets in emerging East Asia—the corporate ratio compares well, but the small number of outstanding bonds means the secondary market is small and illiquid.

Figure 24a: **Indian and EEA Government Securities Turnover** (% of Average Outstanding, in Log Scale)



Source: *AsianBondsOnline*, Reserve Bank of India.

The turnover ratio for Indian government bonds, according to the central bank—Reserve Bank of India (RBI)—was 109%, meaning that, on average, government bonds changed hands slightly more than once a year.[13] Although some caution is necessary when making international comparisons because of differing methodologies,[14] government bond market turnover ratios in other emerging East Asian markets were higher (**Figure 24a**).

[13] Turnover ratio is calculated as 12 months trading as a percentage of market capitalization.

[14] Indian banks and some other investors are required to hold a certain percent of their assets in government bonds. These holdings can be traded but arguably the "free float" of Indian government bonds is likely to be quite low, hence the caution of too much reliance on turnover ratios.

Box 4: Reforming India's Financial Sector

Economic growth in India has picked up in recent years, and like other integrating Asian economies, it too requires large amounts of efficiently intermediated capital to sustain its development. However, an important constraint to financial reform has been dealing with the vestiges of financial "repression"—deliberate policies that crowd out the private sector from credit markets and limit the ability of financial markets to develop as intermediaries for saving.

Years of deficit financing have led to large-scale intervention and state ownership of financial intermediation. High statutory reserve requirements, extensive directed lending to priority sectors (including mandatory holdings of government securities by banks), regulated interest rates, credit ceilings, and other controls are examples.

Financial market liberalization

Reforming and liberalizing financial markets began in the wake of the country's 1991 balance-of-payments crisis. The thrust of these reforms was to promote a diversified, efficient and competitive financial system, with the ultimate objective of improving the allocation of resources through operational flexibility, improved financial viability, and institutional strengthening. The pace of reform was, however, slower than those in product markets, partly because the introduction of stricter prudential controls on banks revealed significant problems in asset portfolios. Prior to the reforms, state-owned banks controlled 90% of bank assets—compared with approximately 10% at end-2005—and channelled an extremely high proportion of funds to the government. Interest rates were determined administratively; credit was allocated on the basis of government policy and approval from the Reserve Bank of India (RBI) was required for individual loans above a certain threshold. Capital markets were underdeveloped, with stock markets fragmented across the country. The major stock market[1] acted mainly in the interest of its members, not the investing public. Derivative markets did not exist and comprehensive capital controls meant that companies were unable to bypass domestic controls by borrowing abroad.

Concerns over the 1997/98 Asian financial crisis and its contagion effects further spurred Indian authorities to strengthen the domestic financial system. Reforms were, and continue to be, based on several principles: (i) mitigate risks in the financial system; (ii) efficiently allocate resources to the real sector; (iii) make the financial system competitive globally; and (iv) open the external sector. The goal was to promote a diversified, efficient, and competitive financial system which would ultimately improve the efficiency of resource allocation through operational flexibility, enhanced financial viability, and institutional strengthening.

Banking sector reform

Reform of the banking system has been gradual and sequenced, focusing on improved prudential control, recapitalization of public-owned banks, and the introduction of greater competition. Reforms have included the establishment in 1994 of a Board of Financial Supervision within Reserve Bank of India; substantially tightened rules on bad loans, and convergence of regulatory norms with international best practices. Various legal and technology-related measures have likewise been implemented, such as the strengthening of credit information and creditors' rights, and the development of a dedicated communication backbone for banks.

Work to introduce the new Basel II regulatory system is underway and a pilot project was launched in 2003 to operate a risk-based supervision system. The introduction has, however, been postponed to 2009 for banks with only domestic operations, and to 2008 for other banks as it takes time to raise capital. Enhanced competition has also been introduced by allowing new entries into the market. A dozen private Indian banks have been created and about 30 new foreign banks had entered the market and started operations by end-2006. Prudential reforms have been implemented. But while interest rates have been deregulated, controls remain in four areas—savings deposit accounts, small loans in priority areas, export credits, and nonresident transferable rupee deposits. The reduction in the lending requirement to government from 63.5% to 30.0% of bank assets has given banks greater lending latitude. Other measures include ending the RBI's participation in the primary market for government securities and lending to the government; removal of the legal ceiling on the statutory liquidity ratio; and abolishment of limits on both the floor and ceiling of the cash reserve ratio, allowing RBI to alter these ratios depending on prevailing monetary and economic conditions.

Banking sector reforms have been sequenced to correspond with changing regulations of the foreign exchange market. The government has allowed the exchange rate to gradually float (as opposed to a "crawling" peg), and full current account convertibility has been introduced, with *de facto* capital account convertibility for nonresidents, and calibrated liberalization for residents. Other recent measures include foreign participation in the Indian foreign exchange market, unlimited hedging of genuine foreign exchange risk, and the introduction of new instruments such as interest rate and currency swaps, options, and forward contracts.

[1] A number of exchanges exist, the National Stock Exchange of India Limited (NSE) and the Bombay Stock Exchange are the two most significant stock exchanges in India, and between them are responsible for the vast majority of share transactions.

Capital market reforms

Significant effort has similarly gone into strengthening India's capital markets, particularly through the creation of various institutions such as the Securities and Exchange Board of India (SEBI) in 1992, an insurance market regulator in 1999, and a pension market regulator in 2004. The National Stock Exchange (NSE)—one of the first in the world to have a corporate structure—was likewise created in the mid-1990s. This has developed into the world's third largest exchange in terms of number of transactions, with foreign shareholders approved to own up to a maximum of 26% (the amount allowed by FDI regulations).

In contrast to equity markets, the government and corporate bond markets have been held back by the more restrictive regulatory framework. A number of reforms were introduced to the government bond market in 1992 when the price of newly-introduced bonds was set by auction. But it was not until 2005—11 years after the equity market—that bond market became an electronic order limit market. Several measures were implemented to minimize risks in equities trading and to create a national market in stocks. These included the introduction of a clearing and settlement system, creation of a centralized counterparty for transactions, establishment of a modern depository system for stocks, and a shift from a relatively primitive carry-forward system to the introduction of futures contracts. Trading in derivatives on the NSE started in 2000—the Indian market is now the tenth largest globally for futures contracts on single stocks and indexes and the largest for futures on single stocks.

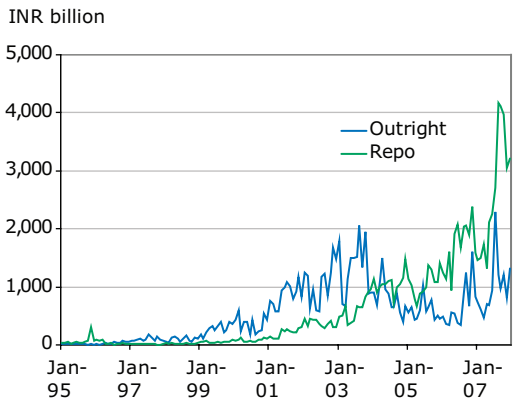
As part of the package of financial reforms, commodity exchanges were also fundamentally overhauled. Starting in the mid-1990s, the commodity market regulator began to reform the domestic markets and while initial attempts were unsuccessful, three new markets were eventually created in 2000 based on the architecture of the NSE.

Since the mid-1990s, the Indian financial system has been steadily if incrementally deregulated and more exposed to international financial markets. Its rapid transformation has been accompanied by strong economic growth, increased market robustness, and a considerable increase in efficiency. Reforms are continuing with the development of appropriate market regulation and an associated payment and settlement system, as well as greater integration into global financial markets.

