

World Economic and Financial Surveys

Regional Economic Outlook

Asia and Pacific

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This *Regional Economic Outlook* was prepared by a team coordinated by Jerald Schiff, under the direction of David Burton of the Asia and Pacific Department. Kay Chung, Janice Lee, and Fritz Pierre-Louis provided research assistance and Corinne Danklou provided production assistance.

Definitions

In this Regional Economic Outlook, the following groupings are employed:

- Emerging Asia refers to China, India, Hong Kong SAR, Korea, Singapore, Taiwan Province of China, Indonesia, Malaysia, the Philippines, and Thailand.
- Industrial Asia refers to Japan, Australia, and New Zealand.
- Asia refers to emerging Asia plus industrial Asia.
- Newly industrialized economies (NIEs) refers to Hong Kong SAR, Korea, Singapore, and Taiwan Province of China.
- ASEAN-4 refers to Indonesia, Malaysia, the Philippines, and Thailand.
- Low-income countries in Asia (LIAs) include Bangladesh, Bhutan, Cambodia, Lao P.D.R., Mongolia, Myanmar, Nepal, Sri Lanka, Timor Leste, and Vietnam

The following abbreviations are used:

- SAAR refers to seasonally adjusted increase at an annual rate.
- y/y refers to a year-on-year increase.
- q/q refers to a quarter-on-quarter increase.

Executive Summary

The Asia region appears poised to continue its strong economic growth of recent years. (Chapter I). Growth is expected to reach 7.3 percent this year, declining marginally to 7.1 percent in 2007, again outpacing other regions. Relative to the May 2006 Regional Economic Outlook (REO), this represents an increase of about ½ percentage point per year, reflecting sizable upgrades for both China and India. While export growth for the region is projected to moderate next year in line with slowing growth in industrial countries, overall it is expected to remain strong, in part reflecting continued solid prospects in the electronics sector. Moreover, with the interest cycle in Asia likely nearing its peak and the prospect of stability in oil prices, there is an expectation that domestic demand—in particular investment in the ASEAN countries—will pick up steam. In China and India, rapid investment growth is expected to slow modestly in response to policy tightening, but domestic demand is projected to remain very robust.

The region's current account surplus is expected to remain broadly unchanged this year and next, at about 3½ percent of GDP. In emerging Asia, excluding China, surpluses are projected to decline by ¾ percent of GDP in 2006, reflecting a higher oil import bill and, in some cases, the impact of currency appreciation. But China's surplus is projected to remain large, at about 7¼ percent of GDP.

Inflation in the region remains well contained. Despite much higher prices for oil and other commodities, monetary policy tightening and exchange rate appreciation have helped keep CPI inflation at about 2¾ percent this year, with a similar outcome expected next year. Relatively high-inflation economies are expected to see a significant moderation of inflation.

Prospects for capital flows to emerging Asia also remain good (Chapter II). Global financial market volatility in May-June served to illustrate the region's resilience, as it came through less affected than emerging markets in other regions. Investors do not appear to have altered their positive view of regional fundamentals, which bodes well for the continuation of strong FDI and portfolio flows.

While the outlook is good, near-term risks are slanted to the downside, and perhaps more so than at the time of the May 2006 REO:

- **The key risk for Asia is a more rapid than expected slowdown in the United States.** Despite increased intra-Asia linkages, in particular with China, growth in the United States remains critical to Asia's prospects. Our central scenario is consistent with a gradual return to potential growth in the United States. But a sharper slowdown—e.g., from a sharp correction in the housing market—would have a significant impact on Asia's exports and, indirectly, on domestic demand.
- **Higher oil prices could affect both growth and inflation.** With supply still tight and geopolitical risks high, significant spikes in oil prices from current levels cannot be ruled out. While Asian economies have managed to absorb large increases over the past several years, their ability to continue to do so could be challenged, in particular if price increases coincide with weakening global demand.

- **A return to the sort of financial market volatility seen in May-June could slow growth and raise inflation.** A rise in risk assessments or risk aversion for emerging markets would lower asset prices, and potentially domestic demand, while currency depreciation could increase inflation.
- **Rapid growth in China is a decidedly mixed blessing for the region.** Should growth in China again exceed expectations, regional growth would benefit. However, such rapid growth may be unsustainable, raising concerns that increased tightening could lead to a sharper-than-expected slowdown.

Macroeconomic policies in the region have been generally appropriate but the policy environment could become more challenging in the coming year (Chapter III).

Timely monetary tightening and increased exchange rate flexibility in the region have helped keep inflation in check. Fiscal policy has in most countries been broadly appropriate, but some countries have not taken full advantage of rapid growth to make progress on fiscal consolidation. Looking forward, there may be scope for a loosening of monetary policy in some countries, but high oil prices and narrowing interest rate differentials with industrial countries will pose constraints. And some countries—notably China and India—will need to tighten to slow booming domestic demand. Greater exchange rate flexibility in some countries will also be important for addressing pressures from large foreign inflows.

While the boom in Asia is now in its fifth year, the region faces important challenges in the medium term as it seeks to sustain its impressive economic performance.

Global imbalances remain a concern over the medium term. Any solution will involve policy action on a global scale. But a rebalancing of growth in Asia will need to contribute and, in any case, would be beneficial to Asian economies by ensuring that their current robust growth can be sustained. In previous REOs, this issue was examined from several perspectives: the potential role of exchange rates; Asia's investment decline; and the need to raise consumption in China. In this REO (Chapter V) we focus on consumption in the rest of emerging Asia. We find that consumption is indeed low by international standards and has failed to keep up with rapid GDP growth. The prospective aging of Asia—which will bring with it many of its own challenges—will raise consumption over the medium term, in some cases dramatically. But policies can also play a supporting role. While the appropriate response will be country-specific, reducing the need for precautionary savings—for example by raising public provision of education, health care and social safety nets—and enhancing access of households to bank lending and capital markets are two areas on which policymakers may focus their efforts.

A growing divide between rich and poor also raises important issues for policymakers. After an extended period in which emerging Asia experienced the best of both worlds—rapid growth and increased equality—more recent years (beginning before the Asia crisis) have seen rising inequality and polarization, including along geographic and urban/rural lines (Chapter VI). This is a matter of concern, not only because rising inequality makes it more difficult to reduce poverty but also because there is evidence linking large income disparities to lower growth and higher macroeconomic volatility. No single factor can explain the trend of rising inequality, and no one policy measure alone can reverse it. However, the analysis suggests a number of policy options to enhance economic

opportunity, including: increased or more effective spending on education; provision of economic infrastructure, in particular in less well-off regions; reforms to eliminate dualism in labor markets; and elimination of barriers to financial sector access by the poor.

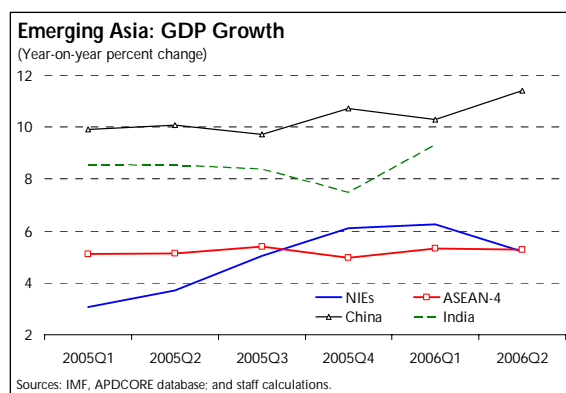
Continued development of Asian financial sectors is critical to sustainable rapid growth in Asia. In this context, Chapter IV examines the development of regional equity markets. These markets have grown significantly since the early 1990s, driven by strong international interest, greater regional integration, capital account liberalization and structural improvements to markets. Continued development will allow for greater efficiency of financial intermediation and investment and more robustness to shocks. Greater equity market participation can also aid rebalancing of growth and perhaps contribute to addressing rising inequality, by allowing individuals to share in increased corporate profits and raise disposable incomes, which have lagged growth in GDP in recent years. But growing equity markets also pose challenges to regulators and raise new issues for monetary policy.

I. Recent Developments and Outlook

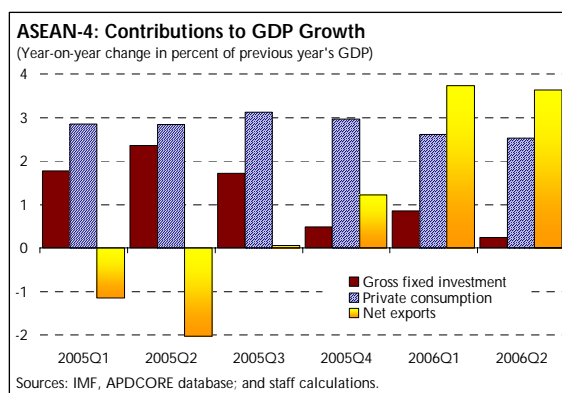
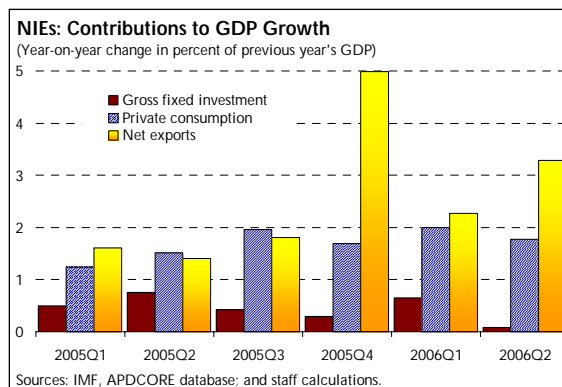
Asia's growth prospects remain bright. Some modest rebalancing of growth is likely, as exports moderate with slowing global growth and domestic demand, in particular investment, firms. China is becoming an increasingly prominent driver of growth in the region, and Japan's continued expansion is also contributing to buoyant economic activity. Inflation should stay subdued even with persistent high oil prices, as second-round effects are likely to remain modest. However, risks to the outlook are tilted to the downside, in particular for 2007. While growth in China could continue to exceed expectations, an abrupt slowdown in the U.S. economy, higher oil prices, and increased risk aversion toward emerging markets pose potential challenges for Asia's growth momentum.¹

Growth

Growth in Asia so far this year has been robust, especially in China and India. Real GDP in China grew by 11 percent in the first half of 2006, led by strong investment and net exports. India's economy expanded by 9½ percent in the first quarter, driven by buoyant domestic demand. Notwithstanding a slowdown in the second quarter, Japan's expansion continued through the first half of the year, with private domestic demand remaining strong on the back of robust corporate investment and a firming labor market. Improving employment conditions supported income and consumption growth in the NIEs, while net exports remained the key driver of growth. Net exports have also surged in the



ASEAN-4 countries, reflecting both an export boom and import compression amid weak domestic demand.



Looking ahead, Asia's growth prospects are bright, spurred by firming domestic demand.²

Growth is forecast at 7¼ percent in 2006, declining marginally to about 7 percent next year. Compared with projections in the May 2006 REO, this represents an increase of about ½ percentage point in each year for the region as a whole, as sizable upgrades for China and India more than offset the less sanguine outlook for Korea and Taiwan Province of China. Growth in China and India is set to remain very rapid this year and next, driven by strong domestic demand. In the NIEs, the still positive outlook for exports, in particular

¹ The main author of this chapter is Varapat Chensavadijai.

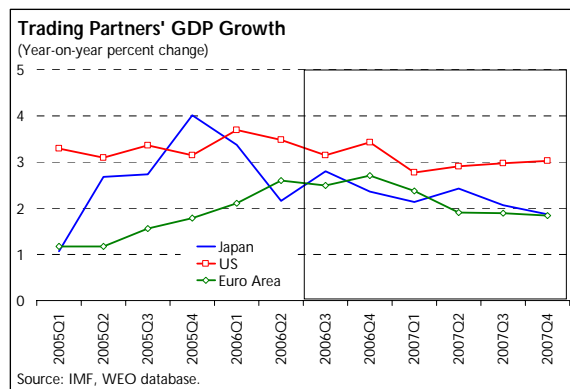
² See Chapter III of the IMF September 2006 *World Economic Outlook* for an analysis of the determinants of long-term growth in Asian economies and challenges ahead.

electronics, should help investment remain solid. And a recovery in domestic demand is expected in the ASEAN-4 countries—in particular on the investment side—helping to maintain the growth momentum in the region.

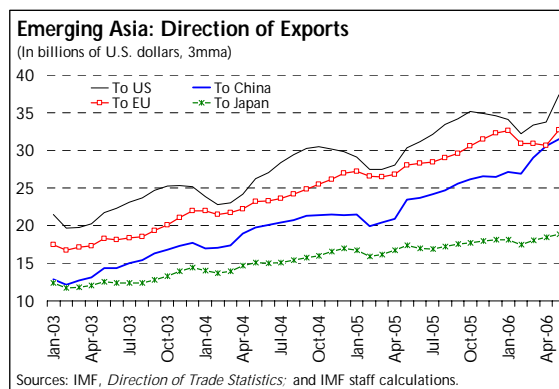
Real GDP Growth (Year-on-year percent change)						
	2004	2005	2006	2007	2006	2007
			May-06 Proj.	Latest Proj.	Latest Proj.	Latest Proj.
Industrial Asia	2.5	2.6	2.8	2.2	2.7	2.3
Japan	2.3	2.6	2.8	2.1	2.7	2.1
Australia	3.5	2.5	2.9	3.2	3.1	3.5
New Zealand	4.3	1.9	0.9	2.1	1.3	1.7
Emerging Asia	8.4	8.5	8.0	7.7	8.5	8.3
Hong Kong SAR	8.6	7.3	5.5	4.5	6.0	5.5
Korea	4.7	4.0	5.5	4.5	5.0	4.3
Singapore	8.7	6.4	5.5	4.5	6.9	4.5
Taiwan POC	6.1	4.0	4.5	4.5	4.0	4.2
China	10.1	10.2	9.5	9.0	10.0	10.0
India	7.3	8.2	7.3	7.0	8.3	7.3
Indonesia	5.1	5.6	5.0	6.0	5.2	6.0
Malaysia	7.2	5.2	5.5	5.8	5.5	5.8
Philippines	6.2	5.0	5.0	5.6	5.0	5.4
Thailand	6.2	4.5	5.0	5.4	4.5	5.0
NIEs	5.9	4.5	5.2	4.5	4.9	4.4
ASEAN-4	5.8	5.1	5.1	5.7	5.0	5.6
Asia	7.1	7.2	6.9	6.6	7.3	7.1

Sources: IMF, APDCORE and WEO databases; and staff estimates.

Emerging Asia's exports are expected to moderate next year in line with the slowdown in industrial country growth. The U.S. economy is expected to slow modestly, amid a cooling housing market and high oil prices, while the pace of economic activity in Japan and the euro area is also projected to decelerate toward potential. Nevertheless, most countries in Asia will likely see only a mild slowdown in export growth, reflecting in part the growing importance of intra-regional trade. While the United States remains emerging Asia's main trading partner, accounting for 17 percent of total exports, China's share is rising rapidly—it now accounts for one-fourth of the NIEs' total exports, and 10 percent of the ASEAN-4 countries' export



market. China's imports from Asia grew by 21 percent in the first half of this year relative to the same period last year. Given China's role in regional trade, robust growth in Chinese consumption and infrastructure investment should offer some cushion to the slowdown in industrial country growth. In addition, although emerging Asia's exports of electronics may soften in response to a weaker external environment, a sharp slowdown is unlikely thanks partly to China's growing demand for consumer electronics and the continued strengthening of Asian global brands (Box 1.1).



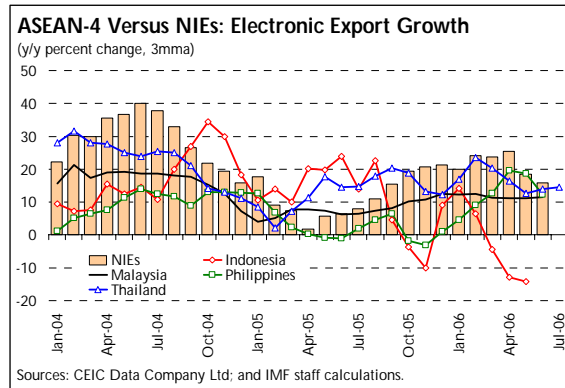
Export Growth (Year-on-year percent change)				
	2004	2005	2006	2007
			Proj.	Proj.
Industrial Asia	12.4	6.2	8.4	5.3
Japan	13.9	7.0	9.4	5.1
Australia	4.0	2.0	3.6	6.3
New Zealand	5.5	-0.2	0.7	6.3
Emerging Asia	25.0	18.9	17.6	16.7
China	28.4	22.4	21.1	20.2
India	28.0	23.0	18.2	17.7
NIEs	17.7	8.4	10.6	9.0
ASEAN-4	13.1	6.7	7.3	6.5
Asia	22.2	16.2	15.7	14.5

Sources: IMF, APDCORE and WEO databases; and staff estimates.

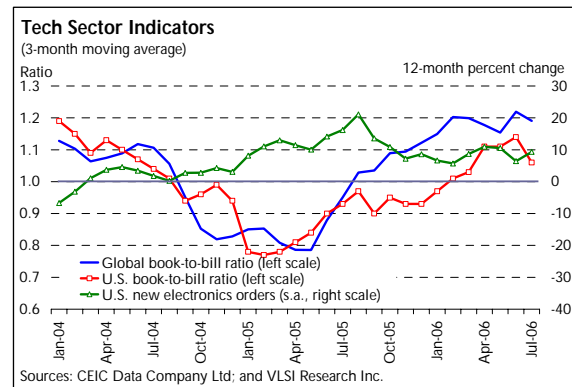
Box 1.1. Outlook for Asia's Electronics Sector¹

Most economies in emerging Asia are benefiting from strong external demand for their electronics products.

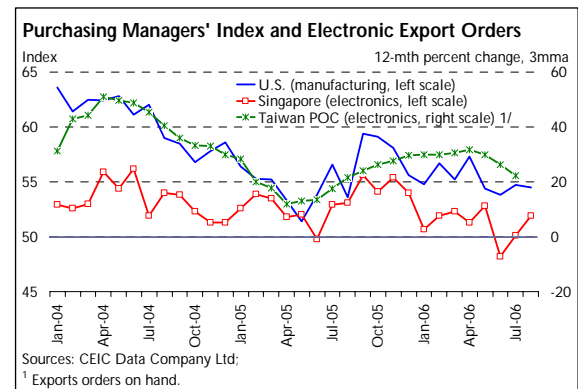
Demand from major markets such as the United States and Japan remains firm. Exports of electronic goods have been robust, especially for the NIEs, fueled by a booming market for digital consumer electronics, in particular semiconductors, mobile phones, and flat panel displays. In Korea, exports of flat panel displays have seen triple-digit growth for over a year. Most of these displays are used in the production of digital TVs in Japan. In Singapore, buoyant demand for music players and mobile phones has generated profit gains for component makers. Export growth appears to be holding up well in Malaysia and Thailand. There has also been a sharp turnaround in electronics exports in the Philippines and Indonesia, although it was not sustained in the latter.



However, there are some initial signs of a slowdown in Asia's electronics sector. The sustained climb in the book-to-bill ratio for semiconductor equipment to its highest level since February 2004 and strong new electronics orders in the United States point to positive momentum in the tech sector. This is also supported by continued high levels of the global book-to-bill ratio. However, the picture is not all bright. Recent sharp corrections in tech stock indices in the United States and Asia (Japan, Korea, Singapore, and Taiwan Province of China) in response to poor earnings reports from major technology companies, as well as a weakening of U.S. purchasing managers' index for manufacturing, suggest a



moderation in electronics demand going forward. In addition, recent trade data show a drop in China's tech imports, reflecting a correction in inventories that had been accumulating since the second half of last year. This is likely to have negative repercussions on the NIEs, particularly Korea and Taiwan Province of China, which supply parts and component inputs for tech products in China, their largest export market. Already, Taiwan Province of China is experiencing a sharp slowdown in exports of precision machinery (particularly flat panel displays) as well as in tech export orders and production. Singapore's purchasing managers' index generally points to an expansion in the tech sector, except for one month of contraction. Moreover, prices of personal computers, mobile phones, and flat panel displays have been sliding, squeezing profit margins of many manufacturers.

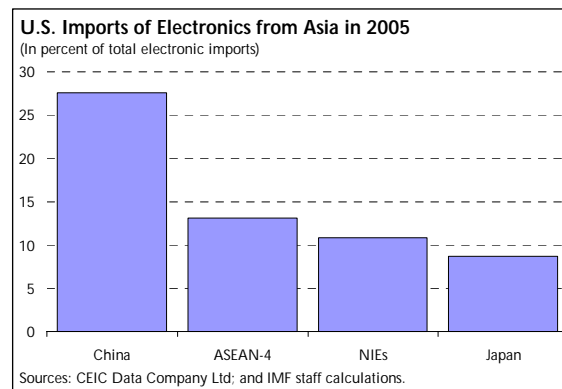
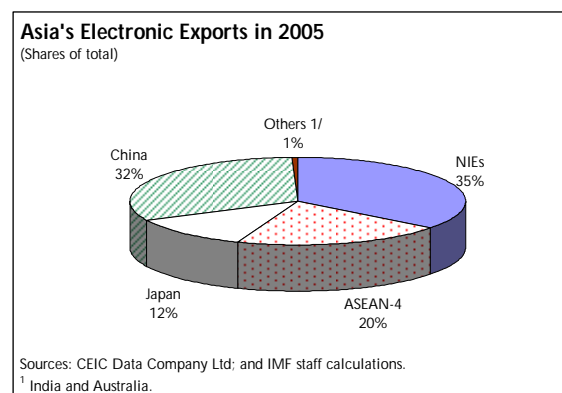
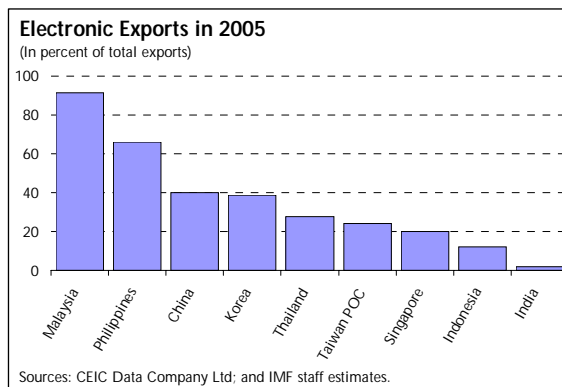


¹ The main author of this box is Varapat Chensavasdjai.

Box 1.1. (concluded)

The key risk to electronics exports would be a sharper-than-expected slowdown in the United States. Those countries that depend most heavily on electronics exports, including Malaysia, the Philippines, Thailand, and Korea, would tend to be the most affected by any such slowdown. But the impact would also vary across countries depending on their product specialization and the relative importance of the U.S. market. China, which accounts for one-third of the region's electronics exports, has the largest share of U.S. imports of high-tech products. Thus, sluggish U.S. demand could undermine China's electronics exports, which would reverberate to its Asian suppliers of parts and components. However, China's growing consumption of consumer electronics may help cushion softening demand from advanced economies. In addition, Korea and Taiwan Province of China have become more resilient to the tech cycle by establishing their own niche markets and brand names.

Longer-term prospects for producers of memory chips are promising. The Semiconductor Industry Association (SIA) revised up its 2006 forecast for worldwide semiconductor sales growth to 9.8 percent in June from 7.9 percent in November 2005. This reflects better-than-expected growth in key end-markets for semiconductors, notably mobile phones. According to the SIA, global sales growth is projected to continue at this pace before slowing down in 2009, propelled by strong demand for analog products.² The anticipated release of Microsoft's operating system Windows Vista by year-end, coupled with greater DRAM usage in mobile phones and gaming applications, is likely to boost DRAM sales.³ Increasing demand for flash in mobile phones, more advanced iPods (Apple's portable music player), and personal computers will also spur the memory chip market. As a result, Asia's share of the global semiconductor market is expected to increase from 40 percent in 2006 to 49 percent in 2009, with the main beneficiaries being Japan, Korea and Taiwan Province of China. In addition, capital equipment spending in the semiconductor industry is surging on the back of robust demand and high capacity utilization rates, especially in Asia. This could lead to excess supply in some segments, especially flash memory, with expected falls in prices and profit margins.



² Analog chips are used in communications, computer, automotive, and industrial and medical equipment applications.

³ DRAM and flash memory chips are commonly used to store data in computers and electronic devices. Unlike DRAM, flash memory chips have a limited lifespan. However, flash is nonvolatile, which means that data can be retained without electric power, whereas DRAM requires constant power to maintain the stored information. Because of its heat and shock resistance, smaller size, lower power consumption, and faster speed, flash is more flexible in its use in mobile applications such as handsets, digital cameras, and iPod music players. Flash chips are also becoming less costly to produce.

Domestic demand is projected to strengthen in several countries in the region, as a number of impediments to investment and consumption lift. So far this year, world oil prices have jumped by more than 30 percent, and central banks across the region have continued to raise benchmark interest rates to curb inflation. In Thailand, these factors have contributed to lower consumer confidence, while large public infrastructure projects have been delayed. In Indonesia, fuel prices and interest rates were increased sharply last year, leading to an economic slowdown. In Korea, private consumption has moderated in response to monetary tightening, while government policies aimed at curbing real estate speculation have contributed to a contraction in construction activity. Political turmoil and a credit card bust in Taiwan Province of China have weakened consumption and investment. Going forward, these factors are likely to unwind. In particular, interest rates may be nearing their peak (see Chapter III). A stabilization of oil prices would aid this process and provide an additional incentive for corporates to step up investment. Indonesia has already lowered its policy rate by 150 basis points this year, which should

contribute to a recovery in domestic demand. In Korea, an early end to monetary tightening and higher public investment should aid a recovery in construction. Resolution of political uncertainties in some countries would also improve consumer and business sentiment. Meanwhile, strong remittances should continue to bolster consumption in the Philippines.

In China and India, domestic demand is projected to continue its robust growth. In the former, the tightening of monetary policy and administrative controls—including increases in reserve requirements and benchmark interest rates, and measures to cool down the property market—have so far had little success in reining in investment. In the latter, domestic demand remains strong despite some modest monetary tightening, as a growing middle class raises its consumption and corporates continue to build capacity following several years of successful restructuring. While investment growth is expected to moderate in response to administrative policies in China and some further monetary tightening in India, domestic demand will likely remain quite strong.

Japan's continued expansion is expected to benefit the region. Further strengthening in domestic demand, particularly business investment, and stronger trade linkages between Japan and the rest of Asia should continue to boost imports from Asia as well as encourage Japanese investment in other Asian economies (Box 1.2).

In Australia and New Zealand, prospects are increasingly shaped by macroeconomic developments in Asia. Australia, in particular, will continue to benefit from the boom in commodities demand from China (Box 1.3).

Investment Growth (Year-on-year percent change)				
	2004	2005	2006 Proj.	2007 Proj.
Industrial Asia	2.3	3.9	5.6	3.8
Japan	1.1	3.3	5.5	3.9
Australia	7.8	7.4	7.5	4.2
New Zealand	12.8	5.1	-2.2	-3.4
Emerging Asia	13.0	13.4	13.2	11.8
China	15.1	18.2	18.0	15.0
India	12.4	11.4	10.2	8.3
<i>NIEs</i>	<i>7.6</i>	<i>1.7</i>	<i>2.9</i>	<i>5.2</i>
<i>ASEAN-4</i>	<i>10.4</i>	<i>7.0</i>	<i>6.1</i>	<i>8.6</i>
Asia	10.6	11.4	11.7	10.2

Sources: IMF, APDCORE and WEO databases; and staff estimates.

Private Consumption Growth (Year-on-year percent change)				
	2004	2005	2006 Proj.	2007 Proj.
Industrial Asia	2.6	2.3	2.0	2.1
Japan	1.9	2.1	1.9	2.0
Australia	5.8	3.1	3.2	3.1
New Zealand	6.6	4.6	1.5	0.5
Emerging Asia	6.7	7.0	7.8	8.4
China	7.8	9.0	9.8	10.9
India	6.8	5.4	7.0	6.3
<i>NIEs</i>	<i>2.3</i>	<i>3.1</i>	<i>3.8</i>	<i>3.7</i>
<i>ASEAN-4</i>	<i>6.1</i>	<i>4.9</i>	<i>3.8</i>	<i>4.8</i>
Asia	5.8	6.0	6.6	7.2

Sources: IMF, APDCORE and WEO databases; and staff estimates.

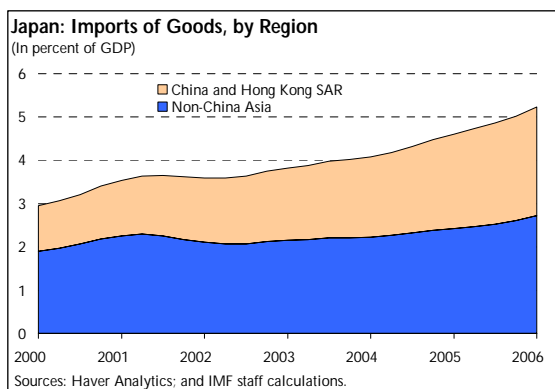
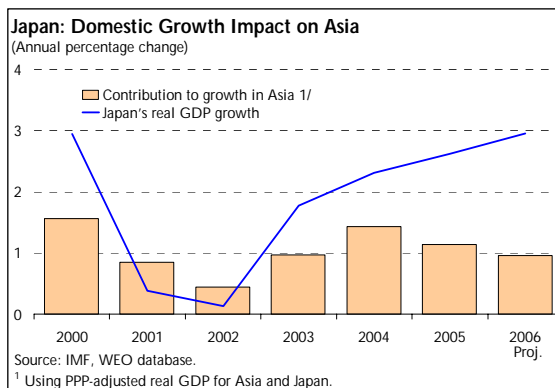
Box 1.2. The Impact of Japan's Recovery on Asia¹

Japan's expansion—stretching well into its fourth year—is having positive spillovers on the rest of Asia. Since the start of the recovery in 2002, Japan's GDP growth has added, on average, 1 percentage point to regional growth. This trend is anticipated to continue into 2006, and faster growth in Japan should help maintain growth in Asia as economic growth globally moderates.

Imports from Asia have risen sharply in the upswing, reflecting Japan's stronger domestic demand and tighter trade and investment linkages. The share of Asian goods in the economy has expanded by 50 percent over the past three years. Much of this increase has come from trade with China—reflecting a steady outsourcing of production. In fact, China—along with Hong Kong SAR—accounts for over 50 percent of Japan's FDI flows to Asia. Japan's engagement in the region has been broad-based, though: over 2004 and 2005, Japanese firms have doubled their business investment in other Asian economies. As a result of a steady presence in the region, Asian subsidiaries of Japanese corporations are tightly integrated with their parent companies, and they derive nearly one-quarter of their sales from trade with Japan.²

Deeper financial linkages between Japan and the rest of Asia are also being laid out.³ Stronger balance sheets at home have provided the foundation for the return of Japanese banks to the region. Over the last three years, Japanese banks' credits to non-Japan Asia have expanded by 14 percent per year on average, the fastest market expansion in all regions where Japanese banks are active (except for specialized lending to offshore centers). The Asia/Pacific market is still small—about one-sixth of that in North America and Europe—but it is gaining prominence in the banks' operations, rapidly.

For the most part, Japanese banks have been focused on providing loans, derivatives, and cash management services to Japanese companies operating in Asia. China, South Korea, and the largest South East Asian economies have been the main areas of interest. More recently, however, India and Vietnam have joined the group. While "following-the-clients" may have provided a beachhead for a re-engagement in Asia, the banks' strategy may be evolving. There is growing interest among Japanese banks in expanding their presence in specific domestic markets, such as banking services to non-Japanese clients, syndicated loan arrangements, and structured finance products for local investors.



¹ The main author of this box is Chris Faulkner-MacDonagh.

² In contrast, Japanese subsidiaries located in other parts of the world only derive around 2 percent of sales from trade with Japan. Source: Ministry of Economy, Trade, and Industry, *Quarterly Survey of Overseas Subsidiaries*.

³ IMF Country Report No. 06/276.

Box 1.3. Spillovers From Asia Are Affecting Australia and New Zealand¹

Cyclical prospects are unusually divergent in Australia and New Zealand, but in both cases macroeconomic and financial forces emanating from Asia are important influences.

Australia

Asia's ravenous demand for commodities is driving an investment-led strengthening in growth. Growth eased to 2½ percent in 2005 as consumption slowed and residential investment declined following a welcome cooling of the housing market. But strong Asian demand for "hard" commodities has lifted Australia's terms of trade by 30 percent in the past three years, to their highest level in three decades. Business investment has jumped 80 percent over the same period in response, cushioning the slowdown in 2005, and underpinning expected growth of about 3 percent in 2006. With export sector capital projects starting to come on stream, growth is projected to rise to about 3½ percent in 2007.

Monetary policy has been tightened to lean against inflationary pressures. Core CPI inflation rose to just under 3 percent y/y in June, after remaining steady at the center of the 2 to 3 percent inflation target during 2004-05. Firming growth in credit and retail sales also suggests that any needed consolidation in household balance sheets may be largely completed. With unemployment down to 4.8 percent and capacity utilization high, the Reserve Bank of Australia projects that core inflation will remain at the high end of its medium-term target during 2006 and 2007. As a result, interest rates were hiked by 25 basis points in both May and August, to reach 6 percent, and financial markets expect a further tightening by the end of 2006.

New Zealand

Low international interest rates, especially in Japan, exacerbated the recent economic cycle. Growth averaged 4¼ percent in 2002-04, driven by strong domestic demand partly due to booming house prices. Monetary policy was tightened substantially, with the cash rate rising to 7¼ percent, but the transmission lags were lengthened by cheap external financing for mortgage lending, partly reflecting large purchases of NZ\$ bonds (Uridashi) by Japanese households. By 2005, the NZ\$ hit record highs, exports fell, and the external current account deficit reached 9 percent of GDP.

