

World Economic and Financial Surveys

Regional Economic Outlook

**Asia and Pacific**  
**Managing Spillovers and**  
**Advancing Economic Rebalancing**

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# Contents

<b>Definitions</b>	<b>vi</b>
<b>Executive Summary</b>	<b>viii</b>
<b>I. Ensuring Stable Growth: Risks and Challenges</b>	<b>1</b>
A. Signs of Stabilization during Global Uncertainty	1
B. A Turnaround in 2012 and a Stronger 2013	5
C. What Are the Main Risks to the Outlook?	9
D. The Policy Challenge: How Much Insurance Is Still Needed?	14
E. Laying the Foundations for Sustainable Growth	17
<b>II. The Evolution of Asian Financial Linkages: Key Determinants and the Role of Policy</b>	<b>23</b>
A. How Sensitive Are Asian Financial Markets to Market Movements in Systemic Economies?	23
B. Can Macroeconomic Policies Reduce Financial Sensitivities in Asia?	24
<b>III. The Likely Effect on Asia of a Sharp Deleveraging by European Banks</b>	<b>27</b>
A. The Role of European Banks in Asia	27
B. What Happened during the Lehman Crisis?	28
C. What Are the Implications of a Future Shock?	32
<b>IV. Is China Rebalancing? Implications for Asia</b>	<b>35</b>
A. Is China Rebalancing?	35
B. What Are the Implications for Asia?	39
C. Conclusion	41
<b>V. Asian Low-Income and Pacific Island Countries: Opportunities and Risks from Increased Regional Integration</b>	<b>43</b>
A. Regional LICs Receive More Investment from within Asia	43
B. Pacific Island Countries: Links to Regional Economies Already Matter More	45
<b>References</b>	<b>47</b>
<b>Boxes</b>	
1.1 Myanmar—Improved Outlook as Reform Momentum Picks Up	8
1.2 What Explains the Recent Decline in Japan’s Current Account Surplus, and What Lies Ahead?	10
1.3 Harnessing India’s Demographic Dividend	19
1.4 Explaining the ASEAN-3 Investment Puzzle: A Tale of Two Sectors	21
<b>Tables</b>	
1.1 Selected Asia: Real GDP	5
2.1 Determinants of Asian Financial Betas	25

## REGIONAL ECONOMIC OUTLOOK: ASIA AND PACIFIC

3.1	The Impact of Changes in Foreign Claims on Changes in Domestic Credit Supply	31
3.2	Summary of Policy Actions Taken in Asia during the Global Financial Crisis	31
3.3	Selected Asia: Impact on Tier 1 Capital Adequacy Ratios (CARs) Following Deleveraging by European Banks	32
4.1	Determinants of Asian Exports to China	41

### Figures

1.1	Real GDP Growth in the United States and the Euro Area	1
1.2	Selected Asia: Changes in Real GDP at Market Prices in 2011	1
1.3	Selected Asia: Exports to the United States and the European Union	1
1.4	Emerging Asia: Trade Balance	2
1.5	Global Manufacturing PMIs and Its Correlation with Emerging Asia's Industrial Production Growth	2
1.6	Selected Asia: Labor Market Conditions	2
1.7	Emerging Asia: Measure of Excess Credit Growth	3
1.8	Selected Asia: Fiscal Impulse in 2011	3
1.9	Selected Asia: Core and Headline Inflation	3
1.10	Selected Asia: Change in One-Year Ahead Inflation Expectations since the End of 2011	4
1.11	Nonresident Investment in Selected Asian Markets	4
1.12	Selected Asia: Stock Markets	4
1.13	Selected Asia: Exchange Rates against the U.S. Dollar	5
1.14	Selected Asia: Share of Exports Linked to Demand from Europe, 2010	6
1.15	Selected Asia (excl. China and Japan): Exports to China, Europe, and the United States	6
1.16	Emerging Asia: Response of Real Private Consumption Expenditure and Real Gross Fixed Investment to Non-FDI Inflows	6
1.17	Selected Asia: Headline Consumer Price Inflation	7
1.18	Selected Asia: Current Account Balances	9
1.19	Asia: Real GDP Growth	9
1.20	Consolidated Foreign Claims of European and U.S. Banks on Asia	12
1.21	China: Potential Effects of Property Downturn	13
1.22	Asia: Pass-Through from Global Energy Prices to Domestic Food and Energy Prices	13
1.23	Selected Asia: Real Interest Rates	15
1.24	Selected Asia: Nominal Policy Rates and Taylor Rule Implied Rates	15
1.25	Asia: Real Effective Exchange Rates	15
1.26	Emerging Asia and Latin America: Real Exchange Rates and Reserves	16
1.27	Selected Asia: Cyclically Adjusted General Government Balances	16
1.28	Selected Asia: Fiscal Impulse in 2012	17
1.29	Gross Public Debt, 2011	17
1.30	Share in Global Consumer Goods Import Demand, 2010	17
2.1	Equity Returns: Selected Systemic Economies and Asia	23
2.2	Asian Financial Betas and Global Financial Shocks	25
2.3	Financial Betas across Asian Economies	25
2.4	Asia: Changes in Betas from 2002–07 to 2008–11	26
3.1	Consolidated Foreign Claims of European and U.S. Banks on Emerging Asia	27
3.2	BIS Reporting Banks' Consolidated Foreign Claims on Selected Asian Economies by Sector	29
3.3	Asia: Export Credit Agency Backed Trade Finance	29

3.4	Consolidated Foreign Claims on Asian Economies	29
3.5	Differences in Policy Responses: Asia versus Non-Asia	31
3.6	Debt-to-Equity Ratio in Financial Firms at End-2007	32
3.7	Selected Asia: Real Policy Rates	32
4.1	China: Current Account Balance and Components	35
4.2	China: Composition of Exports and Imports	36
4.3	China: Export and Import Prices, and Terms of Trade	36
4.4	China: Mineral Import Volumes	37
4.5	China: Domestic Demand	37
4.6	China: Import Quantum Index	37
4.7	China: Number of Employees	38
4.8	Global Shares in Photosensitive Semiconductor Devices Exports	38
4.9	China: Loss-Making Enterprises	39
4.10	Selected Asia: Value Added Linked to China's Final Demand	39
4.11	China: Distribution of FDI and Imported Value Added	39
4.12	China: Share in Global Consumption versus Share in Global Consumer Goods Imports	40
4.13	Selected Asia: Share in Intermediate Goods Flows	41
4.14	Selected Asia: Correlation of Exports to China with China's Exports	41
4.15	U.S. Imports from Asia for Final Demand, 2010	42
5.1	Selected Emerging Asia: Share in Global Output and FDI	43
5.2	Selected Emerging Asia: Share in Regional FDI	43
5.3	China: Foreign Direct Investment	44
5.4	Selected Emerging Asia: Growth in FDI Relative to Regional Average	44
5.5	Selected Emerging Asia: Growth in FDI Relative to Regional Average	44
5.6	Selected Emerging Asia: Trade Openness and FDI	45
5.7	Selected Emerging Asia: Exports Exposure	45
5.8	PICs: Official Development Aid by OECD Donors	45
5.9	Selected PICs: Tourist Arrivals by Country of Residence	46
5.10	PICs: FDI by Country of Origin	46

# Definitions

In this *Regional Economic Outlook: Asia and Pacific*, the following groupings are employed:

- “ASEAN” refers to Brunei Darussalam, Cambodia, Indonesia, Lao People’s Democratic Republic, Malaysia, Myanmar, the Philippines, Singapore, Thailand, and Vietnam, unless otherwise specified.
- “East Asia” refers to China, Hong Kong SAR, the Republic of Korea, and Taiwan Province of China.
- “Emerging Asia” refers to China, Hong Kong SAR, India, Indonesia, the Republic of Korea, Malaysia, the Philippines, Singapore, Taiwan Province of China, Thailand, and Vietnam.
- “Industrial Asia” refers to Australia, Japan, and New Zealand.
- “South Asia” refers to Bangladesh, India, and Sri Lanka.
- “Asia” refers to ASEAN, East Asia, Industrial Asia, and South Asia.
- “EU” refers to the European Union.
- “G-2” refers to the euro area and the United States.
- “G-7” refers to Canada, France, Germany, Italy, Japan, the United Kingdom, and the United States.
- “G-20” refers to Argentina, Australia, Brazil, Canada, China, the European Union, France, Germany, India, Indonesia, Italy, Japan, the Republic of Korea, Mexico, the Russian Federation, Saudi Arabia, South Africa, Turkey, the United Kingdom, and the United States.

The following abbreviations are used:

ASEAN	Association of Southeast Asian Nations
BBVA	Banco Bilbao Vizcaya Argentaria
BIS	Bank for International Settlements
CAPM	Capital Asset Pricing Model
CARs	capital adequacy ratios
FDI	foreign direct investment
FTA	free trade agreements
FTSE	Financial Times Stock Exchange
FY	fiscal year
GDP	gross domestic product
HSBC	Hong Kong Shanghai Banking Corporation
LICs	low-income countries
MSCI	Morgan Stanley Capital International
NASDAQ	National Association of Securities Dealers Automated Quotations
OECD	Organization for Economic Cooperation and Development
PICs	Pacific Island countries
PMI	purchasing managers’ index
SEEs	state economic enterprises
SMEs	small and medium-sized enterprises
VIX	Chicago Board Options Exchange Market Volatility Index
WEO	<i>World Economic Outlook</i>

The following conventions are used:

- In tables, a blank cell indicates “not applicable,” ellipsis points (. . .) indicate “not available,” and 0 or 0.0 indicates “zero” or “negligible.” Minor discrepancies between sums of constituent figures and totals are due to rounding.
- In figures and tables, shaded areas show IMF projections.
- An en dash (–) between years or months (for example, 2007–08 or January–June) indicates the years or months covered, including the beginning and ending years or months; a slash or virgule (/) between years or months (for example, 2007/08) indicates a fiscal or financial year, as does the abbreviation FY (for example, FY2009).
- An em dash (—) indicates the figure is zero or less than half the final digit shown.
- “Billion” means a thousand million; “trillion” means a thousand billion.
- “Basis points” refer to hundredths of 1 percentage point (for example, 25 basis points are equivalent to ¼ of 1 percentage point).

As used in this report, the term “country” does not in all cases refer to a territorial entity that is a state as understood by international law and practice. As used here, the term also covers some territorial entities that are not states but for which statistical data are maintained on a separate and independent basis.

This *Regional Economic Outlook: Asia and Pacific* was prepared by a team coordinated by Roberto Cardarelli of the IMF’s Asia and Pacific Department, under the overall direction of Anoop Singh. Contributors include Ashvin Ahuja, Shekhar Aiyar, Rahul Anand, Benjamin Bingham, Ravi Balakrishnan, S. Pelin Berkmen, Nigel Chalk, Ding Ding, Sergei Dodzin, Nombulelo Duma, Selim Elekdag, Sonali Jain-Chandra, Tsin Zhen Koh, W. Raphael Lam, Adil Mohommad, Papa N’Diaye, Malhar Nabar, Sylwia Nowak, Alexander Pitt, Phurichai Rungcharoenkitkul, Olaf Unteroberdoerster, Jade Vichyanond, Yiqun Wu, and Yong Sarah Zhou. Souvik Gupta and Hye Sun Kim provided research assistance. Lesa Yee provided production assistance. Joseph Procopio, Joanne Blake, and Michael Harrup of the IMF’s External Relations Department edited the volume and coordinated its publication and release. This report is based on data available as of April 11, 2012 and includes comments from other departments and some Executive Directors.

# Executive Summary

Global economic prospects have improved somewhat in 2012. After a sharp slowdown at the end of 2011, there is growing evidence that global activity is set to strengthen in the second half of 2012. Financial conditions have eased considerably and risk appetite rebounded in the first quarter after policymakers circumvented an imminent crisis in the euro area.

Growth in Asia is also expected to gain momentum over the course of 2012. Although activity slowed markedly across the region in the last quarter of 2011, mainly due to weakening external demand, domestic demand has generally remained strong, as reflected in low unemployment, high capacity utilization, and robust credit growth. In the first months of 2012, leading indicators of activity strengthened, inflation expectations picked up, and capital inflows into Emerging Asia rebounded. Growth for the Asia and Pacific region as a whole is projected to be at 6 percent in 2012, broadly unchanged from last year, before rising to about 6½ percent in 2013.

Nevertheless, the global economy remains fragile, exposing Asia to serious downside risks. The debt crisis in the euro area has not been fully resolved, and financial turmoil could still escalate in the region and spread globally, while increased geopolitical risks could push energy prices sharply higher. So far, stronger economic and policy fundamentals have helped buffer Asian economies against the global financial crisis, including by limiting adverse financial market spillovers (Chapter 2) and ameliorating the impact of deleveraging by European banks (Chapter 3). But a sharp fall in exports to advanced economies and a reversal of foreign capital flows would severely impact activity in Asia, both directly and through knock-on effects on domestic demand. Moreover, a shock to commodity prices could create difficult trade-offs between inflationary pressures and budgetary risks from energy and food subsidies.

On the other hand, there are also upside risks to our central scenario. Because macroeconomic policy has remained generally accommodative, further stabilization of global economic and financial conditions over the course of 2012 could boost growth and revive overheating pressures in the region.

Against this background, Asian policymakers face the difficult task of calibrating the amount of insurance needed to support stable, noninflationary growth. Pausing the normalization of macroeconomic policies when the global recovery stalled in late 2011 was fully warranted, given the uncertainties at the time. Now, however, policymakers should be ready to shift gears and renew their tightening cycle as overheating pressures become evident. Of course, the balance of risks differs from country to country. Economies with greater exposure to downside risks and those closer to neutral monetary policy stances could afford to pause longer, but others with more accommodative conditions, stickier core inflation, and more buoyant credit growth may need a faster return to more neutral policy stances. Similarly, the pace of fiscal consolidation should be calibrated to country-specific circumstances, with a more rapid pace adopted in countries with large, cyclically adjusted deficits and elevated debt profiles.

The best form of creating insurance against the risk of external shocks remains strengthening domestic sources of growth. Lower trade surpluses in China have raised the likelihood that the shift of global demand to major surplus economies is finally taking place, but sustainable rebalancing will

nonetheless depend on China's successful transition from investment-led to consumption-led growth (Chapter 4). In India, improving the investment climate and infrastructure, and education, as well as facilitating trade and easing labor laws will be keys to maximizing gains from its ongoing demographic transition. Among ASEAN economies, public investment in infrastructure within appropriate medium-term frameworks would help crowd-in private investment and promote more broad-based growth while safeguarding fiscal sustainability.

Asian low-income and small island economies face particular challenges (Chapter 5). In low-income countries, attracting foreign direct investment (including from other Asian economies) will be key to helping these countries participate more fully in Asia's growth dynamics and benefit from the region's rebalancing. Pacific and other small island economies face the challenge of improving economic resilience in the face of adverse global economic spillovers and broadening sources of growth over the medium term.



# I. Ensuring Stable Growth: Risks and Challenges

## A. Signs of Stabilization during Global Uncertainty

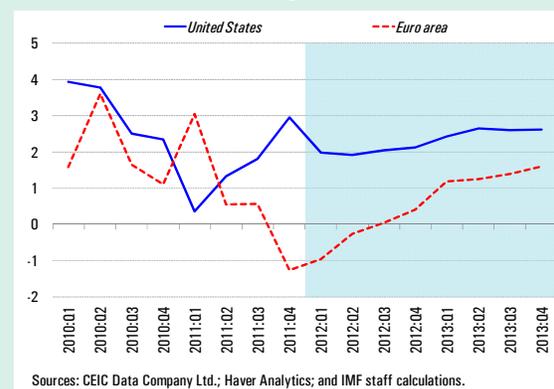
Since September 2011, the economic fortunes of Europe and the United States have diverged, with European growth slowing sharply (Figure 1.1). While policy measures taken by the European Central Bank and the approval of a new financing package for Greece have alleviated the market disruptions of 2011:Q4, the central forecast for the region is still for a mild recession in 2012. On the other hand, as discussed in the April 2012 *World Economic Outlook* (IMF, 2012c), a string of encouraging economic indicators have emerged from the United States, including better employment numbers and rising business confidence. As a result, real gross domestic product (GDP) growth in the United States has been marked up to 2.1 percent in 2012 from the 1¾ percent projected in the September 2011 *World Economic Outlook* (IMF, 2011a).

Growth in Asia slowed markedly in the last quarter of 2011, mainly due to weakening external demand (Figure 1.2). Export growth has lost momentum across the region, for both electronics and nonelectronic goods. The level of exports to the European Union has fallen increasingly below trend even as exports to the United States have recovered to their long-run trend after the global financial crisis (Figure 1.3). The region's trade surplus continued to shrink in the last quarter of 2011, with China playing a prominent role in this decline (Figure 1.4).