The financial market as a whole, however, remains subject to a number of constraints that need to be eased if efficiency is to improve further. The level of bank and financial intermediation remains low, for instance, both with respect to lending and deposits, and most banks remain largely controlled by public sector institutions. While household savings are high, individuals generally prefer to invest in real assets and gold rather than in financial assets.

A major challenge is thus to deepen financial intermediation. This can be achieved by further improving the environment for financial investment through better regulation, greater transparency, and generally stronger institutions and legal frameworks.

Figure 24b: **Government Securities Turnover**



Source: Reserve Bank of India.

Ratios in Korea, PRC, and Indonesia were around 150% in 2007; in Malaysia the ratio exceeded 250%, and Thailand over 350% (albeit an unusually high figure for Thailand reflecting unusual political circumstances). Elsewhere, the ratio in Japan is over 500%, in Australia over 600%, while the US; Canada; and Taipei,China have ratios well over 2,000%. Hong Kong, China had a ratio of over 9,000% in 2007.

Turnover of repurchase agreements (repo) continues to increase as more borrowers use them as a financing tool, but government bond market turnover by investors has not kept pace (**Figure 24b**).

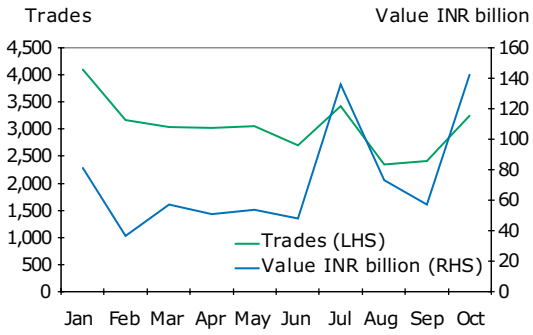
Illustrating the relative illiquidity of the government bond market is the low level of traded bonds—in 2007, only 69 of 104 government bonds were traded **(Table 8).**

Table 8: **Government Bonds—days traded in 2007**

Days traded in 2007	Number of stocks
Over 200	3
150–199	5
100–149	13
50–99	15
25–50	11
Less than 25	22
0	35
	104

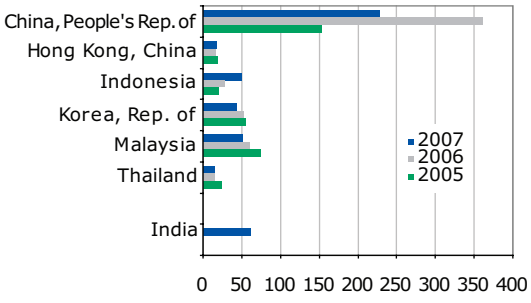
Source: Clearing Corporation of India.

Figure 25a: **Corporate Bond Turnover** (2007)



Source: Securities and Exchange Board of India.

Figure 25b: **Indian and EEA Corporate Bonds Turnover** (% of average outstanding)



Note: no available data for India in 2005 and 2006; 2007 turnover covers Jan to Oct only
Source: *AsianBondsOnline*, Securities and Exchange Board of India.

Liquidity is clearly concentrated in a few bonds and does not extend along the length of the yield curve, which has emerged over a spectrum of 30 years**.** It is highly concentrated in 10-year issues (bonds maturing in 2016/17 comprised 50% of all trading) and 5-year issues (bonds maturing in 2010–12 were 20% of all trading).

Until 2007, information on Indian corporate bond market turnover was incomplete and largely anecdotal. In 2007, however, the Securities and Exchange Board of India (SEBI) launched initiatives to ensure more comprehensive reporting of the over-the-counter (OTC) bond market (**Figure 25a).** Current volumes are running at low levels—around 150 transactions amounting to about USD100 million per day. But corporate bond markets worldwide are typically illiquid,[15] so it may be overly optimistic to expect India to develop a uniquely liquid corporate bond market. Nonetheless, a more liquid market should eventually contribute to lower costs of capital for issuers.

India's corporate turnover ratio is quite high at 61%, comparing favorably with most other emerging East Asian corporate bond markets **(Figure 25b)**. However the small total of outstanding corporate bonds in India means that the secondary market is small and relatively illiquid, irrespective of the turnover ratio. The same is also true for the PRC, which has a high turnover ratio and a very small value of corporate bonds outstanding (relative to GDP).

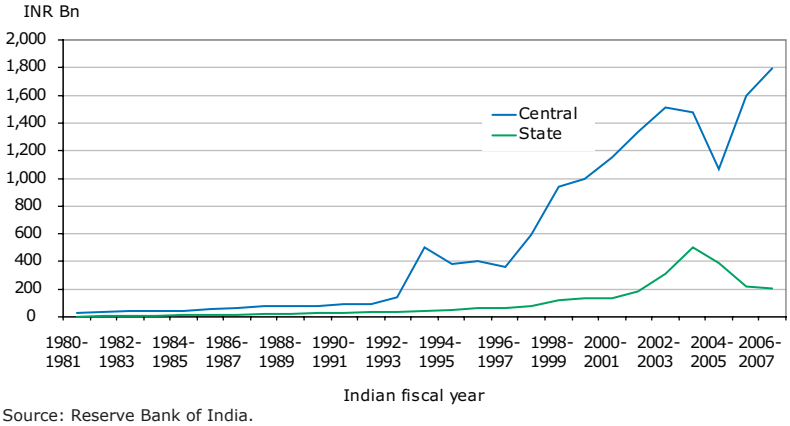
Government Bond Market

The government bond market has developed steadily—with an increased supply of bonds, market reforms, and infrastructure enhancements—while new fiscal discipline aimed at controlling the deficit may reduce new bond issuance.

Borrowing by the Indian government since the late 1990s has been large and has grown rapidly. Government deficits have also been large. The revenue deficit increased to 5% of GDP in fiscal year 2001–02. Since then, although the deficit appears to be

[15] Corporate bond markets even in developed markets—for example the Eurobond market— are notoriously illiquid with most bonds only trading actively for a brief period after issue and around the time of significant events, such as re-rating or redemption. They also tend to be institutional markets, so such trading as occurs tends to be in large blocks, putting further pressure on liquidity.

Figure 26: **Indian Government Market Borrowing**



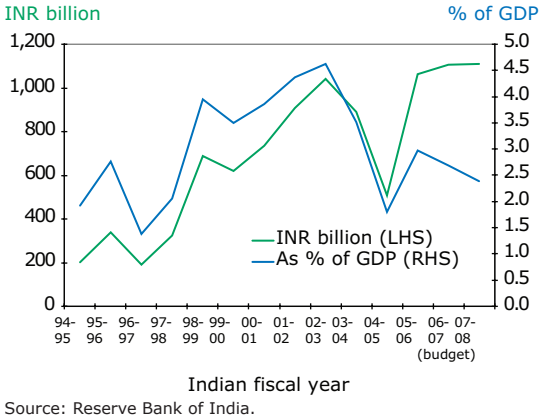
Source: Reserve Bank of India.

more under control at about 2.5% of GDP, growth has remained strong and suggests the actual deficit has continued to increase, calling for further government borrowing (**Figure 26**).

The enactment of the Fiscal Responsibility and Budget Management Act (FRBM) in 2003 was the culmination of a lengthy attempt to devise a control strategy for public finances. The act requires the government to follow a strategy to reduce the fiscal deficit to less than 3% of GDP by 2009. Additionally the government is required to produce a Medium Term Fiscal Policy Statement as part of the annual budget, in which it explains the sustainability of policies, how they are consistent with the FRBM, and to make projections for the current and following 2 years.