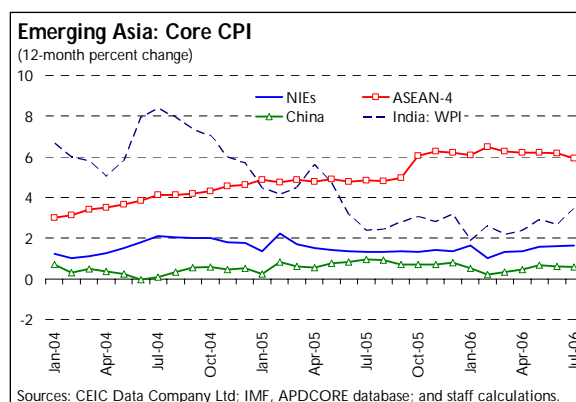
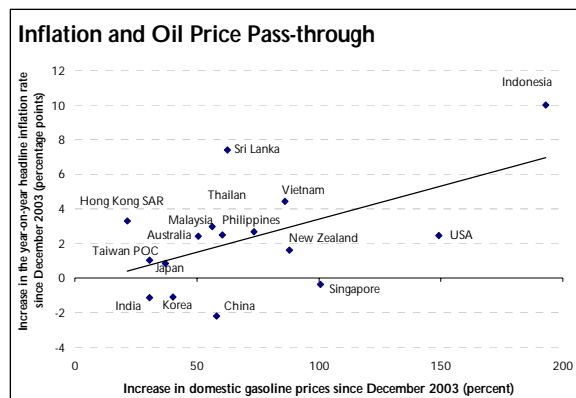
The NZ\$ fell in 2006 and demand is slowing, with a soft landing appearing most likely. As international interest rates began to rise and weaker data suggested that monetary tightening in New Zealand was over, the NZ\$ dropped by 10 percent during February and March, to stand about 5 percent above historical average levels by August. Growth is expected to be only 1 to 1½ percent in 2006 as retail sales are slowing and investment is declining, but downside risks are cushioned by the strong labor market. As exports begin to respond to the improvement in competitiveness, growth is projected to strengthen to about 2 percent in 2007. The Reserve Bank of New Zealand is not expected to hike rates further, even though core inflation is at the top of the 1 to 3 percent target range, because core inflation will likely ease as growth softens. However, a significant decline in the current account deficit is not expected until 2007, suggesting that downside risks to the NZ\$ remain.

¹ The main author of this box is Craig Beaumont.

The economic outlook for low-income countries in Asia is generally good. Growth is expected to remain robust in the Mekong region, particularly in Vietnam. In South Asia, remittances continue to play an important role in supporting consumption and growth (Box 1.4). While the Pacific island countries have considerable potential for development, structural impediments continue to limit growth (Box 1.5).

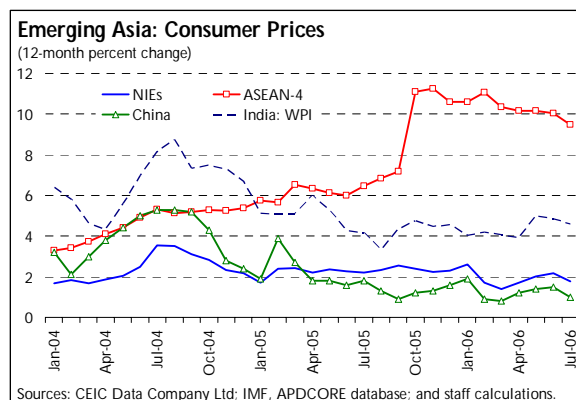
Real GDP Growth (Year-on-year percent change)				
	2004	2005	2006 Proj.	2007 Proj.
Bangladesh	6.1	6.2	6.2	6.2
Bhutan	7.5	7.4	12.7	14.3
Cambodia	10.0	13.4	5.0	6.5
Lao P.D.R.	6.4	7.0	7.3	6.6
Mongolia	10.7	6.2	6.5	5.5
Myanmar	13.6	13.2	7.0	5.5
Nepal	3.8	2.7	1.9	4.2
Sri Lanka	5.4	6.0	5.6	6.0
Timor-Leste	0.3	2.3	0.9	4.6
Vietnam	7.8	8.4	7.8	7.6
Low-income countries in Asia	7.5	7.8	6.5	6.5

Sources: IMF, APDCORE and WEO databases; and staff estimates.



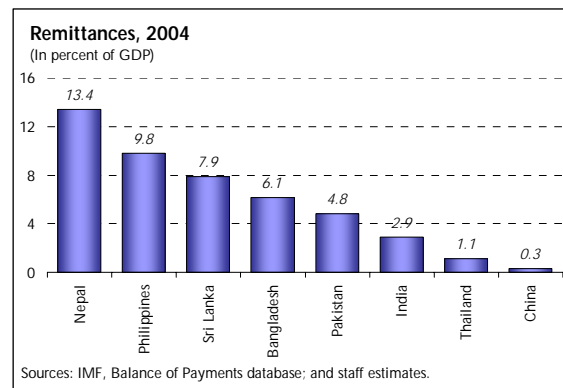
Inflation

Despite the continued rise in oil prices, inflation generally has been benign thanks partly to prompt monetary policy action and currency appreciation in the region. Average headline inflation in the ASEAN-4 countries remains at double-digit levels, mainly reflecting the sharp rise in administered fuel prices in Indonesia last October, but has moderated recently. Indeed, second-round effects have so far been modest throughout the region and core CPI inflation was little changed during the first half of 2006. Exchange rate appreciation in Korea, Indonesia, and Thailand has absorbed some of the increase in the prices of oil and other imports, while the strong monetary policy response in a number of countries has also kept inflation under control. Less than full pass-through of oil prices, for example in India, Indonesia, and Malaysia, has also contributed to lower inflation, albeit with a fiscal (or quasi-fiscal) cost. Meanwhile, strong corporate profits have helped insulate several countries, including India and Korea, from inflation pressures as firms have managed to absorb higher costs. In addition, stable food prices have helped keep a lid on inflation in China and the NIEs.



Box 1.4. Workers' Remittances: A Gravity Model¹

Workers' remittances have recently attracted much attention in policy circles, owing to their scale and properties. They are the largest source of foreign financing for developing economies after FDI. In 2005, remittances to developing countries amounted to \$167 billion. Asia and the Pacific is the main destination region for remittances, accounting for 45 percent of the global total. A number of regional economies, including Nepal, the Philippines and several Pacific Islands, have reported remittances of 10 percent of GDP or more. Remittances are a particularly attractive source of foreign financing as they have proved much more stable over time than private capital flows and they do not create obligations in the future.



A better understanding of what determines remittances is warranted to help address challenges confronting policymakers in this area. These include identifying what policies may encourage remittances, their cyclical properties, and their potential role as both a shock-absorber and as part of an anti-poverty policy. So far, the study of remittances has been constrained by the lack of data on bilateral flows. However, a recent IMF paper creates the first dataset of bilateral remittance flows for a limited set of developing countries in Asia and Europe over the period 1980-2004 and estimates a gravity model for remittances.²

The study finds that the gravity framework is very powerful in explaining remittance inflows. Indeed, a few key variables such as partner countries' income, distance, a common border and common language can explain more than half of the variation in remittance flows across time and countries. This is broadly in line with results from more common gravity models for trade. Perhaps surprisingly, despite the importance of remittances in Asia, South and East Asia actually receive lower remittances than predicted by the model.

What motivates remittances? The evidence is mixed, but altruism may be less of a factor than commonly believed. The paper does find a positive association between remittance receipts and the dependency ratio in the home country, suggesting that helping those at home is an important motive. Higher inflation in the home country is also found to encourage remittances to compensate for the loss of purchasing power at home. However, remittances do not appear to increase in the wake of natural disasters and appear positively aligned with the business cycle in the home country, suggesting an investment motive. Remittances are also sensitive to the investment and political climate in the home and host countries, again suggesting that investment considerations play an important role.

The results suggest that remittances can play some role, but perhaps not a major one, in limiting vulnerability to shocks. In particular, remittances are positively correlated with oil prices, offering a hedge against oil shocks. This is particularly important in some Asian countries, such as Sri Lanka, with over 80 percent of its migrant population working in the oil rich Gulf States. However, remittances may be less of a shock absorber than commonly believed. Being pro-cyclical, remittances tend to falter when exports weaken and GDP growth slows. They also decline when the home investment and political climate worsens and do not seem to respond to adverse shocks at home. Moreover, depreciation of the home country's currency tends to reduce remittances, suggesting they may provide only limited insurance against balance of payment crises.

¹ The main author of this box is Marta Ruiz Arranz.

² See E. Lueth and M. Ruiz Arranz, "A Gravity Model of Workers' Remittances," IMF Working Paper (forthcoming).

Box 1.4. (concluded)

Earlier evidence on the importance of transaction costs for explaining remittances is confirmed and extended to conditions in the host countries. Both underdeveloped financial sectors and current account restrictions in the home country may discourage remittances through official channels, as do dual exchange rates in the worker's host country. In fact, countries that restrict current account transactions receive 40 percent lower remittances on average than countries with fully liberalized current accounts. And up to 80 percent fewer remittances are sent through formal channels from host countries with dual exchange rates.

Remittances should be encouraged but should not be seen as a panacea. Remittances can yield important economic benefits to recipient countries, providing financing and supporting consumption and investment. But they may be of only limited value in absorbing shocks and reducing vulnerability to crisis. To encourage remittances and maximize their economic impact, policies should be directed at reducing transaction costs, promoting financial sector development, and improving the business climate.

Box 1.5. Pacific Island Countries: Regional Issues and Prospects¹

The Pacific island region has considerable potential for development, especially in the areas of tourism, fisheries, forestry, mining and agriculture. An important task for economic policymakers is to exploit these resources to achieve faster sustainable growth and alleviate poverty. This will require the continuation of macroeconomic stability together with greatly increased emphasis on structural reform, including improved public sector efficiency and greater private sector activity.

Real GDP growth has been modest over the past decade, averaging only 3 percent annually, barely above the rate of population increase. In recent years, governance problems surfaced, control of public expenditure was progressively weakened, and spending was misdirected. Ethnic tensions contributed to coups in Fiji and civil conflict in the Solomon Islands, although economic recovery has been underway since the arrival of the Australian-led Regional Assistance Mission to the Solomon Islands (RAMSI) in 2003. Lack of employment opportunities contributed to increased crime and lawlessness in Papua New Guinea, and emigration from various island countries.

The Pacific islands face many challenges in seeking to improve living standards, especially given their small size, remoteness, openness, limited production diversification, lack of regional cooperation, and vulnerability to natural disasters. While recognizing that economic, political and cultural differences exist between the countries, there are a range of policy recommendations that are widely applicable throughout the region. These can be implemented while preserving the traditional way of life.

Pacific leaders are already committed to structural change over the medium term. A comprehensive agenda has been spelt out in the Pacific Plan which was approved in late 2005, with the endorsement of Australia and New Zealand, who are major donors and play a leadership role in the region. The key to success of the Plan's proposals will be their pace of implementation, which will depend crucially on the island countries themselves. However, the process will inevitably be a lengthy one, given the deep seated nature of many impediments to growth.

One major issue is the large size of the public sector throughout the region. In particular, the government wage and salary bills are in the range of 10–25 percent of GDP, far higher than in other regions. Another concern is the role of public enterprises, which frequently operate at a loss. This reduces the availability of budgetary funds for other types of spending more conducive to faster growth, including for health, education and infrastructure, especially in the telecommunications and transport sectors.

By contrast, the private sector is very small in most of the islands. Complicated regulatory requirements impede the opening of new businesses, impose substantial restrictions on their operations, and discourage foreign direct investment. A shift is also required from communal land ownership to a blending with long-term leases for commercial use. Economic integration should be expanded from its present small base, including through the regional free trade arrangements that recently came into force, further partnerships with foreign airlines to improve air service, and greater labor mobility.

Few Pacific island countries have consistently pursued structural reforms. One notable exception is Samoa, which embarked on a wide-ranging program one decade ago, leading to higher investment and growth. Fiji and Palau have succeeded more recently in promoting foreign and domestic investment in tourism. However, firm and persistent application of the medium-term policy framework outlined above is essential for improved economic performance throughout the region.

Real GDP Growth				
(Year-on-year percent change)				
	2004	2005	2006	2007
			Proj.	Proj.
Emerging Asia	8.4	8.5	8.5	8.3
Pacific Islands	2.6	2.9	2.8	3.1
Fiji	4.1	1.6	2.5	2.5
Kiribati	-3.7	0.3	0.8	0.8
Marshall Islands	4.7	1.4	0.9	3.5
Micronesia	-4.4	1.5	-0.7	3.0
Palau	4.9	5.5	5.7	5.0
Papua New Guinea	2.9	3.1	3.7	4.0
Samoa	2.8	5.4	4.6	3.5
Solomon Islands	8.0	5.0	5.3	4.3
Tonga	1.4	2.3	1.9	0.6
Vanuatu	4.8	2.6	3.0	3.5

Sources: Data provided by country authorities; and IMF staff estimates.

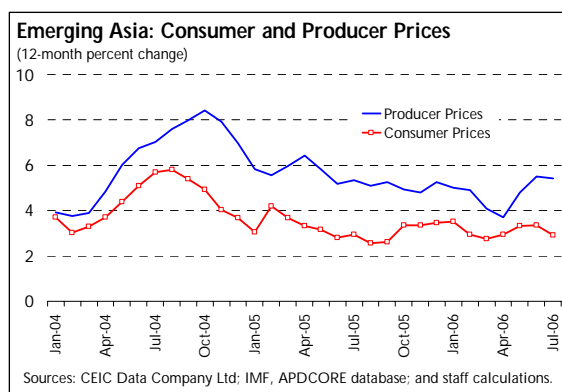
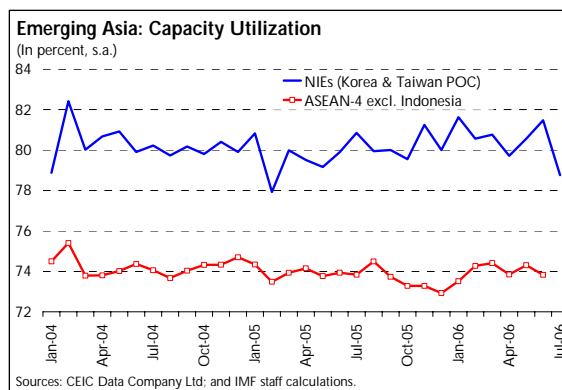
¹ The main author of this box is Christopher Browne.

Inflation pressures are expected to remain well contained. Inflation in Asia is projected to remain at around 2¾ percent in both 2006 and 2007, virtually unchanged from the May 2006 REO projections. Monetary policy tightening has helped keep inflation expectations in check and oil prices are projected to rise only moderately through 2007. Inflation in the ASEAN-4 countries will also benefit in 2007 from an unwinding of base effects from previous increases in administered fuel prices. In India, still-strong domestic demand will likely continue to exert inflationary pressures, while in China, the booming domestic economy poses little immediate inflation risk owing to overcapacity in certain sectors.

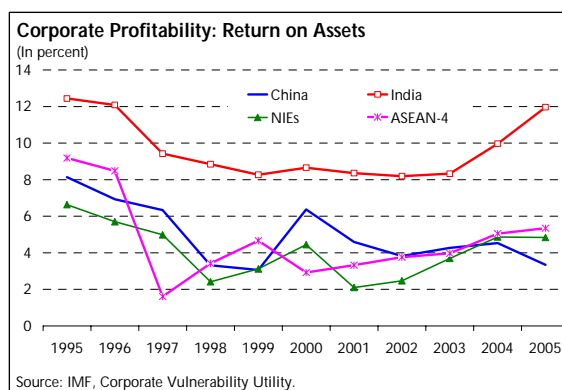
Hong Kong SAR, Korea, and Taiwan Province of China and the lowest level in Thailand since the Asian crisis. In Singapore, a record number of jobs was created in the first half of 2006, while the unemployment rate remains low. Even so, there are no clear signs yet of wage pressures in the region, with the possible exception of India, where survey results point to rapid increases in some sectors.

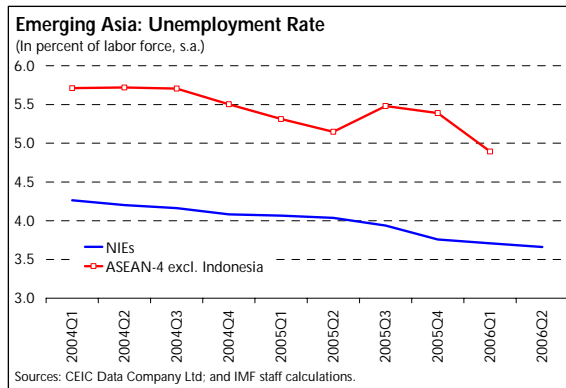
CPI Inflation						
(Year-on-year percent change, average)						
	2004	2005	2006		2007	
			May-06 Proj.	Latest Proj.	2006	2007
Industrial Asia	0.4	-0.1	0.7	1.0	0.8	1.1
Japan	0.0	-0.6	0.3	0.6	0.3	0.7
Australia	2.3	2.7	2.8	2.7	3.5	2.9
New Zealand	2.1	2.2	3.1	2.8	3.8	3.4
Emerging Asia	4.4	3.2	3.3	3.1	3.1	3.1
Hong Kong SAR	0.0	1.2	1.8	2.1	2.3	2.5
Korea	3.6	2.8	2.5	3.0	2.5	2.7
Singapore	1.7	0.5	2.0	1.9	1.8	1.7
Taiwan POC	1.6	2.3	1.8	1.5	1.7	1.5
China	3.9	1.8	2.0	2.2	1.5	2.2
India ¹	6.6	4.7	3.8	4.7	4.5	5.2
Indonesia	6.1	10.5	14.2	6.6	13.0	5.9
Malaysia	1.4	3.0	3.1	2.7	3.8	2.7
Philippines	6.0	7.7	7.4	4.7	6.7	5.0
Thailand	2.8	4.5	3.6	2.2	4.9	2.6
NIEs	2.4	2.3	2.2	2.3	2.2	2.2
ASEAN-4	4.6	7.5	8.9	4.7	8.7	4.5
Asia	3.5	2.5	2.7	2.6	2.6	2.7

Sources: IMF, APDCORE and WEO databases; and staff estimates.
¹ Wholesale price index for India.



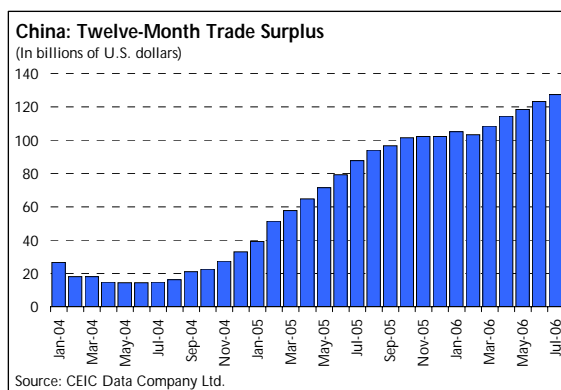
Nevertheless, there are both supply- and demand-side risks to this low-inflation scenario. Overall, supply-side pressures still appear limited, as trends in industrial capacity utilization so far do not point to upward price pressures. However, the gap between producer and consumer price inflation remains significant and, as profit margins begin to be squeezed—in part by higher interest rates and exchange rate appreciation in some countries—the pressure on companies to pass on higher production costs to consumers may rise. Also, labor market conditions have been steadily improving, with unemployment rates reaching 4- to 5-year lows in





External Sector

Current account balances are expected to remain broadly stable in most of Asia, except for China and Korea. Emerging Asia excluding China is likely to see its current account surplus decline modestly in 2006, then stabilize in 2007. But China's surplus is projected to rise further as exports continue to perform very strongly, reaching over \$200 billion (7¼ percent of GDP) in 2007. In contrast, Korea's current account surplus is expected to fall sharply, to less than ½ percent of GDP this year and next, from 2 percent of GDP in 2005, reflecting higher imports due to the recent recovery in domestic demand and won appreciation, and a rising oil import bill. India's current account deficit is forecast to widen in 2006-07 amid vibrant domestic demand, while Thailand's deficit is expected to expand next year with the resumption of infrastructure mega-projects. In both of these countries, the high proportion of imported oil is also contributing to the persistent current account deficits.



Current Account Balances

(In billions of U.S. dollars)

	2004	2005	2006 Proj.	2007 Proj.
Industrial Asia	125.4	114.0	116.1	111.2
Japan	172.1	165.7	167.3	162.9
Australia	-40.1	-42.1	-41.4	-42.3
New Zealand	-6.5	-9.7	-9.8	-9.3
Emerging Asia	183.7	254.6	269.9	288.1
China	68.7	160.8	184.2	206.5
India	1.4	-11.9	-17.6	-25.1
<i>NIEs</i>	88.7	86.1	78.5	80.1
<i>ASEAN-4</i>	24.9	19.6	24.8	26.7
Asia	309.2	368.5	386.0	399.3
Emerging Asia excl. China	115.1	93.8	85.8	81.7

Sources: IMF, APDCORE and WEO databases; and staff estimates.

Current Account Balances

(Percent of GDP)

	2004	2005	2006 Proj.	2007 Proj.
Industrial Asia	2.4	2.1	2.2	2.0
Japan	3.8	3.6	3.7	3.5
Australia	-6.3	-5.9	-5.6	-5.3
New Zealand	-6.7	-8.9	-9.6	-9.1
Emerging Asia	4.1	5.0	4.7	4.5
China	3.6	7.2	7.2	7.2
India	0.2	-1.7	-2.1	-2.7
<i>NIEs</i>	7.0	6.0	5.0	4.9
<i>ASEAN-4</i>	4.0	2.8	3.1	3.0
Asia	3.2	3.5	3.5	3.4
Emerging Asia excl. China	4.6	3.3	2.7	2.4

Sources: IMF, APDCORE and WEO databases; and staff estimates.

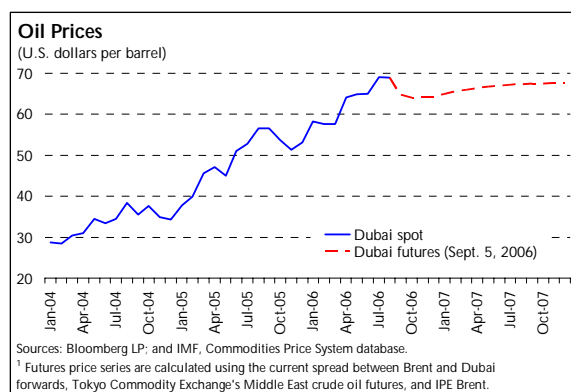
Risks

While the outlook for Asia remains positive, risks appear to have increased, in particular for 2007. Downside risks predominate, in particular with regard to the pace of slowdown in the United States, the future path of oil prices, and increased risk aversion toward emerging markets.

The key risk for Asia continues to be a more rapid than expected slowdown in the United States. A sharp slowdown in the housing market or a disorderly unwinding of global imbalances could hamper U.S. consumption and residential investment, with adverse consequences for growth

in both Asia and the rest of the world.³ In previous cycles, including the 2001-02 global recession, a slowdown in global growth has typically been preceded by U.S. consumption-led downturns. Nevertheless, there are some indications that domestic demand is strengthening in the Euro area, which could partly offset weaker demand conditions in the United States going forward.

Oil prices could surge again due to growing supply concerns. Global oil prices remain near record levels and may rise further with greater output volatility for major producers and escalating geopolitical tensions. Futures markets suggest that prices for crude oil will remain elevated for the remainder of this year and next. While countries in Asia have so far been able to absorb higher fuel costs, this may change as exchange rates stabilize and corporate profit margins are squeezed on weaker global demand. Some countries (India, Indonesia, and Malaysia) could also come under pressure to reduce oil price subsidies, which could fuel inflation. A combination of slower growth and rising inflationary pressures arising from further hikes in oil prices would present a difficult macroeconomic policy choice, including on the desirability of renewed monetary policy tightening.



³ Empirical relationships between growth forecast errors of the United States and trading partner countries for 1990-2005 indicate that a 1 percentage point slowdown in the U.S. economy is associated with a ¼ percentage point reduction in growth in the rest of the world, and in Asia, a decline of ¾ percentage point in China and almost ¼ percentage point in Japan. (Details can be found in the Staff Report for 2006 Article IV Consultation with the United States, IMF Country Report No. 06/279.)

The increased financial market volatility seen in May-June points to risks from a deterioration in the global financial environment. The recent bout of financial turbulence appears to have represented largely an orderly correction in equity prices (see Chapter II). But if risk aversion toward emerging markets intensifies—triggered, for example, by negative news on the inflation-growth tradeoff in the United States—asset prices could decline more sharply and/or for a longer period, which could affect adversely household incomes and consumption, while pressures for currency depreciations resulting from capital outflows could push up inflation.

Faster than expected growth in China could be a mixed blessing for the region. China's economy could continue to expand rapidly notwithstanding policies aimed at slowing investment, which would generate benefits for the region in the near term. However, the current pace of growth appears unsustainable and, as the effects of increasingly restrictive administrative measures materialize, a sharper-than-expected slowdown could ensue, with important knock-on effects, including from a decline in China's demand for capital goods.

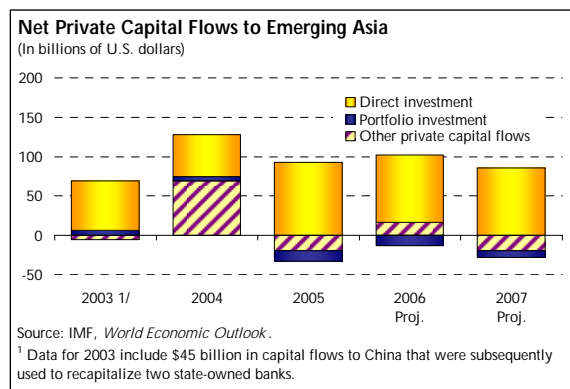
The recent suspension of the Doha Round has again raised concerns regarding the return of protectionism. Any dislocation in global trade would impose a particular risk to Asian economies in the medium term, given their still strong dependence on export-led growth. Also, with the weakening of the multilateral trading system, countries may resort increasingly to bilateral and regional trade agreements as alternatives, which could entail potential costs in terms of trade diversion and administrative burden, unless such agreements were designed in ways that complement multilateralism.

Finally, the risks from an avian flu pandemic remain large. As highlighted in the May 2006 REO, beyond the potential tragedy in terms of human life, any such outbreak could have a significant impact on regional economies and, in particular, their trade and financial systems.

II. Financial Developments in Emerging Asia

Prospects for capital flows to emerging Asia remain good, despite the May-June financial turbulence. International investor sentiment toward the region continues to be positive as regional asset prices have corrected and the region has demonstrated its resilience to a volatile global financial environment. Portfolio flows are expected to moderate, however, as the global monetary tightening continues and the world economy slows gradually from the rapid pace of the last few years.⁴

Despite the correction of May-June this year, prospects for capital flows to emerging Asia remain good. Overall, net private capital flows to the region are expected to increase to \$88 billion this year, up from \$60 billion last year. Despite the impact of the May-June correction, emerging Asia is poised for another year of solid capital inflows thanks largely to its strong fundamentals and improved resilience. However, given signs that global economic growth may be moderating and that the spread of regional policy rates over the U.S. Fed Fund rate may remain near zero, capital inflows are projected to moderate in 2007.



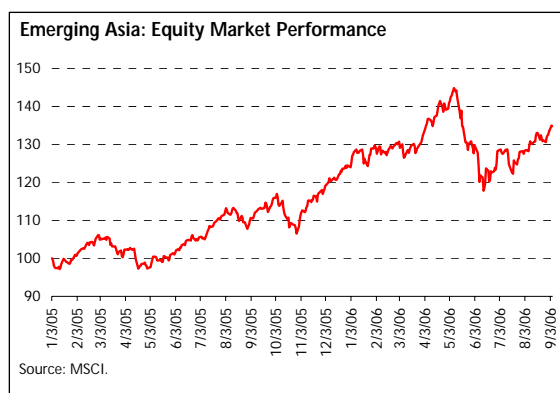
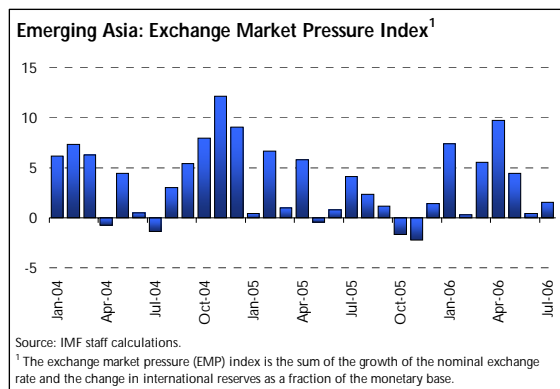
Assessment of the Recent Correction

As in other emerging markets, the region underwent a correction in May-June this year.

The correction occurred as central banks in advanced economies tightened monetary policies amid rising inflationary pressures. This triggered an

adjustment in international investors' risk assessment and some sell-off in positions on risky assets in general and emerging markets in particular.⁵ To some extent, this correction mirrored the gains in regional capital markets earlier this year. All classes of assets were affected, and countries which had seen the sharpest gains corrected the most.

Until the correction, Asia had recorded a surge in portfolio inflows. Anticipating an early end to the monetary tightening in the United States, international investors increased their exposure to risky assets and emerging markets. Gross inflows from U.S. mutual funds into Asian emerging markets reached \$11 billion in the first quarter of the year, compared with \$16 billion for 2005 as a whole. The inflows fueled a rally in regional equity markets and compressed yields in local currency bond markets, putting strong upward pressure on regional currencies. The rally unraveled in May and June.



⁴ The main author of this chapter is Romuald Semblat.

⁵ The September 2006 Global Financial Stability Report provides an analysis of the correction in global markets.

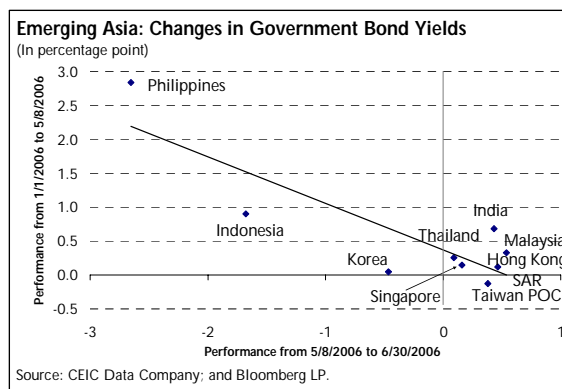
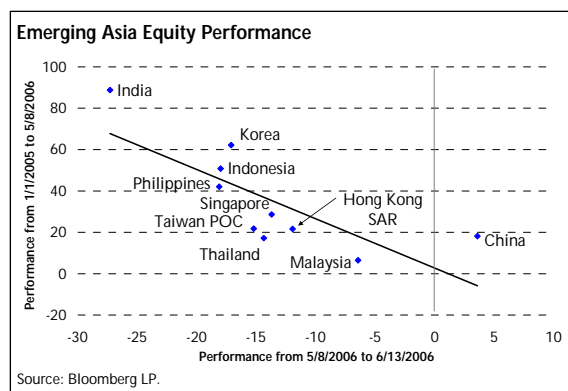
The May-June financial turbulence contributed to an equity market correction that was not unexpected.

From January 2005 to April this year, regional equity markets rose by 45 percent on average, driving price-earnings (PE) ratios up to around 15. By historical standards, these PE ratios were not very high—they remained below the post-2000 average of 16—but as valuations increased, markets became vulnerable to a sudden shift in investor sentiment. (See Chapter IV for a more detailed discussion of the role of stock markets, and an analysis of equity price valuations in Asia.) Markets that suffered the sharpest declines were those that had risen the most during the rally. The Indian market, which was seen by many as overvalued, stood out in the region: the equity index gave back about one-third of the gains since early 2005.

There was also some selling from global funds which recently had moved into emerging markets. At the same time, pension funds and other Asia-dedicated long-term investors did not lower significantly their exposure to Asian equities.

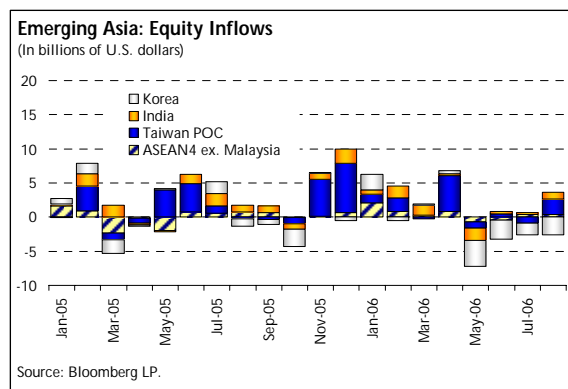
The adjustment in risk assessment also impacted government bond yields.

In the first few months of the year, government bond yields in a number of countries in the region fell, driven by foreign inflows. This decline was especially rapid for the Philippines and Indonesia, where yields dropped by almost 200 to 300 basis points. In these countries, anticipation of fading inflationary pressures fueled the compression in government bond yields.⁶ As global financial conditions changed, foreign investors exited and yields reverted.



The correction was driven to a large extent by foreign investors.

Net foreign equity sales reached \$14 billion in May-June hitting Korea, India and Taiwan Province of China especially hard. Hedge funds, which only recently became active in regional equity markets, liquidated most of their positions, shifting into less risky cash positions (Box 2.1).



⁶ In the Philippines, the rally was also driven by domestic investors' buying through Unit Investment Trust Funds (UITF).