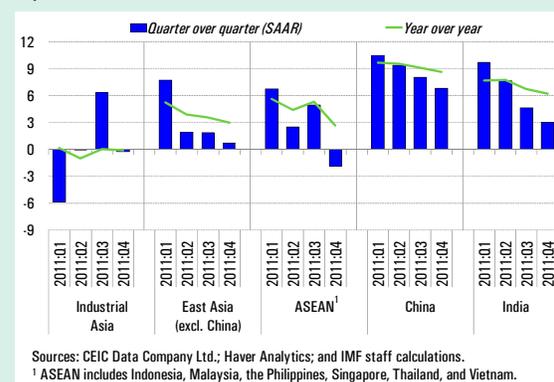
Weak exports and supply shocks have taken their toll on industrial production across Asia, but high-frequency indicators suggest that a turnaround may be in the cards. The Thai floods in October–November 2011 led to supply chain disruptions across the region, particularly in Japan, where an inventory drawdown and a decline in exports were responsible for a contraction of GDP in the fourth quarter of 2011. While the supply

Note: The main authors of this chapter are Shekhar Aiyar, Sylwia Nowak, and Olaf Unteroberdoerster, with contributions from Tsin Zhen Koh. Hye Sun Kim provided research assistance.

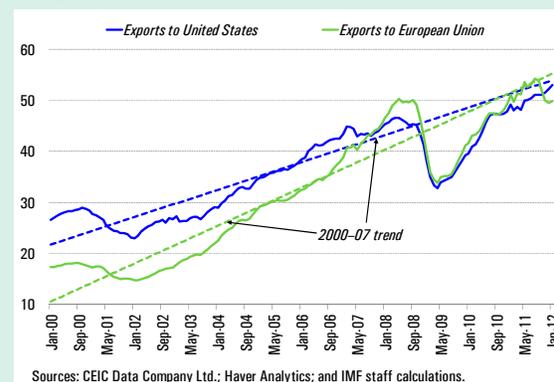
**Figure 1.1. Real GDP Growth in the United States and the Euro Area**  
(Quarter-over-quarter percent change; SAAR)



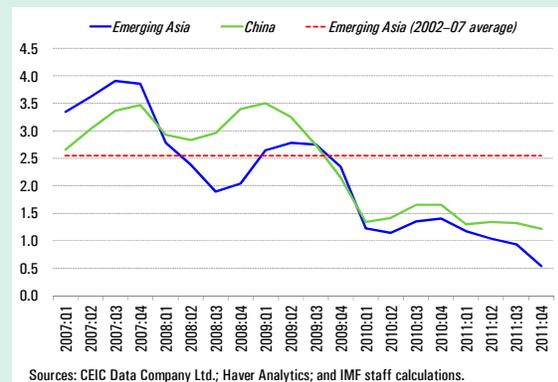
**Figure 1.2. Selected Asia: Changes in Real GDP at Market Prices in 2011**  
(In percent)



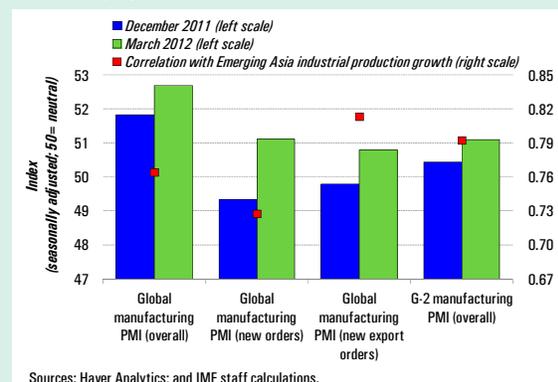
**Figure 1.3. Selected Asia: Exports to the United States and the European Union**  
(Seasonally adjusted, three-month moving average; in billions of U.S. dollars)



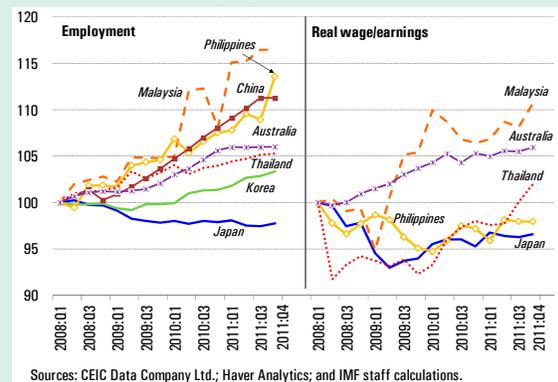
**Figure 1.4. Emerging Asia: Trade Balance**  
(12-month rolling sum, in percent of Emerging Asia GDP)



**Figure 1.5. Global Manufacturing PMIs and Its Correlation with Emerging Asia's Industrial Production Growth**



**Figure 1.6. Selected Asia: Labor Market Conditions**  
(2008:Q1 = 100; seasonally adjusted)



chain disruptions are temporary, high-frequency indicators such as purchasing managers' indices (PMIs) and export orders improved in recent months, suggesting that activity might have bottomed out in the first quarter of 2012 in much of Asia. In particular, global manufacturing PMIs and export orders, and industrial countries' manufacturing PMIs—which have been highly correlated with industrial production in Asia in the past—have strengthened in the first quarter of 2012 (Figure 1.5).

Asian domestic demand has generally remained strong, buffering the impact of the weakening external environment. Capacity utilization has remained high, and regional labor markets have been tight on the back of strong employment growth and steadily rising real wages (Figure 1.6). Credit continued to grow faster than nominal GDP growth in many regional economies, particularly in the Association of Southeast Asian Nations (ASEAN) countries (Figure 1.7), and local bond markets continued to expand. Credit growth in China—while having fallen considerably from its peak level in 2009—remains in double digits, but is broadly commensurate with nominal GDP growth.

Domestic demand has benefited from the continued easing of macroeconomic policy across most of the region. Many countries have either loosened monetary policy or paused the tightening cycle since activity slowed last October. For example, in Indonesia, the central bank has lowered its policy rate by 100 basis points since the last quarter of 2011, in addition to lowering the bottom end of its deposit standing facility rate, while Singapore reduced the slope of the exchange rate policy band in October. By contrast, in China the authorities have allowed for only a modest increase in liquidity through a 50 basis point reduction in reserve requirements since December, consistent with their targeted rate of credit growth. Moreover, in a number of regional economies the fiscal impulse remained positive in 2011 (Figure 1.8), reflecting higher capital expenditure under medium-term infrastructure projects (for example, Hong Kong SAR), subsidies and transfers (for example, Malaysia), and repair work from natural disasters (for example, Japan and New Zealand). But fiscal consolidation continued in 2011 in quite a few

other regional economies, including Australia, China, India, Korea,<sup>1</sup> the Philippines, and Vietnam.

Across Asia, inflation has been gradually climbing down from its peak in mid-2011. The decline has been propelled mainly by the normalization of commodity prices, particularly of food prices, with core inflation having declined generally by less than headline inflation in the region (Figure 1.9). Moreover, since the end of 2011, sequential headline inflation has been creeping upward in Indonesia, Korea, and Singapore, and most economies in the region have seen an increase in inflationary expectations (Figure 1.10).<sup>2</sup>

Capital flows to Emerging Asia have rebounded so far in 2012, following the sharp retrenchment in portfolio equity flows late last year (Figure 1.11). From August 2011 onward, global risk aversion spiked in response to escalating turmoil in the euro area, and investors fled to safe havens globally. In Emerging Asia, this caused a large withdrawal of foreign equity investments, plunges in regional stock markets, sharp currency depreciations, and a shortage of U.S. dollar funding. Stresses in local banking systems also emerged, with credit default swap spreads on some banks in Australia, China, Hong Kong SAR, and Japan increasing to record or near-record highs. With the decline in global market turbulence in 2012, capital inflows to Emerging Asia have resumed, and equity and currency markets have regained some of the ground lost in late 2011 (Figures 1.12 and 1.13). As a notable exception, the improvement of global financial conditions so far in 2012 caused a significant decline of the yen, the region’s safe-haven currency.

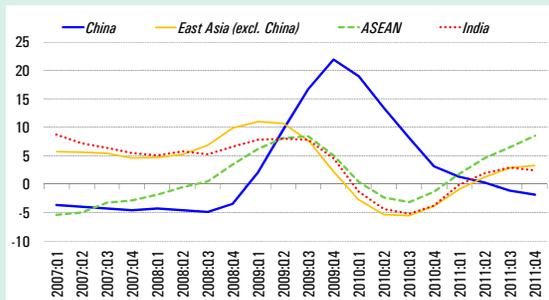
These regional trends mask considerable heterogeneity in different parts of Asia.

- In Industrial Asia, growth in Australia has been supported by continued strong demand for commodities (particularly from China) and sustained investment in mining, although the

<sup>1</sup> Throughout this report, “Korea” refers to the Republic of Korea.

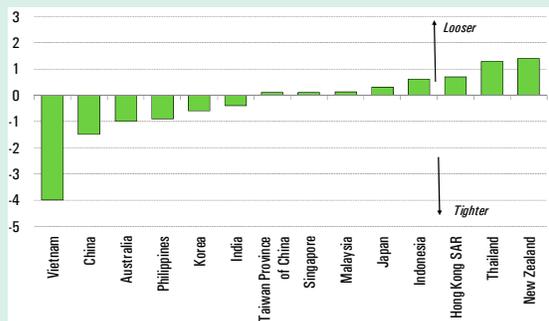
<sup>2</sup> Sequential inflation is defined as the three-month change in the seasonally adjusted three-month moving average of consumer price index.

**Figure 1.7. Emerging Asia: Measure of Excess Credit Growth<sup>1</sup>**  
(In percentage points; four-quarter moving average)



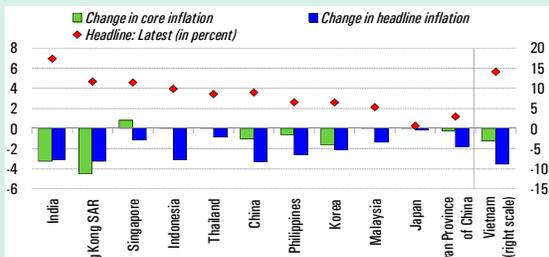
Sources: CEIC Data Company Ltd.; Haver Analytics; and IMF staff calculations.  
<sup>1</sup> Excess credit growth is represented by the difference in year-over-year growth rate between credit to the private sector and nominal GDP. ASEAN includes Indonesia, Malaysia, the Philippines, Singapore, and Thailand.

**Figure 1.8. Selected Asia: Fiscal Impulse in 2011<sup>1</sup>**  
(In percent of GDP)



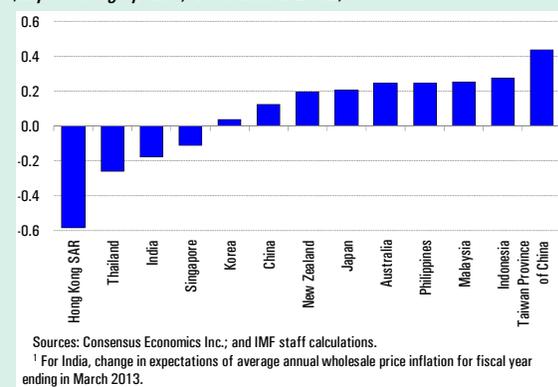
Sources: IMF staff estimates.  
<sup>1</sup> Change (relative to previous year) in structural fiscal balances related to measures taken in response to the crisis.

**Figure 1.9. Selected Asia: Core and Headline Inflation**  
(In percentage points, except as otherwise indicated; change since peak of headline inflation in 2011)<sup>1</sup>

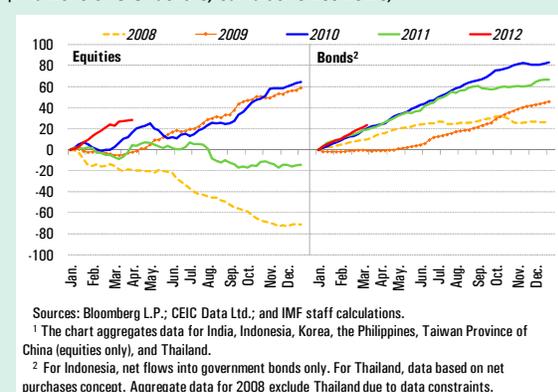


Sources: CEIC Data Company Ltd.; Haver Analytics; and IMF staff calculations.  
<sup>1</sup> Latest data in the case of headline for China, Korea, Indonesia, the Philippines, Taiwan Province of China, Thailand, and Vietnam refer to March 2012. For others, data are as of February 2012 except for Malaysia (January 2012 for core inflation) and the Philippines (December 2011 for official data on core inflation).

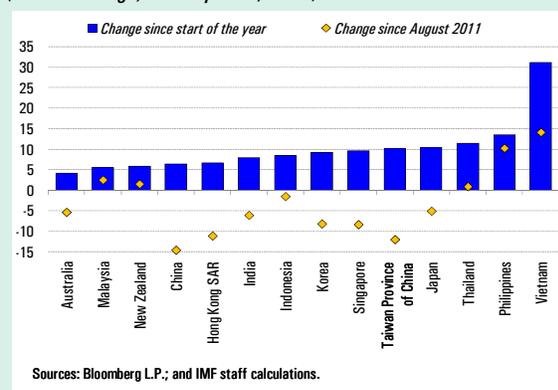
**Figure 1.10. Selected Asia: Change in One-Year Ahead Inflation Expectation since the End of 2011<sup>1</sup>**  
(In percentage points; as of March 2012)



**Figure 1.11. Nonresident Investment in Selected Asian Markets<sup>1</sup>**  
(In billions of U.S. dollars; cumulative net flows)



**Figure 1.12. Selected Asia: Stock Markets**  
(Percent change; as of April 11, 2012)



strong exchange rate and cautious household spending acted as a drag on activity. In New Zealand, still-elevated commodity prices and favorable agricultural conditions helped offset the impact of the 2011 earthquakes. In Japan business investment has picked up since the last quarter of 2011, helped by reconstruction spending and a weakening of the yen.

- In East Asia, the moderation of growth in China since September 2011 has reflected not only lower export growth, but also the continued withdrawal of the postcrisis fiscal stimulus and the move to a more prudent monetary policy stance. Moreover, the property market has cooled off in the face of concerted policy actions. Still, private investment has remained at high levels. In Korea the growth of domestic demand has been dragged down by gross fixed investment, which contracted in 2011 because of an overhang of unsold apartments, negative base effects from a surge in facilities investment in 2010, and the withdrawal of fiscal stimulus.
- In South Asia, domestic factors have also played a role in India's growth slowdown over the second half of 2011. Concerns about governance and slow project approvals by the government have weakened business sentiment, which in turn has adversely affected investment, along with cyclical factors such as global uncertainty and policy tightening, although the latter has loosened since then. Growth in Sri Lanka remained robust, but a surge in domestic demand, boosted by rapid credit growth, caused a sharp widening of the external current account deficit that put reserves under significant pressure in the second half of 2011.
- The pattern of moderating growth also extended to ASEAN economies, but Indonesia is the region's notable exception, as rapid credit growth and supportive monetary policy continued to boost domestic demand in the second half of 2011. In Thailand, just as the economy began to recover from the impact of the Japanese tsunami, massive floods in October–November 2011 brought the manufacturing sector to a near standstill.

Despite lower commodity prices in the second half of 2011 and weaker external demand, growth remained relatively buoyant in Asian low-income economies. Robust investment in the mining and energy sectors of economies such as Mongolia and Papua New Guinea supported activity, as did the relocation of production from more-advanced neighboring economies, as was the case for garment exporters in Bangladesh and Cambodia. An improvement in the business climate also spurred investment and activity in Myanmar, and buoyant remittance flows have helped boost activity in countries with significant migrant workforces such as Nepal. By contrast, stabilization policies have weighed on Vietnam's growth, notwithstanding continued gains in export market share. In Pacific Island economies, regional economic links, notably with Australia and China, continued to support the recovery (see Chapter 5).

## B. A Turnaround in 2012 and a Stronger 2013

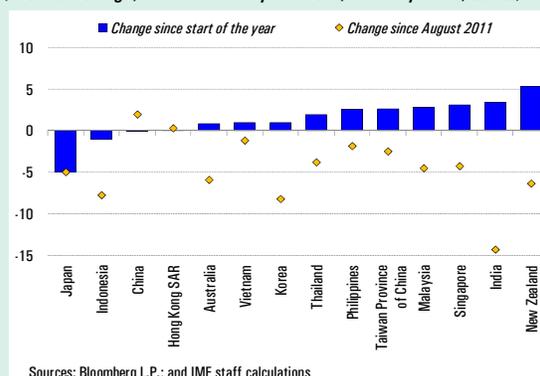
Looking ahead, the forecast for the Asia and Pacific region is essentially unchanged from the January 2012 *World Economic Outlook Update* (IMF, 2012a): growth in 2012 will continue at the same pace as in 2011, and then rebound in 2013. This forecast, however, reflects a combination of considerably lower growth in Emerging Asia—particularly in the first half of 2012 and in the more open and trade-dependent economies—and a sharp rebound in Industrial Asia (Table 1.1). Industrial Asia is projected to grow at about 2 percent in 2012, as Japan and New Zealand recover strongly from the natural disasters and favorable demand conditions for commodities provide a boost to Australia. But growth in Emerging Asia as a whole is expected to decline from 7½ percent in 2011 to below 7 percent in 2012, before recovering in 2013.