The discipline this has imposed has led to the possibility of breaking the upward momentum of the absolute deficit—though it has shown considerable volatility over the past few years. More importantly, the sharp acceleration in GDP growth since 2001 has led to a major decline in the deficit as a proportion of GDP. From its peak in 2001–02 the percentage has declined substantially, and is now below the FRBM target for 2009. Despite the progress, however, government borrowing remains high in absolute terms and highly volatile **(Figure 27)**. And government demands on the market remain large, with outstanding debt at more than 90% of GDP.

Figure 27: **Government Borrowing for Deficit Funding**



Source: Reserve Bank of India.

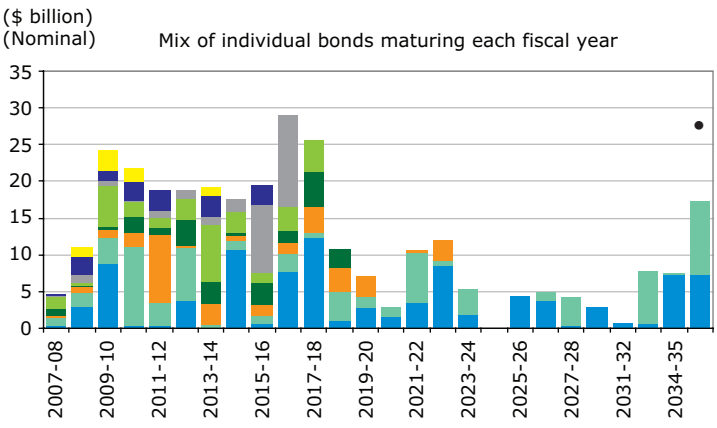
Issuance, trading, settlement, and regulation in the government bond market follow conventional models. But the market features many small, illiquid issues and lacks bond-related derivative products.

The RBI operates the government bond market, and therefore acts as monetary authority and debt manager, as well as regulator of the government bond market and its key participants—primary dealers and banks.[16] Other participants are regulated by SEBI, the Insurance Regulatory and Development Agency (IRDA), or the Provident Fund regulator.

New securities are issued by auction, with primary dealers required to participate. Trading is a mix of OTC bilateral negotiation and an order matching system. Banks and primary dealers are the main participants, but other investors have access to trading. Some limited retail trade occurs on the stock exchanges. Bond holdings have been dematerialized, existing as entries on the books of depositories. India uses Real-Time Gross Settlement (RTGS) and settlement is done on a net basis using delivery versus payment (DVP).

Significant characteristics of the government bond market include (i) a large number of issues that can be quite small; (ii) a large proportion of electronic trading; (iii) the absence of bond-related derivatives while equity market derivatives are very active; and (iv) statutory requirements on investors.

Figure 28: **Indian Government Debt by Maturity**

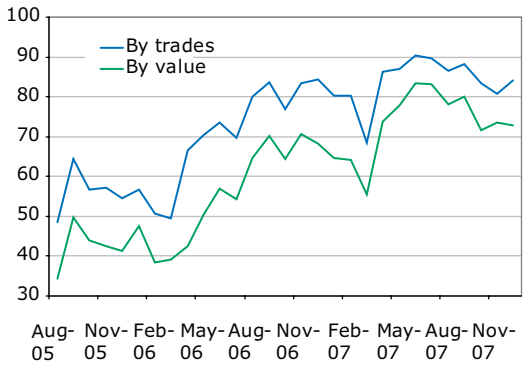


Source: Reserve Bank of India.

The government bond market has a long history and, consequently, a very large number of issues—of which many can be quite small. Each column in **Figure 28** represents the total value of the government bonds outstanding which matures in that year. The splits in each column represent the value of each individual issue maturing in that year. Thus in 2009–10, eight of the issues are due to mature. It is clear that at most maturities there are several issues, none of which is very large (or therefore very liquid).

[16] The trend in developed countries has been to separate the functions because of potential conflicts of interest and the difficulty of convincing the market that the debt management function is not using monetary policy to manipulate the government bond market. This discussion is occurring in India but a rapid change is not expected.

Figure 29: **NDS-OM Market Share of Government Securities Trading**



Source: Clearing Corporation of India Ltd.

- A significant proportion of trading is conducted electronically. The negotiated dealing system (NDS) allows a range of trading styles including anonymous negotiation and order matching. The order matching system is now the dominant form of trading approaching an unusual 90% of market share **(Figure 29)**. Several markets have tried to initiate some form of electronic trading system for government bonds, but none have had as much success as India in attracting significant business.

- As with bond markets in emerging East Asia, India has no bond-related derivative market. An attempt to introduce interest rate futures was unsuccessful, largely because banks were only permitted to use the market for specific hedging transactions. By contrast equity market derivatives have been highly successful in India and now rank among the most traded in the world.

- India retains a number of statutory requirements on investors. Banks, insurance companies, and pension funds are required to hold 25% of assets in government securities. In contrast, foreign investors have limited access to government securities.

The Reserve Bank of India has introduced a number reforms since 1992 in an effort to move toward a more transparent and market-driven structure.

The process of auctioning new issues was introduced in 1992, replacing the previous system whereby government issues were allocated to investors—largely banks and state-owned investment institutions. Until prohibited under the FRBM in 2006, the RBI frequently intervened in the auction, taking substantial holdings onto its own books ("devolvements") to ensure the auction achieved the right price.

Primary dealers were introduced in 1996 to support the auction system. Primary dealers may be independent or may be linked to banks. In 2006, the primary dealer structure was modified to allow banks to operate directly as primary dealers (separate primary dealer subsidiaries of banks were permitted to reintegrate into the parent bank). There are currently six primary bank dealers and 11 "stand-alone" primary dealers. Primary dealers have privileged access to preferential finance at the RBI through the

liquidity access facility and through repos. Primary dealers are also given favored access to the RBI's open market operations. They are permitted to borrow and lend in the money market, can raise resources through commercial paper, and have the same access to finance from commercial banks as any other corporate borrower. Issuance is a two-stage process with primary dealers bidding to underwrite the issue and then bidding for the issue itself. Primary dealers are assessed on their performance in auctions and in the secondary market. The auction process permits non-competitive retail bids to be submitted through primary dealers.

A "when-issued (grey) market" was introduced in May 2006 and initially was only permitted when the issue was a re-opening of an existing bond (that is, one that was currently trading). The rules were subsequently relaxed to allow when-issued trading in selected new issuances (that is, bonds that were not re-openings of old bonds).

In 2001 there was a published timetable for treasury bill auctions but not for longer dated bonds. In part this was a consequence of weak control of the budget deficit, leading to frequent revisions in the funding requirement during the course of the year. Since September 2006, the RBI has published a yearly issuance timetable for dated bonds.

Indian state governments raise finance through omnibus issues organized by the RBI. State issues are not government guaranteed. The omnibus issues are sold at fixed coupons and prices (the same for every state). Potential buyers subscribe at the fixed coupon rate for the bonds of a particular state (the amount on issue for each state is not announced). The subscription is closed after 2 days even if some issues are under-subscribed.

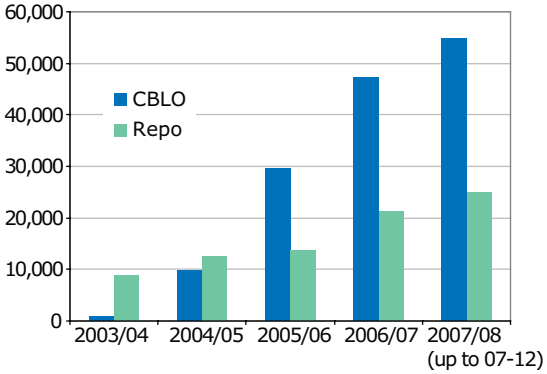
Current government bonds are fixed-coupon with maturities from 1 to 30 years. The RBI has experimented over the years with a number of different types of bonds. These include (i) zero coupon bonds; (ii) capital-indexed bonds (inflation-linked principal); and (iii) floating rate bonds. None has generated much interest and all have now been discontinued. The RBI is now working to develop a market for Separate Trading of Registered Interest and Principal of Securities.[17]

[17] Separate Trading of Registered Interest and Principal of Securities allow investors to hold and trade the individual principal and coupon components of eligible Treasury notes and bonds.