Box 2.1. Hedge Funds—Recent Developments in Asia¹

Asian-focused hedge funds (AHFs) have experienced rapid growth in recent years, both in terms of number of funds and assets under management. Based on industry estimates, the total number of these funds has more than quadrupled since 2002 to approximately 750, with two-thirds based in the region.² More than half of the Asian-focused funds have been launched the past two years. Total assets under management (AUM) are reported to be around \$120 billion, up tenfold since 2002. Some 15-20 funds manage assets in excess of \$1 billion, although few yet approach in size the large global players (typically with AUM of \$5-10 billion). AHFs are generally viewed as providing support for market stability. While they did appear to play a major role in the May 2006 sell-off of regional equities, trading activity was generally viewed as orderly and losses self-contained by the industry watchers.

While a majority of AHFs are operated through advisory services located outside Asia, the fastest growth in the past two years has been in funds establishing operations in Hong Kong SAR and Singapore.³ Industry experts expect this trend to continue, given ongoing efforts to improve the environment in emerging Asia for operating funds and the region's attractiveness as an investment destination. Japan has also experienced rapid growth in hedge fund activity, starting in 2003. Hedge funds have also set up operations in China, Korea, Malaysia, and Thailand, although their numbers remain small.

The growth in AHFs reflects both global and local developments:

- *As elsewhere, AHFs have benefited from demand in recent years for alternative investments, in particular by institutional investors seeking higher risk-adjusted returns.* In this context, AHFs have become a popular investment vehicle for those seeking exposure in emerging market equities, which has attracted the largest concentration of hedge fund money in East and South Asia. The strong performance of Asian equities since 2003 has been aided by AHFs and in turn has encouraged their growth, with funds seeking to be closely sourced to local knowledge. Finally, the strong medium-term growth outlook for the region is a positive factor, especially as a number of AHFs run large net-long positions (similar to mutual funds) or pursue investment strategies akin to private equity funds.
- *While the tax and regulatory regimes facing hedge funds differ across the region, rules are generally perceived as becoming more industry friendly.* Recent reforms have focused on more favorable tax treatment of locally sourced income, streamlining of registration procedures, and improvements to trading platforms. Some regional financial centers, most notably Singapore, are actively courting the global wealth management business, including hedge funds.
- *AHF growth has led to, and been partly fueled by, the development of a wider range of derivative markets and structured products, and allowance of new investment strategies in the region.* The area most affected has been equity derivatives: stock futures and index options are now available in major Asian economies, with market liquidity increasing substantially in recent years. Securities markets have also proliferated in the region, although short selling is considered more easily done in Japan, Hong Kong SAR, and Singapore than elsewhere. Credit default swaps are also currently available, but these markets remain shallow in much of Asia.

The investment strategies of AHFs are reportedly concentrated in long-short and market neutral securities.

Other strategies employed are convertible bond arbitrage and fixed-income arbitrage, as well as commodity trading and real estate. The interest of AHFs in local currency bonds appears limited by relatively illiquid markets and the lack of bond derivative products, often necessitating imperfect hedges. Fund managers also tend to take positions in local currency bonds only when exchange rate risk can be properly hedged. As a result, AHFs typically have not run pure foreign exchange trades, where inflows and outflows are usually most volatile.

¹ The main author of this box is David Cowen.

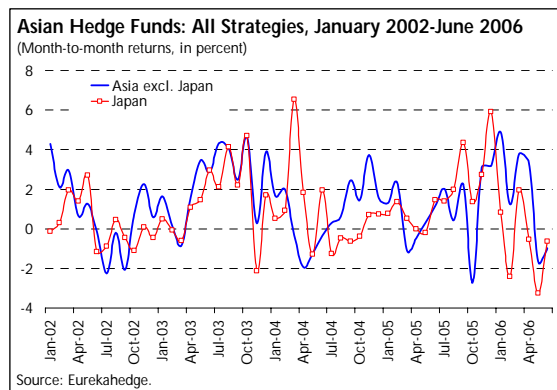
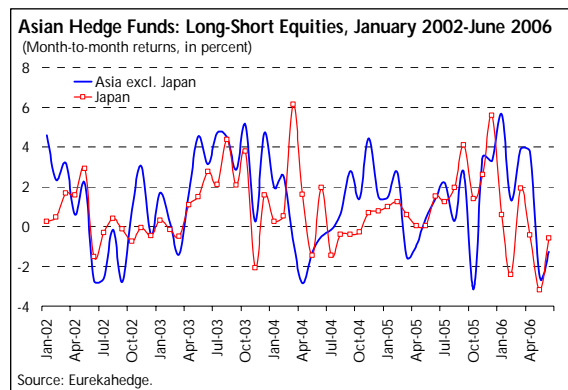
² The term "Asian-focused hedge funds" refers to those funds with investment strategies primarily focused on Asia (including Japan). It excludes hedge funds that are operated from the Asia region but with principal investments elsewhere.

³ A recent report by GFIA, a Singapore-based hedge fund consultancy, indicated that as of late 2005, the advisory services for 52 percent of AHFs was done in the United Kingdom, United States, or Australia. Another 19 percent were advised from Hong Kong SAR and China (mainly the former), 11 percent each from Japan and Singapore, and 3 percent from elsewhere in the region (with the remaining 4 percent from other jurisdictions).

Box 2.1. (continued)

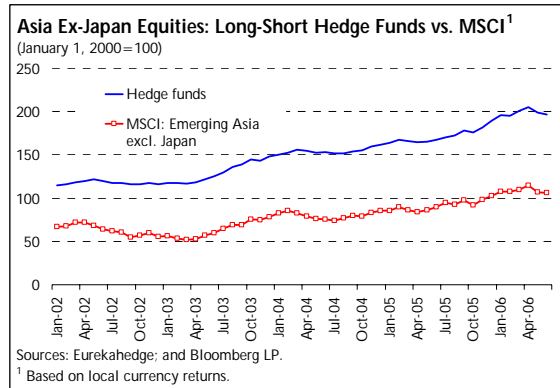
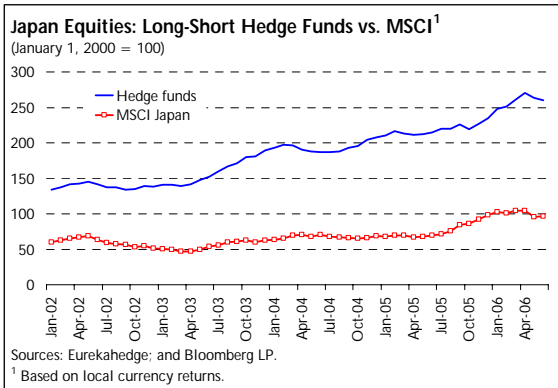
Even with recent growth, AHFs still hold a small share of the global hedge fund business. Among the world's 100 largest funds, only one is focused on Asia (Japan). The share of AHFs' AUM in total global hedge funds business—less than 10 percent—remains well below that of Asian market capitalization in the global equity market, pointing to the potential for hedge fund growth. Currently, AHFs appeal primarily to family offices, private banks, and institutional investors (pensions, insurance, endowments), as well as to select government agencies and central banks. In addition, as these funds grow, they are attracting more interest from funds of funds. For family offices and high net worth individuals, the bulk of funds comes from Europe and the Middle East, and to a lesser extent the United States.⁴ For this class of investor, the local base has remained small, mainly because Asian family offices have traditionally employed their own investment managers and/or diversified their investments outside the region. However, this is seen as changing, with AHFs being more aggressively marketed and developing new trading strategies. Among institutional investors, the United States and Europe are the principal funding sources. However, their Asian counterparts—led by Japanese pension funds and insurance companies, with some significant action by Singapore and Hong Kong SAR investors as well—are slowly taking larger stakes in alternative investments, including AHFs, partly driven by deregulation.

The Asian equity sell-off in May-June 2006, in which AHFs were seen as key drivers, was generally viewed as orderly, although a number of funds suffered large losses. Most market watchers suggest fund managers sold regional equities in their portfolios in order to move to less risky cash positions rather than in response to redemption pressures. Real money investors—particularly pension funds and endowments—were thought to have largely maintained their exposure to Asian equities, in line with their longer term, more structural, view. The May sell-off also suggests AHFs were running sizable net-long positions, as fund managers experienced their worst month, on average, since late 2002. Although as a group they continued to outperform regional indices, they still fell well short of returns promised to hedge fund investors, with those AHFs targeting long-short securities declining by 3 percent. In fact, average returns of hedge fund indices were significantly negative in May, even outside those long-short equities, but still maintain positive year-to-date returns on average.



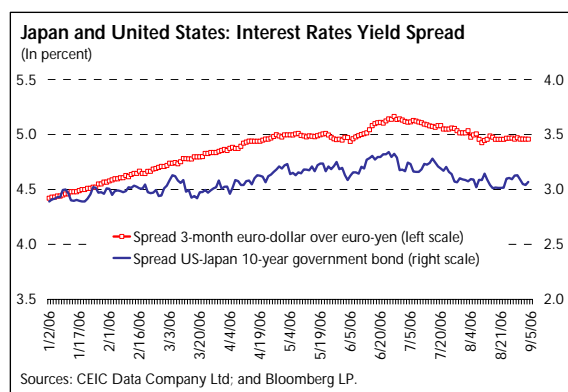
⁴ Some hedge funds have reduced their marketing to potential American clients, owing to additional compliance costs associated with these investors.

Box 2.1. (concluded)



Going forward, market concerns remain about AHFs if global liquidity conditions were to tighten further significantly. While the May sell-off did not appear to pose any systemic risk, concerns remain that further market turbulence could lead prime brokers to suddenly pull back funding. In addition, the recent sell-off revealed some less-than-perfect hedges in select markets (India being most widely cited). Related to this, certain trades are reported to have yet to be fully unwound owing to illiquid markets, with AHFs possibly sitting on unrealized losses. However, these funds are not generally viewed as excessively leveraged, and long/short AHFs have also not been seen as very active in the yen carry trade.

The yen carry trade does not appear to have been a major factor in this episode.⁷ Unlike in October 1998, when an unwinding of the yen carry trade triggered a massive yen appreciation, the yen did not appreciate during the recent correction. To some extent, this was not unexpected as underlying conditions for the yen carry trade did not change materially following either the end of quantitative easing in March or the end to the zero interest rate policy in July: the rise in short-term yen rates has remained contained, and long-term JGB yields have been stable, leaving spreads with U.S. rates broadly unchanged. But this is also because the yen carry trade may not have been sizable enough—some estimates of outward yen lending by Japanese banks point to a figure around \$70 billion⁸ in 2005—to influence global markets at a time of massive retrenchment of dollar-based investors from emerging markets. Nevertheless, small mature markets which had seen heavy inflows from yen-funded investors, such as New Zealand, were affected.



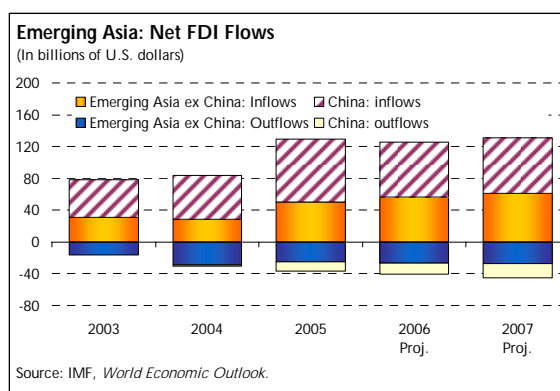
⁷ In narrow terms, the yen carry trade describes a transaction whereby international investors borrow in yen to invest in higher yielding currencies. Some broader uses of the term may also include purchases of high-yielding foreign currency bonds by Japanese investors, including the so-called “uridashi bonds”, foreign currency bonds sold in Japan for retail investors.

⁸ This figure compares with a daily volume of overall foreign exchange transactions of about \$2 trillion and almost \$350 billion for yen transactions alone. Precise estimates are difficult as many transactions are done through derivatives and Over The Counter (OTC) transactions (see Box 1.1 of the September 2006 Global Financial Stability Report).

Outlook for Capital Flows to Emerging Asia

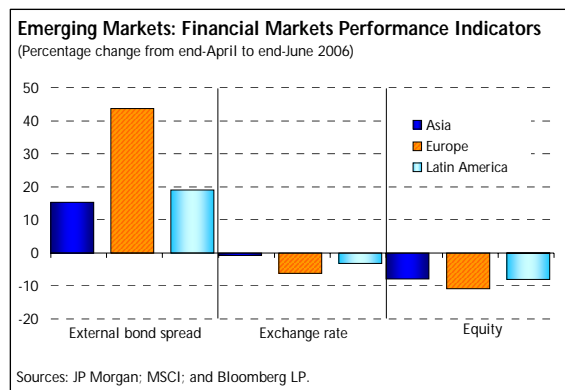
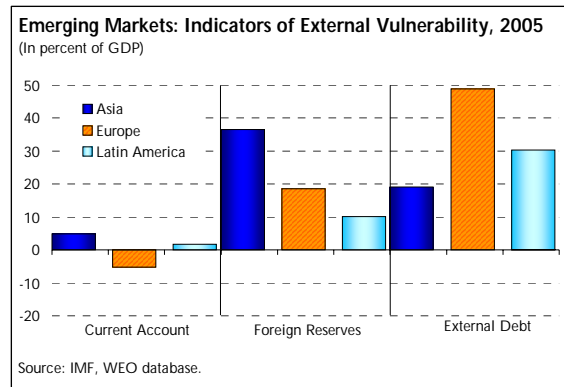
Despite the recent reassessment of risks by international investors, capital flows to the region should remain sizable because sentiment toward Asia remains positive (“pull factors”) and despite a more difficult international environment (“push factors”). Given its strong fundamentals, reduced vulnerabilities and fairer valuations, emerging Asia will likely continue to attract sizable capital inflows, especially in the form of FDI.

Reflecting strong fundamentals, net FDI flows to emerging Asia are expected to remain buoyant. They are projected to reach \$85 billion in 2006, down from \$93 billion in 2005. Gross inflows are forecast to drop modestly with China continuing to attract the bulk of FDI, albeit at a more moderate pace. At the same time, FDI flows to India are projected to double this year, from low levels, as inflows into the service sector continue and foreign investment into IT and steel picks up. Meanwhile, the recovery in FDI flows to ASEAN economies is also gathering momentum. FDI abroad by emerging Asia is also expected to continue its rising trend reflecting, in part, continued capital account liberalization (India) and efforts to acquire oil assets and other commodities abroad (China).



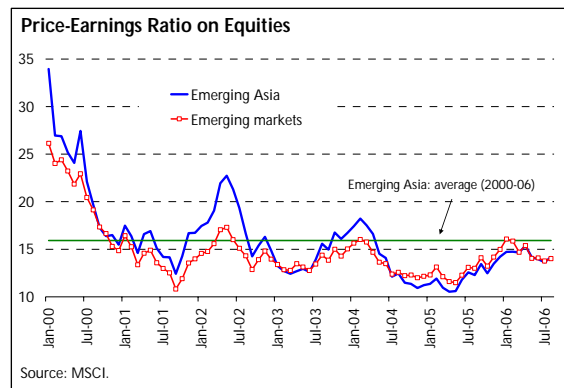
Investor sentiment has also received a boost from demonstrated resilience by the region during the correction. While emerging markets in Latin America and Eastern Europe suffered sharp declines in equity markets and currencies, as well as a steep rise in external spreads, movements in the region were more limited. Emerging Asia's resilience was further demonstrated, as despite the correction, credit ratings for the sovereign external debt of China, Hong Kong SAR, India and Indonesia were upgraded by Standard and Poor's during late July-early August. (China was also upgraded by Moody's in July.) At the same time, the Philippines successfully raised \$750 million in international markets at a spread of around 250 basis points above US treasuries. Also, external debt issuance by the private sector has remained very active, with total issuance reaching a historical high in the second quarter.

improved following the recent implementation of a series of fiscal measures.



With regional asset prices now appearing more fairly valued, equity inflows have recently picked up again and regional equity markets have rebounded. Since the trough of mid-June, markets have risen by 12 percent. This occurred as world equity markets rose on increasing expectations of an end to the tightening cycle in the United States and healthy corporate profits. Following the correction, equity markets valuations in the region have returned to moderate levels (see Chapter IV). The average price earnings ratio for emerging Asia now stands at around 14, slightly below the average recorded since 2000. Other indicators also point to generally fair valuation.

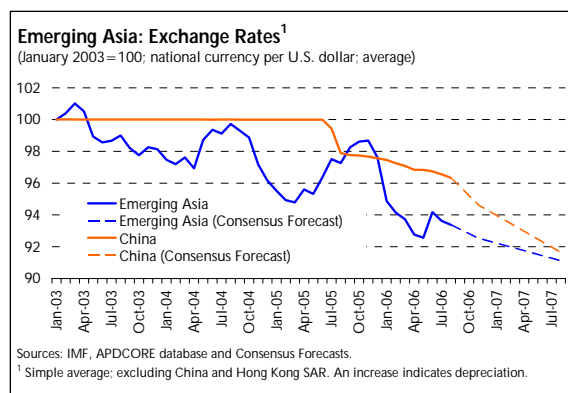
This resilience is likely the result of improvements in reducing fiscal, financial and external vulnerabilities over several years. External debt levels in the region have declined and foreign reserves are ample. Current account positions, albeit on the decline in most countries outside of China, remain in most cases positive, and exchange rates have become more flexible. Corporate sectors in the region are stronger, their profitability higher and their leverage ratios reduced. Despite persistent problems in a few countries, banking systems have been strengthened, as capital adequacy ratios have risen and vulnerabilities have decreased. In Indonesia and the Philippines, which were seen as the most vulnerable to a change in investor sentiment, external public debt levels have been brought down and fiscal positions have



Despite Asia's strong position, portfolio and other short-term flows to the region are expected to moderate next year as the global tightening continues and industrial country growth slows. While the region could see inflows and upward pressure on regional currencies related to persistent expectations of appreciation of the

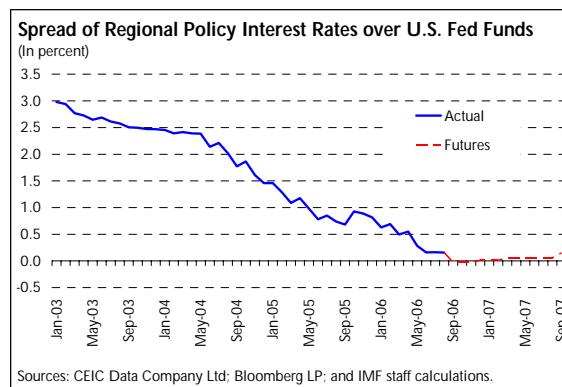
renminbi, the situation looks very different from that of a year ago where such expectations led to massive capital inflows into the region. In particular, the spread of policy rates in the region over the U.S. Fed Funds rate has vanished, and industrial country growth is slowing down, affecting prospects for regional equity markets and net equity inflows.

Continued renminbi appreciation expectations could put some upward pressure on regional currencies. The renminbi is continuing its incremental appreciation since its one-off 2.1 percent revaluation on July 21, 2005. Fueled by an increase in China's trade and current account surpluses, the Non Deliverable Forward (NDF) market continues to point to a further gradual appreciation of the renminbi over the next twelve months. Consistent with these expectations and given the strong trade linkages with China, other regional currencies are seen by market participants as following the appreciation of the renminbi. Any upward movement, however, is not expected to match in intensity that of late 2004, as many regional currencies have already recorded sizable appreciation.

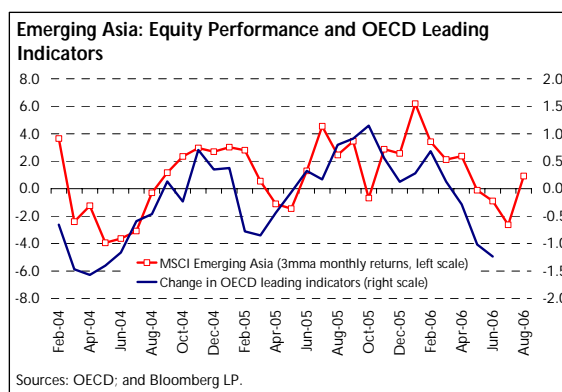


With the spread of regional rates over U.S. rates expected to remain near zero, portfolio flows are likely to slow. Since the beginning of the tightening cycle in the United States in May 2004, the average spread between Asian policy rates and the U.S. Fed Fund rate has declined by 240 basis points to almost zero now. This decline occurred as strong balance of payments positions and limited inflationary pressures in the region enabled central banks to delink from the pace of Fed tightening. With inflationary pressures expected to remain under wraps, especially in the ASEAN economies, investors are expecting a quick end to monetary

tightening in the region. Accordingly, the spread is expected to remain near zero well into 2007.



Moreover, the expected deceleration in industrial country growth could affect regional stock markets and prospects for foreign equity inflows. Because of emerging Asia's intensive trade and financial linkages to the global economy, regional equity markets have been strongly correlated with the global economic cycle and equity markets in advanced economies (see Chapter 4). As the world economy gradually slows from the rapid pace of the past few years, prospects for stock markets in the region could be affected, limiting foreign investors' interest. Moreover, should the current strong momentum in the technology cycle unravel, given the importance of the technology sector in regional equity markets, prospects could be significantly affected.



Should the global monetary tightening be more pronounced, and the slowdown in the world economy sharper than projected, capital flows to emerging Asia could fall well short of expectations.

Our central scenario is a relatively benign one. In this scenario, emerging Asia would be expected to fare well, and could again show its resilience as it did in May-June this year if there were other bouts of volatility. However, should central banks in advanced economies tighten monetary policy more aggressively, the world economy could slow down more rapidly, and a rise in risk aversion could be triggered, impacting Asia significantly. In such a case, emerging Asia would face the challenge of dealing with a sharply reduced external demand and lower capital inflows (or even net outflows), putting downward pressure on regional exchange rates.

III. Macroeconomic Policy Issues

While the monetary tightening cycle appears to be nearing its peak in most Asian economies, the outlook for inflation remains uncertain, and monetary authorities will need to remain attuned to the emergence of stronger inflationary pressures. A further rise in global perception of risk could also require additional monetary tightening in countries where capital flows remain volatile. On the fiscal front, performance has generally remained on track, and risks to the outlook appear low. However, difficult longer-term fiscal challenges remain in many countries.⁹

Monetary Policy

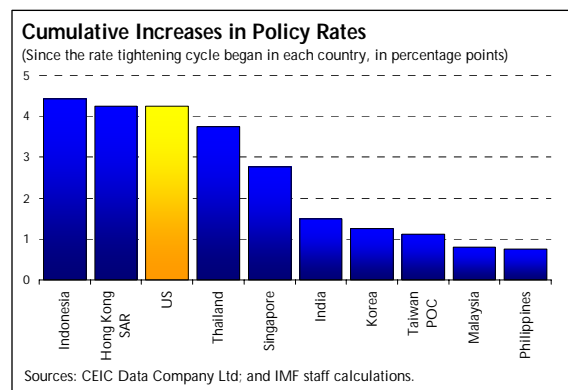
The principal factors influencing monetary policy in the region are broadly as outlined in the May 2006 REO, although relative risks have changed somewhat.

- **Limiting the potential impact of high and rising oil prices on inflation has remained the primary challenge faced by macroeconomic policymakers in the region.** So far, the impact of this price rise (and of that for other commodities) on headline inflation has remained fairly small in most countries, and core inflation remains under control.¹⁰ However, there are risks to the inflation outlook, related primarily to higher oil prices, but also to more general supply-side pressures.
- **Domestic demand has continued to face constraints in most countries, increasing the risks to growth associated with monetary tightening.** Although domestic demand is expected to firm across Asia, slowing external demand could hold this back. China and India present notable exceptions to this trend, with robust domestic demand adding to concerns about overinvestment in the former, and inflationary pressures in the latter.
- **The yield differential between Asia and the United States has continued to decline.** This has mattered more for some countries in Asia

than for others. In those where the pass-through from exchange rates to inflation is relatively high (e.g., Indonesia and the Philippines), U.S. monetary policy matters quite a bit: to the extent that a decline in the interest rate differential depresses capital flows and weakens the exchange rate, monetary authorities need to factor in U.S. interest rate changes. But in other countries, where inflation is less sensitive to the exchange rate, or capital flows are less sensitive to interest rates, the yield differential is less relevant for monetary policy.

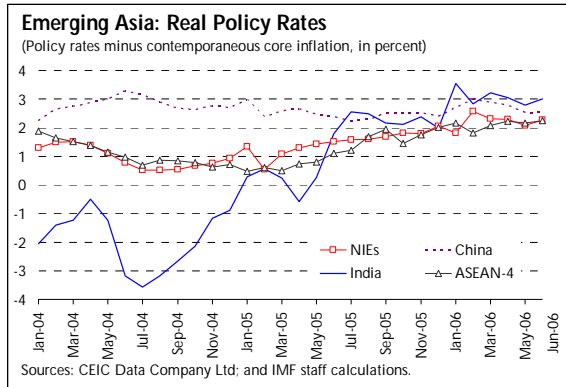
Monetary policy response

Most regional monetary authorities have remained proactive in addressing inflationary pressures. Although their rate increases have on the whole continued to lag those of the Fed (in some cases by quite a lot), they have in general exceeded the increase in inflation. As a result, real policy rates in Asia (based on contemporaneous core inflation) have risen to about 2¼ percent in the NIEs, and roughly 2 percent in the ASEAN-4. In recent months, however, real policy rates have eased somewhat. By comparison, the real policy rate in the United States had reached about 2½ percent at mid-year.



⁹ The main author of this chapter is Andrea Richter Hume.

¹⁰ See Chapter I for a more detailed discussion of inflation performance.



Abstracting from these broad trends, there has been some variation in monetary policy across the region since the May 2006 REO. Most countries have raised policy rates further (by ¼ to ½ percentage point), to keep inflationary expectations in check. Indonesia, which has faced the highest inflation in the region, has been an exception to this general trend, lowering its policy rate by 150 basis points (from a peak of 12¾ percent in May) as price pressures have eased. And in the Philippines, the policy rate has remained on hold (at 7½ percent) since late 2004, reflecting a gradual moderation of inflation and positive external developments. In China, where inflation has remained low, the primary policy concern has been rapid credit and investment growth in certain sectors, and the risks this may pose to banking sector health.¹¹ To address this concern, monetary policy has been tightened (via interest rate and reserve requirement increases), and administrative controls have been adopted (including sector-specific investment bans and restrictions on lending to excess capacity sectors).

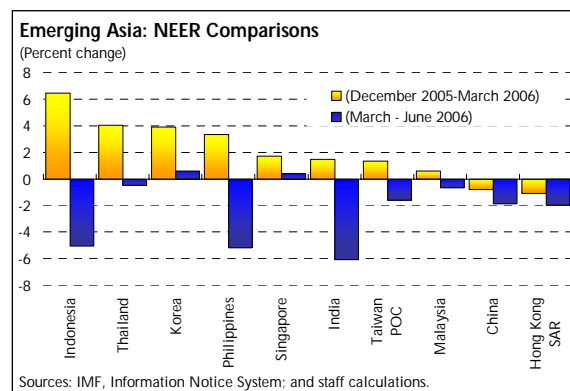
In Japan, with inflation better established, monetary policy has normalized. Following the end of quantitative easing in March 2006, the Bank of Japan (BoJ) increased its overnight policy rate to ¼ percent on July 14. The move brought an end to almost five years of ZIRP—the unprecedented policy of effectively zero short-term interest rates

¹¹ Although consumption growth has been strong, much of China's rapid growth has been driven by investment, which in some sectors had led to overcapacity and hence to falling prices. This has helped offset higher prices of services and of administered goods (such as energy), keeping headline inflation low.

aimed at reversing deflation and reviving the economy. The beginning of a tightening cycle was well anticipated by markets, with the modest removal of accommodation broadly viewed as an appropriate step toward a more neutral monetary stance. BoJ statements have helped reassure markets that, going forward, interest rates will be adjusted gradually.

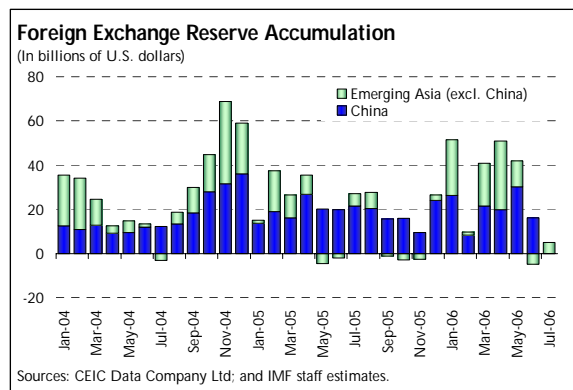
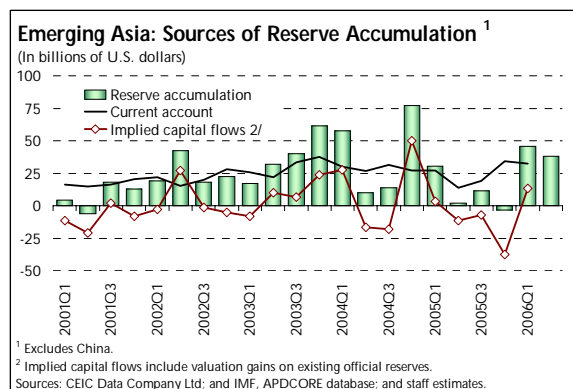
Exchange rates and reserves

In most of Emerging Asia, exchange rate appreciation had, until recently, contributed (in some cases significantly) to tighter monetary conditions, thus reducing the need for interest rate hikes. While regional exchange rates depreciated during the mid-year global financial market turbulence, most have recovered at least partially since then. Looking ahead, financial markets expect most Asian currencies to appreciate further. In the case of China and Malaysia, various indicators—including persistent and large current account surpluses—suggest that further appreciation is warranted. In other emerging Asian economies, appreciation pressures are likely to be weaker, reflecting generally narrowing current account surpluses. However, financial markets suggest that any renminbi appreciation is likely to be followed by that of other regional currencies, given the strong trade linkages in the region (Chapter II).



In some Asian countries, greater exchange rate flexibility is important for addressing the significant pressures on liquidity stemming from large foreign exchange inflows. Asian official foreign exchange reserves surged by \$220 billion in the first half of 2006, reaching

\$2.9 trillion.¹² In China—which accounts for one third of Asian reserves—strong inflows primarily reflect a burgeoning trade surplus. In the rest of emerging Asia, while current account balances have generally been narrowing, capital inflows have been buoyant, despite a temporary reversal in May and June.¹³ In these countries, the strong reserve accumulation this year marks a turn-around from late 2005. While part of the overall increase in Asia's official reserves can be attributed to valuation gains on non-U.S. dollar holdings, the majority reflects intervention by monetary authorities.¹⁴



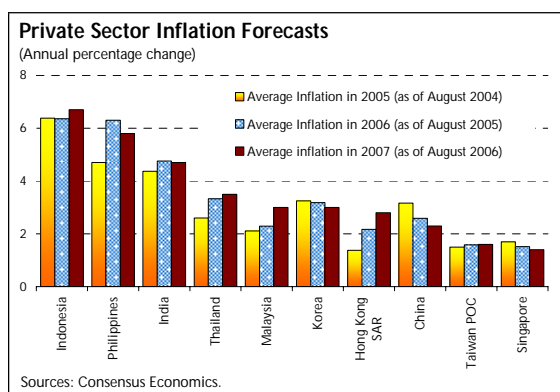
¹² These figures exclude off-balance sheet foreign exchange reserves of central banks, which in some cases (notably the Philippines and Thailand) have also increased in recent months.

¹³ It should be noted, however, that more recently the ASEAN economies (Indonesia, the Philippines, and Thailand) have seen a marked improvement in their current account positions.

¹⁴ The exact size of valuation gains cannot be calculated since the currency composition of reserves is generally not available. But if one assumed, for example, that 30 percent of Asia's foreign reserves was held in euro, the valuation gains between end-2005 and mid-2006 would amount to roughly \$60 billion, reflecting the 7½ percent depreciation of the U.S. dollar against the euro during this period.

Monetary policy outlook

For most Asian economies, the central outlook is for the monetary tightening cycle to end this year. Headline inflation is generally expected to remain modest or decline in 2007—especially in countries where base effects have played a large role in the increase (e.g., Indonesia and the Philippines)—reflecting well-anchored inflationary expectations. Against this backdrop, some monetary authorities may even be in a position to begin easing (with Indonesia expected to ease further). And in Japan, with inflation unlikely to rise quickly (as growth appears to be moderating), monetary policy is expected to remain accommodative.



China and India present exceptions to this central outlook. In China, although there are signs that credit and investment growth may be moderating, both remain robust, and more monetary policy tightening is likely to be needed. Given concerns that such tightening could attract additional capital inflows (and hence expand liquidity), allowing more rapid appreciation of the renminbi, combined with an intensification of open market operations, is warranted. In India, although core inflation remains low, there are considerable price pressures in the pipeline, emanating principally from rapid credit growth (running at about 30 percent per annum), and possibly also from rising

wage pressures.¹⁵ In addition, the decline in the yield differential with the United States (which has fallen by 2¾ percentage points since May 2005) may depress capital inflows, which play a significant role in financing India's current account deficit.¹⁶ Further monetary tightening is therefore likely to be needed.

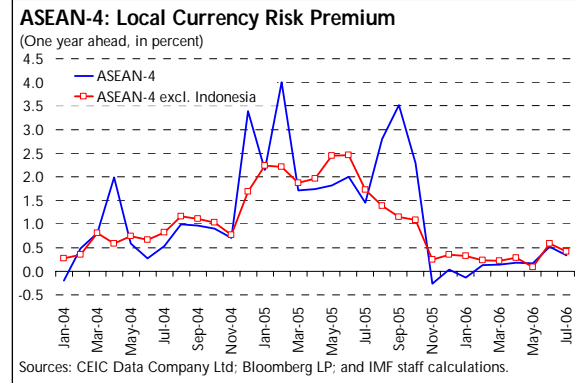
This central policy outlook could face a number of challenges.