The slowdown in Emerging Asia's growth for 2012 mainly reflects the outlook for advanced economies and China. Growth prospects for advanced economies continue to be critical for Asia's overall exports dynamics, but regional and nontraditional markets are also beginning to play a more important role as a destination for Asian exports. In particular:

- While the April 2012 *World Economic Outlook* (IMF, 2012c) forecasts a rising growth trajectory for the United States, this is more than offset by projections for the mild contraction in the euro area in 2012 followed by growth of a mere 0.8 percent in 2013. This will have a nonnegligible impact on Asia's exports, as many regional economies have large direct and indirect (through

**Figure 1.13. Selected Asia: Exchange Rates against the U.S. Dollar**

(Percent change; decrease = depreciation; as of April 11, 2012)



**Table 1.1. Selected Asia: Real GDP**

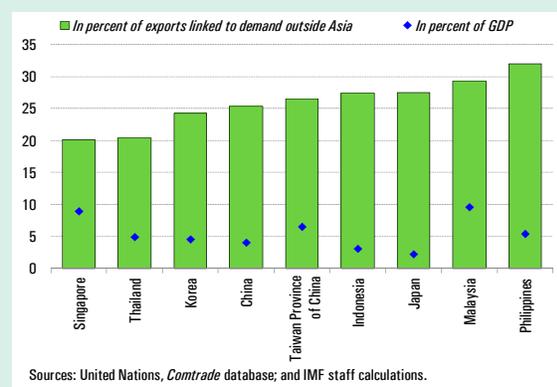
(Year-over-year percent change)

	Actual data and latest projections			Difference from January 2012 projections	
	2011	2012	2013	2012	2013
<b>Industrial Asia</b>	<b>-0.2</b>	<b>2.2</b>	<b>2.0</b>	<b>0.3</b>	<b>0.0</b>
Australia	2.0	3.0	3.5	0.0	-0.1
Japan	-0.7	2.0	1.7	0.4	0.1
New Zealand	1.4	2.3	3.2	-0.4	-0.2
<b>East Asia</b>	<b>8.2</b>	<b>7.3</b>	<b>8.0</b>	<b>0.1</b>	<b>0.0</b>
China	9.2	8.2	8.8	0.0	0.0
Hong Kong SAR	5.0	2.6	4.2	-0.1	0.2
Korea	3.6	3.5	4.0	0.0	0.0
Taiwan Province of China	4.0	3.6	4.7	0.3	0.3
<b>South Asia</b>	<b>7.1</b>	<b>6.8</b>	<b>7.2</b>	<b>-0.1</b>	<b>0.0</b>
Bangladesh	6.1	5.9	6.4	-0.3	-0.1
India	7.1	6.9	7.3	-0.1	0.0
Sri Lanka	8.2	7.5	7.0	0.5	0.5
<b>ASEAN</b>	<b>4.6</b>	<b>5.2</b>	<b>6.0</b>	<b>0.4</b>	<b>1.0</b>
Brunei Darussalam	1.9	3.2	1.6	0.8	-0.3
Cambodia	6.1	6.2	6.4	-0.3	0.0
Indonesia	6.5	6.1	6.6	0.0	0.0
Lao P.D.R.	8.3	8.4	7.1	0.0	0.0
Malaysia	5.1	4.4	4.7	0.4	0.2
Myanmar	5.5	6.0	5.9	0.3	0.0
Philippines	3.7	4.2	4.7	0.0	0.0
Singapore	4.9	2.7	3.9	0.0	0.1
Thailand	0.1	5.5	7.5	0.8	2.7
Vietnam	5.9	5.6	6.3	0.0	0.0
<b>Emerging Asia<sup>1</sup></b>	<b>7.4</b>	<b>6.9</b>	<b>7.5</b>	<b>0.0</b>	<b>0.1</b>
<b>Asia</b>	<b>5.9</b>	<b>6.0</b>	<b>6.5</b>	<b>0.1</b>	<b>0.1</b>

Source: IMF staff projections.

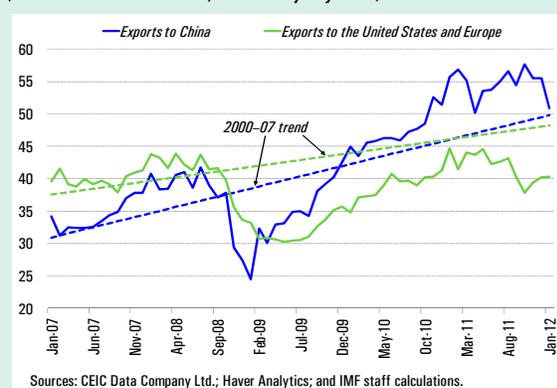
<sup>1</sup> Emerging Asia includes East Asia, India, Indonesia, Malaysia, the Philippines, Singapore, Thailand, and Vietnam.

**Figure 1.14. Selected Asia: Share of Exports Linked to Demand from Europe, 2010**  
(Value-added basis)



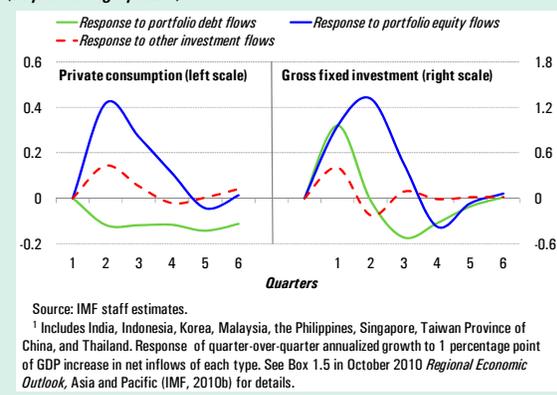
the regional supply chain) export exposure to the euro area. The IMF staff estimates that, on average in 2010, demand from Europe accounted for about one-fourth of the Emerging Asia exports that can be linked to demand from outside the region, a share almost as large as that linked to the United States (Figure 1.14). The impact of the weaker external environment is likely to be greater for highly open economies specializing in cyclically sensitive goods such as Hong Kong SAR, Singapore, and Taiwan Province of China, and to be lower in economies more reliant on domestic demand, such as India and Indonesia.

**Figure 1.15. Selected Asia (excl. China and Japan): Exports to China, Europe, and the United States**  
(In billions of U.S. dollars; seasonally adjusted)



- At the same time, China's growth is expected to slow to 8.2 percent in 2012 as the authorities' efforts to engineer a soft landing and support more balanced growth take effect alongside the fall in external demand, before rebounding to 8.8 percent in 2013. Given China's greater role as a source of external demand for many regional economies, this is expected to have knock-on effects in the region. Indeed, staff estimates suggest that China's domestic demand has explained about 60–70 percent of the recovery of Asia's (excluding China and Japan) exports to China to the peak above precrisis trends in 2011 (Figure 1.15). In particular, the region's commodity exporters, including Australia and Indonesia, continue to benefit from China's investment-led growth.

**Figure 1.16. Emerging Asia: Response of Real Private Consumption Expenditure and Real Gross Fixed Investment to Non-FDI Inflows<sup>1</sup>**  
(In percentage points)



Growth in the region is expected to gain momentum by the second half of 2012 and into 2013. External demand is projected to improve in line with better growth performance in the euro area from the third quarter of this year. At the same time, the fundamentals for domestic demand, including strong labor markets, are expected to remain solid across the region. A resumption of strong capital flows to Emerging Asia over 2012 and 2013 is expected to sustain private consumption and investment across the region, by boosting confidence and contributing to a loosening of financial conditions. Estimated impulse response functions for Emerging Asia suggest that domestic demand reacts particularly strongly to a surge in equity inflows (Figure 1.16).

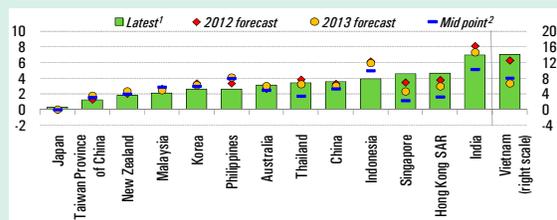
In addition to these general trends, our forecasts reflect a series of country-specific factors:

- In Industrial Asia, Japan’s recovery in 2012 is driven by reconstruction spending and further monetary easing, but growth will level off in 2013 as the acceleration of exports and private domestic demand only partly offsets lower public spending. Reconstruction activity is also expected to boost growth in New Zealand, while continued strong commodities demand and prices will sustain activity in Australia.
- In East Asia, Korea’s growth in 2012 and 2013 is expected to benefit from a strong recovery in private investment, particularly in the construction sector as the housing sector overhang gradually unwinds, while the recently approved free-trade agreement with the United States is expected to sustain exports.
- Among ASEAN economies, reconstruction activity is expected to provide a strong spur to domestic demand in Thailand, boosting growth in both 2012 and 2013. Despite the drag from weaker external demand, growth in 2012 is also expected to accelerate in the Philippines, reflecting stronger government spending, robust remittances, and the initiation of public-private partnership projects. The gradual implementation of investment projects under the Economic Transformation Plan is expected to boost growth in Malaysia.
- In India, the lowered growth outlook in 2012 owes much to a slowdown of investment which partly reflects structural factors. In particular, apart from some financial reforms and measures to broaden the use of public-private partnerships announced in the 2012/13 budget, the implementation of reforms related to infrastructure is likely to proceed slowly.
- Growth is expected to remain healthy in low-income countries in Asia in 2012 and 2013, owing mainly to sustained receipts from tourism and remittances, and strong foreign direct investment (FDI) (see Chapter 5). Growth is set to remain particularly robust in the resource-rich economies (the Lao People’s Democratic Republic,

Mongolia, and Papua New Guinea) where economic activity is being propelled by investments in large resource projects. In Cambodia, growth will pick up in 2012, as agricultural production rebounds from the flood damage in late 2011. Stronger garment exports and firming remittances are expected to support higher growth in Bangladesh, where investment is also set to strengthen on improvements in energy supply and normalizing credit conditions. New momentum in political and economic reform is creating a more favorable growth environment in Myanmar (Box 1.1). However, the impact of macroeconomic stabilization policies is expected to continue dampening Vietnam’s growth in 2012.

Inflation is expected to decline modestly in 2012 across the region. The April 2012 *World Economic Outlook* (IMF, 2012c) projects stable oil prices in 2012 and 2013, but a decline in other commodity prices, with the nonfuel index falling by 10 percent in 2012 and 2 percent in 2013. The normalization of commodity prices and somewhat less accommodative monetary policy conditions will contribute to lower inflation in 2012, including in low-income economies. Nonetheless, in many economies, such as Hong Kong SAR, India, Indonesia, Singapore, Thailand, and Vietnam, the forecast for headline inflation in 2012 remains well above the midpoint of the inflation target range (or above the historical average for those economies that do not target inflation explicitly) (Figure 1.17). This reflects sustained demand pressures but also ad hoc factors like the potential increase of energy prices in Indonesia.

**Figure 1.17. Selected Asia: Headline Consumer Price Inflation (Year over year; in percent)**



Sources: CEIC Data Company Ltd.; Haver Analytics; and IMF, WEO database and staff projections.

<sup>1</sup> Latest data for China, Korea, Indonesia, the Philippines, Taiwan Province of China, Thailand, and Vietnam refer to March 2012. Others are as of February 2012 except for Australia and New Zealand (December 2011).

<sup>2</sup> Mid point refers to the center of the inflation target band (headline for Australia, Indonesia, Korea, New Zealand, and the Philippines; core inflation for Thailand; and average headline inflation over 2005–07 for other economies). Wholesale prices used for India.

### Box 1.1. Myanmar—Improved Outlook as Reform Momentum Picks Up

Real GDP growth in Myanmar is projected to increase to 6 percent in FY2012/13, from an estimated 5½ percent in the current year, driven by commodity exports and higher investment on the back of improved business confidence. However, inflation, which has been moderating mainly due to lower food prices and less deficit monetization, running at an estimated 4 percent this fiscal year, is expected to pick up to 5¾ percent in FY 2012/13, as the recent drop in food prices phases out. Even though export growth is expected to fall short of fast import growth linked to large FDI projects in the energy sector, gross official reserves, at US\$7.1 billion in September 2011, are expected to remain comfortable at about 9½ months of imports in FY2011/12.

Myanmar's long-term economic potential is high. With appropriate reforms, Myanmar could turn to its advantage its rich natural resources (natural gas, gems, minerals, and forestry products), a young labor force, and proximity to some of the most dynamic economies in the world, lifting growth and improving living standards.

Myanmar's favorable economic outlook and longer-term prospects hinge on vigorous implementation of reforms. Priorities include establishing the market infrastructure to enhance monetary and foreign exchange policy, fiscal reform to end monetization of deficits and enhance public financial management, and financial and other structural reform to promote private-sector led growth.

- **Exchange market.** The economy has been burdened with complex exchange restrictions that give rise to multiple currency practices. As a first step toward unification, the authorities adopted a managed float as their new exchange rate regime on April 1, 2012 and have introduced foreign currency auctions and an interbank market. This initial step would need to be complemented by gradually removing all remaining exchange restrictions on current international payments and transfers to unify the various informal market rates used by the private sector.
- **Fiscal management.** The new government's first budget targets a smaller deficit, declining from 5½ percent of GDP in FY2011/12 to about 4½ percent of GDP in FY2012/13. However, spending on education and health is expected to increase from 5½ percent of total expenditures to 7½ percent. The consolidated nonfinancial public sector deficit would also decline due to higher net transfers from state economic enterprises (SEE), primarily from gas exports, following the introduction of market-based exchange rates for SEE exports and imports. Going forward, reform priorities include improving public financial management.
- **Monetary framework.** The central bank of Myanmar cut the administratively set interest rates by a cumulative four percentage points since September 2011, the first cuts since 2007. It has also revised the fixed interest rate structure to provide financial incentives for banks to hold treasury bonds, and as a consequence, deficit monetization is projected to decline to about half of the fiscal deficit in FY2011/12.
- **Bank intermediation.** Modernization of the financial sector should start with phasing out pervasive administrative controls on bank activities and gradually liberalizing interest rates. While formal intermediation remains depressed, the authorities relaxed the requirements on deposit taking, expanded the administratively set collateral list, eased controls on extending branch networks, and allowed some flexibility in setting the deposit rates as part of the recent interest rate cuts. As a result, private sector credit growth has accelerated, albeit from a very low base.
- **Private sector led growth.** The authorities have also taken some steps to promote rural growth and increase competition. Harvest loans to farmers have been doubled, FDI rules have been relaxed, and imports of gasoline and palm oil have been liberalized. The broader goal of promoting private sector development would require additional efforts to improve the business climate by reducing administrative controls and the cost of doing business.

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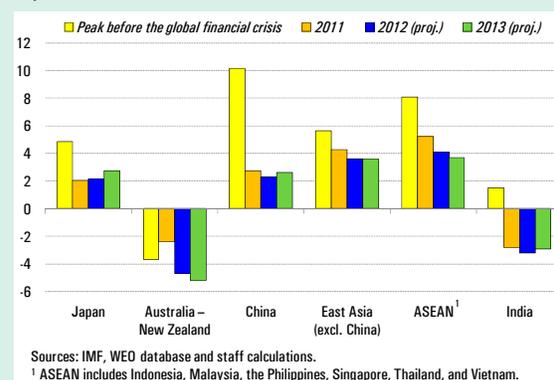
Note: The main author of this box is Sergei Dodzin.

Asia's current account surplus is expected to bottom out in 2012, at just above 1½ percent of regional GDP, and then increase to just below 2 percent in 2013 (Figure 1.18). That said, it remains uncertain whether the extent to which the decline in Asia's overall current account since precrisis peaks reflects progress toward comprehensive rebalancing. In Japan, a lower current account surplus in 2011 mainly resulted from the transitory impact of the earthquake, which curbed export supply and boosted energy-related import demand (Box 1.2). In China, the decline in current account surplus has helped narrow global imbalances and mainly reflected a worsening in the terms of trade as well as robust import growth. But the latter was largely linked to even higher investment, as China continued to develop its infrastructure network, rather than greater consumption as a share of output, which will need to rise further to make this progress sustainable in the future, in line with the authorities' 12th Five Year Plan (see Chapter 4). By contrast in several ASEAN economies, including Indonesia, the Philippines, Singapore, and Thailand, the lower current account balances reflected mainly a welcome increase in investment-to-GDP ratios, which might help strengthen domestic sources of growth in a more sustainable way. Overall, the progress made across the region is important and can be built on with continued reforms in the coming years.

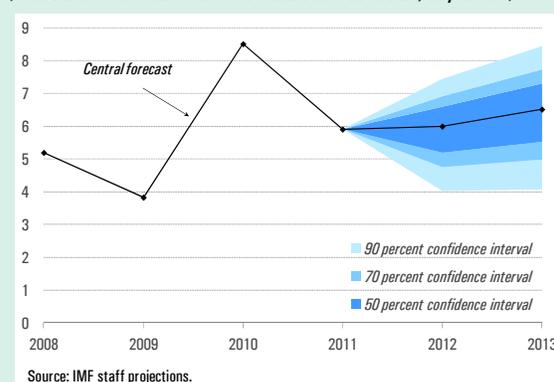
### C. What Are the Main Risks to the Outlook?