Primary dealers are obliged to support the secondary market by providing continuous two-way quotes. In practice, until the prohibition on short-selling of government bonds was relaxed, it was difficult for primary dealers to meet this obligation and market opinion was that they did not. Short-selling was absolutely prohibited until March 2006. It was then relaxed, allowing primary dealers and scheduled commercial banks to run intra-day short positions. In January 2007, this was further relaxed to allow short positions to run for 5 days. Market opinion is, however, that the remaining restrictions still pose a significant barrier—for example; the limiting of short positions to a maximum of 0.25% of an issue can be restrictive in the case of the many small issues that still exist. However, the direction of policy is clear and the barrier caused by short-selling restrictions is likely to continue to decline in importance.

Figure 30: **Repo and CBLO Volumes**

INR billion



Source: The Clearing Corporation of India.

The government bond repo market is open to primary dealers and banks, which are free to repo their non-Statutory Liquidity Reserve (SLR) holdings.[18] Government bond repos are almost exclusively between the market and the RBI and there are few third-party repos. The RBI also uses repos and reverse-repos to conduct money market operations. Daily rates are announced and set a band between the repo and reverse-repo rates, where the call money market operates. The volume of repos has grown sharply in recent years (**Figure 30**). In the financial year 2006/07, primary dealers were the counterparty in nearly 40% of repo transactions, foreign banks took another 40% and non-primary dealer domestic banks accounted for the remaining 20%.

The Clearing Corporation of India Ltd. (CCIL), the clearing agency, operates a market for Collateralized Borrowing and Lending Obligations (CBLOs). CBLOs are a form of tripartite repo (approved by the RBI) which allows market participants to create borrowing facilities by placing collateral securities at CCIL. Borrowers can then bid for funds (up to their collateral's value less a discount margin) through the CBLO system—a transparent, electronic order book. Established in 2001, CCIL is India's first exclusive clearing and settlement institution to provide guaranteed settlement facility for transactions in government securities, money market instruments, and foreign exchange). CCIL, owned by industry participants, also manages bond lending transactions and operates the CBLO facility.

[18] Banks are required to keep a Statutory Liquidity Reserve (SLR) equal to at least 25% of deposit liabilities.

CBLOs are offered for a variety of terms—most are overnight (75%) but dates out to 1 year are possible. The CBLO offers significant advantages over repos: (i) the instrument is tradable, allowing a borrower to reverse the position and repay the loan before its term expires; and (ii) CBLOs are very secure because of the involvement of CCIL as guarantor of each transaction. This means (i) failures are rare and (ii) CBLOs can be used by participants with lower credit ratings.

There are currently 161 participants in the CBLO market. In December 2007, mutual funds were the largest lenders of cash (57%) followed by public sector banks (28%). The main borrowers were public sector banks (37%), private sector banks (21%), and foreign banks (16%). The advantages of CBLOs have led to a rapid expansion of the market since its introduction in January 2004. CBLO volumes now outstrip repo volumes by a significant margin.

The Reserve Bank of India has significantly enhanced India's trading and settlement infrastructure.

Until 2002 the government bond secondary market was a purely OTC telephone market. The main participants were banks and primary dealers with agency brokers acting as intermediaries. In February 2002, the RBI launched the Negotiated Dealing System (NDS). The NDS was designed as complementary to the OTC trading structure, with the aim of gradual replacement. In practice the NDS was mainly used for post-trade reporting of OTC trades. This brought about considerable efficiencies in settlement but had little impact on trading.

In August 2005, the RBI introduced its Negotiated Dealing System–Order Matching Segment (NDS-OM). This is a screen-based anonymous trading and reporting platform enabling electronic bidding in primary auctions and disseminates trading information with a minimum time lag. NDS-OM has had considerable success and has taken a dominant share of government securities market trading.

Holdings of government bonds are in scripless form. Participants have Securities General Ledger (SGL) accounts if they are direct participants or Constituents' Subsidiary General Ledger (CSGL) accounts operated by SGL account holders if they are indirect participants.

Real Time Gross Settlement for cash was introduced in 2004. Settlement of government securities is now 1 day following the transaction (T+1) using the DvP-III model whereby both bond and cash positions are settled on a net asset basis.

Corporate Bond Market

Several changes have helped improve transparency in the corporate bond market, including better documentation requirements and improved credit rating. But it remains undeveloped relative to the government market.

Four key developments have affected corporate bond markets over the past decade:

i. the dematerialization of holdings, as required by SEBI in 2002;

ii. increased transparency of trading as a consequence of compulsory reporting of trades. There are currently three trade reporting venues for corporate bonds and SEBI has published details of trading since January 2007;

iii. documentation requirements for private placements have been enhanced. Five years ago the term sheet sent out to potential buyers was little more than half a page and many key pieces of information were omitted or implied. The documentation now runs to about three or four pages, which practitioners regard as appropriate;

iv. linking of local rating agencies (of which there are five offering bond ratings) to international rating agencies (**Table 9**).

Table 9: **Indian Credit Rating Agencies**

CRISIL	Standard & Poor's are major shareholder
CARE	61% owned by 3 major Indian banks (IDBI, SBI, Canara)
ICRA	Moody's is a major shareholder
Duff & Phelps (India)	Subsidiary
Fitch (India)	Subsidiary

Source: Agency websites

Authorities are examining recommendations for improving the corporate market, including the possibility of a uniform stamp duty and reform of issuance procedures.

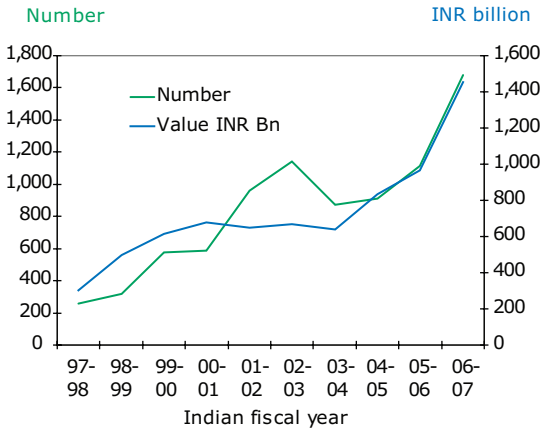
The recent *Report of the High Level Expert Committee on Corporate Bonds and Securitisation*—commissioned by the Union government and chaired by R. H. Patil in 2005—made a number of recommendations for improving the corporate bond and securitization markets. The government is examining its

recommendations on stamp duty tax, issuance procedures/ disclosure requirements for public issues, and modifying the investment rules relating to institutions. A number of improvements recommended in the report, including one for trading conventions, have been implemented.

In actual fact, most issues in the corporate bond market are not really bonds but private placements, and most issues are not made by corporations.

Corporate bonds can be issued as public issues (that is, bonds offered to a wide range of investors and which conform to the regulatory standards required of public issues of bonds) or as private placements to a maximum of 50 "Qualified Institutional Buyers" (that is, professional investors). Public issues require a prospectus approved by SEBI, while private placements have much less documentation. Public issues have to be open at a fixed price for a month to allow investors—particularly retail investors—to subscribe. There are almost no public issues of corporate bonds, however, and practically all issues are private placements **(Figure 31)**.