- As discussed in Chapter 1, there are *upside risks to inflation*. Continued attention to the possible emergence of inflationary pressures is therefore warranted, especially where inflationary expectations are less firmly anchored. The experience of Indonesia in late 2005 shows the potential costs of delayed policy reaction to rising inflationary pressures.¹⁷
- Another potential challenge stems from the *narrowing of the interest differential* between emerging Asia and the United States, which could reduce portfolio inflows, depress regional currencies, and thus increase imported inflation. The declining rate differential has been sustainable so far because risk premia had fallen sharply (especially in the ASEAN-4), though it should be noted that this decline may have been driven to a large degree by liquidity rather than a decline in perceptions of risk. While risk premia have remained low (despite the May-June financial market turbulence), further tightening of global liquidity conditions would likely usher in a rise in these premia.

¹⁵ Factors keeping core inflation low in India include cuts in import duties, and more generally competition from imports. Broader concepts of inflation (such as the wholesale price index) are likely to underestimate price increases due to (i) price controls and other measures to ease food price pressures (e.g., export bans on certain agricultural products, and custom duty reduction on others), and (ii) remaining controls on fuel prices. Even so, CPI inflation had risen to 7.9 percent in June, from 4.4 percent in January.

¹⁶ It should be noted, however, that to the extent that lower domestic interest rates boost equity valuations, this may actually encourage portfolio investment in equity.

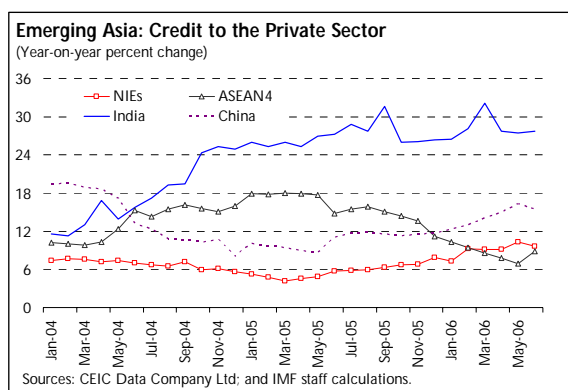
¹⁷ Investor concerns about delays in tightening monetary policy (and adjusting fuel prices) contributed in part to the financial volatility experienced in Indonesia in August-September 2005.



- The most challenging scenario could be *if growth slows sharply* (reflecting a weaker world economy), *but inflationary pressures remain in the system* (for example, if oil prices are driven even higher due to supply constraints). In this situation, policymakers will need to weigh the trade-offs between easing, in the interest of supporting domestic demand, and tightening, in the interest of containing inflation. To a large extent this trade-off will depend on the underlying strength of domestic demand.
- Finally, while the persistence of *rapid credit growth* may not generally pose an inflationary risk (except in the case of India), in some countries it may raise concerns about banking sector health.¹⁸ In China, for example, there are risks that the newly-recapitalized state-owned banks may be on yet another lending spree, under less than ideal regulatory and supervisory conditions. In addition, a number of Asian economies have recently experienced rapid household credit growth, including India, Malaysia, the Philippines, and Thailand. While stability-related concerns remain minor in these countries, Korea's financial sector problems (and economic slowdown) in the wake of the 2000-02 credit card boom, and more recently problems on this front in Taiwan Province of China, underscore the importance of monitoring household credit growth closely, and tightening prudential measures where necessary. A related concern is the increase in property prices—and possible risks of price

¹⁸ Rapid credit growth is generally not of inflationary concern in Asia at the moment because it is starting from a relatively low base, reflecting the sharp contraction in corporate credit in the wake of the Asian crisis.

speculation—that has accompanied the sharp rise in mortgage lending in many Asian economies, given that such price increases expose banks to asset price corrections.¹⁹ And because most mortgages are variable-rate, banks are also exposed to credit risk via this channel. All these issues highlight the critical importance of strong prudential policies.



Fiscal Policy

Fiscal consolidation is set to continue in most Asian economies in 2006, as anticipated in the May 2006 REO. In the Philippines, higher revenue following the VAT reform, combined with expenditure constraints related to failure to pass the 2006 budget, is forecast to lower the deficit for the second year in a row. The deficit is also forecast to fall in Malaysia (due to buoyant oil-related revenues) and in Thailand (as public investment projects are postponed). In India, where the fiscal deficit has been considerably higher than in the rest of emerging Asia, consolidation is expected to be fairly modest this year, though somewhat larger in 2007. Deficit reduction is also expected in Japan, where public debt remains high and population aging will heighten already strong spending pressures. In contrast to this consolidating trend, Indonesia's fiscal deficit is expected to widen this year, as fiscal policy aims to boost flagging domestic demand.

¹⁹ Chapter IV includes a discussion of the links between equity prices and the real economy, including the impact of asset-price swings on the net worth of financial institutions.

Selected Fiscal Indicators

(In percent of GDP)

	General Government Gross Debt			Central Government Fiscal Balance		
	2005	2006 Proj.	2007 Proj.	2005	2006 Proj.	2007 Proj.
Industrial Asia	154.8	154.7	154.0	-4.2	-4.2	-4.1
Japan	181.6	181.8	181.7	-5.4	-5.2	-5.1
Australia ¹	9.9	9.1	8.6	1.5	1.1	1.0
New Zealand	23.8	22.8	21.2	4.1	2.5	1.6
Emerging Asia	37.7	35.8	34.1	-1.6	-1.5	-1.3
Hong Kong SAR	1.9	1.7	1.4	1.0	0.5	0.7
Korea ^{2,3}	36.4	35.4	33.6	2.1	2.4	2.5
Singapore	...	...	...	6.0	4.3	4.5
Taiwan POC	38.5	38.9	38.9	-1.9	-1.7	-1.7
China ⁴	17.9	17.3	16.4	-1.3	-1.2	-1.1
India ⁵	84.1	80.9	78.5	-4.2	-4.0	-3.6
Indonesia ²	46.5	40.9	37.3	-0.3	-1.2	-0.9
Malaysia ²	46.2	45.3	45.4	-3.8	-3.0	-3.0
Philippines ⁶	63.1	59.0	54.4	-3.0	-2.1	-1.5
Thailand ^{6,7}	47.3	45.1	42.4	0.0	1.0	1.2
NIEs	32.8	32.4	31.4	0.6	0.8	0.8
ASEAN-4	49.8	45.8	42.7	-1.2	-1.1	-0.8
Asia	62.9	60.3	57.8	-2.2	-2.1	-1.9

Sources: IMF, APDWEQ database; and staff estimates.

¹ Fiscal year ending June. Fiscal balance includes net surplus from state-owned enterprises.

² Central government only.

³ Consolidated central government debt including government guaranteed debt for financial sector restructuring.

⁴ Net debt.

⁵ Fiscal year ending March; privatization receipts excluded from revenues.

⁶ Public sector debt.

⁷ Fiscal year ending September.

The fiscal stance across Asia is broadly neutral this year, which appears warranted in most countries given that growth is at or near potential. In some, however, significant off-budget oil subsidies entail a more expansionary fiscal policy than the headline deficit numbers would suggest. This could cause some tension with monetary policy where inflationary pressures require tightening (e.g., India).

Risks to the near-term fiscal outlook appear relatively minor at this stage, and relate primarily to expenditure.

- If higher-than-expected inflationary pressures require a further tightening of monetary policy, domestic debt service can be expected to increase along with interest rates. For most countries, however, interest payments have fallen as a share of GDP in recent years, so the expected impact on the budget would likely be

small.²⁰ Of course, for countries with a higher share of domestic debt, or whose debt has a shorter maturity, the impact would be larger.

- If investors' perception of risk should increase, this could drive up the cost of external debt issuance. Although emerging Asian external debt performed relatively well during the financial turbulence in May-June, reflecting strong fundamentals, this could change if risk aversion rose across the board (see Chapter II). But even if external issuance conditions should become more difficult, the average maturity of Asia's sovereign external debt is quite high, suggesting that the actual impact on refinancing should not be too great (and in any case, plans for external borrowing during the remainder of 2006 are relatively small).²¹

Over the longer term, significant challenges remain on the fiscal front, primarily related to much-needed upgrades to infrastructure and costs related to aging societies. As discussed in the May 2006 REO, the infrastructure needs of emerging Asia are significant, and will require a considerable step-up in public investment in the coming years. In addition, the NIEs and industrial Asia are likely to face significant costs over the medium to long term as old-age dependency ratios rise. To the extent that regional economies are not making the most of the current favorable economic conditions to accelerate fiscal consolidation, an important opportunity to address these medium- to longer-term fiscal challenges is being missed.

	Planned	Actual	Remaining
Asia	7.6	5.1	2.6
Emerging Europe	17.9	11.8	6.1
Latin America	18.4	22.3	-3.9
Middle East & Africa	6.1	2.0	4.1
Total	50.2	40.5	9.7

Sources: JP Morgan; and IMF staff estimates.

- In countries that still maintain administered prices for energy (China, India, Indonesia, and Malaysia), high and rising oil prices present a more serious expenditure risk. Energy-related subsidies (which in some cases may be off-budget) have been forecast as high as 2 percent of GDP this year in India and Malaysia. To the extent that oil prices rise further, and the price increases are not passed through, the fiscal costs of regulated energy prices will rise.
- Finally, on the revenue front, the only downside risk at this juncture is the impact of slowing economic growth.

²⁰ Interest payments (on domestic and external public debt) range from less than 1/2 percent of GDP in China, to 6 percent of GDP in India and the Philippines.

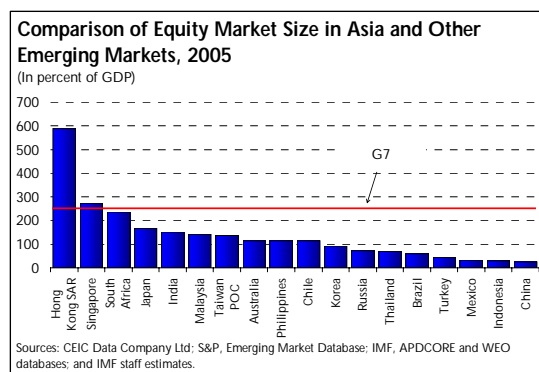
²¹ The average maturity of public external debt is roughly 13 1/2 years for Thailand, and about 20 years for Indonesia and the Philippines.

IV. Asian Equity Markets: Growth, Opportunities, and Challenges

Asian equity markets have grown significantly in size since the early 1990s, notwithstanding the turbulence that surrounded the late 1990s Asian financial crisis. Asian equity market development has been driven by strong international investor inflows, growing regional financial integration, capital account liberalization, and structural improvements to markets. In the wake of the recent sell-off, valuations and risk-adjusted returns seem to be broadly in line with comparator markets and with the economic outlook. The development of equity markets provides a more diversified set of channels for financial intermediation to support growth while bolstering financial stability. At the same time, as highlighted by recent corrections, the increasing role of stock markets potentially changes the nature of macroeconomic and financial stability risks, as well as the policy requirements for dealing with these risks.²²

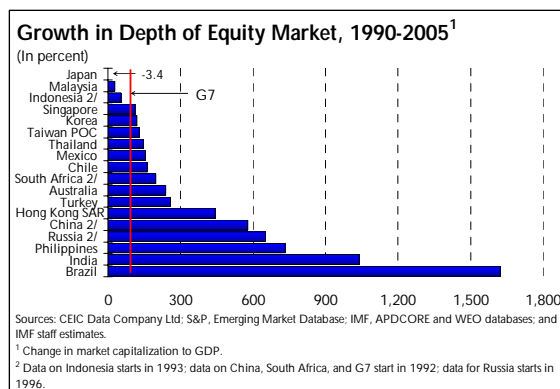
The Emergence of Asian Stock Markets

Asian equity markets are sizeable and fast growing. Since 1990, Asia's capitalization has more than doubled in U.S. dollar terms to \$13.7 trillion, 30 percent of world capitalization. Excluding Japan and Australia, it has risen almost tenfold. The financial hubs of Hong Kong SAR, Singapore, and Japan dominate the region, accounting for two-thirds of Asian equity assets. Markets in some other countries, such as India, Malaysia, and Taiwan Province of China, are also sizeable. But, for the



²² The main authors of this chapter are Catriona Purfield, Hiroko Oura, and Charles Kramer. Andy Jobst and Jennifer Elliott contributed material on equity derivatives and smaller stock markets respectively.

most part, market capitalization remains well below industrial country levels.



The growth in Asian markets has been accompanied by improved liquidity and breadth. Since 1990 market liquidity (share turnover) has more than doubled in relation to GDP, while turnover velocity (share turnover/market capitalization) has risen almost four-fold. Market breadth (the percentage of market capitalization and turnover accounted for by the ten largest companies—a higher figure implies greater concentration) is now better in Asia than in other emerging markets, although worse than in industrial countries.

There is, however, considerable diversity within this broad picture. Equity markets in China and Indonesia remain illiquid and small relative to the size of their domestic economies, with growth trailing the rest of the region. The Philippines and Hong Kong SAR markets are dominated by relatively few firms. Other markets in the region are generally very small and highly illiquid. In Bhutan, for example, the 16 listed companies trade twice a week; in 2005 there were 65 trades, involving only 8 of the 16 listed companies. In Sri Lanka, total equity and corporate bond market capitalization is only around 10 percent of GDP, with only a few active stocks.

Equities are also a large share of financial assets in the region, accounting for about half of assets (deposits, stocks, and bonds). Nevertheless, as a

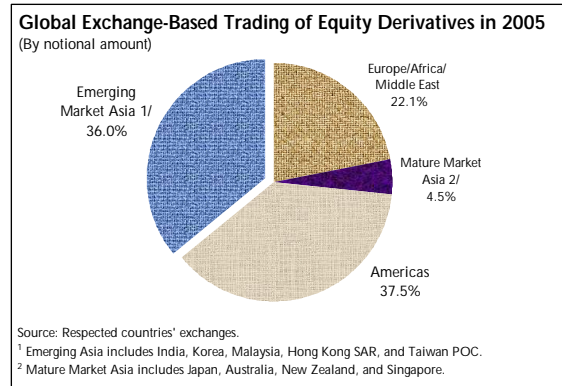
share of assets, equities, except for those in India, have yet to recover to pre-Asia crisis levels. However, it also reflects the fact that bank loans continue to be the most important source of finance for Asian corporates.

While Asian finance remains bank-dominated, stock markets are an important source of corporate finance.

In 2005, emerging Asia companies tapped equity markets for some \$814 billion in new capital through initial and secondary public offerings. However, issuance activity is highly concentrated within the region; Hong Kong SAR accounted for almost half the total. Overall, equities provide around 10 percent of corporate finance in emerging Asia, but this compares favorably with 3.7 percent in emerging markets excluding Asia.

Equity derivatives have flourished in a few markets in Asia.

On Asia's exchanges, trading in Asian equity derivatives has mushroomed from \$16.5 trillion in 2002 to \$40.3 trillion in 2005, and now represents 36 percent of worldwide equity derivatives turnover by notional value.²³ This mainly represents very rapid growth in Korea's market, which thanks to contract specifications and a trading environment that are friendly to retail investors, hosts the world's most active derivatives market. In 2005, its *daily* turnover totaled some \$151 billion, or almost 34 percent of worldwide trading (83 percent of trading in all of Asia). By comparison, the average daily turnover in all of Western Hemisphere, including the U.S. and Brazilian markets, was about \$168 billion in 2005. India's equity derivatives market is also significant in size, and Hong Kong SAR has the world's most active equity warrants market. Equity derivatives markets are much less well developed in other Asian countries, even ones where cash market activity is strong. Variations in derivatives markets development relate to differences in the operational and legal infrastructure (Fratzscher, 2006).



²³ Equity derivatives are mainly traded on organized exchanges rather than over the counter (OTC). Annual OTC equity trading in Asia is only around \$100 billion (BIS (2005)).

Indicators of Stock Market Activity, 2005										
	Market Capitalization	Turnover ¹	IPOs	Secondary Public Offerings	No. of Listed Shares	Market Capitalization	Turnover	Turnover Velocity ²	Market Cap of Top 10 companies ³	Turnover Value of Top 10 Companies ⁴
	In billions of U.S. dollars				In percent of GDP			In percent		
Emerging Asia	4,684.8	421.0	34.6	46.8	13,403	91.7	8.2	9.0	42.4	34.3
China	563.8	67.3	0.7	3.3	1,377	25.3	3.0	11.9	25.1	16.1
India	1,060.8	50.4	3.3	15.8	5,797	136.8	6.5	4.8	35.3	11.4
Hong Kong SAR	1,046.5	49.0	21.3	17.0	1,135	588.9	27.5	4.7	51.6	43.8
Korea	717.6	159.7	2.2	2.6	1,616	90.5	20.1	22.3	40.2	38.7
Singapore	318.3	8.1	3.9	1.6	686	270.0	6.8	2.5	39.2	39.2
Taiwan POC	475.9	73.8	0.2	2.1	696	137.5	21.3	15.5	34.9	26.5
Indonesia	81.5	2.5	0.4	0.6	336	29.5	0.9	3.0	53.2	54.1
Malaysia	183.7	2.9	1.1	0.9	1,019	140.5	2.2	1.6	36.8	26.8
Philippines	112.1	0.4	0.5	0.4	237	114.8	0.4	0.3	60.8	57.2
Thailand	124.4	7.0	1.1	2.6	504	73.7	4.1	5.6	47.1	28.8
Other Emerging Market	2,124.0	63.6	4.4	24.2	1,630	69.8	2.1	3.0	51.3	60.4
Brazil	482.1	16.4	2.0	8.9	381	60.8	2.1	3.4	52.4	48.8
Chile	131.3	3.4	0.5	1.9	246	115.2	3.0	2.6	45.6	49.6
Mexico	239.2	4.5	0.1	0.0	326	31.1	0.6	1.9	63.5	70.5
Russia	544.6	...	...	...	...	71.1	...	...	...	...
South Africa	563.9	17.9	0.0	13.0	373	235.8	7.5	3.2	44.1	91.7
Turkey	162.8	21.3	1.8	0.4	304	44.9	5.9	13.1	50.8	41.4
Industrialized	30,968.3	2,783.2	97.6	188.0	13,654	155.1	13.9	9.0	29.9	26.8
US ⁵	19,554.4	1,989.4	56.3	130.9	5,434	156.6	15.9	10.2	23.7	21.7
UK	3,053.4	106.2	23.3	17.3	3,091	138.7	4.8	3.5	40.9	29.6
Japan	7,546.4	640.4	...	24.6	3,415	165.1	14.0	8.5	18.1	17.3
Australia	814.1	47.2	18.1	15.2	1,714	115.0	6.7	5.8	37.1	38.6

Sources: Federation of World Exchanges; IMF, WEO database; and IMF staff estimates.

¹ Average daily trading volume (total value of share trading divided by number of trading days).

² Defined as the ratio of stock turnover to stock market capitalization.

³ Shows the part represented by the 10 most capitalized domestic companies in domestic market capitalization.

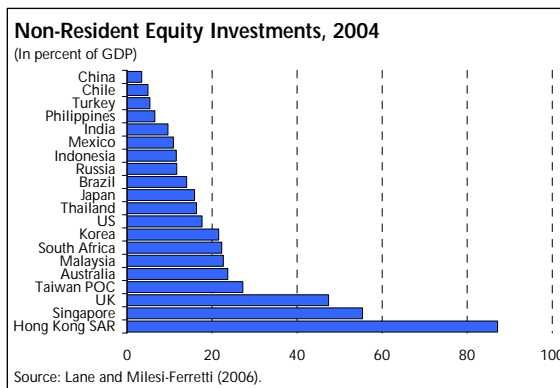
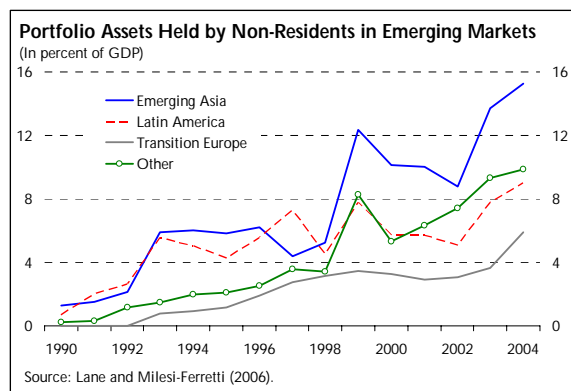
⁴ Shows the part represented by the 10 most traded companies in share trading value.

⁵ US secondary public offering only includes NYSE.

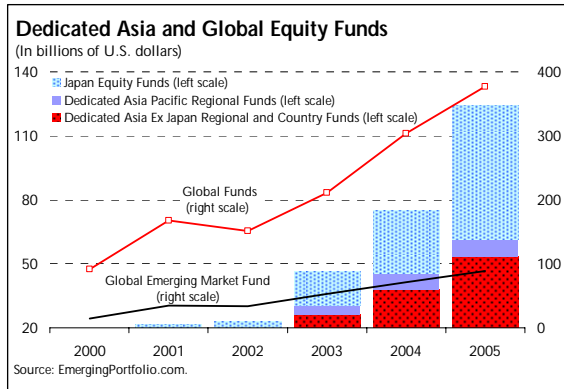
Factors driving the development of Asian equity markets include:

International Investor Diversification

Equity flows into emerging Asia have soared. By end-2004, international investors had placed some \$638 billion in emerging Asia equity markets—a twelve-fold increase over 1990s levels.



Accordingly, emerging Asian markets now capture three-quarters of global equity investments in emerging markets, up from about half in 1992. One underlying factor is the explosion of flows from dedicated emerging market equity funds, whose assets have grown at rates in excess of 54 percent per year since 2000. With assets of some \$125 billion, such funds are important investors in the region. But this figure understates the presence of global investors, as Asian markets likely capture a significant share of the much larger assets managed by global investment funds.



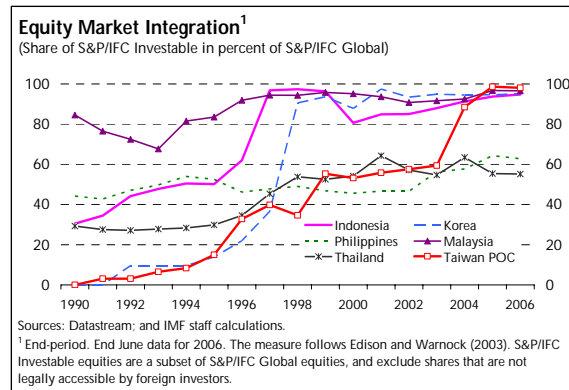
International investors now play a key role in many Asian markets. Such investors are concentrated in markets such as Korea, Hong Kong SAR, Taiwan Province of China, India, and Singapore, with portfolio allocations to ASEAN countries relatively small. However, even in countries in which foreign holdings of stock are relatively small, they may still own a large fraction of the free float (the amount available for trading). In India, for example, while foreigners own 20 percent of Morgan Stanley Capital International (MSCI) stocks, and less of the total market, they hold over 80 percent of the MSCI free float.

	Individuals	Domestic Institutional	Foreign
China	6	9	49
Hong Kong SAR	30	27	36
India	16	8	8
Japan	20	27	24
Korea	18	11	40
Malaysia	...	...	20
Singapore	1	29	70
Taiwan POC	48	6	16
Thailand	62	10	28
Simple average	25.1	15.9	32.3

Source: HSBC analysts estimates at end-2005.
¹ The numbers do not add to 100 percent because ownership by government, banks and corporates are omitted as they are generally longer-term holders and do not represent part of the free float.

Financial Integration within Asia

Intra-regional equity portfolio flows nearly tripled over 2001–04 to \$113.6 billion. Today, such flows account for over 15 percent of total inflows to countries in the region, up from under 10 percent in 2001. While rising, intra-regional flows remain small relative to flows from Asia to the rest of the world. For example, Japan channels about 7 percent of its external portfolio investment to Asia. Capital account liberalization has facilitated the increase in cross-border flows both within the region and from abroad.



Cross-Border Equity Security Investment, 2004 (In billions of U.S. dollars)										
Investment to	Investment from								Total	In percent of total
	US and Canada	In percent of total	EU15	In percent of total	Asia	In percent of total	Rest of world	In percent of total		
US and Canada	180.4	6.3%	809.0	19.2%	284.1	38.0%	425.2	48.9%	1698.7	19.5%
(In Percent of Total)	10.6%		47.6%		16.7%		25.0%		100.0%	
EU15	1252.1	43.5%	2340.2	55.5%	201.3	26.9%	400.5	46.1%	4194.1	48.1%
(In Percent of Total)	29.9%		55.8%		4.8%		9.5%		100.0%	
Asia	649.4	22.6%	472.9	11.2%	113.6	15.2%	17.9	2.1%	1253.9	14.4%
(In Percent of Total)	51.8%		37.7%		9.1%		1.4%		100.0%	
Rest of World	797.7	27.7%	596.8	14.1%	148.5	19.9%	25.4	2.9%	1568.3	18.0%
(In Percent of Total)	50.9%		38.1%		9.5%		1.6%		100.0%	
Total	2879.6	100.0%	4218.9	100.0%	747.5	100.0%	869.0	100.0%	8715.0	100.0%
(In Percent of Total)	33.0%		48.4%		8.6%		10.0%		100.0%	

Source: IMF, Coordinated Portfolio Investment Survey.

Growing Domestic Institutional Investor Base

Between 2000 and 2004, domestic mutual funds, pension funds, and insurance companies' assets doubled to just over 36 percent of emerging Asia GDP.²⁴

This development has been spurred by the need to provide retirement savings vehicles in light of aging populations as well as by the liberalization of regulatory controls on investments by public pension funds. In some countries, a large share is invested in equities. Nonetheless, the sector still holds major potential for growth, as it remains small relative to developed countries (U.S. institutional investors' assets comprise 160 percent of GDP; McKinsey Global Institute, 2006a and 2006b).

While domestic institutional investors play large roles in some markets, in some cases structural barriers may hinder their participation (Ghosh 2006).

These include restrictions on the types of investments that can be made by insurance and pension companies; competition from government guaranteed savings schemes; crowding out by public defined benefit pension plans; legislative hurdles; and fragmentation due to the dominance of small players. Accordingly, in such markets, retail investors account for the bulk of exchange trading (about two-thirds in China, and about 85 percent in India; McKinsey Global Institute, 2006a and 2006b). That said, structural barriers to the participation of institutional investors will likely be reduced over time, as some countries

²⁴ In 2004, this figure excludes assets invested in Hong Kong SAR by overseas mutual funds.

are beginning to establish new pension systems and liberalize controls on public institutional investors' asset allocation.

Improvements in Market Infrastructure and Governance

Efforts over the past decade have improved the technical market infrastructure, as well as corporate governance (see Ghosh, 2006). Most countries in the region have developed electronic clearing and settlement systems. As for corporate

Market Infrastructure Scores

China	92.5	A-
Indonesia	68.5	A-
Korea	97.3	A+
Malaysia	93.3	A+
Philippines	92.4	A
Thailand	93.6	A
Hong Kong SAR	...	A+
Singapore	...	AA-
Japan	...	A+

Sources: GSCS; and Thomas Murray.¹

¹ GSCS compares the settlement efficiency of markets, incorporating average trade size, local market interest rates, the proportion of trades that fail, and the length of time for which they fail. 100 represents the highest score. Thomas Murray produces ranking of post-trade risk exposures according to various criteria of clearing and settlement, safekeeping, and asset servicing. The ratings follow alpha scale from AAA to C.

governance, the formal rules and regulations governing corporations across the region are in general quite strong, but surveys of investor perceptions suggest weaknesses in implementation (Cheung and Jang 2005).

Performance of Asian Emerging Stock Markets

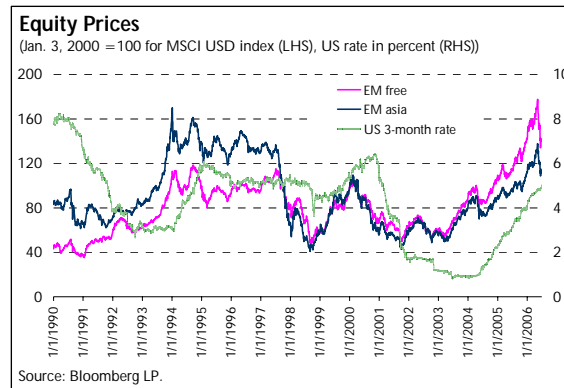
This section examines three aspects of Asian emerging-market equity performance over recent years, namely price performance relative to other markets, trends in volatility, and correlations with global and regional markets.

Price Performance

Over the past five years, Asian emerging markets have outperformed mature markets but lagged other emerging markets. Overall, stock prices generally remain well below pre-Asia crisis peaks, whereas equity indices in Latin America, emerging Europe, and Middle East exceed their 1990's highs (perhaps boosted by higher oil prices or expectations of EU accession).

As discussed in past issues of the Regional Economic Outlook, the run-up in Asian stock prices has reflected good economic fundamentals. Economic growth has been strong in a number of countries, in the context of a robust global expansion, notwithstanding periodic spikes in oil prices. Moreover, corporate profits have been solid.

Rising Asian stock prices have also coincided with a period of low U.S. interest rates. U.S. interest rates affect Asian equities by affecting portfolio choices of global investors; they provide a benchmark safe return for global investors and are used to discount future cash flows from equities. In addition, higher U.S. rates sometimes coincide with moves by global investors toward more defensive postures, sending riskier assets such as emerging Asian equities lower. As a third channel, changes in the U.S. monetary stance may signal a turning point in the U.S. economy, with potential implications for growth in its trading partners. Indeed, turning points in Asian equity prices do seem to correspond, albeit rather loosely, to shifts in U.S. short-term rates.



Volatility

Asian emerging market equity volatility remains a few percentage points above the levels attained in the first half of the 1990s. Looking at country-specific data, however, the increase seems to be mostly limited to Indonesia and Taiwan Province of China, and to a lesser extent Korea. Higher volatility in some countries compared with the early 1990s could reflect the opening-up of Asian markets to foreign investment, but evidence on this score is mixed.²⁵ In principle, the increase in openness means that Asian markets are more

	Developed World	Emerging Market	Emerging Europe, Middle East, and Africa	Latin America	Emerging Asia
1990-95	10.5	13.6	21.7	22.6	14.5
1996-2000	12.1	15.9	20.1	24.5	20.5
2001-06 (May)	13.1	14.4	19.1	20.2	18.2

Sources: Bloomberg LP; and IMF staff calculations.
¹ Annualized 3-month rolling standard deviation of daily price changes. Based on MSCI USD index.

²⁵ Relatedly, Chapter V in the *May 2006 Regional Economic Outlook* discusses the hypothesis that increased uncertainty may have dampened capital investment in emerging Asia.

Equity Price Change Volatility ¹ (In percent)									
	India	Indonesia	Korea	Malaysia	Philippines	Taiwan POC	Thailand	Hong Kong SAR	Singapore
1990-95	20.3	17.5	24.4	18.9	22.5	19.5	33.2	25.3	21.3
1996-2000	27.6	52.7	45.6	36.9	29.5	18.3	27.9	42.9	29.3
2001-06 (May)	20.4	30.0	29.6	13.0	22.2	28.1	25.6	24.1	17.5

Sources: Bloomberg LP; and IMF staff calculations.
¹ Annualized 3-month rolling standard deviation of daily price changes. Based on MSCI USD index.

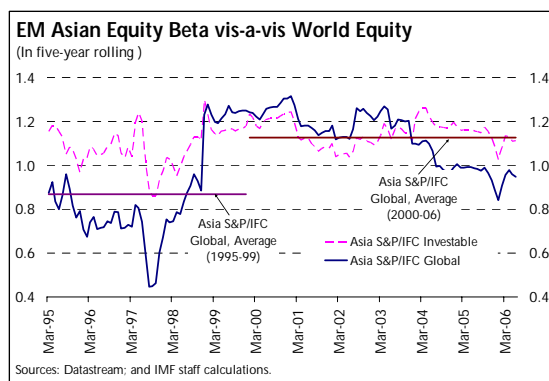
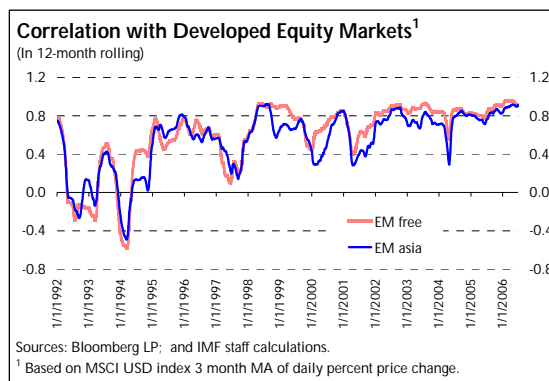
exposed to global volatility and shifts in investor sentiment.²⁶ However, while openness has increased in the markets where volatility has risen, it has also increased in markets where volatility is basically unchanged, or lower. Moreover, volatility seems to have trended down during this decade, despite rising financial integration.

Correlation with Global and Regional Markets

Asian equity markets have become more synchronized with global markets since the early 1990s. The same is true for emerging markets as a group, suggesting that globally rising integration may be at play. Indeed, Asia’s correlation with developed markets has moved closely with the overall correlation of emerging market economies. Correlations have also risen significantly for individual Asian countries, in some cases quite dramatically.

The Asian market “beta” versus world markets has also increased over time. Notably, the beta for the S&P/IFC global index has risen by more than that for the investable index. This is consistent with the idea that rising market integration could be lifting return correlations. In particular, as the share of internationally tradable stocks in the global index rises, the share held in global portfolios should rise, and thus its exposure to global market developments should increase.

Overall, returns from Asian equity markets have performed well and in some cases have become less volatile, notwithstanding increased integration into world markets.