Risks to this forecast have lessened somewhat relative to January, but remain tilted to the downside (Figure 1.19). As discussed in the April 2012 *Global Financial Stability Report* (IMF, 2012b), important policy steps since last fall have brought much-needed stabilization to the euro area financial markets, causing sovereign spreads to decline, bank funding markets to reopen, and equity prices to recover. Risks to global growth, highlighted in the April 2012 *World Economic Outlook* (IMF, 2012c), have therefore receded since last January's update. However, the global economy remains unusually vulnerable, and fresh setbacks could still occur, with great repercussions for Asia.

**Figure 1.18. Selected Asia: Current Account Balances (In percent of GDP)**



**Figure 1.19. Asia: Real GDP Growth (Central forecast and selected confidence intervals; in percent)**



A key downside risk for Asia is renewed escalation of the euro area debt crisis, which could result in a much larger and more-protracted bank deleveraging. European banks are under pressure to reduce the size of their balance sheets as they continue to cope with sovereign risks, weak economic growth, high rollover requirements, and the need to strengthen capital cushions to regain investor confidence. An escalation of the crisis with a disorderly, large-scale, and aggressive trimming of balance sheets could have a serious impact on Asia:

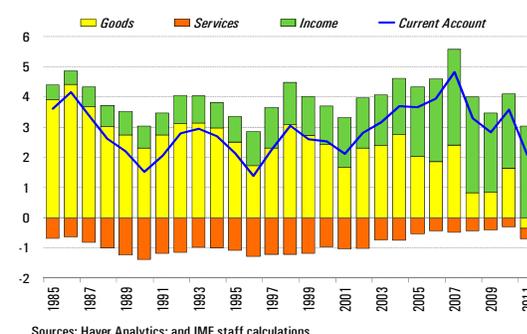
- Although Asian economies on average rely less than comparator regions on euro area and U.K. banks, these banks nonetheless have a substantial presence in several Asian economies (Figure 1.20). They are important sources of credit in two ways: (i) direct lending, including in the area of trade finance, to private sector agents in the region,

### Box 1.2. What Explains the Recent Decline in Japan's Current Account Surplus, and What Lies Ahead?

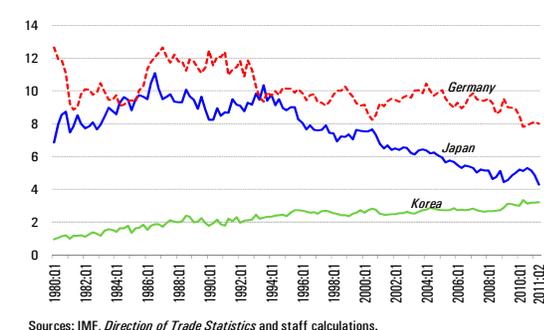
In the two decades prior to the global recession, Japan's current account recorded a steady surplus of 3 percent of GDP, the result of a positive goods trade balance and a stable investment income account surplus. In 2011, however, the current account declined to about 2 percent of GDP, well below the peak in 2007 and the lowest since 2001. Moreover, the goods trade balance recorded a deficit for the first time since 1980. A combination of temporary and permanent factors explains the recent shift in the trade balance, including:

- The Great East Japan Earthquake and Thai floods.** The earthquake in March 2011 and Thai floods in late 2011 affected automobile and electronics production, which accounts for roughly 40 percent of exports. The affected plants were back in operation by December 2011, but the two events are estimated to have reduced exports by about  $\frac{1}{4}$ – $\frac{1}{2}$  percent of GDP.
- A decline in export shares.** Even before the earthquake, exports had not recovered to levels seen prior to the Lehman shock, partly due to weak external demand. Japanese exports are sensitive to demand conditions in advanced economies, particularly for consumer durables, and growth remained subdued in the United States and Europe. In addition, while the share of its exports going to Asian countries has increased over time, Japan was less successful in penetrating markets in the region's emerging economies than its competitors.
- Exchange rate appreciation.** The yen strengthened following the Lehman shock, as a result of the unwinding of carry trades and the subsequent safe haven flows, which contributed to a weak recovery in exports.
- Rising energy imports.** Energy imports rose to about one-third of total imports in 2011, compared with an average of about one-quarter of total imports over the past decade. The increase reflects higher world oil prices and increased volumes (especially of liquefied natural gas), as almost all nuclear power plants have been closed for regular safety inspections. Uncertainty surrounds the outlook for energy supply and imports, as it is unclear whether the nuclear plants will reopen and to what extent alternative sources of energy or conservation efforts will aid the adjustment.

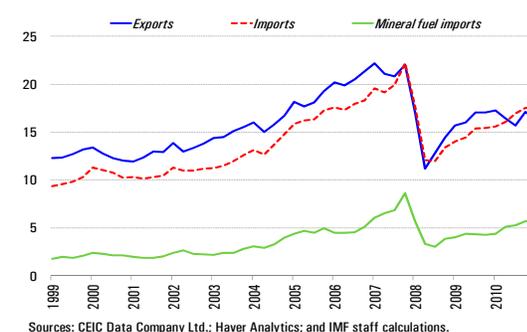
**Japan: Current Account Balance**  
(In percent of GDP)



**Exports**  
(Share in world exports, in percent)



**Japan: Goods Trade and Fuel Imports**  
(In trillions of yen)



Note: The authors of this box are S. Pelin Berkmen and W. Raphael Lam.

Japan has maintained a sizable income account surplus over the past decade, which reached ¥14 trillion (about 3 percent of GDP) in 2011. Nearly 70 percent of net investment income comes from portfolio investment assets abroad, with the remainder mostly from direct investment income.

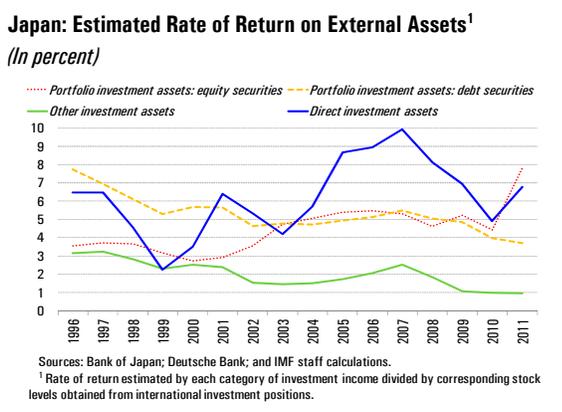
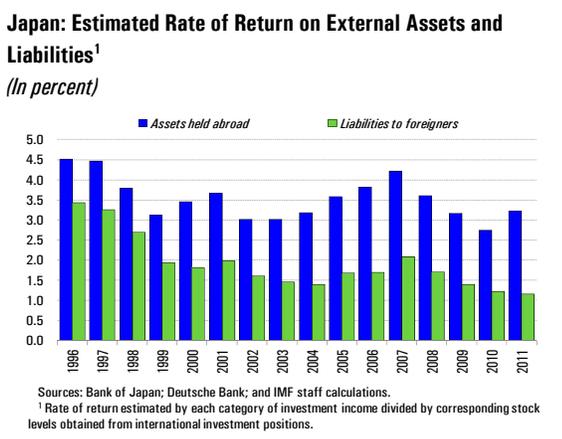
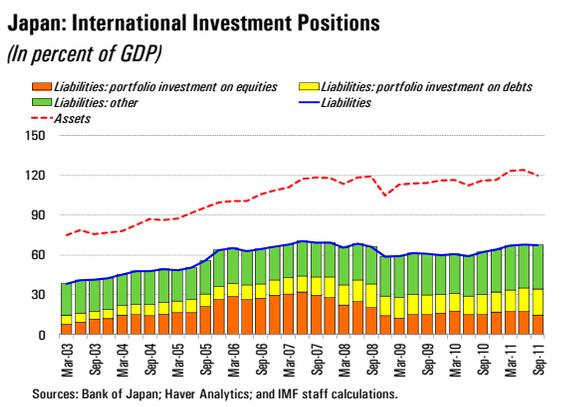
Stable income account surpluses reflect large foreign reserves and sizable private assets held abroad. Net foreign assets increased markedly in the five-year period leading up to 2008, exceeding 50 percent of GDP, because of strong current account surpluses. Despite sizable valuation losses in 2008/09, net foreign assets have remained relatively stable in recent years.

Geographically, Japan receives most of its investment income from the United States, mainly from equity and debt securities. Investment income from Asia has grown to 20 percent of total income over the last decade, while income from Europe has fallen since March 2010, as Japanese financial institutions reduced their exposure.

A key factor contributing to the income surpluses has been the higher return on assets than on liabilities. The average return on assets held abroad in the income account has been higher than the return on liabilities owed to foreigners by almost 2 percent over the past decade. In 2011, the rate of return on gross foreign assets recovered to more than 3 percent, but was still below the levels of the mid-2000s. The rate of return on direct investment and equities increased sharply to 7–8 percent in 2011. On the liabilities side, large safe haven inflows since the global financial crisis have been invested in short-term debt securities (such as bills and notes) and money market instruments. The return on these portfolio investment liabilities, however, has fallen in recent years to just over 1 percent in 2011, due to declining Japanese government bond yields and a sluggish domestic equity market.

The trade balance is expected to return to a small surplus in the near future because of the recovery of exports from the earthquake and Thai floods, despite higher energy imports. Over the medium term, trade deficits may reemerge, assuming a continued decline in world export market share and a gradual recovery in private demand.

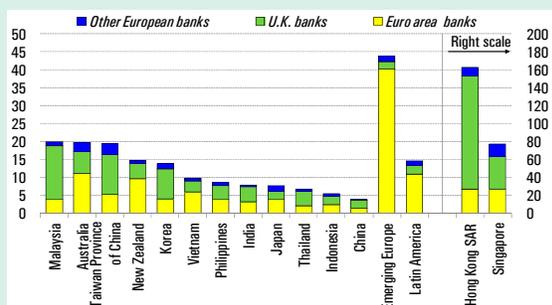
Importantly, the current account is likely to maintain a surplus of about 2 percent of GDP over the medium term. This is because net investment income is expected to remain healthy at 2½–3 percent of GDP, assuming global interest rates eventually increase to historically normal levels and the trend increase in outward FDI from Japan continues.



through cross-border transactions and lending by local subsidiaries and branches; and (ii) indirectly, through their role in the wholesale funding of regional banks, particularly in Australia, Hong Kong SAR, Korea, New Zealand, Singapore, and Taiwan Province of China (see Chapter 3).

**Figure 1.20. Consolidated Foreign Claims of European Banks on Asia<sup>1</sup>**

(In percent of GDP; as of 2011:Q3)



Sources: Bank for International Settlements; CEIC Data Company Ltd.; Haver Analytics; and IMF staff calculations.

<sup>1</sup> Claims are on immediate borrower basis. Uses sum of quarterly GDP in U.S. dollars between 2010:Q4 and 2011:Q3.

- So far, the impact on Asia of the deleveraging process, which began gradually in the third quarter of 2011, has been manageable. In several Asian economies lending by local subsidiaries and branches is a large part of overall European bank claims. As noted in the April 2011 *Global Financial Stability Report* (IMF, 2011e), to the extent that local claims are funded by local deposits, the pressure to retrench these claims is reduced. In Malaysia, for example, U.K. bank claims are largely locally funded. Moreover, an important buffer against a credit supply shock emanating from euro area deleveraging are the relatively healthy balance sheets of large regional banks, which allows them to partly substitute for withdrawn European credit. Indeed, Japanese and Australian banks appear to have expanded their lending to the Asian region recently, which may have offset some of the recent pullback by euro area and U.K. banks.
- But much of Asia is still exposed to sharper deleveraging in the event of a reescalation of the euro area crisis and spillovers to other advanced economy banks. As seen during the Lehman episode, this could comprise a significant shock to

domestic credit supply, even if the shock is less than in comparator regions (see Chapter 3). Some systemically important regional banks could see their capital ratios deteriorate significantly if they were to attempt to fully make up for the decline in foreign lending. Thus some overall tightening of credit is likely.

- Trade finance appears particularly vulnerable, as exposures can be rolled off quickly. Moreover, euro area banks could prove hard to replace in some specialized areas, such as project finance. Wholesale funding to local banking systems and derivatives markets would be affected, and dollar funding shortages could emerge again. Financial centers like Hong Kong SAR and Singapore could transmit financial contagion around Asia.

Trade and financial spillovers to Asia would combine to hit the region severely. In addition to the negative consequences for Asia from a disorderly bank deleveraging scenario, the region would be affected by renewed stress in asset markets and a decline in global risk appetite. Chapter 2 shows that the sensitivity of Asian financial markets to external shocks has increased over the last decade, and that while better fundamentals (in particular lower fiscal debt and higher reserves ratios) may provide some cushion against external shocks, this buffer is much weaker when the shock is severe. A sharper-than-expected recession in the euro area, with output falling there by about 4 percentage points of GDP below the current baseline (a scenario described in the April 2012 *World Economic Outlook*, IMF, 2012c) would therefore severely hurt Asian economies. In the absence of policy responses, and after taking into account faltering demand from other regions and knock-on effects on domestic demand, IMF staff estimate that growth across Asia would decline by between 2 and 5 percentage points relative to the baseline. Smaller open economies would be hardest hit, but the sharp fall of investment in the tradables sector and the worsening of banks' asset quality would also hit China severely.

However, there are also upside risks for growth in Asia. If conditions in the euro area were to normalize more rapidly than expected, this could drive a

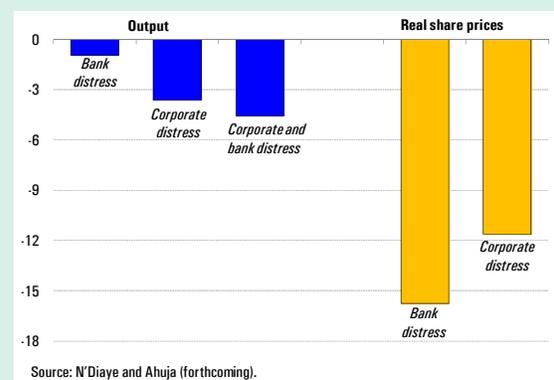
generalized decline in risk aversion, make carry trades more attractive, and generate stronger and more persistent capital inflows into Asia than currently built into these forecasts. Such developments would carry the risk of heightening the credit cycle in many regional economies and reinflating bubbles in property and credit markets, in the absence of an appropriate policy response.

While developments in the euro area continue to represent the most important source of risks for Asia, the region also faces two other risk factors:

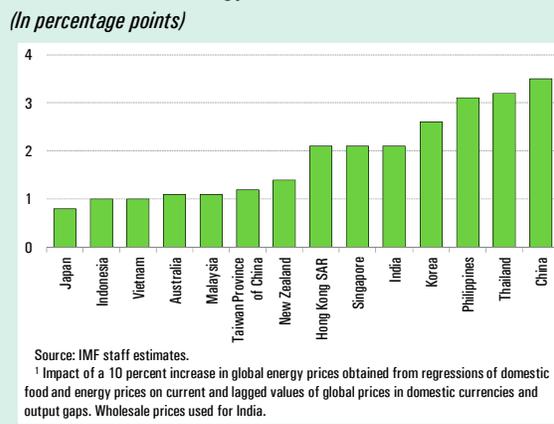
- A hard landing in mainland China.* Although a low probability event, a sharp correction in China’s real estate market represents an important downside risk. A 30 percent decline in house prices from their peak in 2011 could hit private sector balance sheets severely in a scenario where the property bust impairs a sizable portion of credit to local government financial platforms, the real estate sector, and small and medium-sized enterprises (SMEs) (Figure 1.21). Although conservative mortgage loan-to-value ratios and healthy bank balance sheets might buffer the banking system to some extent, the likely tightening of financial conditions and attendant corporate sector distress would result in a significant slowdown of the Chinese economy. IMF staff estimates suggest that in this scenario, output in China could fall to as much as 4 percent below baseline after two years, with likely substantial trade and financial spillovers to the region, especially Hong Kong SAR, Indonesia, and Singapore. This assumes no policy intervention and thus likely overstates the impact on activity, although the Chinese government’s ability to respond to the property bust through an expansion of credit as in late 2008 would be limited by the deterioration of bank balance sheets.
- Higher commodity prices.* Geopolitical tensions could push oil prices sharply higher given low global inventories and spare capacity. Although most economies in the region are net oil importers, the impact would vary for each country according to its dependence on oil, its approach to stabilizing domestic energy prices and ensuring adequate

alternative supplies, and the strength with which its inflation expectations are anchored. For most Asian economies the pass-through from global energy prices to domestic food and energy prices is substantial, ranging from just under a tenth in Japan, to over a third in China (Figure 1.22).

**Figure 1.21. China: Potential Effects of Property Downturn**  
(In percent, change relative to baseline)



**Figure 1.22. Asia: Pass-Through from Global Energy Prices to Domestic Food and Energy Prices<sup>1</sup>**  
(In percentage points)



Several emerging and low-income countries would face difficult trade-offs between containing budgetary risks from fuel-related subsidies and inflationary pressures, given a relatively higher share of energy and food in their consumer price indices. There would also be a substantial impact on output: a 50 percent increase in global oil prices above the baseline would lower growth in Asia’s net oil importers by between ¼ and 1 percentage point. However, in a few other oil-exporting economies, including Brunei and Malaysia, a positive windfall of similar magnitude would result.