Figure 31: **Private Placements Outstanding**



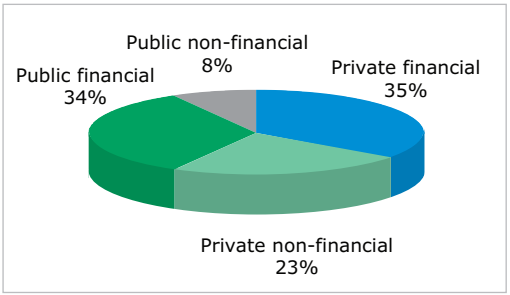
Source: Reserve Bank of India.

The disclosure requirements for public issues are viewed by many as excessive:

- Prospectuses for bond issues are reported to be several hundred pages long.
- Disclosure requirements are identical, irrespective of whether the company is already listed or not. This is not normal international practice.
- There is no provision for shelf registration whereby a program of tranches can be covered by a single prospectus.

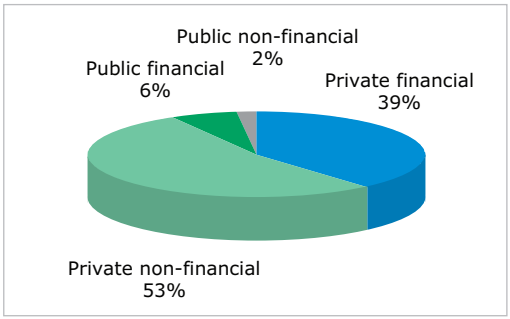
The issue process is reportedly slow, taking several months, which, with high marketing and other costs, makes public issues very expensive. The slow process also makes issues risky as the price is fixed throughout the offer period. In contrast with public issues, the documentation for a private placement is small, although requirements have been increased in recent years. Placements can be issued very quickly with book building and pricing usually completed within a day.

Figure 32: **Value of Private Placements by Issuer Type** (2006/07)



Source: Reserve Bank of India.

Figure 33: **Number of Private Placements by Issuer Type** (2006/07)



Source: Reserve Bank of India.

The small number of investors makes it relatively easy to renegotiate terms. Typically, for example, a change in interest rates will lead to a renegotiation of the coupon on a placement during the currency of the issue. This makes private placements very flexible.

Private placement issues are generally quite small, averaging about USD20 million.

Issuers wanting to raise a larger amount may well make a number of separate placements, sometimes on the same day. Since the number of investors is limited, the separate issues will all, practically speaking, go to the same investors, usually under similar terms. The result is that many of the "bonds" are actually syndicated loans—an impression confirmed by the fact that the largest investors are banks.

Corporate bonds are issued by a range of entities—private sector companies, banks, and public sector companies. Issuance in 2006–07 was USD35 billion in 1,678 issues. Public sector entities accounted for 42% of the value and 8% of the number of issues. Public sector issues were also relatively large, averaging USD107 million. Private financial companies—largely banks raising money to lend on to clients—represented 35% of the value and 39% of the volume. Private, non-financial corporate issuers represented only 23% of value, but 53% of the volume, indicating an average value of USD10 million **(Figures 32, 33**). Issuers who are the main participants in other corporate bond markets—that is, private sector, non-financial—represent only a small proportion of the value of corporate bonds in the Indian market.

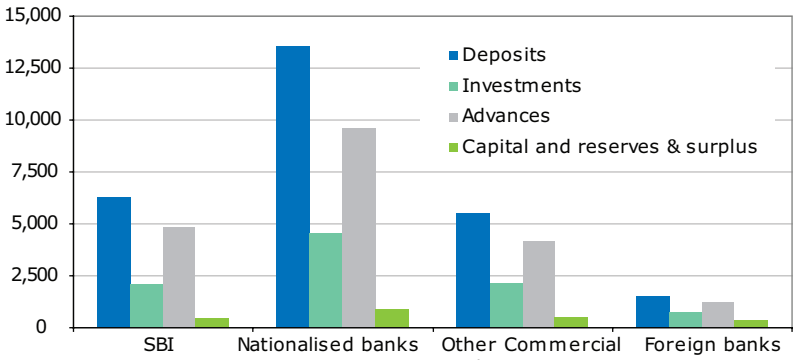
Demand for corporate bond finance is limited.

Corporate demand is limited for genuine bond finance (as opposed to loans disguised as bonds). Traditionally companies have borrowed from banks to meet their financing needs: indeed, bank credit continues to dominate corporate funding. Banks account for 90% of financial assets (and state-owned banks represent 75%) (**Figure 34).**

The main source of finance for smaller companies is from former "development banks," which have emerged from state-owned development banks but are now private and profit-oriented, and dominate corporate lending. They finance themselves not

Figure 34: **Deposits, Investments, and Advances by Bank Type**

INR billion



Source: Reserve Bank of India.

through deposits—from which they are generally barred—but through debt issues. The development banks are active in the private placement market, borrowing wholesale to lend to smaller corporations.

Private placements have dominated debt issuance and banks or even a single bank will often take up the entire issue. The decision as to whether to issue a bond or take a loan is determined by non-strategic factors:

- At various times the RBI has prohibited banks from lending at rates below their published lending rate but the prohibition did not apply to investments in private placements. Therefore, a bank that wanted to offer a very tight rate to a highly rated corporate borrower would present the loan as a bond.

- Interest rate expectations may influence the choice—when rates are falling, as they have been for several years, borrowers will prefer a variable rate loan and lenders a fixed-rate bond.

- Large bank loans are required to pass an internal approval process, usually by the board or a board committee. Private placement investments are not subject to the same scrutiny (or delay), again, giving banks an incentive to grant loans but present them as bonds.

- Loans are not subject to stamp duty, whereas bonds are, making loans desirable for tax sensitive borrowers.

Table 10: **Distribution of Corporate Bonds Issued by Rating**

	AAA		AA		A		BBB		Below Inv. grade	
% of total	No.	Value	No.	Value	No.	Value	No.	Value	No.	Value
1999–00	35	83	25.9	9.4	25	6.1	7.7	0.8	6.4	0.6
2000–01	38.3	76.6	33.6	10.1	21.4	11.6	3.1	1.3	3.7	0.3
2001–02	31.7	61.6	33.5	27.8	24	9.3	7.8	1.1	3	0.2
2002–03	45.6	76	27.1	13.8	18.2	7.5	6.3	1.6	2.8	1
2003–04	50.4	77.5	24.8	14.9	17.3	6.1	6.5	1.1	1	0.4
2004–05	56.7	72.2	22.4	22	11.8	3.7	7.1	1.9	1.8	0.3
2005–06	54.6	75.1	30.8	16.7	9.4	7.8	4.4	0.3	0.8	0

Source: Securities and Exchange Board of India.

- Loans may be preferable for banks since they are not currently marked to market (but will be under Basel II—rules which are due to begin implementation in 2008). Bonds (not in the held-to-maturity category) are marked to market but, in the absence of reliable secondary market prices; there is scope for manipulation and window dressing.[19]

Similarly, corporations tend to regard loans and bonds as interchangeable. This occurs to some extent in most markets. But in India there is a strong focus on managing or arbitraging micro-features as described above.

The level and complexity of stamp duty encourages the arbitrage-based approach to corporate finance so that decisions are often tax-driven rather than strategy-driven. There is a stated, but as yet unscheduled, intention to reform the stamp duty, probably by introducing a standard national rate with a maximum rate, as recommended in the Patil report.

Companies with high credit ratings dominate corporate issuance, while smaller corporate issuers are generally excluded.

The distribution of corporate bonds issued by rating (**Table 10**) indicates that the number of sub-investment grade issues is minimal and the proportion below AA is small—8% by value in 2006–07. Only the largest corporations are likely to achieve an AAA rating. Others are thus excluded from the bond market and obliged to rely on bank finance.