²⁶ Box 4.1 finds that capital flows in emerging Asia have become more volatile in absolute terms, although it also finds that this has not necessarily resulted in greater vulnerability.

Box 4.1. Capital Flows to Emerging Asia: How Volatile Are They?¹

Volatility of capital flows has been a policy concern for many years in Asia's emerging market economies, and drew renewed attention during the bout of market volatility in May-June 2006. Although the benefits of greater capital mobility in terms of enabling a more efficient allocation of savings and consumption smoothing are well recognized, there is a widespread perception that capital flows have become increasingly volatile. Significant risks to macroeconomic stability can ensue from such volatility, in particular if regulations are weak or distortionary and the financial or macroeconomic environment is fragile.

Notwithstanding rising volumes and greater swings in US dollar terms, the intrinsic volatility of capital flows does not appear to have increased. The average standard deviation of net capital flows across nine emerging Asian economies steadily increased from less than \$1 billion (1976-1980) to nearly \$9½ billion (2000-04). However, the coefficient of variation, which scales the standard deviation in US\$ term of capital flows by the size of flows, has been lower after the Asian financial crisis than in the 20 years preceding it in six out of eight countries.

Moreover, Asian countries have undertaken policies which have succeeded in reducing vulnerabilities to capital market volatility. Countries' vulnerability to risks—including disruption of trade, domestic financial markets, or exchange rate markets—can be roughly gauged by looking at trends in volatility scaled by key macroeconomic indicators. Average volatility as a share of GDP rose from about 2 percent (1976-1980) to about 4 percent (2000-04). However, volatility as a percent of gross official reserves—capturing a central bank's capacity to smooth attendant foreign exchange market volatility—peaked in the early 1990s at about 30 percent, before declining to 10 percent in recent years. This, of course, largely reflects the effort by a number of Asian countries to self-insure against potential volatility in financial markets. Volatility has also remained broadly constant or declined relative to the growth of trade or monetary aggregates, the latter reflecting the risk posed by capital flight to the banking system or credit supply.

Emerging Asia does not compare unfavorably with advanced economies, which are widely regarded as benchmarks given their relatively strong institutions and sophisticated markets. While volatility of net capital flows in percent of GDP has consistently been higher for emerging Asia than advanced economies, the gap has narrowed in recent years. Moreover, mirroring Asia's trade dependence, volatility has been noticeably lower in terms of total trade. In terms of gross official reserves, emerging Asia stands out as having very low volatility.

Coefficient of Variation of Net Capital Flows

(Over indicated period)

	1976-96	2000-04
China	1.2	0.9
Hong Kong SAR	...	0.8
India	0.7	0.4
Indonesia	0.5	1.4
Korea	1.9	0.9
Malaysia	1.2	1.5
Philippines	1.0	0.5
Singapore	13.1	0.4
Thailand	1.1	0.7
Median	1.1	0.8
Average (unweighted)	2.6	0.8

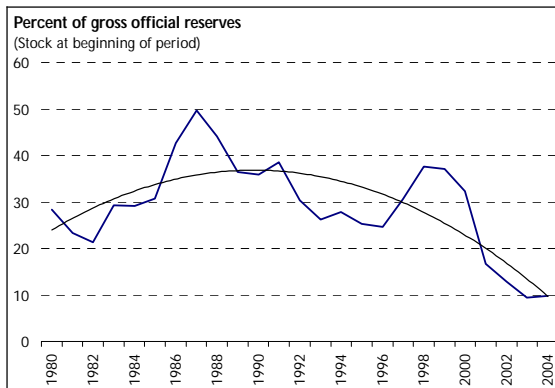
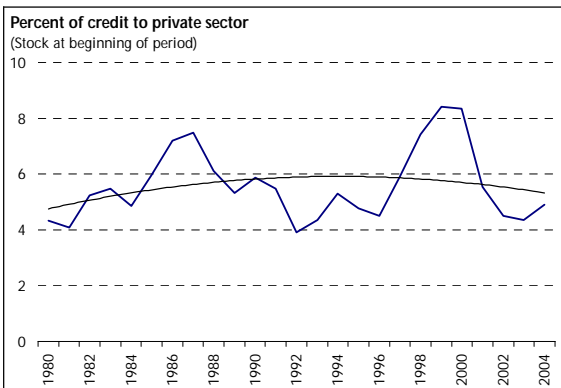
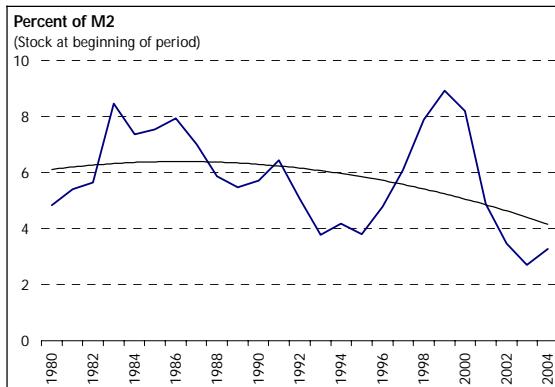
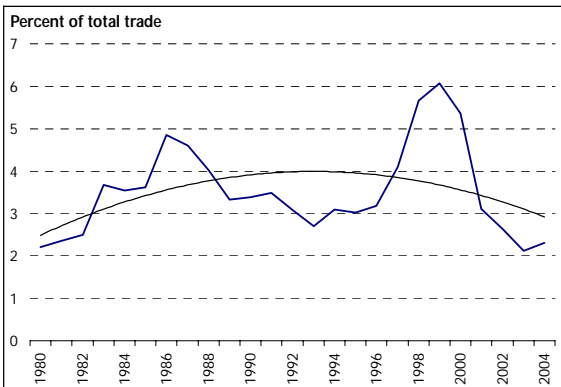
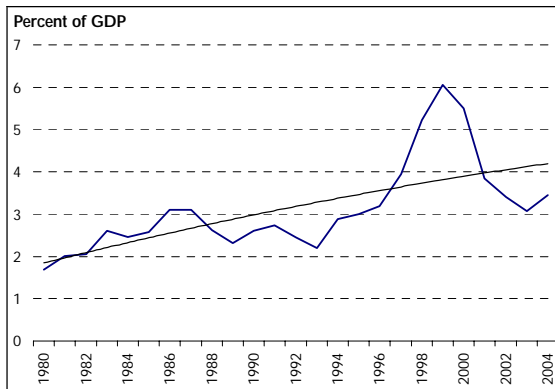
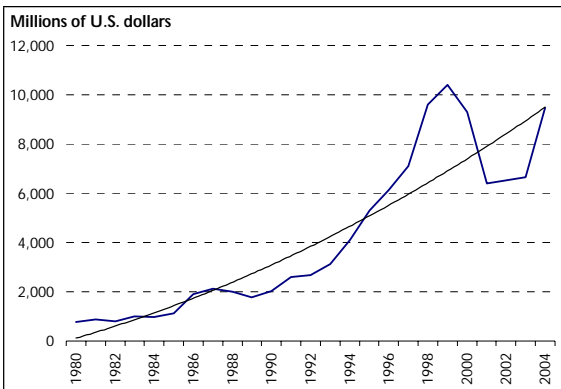
Sources: IMF, *International Financial Statistics*; and staff calculations.

¹ The main author of this box is Olaf Unteroberdoerster.

Box 4.1. (continued)

Emerging Asia: Volatility of Net Capital Flows by Different Scales¹

(Unweighted average of standard deviation of annual flows over previous 5 years)



Sources: IMF, *International Financial Statistics*; and staff calculations.

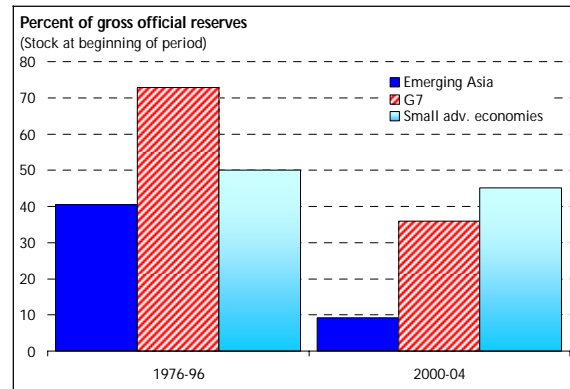
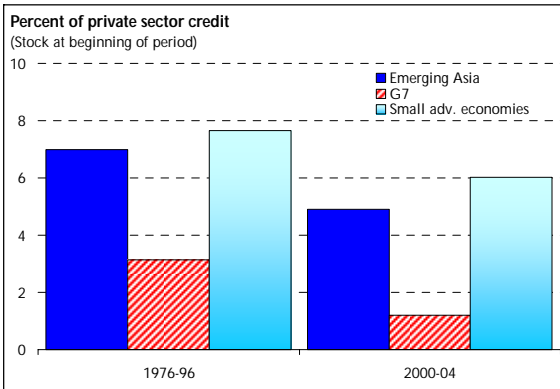
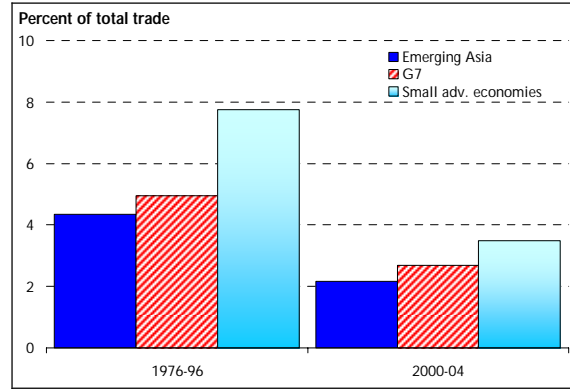
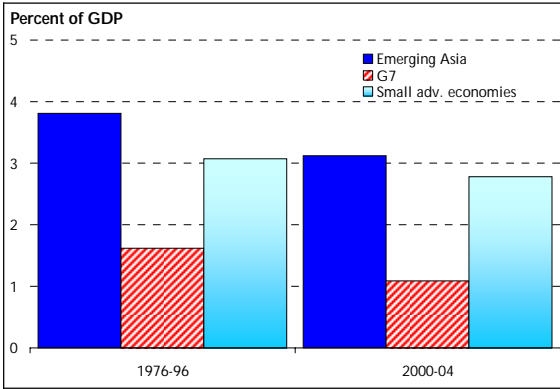
¹ Emerging Asia includes: China, Hong Kong SAR, India, Indonesia, Korea, Malaysia, Philippines, and Singapore.

Small advanced economies include: Australia, Austria, Belgium, Denmark, Finland, Ireland, Netherlands, New Zealand, Norway, Spain, Sweden, and Switzerland.

Box 4.1. (continued)

Emerging Asia and Advanced Economies: Volatility of Net Capital Flows by Different Scales¹

(Unweighted average of standard deviation of annual flows over indicated period)



Sources: IMF, *International Financial Statistics*; and staff calculations.

¹ Emerging Asia includes: China, Hong Kong SAR, India, Indonesia, Korea, Malaysia, Philippines, and Singapore.

Small advanced economies include: Australia, Austria, Belgium, Denmark, Finland, Ireland, Netherlands, New Zealand, Norway, Spain, Sweden, and Switzerland.

Looking at types of flows, volatility arises primarily from portfolio flows. The coefficient of variation for net portfolio flows has generally been higher than for net FDI and other flows (including bank debt), both across countries and over time. However, net other flows also show substantial volatility in some countries which, given their large size, could become problematic under conditions of financial stress. It is noteworthy that the coefficient of variation is higher for net FDI than for net portfolio flows for Hong Kong SAR and Singapore in recent years, and for Korea both before and after the Asian financial crisis. One explanation may lie in the bulkiness of FDI. In Singapore, the recent sharp increase of investments abroad as part of public sector diversification efforts may be another factor.

Coefficient of Variation by Type of Flows

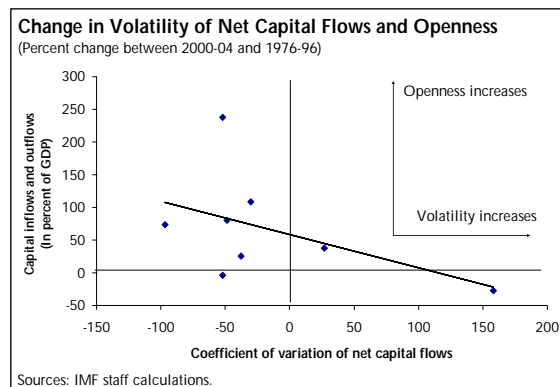
(Over indicated period)

	1976-96			2000-04		
	Net FDI	Net portfolio	Net other	Net FDI	Net portfolio	Net other
China	1.4	1.7	4.1	0.2	30.4	9.9
Hong Kong SAR	...	...	...	14.0	1.1	1.8
India	2.3	2.4	0.8	0.1	0.9	0.7
Indonesia	1.2	1.8	0.7	1.7	2.2	0.5
Korea	2.1	1.8	2.5	1.2	0.7	3.5
Malaysia	0.9	14.0	2.5	0.6	4.2	0.3
Philippines	1.1	3.3	0.9	0.8	5.6	0.7
Singapore	0.9	2.3	9.3	0.8	0.1	1.6
Thailand	1.0	1.6	1.2	0.6	6.0	0.6
Median	1.1	2.3	1.2	0.8	1.7	0.7
Average (unweighted)	1.3	3.9	2.5	2.5	2.6	1.2

Sources: IMF, *International Financial Statistics*; and staff calculations.

Box 4.1. (concluded)

Broad-based capital account liberalization may contribute to lower aggregate volatility. There may be a diversification effect that comes with broader-based capital account liberalization, as long as different types of capital flows are not highly correlated. The Asian experience suggests that the intrinsic volatility of net capital flows has tended to decline as the capital account has become more open. As mentioned above, in six out of eight countries the coefficient of variation of net capital flows has fallen below pre-Asian crisis levels. In five of these six countries the degree of capital account openness has increased as suggested by the ratio of gross capital flows in percent of GDP. However, capital account liberalization does have the potential to leave countries exposed during more extreme periods of financial turbulence. In this context, a gradual approach to capital account liberalization, and the appropriate sequencing in tandem with other reforms to strengthen market efficiency, have generally played a stabilizing role. Recent examples of a broadening of capital account liberalization include Korea, where restriction on FDI flows were lifted after the crisis; China, where a outflow restrictions have been gradually relaxed; and India where sector-specific controls on FDI have been gradually lifted.



Valuation of Asian Markets

Most Asian markets show historically moderate valuations. Even in cases where historical price-earnings (PE) ratios exceed averages for earlier in this decade, PE ratios are generally much lower than pre-Asia crisis highs. Dividend yields (dividend/price; a higher figure implies a more modest valuation) are similarly moderate, by and large. That said, a few markets (India, Sri Lanka) have valuations well above recent averages.

Price-Earnings Ratio ¹				
(Period average)				
	2006 end-July	2006 H1	2001-06	Pre-1997 high ²
India	20.4	21.4	15.9	31.9
Sri Lanka	19.6	20.6	12.5	14.0
Taiwan POC	15.8	18.9	29.7	33.0
Singapore	16.1	16.5	17.9	21.4
Philippines	15.5	16.3	18.9	28.0
Hong Kong SAR	16.9	15.4	16.9	17.1
Malaysia	15.8	15.1	17.7	30.9
China	15.4	14.0	15.2	20.2
Indonesia	13.9	13.8	12.6	24.7
Korea	10.9	12.0	11.9	31.4
Thailand	9.6	10.5	23.8	21.9
World	16.2	17.2	20.9	31.7 ³
EM Latin America	12.5	13.8	13.1	17.9 ³
EM Europe & Middle East	15.0	15.4	14.9	25.7 ³

Sources: Datastream; and IMF staff calculations.

¹ Based on MSCI country index.

² Highest annual average between 1990-97. Each economy can have different data starting point.

³ Historical high since 1995.

Dividend Yields¹

(Period average)				
	2006 end-July	2006 H1	2001-06	Pre-1997 high ²
India	1.3	1.2	1.7	1.0
Sri Lanka	1.9	1.6	3.3	1.0
Korea	1.8	1.7	1.9	1.3
Philippines	2.2	2.2	1.7	0.7
China	2.3	2.3	2.3	2.0
Singapore	2.8	2.5	2.2	1.2
Malaysia	2.8	2.8	2.3	1.0
Indonesia	3.0	2.9	3.4	1.5
Hong Kong SAR	2.9	3.1	3.2	2.9
Thailand	4.0	3.6	2.8	2.0
Taiwan POC	4.0	3.8	2.4	0.9
World	2.2	2.1	2.0	1.4 ³
EM Latin America	2.7	2.4	3.2	2.2 ³
EM Europe & Middle East	2.1	2.7	1.9	1.6 ³

Sources: Datastream; and IMF staff calculations.

¹ Based on MSCI country index.

² Lowest annual average between 1990-97. Each economy can have different data starting point.

³ Historical low since 1995.

The expected real dividend growth implied by current valuations also appears to be generally in line with medium-term GDP growth forecasts. Comparing expected real dividend growth extracted from dividend yields with GDP growth shows only a few instances where equity-market valuations imply levels of dividend growth that are out of line with medium-term WEO projections.

Implied Dividend Growth Rate, 2006¹

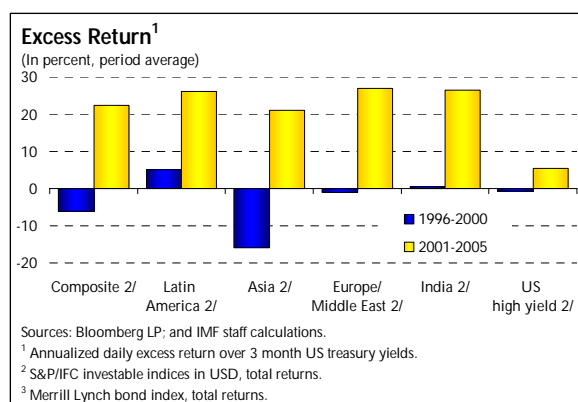
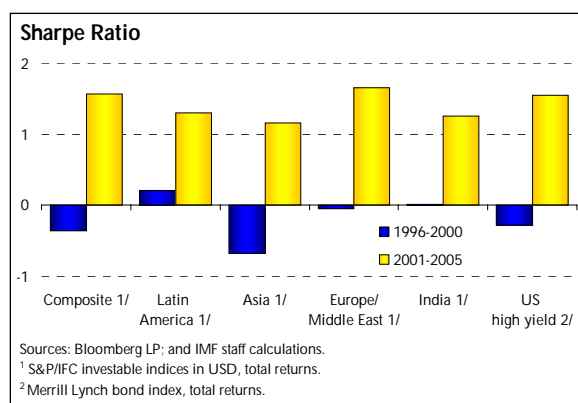
(In percent)

	Hong Kong SAR	India	Indonesia	Korea	Malaysia	Philippines	Singapore	Taiwan POC	Thailand
WEO projection	4.7	7.1	6.4	4.8	5.9	6.0	4.4	4.8	5.4
Implied dividend growth	5.5	7.5	-0.3	7.2	3.4	4.9	5.5	2.6	1.8

Sources: Bloomberg LP; and IMF staff calculations.

¹ Calculations are based on average data from Jan. to Jun. in 2006 unless otherwise specified. Discount factor is domestic long-term rate deflated by CPI, plus a 6 percent risk premium. Implied dividend growth rates are calculated following the Gordon valuation model: $P_1 = D_1 / (1 + g) / (r_1 + p_1 - g)$; where P_1 is equity price; D_1 is dividend; r_1 is the real interest rate; g_1 is the real dividend growth rate; and p_1 is the risk premium.

Ex-post risk-adjusted returns in EM equity investments also do not suggest that markets are overvalued. Based on the Sharpe ratio, which measures excess returns per unit of risk (volatility, as measured by the standard deviation), Asian risk-adjusted returns have been basically in line with those in emerging markets in other regions, as well as U.S. high-yield bond returns. This is consistent with a comparison of excess returns (over a risk-free benchmark rate), which have been broadly similar to those in non-Asian emerging markets. As one important caveat, this does not provide definitive evidence, on its own, that Asian markets are not overvalued—it cannot be ruled out that many emerging markets are out of line with fundamentals. But along with the aforementioned valuation measures, it does provide some evidence that recent performance has not been grossly out of line with fundamentals.



To sum up, equity markets do not generally show signs of overheating. Following the repricing in markets earlier this year, equity valuations seem to price in a baseline for growth broadly consistent with the WEO baseline.

However, in the event that growth came in lower than this scenario—say, in the event of a global or regional slowdown—valuations would probably adjust. Accordingly, exploration of the relationship between equity prices and economic activity is useful to provide some forward-looking perspective on the development of equity markets, and to shed light on the attendant possible policy implications.

Equity Prices and Economic Activity

There are a number of relationships between equity prices and the real economy.

Equity prices are leading indicators of future changes in economic activity, because stock prices reflect the present discounted value of expected future dividends (and thus expected future growth). Beyond this passive channel, however, there are five main channels whereby equity prices may affect real activity (Morck, Schleifer, and Vishny, 1990)

- *Wealth effects:* Under the life cycle/permanent income hypothesis, higher asset prices raise individuals' lifetime wealth, leading to higher spending (potentially most significant in countries where stock ownership is more prevalent among households).
- *The financing or cost of capital channel:* Rising stock prices lower the cost of new capital relative to existing capital, spurring investment.
- *The financial accelerator or credit channel:* When credit markets are imperfect, asset price fluctuations can impact borrowing capacity by affecting borrowers' wealth and the value of assets pledged as collateral (Kiyotaki and Moore, 1997 and Bernanke, Gertler and Gilchrist, 1999). These dynamics affect the finance premium on loans, and thus influence investment and consumption. If borrowers are highly leveraged, changes in net worth arising from moves in asset prices can disproportionately impact real variables, working to propagate and amplify macroeconomic shocks.
- *Balance sheet effects and financial fragility:* Asset-price swings affect financial institutions' net

worth by affecting the valuation of asset portfolios, as well as the health of borrowers as noted above (thus potentially boosting non-performing loans). Severe asset-price crashes can cause intermediaries to cut back credit, potentially dampening aggregate demand. Large shocks can cause feedback into corporate and household income, further weakening intermediaries and prompting further asset-price declines, especially when intermediaries are highly leveraged.

- *Confidence effects.* To the extent that equity prices signal faster growth of future real incomes, they can also influence consumption. Likewise, stock market changes may provide entrepreneurs with information about market expectations of future demand, thus influencing investment decisions.

Empirical research suggests that the financial wealth channel could be significant in Asia. In Japan and Australia—both of which have large stock markets and retail investor bases—the marginal propensity to consume from wealth is estimated at 2–3 percent and to 7.4–14.5 percent respectively (Slacalek, 2006). However, Slacalek's estimates for Australia appear to be large particularly relative to those derived from other studies. For example Dvornak and Kohler (2003) finds that the long run wealth effect, including the housing and stock market effects, is 4 percent. Kuralbayeva and N'Diaye (2006) find that in Malaysia, Hong Kong SAR, Indonesia, and Korea, a 10 percent rise in real stock prices increases private consumption by about 0.2–0.3 percent, similar in magnitude to estimates for industrialized countries (see IMF 2000, and Slacalek, 2006). As one caveat, using stock price indices to proxy household wealth may overstate wealth effects, because stock prices are leading indicators and because retail investment in some markets is low (Slacalek, 2006).

The 1997 Asia crisis illustrates how financial accelerator types of effects can contribute to financial and economic volatility, especially through real estate. Among the mechanisms surrounding the crisis, large capital inflows allowed financial intuitions to intermediate a large supply of funds to their credit constrained customers. This in

turn drove up stock and property prices, raising the net worth of borrowers and easing their borrowing constraints and allowing them to become highly leveraged. In Thailand, for example, borrowers could fund up to 70–80 percent of the value of collateral, making borrowers vulnerable to asset-price declines (Edison and Miller, 2000).

This analysis raises the question: how large are equity holdings in Asia? The answer can provide a perspective on the size of potential balance sheet and accelerator effects in Asia. That said, a few caveats are in order before proceeding; data are fragmentary, and indirect effects on the real economy through confidence and a worsening of corporate financing conditions and financial stability can also be important.

Available data suggests that households' direct holdings of equities remain small by international standards, but are rising with efforts to promote private institutional saving. Households' aggregate net worth range from lows of 10 percent of GDP in some low-income countries to in excess of 300 percent of GDP in higher income countries. As a rule, only a small portion of this wealth is directly held in stocks, as households generally prefer relatively safe instruments such as bank deposits and government securities.²⁷ In India, almost three quarters of household financial wealth is held in a combination of cash, bank deposits and government securities (available data omit potentially important holdings of nonfinancial wealth, such as gold); in Japan the ratio is about 60 percent and in Korea about one-third. In contrast, households' direct holdings of shares generally account for less than 10 percent of household wealth. Taking indirect holdings via institutional investors into account, however, raises household exposure to equity to one-fifth to just over one-half of total household net worth, a figure that is sizeable in relation to GDP in several countries.

While still moderate, rising equity holdings are making household wealth more sensitive to market movements. Direct equity holdings are over twice as volatile as holdings of deposits,

²⁷ Households are also exposed to wealth effects from real estate price changes.

Non-Public Sector Investments in Equity Markets						
	China ¹	India	Japan	Korea ²	Singapore ³	Taiwan POC
Net holdings in percent of GDP, 2005 ⁴						
Total non-public sector investments in securities markets	56.3	4.5	84.9	-9.4	135.8	64.6
<i>Households</i>	56.3	3.4	113.3	7.2	130.2	188.3
<i>(in percent of total household assets)</i>	18.2	35.5	37.2	55.0	23.6	...
Mutual Funds	...	0.1	...	...	...	13.8
Shares	...	0.1	34.1	7.2	33.5	123.5
Derivatives	0.0	...	...	...
Insurance	...	1.6	46.1	{ 30.0	35.2	45.2
Pensions	...	1.6	31.6	...	61.6	5.8
External Portfolio investment	...	0.0	1.5	...	...	0.0
<i>Financial Institutions</i>	...	1.1	5.9	9.6	42.4	-17.9
Mutual Funds
Shares	...	1.1	5.9	9.6	13.5	-17.9
Derivatives
Insurance	25.5	{ 0.5
Pensions
External Portfolio investment	3.5	...

Sources: CEIC Data Company Ltd; CMIE, Business Beacon; China Human Development Report; Singapore Department of Statistics; and Monetary Authority Singapore.

¹ For China, total wealth invested in all types of financial assets in 2002.

² In Korea, foreign investors hold some 11.3 percent of GDP in Korean stocks. If these and the holdings of the government sector is included, total stock market assets in the economy is about 6 percent of GDP.

³ For Singapore, household and corporates holdings reported by the departments includes securities in addition to shares. To remove the securities component, the table assumes that the corporate sector share issue is equally divided between the financial and household sectors.

⁴ 2004 for Singapore, Taiwan POC and Thailand. For Thailand flows into financial assets in 2004.

reflecting swings in market valuation.²⁸ That said, indirect holdings via institutional investors are less volatile than direct stock holdings perhaps reflecting restrictions on investments by institutional investors such as pension funds.

Household Balance Sheet Volatility Measures				
	India	Japan	Korea	Singapore
		(2000-05)		
Volatility ¹				
Household Wealth	0.20	0.04	0.07	0.06
Deposits	0.31	0.04	0.06	0.03
Securities (non-share)	0.39	0.15	0.05	...
Share holdings	0.53	0.23	0.02	0.20
Mutual Funds	0.47	...	...	...
Insurance	0.29	0.02	0.04	0.25
Pensions	0.06	0.10	...	0.09

Sources: CEIC Data Company Ltd; Business Beacon; Singapore Department of Statistics; and IMF staff estimates.

¹ The standard deviation divided by the mean for the period.

The financial sector's direct exposure to equity markets also appears relatively limited. Except in Taiwan Province of China, where domestic financial institutions are net issuers, direct holdings of shares are relatively small, generally less than 10 percent of GDP and under 1 percent of total net assets. As

such, financial institutions do not appear to be unduly vulnerable to direct losses arising from downward movements in the value of their stock holdings.

In sum, an equity market correction, in and of itself, would seem unlikely to have a major macroeconomic impact in Asia. Outside a few markets, valuations do not seem overly lofty. Moreover, available data suggest that households' and financial institutions' direct exposures to equity markets are generally modest. In addition, while equity markets play a growing role in corporate finance, Asian financial systems remain bank-dominated. That said, an equity market correction could be significant if it were triggered by broader macroeconomic or financial stress—say, slowing global growth, or widespread financial fragilities—and in turn would exacerbate the impact of such stress on Asian countries. In addition, indirect exposures through institutional investors are non-negligible and growing in some countries, and over time could increase households' exposure to asset-price cycles.

²⁸ Because these calculations use aggregate data, volatility faced by individual households could well be higher.

Policy Implications

The growth and development of well-functioning equity markets conveys long-run economic benefits to Asia. It provides an efficient savings vehicle for retail and institutional investors, helping to diversify their financial holdings. Moreover, the increased diversity of funding sources for corporations can make Asian financial systems more robust to shocks. Davis (2001) finds that when active securities markets supplement the banking system, corporate financing is more stable during both economic downturns as well as banking and securities market crises. Moreover, empirical studies find that well-developed stock markets can support long-run economic growth.

That said, the aim of reaping the maximum benefit from the growth of equity markets, while managing the risks, has both microeconomic and macroeconomic policy implications. On the microeconomic side, the growing role of equity markets puts a premium on well-functioning market trading, clearing and settlement systems, transparency, and corporate governance. Given that the technical infrastructure seems well developed, a main challenge going forward may be expanding over time the capacity to handle a high volume of transactions (Ghosh, 2006). (See also Box 4.2, which discusses the role of institutions and markets in fostering financial integration.)

Low liquidity in some markets may reflect issues of transparency and corporate governance. These issues generate information asymmetries and the risk of adverse selection (when trading against better-informed investors), and accordingly foster high bid-asked spreads and limited trading activity. While *de jure* transparency and corporate governance have improved over time, investor perceptions suggest gaps in the application of existing frameworks.

The growth of equity markets also has potential implications for prudential regulation and supervision, which exist at the boundary of micro- and macro-financial stability. Appropriate regulation and supervision of institutions active in equity markets is essential for sound functioning of equity markets. Equally important is a firm understanding and strong management of equity exposures among financial institutions, so that

equity-market volatility does not engender broader financial spillovers (see *Korea's Financial Stability Report* (October 2005). For example, in financial systems where banks are active in stock markets, stress testing of equity market exposures—as done in the Monetary Authority of Singapore's *Financial Stability Review* (December 2005)—is important to limit the risk that an equity-market correction could create fragility in the banking system, potentially causing banks to rein in lending and giving rise to a credit crunch.

Another, more controversial macroeconomic policy question is whether—and if so, how—monetary policy should respond to asset-price fluctuations. For economies in emerging Asia, where the direct macroeconomic impact of stock prices may be limited, this could be largely a question for the future. Nevertheless, it is well agreed that equity prices are an important input to monetary policy decision-making, because they reflect the market's assessment of future economic prospects. It is also relatively uncontroversial that current and past equity-price developments may appropriately be factored into monetary policy, because such developments influence consumption and business investment through their effects on household wealth and the cost of capital.

Still actively debated is whether monetary policy should respond preemptively to the emergence of imbalances in equity and other financial markets. One school of thought contends that, especially in an environment of low inflationary pressures, accommodative monetary policy settings can feed financial imbalances (White 2006). The long-run buildup and sudden unwinding of such imbalances can seriously impair financial and macroeconomic stability. In addition, moral hazard could arise if central banks' mandates for macroeconomic (and sometimes financial) stability oblige them to ease in response to busts (Schinasi 2006 discusses the role of central banks in promoting financial stability). By this view, central banks have a motive—if not an obligation—to respond to such imbalances.

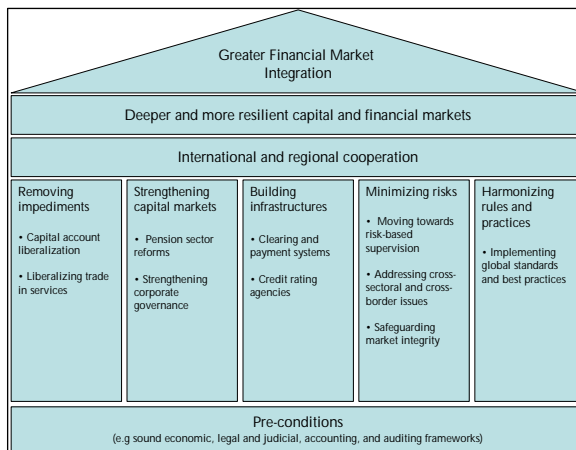
Box 4.2. Fostering Financial Integration and Economic Stability^{1,2}

What are the market infrastructure and regulatory frameworks needed to reap the benefits—and contain the risks—of financial integration in Asia? What are the next steps for institutional reform and development?

Strengthening Capital Markets

The integration of Asian financial markets with the global financial system is well advanced. By contrast, intra-regional financial investments are surprisingly low. Asian policymakers have recognized the importance of strengthening capital markets and many initiatives have been launched at the national and regional level to deepen domestic markets and establish pan-Asian markets. Areas for further reforms include:

- Developing Institutional Investors.* Reforms aimed at strengthening the investor base by increasing the role of institutional investors—asset managers, insurance companies, and pension funds—can have a profound impact on the development of regional capital markets. Pension reforms are a key as historically pension funds in Asia have been state-sponsored and defined benefit.
- Strengthening Corporate Governance.* The prevalence of controlling holdings of companies by families or other corporations continues to place importance on the protection of minority shareholders. There is also a need for cost effective legal channels for shareholders seeking redress to ensure that rights can be practically enforced. Takeover codes are an important element to ensure a fair market for corporate control and examples such as the Hong Kong SAR and Singapore Codes on Takeovers and Mergers provide useful models. Finally, the role of the Board of Directors in protecting shareholder rights is fundamental and more training and guidance for this role is also needed.
- Improving Transparency.* Increased transparency and accountability through moving to a common financial reporting framework—the International Financial Reporting Standards (IFRS)—is another key reform. To ensure the consistent application of IFRS, external audit of financial statements should preferably be based on the International Standards on Auditing.