## D. The Policy Challenge: How Much Insurance Is Still Needed?

Against this background, Asian policymakers face the difficult task of calibrating the amount of insurance needed to support stable, noninflationary growth. Delaying the return to more neutral macroeconomic policy stances after the aggressive postcrisis easing has been prudent, given the severe downside risks to Asia from the fragile global economy. Those risks are still looming, and thus policymakers in Asia need to remain vigilant against signs of renewed deterioration in external conditions, which may require easing policies in those countries with the requisite policy space. But with acute financial tensions in key global financial markets easing in early 2012, and signs that the slowdown is bottoming out in most of Asia, policymakers in the region should also stand ready to normalize macroeconomic policies at a faster pace than expected earlier this year.

Asian central banks should stand ready to normalize monetary policy if core inflation remains sticky and signs of overheating begin to resurface. In most economies, real policy rates are well below precrisis levels and cuts have been fully transmitted to lower lending rates in the economy (Figure 1.23). A Taylor rule variant incorporating interest rate smoothing indicates that rates in most countries are already at a level consistent with the historical reaction function, while a variant in which policy is more forward looking suggests that many countries may need to increase policy rates, including India, Indonesia, Korea, the Philippines, and Thailand (Figure 1.24). In the event of an oil price shock, tightening may also be warranted to help preempt second-round effects from higher oil prices, especially in those economies where inflation expectations are less well anchored. Of course, a change in the policy stance will need to be tailored to the needs of each individual economy. In particular:

- In Japan, further monetary easing may be needed to boost growth and exit deflation. With inflation pressures likely remaining subdued over the next two to three years, the Bank of Japan may need to undertake additional asset purchases to bring inflation closer to the price stability goal in the

medium to long term, which is set at 1 percent for the time being.

- In China, authorities will need to fine tune monetary conditions appropriately and strike the correct balance between the need to provide modest support to a slowing economy while managing a credit overhang (and attendant risks to the banks) created by the exceptional postcrisis credit stimulus.
- In Indonesia, given the considerable recent easing of monetary policy, lags in monetary policy transmission and still strong domestic demand, the central bank should stand ready to tighten policy in the face of improving global investor sentiment and be prepared to limit the second-round impact of potential increases in fuel prices. In India, a series of policy rate increases since 2010 and the gradual decline in inflation (which remains at an elevated level) have returned real policy rates closer to neutral.
- Monetary policy in Asia's low-income countries will also need to be calibrated to their widely differing individual circumstances. In some—especially those with booming resource sectors, such as Bhutan and Mongolia—the challenge is to rein in an overheating economy. In others, such as Bangladesh and Sri Lanka, further monetary tightening is needed to help absorb external pressures on the economy and bring down inflation. In Vietnam, while the significant tightening of monetary policy in 2011 is beginning to yield a desired easing of inflation and exchange rate pressures, the scope for an easing of monetary policy is constrained by the need to preserve confidence. In several low-income countries, for example, Cambodia and Timor Leste, the scope for active monetary policy is more constrained, placing the burden of macroeconomic management on fiscal policy.

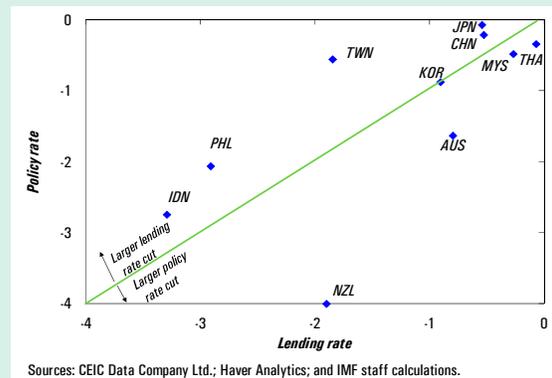
Financial policies are critical to increasing Asia's resilience to further volatility in global financial conditions. In the event of a sharp European deleveraging, governments should be ready to combine

monetary and fiscal policies with a range of measures aimed at stabilizing financial systems. As described in Chapter 3, it is likely that this combination of policy measures in 2008 was successful in mitigating Asia's credit supply response to the crisis, relative to other regions of the world. Measures to maintain credit supply could include time-bound deposit guarantees and schemes to protect trade finance and lending to SMEs. Ensuring ample liquidity in the banking system could also require running down foreign exchange buffers, activating swap lines with the Federal Reserve, and making use of increased regional pooling arrangements. At the same time, as discussed in the October 2010 *Regional Economic Outlook: Asia and Pacific* (IMF, 2010b), macroprudential policies should be pursued to strengthen the resilience of domestic financial systems to pressures from increased capital inflows.

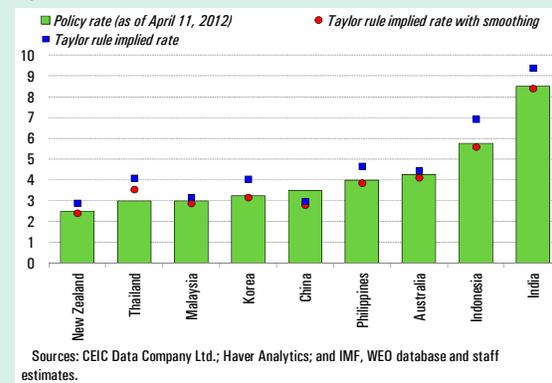
Greater exchange rate flexibility in Asia could usefully complement the policy toolkit under this report's baseline outlook. Since the global financial crisis, real effective exchange rates have undergone episodic shifts across the region, in particular during the surge of capital inflows to emerging markets in 2010, increasing by more than 20 percent (trough to peak) in India, Indonesia, and Korea (Figure 1.25). Despite these movements, Emerging Asia's exchange rates have remained generally more stable, and reserves have grown at a faster pace, than in other regions (Figure 1.26). As shown in Chapter 2, higher reserve ratios may help reduce the economy's exposure to external financial shocks, but this effect is likely to be lower after a certain threshold. In the presence of renewed pressures from large capital inflows, allowing two-way flexibility in exchange rate movements would help discourage speculative portfolio and bank inflows, by making the payoff from interest-rate differentials more uncertain. Similarly, in the event of undue demand pressures, currency appreciation would help rein in inflation.

The thrust of fiscal policies in Asia should be to rebuild space and reorient spending toward faster economic rebalancing and inclusive growth, through a greater focus on investments in social safety nets and critical infrastructure projects. As cyclically adjusted

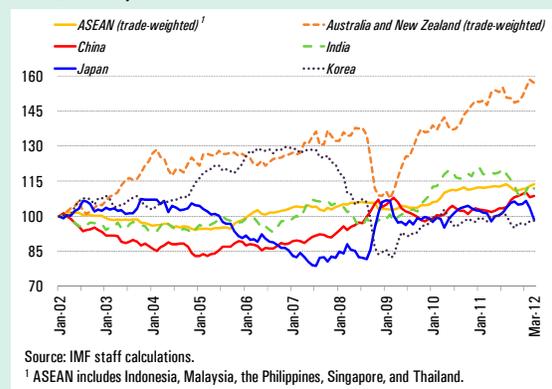
**Figure 1.23. Selected Asia: Real Interest Rates**  
(As of March 2012; relative to 2002–07 average)



**Figure 1.24. Selected Asia: Nominal Policy Rates and Taylor Rule Implied Rates**  
(In percent)

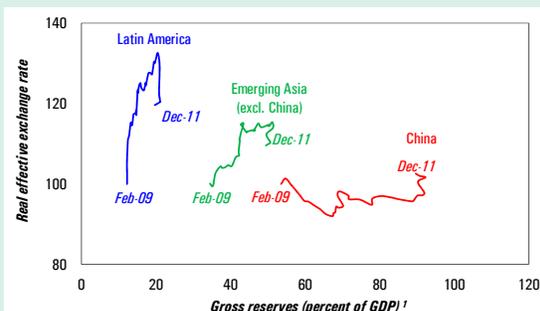


**Figure 1.25. Asia: Real Effective Exchange Rates**  
(Index, January 2002 = 100)



**Figure 1.26. Emerging Asia and Latin America: Real Exchange Rates and Reserves**

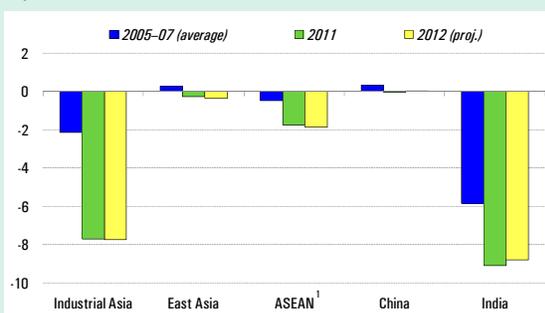
(February 2009 = 100; market GDP weighted)



Sources: IMF, *International Financial Statistics* database and staff calculations.  
<sup>1</sup> Gross international reserves as a share of 2006–08 average GDP. Weighted average using market GDP.

**Figure 1.27. Selected Asia: Cyclically Adjusted General Government Balances**

(In percent of GDP)



Sources: IMF, WEO database and staff projections.  
<sup>1</sup> ASEAN includes Indonesia, Malaysia, the Philippines, Singapore, Thailand, and Vietnam.

deficits have not yet returned to their pre-2008 levels (Figure 1.27), a resumption of fiscal consolidation across the region is warranted in the central case of a rebound in activity in the latter half of 2012. In fact, on current budget plans for calendar year 2012, a modest further consolidation is envisaged only in selected economies (such as India and Indonesia), implying a limited withdrawal of fiscal stimulus across the region (Figure 1.28).

That said, the pace of fiscal consolidation should also be tailored to the evolution of economic conditions, and take into account regional heterogeneity. The case for fiscal consolidation is strongest in economies that still have large cyclically adjusted deficits and elevated public debt profiles. This may require the introduction of clear medium-term adjustment plans as well as

stronger institutional frameworks that would allow greater control over public spending and service delivery. Moreover, consolidation will also have to rely on improvements in revenue mobilization, including in a number of low-income economies with ongoing public financial management reform programs (for example, Cambodia, Lao People’s Democratic Republic, and Nepal).

- In Japan, the overriding concern is the adoption of a comprehensive and credible consolidation plan that includes an increase in the consumption tax along with reforms to cap social security expenditure and to curb discretionary spending. Greater efforts are needed toward implementing tax reforms that help promote private investment and boost long-term growth prospects in the face of adverse demographic change.
- In India and Indonesia, fiscal consolidation is the key to containing inflationary pressures and creating space for priority development needs. Hence, consolidation efforts should focus on limiting nonpriority spending, including fuel-related subsidies, while providing more room for public investment and health and education.
- By contrast, consolidation plans in China for 2012 have been rightly deferred in response to slower growth, while greater outlays for public investment in several ASEAN economies would contribute to eliminating supply bottlenecks and supporting their economic rebalancing toward domestic sources of growth.
- At the same time, should the downside risks to growth materialize, most Asian economies still have ample space to deploy fiscal stimulus, especially when compared with advanced economies (Figure 1.29). Economies with more limited fiscal space should allow automatic stabilizers to operate and reprioritize spending toward those areas with higher impact on economic activity. In China, residual concerns about credit quality and bank balance sheets from the 2009–10 stimulus make a fiscal response to downside risks the principal line of defense, but the

fiscal package should be consistent with the need to boost consumption.

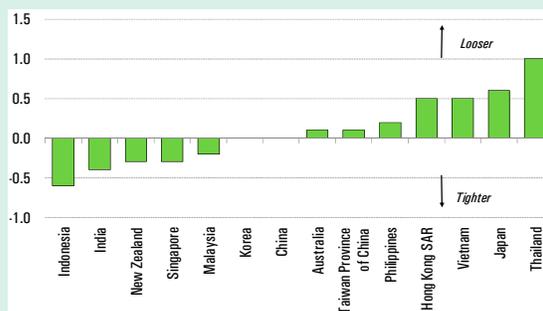
Reprioritizing budgets would become more difficult in the event of sharply higher oil prices. Direct and indirect subsidies are in place in many Asian economies to cushion the impact of volatile fuel prices on consumers. As highlighted in the October 2011 *Regional Economic Outlook: Asia and Pacific* (IMF, 2011b), foregone tax revenues and outright subsidies can result in substantial budgetary costs, in some cases comparable to social priority expenditures. Greater efforts will therefore be needed, particularly in Emerging Asia (for example, India and Malaysia) and low-income economies (for example, Bangladesh and Vietnam) to preempt further wasteful spending and to better target subsidies to the most vulnerable households.

### E. Laying the Foundations for Sustainable Growth

Sustainable growth over the medium and long term will require implementing diverse policy agendas in different parts of Asia. In China, economic rebalancing and strengthening of household income and consumption remain crucial. Since mid-2011, the renminbi has appreciated 6 percent in real effective terms, and the pace of reserve accumulation has slowed. However, sustaining the recent decline in the current account surplus will require further real appreciation of the renminbi as well as continued progress in the broad range of reform areas identified in the 12th Five Year Plan—including increasing household income and expanding the service sector, investing in social safety nets, and accelerating progress toward financial liberalization.

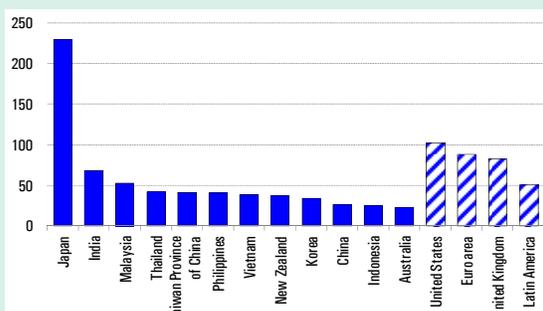
Much will depend not only on China but also on Asian exporters' ability to adjust to a changing economic environment. As highlighted in Chapter 4, domestic imbalances in China continue to cast a shadow on its ability to act as a sustained source of demand in the region. While China is by far the single most important destination for Asia's capital goods exports, it still only accounts for less than 2 percent of global consumer goods imports (Figure 1.30). As

**Figure 1.28. Selected Asia: Fiscal Impulse in 2012<sup>1</sup>**  
(In percent of GDP)



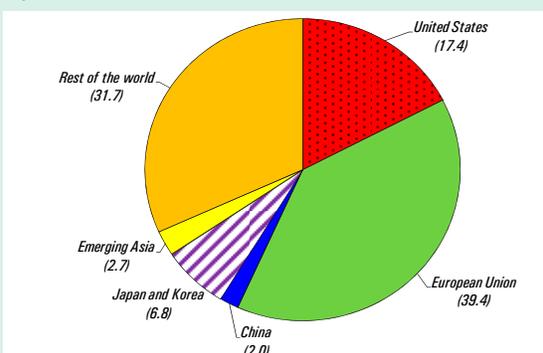
Source: IMF staff estimates.  
<sup>1</sup> Change (relative to previous year) in structural fiscal balances related to measures taken in response to the crisis.

**Figure 1.29. Gross Public Debt, 2011<sup>1</sup>**  
(In percent of GDP)



Sources: IMF, WEO database and staff calculations.  
<sup>1</sup> Excludes Singapore and Hong Kong SAR, where public debt arises mainly from non-fiscal operations.

**Figure 1.30. Share in Global Consumer Goods Import Demand, 2010**  
(In percent of total)



Sources: United Nations, Comtrade database; and IMF staff calculations.

## REGIONAL ECONOMIC OUTLOOK: ASIA AND PACIFIC

highlighted in Chapter 4, whether China will be a sustained source of growth in the region will depend not only on China's ability to move to consumption-led growth, but also on Asia's ability to cater more to Chinese consumers.

In India, renewed efforts are needed to revive the flagging structural reform agenda. These include measures to improve the investment climate, remove infrastructure bottlenecks, and further expand education opportunities. It is also important for India to make progress in reducing barriers to trade, in order to maximize the potential of its continuing demographic dividend (see Box 1.3). Raising female and old-age labor force participation to cope with demographic change will be key to strengthening growth prospects in more-advanced Asian economies, such as Japan and Korea.

In many ASEAN economies, strengthening domestic demand will require improving the conditions for private investment. Higher investment ratios relative to precrisis levels suggest that ASEAN economies are addressing an important medium-term priority of accelerating the accumulation of physical capital and addressing the "infrastructure gap" that persists between these economies and the rest of the world. To some extent, this progress reflects government-sponsored and -financed projects, which by relieving infrastructure bottlenecks might help crowd-in private investment and lift productivity and potential growth (see the April 2010 *Regional Economic Outlook: Asia and Pacific*, IMF, 2010a). But the pattern of investment in the region could also be influenced by reforms that make external funding more accessible to firms in the nontradables sector (see Box 1.4).

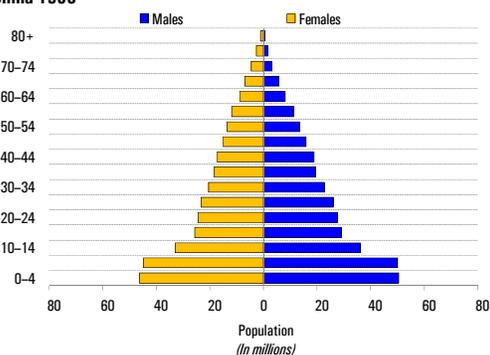
### Box 1.3. Harnessing India's Demographic Dividend

An increase in the share of a country's working-age (15–64) population in the total population can generate faster economic growth. The working-age population is generally more productive and saves more, increasing domestic resources for investment. This so-called demographic dividend has been regarded as a key explanatory factor for the remarkable economic growth performance in East Asia. Regression analysis in Bloom and Finlay (2009) suggests that demographic factors contributed significantly to economic growth in East Asian countries from 1965 to 2005.