[19] The Reserve Bank of India allows banks to hold bonds in "trading book", "available-for-trading" and "held-to-maturity". The latter are not marked to market under current rules

Wholesale trading in the corporate bond market is entirely over-the-counter, with some major banks acting as unofficial market makers.

The declining role for brokers in the government bond market has led to their general withdrawal from the market. The NSE and Bombay Stock Exchange (BSE) offer order-driven, bond trading platforms that are used for post-trade reporting but rarely for trading. The exchange trading platforms are mainly used by a small number of retail participants.

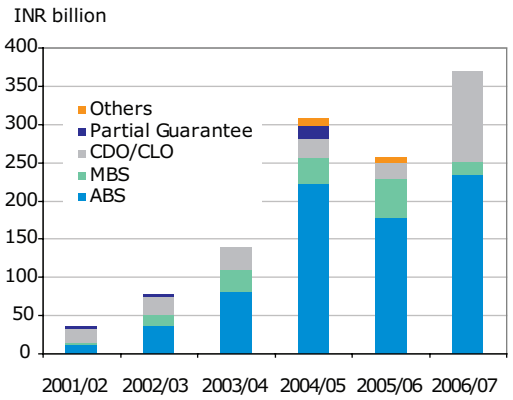
Delivery versus payment (DvP) clearing is available for the few trades transacted on the stock exchanges' dealing platforms (that is, by order matching) but not for OTC trades, which are the bulk of the market. However, corporate bond OTC transactions are settled bilaterally between the counterparties (that is, there is no central counterparty to start the process and so reduce settlement risk). SEBI introduced regulations in 2002 requiring corporate bonds to be held in scripless form. However, cash is still settled inter-office—sellers instruct CCIL to move bonds before they have the funds from the buyer, so the system is not truly DvP, and sellers are at risk during settlement. This potentially imposes a barrier to trade. But because the market is in practice limited to a small number of major players, the risk is considered manageable.

Repurchase agreements are not permitted on corporate bonds. The RBI is the regulatory authority for this part of the market since corporate bond repos would be regarded as money market instruments. The RBI has been considering allowing corporate bond repos for some time and now seems to be moving toward permitting them. CBLOs have been increasingly taking over the role of repos but are also limited to government bonds.

Conventional securities lending is theoretically available as an alternative to repos, but general market illiquidity makes it impractical. India does have efficient, automated securities borrowing and lending infrastructure for equities which was introduced when "badla"—the indigenous carry-forward system—was outlawed in the early 2000s but conventional securities lending systems have not been developed for corporate bonds.[20]

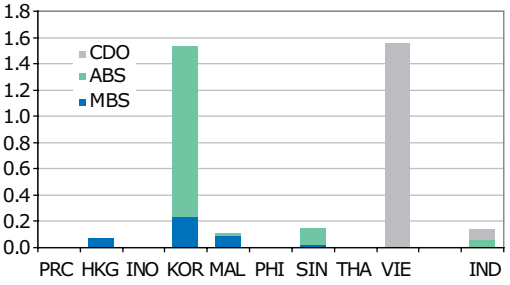
[20] "Badla" was a feature of most markets in the subcontinent. Essentially it involved the carrying over of positions rather than settling them—in effect, un-margined OTC futures. The growth and opacity of badla led the Securities and Exchange Board of India to finally ban the practice and force the unwinding of positions.

Figure 35: **Structured Finance**



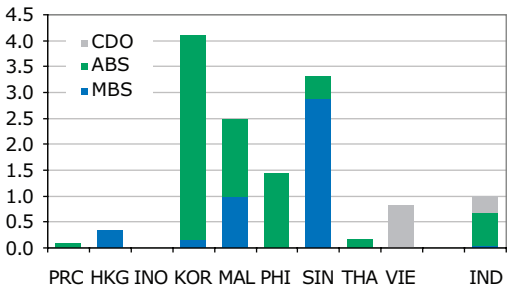
Source: ICRA.

Figure 36: **Indian and EEA Securitization as % of GDP** (2001)



Source: *AsianBondsOnline*, ICRA, Reserve Bank of India.

Figure 37: **Indian and EEA Securitization as % of GDP** (2006)



Source: *AsianBondsOnline*, ICRA, Reserve Bank of India.

If the market were to expand to encompass a wide range of investors, then it would require better settlement infrastructure. Other factors that have a limiting impact on trade include: (i) tax deducted at source—which complicates trades between tax-exempt and non-exempt entities; (ii) no single database of bonds; and (iii) no universal conventions for day count, interest calculation.

Securitization Market

Securitization has a long history but development has been slow and limited to a few asset types.

India began securitization early among Asian markets, with transactions going back to the early 1990s. Growth accelerated from 2000, reaching USD9.4 billion (INR370 billion) in fiscal 2006/07 (**Figure 35**). However, the securitization market has not yet taken off. Volumes tend to be low and asset types limited. Volumes appear to be mainly influenced by tax or regulatory arbitrage considerations rather than by underlying financial factors. The market is also subject to regulatory, legal, and tax uncertainties.

Indian securitizations have tended, like those in Korea and the Philippines, to be Asset-backed securities (ABS). Other assets have fluctuated with mortgage-backed securities (MBS), which are more significant in Malaysia and Singapore, showing steady growth to 2005. But they have since declined, while collateralized debt and loan obligation (CDO/CLO) securitizations have surged, including a significant volume of single loan securitizations in 2006/07 (**Figures 36, 37**).

Securitization was generally small in emerging East Asian markets in 2001**,** amounting to less than 0.2% of GDP, including India. By 2006 a number of the region's economies—Korea, Malaysia, Philippines, and Singapore—had expanded securitization levels considerably (to between 1.5% and 4% of GDP). In the cases of Korea, Philippines, and Malaysia, they did this through policies designed to recapitalize the banking sector. In India, reasonable growth brought securitization volumes to roughly 1% of GDP.

Auto loans were the mainstay of the securitization market in the 1990s. Since 2000, residential mortgage backed securities (RMBS) have also contributed to market growth, though RMBS

activity has slowed significantly during the last two years. Asset-backed securities (ABS) claimed the biggest share in the market, accounting for 63% in FY2007, followed by CDO/CLO (32%). RMBS, hindered by limited investor interest, amounted to less than 5% of the total in FY2007. [21]

Credit card securitizations have been limited, partly because of stamp duty costs, but also because the credit card market in India—while showing rapid growth—remains small. There have also been limited future flow securitizations, such as toll receipts, and some infrastructure financing. The demands for infrastructure financing in India are now recognized and it is expected that securitization of receivables from those projects should expand rapidly.

As the nature of the securitized assets suggests, the originators have mainly been banks and nonbank financial institutions. The originators include former development banks that have been privatized and which have become major players in the consumer lending market, and housing finance companies. ICRA estimates the top five originators account for about 80% of issuance. There has also been some securitization of corporate loans, again with substantial credit enhancement. These have included single loan securitizations.

Investors in securitized notes are predominantly banks and insurance companies.

Insurers are subject to restrictive investment mandates (discussed below) and thus securitized assets are structured to achieve a very high rating and, often, to minimize prepayment risk. To gain these ratings, successful issues require very substantial levels of credit enhancement. Methods of enhancement have included: (i) direct recourse to the originator (often structured as put options); (ii) originator or third party guarantees; (iii) over collateralization; and (iv) cash collateral and reserves.

Until recently, securitizations with subordinated tranches were not offered in India and remain a rarity. This is because there is: (i) little investor demand for such lower-rated notes; and (ii) there was no capital penalty for originating banks retaining the first-loss tranche. RBI guidelines (described below) have removed the latter reason and the market is now seeing some use of subordinated tranches.