Building Market Infrastructures

In many Asian countries, market infrastructures have been developed nationally but, for the most part, regional systems and linkages are rudimentary. The remaining agenda includes:

- Enhancing Market Depth and Liquidity.* Further steps to improve transparency, encourage diverse participants, and develop derivative markets could enhance depth and liquidity in capital markets. For instance, although primary issuance markets for bonds have been developing rapidly since 1997, there is poor liquidity in most secondary markets.
- Building Regional Clearing and Settlement Systems.* Domestic clearing and settlement processes are well-developed in many Asian markets, so attention could focus on establishing regional linkages.
- Establishing Regional Credit Rating and Benchmarks.* The development of a regional risk rating agency should also be facilitated, as a means of ensuring standardized ratings and more complete coverage.

¹ The main author of this box is Leslie Eng Sipp Teo.

² Based on a background paper prepared by ICM and MFD staff for the 2nd IMF-MAS High Level Seminar on Asian Financial Integration held in Singapore on May 25, 2006.

Box 4.2. (concluded)

Harmonizing Rules and Practices

An important agenda is to address differences in laws, regulations, and tax treatments that prevent investors—from both within and outside Asia—from building pan-regional portfolios. This is a difficult task, requiring close collaboration among countries and assistance from international institutions and agencies, but it has the potential to produce large payoffs. This involves:

- *Strengthening Implementation of Global Standards and Best Practices.* Within regulatory and supervisory frameworks, nonbank financial institutions and capital markets deserve emphasis. These are key if institutional investors—insurance companies and pension funds—and capital markets are to become more integrated. In addition, weaknesses in the prudential and supervisory framework for banking still need to be addressed.
- *Reviewing Taxes on Financial Products and Services Across the Region.* Consideration could be given to the benefits of more harmonization of taxes on capital market transactions. Such taxes may come in the form of transaction taxes and stamp duties; taxes on dividends and capital gains; and withholding tax.

Removing Impediments

The removal of capital and exchange controls could increase cross-border flows and competition. Rules in some countries, including limits on foreign ownership and associated rights, still inhibit cross-border flows. In many countries, existing prudential requirements bias investment toward domestic assets. Reforms could include:

- *Further Liberalizing Capital Flows.* While capital accounts in many Asian countries have been gradually liberalized, further steps could be taken to relax restrictions on cross-border investments while maintaining appropriate prudential safeguards.
- *Liberalizing Financial Services and Prudential Regulation.* Further liberalizing the financial services sector would be beneficial as controls and limits remain on ownership shares, voting rights, licenses, and branch networks. Another reform is to reexamine prudential limits on pension funds' and life insurers' investments which may have inadvertently biased investment domestically, and to government securities.

Minimizing Risks

Greater financial integration brings about new risks that have to be anticipated and managed, especially as institutions and individual invest in new markets and instruments. Aside from the risks arising from potential currency mismatches and country exposures, risks also arise for institutions that are increasingly active in a variety of financial sectors and regions. At a minimum, managing the risks associated with greater integration involves:

- *Moving Towards Risk-Based Supervision.* Risk-based supervision is needed to effectively manage risks from more sophisticated institutions and products. This is particularly true in banking, where many Asian countries intend to adopt the Basel II framework. Effective implementation will require capacity building both for supervisors and domestic banks, as well as enhanced cross-border cooperation to avoid regulatory arbitrage or unexpected risk migration.
- *Addressing Cross-sectoral and Cross-border Issues.* Consolidated supervision—and close cooperation among sector supervisors—is needed to deal with risks from diversified financial groups. With deeper cross-border linkages, improved cross-border supervision and cooperation is also increasingly important.

The more conventional school holds that monetary policy is too blunt an instrument to restrain financial imbalances—prudential policy is a better tool (Bernanke, 2002). Even trying to do so could inflict major economic damage. Moreover, financial bubbles are too difficult to identify, even in hindsight. Accordingly, mistakenly tightening in response to a fundamentals-driven asset price boom (reflecting, say, productivity-enhancing technological innovation) could choke off potential growth. These considerations seem particularly relevant for Asian emerging markets countries, where structural changes complicate the relationship between monetary policy and asset prices, as well as between asset prices and economic activity. This would imply a reliance on prudential measures as a first line of defense against the macroeconomic effects of financial imbalances. While these issues will no doubt remain actively debated, the continued growth of financial markets will over time make them of increasing importance to policymakers.

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V. Private Consumption in Emerging Asia

Raising private consumption in emerging Asia is critical both for ensuring sustainable growth in the region and for contributing to an orderly resolution of global imbalances. Consumption as a share of GDP in emerging Asia is low by international standards and has been declining for some time. Demographics has played an important role in this regard, and the prospective aging of populations across much of the region will likely raise consumption significantly. But government policies can also play a supporting role. In particular, adequate provision of health care, education and social safety nets can reduce recourse to precautionary savings, while financial sector development can improve the ability of households to smooth consumption and to share in rising corporate profits.²⁹

Introduction

As current account imbalances around the world have widened, attention has focused on the role of Asia as one of the sources of these imbalances. Some have argued that the emergence of global imbalances is linked to developments in emerging Asia, where saving rose but investment declined in the wake of the Asian crisis (See Box 5.1 for one take on the decline in investment). According to this view, the swing in Asia's saving-investment balance is a major contributor to the global saving "glut" (Bernanke, 2005), which has allowed the United States to run record current account deficits. Within emerging Asia, attention has focused largely on China, where national saving has risen from 35 percent of GDP in 1980 to 50 percent in 2004, due in large part to an increase in private saving. While, in part, this rise in private saving is seen as integral to China's economic development, needed to finance domestic capital formation, the rapid rise in private saving in recent years has raised concern among policymakers that private consumption in China needs to be strengthened, not only to address global imbalances but also to rebalance the economy towards more sustainable sources of growth (see the May 2006 REO). Meanwhile, there has been relatively little focus on private consumption trends in the rest of emerging Asia.

This chapter examines the determinants of private consumption in emerging Asia. The severity of the Asian crisis has given rise to the view that precautionary saving may have risen in recent years, given a perception of greater uncertainty. The effects of greater economic uncertainty, according to this view, are compounded by structural factors, such as limited social safety nets, underdeveloped financial markets that prevent households from smoothing the effects of adverse shocks on consumption, and population aging. This chapter attempts to explain why consumption has grown less rapidly than GDP in Asia. It presents a regression model that links private consumption in countries around the world to economic fundamentals, including economic growth, youth- and old-age dependency ratios, measures of financial development, and public consumption. It then runs two experiments. First, it compares actual consumption in emerging Asia to its fitted value, in order to assess whether private consumption in the region is consistent with fundamentals, based on evidence from a broader set of countries. Second, it estimates the model for a sample period that ends in 1996 and compares actual consumption in recent years to the out-of-sample forecast from this regression, to assess whether the link between private consumption and fundamentals has changed in the wake of the Asian crisis, an indication that precautionary saving has risen in recent years.

²⁹ The main authors of this chapter are Robin Brooks and Enric Fernandez.

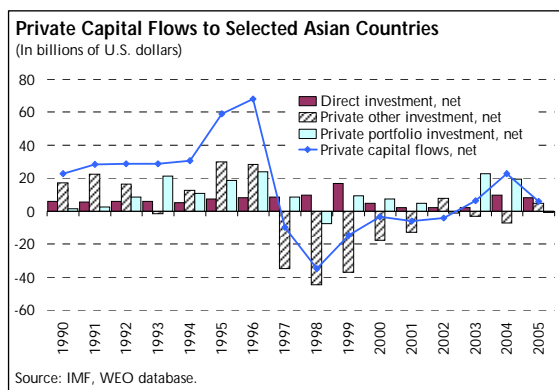
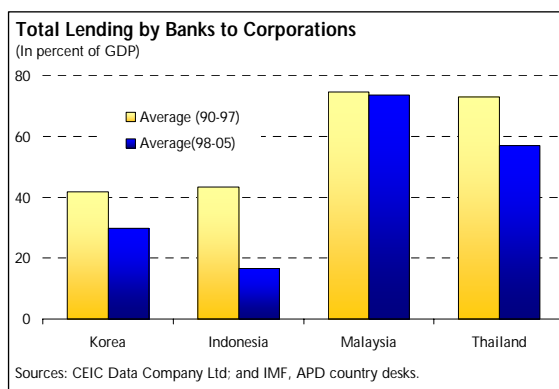
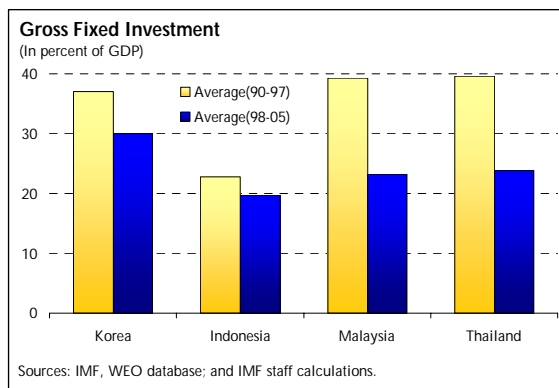
Box 5.1. Credit, Investment and Growth in Post-Crisis Asia: A Tale of Two Sectors¹

The protracted investment decline in post-crisis Asia, in contrast to a more rapid recovery of GDP, has remained a puzzle.² This Box argues that an important source of emerging Asia's post-crisis investment decline was that producers of nontradable (N) goods were starved of both domestic and foreign financing. As a result, Asia's rapid recovery has been driven by the growth of the tradable (T) sector, which has been much less constrained by the credit shortfall. However, sustainable economic growth, as well as a successful unwinding of global imbalances, favors more balanced development, suggesting a need for policies to overcome impediments to investment in the N sector.

In the aftermath of the Asian crisis, domestic bank credit and investment fell more sharply than GDP and has not yet fully recovered. Average investment in Korea, Indonesia, Malaysia and Thailand has declined—albeit from very high levels—by an average of 10.5 percentage points of GDP from 1990-1997 to 1998-2005. Over the same period, bank credit to corporations in the four countries decreased from 58.2 percent of GDP to 42.4 percent of GDP.

The post-crisis decline in international bank flows, largely channeled to the local economy through domestic banks, further reduced available bank funds. The breakdown of private capital flows for the four crisis countries (Korea, Indonesia, Malaysia and Thailand) shows that the precipitous decline of net private capital flows reflected a sharp turn around in bank lending flows,³ while portfolio and FDI flows to the region remained relatively stable.

The prolonged post-crisis credit slump and the slowing of international bank flows affected the N sector more seriously than the T sector. There are asymmetric financing opportunities for T and N firms. The T sector, typically large and able to pledge export receivables as collateral, has greater access to international capital markets, and so is not limited to domestic bank lending. The N sector, heavily populated by small and medium sized enterprises, relies predominantly on domestic and external bank credit for operations.⁴



¹ The main author of this box is Yong Sarah Zhou.

² As discussed in the May 2006 REO, with a waning of past over-investment and significant progress in corporate restructuring, neither of these factors can fully explain the still low level of investment. However, some tentative evidence suggests that corporations might be holding back investment in response to higher volatility of exports and output.

³ Proxied by net private other investment flows where bank lending flows dominate.

⁴ The lion's share of FDI goes to the T sector or to financial institutions. Because the non-financial N sector receives a small share of FDI, bank flows remain the main source of external finance for N sector firms.

Box 5.1. (concluded)

What's more, in the aftermath of the Asia crisis, with the implementation of stricter prudential regulations and stepped up supervision, banks became more cautious about lending to N firms, which often have relatively weak balance sheets.⁵ These N firms were hit especially hard during the crisis and benefited little from subsequent exchange rate depreciation due to their domestic focus. In addition, small and medium N firms have made slower progress in restructuring than larger export-oriented corporates, which worsened their profitability. As a result, loans to the N sector declined sharply as a percentage of total loans.

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Lack of financing appears to have constrained N sector investment and output.⁶ In the aftermath of the crisis, N sector output also dropped more sharply than that of the T sector, experienced a sluggish recovery, and still lags the tradable sector's development. In fact, post-crisis growth has been driven mainly by exports. In the wake of the crisis, the tradable sector experienced an acceleration of growth after a mild recession, thanks to real depreciation and the tradable sector's use of cheaper non-tradable sector resources. The growth path of exports has closely tracked the growth of overall GDP in the region.

A recovery in investment in Asia would be helped by steps to ensure adequate financing for small N firms. Such firms are often important sources of employment. Moreover, because the development of the T sector depends on N sector inputs, the observed decline in N sector output may generate bottlenecks that eventually hinder T sector

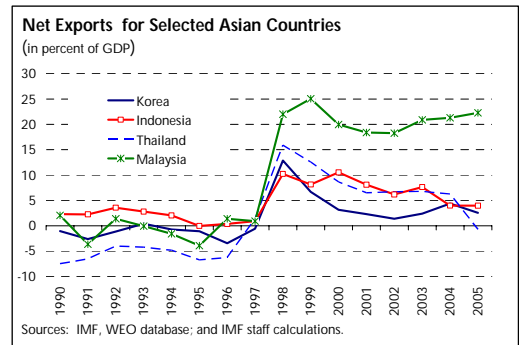
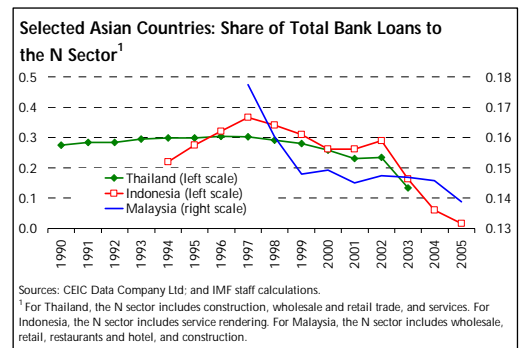
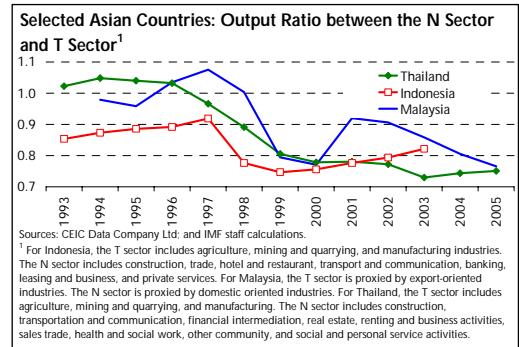
growth. The weak recovery in the N sector has also contributed to global imbalances. For Asian countries playing their role in adjusting the global imbalance, N sector investment, will likely need to increase. While the right approach will depend on country-specific circumstances, several types of policy may help:

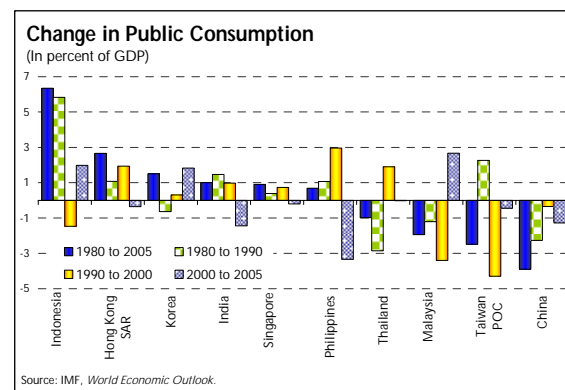
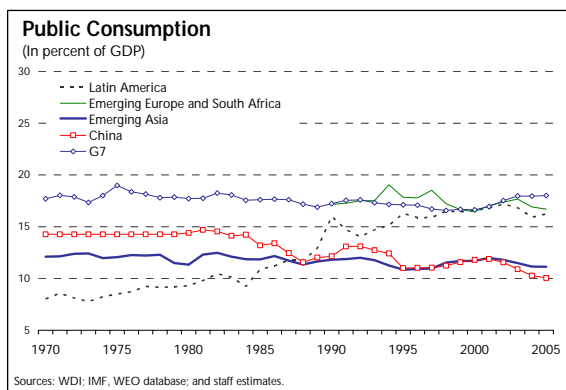
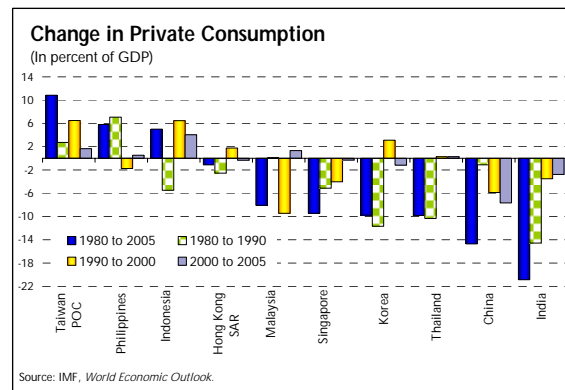
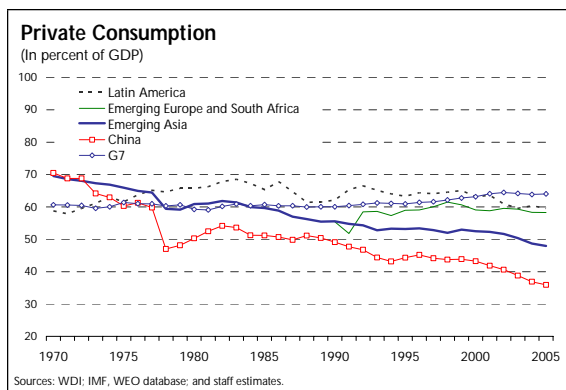
- **Expanding the potential sources of N firms' financing.** Asia needs to develop and deepen capital markets, especially bond markets, so that N firms can have well-diversified funding channels to avoid excessive reliance on bank credit.
- **Bank lending to small N firms can also be encouraged by eliminating roadblocks to such lending.** For example, the establishment of credit bureaus or other forms of information exchange would allow banks to lend to N firms based on individualized credit analysis, rather than simply avoiding such lending.⁷

⁵ Actually, banks have focused more on household credit and have shifted away from corporate lending in many Asian countries since 1997.

⁶ The causality between lower credit and investment is not obvious, and may well go in both directions. In particular, structural reform in many corporates following the Asia crisis likely limited demand for credit. However, with corporate restructuring largely complete, it is more likely that credit supply constrains N firms' investment in the more recent period.

⁷ In contrast, in Korea, lending to SMEs was increased following the Asia crisis by government provision of credit guarantees to existing SMEs. However, such guarantees acted as a barrier to exit and entry, and are believed to have contributed to a slowdown of restructuring and low productivity growth in SMEs.





Private Consumption Trends in Emerging Asia

The consumption-to-GDP ratio in emerging Asia has fallen since the 1980s, in contrast with other emerging market regions. This decline is driven in large part by private consumption, though public consumption has also fallen. In part, this long-term trend reflects the rapid pace of economic development in the region, as countries mobilized domestic saving in order to raise capital formation. What has surprised policymakers and analysts is that the consumption-to-GDP ratio has continued to fall in recent years, even as standards of living in some countries have approached those in industrialized countries.

Within emerging Asia, the recent decline in consumption relative to GDP is driven by China. Since the 1980s, the decline in private consumption relative to GDP has gathered pace in China, while it has slowed in Hong Kong SAR, Korea, Malaysia, Singapore and Thailand, perhaps reflecting the fact that economic development in some of these countries took off earlier. In India, the private consumption-to-GDP ratio has fallen steadily, though the pace of this decline has slowed, while in Indonesia, the Philippines and Taiwan Province of China private consumption has increased relative to GDP. Meanwhile, there is less of a regional pattern in public consumption, and China stands out in the region as the only country with a continuous decline in the public consumption-to-GDP ratio.

Though private consumption has fallen relative to GDP, it should be emphasized that real consumption growth is high by international standards. Since 1970, real private consumption growth in emerging Asia excluding China (EAXC) has averaged 5.7 percent, compared to 4.8 percent across industrial and emerging markets. Private consumption growth in

EAXC has however not kept pace with real GDP growth, which has averaged 6.1 percent compared with 3.9 percent across developed and emerging markets.

Determinants of Private Consumption in Emerging Asia

In the wake of the Asian crisis, popular attention has focused on precautionary saving as a possible explanation for the declining importance of private consumption relative to GDP. However, in explaining the evolution of private consumption over time, a number of factors need to be taken into account:

- **Economic development:** part of the longer term decline in consumption relative to GDP in emerging Asia could reflect a catch up with the industrialized world, as countries mobilized resources to boost capital formation. Indeed, the fact that the fall in private consumption has slowed in some wealthier countries (Hong Kong SAR, Korea, Malaysia, Singapore and Thailand), while it has accelerated in China, suggests that economic development plays at least some role in explaining private consumption patterns in emerging Asia.
- **Disposable income:** where household survey data is available (China, the Philippines, and Thailand), there is evidence that a decline in household disposable income relative to GDP explains much of the decline in the private consumption-to-GDP ratio. For example, in Thailand private consumption declined from 66 percent of GDP in 1980 to 56 percent of GDP in 1990. Over the same period, disposable income fell from 79 percent of GDP to 69 percent of GDP. Since 1990, however, both ratios have been quite stable. Similar trends are apparent in China. In the Philippines, by contrast, disposable income has risen relative to GDP, likely reflecting growing remittances. The fall in disposable income relative to GDP in much of the region reflects primarily falling wages (as a share of GDP), driven by a slowdown in job creation as the capital intensity of production has risen.

In addition, household ownership rates of equities are low by international standards, which has tended to limit positive wealth spillovers into consumption from rising corporate profits.

- **Social safety nets:** despite the fall in the ratio of disposable income to GDP, this ratio measured 67 percent in emerging Asia in 2004, 5 percentage points of GDP above that in industrial countries, and therefore does not fully explain lower private consumption-to-GDP ratios. One widely held view is that the relative lack of social safety nets has interacted with the perception of greater economic uncertainty in the wake of the Asian crisis, such as the loss of lifetime job security, to push up precautionary saving. In the absence of cross-country data on social safety nets, we use total public consumption and government spending on health and education as proxies to examine this hypothesis. Public consumption averaged 11 percent of GDP in emerging Asia in 2004, compared with 18 percent in industrial countries, while public spending on health and education was only 6 percent on average in emerging Asia, while it was 15 percent in industrial countries. Factoring in these low levels of expenditure, the difference in “adjusted” private consumption-to-GDP ratios between industrial countries and emerging Asia is even more striking, as households in industrial countries consume publicly provided healthcare and education not captured in national accounts-based measures of personal consumption. Moreover, the differences in spending point to a relative lack of social safety nets in emerging Asia and are large enough that a rise in precautionary saving could have resulted from perceived greater uncertainty in the wake of the Asian crisis.

Selected Countries: Consumption, 2004

(In percent of GDP, unless otherwise indicated)

	Personal disposable income	Taxes on personal income ¹	Personal consumption/ disposable income	Personal consumption	Public Consumption	Labor Income	Government consumption on health and education ²	Adjusted consumption ³
United States	74	9	95	70	16	57	22	92
United Kingdom	66	10	98	65	21	56	13	78
Australia	58	12	103	60	18	49	15	75
Canada	58	12	96	56	19	50	16	72
Ireland	49	...	91	44	14	40	12	56
France	62	8	90	56	24	52	16	72
Germany	66	9	88	57	19	51	16	74
Italy	67	...	90	60	20	42	14	74
Japan	59	8	96	57	18	51	12	69
China	60	1	69	41	10	56	3	44
India	84	2	76	67	11	...	...	...
Korea	54	3	95	51	13	44	14	65
Singapore	52	2	82	43	11	...	...	...
Taiwan POC	73	3	77	60	14	47	...	...
Thailand	65	2	87	57	10	30	6	63
Philippines	78	3	89	69	10	34	5	74
Hong Kong SAR	...	...	...	...	10	...	...	...
Malaysia	...	...	...	...	13	...	10	...
Indonesia	...	...	...	...	8	...	2	...

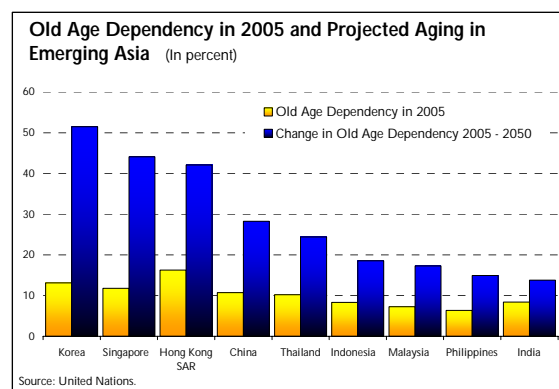
Sources: OECD; CEIC Data Company Ltd; IMF country desks.

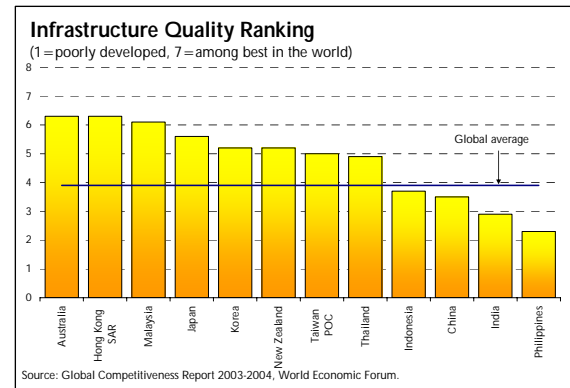
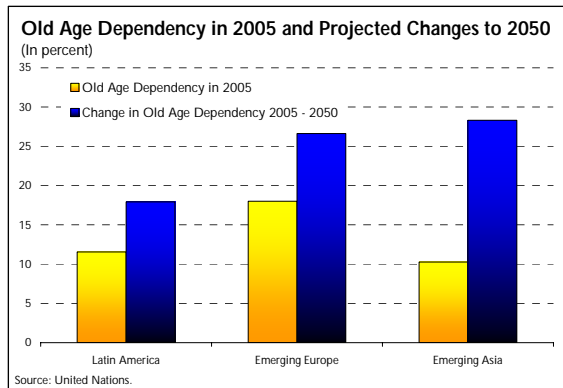
¹ 2003 figures.

² 2001 figures.

³ Personal consumption and government consumption on health and education.

- Demographics:** emerging Asia as a whole is relatively young, but is projected to age more rapidly than other emerging market regions. Some of the decline in consumption-to-GDP ratios may, therefore, be related to life cycle factors. The prospect of rapid population aging in the decades ahead may have held back consumption growth, as households increased saving rates in preparation for retirement. If this factor turns out to be important, it can be expected to boost consumption-to-GDP ratios in the decades ahead, as more and more workers retire and consume out of savings.





- Financial markets:** The perception of greater economic uncertainty in the wake of recent shocks may have interacted with a limited ability of households to borrow to smooth consumption to raise precautionary saving. Kuralbayeva and N'Diaye (forthcoming) find evidence of significant liquidity constraints in Indonesia, Korea, the Philippines, Taiwan Province of China, and Singapore.³⁰ At the same time, it is also true that indicators of financial depth in emerging Asia compare favorably with other emerging market regions. For example, credit to the private sector has averaged 64 percent of GDP in EAXC since the 1970s, relative to 59 percent across advanced and emerging markets. It is possible, however, that indicators typically used to measure financial development may not capture constraints faced by households.
- Infrastructure:** a likely future driver of higher private consumption in the region would be higher purchases of durable goods and services. However, purchases of durable goods and services depend on the availability of infrastructure, including the provision of roads, electricity, telecommunications, and health services. The relatively poor provision of infrastructure in some countries in emerging Asia, principally China, India and the Philippines, may have reduced the scope for higher consumption of durable goods and services.

³⁰ For a survey of consumer finance in emerging Asia, see Box 5 in the May 2006 REO.

Estimation Results

This section uses panel regressions to explore the relative importance of these various factors in explaining the evolution of private consumption in emerging Asia. It uses a dataset that spans 44 countries from 1972 through 2004, which includes the following variables: the share of private and public consumption in GDP, real per capita GDP growth, elderly and youth dependency ratios, private sector credit (in percent of GDP) as a proxy for financial development, and real interest rates, which are generally thought to be negatively related to private consumption, though the strength of this effect tends to depend on households' net asset position.

As a result of data limitations, it is not possible to control explicitly for the evolution of disposable incomes, the social safety net and the quality of infrastructure. Though public consumption may be seen as a proxy for the generosity of the social safety net, movements in public consumption are likely dominated by fiscal consolidation effects in the wake of the Asian crisis and therefore provide only a very weak link to the generosity of social safety nets. Moreover, public consumption may be in part a substitute for private consumption, while social safety nets can be thought of as complementary. Also, though the list of controls omits a quality of infrastructure measure, the regressions include country-specific fixed effects. As it is likely that the quality of infrastructure does not change rapidly over time, it is likely that these country dummies will control for this factor at least in part. Finally, the absence of cross-country data on disposable incomes is unfortunate, as this is likely an important driver of

consumption behavior. However, the regressions include time dummies, which aim to control for global variation in private consumption. To the extent that the increased capital intensity of production has caused disposable incomes to fall over time across countries, these time dummies should capture some of this effect.

The dataset captures the main characteristics of emerging Asia outlined above. Private consumption in EAXC is lower than for the overall sample, and has tended to decline over time. Public consumption in EAXC is also lower than for the overall sample. Growth has exceeded that in other regions, though it has slowed slightly since the Asian crisis. Financial markets are relatively deep, especially compared to other emerging markets.

Data description ¹					
	All	Emerging Market	Emerging Asia ex. China	Emerging Asia ex. China 1980-1989	Emerging Asia ex. China 2000-2005
Private consumption (percent of GDP)	59.8	61.5	58.8	59.9	56.6
Elderly dependency ratio	8.9	4.7	4.7	3.9	6.3
Youth dependency ratio	20.0	36.3	32.9	35.3	26.7
Real interest rate	0.7	-1.3	2.3	3.1	2.0
Credit to private sector (percent of GDP)	58.8	41.1	63.9	49.5	89.1
Real per capita GDP growth	2.3	2.5	3.5	3.6	3.3
Terms-of-trade growth	-0.1	0.0	-0.6	-0.7	-1.7
Public consumption (percent of GDP)	16.2	13.6	11.0	11.3	11.2
Real GDP growth	3.9	4.8	6.1	6.2	4.7
Real private consumption growth	4.8	6.7	5.7	5.9	4.3

Sources: IMF, World Economic Outlook; World Bank, World Development Indicator.
¹ Simple average of 1972-2004 or available periods for each country.

The empirical framework used to explore the link between private consumption and its determinants follows Arellano-Bond (1991).

This approach allows country-specific fixed effects to be included together with the lagged dependent variable. As noted above, country-specific fixed effects are important because they control for omitted variables that do not vary over time but are specific to each country in the sample. Meanwhile, including lagged private consumption as a determinant of private consumption is important for two reasons. From a theoretical perspective, it reflects growing evidence that habit formation is a key element of consumption behavior, so that shocks will affect private consumption only slowly. From an empirical perspective, the lagged dependent

variable permits a distinction between long and short run effects of shocks on consumption. For the purposes of this chapter, long run effects will be the main focus, and will be discussed below. The regression model used is as follows:

$$c_{it} = \alpha \cdot c_{i(t-1)} + X_{it}\beta + \chi_i + \delta_t + \varepsilon_{i,t} \quad i = 1, \dots, N; t = 1, \dots, T$$

where c_{it} is the consumption-to-GDP ratio for country i in period t ; X_{it} is a matrix of the explanatory variables; χ_i is a country dummy that controls for country-specific features that are time invariant and determine the consumption-to-GDP ratio; and δ_t is a time dummy that controls for global trends in consumption-to-GDP ratios. As noted above, the regressions also include the lagged consumption-to-GDP ratio as an explanatory variable.

The regression results suggest that private consumption relates to fundamentals in the expected way. Indeed, most of the results are in line with the World Economic Outlook chapter on the determinants of private saving (IMF, Chapter II, 2005):

Global Private Consumption : Panel Regression (Long-term effects) ¹					
	Private Consumption (percent of GDP)				
	All	Emerging Market	All 1975-96	Emerging Market 1975-1996	Emerging Asia 1975-1996
Elderly dependency ratio	2.98	1.58	1.50	-0.81	3.22
Youth dependency ratio	<i>0.09</i>	-0.73	<i>-0.19</i>	<i>-0.82</i>	<i>0.31</i>
Real interest rate	0.05	0.05	0.03	0.04	-0.48
Credit to private sector (percent of GDP)	-0.03	-0.08	<i>-0.01</i>	-0.04	<i>-0.04</i>
Real GDP growth	-0.49	-0.41	-0.45	-0.36	-1.64
Terms-of-trade growth	-0.19	-0.16	-0.15	-0.12	<i>-0.03</i>
Public consumption (percent of GDP)	-1.63	-1.54	-1.57	-1.38	<i>0.14</i>

Sources: IMF staff calculations.
 Note: Reported numbers are the long-term effects calculated as the ratio of the estimated coefficient over one minus the coefficients of the lagged-dependable variables. Bold-faced values are statistically significant at the 5 percent level. Values in Italics are statistically significant at the 10 percent level.
¹ Period of 1972-2004 or available periods for each country. Taiwan POC is excluded from Emerging Asia, due to the lack of data.