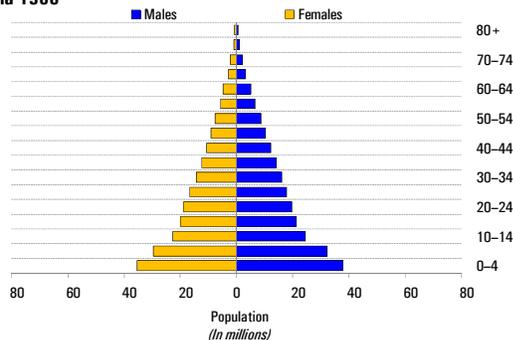
#### China and India: Population Distribution

(By age group, in years)

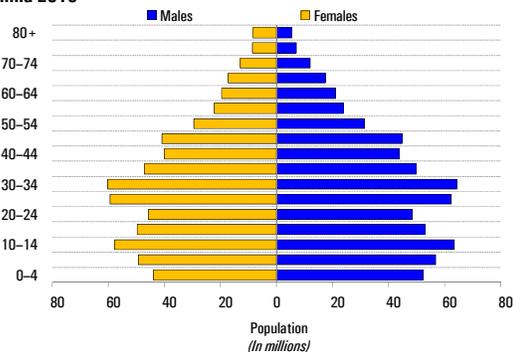
China 1960



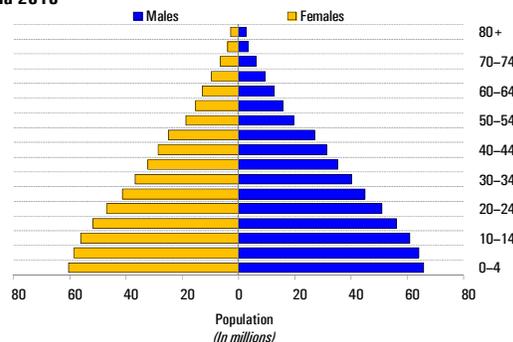
India 1960



China 2010



India 2010



Source: United Nations, *World Population Prospects* (2009).

In many Asian countries, aging populations are now causing, or about to cause, a decline in the working-age ratio. The Japanese workforce has been shrinking since 1995, and the Korean workforce will start to decline beginning in 2015. Most significantly, China has almost completed its transition to a “mature” age distribution structure, as illustrated in the population pyramids above. According to United Nations’ projections, China’s working-age ratio will peak in 2013 and then decline by a substantial amount in the next few decades.

Amid concerns that aging workforces will take their toll on medium-run growth prospects, the second-most populous country in the region (and the world) affords grounds for cautious optimism. India’s demographic transition is presently well underway, and, unlike in China, the age structure of the population there is likely to evolve favorably over the next two to three decades. United Nations’ projections suggest that a peak working-age ratio of 67 percent will be attained in about 2035, up from 64 percent in 2011.

Note: The main authors of this box are Shekhar Aiyar, Rahul Anand, and Ding Ding.

**Box 1.3. (concluded)**

Using state-level data, Aiyar and Mody (2011) show that in India both the level and the growth rate of the working-age ratio have exercised a significant positive impact on per capita income growth. In fact a substantial part of the acceleration in economic growth since the 1980s can be ascribed to demographic trends. Aiyar and Mody estimate that the continuing demographic dividend could add about 2 percentage points per annum to India's per capita GDP growth over the next two decades. Moreover, since further growth in the working-age ratio is likely to be concentrated in some of India's poorest states, demographic changes may be a powerful internal force for income convergence in the future.

That said, the demographic dividend will be fully realized only if India is able to create gainful employment opportunities for this working-age population. This will require enabling reforms, and the experience of East Asia in the 1960s suggests that trade reforms could play an important role (Bloom and Sevilla, 2003). In particular, China capitalized on the demographic dividend through trade liberalization in the 1960s (Garnaut and Song, 2006). Meanwhile, the absence of liberalization in Latin America in the early 1980s cost the region an average 0.9 percent growth per year (Inter-American Development Bank, 2000).

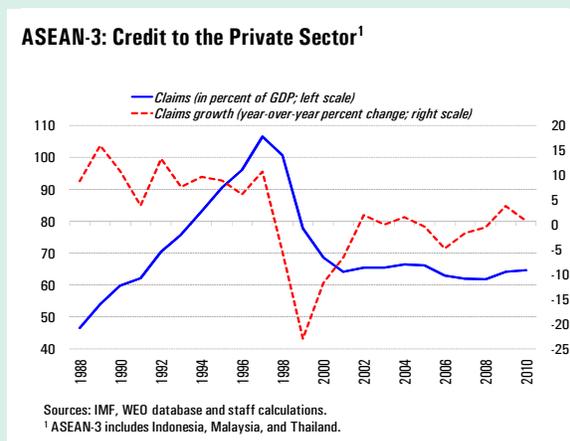
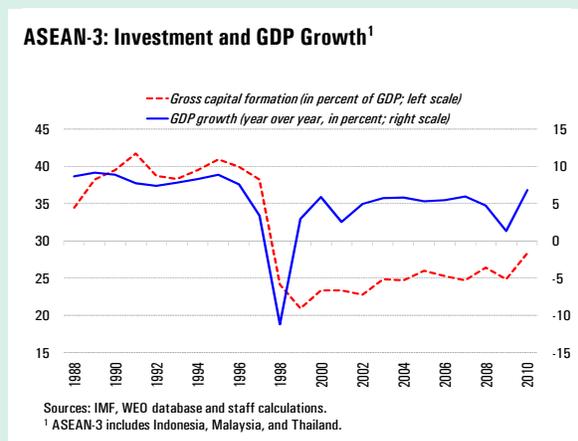
Bloom and Canning (2004) find that openness can double the size of a country's demographic dividend. For countries relatively more open to trade, the shift in age structure toward a higher working-age ratio is more likely to be translated into higher saving (Behram, Duryea, and Székely, 1999). This is partly because of the increase in productivity brought about by trade liberalization. If high productivity coincides with a low dependency ratio, the opportunity arises to raise savings rates dramatically. Furthermore, the decline in unemployment along a country's average age profile is much steeper for countries more open to trade. This suggests that trade policy might help to release some pressure from labor markets at a time when large shares of the population are entering working age. Moreover, there is evidence to suggest that the beneficial impacts of trade liberalization are likely to be enhanced by easing labor laws.

India could harness its potential demographic dividend by expanding both intraregional trade within South Asia and trade with new regions. This could be achieved by policies aimed at (i) reducing trade restrictiveness and (ii) improving trade facilitation.

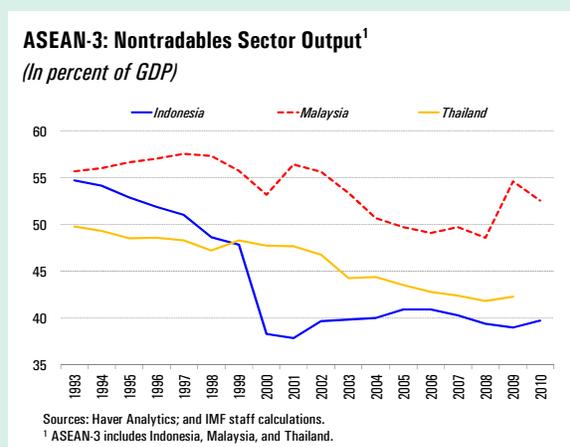
Trade restrictiveness in South Asia is high: the weighted average tariff is greater than in East Asia and also compares unfavorably to other Group of Twenty countries. Integrated South Asian markets would improve scale economies for domestic firms, especially in manufacturing, and attract higher investment. Hoekman and Nicita (2008) have found that a 10 percent reduction in the cost associated with importing (exporting) would increase imports (exports) by about 5 percent. Trade facilitation consists of reforms to make the movement of merchandise from one country to another faster, cheaper, and easier, and is crucial in realizing higher trade potential (Portugal-Perez and Wilson, 2010). India lags ASEAN economies on trade facilitation measures, and progress in this area could yield large dividends. For example, a World Bank study has found that a 10 percent improvement in export customs procedures would enhance merchandise export performance by 15 percent and manufacturing export performance by 17 percent (Broadman, 2007).

### Box 1.4. Explaining the ASEAN-3 Investment Puzzle: A Tale of Two Sectors

After the late 1990s financial crisis, economic activity in Emerging Asia quickly rebounded to near precrisis levels. Investment, however, never fully recovered, and has remained at a low level ever since. On average, in three emerging ASEAN economies (Indonesia, Malaysia, and Thailand, or ASEAN-3 for the purposes of this box), investment ratios in 2010 are still about 10 percent of GDP below their 1996 levels (figure, below left). In the same economies, credit to the private sector (as a share of GDP) also never recovered from the fall during the financial crisis of 1997–98, as it stands on average at about 70 percent of GDP in 2011 against almost 100 percent in 1996 (figure, below right).



The fall in investment ratios has been considered, at least in part, to be a correction of the precrisis lending and investment overhang. However, during the last decade, many emerging Asia economies have reduced the structural overcapacity inherited from the crisis and significantly strengthened their economic and financial fundamentals. Different explanations have been proposed, including a weak investment climate; risky investment environment; institutional and regulatory factors; a shift to knowledge-based growth strategies, with a related decline in the stock of physical capital needed; and increased competition from China, with a reallocation of physical capital from the rest of the region into China. All in all, the prolonged low level of investment in Emerging Asia has remained something of a puzzle.<sup>1</sup>



Another explanation might be found by looking at the sectoral composition of output and credit in the region, and in particular at the difference between tradables and nontradables sectors.<sup>2</sup> In the ASEAN-3 economies, the share of nontradable output in GDP dropped sharply—by 5 percentage points on average from 1996 to 2007 (figure, above).

Note: The main author of this box is Yong Sarah Zhou.

<sup>1</sup> Hori (2007) argues that the post-Asian-crisis investment slump has been more severe and prolonged compared with investment declines following similar crisis episodes elsewhere. Chinn and Ito (2005), Eichengreen (2006), and IMF (2005a, 2005b, 2006) note that investment in Emerging Asia is lower than predicted by fundamental factors.

<sup>2</sup> Nontradables sectors here include construction; service; wholesale and retail trade; transport, storage, and communication; hotel and restaurant; and electricity, gas, and water supply.

**Box 1.4. (concluded)**

This is in stark contrast to trends in advanced economies, where the share of nontradables sectors in GDP has steadily risen (April 2010 *Regional Economic Outlook: Asia and Pacific*, IMF, 2010a). At the same time, loans to the nontradables sector experienced a disproportionate decline relative to GDP in the ASEAN-3, with their share in total loans dropping by around 10 percentage points between 1997 and 2007 (figure, right).

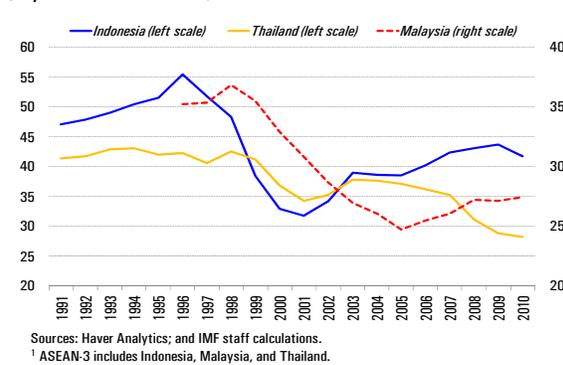
This suggests that the postcrisis credit slump in Emerging Asia has affected firms in different sectors asymmetrically. The tradables sector, typically large and able to pledge export receivables as collateral, has greater access to domestic and international capital markets, in addition to domestic bank lending. By contrast,

nontradables firms, usually small and domestically focused, tend to face more asymmetric information problems in credit markets and thus rely predominantly on bank credit. In addition, firms in nontradables sectors benefited little from the exchange rate depreciation after the financial crisis, and made slower progress in balance sheet restructuring than larger, export-oriented corporations. As a result, the financial crisis at the end of the 1990s may have begun a reallocation of bank lending from nontradables firms to large tradables firms, with the former ultimately forced to pass up investment opportunities that cannot be implemented with internal funds alone.

Indeed, IMF staff analysis shows that there is a significant positive correlation between output and credit in ASEAN-3 nontradables sectors, after controlling for other determinants of output (real interest rate, uncertainty, terms of trade, and real exchange rate). Moreover, while investment levels in these economies depend on the amount of internal funds for all firms, the sensitivity is significantly higher for those in the nontradables sector. Finally, for nontradables firms in ASEAN-3 economies, debt and leverage ratios have a greater negative effect on investment.<sup>3</sup>

Removing financing constraints to firms in nontradables sectors may thus help increase investment levels in Emerging Asia, with potential positive implications on productivity growth and also for social welfare and income equality, as the nontradables sector plays an important role in the creation of jobs. For example, it would be important to alleviate information asymmetry in credit markets, by improving and extending the coverage of credit registries in credit bureaus. Malaysia's credit bureau is a good example in terms of providing comprehensive credit information and ratings on small and medium enterprises. Moreover, developing further capital market structures (for example, improving legal and corporate governance frameworks in corporate bond markets) (Goswami and Sharma, 2011), and changing legal frameworks to widen the range of assets that can be used as collateral, would promote financing on risk-based terms and venture capital. These policies would also help promote lending to small- and medium-sized enterprises, which account for a large share of firms in the nontradables sector. Deregulating and opening the nontradables sector to foreign capital (for example, by reducing restrictions on foreign investment in the service sector) could also boost investment in regional nontradables sectors.

**ASEAN-3: Loans to the Nontradables Sector<sup>1</sup>**  
(In percent of total loans)



<sup>3</sup> More details on these results can be found in Zhou (forthcoming). They are based on analysis of both aggregate and listed firm-level data in ASEAN-3 economies from 1991 to 2007.

## II. THE EVOLUTION OF ASIAN FINANCIAL LINKAGES: KEY DETERMINANTS AND THE ROLE OF POLICY

As highlighted in Chapter 1, global economic prospects have improved somewhat in the first quarter of 2012, and acute tensions in global financial markets have eased. Still, downside risks related to a possible further deterioration across international capital markets remain a concern for the Asia and Pacific region, as developments in major global financial centers tend to have large effects on Asian financial markets. In particular, equity returns in Asian economies seem generally to move in tandem with those in systemic economies (Figure 2.1).<sup>1</sup>

This chapter focuses on the following questions: How has the sensitivity of Asian financial markets to systemic economies varied across economies and over time? How important are real and financial linkages with systemic economies in explaining Asian financial market fluctuations? To what extent can macroeconomic policies help mitigate financial market spillovers?

The following main conclusions of this chapter are based on a working paper by IMF staff:<sup>2</sup>

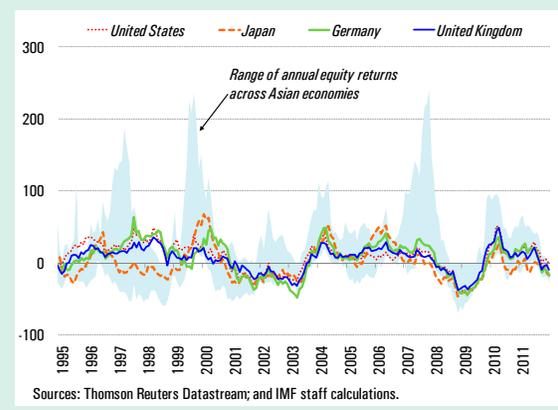
- First, in line with Asia’s growing role in the global economy—including through deeper financial integration—regional financial markets have become more sensitive to systemic economies.
- Second, Asian financial sensitivities to systemic economies exhibit cyclical fluctuations which correspond to tranquil and turbulent periods across international capital markets. These financial sensitivities reached historically high levels during the latest global financial crisis.

Note: The main authors of this chapter are Selim Elekdag, Phurichai Rungcharoenkitkul, and Yiqun Wu.

<sup>1</sup> The set of systemic economies includes France, Germany, Japan, the United Kingdom, and the United States. The sample of Asian economies in this chapter excludes low-income countries due to data constraints.

<sup>2</sup> Elekdag, Rungcharoenkitkul, and Wu (forthcoming).

**Figure 2.1. Equity Returns: Selected Systemic Economies and Asia**  
(In percent over 12 months)



- Third, macroeconomic policies—including those designed to lower government debt and increase international reserves (up to a limit)—can reduce Asia’s sensitivity to financial spillovers from systemic economies even after global factors and other economy-specific characteristics are accounted for. While macroeconomic policies can limit financial sensitivities during both tranquil and turbulent periods, they cannot completely insulate Asian financial markets against major global financial shocks.