[21] Update on Indian Structured Finance Market—ICRA July 2005

India currently does not have credit insurance or an active market for credit derivatives. This means these risk management tools are not available for structuring deals and the use of credit default swaps to create synthetic securitizations is impractical.

Regulatory responsibility within the securitization market is unclear, but the strong involvement of banks means that the RBI's regulatory actions will have a significant impact. For example, RBI recently published regulations on the capital provision required for securitizations by banks. These are similar to, but stricter than Basel II requirements.

There are several distinguishing features of India's securitization market:

- as a common law jurisdiction, India does not require specific legislation to permit the formation of special purpose vehicles (SPVs).

- This gives considerable flexibility, but at the same time means that many features are left unclear until decided by case law.

- for tax reasons, SPVs are set up as single-purpose trusts rather than corporate entities, as is common in other jurisdictions.

- arbitrage considerations are regarded as crucially important and tax and regulatory environment will determine the decision to securitize, as well as the structure of a securitization to a far greater extent than in other markets. As an example, the recent RBI rules on capital provision led to a number of direct assignment deals (that is, transfers of cash flows but without an SPV) since the new rules specifically applied only to transactions involving an SPV.

The pace of change in the securitization market has been slow.

The Securitisation and Reconstruction of Financial Assets & Enforcement of Security Interest Act, which was intended to clarify the status of securitization, has been enacted, but is regarded as having had little effect. The implementation of Basel II may have an impact, and India plans to begin implementation in 2008. The

RBI regulations—which as noted are stricter than Basel II—have encouraged more direct assignments (that is, cash flow transfers without SPVs). The Patil report also made recommendations on securitization relating to the stamp duty and taxation.

Developing a securitization market requires financial institutions that have an incentive to securitize and a set of standard assets to securitize.

Financial institutions will securitize if they are (i) constrained by their balance sheets and securitization allows them to reduce the size of the balance sheets; or if they are (ii) under competitive pressure. Securitization permits them to realize profits on their current assets by selling them on.

A securitization market also requires a supply of assets that typically can be securitized at the start of the market. These are the standard assets such as mortgages, auto loans, and credit card receivables, as well as infrastructure projects where future cash flows can be securitized.

India's banks have not felt pressure on their balance sheets so far—though credit demand suggests they may. Other entities such as auto finance companies have been active but they are small relative to the bank market. In considering which assets to securitize: (i) India is still developing its credit card market; (ii) auto loans are being securitized but the residential mortgage market is still too small for securitization on any scale; and (iii) India's infrastructure demands are huge—but the main expenditure is in the future.

As a result, there has so far been limited incentive for securitization. But this may change as credit demand and infrastructure expenditure increase. The use of securitization to finance infrastructure development and remit the cash flows could diversify the investor base for infrastructure debt.

The stamp duty is a major barrier to the development of securitization. Transfers of assets require written instruments which are subject to stamp duty. Rates of duty on asset transfers vary among the states, but are generally high—most states charge between 3% and 16% on the value of the property being transferred.

Tax uncertainty remains and there are no clear rulings on the taxation of SPVs. Market practice and current opinion is that taxation of interest paid on SPV bonds will be levied on the investors rather than being paid by the SPV. However, this has not been tested.

There is also a general lack of clear regulatory structure. A legal amendment is underway which clarifies the position of SEBI as the principal regulator for securitizations, although, as in corporate bonds, the RBI will retain a significant role because of the involvement of banks.

Market participants

Regulatory responsibility in India's bond markets is fragmented—and there is the perception among market participants that they are also at cross-purposes.

Corporate bonds are regulated by SEBI, which is responsible for authorizing the public issue prospectus and for setting standards regarding private placements. It also regulates some of the participants—the brokers (who have all but disappeared from the market) and mutual funds. Other participants are subject to different regulators. Banks and primary dealers are regulated by the RBI, insurance companies (including the Life Insurance Corporation of India) by the Insurance Regulation and Development Agency and provident/pension funds by their own regulator.

The bankruptcy system is time-consuming and inefficient, although the law is based on United Kingdom law and, as such, is judged to be reasonably clear. There are, however, (i) significant political pressures against declaring enterprises insolvent; and (ii) serious delays in the court process—several years is the quoted time for resolution of insolvencies. In practice bankruptcy is hardly an issue in the corporate bond market because: (i) very few issues are rated below AA; and (ii) the terms of the private placement (and the small number of investors) mean it is easier to renegotiate terms if necessary, rather than to go through the legal processes for insolvency.

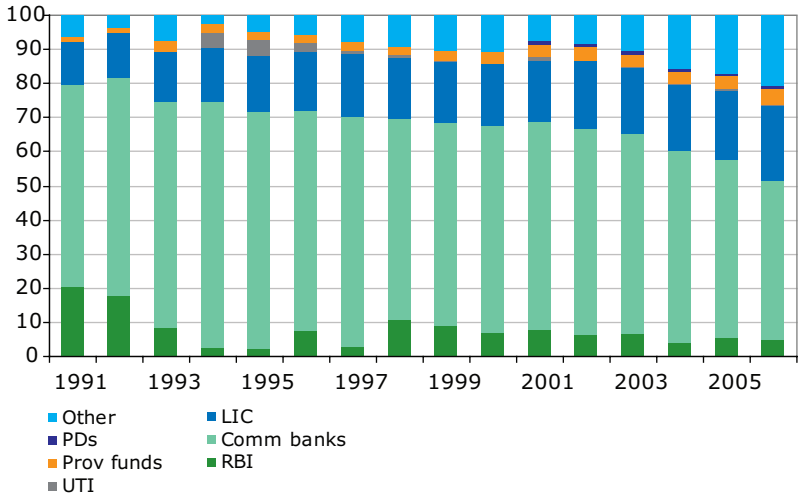
The requirement on banks, insurance companies, and pension funds to hold government bonds restricts liquidity.

Banks, life insurance, and pension funds are required to hold a minimum of 25% of their time deposit liabilities in government securities—the Statutory Liquidity Requirement (SLR). Only holdings in excess of the SLR requirement can be traded and repurchased. Bank holdings have declined as a proportion of the total issuance of government bonds over time as interest rates have fallen and loan demand has risen (**Figure 38).** However, in absolute terms, 2006 was the first year in which banks' holdings of government bonds fell.

The life insurance sector remains dominated by the Life Insurance Corporation of India (LIC). LIC now faces competition from private sector insurers but in terms of investment it represents 98% of the market. Although LIC is only required to hold 25% of its assets in government bonds, it still holds about 75% of its assets in government bonds. Private sector insurers are similarly conservative.

Also pension funds tend to hold a larger percent of government bonds than required. The pension fund sector is mainly controlled by various state-run provident schemes. A new pension system based on individual accounts is being introduced, though the time of completion has not been published.

Figure 38: **Holdings of Government Bonds by Investor Group** (%, end March)



Source: Reserve Bank of India.

Life insurers and pension funds are also constrained by legal mandates as to the proportion of corporate bonds and to quality and rating. Like banks, these investors tend to buy and hold, partly because that is their nature and partly because of the lack of liquidity. The current structure of investors includes many with heavy state involvement. In addition competition is limited—for example in the low-premium life business. These investors may lack the incentive (and the skills) to engage in more active investment strategies. Bond mutual funds in practice invest mainly in short-term instruments to match the short expected holding period of their investors.

The requirement to hold government bonds constrains liquidity by restricting the main liquidity traders to arbitrage transactions rather than directional trading. This means that the market tends to dry up in anticipation of a fall in interest rates because the natural suppliers of bonds cannot sell below their required holding level. It also ensures that the amount of government bonds held by mutual funds and other entities that are not required to hold a certain proportion of government bonds is small relative to the more static holdings of the banks, insurance companies, and pension funds.