- Higher output growth tends to lower the share of consumption in GDP. In other words, households tend to save some part of a growth spurt, in order to smooth consumption over time. The coefficient estimates suggest that a one percentage point

increase in per capita output growth would in the long run reduce consumption by about $\frac{1}{2}$ percent of GDP.³¹

- Population aging tends to raise consumption over time quite significantly, by about 3 percentage points of GDP for each percentage point increase in the elderly dependency ratio. Meanwhile, the youth dependency ratio does not have a statistically significant effect on consumption. This suggests that population aging may have profound effects on consumption-to-GDP ratios going forward, as a rise in consumption-to-GDP ratios driven by rising old age dependency may not be offset by a decline in consumption linked to falling youth dependency ratios.
- Government consumption is found to reduce private consumption, suggesting that the two types of consumption tend, in the aggregate, to be substitutes. The coefficient estimates imply that a one percentage point of GDP increase in public consumption in the long run reduces private consumption by about $1\frac{1}{2}$ percent of GDP (although this point estimate is high, it is not statistically different from one, suggesting a one-for-one offset). This result contrasts somewhat with the empirical literature, which finds in general that increased government spending is either not offset, or only partly offset, by lower private consumption.³²
- Positive terms of trade shocks tend to lower consumption, which can again be explained by households smoothing consumption in the face of transitory shocks. The point estimates suggest that a 10 percent increase in the terms

of trade reduces consumption by close to 2 percentage points of GDP.

- Increases in private sector credit are not associated with changes in private consumption. This finding is similar to Eichengreen (2006) and likely reflects the fact that this measure of financial deepening fails to capture borrowing constraints that households effectively face.
- Finally, the coefficient for the real interest rate is positive and marginally significant, and is therefore the wrong sign. This result is in line with the World Economic Outlook chapter on the determinants of national savings rates in industrial countries, which also failed to find the expected sign. This may point to a role for wealth effects in explaining consumption.

These regression results are subject to the caveat that controls for disposable income, the social safety net, and the quality of infrastructure are not included.

The omission of disposable income is perhaps most problematic, as the evolution of this variable is likely to be dominated by country- and region-specific developments, such as labor market reforms and product market regulations. In addition, the wave of fiscal consolidation in emerging Asia following the late-1990s may have resulted in a deterioration in the quality of infrastructure, which would not be adequately captured by country dummies. Similarly, some countries in emerging Asia introduced social safety nets in the wake of the Asian crisis, so that country dummies will again only be an imperfect control for this omission.

Is Private Consumption in Emerging Asia Too Low?

This section uses the regression results to test whether private consumption in emerging Asia is too low, i.e. whether the empirical estimates suggest that consumption should be higher, given the level of fundamentals. The absence of cross-country data on disposable income and the generosity of social safety nets complicates the task of assessing whether

³¹ The long run impact of growth on the consumption-to-GDP ratio can be calculated by dividing the coefficient estimate on per capita output growth by one minus the coefficient on lagged consumption.

³² See, for example, M. Gabriella Briotti, "Economic Reactions to Public Finance Consolidation: a Survey of the Literature," European Central Bank Occasional Paper No. 38, Oct. 2005.

households have become more cautious in the wake of the Asian crisis. As a result, this section devises two experiments to test whether the link between private consumption and fundamentals is somehow “out of whack.”

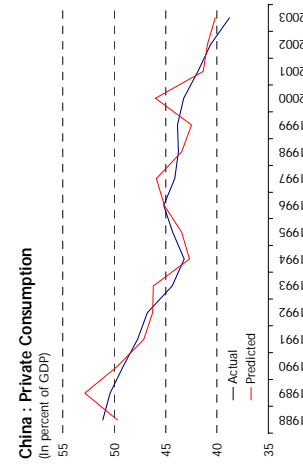
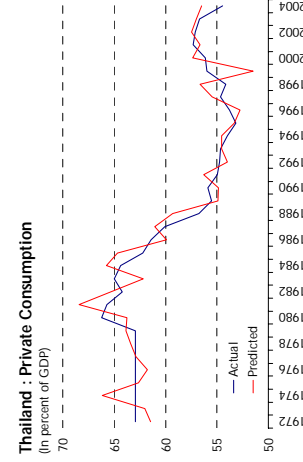
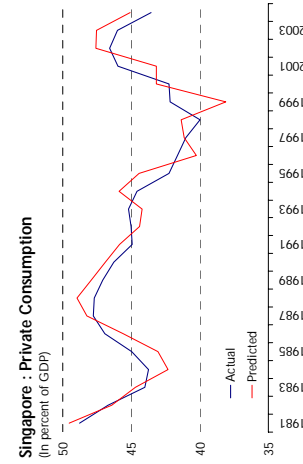
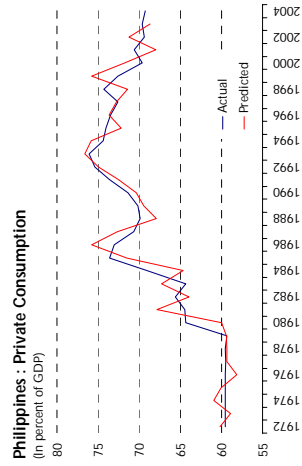
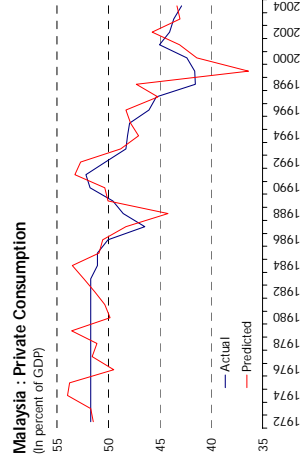
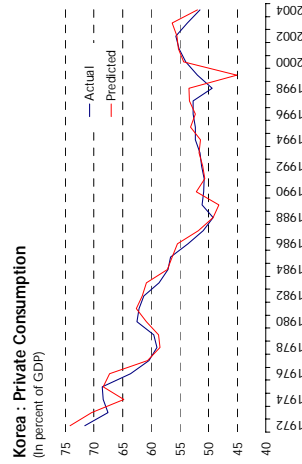
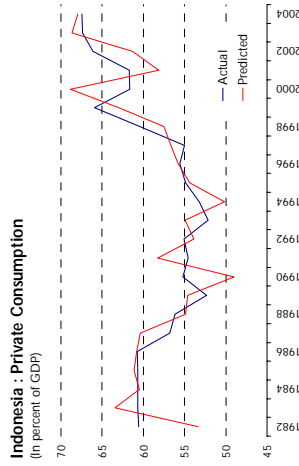
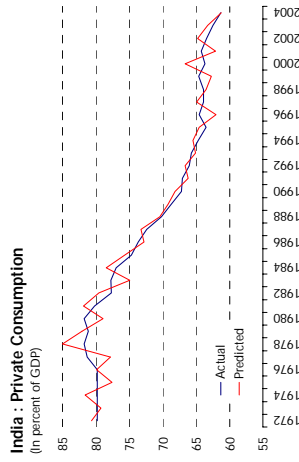
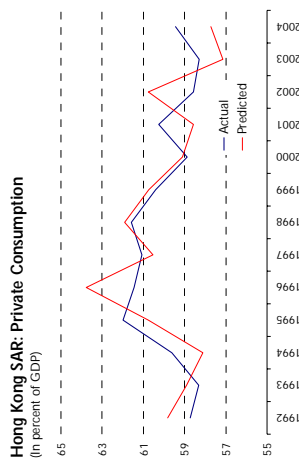
The first experiment assesses whether private consumption is in line with fundamentals, based on evidence from a broader set of countries. It compares actual and fitted values for consumption-to-GDP ratios in emerging Asia, to assess whether consumption relative to GDP is in line with fundamentals, based on the cross-country regressions. This comparison shows that deviations of predicted values from actuals have been minor in recent years and that the long-run trend of consumption can be well explained by changes in fundamentals. That said, this experiment should be interpreted with caution, given that the regressions include country dummies and lagged consumption, so that the deviation of actual from fitted consumption is likely to be small by design.

The second experiment explores whether the link between private consumption and fundamentals has changed in the wake of the Asian crisis. Regression results using the sample until 1996 are used to produce out-of-sample forecasts for 1997-2004. The results show that in 1998 private consumption-to-GDP fell sharply below the out-of-sample forecast in Korea (6 percentage points of GDP below), Malaysia (6 percentage points below), Singapore (2 percentage points below) and Thailand (4 percentage points below). This is a possible indication that, rather than smoothing consumption, households raised precautionary saving in the face of the Asian crisis, due to uncertainty over the scale and length of the crisis. However, private consumption in these countries bounced back in subsequent years and in many cases exceeded the out-of-sample forecast, evidence that precautionary saving was unwound as uncertainty surrounding the Asian crisis receded. The one case where the private consumption-to-GDP ratio is consistently below the out-of-sample forecast is China, which is consistent with the notion that precautionary saving may have risen permanently in the wake of the Asian crisis, so that for the same level of

fundamentals as in the period through 1996, the consumption-to-GDP ratios is now lower.

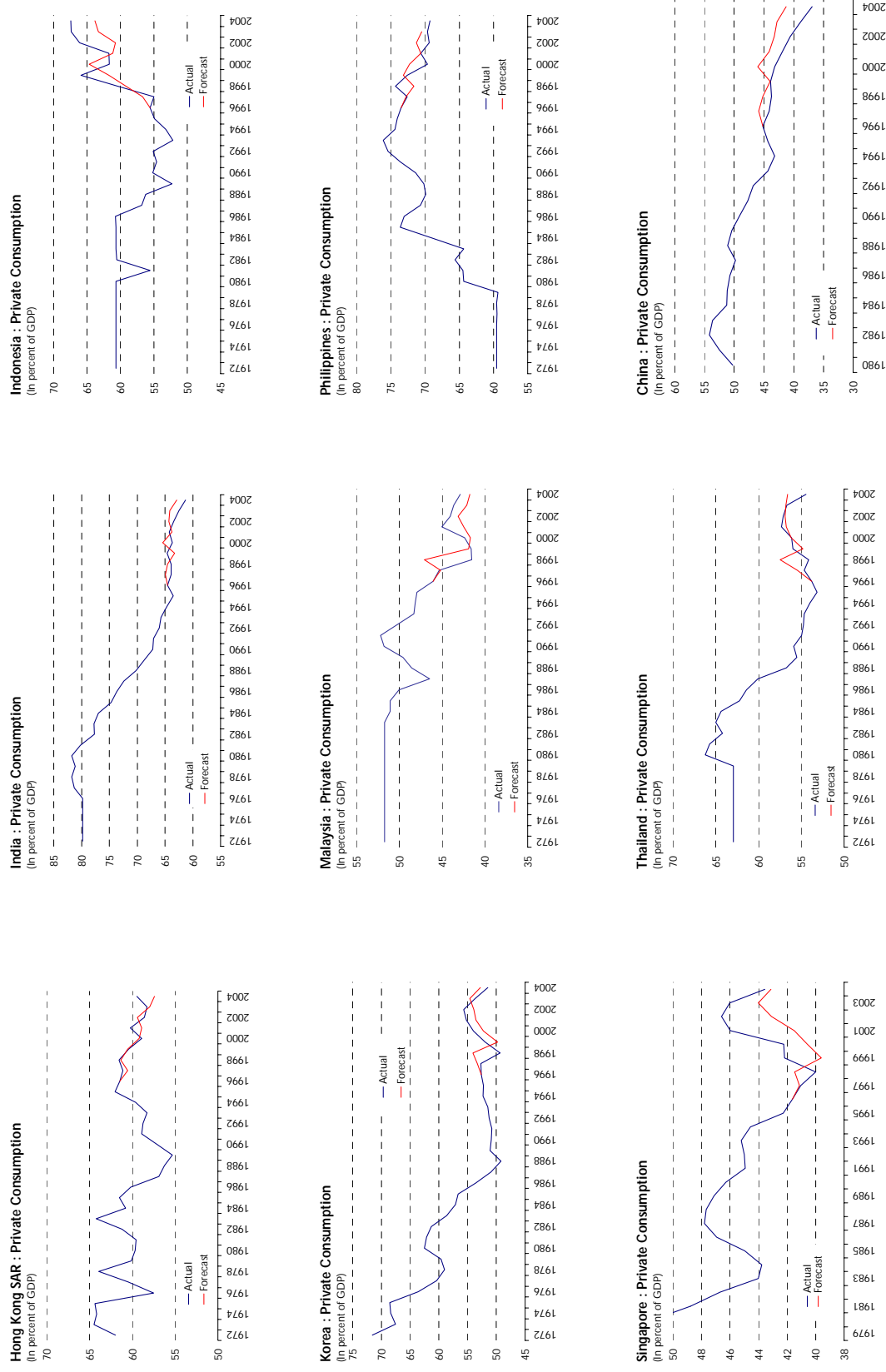
Though these out-of-sample results are compelling, they are subject to a number of caveats. The omission of disposable income means that any divergence between actual and predicted private consumption could reflect the compression over time in disposable income. This factor is especially important for the out-of-sample results for China, where disposable income has fallen sharply relative to GDP in recent years. Moreover, other factors besides a rise in precautionary savings may have altered the relationship between private consumption and fundamentals in China. As a result, this out-of-sample experiment should be seen as an upper bound for the possible impact from a change in precautionary behavior.

Emerging Asia: Actual vs. Predicted Private Consumption (1972-2004)



Sources: IMF, World Economic Outlook, and staff calculations.

Emerging Asia: Out-of-Sample Forecasts of Private Consumption (1997-2004)



Sources: IMF, World Economic Outlook; and staff calculations.

Potential Policy Implications

This chapter finds that private consumption in emerging Asia has a large life cycle component. In the years ahead, as population aging in emerging Asia accelerates, this suggests that consumption-to-GDP ratios will rise. Indeed, in Korea, Singapore, Hong Kong SAR, and Thailand, the elderly dependency ratio is projected to rise between 3-6 percentage points over the next decade. That alone could push consumption up by 10-18 percentage points of GDP.

	Elderly dependency ratio 2005	Elderly dependency ratio 2015	Projected rise in consumption (in percent)
China	10.7	13.3	7.8
Hong Kong SAR	16.3	19.8	10.6
India	8.4	9.4	3.0
Indonesia	8.3	9.4	3.3
Korea	13.1	18.1	15.0
Malaysia	7.3	9.1	5.3
Philippines	6.4	7.5	3.4
Singapore	11.8	18.0	18.6
Thailand	10.2	13.4	9.4

Source: United Nations.
¹ Excluding Taiwan POC.

With the exception of China, there is little evidence that private consumption in emerging Asia is “too low”, based on the historical association between consumption and fundamentals. There is some evidence that precautionary saving in some countries (Korea, Malaysia, Singapore, Thailand) rose around the time of the Asian crisis, as households scaled back consumption in the face of greater uncertainty, but this rise in precautionary behavior has been unwound since then. Only in China are there strong indications that precautionary behavior increased permanently in the wake of the Asian crisis.

Government can play a supportive role in raising consumption over the medium term. Short-term fiscal policy aimed to give a boost to consumption may have limited effectiveness, since there is such a large offset between private and public consumption. However, there are important structural reforms that countries in the region can take to help ensure a more permanent increase in consumption and help rebalance GDP growth away from external demand. While the

best approach will vary from country to country, the following considerations may be relevant:

- The apparent rise in precautionary saving during the Asian crisis suggests that governments in the region may need to do more to reduce uncertainty faced by households, including through education, health care, and pensions. Such reforms would likely entail higher public spending, but may not entail an offset in private consumption because the provision of an enhanced social safety net would reduce the precautionary savings motive.
- Although financial markets are relatively deep, especially compared to other emerging market regions, more can be done to develop household credit instruments that would better allow intertemporal smoothing of consumption. This in turn would have the potential to reduce precautionary saving, as households would be less likely to save for a “rainy day.” Ongoing banking sector reforms in the region, including the implementation of improved risk management systems, should also help banks better cater to the borrowing needs of small- and medium-sized enterprises, again providing a channel for household savings rates to decline over time.
- These reforms could be enhanced by further developing capital markets. Developing more liquid equity and bond markets with greater household participation would allow households to better diversify risk away from purely wage income-based risk, and encouraging international diversification among households would further strengthen this trend. In addition, greater financial market participation among households would allow them to share in rising profits and market valuations of companies, permitting greater wealth effects on consumption.
- Finally, greater exchange rate flexibility would likely imply an appreciation of some regional currencies, which would boost households’ purchasing power and likely raise the consumption-to-GDP ratio.

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VI. Rising Inequality and Polarization in Asia

Income inequality and polarization have increased dramatically across Asia over the last decade, causing concern among policymakers and the public. This trend—which stands in contrast to the region’s past record of rapid growth and increasing equality—has potentially adverse implications for poverty reduction as well as macroeconomic performance. Skill-biased technological change in the advanced economies of Asia and the transition from agriculture to industry in its developing economies are likely to be among the factors behind this trend. Government policies—notably investments in human capital and infrastructure, deregulation of factor and product markets, and improvements in the investment climate—may be helpful in reducing these income disparities, while also helping to lay the foundations for broad-based economic growth.³³

Introduction

Rising income inequality across Asia is a cause for concern among policymakers and the broader public. Over the last ten years or so, 13 out of 18 Asian countries for which data are available have recorded increases in income inequality, ranging from around 5 to 35 percent. Today, China displays greater inequality than the United States or Russia, while Japan—once known for its highly equitable distribution of income—is more unequal than the average OECD country. These changes have not gone unnoticed. In Japan, the income gap between rich and poor has become a leading topic in this year’s race for the premiership. Korea’s president called for a sincere discussion on the widening income gap in his New Year’s message. In India, fears that growth is by-passing a number of poorer states has prompted a package of reforms with a “human face”. And, Malaysia has made the fight against widening income disparities a centerpiece of its latest economic plan.

The recent widening of income disparities is in contrast to Asia’s past record of equitable growth. Between 1965 and 1990, East Asia grew faster than any other region in the world, boosting

average incomes by more than 5 percent a year. At the same time, Asia maintained levels of inequality that were the envy of many industrialized countries. Taiwan Province of China, for example, displayed lower income disparity than Belgium, and Indonesia was more equitable than Australia. Most strikingly, measures of inequality fell between the 1960s and 1980s for Hong Kong SAR, Korea, Singapore, and Taiwan Province of China (newly industrialized economies, or NIEs) as well as Indonesia, Malaysia, Philippines, and Thailand (ASEAN-4).

The distribution of income has implications for poverty reduction and macroeconomic outcomes more broadly. For a given growth rate of per capita income, rising inequality typically means less poverty reduction.³⁴ If the increase in inequality is large relative to growth, poverty could even rise. A growing body of literature, moreover, shows that income disparities are associated with inferior economic outcomes, including lower growth, macroeconomic volatility, and inappropriate responses to external shocks (see e.g., Rodrik, 1999; Easterly, 2000; and Woo, 2005).

Policymakers seem particularly concerned about the emergence of distinct socio-economic groups, or so-called polarization. The income distribution is said to become more polarized if observations move from the middle of the distribution to the tails, the tails move further apart, or both. In industrialized countries, polarization has often been equated with the disappearing middle class. More generally, a society is often said to be polarized if incomes vary a lot by identified groups, e.g., urban-rural or coastal-inland. Such bimodality or “clustering around extremes” has important implications for the equality of opportunity and upward mobility: the more polarized a society, the less likely that individuals at the lower end can move up the

³³ The main authors of this chapter are Erik Lueth and Murtaza Syed.

³⁴ Ravallion (2001) finds that the median rate of decline in the \$1 day poverty headcount index is around 10 percent a year for countries that combine growth with falling inequality, compared to just 1 percent for those where growth coincides with increased inequality.

income distribution. In addition, polarization is often associated with social unrest, and at a more subtle level, can lead to unproductive distributional conflict and a lack of consensus for providing public goods or pursuing good policies. A high official in South Korea warned recently that “if the polarization problem is left unresolved, South Korea could be divided into two, resulting in three Koreas on the peninsula”. Malaysia has included specific targets for the size of the middle class in its ninth economic plan. And, the Communist Party of China will hold a plenary session on how “to build a harmonious society” that overcomes rural-urban divisions.

While inequality and polarization differ in theory, they often move together in practice.

Increasing inequality need not imply widening gaps along other dimensions, such as urban-rural, nor does greater polarization necessarily lead to greater income inequality in aggregate.³⁵ In practice, however, studies that look at both polarization and inequality find that the two move in lockstep most of the time (see e.g., Wolfson, 1994; Ravallion and Chen, 1997; Milanovic, 2000; and Kanbur and Zhang, 2001).

This chapter discusses and attempts to explain the rise in income inequality and polarization observed in many parts of Asia.

The chapter is organized as follows. First, we describe patterns of income inequality and polarization across Asia over the last decade. Second, we explore some of the factors that could help to explain the rising trend observed in many of these countries. Lastly, we present our conclusions and draw some lessons from international experience.

Trends and Patterns

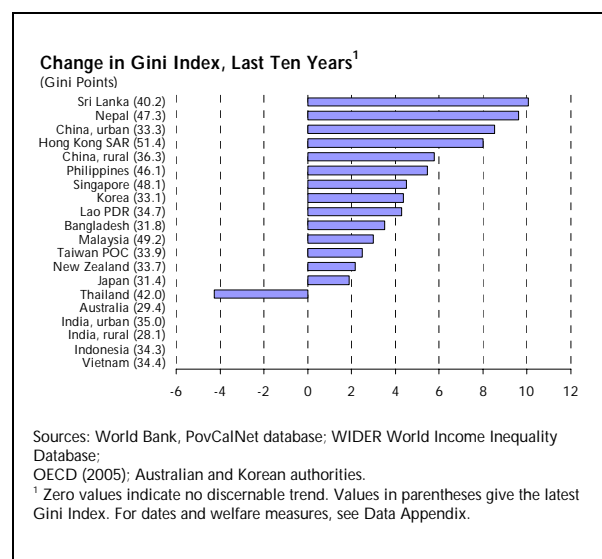
The analysis of recent trends is based on data drawn from multiple sources, and cross-

³⁵ As an example, imagine a society of four individuals earning 1, 2, 3, and 4, respectively. Now, the richer individual in each half of the income distribution transfers 0.5 to the poorer individual in that half, resulting in a distribution where two individuals have 1.5 and two individuals have 3.5. Inequality has fallen in the process, because the gainers were poorer than the losers, but polarization—defined as the emergence of distinct groups—has increased.

country comparisons require more than the usual caution. Most of the data stem from national household surveys which are not conducted on a yearly basis, and definitions and years vary across countries. For example, depending on the country, distributional data are based on consumption, disposable income, or gross income. To ensure some comparability, this section focuses on changes in—rather than levels of—inequality and polarization, usually over the last ten years. However, even the time span can differ for countries with poor data availability.³⁶

There has been a broad and pronounced pick-up in income inequality across Asia over the last ten years.

The Gini index is the most common and widely available measure of inequality.³⁷ Among 18 Asian countries for which data are available, 13 show an increase in the Gini index, 4 exhibit no discernable trend, and only one, Thailand, reports a reduction in

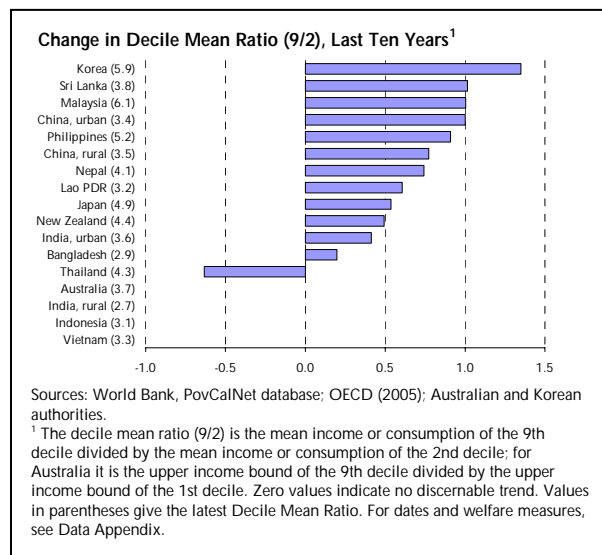


³⁶ To keep the exposition simple, the terms income and consumption are often used interchangeably in this chapter.

³⁷ The Gini coefficient is defined as the area between the Lorenz curve (which plots cumulative shares of the population, from poorest to richest, against the cumulative share of income they receive) and the 45-degree line, taken as a ratio to the area of the whole triangle. The values, which range from 0 in the case of perfect equality and 1 in the case of perfect inequality, are multiplied by 100 to obtain a range of 0 to 100 for the Gini index.

the Gini index.³⁸ The pick-up in inequality is particularly pronounced for developing countries; Japan and New Zealand record the smallest increase, while Australia shows no trend at all. Inequality measures for China and India are derived separately for rural and urban areas. Given the disparities between rural and urban living standards in these countries, inequality at the national level (and changes thereof) may be understated.

Similarly, the gap between rich and poor is widening. The gap between high and low incomes can be measured by the ratio of the mean of the 9th to the 2nd decile.³⁹ Out of 15 countries, 10 show increasing income gaps, 3 exhibit no trend, and one country reports a falling income gap. As with the Gini index, developing countries have registered larger increases in income disparity, on average, than developed countries. In addition, countries with rising, falling, or unchanged Gini indices, respectively, show the same trend for the income gap.

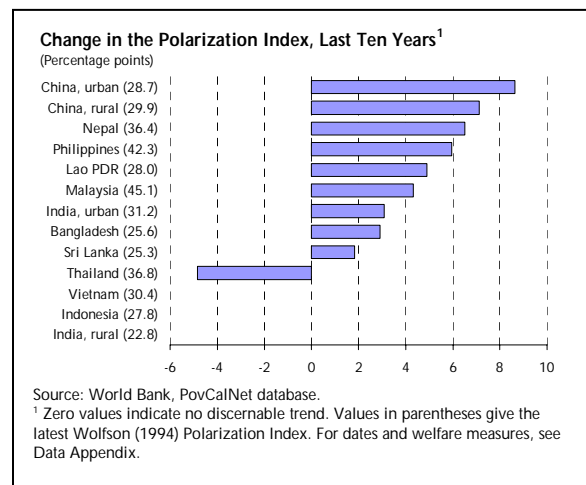


³⁸ Despite the recent decline in its Gini index, Thailand remains among the most unequal and polarized economies in Asia.

³⁹ Since the incomes of the very rich and very poor are hard to measure, the ratio of mean incomes of the 10th to the 1st decile is a less reliable indicator.

Economies have also become more polarized.

The Wolfson polarization index (Wolfson, 1994) accounts for clustering around local means in the income distribution and, therefore, picks up the emergence of distinct income groups.⁴⁰ The polarization index has increased markedly in many low and middle income countries in Asia.⁴¹ Again, while the ranking of countries changes—for example, Sri Lanka exhibits the biggest increase in inequality, but the smallest rise in polarization—the finding of adverse distributional trends across Asia is reinforced.⁴²



There is, moreover, evidence of a shrinking middle class in most of Asia's low and middle income countries.

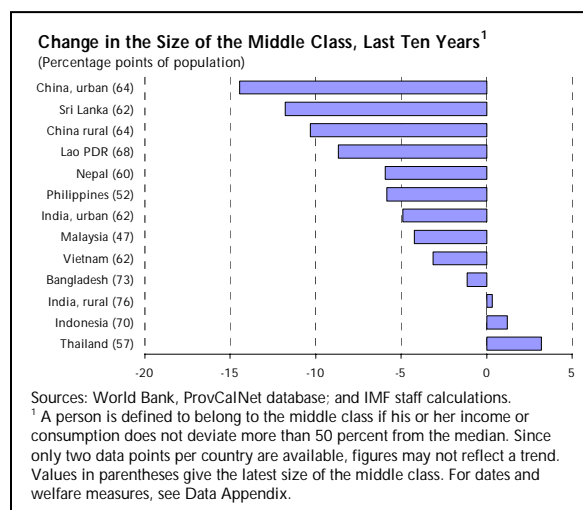
In the overwhelming majority of countries in Asia, the population share of the middle class has shrunk (where people are counted as middle class if their income or consumption does not deviate by more than 50 percent from the median). This is particularly interesting, given that most discussions of the disappearing middle class have centered on

⁴⁰ Like the Gini index, the Wolfson polarization index lies between 0 and 100, where 0 depicts a perfectly equal income distribution and 100 describes a situation in which half the population has zero income and the other has twice the mean.

⁴¹ PovCalNet, the World Bank database from which this and the following statistics are drawn does not include data for industrialized countries.

⁴² The finding of rising inequality and polarization in Asia is confirmed by earlier research, e.g., Ravallion and Chen (1997) and Firebaugh (2003). More recently, World Bank (2006a) reports that the rise in inequality is more pronounced than in previous growth episodes and extends to South Asia, traditionally a region with low inequality.

advanced economies. And the data are in contrast with a situation where countries like India and China have often been heralded for their emerging middle class in the popular press.⁴³

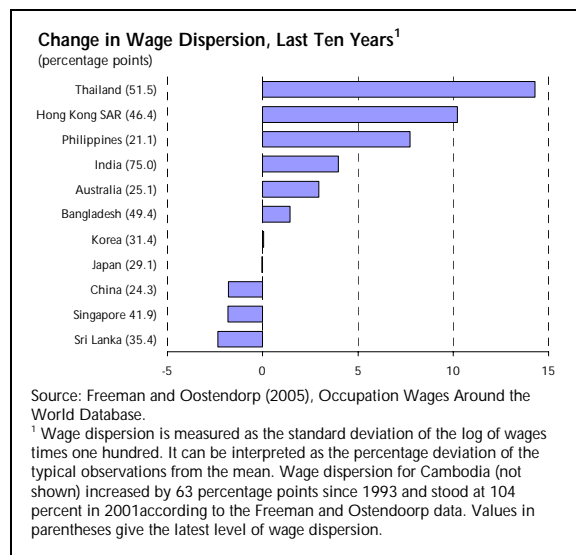


Similar broad trends are apparent in the labor market, where wage dispersion has widened for a majority of countries. Drawing on a database on occupational wages created by Freeman and Oostendorp (2005),⁴⁴ it appears that over the last ten years, 6 out of 11 Asian countries experienced an increase in wage dispersion, 2 show relatively stable dispersion, and 3 report a decline in wage dispersion.⁴⁵ In addition, the level of wage dispersion is smaller for advanced countries and China. This is in line with earlier findings (see Freeman and Oostendorp, 2000).

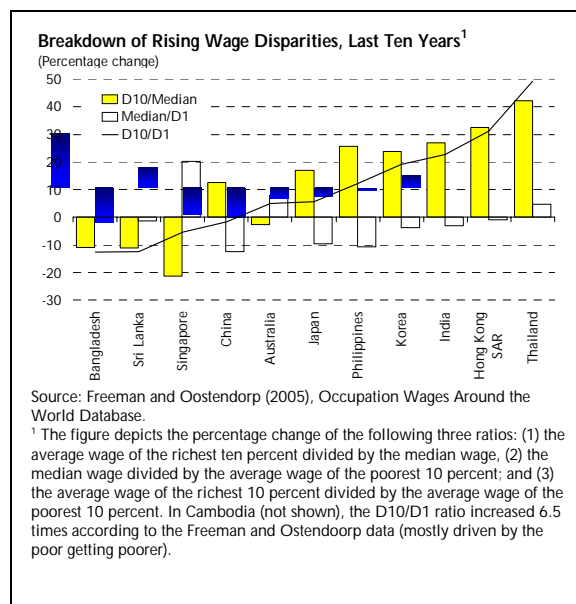
⁴³ Although this may be driven by differences in the notion of the middle class. While our measures are based on relative incomes (i.e., the number of people with incomes a given distance around the median of the distribution), the popular press typically bases its assessments of the size of the middle class on absolute incomes, i.e. the number of people with incomes that allow for discretionary consumption of refrigerators, cars, cell phones, etc.

⁴⁴ This database calibrates data from ILO's October Inquiry, and allows comparisons across time and countries. It contains wage data for 161 occupations in over 150 countries from 1983 to 2003.

⁴⁵ Wage dispersion is measured as the standard deviation of the logarithm of wages times one hundred and can be interpreted as the percentage deviation of a typical observation from the mean. For a given country, only wages of occupations that appear in both the initial and latest year are considered.



Rising wage dispersion is driven by the rich getting richer, rather than the poor getting poorer. The wage gap between top and bottom earners can be broken into two components: the gap between top and median earners, and that between median and bottom earners. In 7 out of 11 countries the rich-poor gap (D10/D1) widened. In 6 out of those 7 this was brought about by wage hikes at the top of the distribution (D10/median). In most countries the lot of the poor improved relative to the median (median/D1), albeit by much less than for the rich.