### A. How Sensitive Are Asian Financial Markets to Market Movements in Systemic Economies?

To answer this question, we estimate the financial sensitivities of Asian economies (“betas”), which capture the effects of movements in systemic economies on Asian equity markets, an important source of external finance for Asian firms.<sup>3</sup> These estimates are based on a two-stage model. In the first

<sup>3</sup> Related studies focusing on financial spillovers from systemic economies include Balakrishnan and others (2009), Bayoumi and Bui (2011), IMF (2009), and IMF (2011d).

stage, the Capital Asset Pricing Model (CAPM) is used to estimate sensitivities of Asian monthly equity returns to those in systemic economies, using the following specification:

$$r_{it} = \alpha_i + \beta_{it}R_t + \gamma_i \text{controls}_t + \varepsilon_{it}$$

where  $r_{it}$  and  $R_t$  denote the monthly equity returns in country  $i$  and systemic economies, respectively, and  $\beta_{it}$  is the financial sensitivity measure.  $\text{controls}_t$  includes global factors such as commodity prices, global growth, international interest rates and the Chicago Board Options Exchange Market Volatility Index (VIX), as a measure of global risk aversion.

In the second stage, these country betas are allowed to depend on observed explanatory variables:

$$\beta_{it} = b_0 + b_1 X_{it} + b_2 Z_t$$

where  $X_{it}$  includes country-specific variables such as macroeconomic policies and bilateral linkages to systemic economies via trade, FDI, and banking exposure, while  $Z_t$  includes common global factors such as the VIX.<sup>4</sup>

Two complementary approaches are used to estimate this general model. The first builds on the work of Forbes and Chinn (2004), in which average betas across different periods of time are first estimated by using a CAPM for 12 Asian economies, and then related to global and country-specific variables via cross-sectional regressions. The second approach follows Bekaert and others (2011) and estimates monthly betas for 40 economies in a panel regression covering 1991–2011, jointly accounting for their dependence on the global and country-specific variables.

The analysis shows that Asian financial markets' sensitivity to systemic economies has followed a steady upward trend over the last two decades (Figure 2.2), which likely reflects Asia's increasing financial integration with the world. This trend, however, has

<sup>4</sup> The model focuses on the effect of shocks to systemic economies on Asian equity markets, rather than on estimating simultaneous equations between all economies. Feedback effects are harder to verify empirically, given limited time series data on bilateral linkages and other asset prices and the predominance of systemic financial markets.

been associated with strong cyclical fluctuations, linked to developments across international capital markets.<sup>5</sup> In particular, the betas spike in all Asian economies during episodes of global financial turbulence, including the bursting of the technology bubble (and the associated NASDAQ crash) in 2001 and, more recently, the Lehman Brothers bankruptcy and the turmoil in the euro area.<sup>6</sup> For all Asian economies, the financial betas reached unprecedented levels during 2008–11 (Figure 2.3).

Even if generally synchronized, individual Asian financial markets tend to react differently to shocks in systemic economies (Figure 2.3). In general, ASEAN and East Asia (which include Singapore and Hong Kong SAR, respectively) appear to have the largest financial betas. In the case of the ASEAN economies, the panel regressions generate an estimated beta of about 0.75, on average, over the sample periods. This estimate suggests that a 10 percent increase in the U.S. stock market is associated with a 7½ percent increase across the ASEAN stock markets. At the other end of the spectrum, economies that pursued a more gradual pace of international capital market integration, such as China, generally had lower financial sensitivities to systemic economies.

## B. Can Macroeconomic Policies Reduce Financial Sensitivities in Asia?

Macroeconomic policies play a notable role in determining Asia's financial betas, after controlling for bilateral linkages to systemic economies and other economy-specific characteristics. Cross-section regression analysis, shown in Table 2.1, suggests that bilateral trade, FDI, and banking exposures to systemic economies help explain the diversity of financial betas

<sup>5</sup> Movements in financial betas over the business cycle are not necessarily disruptive, as they may reflect international risk sharing through financial markets. Rungcharoenkitkul (2011) evaluates the tradeoffs between the benefits (risk sharing) and the costs (negative spillovers) of financial integration.

<sup>6</sup> The upward trend in betas existed even before the onset of the Lehman crisis in 2008, at least for East Asia excluding China and ASEAN. Therefore a pickup in betas over time is likely secular, and it is not driven by the global financial crisis.

across Asia. Even after taking into consideration the importance of economy-specific factors that are difficult to account for explicitly (including structural and institutional difference across economies), the regressions indicate that higher bilateral trade, FDI, and banking exposures to systemic economies are positively correlated with higher financial betas. Macroeconomic policies also matter. Specifically, the empirical results indicate that a lower government debt-to-GDP ratio and a higher stock of international reserves are associated with lower financial betas. For example, a 10 percentage-point increase in the reserves-to-GDP ratio is characterized by financial betas that are lower by 0.03–0.04, which is also corroborated by the results using panel econometrics. However, the panel regression also suggests that the marginal benefit of holding reserves may diminish after a certain threshold.<sup>7</sup>

The role of bilateral linkages and macroeconomic policies has changed over time. Over the first half of the sample period (1992–2001), bilateral FDI and banking linkages to systemic economies become at least twice as influential. At the same time, although debt is less prominent, measures of macroeconomic policies such as the stock of reserves—but up to a limit—become more important. In the second half of the sample period (2002–11), while the role of the bilateral linkages diminishes, the empirical results still suggest that sound policies are correlated with lower financial betas.

To understand the latter result, we split the second sample further into two subsamples (2002–07 and 2008–11). After accounting for macroeconomic policy measures and other economy-specific characteristics, panel regressions suggest that the global financial shock explains nearly 90 percent of the pickup in financial betas across Asia from 2002–07 to 2008–11 (Figure 2.4). The occurrence of the global financial crisis is the main reason why the empirical relationships between financial betas and the fundamentals of Asian economies weaken during the last decade. While macroeconomic policies still appear to be useful in

<sup>7</sup> This result is based on using the logarithm of reserves in the panel regression. Laudes, Salman, and Chivakul (2010) also find that the mitigating effects of reserve holdings during the recent financial crisis are subject to diminishing returns.

Figure 2.2. Asian Financial Betas and Global Financial Shocks<sup>1</sup>

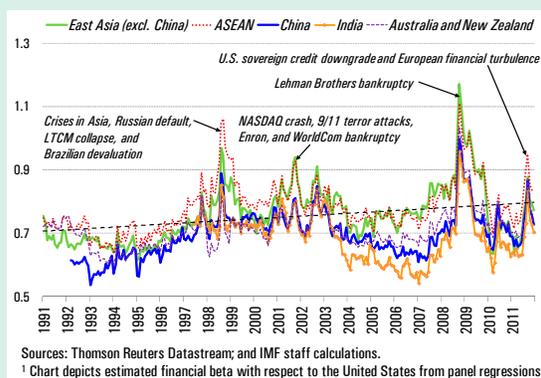


Figure 2.3. Financial Betas across Asian Economies<sup>1</sup>

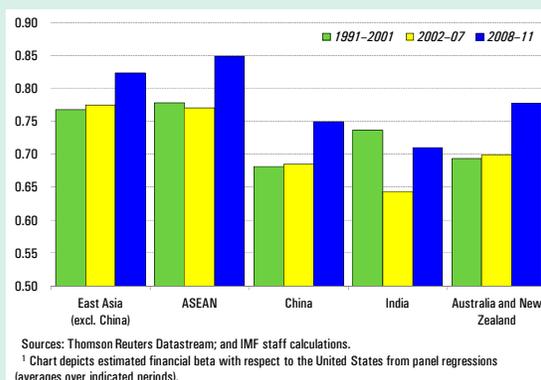
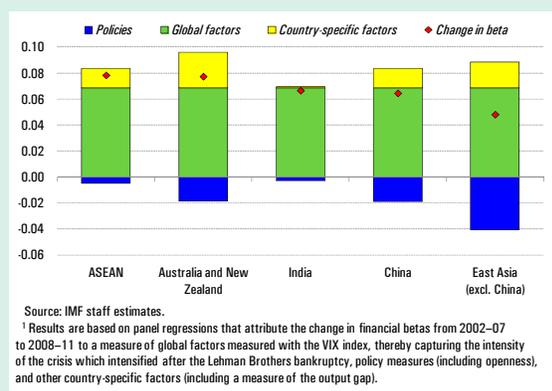


Table 2.1. Determinants of Asian Financial Betas<sup>1,2</sup>

Dependent variable	Betas Full sample	Betas Full sample	Betas Full sample	Betas 1992–2001	Betas 2002–2011	Betas 2002–2007	Betas 2008–2011
Trade <sup>3</sup>	0.0116 <i>8.2%</i>	0.0116 <i>8.2%</i>	0.0116 <i>8.2%</i>	0.0024 <i>79.1%</i>	0.0044 <i>68.1%</i>	0.0260 <i>12.1%</i>	-0.0050 <i>78.2%</i>
FDI <sup>3</sup>	0.6240 <i>3.7%</i>	0.6240 <i>3.7%</i>	0.6240 <i>3.7%</i>	1.8940 <i>0.4%</i>	0.9099 <i>69.9%</i>	-0.2540 <i>31.9%</i>	0.0288 <i>71.6%</i>
Bank <sup>3</sup>	0.0060 <i>0.2%</i>	0.0060 <i>0.2%</i>	0.0060 <i>0.2%</i>	0.0103 <i>2.2%</i>	-0.0009 <i>37.5%</i>	0.0009 <i>48.5%</i>	-0.0034 <i>0.6%</i>
Debt <sup>3</sup>	0.0009 <i>0.3%</i>	0.0011 <i>0.1%</i>	0.0011 <i>0.1%</i>	0.0004 <i>28.6%</i>	0.0030 <i>0.0%</i>	0.0052 <i>0.0%</i>	-0.0003 <i>57.7%</i>
Reserves <sup>4</sup>	-0.0033 <i>0.4%</i>	-0.0042 <i>0.0%</i>	-0.0093 <i>0.2%</i>	-0.0040 <i>2.4%</i>	-0.0088 <i>0.2%</i>	-0.0088 <i>0.2%</i>	0.0004 <i>79.1%</i>
Financial openness <sup>5</sup>	0.0181 <i>2.2%</i>	0.0566 <i>0.0%</i>	0.0253 <i>0.0%</i>	0.0429 <i>2.4%</i>	0.0429 <i>0.8%</i>	0.0110 <i>21.5%</i>	0.0110 <i>21.5%</i>
Exchange rate regime <sup>6</sup>				-0.0118 <i>0.2%</i>	-0.0257 <i>0.6%</i>	-0.0215 <i>5.5%</i>	-0.0146 <i>13.4%</i>
Constant	-0.0937 <i>11.5%</i>	0.0732 <i>0.9%</i>	0.1210 <i>0.0%</i>	0.1930 <i>0.0%</i>	0.1830 <i>0.0%</i>	0.1040 <i>3.8%</i>	0.3270 <i>0.2%</i>
Observations	60	60	60	60	60	60	60
R-squared	12.4%	12.4%	12.4%	15.5%	2.6%	6.7%	3.3%

Source: IMF staff estimates.  
<sup>1</sup> Country fixed effects included, but not reported, in regressions.  
<sup>2</sup> Robust *p*-values (accounting for clustering with respect to Asian economies) are italicized.  
<sup>3</sup> Trade, FDI, bank, and (government) debt refer to bilateral linkages to systemic economies (in percent of GDP).  
<sup>4</sup> Reserves (international) scaled by M2.  
<sup>5</sup> Financial openness measured using Chinn and Ito (2008) metric.  
<sup>6</sup> Exchange rate regime classification based on Reinhart and Rogoff (2004).

Figure 2.4. Asia: Changes in Betas from 2002–07 to 2008–11<sup>1</sup>



lowering financial betas during this period, most of the variation across Asian financial betas during the crisis years is accounted for by global factors, with a relatively more limited role for economy-specific characteristics.

Overall, the analysis suggests that sound macroeconomic policies help lower Asia’s financial betas during both tranquil and turbulent periods, but they cannot completely insulate Asian financial markets against major global financial shocks. To be sure, these policies may limit the impact of major downside risks on the real economy (Balakrishnan and others, 2009). But, given how the extent of spillovers can become more widespread with major global shocks, the response to these shocks may require a more comprehensive mix of policies, including the financial measures mentioned in Chapter 1 and adopted in Asia in response to the global financial crisis.

### III. THE LIKELY EFFECT ON ASIA OF A SHARP DELEVERAGING BY EUROPEAN BANKS

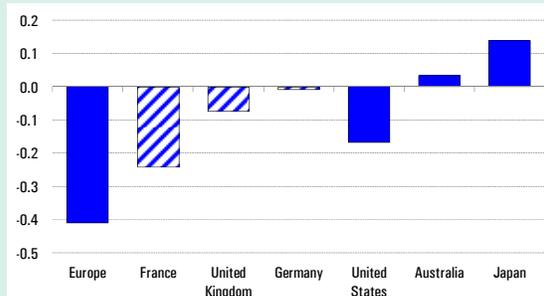
The growth of bank credit in Asia has been robust in recent years as highlighted in Chapter 1, and generally healthy bank balance sheets have helped buffer the region against the gradual deleveraging by European banks that has occurred so far. Nevertheless, Asia is potentially vulnerable to a large shock to foreign funding of the kind that occurred during the 2008 crisis.

European banks play an important role in supplying credit to several Asian economies. With the euro area experiencing financial turmoil, these banks could pare back foreign assets, as described in the April 2012 *Global Financial Stability Report* (IMF, 2012b). A sharp deleveraging arising from an intensification of the euro area crisis could potentially cause a shock to credit supply in Asia. Such a credit crunch could arise from a withdrawal of wholesale funding to the domestic banking sector—and associated derivatives markets—or through a direct reduction in credit supply to the nonbank private sector.

Recently released data show that European banks have already started deleveraging from Asia, although this has been partially offset by regional banks stepping in (Figure 3.1). Under the baseline scenario, the deleveraging is expected to be orderly and much of it is expected to occur through asset sales rather than lower credit provision. Moreover, the European Central Bank’s three-year long-term refinancing operations have alleviated funding difficulties for euro area banks. But if the euro area crisis reescalates, there is a risk that the deleveraging process could gather momentum and become a disorderly rush for the exits.

This chapter first explores Asia’s reliance on European banks and the extent to which a large retrenchment by those banks could affect credit supply in Asia. It then proceeds by examining the last episode during which there was a dramatic retrenchment by

**Figure 3.1. Consolidated Foreign Claims of European and U.S. Banks on Emerging Asia<sup>1</sup>**  
(Change since previous quarter in percent of Emerging Asia GDP)



Sources: Bank for International Settlements; CEIC Data Company Ltd.; Haver Analytics; and IMF staff calculations.  
<sup>1</sup> Claims are on immediate borrower basis as of 2011:Q3. Uses sum of quarterly GDP in U.S. dollars between 2010:Q4 and 2011:Q3 in the denominator for Emerging Asia.

foreign banks. In 2008—a year that encompassed both the Bear Stearns sale and the Lehman Brothers bankruptcy—global banks heavily pared back foreign assets worldwide, affecting credit supply in a broad sample of recipient economies. Although the credit supply response in Asia was significant, it was only about half the size of that in other regions, reflecting greater policy space and healthier bank balance sheets in Asia at the outset of the crisis. The chapter concludes with policy implications that can be drawn for a potential future shock originating in the euro area.

#### A. The Role of European Banks in Asia

Asian liabilities to European banks are substantial, when measured as the consolidated foreign claims of European banks in percent of recipient-country GDP, but with considerable variation across economies (see Chapter 1).<sup>1</sup> Australia, Hong Kong SAR, Korea, New Zealand, Singapore, and Taiwan Province of China are the largest borrowers from European banks, while China, India, and the ASEAN countries generally have smaller liabilities. The regional pattern is broadly

Note: The main authors of this chapter are Shekhar Aiyar and Sonali Jain-Chandra, with research assistance from Souvik Gupta and Hye Sun Kim.

<sup>1</sup> Consolidated foreign claims include both cross-border credit and credit extended by the local subsidiaries and branches of European banks.

similar if European bank claims are scaled by domestic credit to the private sector (rather than GDP). The liabilities of countries with deep banking systems like Australia and New Zealand are somewhat reduced by this measure, while those of some ASEAN countries, like Indonesia and the Philippines, are higher. In several Asian economies, lending by local subsidiaries and branches is a large part of overall European bank claims, and to the extent that these claims are funded by local deposits, they are less subject to deleveraging pressures. The financial centers, Hong Kong SAR and Singapore, which play a regional intermediating role, have much higher liabilities to European banks than do other regions of the world, with the exception of emerging Europe (which is far more interlinked with the euro area).

Among European banks, U.K. banks have a particularly significant presence in the region. To some extent the large local deposit base of banks such as HSBC and Standard Chartered helps insulate them from funding pressures originating in the euro area.<sup>2</sup> Anecdotal evidence suggests that they may even view a relatively orderly deleveraging by euro area banks as an opportunity to increase market share in Asia. But in a deeper crisis characterized by severe stresses in interbank and other funding markets, U.K. banks are likely to join others in retrenching foreign assets—as was the case during the 2008 crisis—with considerable impact on the region.