There is likely to be a movement away from government bonds over the longer term, as the New Pension System (NPS) is implemented and as the private sector insurance companies gradually chip away the dominance of LIC. However, unless there is a change in the mandates of the state-controlled investors, the range and size of corporate bond investors will remain limited.

Mutual funds have developed rapidly in India, but invest mostly in short-term bonds and bills.

The mutual fund market has developed rapidly in India and is now almost exclusively private. Specialist "gilt funds" (which have access to the RBI liquidity facility) have been set up to invest exclusively in government securities.[22] However, the nature of the Indian bond mutual fund industry's customer base—largely corporates using mutuals for short-term treasury management—means that the bond funds are treated as money-market funds and must invest mostly in short-term bonds and bills.[23]

[22] Gilt funds, as they are conveniently called, are mutual fund schemes floated by asset management companies to invest exclusively in government securities.

[23] Corporate use of bond mutual funds developed when there was a tax exemption for income from bond mutual funds. The tax exemption has now been removed but the practice continues.

Foreign investors are restricted by exchange regulations.

Foreign investors are restricted by exchange control regulations to an aggregate of USD1.5 billion in corporate bonds and USD3.2 billion in government bonds. In practice, foreign investors do not even approach these limits. This is in contrast to the domestic stock market where foreign investors are significant participants.

Policy Issues

A rationalized and consolidated regulatory and supervisory structure of India's local currency bond market could contribute to substantial efficiencies spurring innovation, economies of scale, liquidity, and competition.

After years of strong economic growth, and financial market development, India's financial sector is at a turning point. The regulatory and financial supervisory framework plays an important role in developing a vibrant local currency bond market and financial market generally. Streamlining regulatory structures to lessen regulatory inconsistencies, gaps, overlap, and arbitrage can help ensure a level playing field by making players performing a function report to the same regulator regardless of their size or ownership. It can also help regulatory systems adapt to increasing globalization and rapid innovation of new financial instruments. Substantial efficiencies can thus be gained allowing scope economies to be realized, improve liquidity and increase competition and innovation.[24]

Deep and liquid bond markets provide a safety valve when access to bank credit tightens—by providing an alternative source of financing.

To address the lack of bond market liquidity, authorities could (i) relax exchange controls on bonds to facilitate investment by foreign investors and broaden the domestic investor base;

[24] There is no perfect regulatory system. The problems with Northern Rock in the United Kingdom are being attributed to the fact that the United Kingdom had moved to a single supervisor, the Financial Services Authority (FSA), with the monetary authority having no supervisory powers. At the same time, the Bear Stearns debacle in the United States is being attributed to the absence of a single supervisor. What is essential is effective cooperation between all the concerned authorities, which transcends the specifics of organizational architecture.

(ii) ease investment mandates on contractual savings institutions that encourage funds to hold bonds to maturity; (iii) develop exchange and OTC derivatives and swap markets; and (iv) consolidate the outstanding stock of government bonds.

i. Relax exchange controls on bonds to facilitate investment by foreign investors and broaden the domestic investor base.

The restriction on foreign holdings of bonds is anomalous in that it is more onerous than the corresponding restrictions on foreign investment in equities, on foreign direct investment, and on foreign investment in derivatives. The potential benefit achieved by allowing more foreign interest—especially trading interest—would be significant in encouraging greater liquidity and investor diversity in the government bond market. However, to date, foreign investors have not taken up even the modest amounts available to them. Due to the limitations imposed on foreign investors, Indian corporate issuers who want access to foreign investors have to issue in the Euromarket rather than domestically. This contributes to further fragmenting the already limited liquidity.[25]

RBI has announced that it would open up the Indian debt market further for foreign investors after putting in place a more efficient settlement system.

ii. Ease investment mandates on contractual savings institutions to hold bonds to maturity.

Banks are active traders of government bonds but the SLR limit means that a considerable part of their stock of assets cannot be traded. The result is to reduce the profitability of the banking system.

Institutional investors are the main support for corporate bond markets in most jurisdictions. Life insurance and pension sector institutions are subject to strict investment mandates which mean that their ability to invest in non-government debt instruments is limited. To avoid the risks of a too-rapid easing of investment mandates, relaxation should be controlled and phased. The Patil Committee recommends using risk-based guidelines. However, such guidelines can only be useful when the relevant skill set

[25] Foreign institutional investors are required to be registered with SEBI as such.

within the institution is at an appropriate level and the historic data on risk is available.

iii. Develop Derivatives and Swaps Market.

Liquidity in bond markets is often primarily not about trading the cash bond itself but in changing the risk profile of the portfolio, using risk management tools. However, derivatives, bond lending and borrowing, repurchase agreements (repos) and swaps as well as OTC credit derivatives and credit insurance are not available in the bond market.

Developing derivatives and swap markets is a critical measure for broadening the investor base and for increasing liquidity in both government and corporate bond markets. It is also crucial to funding massive infrastructure investment needs and providing corporations with the tools they need to manage the risks associated with India's financial globalization. These markets allow a wider dispersal of risk as derivatives and swaps help reduce costs, enhance returns, and allow investors to manage risks with greater certainty and precision. Derivative and swap markets also help address exchange and interest rate risks. The development of these markets needs to be underpinned by improving regulatory, legal, and infrastructure frameworks.

Discussions about reintroducing exchange-traded derivatives have focused on technical aspects. It has been proposed that bond indexes—both corporate and government—be created and futures and options on the same be introduced along the same lines of what has been permitted in equity. The possibility of introducing exchange traded single bond futures and exchange traded credit derivatives is also being explored.

iv. Consolidate the outstanding stock of government bonds.

There is now a budget provision to finance the consolidation of the outstanding stock of government bonds. The RBI should thus move away from its policy of passive consolidation (which has not led to significant improvements in the number and size of issues) to more active retirement of small issues, with the aim of creating a limited number of large benchmark issues along the yield curve.

Reforming stamp duty and disclosure for public offers are additional measures that, in particular, can help develop the corporate bond market.

i. Reform stamp duty.

Stamp duty is a significant barrier to the development of both the corporate bond and the securitization markets. Stamp duties are typically 0.375% for debentures (that is, on creation of corporate bonds) and, as they are strictly ad-valorem, there is no volume discount.[26] The rate of duty is variable depending upon location (various states have set their own rates). Recently official comments have suggested that individual states have agreed to waive stamp duties but this has yet to be announced as official policy. Rates also vary with the nature of the issuer. Rates may also vary with the nature of the initial purchaser (for example, promissory notes bought by commercial and some other banks are subject to only 0.1% duty, compared with 0.5% if issued to other investors). Interest payments are taxable as income and capital gains are taxable. The Patil report[27] recommended that there should be a uniform low rate across all states and that the maximum payable should be capped. Plans are being drawn up to address this but the timescale is unclear.

ii. Reform disclosure for public offers of corporate bonds.

The current process is considered by issuers to be expensive and risky. Existing regulations could be reformed to allow for disclosures that are appropriate for public issues into a largely professional market by entities that are already well-known to the investment community. The regulations could also be changed to allow techniques such as shelf registration.[28] The public issue process is also unduly long to allow for postal submissions—a recent proposal by the RBI to allow online applications might help by shortening the time an issuer is on risk.

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[26] Stamp duty on secondary market transactions was removed for dematerialised stock transfers in 2000.

[27] Report of the High Level Expert Committee on Corporate Bonds and Securitization (December 2005).

[28] A registration of a new issue which can be prepared up to two years in advance, so that the issue can be offered quickly as soon as funds are needed or market conditions are favorable.

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