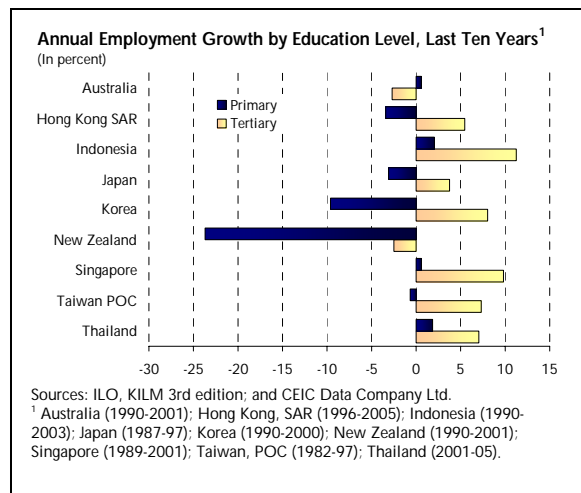
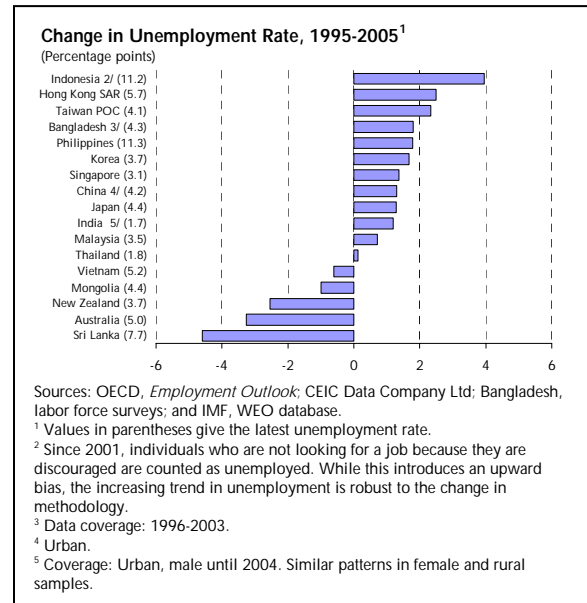
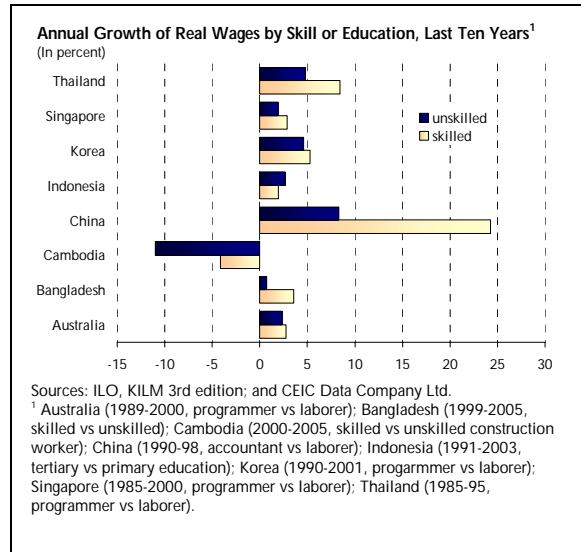


Rising skill premia, driven by increases in demand for skilled labor, may partly account for the growing wage dispersion. Some interesting patterns emerge in examining the annual growth of real wages by skill or education level.⁴⁶ With the exception of Indonesia, every country in the sample shows a rising skill or education premium. Moreover, skill or education premia seem to be rising faster in developing countries, such as Bangladesh, Cambodia, and China. These premia appear to reflect labor demand, as demand for employees with tertiary education increased in every country except advanced Australia and New Zealand. In comparison, demand for employees with primary education increased by much less and even fell in

a number of countries. Such increased demand for educated employees fosters polarization by boosting both high-end wages and employment.

A general trend of rising unemployment also tends to increase polarization and inequality.

In 12 out of 17 countries unemployment rose during 1995-2005. Since unemployed workers tend to be at the lower end of the skill and income distribution, this trend implies growing inequality and polarization.



Determinants of Inequality and Polarization

Why has income inequality increased across Asia?

The literature suggests a number of potential determinants of income distribution, and we consider a few of these below.⁴⁷ While our analysis is suggestive of several factors that may have contributed to the rise in inequality and polarization observed in Asia over the last decade or so, the investigation is by no means exhaustive. This would seem to be a promising area for further research.

⁴⁶ The exercise is mostly illustrative in that labor market coverage is very selective in each of the countries under consideration.

⁴⁷ While we report regressions that use the Gini inequality index as the dependent variable, we obtained qualitatively similar results using the Wolfson polarization index.

Economic Growth

Kuznets (1955) predicts that inequality increases with growth in the early stages of development and falls with growth in the later stages. As people move from the traditionally dominant agricultural sector to the modern industrial sector, inequality and polarization increase initially, but decline as the majority of people find employment in the high-income sector.

Income disparity shows a similar pattern in Lewis (1954). In the modern sector (human) capital accumulation boosts incomes, whereas in the traditional sector incomes move little owing to surplus labor. Only after the pool of surplus labor is exhausted do incomes converge. Often the traditional and modern sectors are in distinct localities, giving rise to spatial inequality and polarization (Box 5.1).

This inverted U-relationship between income inequality and growth is confirmed for a subset of Asian economies. The Gini coefficient is regressed on (log) GDP per capita (expressed in purchasing power parity or ppp) and GDP per capita squared, using country fixed effects for an unbalanced sample of 11 Asian countries.⁴⁸

The estimated coefficients suggest an inverted U-curve relationship and are significant at the 5 percent level. The curve's turning point occurs around \$4,000 of GDP per capita, suggesting that a number of Asian countries may be approaching a turning point beyond which we may see a decline in inequality.⁴⁹ A similar analysis of wage dispersion also shows a rise in the early stages of development and a fall thereafter. Drawing on Freeman and Oostendorp (2005), wage dispersion is regressed on (logged) GDP per capita (ppp) and GDP per capita squared, using country fixed

⁴⁸ The panel covers the period 1981-2004 and consists of the following countries: Bangladesh, Cambodia, Indonesia, Lao PDR, Malaysia, Mongolia, Nepal, Philippines, Sri Lanka, Thailand, and Vietnam. The data on inequality is published by the World Bank (2006b), which goes to great lengths to ensure some degree of international comparability.

⁴⁹ However, the sample excludes Asia's most developed economies with possibly major implications for the shape of the inverted U-curve. Moreover, causation may run from inequality to growth, resulting in inconsistent parameter estimates.

effects.⁵⁰ The coefficients are highly significant and again describe an inverted U-curve, with a turning point around \$6,000 of GDP per capita. However, GDP per capita explains little of the variation in wage dispersion over time and across countries as evidenced by the low R-square.

Panel Regressions for Wage Dispersion with Country Fixed Effects¹

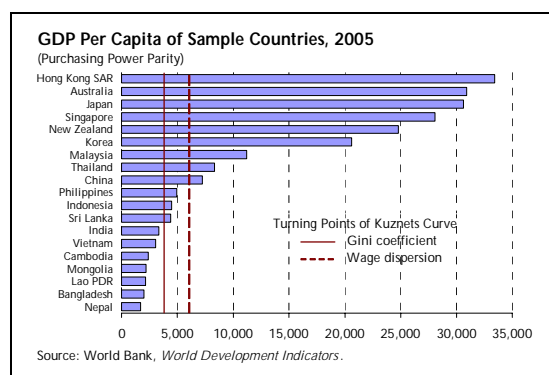
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Constant	-457.71*** (112.92)	-436.29*** (103.15)	-275.06** (119.86)	-290.80** (119.68)	-320.56*** (93.86)	-253.13** (114.28)	-252.12** (114.76)
Log (per capita GDP)	116.88*** (25.47)	111.94*** (23.24)	69.21** (28.43)	73.23** (28.41)	86.53*** (22.45)	92.33*** (27.59)	90.30*** (27.77)
Log (per capita GDP) ²	-6.64*** (1.43)	-6.82*** (1.30)	-4.13** (1.67)	-4.37** (1.67)	-4.86*** (1.31)	-6.99*** (1.74)	-6.96*** (1.75)
Trade/GDP	0.288*** (0.05)	0.79*** (0.20)	0.90*** (0.20)	0.90*** (0.20)	0.33* (0.18)	0.48** (0.21)	0.49** (0.21)
Trade* GDP per capita			-0.05** (0.02)	-0.05** (0.02)	-0.02 (0.02)	-0.03 (0.02)	-0.03 (0.02)
FDI/GDP			0.34 (0.21)				
Higher education share ²					-497.33 (313.98)		
Trend						1.95*** (0.48)	1.95*** (0.48)
Asia crisis dummy						-1.00 (5.24)	-1.00 (5.24)
Number of observations	170	170	170	170	161	170	170
Number of countries	13	13	13	13	12	13	13
R-square	0.06	0.05	0.05	0.06	0.21	0.30	0.30

Source: IMF staff estimates.
¹ Standard errors in parentheses. One, two, and three stars indicate significant at the 10, 5, and 1 percent level, respectively.
² No data available for Cambodia.

Panel Regressions for the Gini Index with Country Fixed Effects¹

	(1)	(2)	(3)
Constant	-146.83* (74.78)	-152.72* (76.54)	-167.40 (74.96)
Log (per capita GDP)	45.04** (18.93)	46.93** (19.52)	50.63** (19.03)
Log (per capita GDP) ²	-2.72** (1.19)	-2.88** (1.25)	-3.09** (1.20)
Trade		0.01 (0.23)	
Asia crisis dummy			2.01 (1.37)
Number of observations	50	50	50
Number of countries	11	11	11
R-square	0.36	0.38	0.34

Source: IMF staff estimates.
¹ Standard errors in parentheses. One, two, and three stars indicate significant at the 10, 5, and 1 percent level, respectively.



⁵⁰ The unbalanced panel covers 13 countries over 1983-2003 and comprises 170 observations. The sample countries comprise Australia, Bangladesh, China, Hong Kong SAR, India, Japan, Cambodia, Korea, Sri Lanka, New Zealand, Philippines, Singapore, and Thailand.

Box 6.1. Spatial Inequality in China and India¹

In both China and India, spatial inequality has increased markedly in recent years and is contributing to increased polarization. Amidst rapid economic growth, there are concerns that select regions are benefiting disproportionately while others are being left behind. In China, after a prolonged period of stable regional inequality, gaps in regional incomes now stand at their highest level since the early 1950s. In India, there is some evidence that the introduction of reforms in the early 1990s may have increased disparities in state incomes (Jha, 2002), or at least slowed the process of convergence (Purfield, 2006).

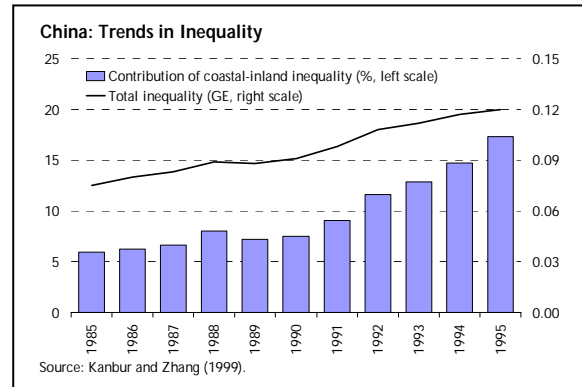
Trends in Spatial Inequality

Growing regional inequalities have emerged as a thorn in China's otherwise favorable reform experience. It is feared that China is fast becoming a polarized country along two dimensions—rural-urban and coastal-inland.² Although the urban-rural gap is much higher, it has remained relatively constant since the start of reforms in the late 1970s (Kanbur and Zhang, 2001). By contrast, coastal-inland polarization has increased dramatically, and explains most of the increase in total inequality observed during this period.³ Indeed, if current trends continue, the coastal-inland gap will eventually surpass the traditional rural-urban divide.

The gap between rich and poor states in India has also widened, as relatively rich states have on average grown two to three times as fast as poorer ones over the last three decades. In addition, the growth elasticity of poverty is also estimated to have been about 50 percent higher in richer states. There is also a high correlation between poverty and geographic location in India. While the poorest states—Bihar, Uttar Pradesh, Madhya Pradesh and Rajasthan—are primarily located in the central and northern regions of India (where the incidence of poverty is around 30 percent), middle- and high-income states such as Maharashtra, Gujarat and Tamil Nadu tend to be located along the coast. These regional differences have become particularly pronounced over the last 10 to 15 years, during which some poorer states, such as Orissa, have witnessed virtually no growth in per capita income and very little reduction in poverty (Deaton and Dreze, 2002).

What explains Spatial Inequality?

To some extent, it has been argued that spatial inequality may be a natural consequence of growth, with some regions enjoying a natural advantage by virtue of real geographic endowments, such as climate, natural resources or



Coastal-Inland Disparities in China¹

	GDP	Capital	Trade ²
1985	1.12	1.20	4.68
1990	1.16	1.27	5.93
1995	1.39	1.39	4.86
1998	1.45	1.52	5.90
Percent increase	29	27	26

Source: Zhang and Zhang, 2003.

¹ Ratio of coastal to inland values.

² Sum of exports and imports to GDP.

¹ The main author of this box is Murtaza Syed.

² The coastal region is typically defined as the following provinces: Beijing, Liaoning, Tianjin, Hebei, Shandong, Jiangsu, Shanghai, Zhejiang, Fujian, Guangdong and Guangxi, with the remaining provinces classified as inland.

³ Kanbur and Zhang (2001) estimate that inland-coastal polarization nearly tripled between 1983 and 1995, while rural-urban polarization fell by around one-third. According to the OECD, differences in income between provinces accounted for 40 percent of total income inequality in 2000 (OECD, 2001).

Box 6.1. (concluded)

proximity to rivers, coasts, ports, and borders. This may be subsequently reinforced by the increasing returns that can arise out of interactions between economic agents in densely packed areas, creating virtuous cycles of development.⁴

At the same time, public policy can also influence spatial disparities. While the spatial distribution of natural features and agglomeration forces may give a region an initial advantage, geographical biases in government policies—especially investment, infrastructure, fiscal transfers and public service provision—and institutional barriers in product and factor markets can entrench spatial inequality.⁵ Some recent empirical work lends support to this hypothesis (see, for example, Jian and others, (1996) and Demurger and others, (2002) for China, and Cashin and Sahay (1996) and Ravallion (2005) for India). Other government policies also matter. In India, there is evidence that states that have sought to liberalize factor markets and promote good institutions usually perform better than others (Besley and Burgess, 2000), and improvements in education have been found to reduce income divergence between states (Aiyar, 2001). In addition, greater private sector investment and smaller governments tend to be positively associated with regional growth performance (Kochhar and others, 2006). These results suggest that policy choices could help stem—and potentially reverse—the recent increase in regional inequality.

Consequences and Policy Responses

Spatial inequality can have severe consequences. Spatial inequality can contribute significantly to changes in overall inequality and may retard growth, by reducing returns to job creation in new locations. It can also lead to more extreme outcomes—where geographical regions align with socioeconomic divisions based on ethnic, political, linguistic or religious affiliations, it can result in conflict and war. Indeed, some recent work suggests that spatial inequality amidst caste and ethnicity divisions is the major cause of the civil war in Nepal, which is at its most intense in the least developed mid and far western parts of the country (Murshed and Gates, 2005). Related to this is the Chinese leadership's concern that rising income disparities between the coastal provinces and less dynamic North eastern parts of the country could affect the country's political unity.

In both China and India, addressing regional disparities is high on the government's policy agenda. During the Annual National People's Congress in March 2006, the Chinese government stressed the need to provide more support to rural areas and less-developed regions. There are several components to the government's strategy, including investment in transportation and communication infrastructure, raising education levels, improving the corporate governance of SOEs, and increasing the share of trade and FDI in less developed regions. Similarly in India, soon after being elected in 2004, the Congress government announced an agenda of "reforms with a human face"—described in the Common Minimum Program (CMP)—aimed at reducing poverty, increasing infrastructure and social spending, promoting FDI and improving access to credit for agriculture and small industry.

⁴ For example, location externalities can result from technological spillovers, thick labor markets, or input-output linkages between firms.

⁵ Such as the household registration system (*hukou*) in China that constrains labor mobility, undermining the potential for income equalization across provinces through migration.

The Kuznets hypothesis may help explain the less favorable growth-equity tradeoff faced by the newly emerging economies compared with Japan, the NIEs, and the ASEAN-4. The latter countries' initial record of high growth and low inequality may have been helped by relatively favorable conditions at the outset of their respective growth spurts. All the relatively advanced economies—with the exception of Japan—started their growth episodes from higher levels of per capita income, and with the transition from agrarian to industrial society much more advanced. For example, in 1967—the take-off date for NIEs—¾ of their population already lived and worked in urban areas, compared with a population share of ¼ for India at its growth take-off in 1982.⁵¹ Moreover, factor endowments were more equally distributed in the relatively advanced economies. Eight percent of the Japanese population had tertiary education in 1955, more than double the share in newly emerging economies at the time of their growth take-offs. Similarly, physical capital and land distributions were relatively equitable as a result of major post-war reforms (Japan, Korea, and Taiwan Province of China).

unskilled labor is higher in industrialized countries than in developing countries, they will specialize in skill-intensive products. Demand for skilled labor should rise and, therefore, inequality should rise after trade liberalization. The opposite pattern of specialization should emerge in developing countries, reducing inequality.

However, the prediction is not borne out by the data. There is still some controversy about the impact of trade openness on income inequality, with some studies suggesting a positive relationship (see e.g., Barro, 2000), and others finding no effect (see e.g., Dollar and Kraay, 2002). On the other hand, a broad consensus has emerged that trade liberalization increases wage dispersion, and more so in developing countries (see e.g., Milanovic and Squire, 2005).

In Asia, the impact of trade on inequality is modest at best. Trade openness, measured as the sum of exports and imports in percent of GDP, is added as an explanatory variable to the Gini coefficient regression. The coefficient is insignificant, suggesting that trade openness has had no impact on income inequality. The same explanatory variable is then added to the wage dispersion regression, where it is found to be significant and positively correlated with wage dispersion. However, the magnitude of this effect is small; a 10 percent increase in trade relative to GDP raises wage dispersion by 3 percentage points. Next, trade is interacted with GDP per capita (ppp) and added as another explanatory variable. This allows the effect of trade on wage dispersion to vary with the level of development, a proxy for differences in factor endowment. The coefficients for trade and trade interacted with GDP per capita—both significant—confirm that wage dispersion increases with trade liberalization, and more so in less developed countries. While the findings for Asia are in line with earlier empirical research and in contrast to the Heckscher-Ohlin model, the effects are relatively modest.

Why might increased openness be associated with rising wage dispersion in developing countries? There are a number of possible explanations. For one, relatively unskilled workers by industrial country standards may be skilled workers by developing country standards. Hence,

	GDP per capita (current US\$)	Urbanization (percent of population)	Agriculture (percent of GDP)	Human Capital (Percent of popu- lation with tertiary education)
Japan	259	39	...	8.0
NIEs	454	74	11	5.2
ASEAN-4	350	28	31	4.2
Newly emerging economies	232	21	34	3.4
China	276	19	31	4.7
India	285	24	36	3.4
Bangladesh	269	20	30	2.2
Vietnam	98	20	39	3.2

Sources: World Bank, *World Development Indicators*; and IMF staff calculations.
¹ The time of the growth take-off is 1955 for Japan; 1967 for the NIEs; 1973 for the ASEAN-4; 1979 for China; 1982 for India, and 1990 for Bangladesh and Vietnam.
² Simple averages for country groupings.

Openness and Technology

Standard trade theory predicts rising inequality in industrialized countries and declining inequality in developing countries in response to trade liberalization. According to the standard Heckscher-Ohlin model, the pattern of international specialization will reflect countries' relative factor endowments after opening up to trade. Since the ratio of skilled to

⁵¹ Take-off dates are from WEO (2006).

specialization in manufacturing exports in the developing world may still benefit the better-off (see Wood, 1994). Alternatively, FDI and trade in goods produced by unskilled labor in developing countries may need to be supported by high-skilled labor, such as managerial staff. Given the scarcity of high-skilled labor in developing countries, skill premia would react particularly sharply to trade and capital account liberalization (see Feenstra and Hanson, 1997). The latter effect is explored by including the proportion of people with higher education and foreign direct investment (in terms of GDP) as additional regressors in the equation for wage dispersion. However, both coefficients turn out to be insignificant.

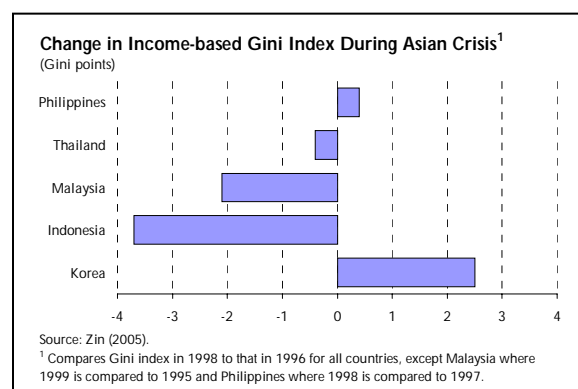
Skill-biased technological change has emerged as the main explanation for rising inequality and polarization in advanced economies (see Box 6.2 for a discussion focused on Korea's experience). Most studies draw this conclusion by rejecting trade, the only alternative hypothesis for advanced economies, as a major determinant since prices of less skill-intensive products have not fallen and there has been little reallocation of labor from low-skill to high-skill sectors as expected under the standard Heckscher-Ohlin model (see e.g., Aghion and others, 1999). Skill-biased technological change represents a shift in the production technology that favors skilled over unskilled labor, by increasing the former's relative productivity and, therefore, its relative demand. This in turn leads to a rise in earnings inequality.⁵² A few studies try to measure skill-biased technological change directly and find a close association with the skill-bias of employment (see e.g., Spitz-Oener, 2006). A time trend is added to the wage dispersion regression, as a proxy for skill-biased technological change. It is highly significant and leads to a large improvement in R-square.

Did the Asian Crisis Increase Inequality?

Economic crises might be expected to increase inequality and polarization. The poor tend to have less flexibility to protect themselves

against adverse shocks—they typically lack assets, such as savings and land, and have limited access to credit and insurance, preventing them from borrowing to smooth their impact. It has also been argued that lack of education and skills makes the poor less mobile across regions and economic sectors, undermining their ability to switch jobs and relocate in response to shifting demand conditions (Agenor, 2001). At the same time, crises may necessitate cuts in public expenditure that directly affect the poor, notably development spending and transfers.

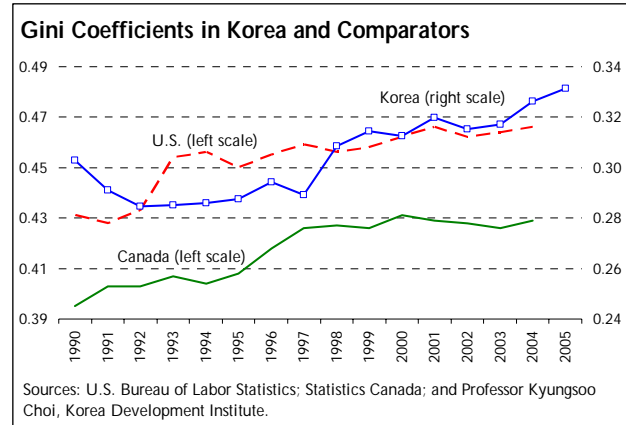
There is little evidence, however, that the Asian crisis led to a widespread increase in inequality. In 3 out of the 5 countries most affected by the crisis—Indonesia, Korea, Malaysia, the Philippines, and Thailand—changes in the Gini index suggest that, if anything, income distribution improved in the immediate aftermath of the crisis (see also World Bank, 2000). Only in Korea did the crisis have a clear worsening effect.



⁵² In recent times, the information technology revolution is often cited as an example of this phenomenon.

Box 6.2. Income Inequality and Social Polarization in Korea¹

Income inequality is rising fast in Korea, faster than in other industrialized countries. After falling for much of the 1980s and rising modestly in the early 1990s, income inequality surged during the financial crisis of 1997-98, as lower-wage employees were more severely affected by corporate layoffs. And the impressive post-crisis economic recovery has not brought inequality down; on the contrary, the increase in the Gini coefficient in Korea since 1997 is not matched by that in other industrialized countries, including the United States.² To boot, real incomes at the bottom of the distribution have fallen in absolute terms by close to 10 percent since the crisis.

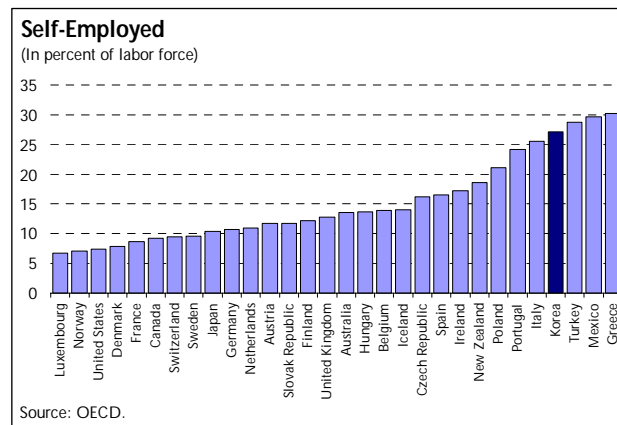


Like elsewhere, skill-biased technological change and pressures from international trade are likely to have contributed to income inequality in Korea.

Korea is exposed to competition from China, mostly affecting labor-intensive, small and medium enterprises in traditional manufacturing. At the same time, computer/IT penetration in the corporate sector is high. These two factors have lowered the relative demand for low-skill workers, and research does indeed point to a substantial rise in the college premium in Korea, with large effects on wage dispersion.

Yet if Korea is faring worse than other advanced countries, it is partly because job precariousness is greater.

The economy has proven unable to generate permanent salaried employment, with a staggering 37 percent of salaried employees now under fixed-term contracts – ten percentage points higher than four years ago, and two and half times the OECD average. Some 30 percent of all new jobs created in the service sector in the past ten years have been accounted for by the self-employed, a much higher share than in most other OECD countries.³ Studies have repeatedly shown that fixed-term employees earn substantially lower salaries than permanent employees, even after accounting for all relevant work and personal characteristics. Beyond income considerations, the increased precariousness of work exacerbates other social inequalities, as fixed-term employees are substantially less likely to be covered by any worksite-based social insurance, face substantially higher probability of a return to unemployment, and together with the self-employed suffer from substantially higher income uncertainty. More flexible regulations on permanent employment, together with deregulation of the service sector to boost its productivity and growth, are key to creating permanent jobs in Korea.



¹ The main author of this box is Jacques Miniane.
² The Gini coefficients come from different national sources, and hence caution is needed when comparing their *levels* across countries. However, it is safer to compare changes and trends.
³ There is evidence that much of this self-employment is involuntary, caused by a lack of salaried employment.

This is also confirmed by the insignificant coefficients on a crisis dummy—taking on the value 1 for the five countries in 1997 and 1998—that was added to both the Gini coefficient and wage dispersion equations. Finally, in 3 of these countries, the trend of rising inequality predates the Asian crisis.

Trends in Gini Index Before the Asian Crisis (Gini points)		
Indonesia	1987	33.1
	1993	34.4
	1996	36.5
Korea	1989	30.4
	1992	28.4
	1996	29.1
Malaysia	1989	46.2
	1992	47.7
	1995	48.5
Philippines	1988	40.6
	1991	43.8
	1994	42.9
Thailand	1988	43.8
	1992	46.2
	1996	43.4

Sources: WIDER Database; World Bank, *World Development Indicators*; and Zin (2005).

Several factors are likely to have contributed to this relatively benign distributional impact, which is in stark contrast to the experience of Latin America during the 1980s.⁵³

- **Initially, the crisis was predominantly an urban phenomenon, with direct effects concentrated on the relatively affluent.** The crisis started as an exchange rate-induced financial downturn, directly affecting urban households and firms through declines in asset values, deteriorating balance sheets, and a squeeze on credit for consumption and investment. Wage declines and employment reductions were concentrated in the urban formal sector,

⁵³ In Korea, the equalizing forces discussed below may not have been as strong because it was the most urbanized and industrialized of the crisis economies, and the only country where poverty has an urban bias. Moreover, the crisis affected the urban poor disproportionately (Birdsall and Haggard, 2000).

which in these countries typically consists of workers with relatively high incomes. In Indonesia, for example, 14 of the 20 hardest hit areas were urban, while 13 of the 20 least affected areas were rural (Poppele and others, 1998).

Employment and Wages During Asian Crisis (1997-98) (Percent change)			
	Agriculture	Manufacturing	Construction
Indonesia			
<i>Employment</i>	13.3	-9.8	-15.9
<i>Real wage</i>	-35.0	-44.0	-42.0
Malaysia			
<i>Employment</i>	-5.3	-2.9	-13.4
<i>Real wage</i>	...	-2.4	...
Korea			
<i>Employment</i>	0.0	-13.1	-26.4
<i>Real wage</i>	...	-10.6	-14.7
Thailand			
<i>Employment</i>	-1.8	-1.9	-33.6
<i>Real wage</i>	-8.9	-4.5	-2.2

Source: World Bank (2000).

- **Subsequently, poorer segments of the population also suffered, but the effect was dampened by a number of factors.** First, in Malaysia, Thailand and the Philippines, the shift in relative prices associated with the currency devaluations favored agricultural products and other tradeables, preventing rural incomes from falling as sharply as in urban areas (FAO, 2001). Second, in some countries such as Thailand, the urban poor moved back to rural areas where they were relatively easily absorbed by flexible labor markets (Knowles and others, 2001). Third, welfare losses were also cushioned to some extent by dissaving and informal safety nets, particularly in Indonesia and Thailand (Gupta and others, 1998).

Conclusion

This study has looked at both inequality and polarization measures for Asia over the last decade. It finds that inequality and polarization have risen significantly for a broad and diverse set of countries, and more so in less developed countries. The study also begins to explore some explanations for this phenomenon. It finds a

positive association between growth and inequality at low levels of development, and a negative one for more advanced countries. The impact of trade on inequality appears small. Nor does the Asian crisis account for much of the recent surge. Skill-biased technological progress appears to be behind the developments in advanced countries, whereas the transition from agriculture to industry is a likely driving force in developing countries.⁵⁴

While the precise causes of increased inequality remain subject to debate, many governments are interested in pursuing policies to stem this trend and to ensure opportunities for people to move up the income ladder. While specific policies will depend on individual country circumstances, a number of policy directions have been suggested. In addition to helping reduce inequality and polarization, these policies are also consistent with best practices for ensuring sustainable growth and sound macroeconomic management, and include:

- **Spending on education.** In both developing and advanced economies, a more equal distribution of human capital through greater—and more effective—spending on education is almost certain to reduce income inequality. In this context, the ASEAN-4 spent 3¼ percent of GDP on education in the decade following their growth take-off, compared with an average of 2½ percent of GDP for the newly emerging economies of China, India, Bangladesh and Vietnam. Whereas

⁵⁴ The potential effects of demographics were also explored. In Japan, for example, growing income inequality is often attributed to population ageing—a recent study (OECD, 2006) finds that it explains almost half of the increase in inequality between the mid 1980s and 2000. However, we did not find such effects more generally—both old age and youth dependency ratios were not significant when added as explanatory variables to the regressions. This may reflect the fact that for 10 out of the 11 countries in the sample, the Gini index is based on consumption: while both the old and the very young tend to have relatively low incomes, their consumption is likely to be supported by intra-family transfers (and, in the case of the former, savings). In addition, population ageing is presently less pronounced in these countries. Hence, our results do not rule out the possibility that population ageing may also be an important determinant of income inequality and polarization.

less developed countries should first aim for universal primary education, more advanced economies need to address skill-biased technological change by upgrading to the next highest level.

- **Spending on infrastructure.** Investment in transport and communications is a key to overcoming spatial inequality. It reduces transaction costs and, hence, the economies of agglomeration. Networks facilitate the flow of production factors, speed up the equalization of marginal returns, and spread prosperity from the centers of growth to the periphery. They also help to ensure that interior regions can benefit from integration into the global economy.
- **Labor market policies.** Labor market policies can have a significant impact on earnings, and hence inequality. Indeed, a number of countries have introduced specific labor market policies in an effort to influence income distribution. In some parts of Asia, lowering employment costs to facilitate new hiring could help to improve labor market efficiency and reduce inequality. In Korea, for example, a growing dualism in the labor market is an important source of increased inequality and the growing use of non-regular workers needs to be curbed, including through reduced employment protection for regular workers. Dismantling obstacles to internal migration is also important. Complementing public investments that aim to bring jobs to lagging regions, this would allow the poor to move to areas with greater potential and could be achieved by providing relocation assistance in the form of transport, housing, and training allowances. Such freer migration might, however, need to be phased in, to minimize problems of urban congestion.
- **Access to financial markets.** Inequality in access to financial markets can reduce economic efficiency and entrench disparities by preventing the poor from

investing in themselves, or in their businesses. Addressing market failures, such as underdeveloped insurance or credit markets that restrict the ability of certain groups (such as farmers and small and medium-sized enterprises) to raise funds for investments or manage risk, is also likely to be an effective tool for redressing inequality.

- **Investment climate.** The cost of doing business remains prohibitively high in many parts of Asia, and extends to small and medium-sized enterprises. Streamlining regulatory regimes can help ensure that firms have an incentive to participate in the formal economy, with potentially wide-ranging effects on poverty and inequality. Key steps include encouraging competition by deregulating product and factor markets, maintaining non-distortionary tax and subsidy regimes, improving linkages with major markets, and ensuring access to information and finance to underpin investment.

At the same time, other policies are likely to be less effective. Studies generally find that the popular approach of providing fiscal incentives—in the form of tax advantages, risk-sharing arrangements, and subsidies—to attract industry and investment in specific regions is costly and ineffective (World Bank (2006a)). Ensuing competition between regions to attract industry and investment can also be highly distortionary, through its adverse effects on local tax bases and public services. Moreover, such interventions are unlikely to be successful at reducing inequality if underlying elements of the regional investment climate—such as the quality of institutions, the availability of skilled labor, infrastructure, and the efficiency of land and capital markets—remain weak.

Data Appendix

The following dates and welfare measures, where available, were used in the discussion and depiction of the changes in the Gini index, Polarization index, decline mean ratio and size of

the middle class: Australia (Disposable income, 1995-2002); Bangladesh (Consumption, 1991-2000); China, rural (Consumption, 1990-2001); China, urban (Consumption, 1991-2001); Hong Kong SAR (Gross income, 1991-1996); India (Consumption, 1990-1999); Indonesia (Consumption, 1993-2002); Japan (Disposable income, 1994-2000); Korea (Gross earnings, 1995-2005); Lao PDR (Consumption, 1992-2002); Malaysia (Income, 1989-1997); Nepal (Consumption, 1995-2003); New Zealand (Disposable income, 1991-2001); Philippines (Consumption, 1988-2000); Singapore (Gross earnings, 1990-2000); Sri Lanka (Consumption, 1990-2000); Taiwan Province of China (Disposable income 1993-2003); Thailand (Consumption, 1992-2002); Vietnam (Consumption, 1993-2004).

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