For most economies in the region, the nonbank private sector—businesses and households—is the main recipient of credit from foreign banks as a whole (Figure 3.2). Trade credit may be particularly vulnerable to deleveraging, given the prominent role of European banks in this area (Figure 3.3). Moreover, European banks tend to specialize in complex project financing, which would not be easy to substitute quickly with other sources of credit. SMEs may suffer disproportionately when credit is rationed, and syndicated loans may be squeezed.<sup>3</sup> The banking

sectors of Australia, Hong Kong SAR, Korea, New Zealand, Singapore, and Taiwan Province of China have the largest liabilities to European banks—likely comprising wholesale funding—making them relatively more vulnerable to deleveraging through the financial system (Figure 3.2).

## B. What Happened during the Lehman Crisis?

The sharp deleveraging that occurred from 2008 onward provides a natural benchmark to analyze the impact of future steep deleveraging by European banks. During the global financial crisis, as funding markets seized up, both euro area and U.K. banks withdrew sharply from Asia. From peak to trough, the foreign claims of euro area and U.K. banks fell by around 37 percent and 21 percent of outstanding claims, respectively (Figure 3.4).

The main question the empirical analysis aims to answer is: To what extent did deleveraging translate into a credit crunch in destination countries? A priori, a large deleveraging could affect credit supply in two ways—directly, and indirectly, through a reduction in foreign funding for local banks. On the other hand, if local and regional banks stepped up lending in response to foreign banks deleveraging, and if the policy response was sufficiently vigorous, this could mitigate any domestic credit supply response.

This analysis focuses on estimating the response of domestic credit supply to deleveraging by European banks. Data on domestic credit supply—the response variable—are gathered for a sample of 75 emerging economies and non-European advanced economies.<sup>4</sup> The main explanatory variable is the change in foreign claims by European banks to the recipient country. The reason for focusing on European banks is twofold. First, a potential sharp deleveraging shock is most likely to come from European banks, given the continuing

<sup>2</sup> HSBC and Standard Chartered are classified as U.K. banks under the consolidated group definition employed by the BIS, since they are headquartered in that country.

<sup>3</sup> The withdrawal of euro area banks from the syndicated loan market in Asia has been ongoing since 2007.

<sup>4</sup> The sample is constructed from a union of sets of emerging markets compiled by (1) the FTSE Group; (2) MSCI; (3) Standard & Poor's; (4) Dow Jones; (5) Frontier Strategy Group; (6) Banco Bilbao Vizcaya Argentina (BBVA) Research; and (7) The Emerging Markets Index. In addition, the following recipient advanced economies are included: Australia, Canada, Japan, and New Zealand.

turmoil in the euro area. Second, while the United States is another important source country for bank finance, the U.S. foreign claims time-series from the Bank of International Settlements (BIS) has a serious structural break.<sup>5</sup>

This chapter contributes to a small and relatively recent literature on the transmission to the real economy of the external funding shock to bank balance sheets during the global financial crisis.<sup>6</sup> Following Aiyar (forthcoming) and Cetorelli and Goldberg (2011), the empirical framework relies on a difference-in-differences specification. For the purpose of this study, the shock period refers to 2008:Q1–2009:Q1, where 2008:Q1 is the peak of outstanding foreign claims in most economies, and 2009:Q1 the trough.

The empirical approach must confront a number of potential issues, including endogeneity and disentangling demand effects.<sup>7</sup> The relationship between domestic credit and foreign banking flows can in principle run in both directions. Reduced foreign inflows can lead to a decline in domestic credit, but it is also possible that anemic activity and bank credit may attract fewer inflows. To circumvent this potential endogeneity, the analysis instruments the main explanatory variable—the change in foreign claims over the shock period—using two different instruments: (i) the preshock ratio of international claims to foreign claims,<sup>8</sup> with a higher ratio implying greater ex-ante vulnerability to deleveraging, and (ii) the weighted sum of ex-ante foreign claims on a given recipient by source country, where the weights are the proportionate

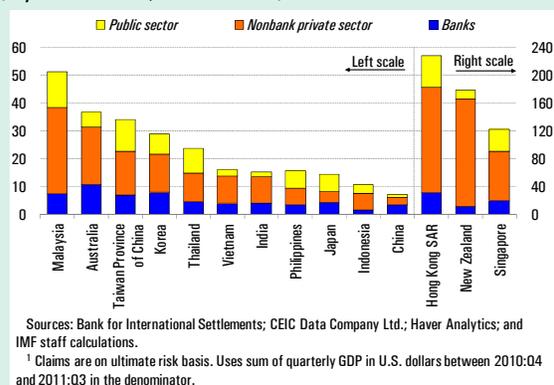
<sup>5</sup> In late 2008, the surviving stand-alone investment banks, including Goldman Sachs and Morgan Stanley, were transformed into bank holding companies and included for the first time in the BIS sample. As a result, the U.S. claims series shows a sharp increase in 2008, rendering the data unsuitable for inference purposes.

<sup>6</sup> These recent papers add to a much longer empirical literature on the transmission of liquidity shocks to the real economy during various different historical episodes. See Aiyar (2011) for a summary.

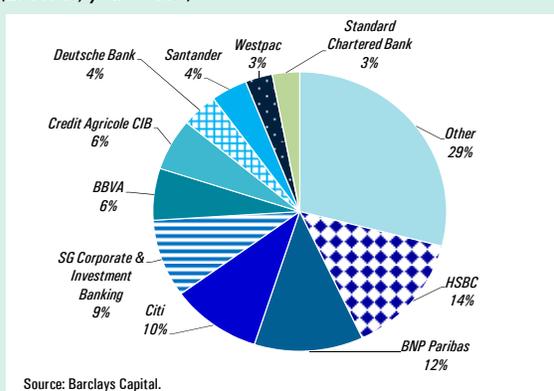
<sup>7</sup> For further elaboration of technical details, see Aiyar and Jain-Chandra (forthcoming).

<sup>8</sup> International claims, as computed by the BIS, refer to the sum of cross-border claims and local claims in foreign currency. Foreign claims include international claims and local claims in local currency. The former is much flightier, therefore the greater the value of the ratio of international claims to foreign claims, the more susceptible a country is to deleveraging when pressures emerge.

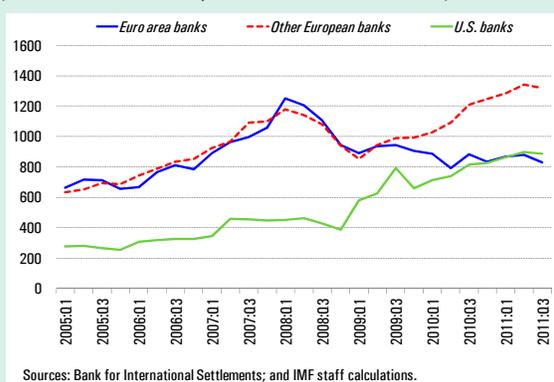
**Figure 3.2. BIS Reporting Banks' Consolidated Foreign Claims on Selected Asian Economies by Sector<sup>1</sup>**  
(In percent of GDP; as of 2011:Q3)



**Figure 3.3. Asia: Export Credit Agency Backed Trade Finance (2011:Q3; year-to-date)**



**Figure 3.4. Consolidated Foreign Claims on Asian Economies (In billions of U.S. dollars; on immediate borrower basis)**



deleveraging by a particular source country during the shock period to all recipient economies.<sup>9</sup>

These instruments are expected to be strongly correlated with actual deleveraging, but should not have a direct impact on the main variable of interest, that is, the change in domestic credit during the shock period. One concern about the validity of the second instrument is that during the 2008 crisis, all source countries were deleveraging at the same time in the context of the global liquidity shock. If the proportionate deleveraging by source countries were too similar, then the proposed instrument would be weak. But in fact an examination of the proportionate retrenchment by European source countries to all recipient countries shows considerable variation.<sup>10</sup> This implies that from a recipient country's perspective, the identity of the precise source countries on which it is reliant for funding should be a good *ex ante* predictor of the shock that it faces.

The second concern relates to the fact that, in theory, an observed decline in domestic credit can be driven by reduced demand or supply. During the 2008 crisis, demand for credit also fell as activity slowed, so it is possible that the observed decline in credit was demand driven. To control for demand, we include the *ex ante* share of exports to GDP. Two related features of the crisis make this a good instrument: (i) the decline in demand in most recipient economies was driven, in the first instance, by a contraction in external demand; and (ii) the decline in external demand in most recipient countries was large relative to the decline in domestic demand.

The main finding is that deleveraging by European banks during 2008 led to a large contraction in credit

<sup>9</sup> For example, suppose the recipient country has only two creditor countries, A and B. The instrument is country A's preshock claims on the recipient weighted by the percentage contraction in foreign credit from country A to all other countries during the shock period, plus country B's preshock claims on the recipient weighted by the percentage contraction in foreign credit from country B to all other countries during the shock period, all divided by the sum of country A and country B's preshock claims on the recipient.

<sup>10</sup> This ranges from 71 percent in the case of Ireland, to minus 3 percent in the case of Finland. The standard deviation of the percent deleveraging by source countries is 20.5, relative to a mean of 16.2.

supply in destination countries. Table 3.1 shows the results from two-stage least squares regressions. A reduction in foreign liabilities of 1 percent resulted in a 0.6–0.7 percent decline in domestic credit. In the specification in column (2), we control for demand effects, and domestic credit remains equally sensitive to the changes in foreign liabilities. Postestimation statistics provide validation of the identification strategy.<sup>11</sup>

Asian countries' credit supply response to deleveraging by European banks was significantly less than that of other countries. Column (3) introduces an Asia dummy variable, both by itself and as an interaction term. The Asia intercept is not significant, but the interaction with the change in foreign liabilities does seem important. Hence in column (4)—the preferred specification—the Asia intercept is omitted. This column shows that credit supply in Asian countries indeed contracted in response to the foreign deleveraging, but only about half as much as in the broad sample of countries. There are at least two possible explanations for this more-muted transmission in Asia: a stronger policy response and healthier balance sheets in local banking systems.

The strong policy response mounted by Asian economies could be one reason for the smaller credit supply impact of foreign deleveraging. Data limitations (including fiscal policy variables would limit the sample to about 40 countries) and nonuniform definitions (of policy rates) make it difficult to econometrically test the role of policy responses in the regressions. But a nonparametric examination of the sample data certainly suggests that the monetary—and to a lesser extent the fiscal—policy response in Asia was more vigorous than in other regions over the period studied here (Figure 3.5).<sup>12</sup> In addition, Asian countries also took a

<sup>11</sup> The results are robust to controls for the importance of European bank credit in each economy, using variables such as the ratio of European bank claims to total domestic credit, or the ratio of European bank claims to GDP. Moreover, the results are consistent with the broader literature on the cross-border transmission of liquidity shocks, for example, Cetorelli and Goldberg (2011), Aiyar (2011), and Schnabl (forthcoming).

<sup>12</sup> This figure shows the change in policy rates over the shock period. However the change in the fiscal balance is shown for end-2008 as these data are available only on an annual basis. The

*(continued)*

number of measures to maintain market confidence and stabilize financial markets. These included instituting liquidity guarantees, negotiating Federal Reserve swap lines, strengthening regional reserve pooling, expanding deposit insurance, guaranteeing nondeposit liabilities, and supporting trade finance and SME programs (Table 3.2).

Another reason for the more subdued impact of foreign deleveraging could be that Asia's local banking systems had healthier balance sheets entering the crisis. Figure 3.6 shows leverage ratios—the ratio of debt to equity—for Asian financial firms relative to global peers.<sup>13</sup>

- Banking systems in the Advanced Americas and in Advanced Europe were much more leveraged than their counterparts in Advanced Asia (almost three times as much, in the case of Advanced Europe). This meant that banks in countries such as Australia and Japan did not suffer the same pressure to deleverage as other major global banks when global liquidity dried up. They could expand credit supply in regional economies in response to deleveraging by other foreign banks, just as they appear to have been doing more recently.
- Banking systems in Emerging Asia had even lower leverage than those in Advanced Asia. Moreover, the leverage ratio for Emerging Asia was less than half of the comparators in the emerging economies of Latin America.<sup>14</sup>

magnitudes are not very sizable for two reasons: first, the implementation of fiscal policy entails significant lags and it is likely that while most governments had decided to use fiscal policy levers, these were not deployed by end-2008, and second, the absence of quarterly data means that the timing does not fully align with the shock period.

<sup>13</sup> The focus is on leverage ratios rather than capital adequacy ratios, since the latter are typically defined in terms of risk-weighted assets, and regulators differ widely in different regions of the world in their definitions of risk weights and permissible regulatory capital (Das and Sy, 2012). Hence comparisons of capital adequacy ratios across broad regions such as Asia, Europe, and the Americas are problematic.

<sup>14</sup> While Emerging Europe had the lowest leverage ratios of all, this does not adequately capture the region's high reliance on direct cross-border credit from (highly leveraged) West European banks.

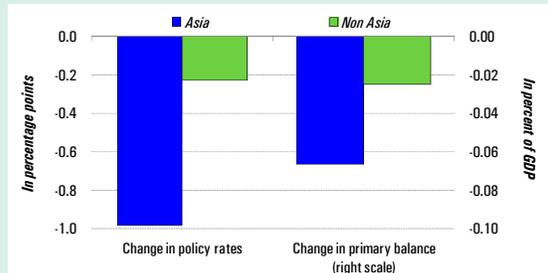
**Table 3.1. The Impact of Changes in Foreign Claims on Changes in Domestic Credit Supply<sup>1</sup>**  
(In percentage points)

Dependant variable: change in domestic bank lending	(1) 2SLS	(2) 2SLS	(3) 2SLS	(4) 2SLS
Change in foreign claims	0.662 ** (0.274)	0.695 ** (0.284)	1.034 *** (0.473)	0.741 *** (0.234)
Exports-to-GDP (preshock)		-0.072 (0.055)	-0.098 (0.065)	-0.120 * (0.054)
Asia			-0.356 (0.242)	
Asia * change in foreign claims			-0.947 * (0.489)	-0.373 *** (0.120)
Constant	0.028 (0.135)	0.071 (0.148)	0.203 (0.242)	0.0547 (0.120)
Number of observations	75	75	75	75
<b>Underidentification (H<sub>0</sub>: Not identified)</b>				
Kleibergen-Papp rank Wald statistic	9.45	9.367	5.670	9.886
p-value	0.008	0.009	0.058	0.007
<b>Overtesting restrictions (H<sub>0</sub>: Instruments uncorrelated with error process)</b>				
Sargan-Hansen statistic	1.830	1.960	0.583	0.580
p-value	0.180	0.160	0.450	0.450

Source: IMF staff estimates.

<sup>1</sup> Robust standard errors given below coefficient estimates in parentheses. Statistical significance at 1, 5, and 10 percent levels is denoted by \*\*\*, \*\*, and \*, respectively.

**Figure 3.5. Differences in Policy Responses: Asia versus Non-Asia<sup>1</sup>**



Sources: CEIC Data Company Ltd.; Haver Analytics; and IMF, WEO database and staff calculations.

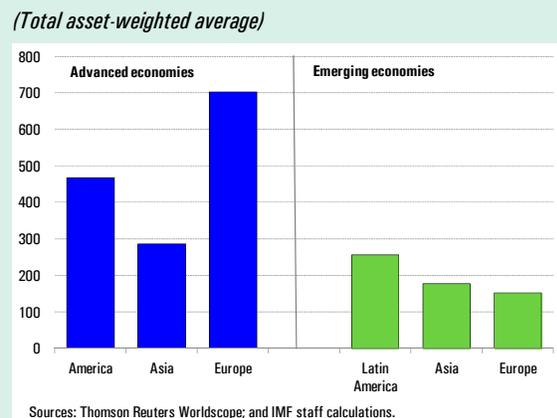
<sup>1</sup> The chart shows the change in policy rates during the shock period (2008:Q1–2009:Q1) and the change in the primary balance between end-2008 and end-2007 (as fiscal data are generally available only at an annual frequency).

**Table 3.2. Summary of Policy Actions Taken in Asia during the Global Financial Crisis**

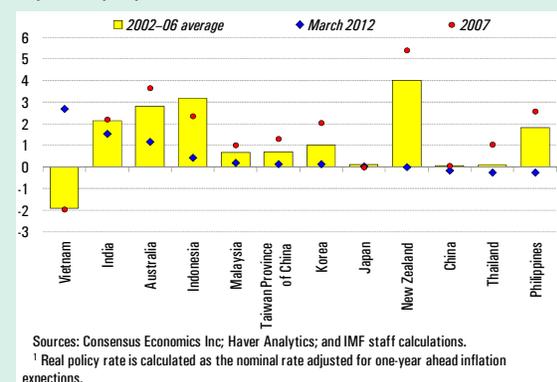
	Australia	China	Hong Kong SAR	India	Indonesia	Japan	Korea	Malaysia	New Zealand	Philippines	Singapore	Thailand
Liquidity assistance in local currency	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
Lend foreign exchange	✓			✓	✓	✓	✓	✓	✓	✓	✓	
Expand deposit insurance	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓
Guarantee nondeposit liabilities	✓						✓		✓			
Prepare bank capital injection		✓	✓	✓	✓	✓	✓					✓
Create demand for assets	✓	✓		✓	✓	✓	✓	✓				
Impose short sale restrictions	✓	✓		✓	✓	✓	✓				✓	
Relax mark-to-market rules				✓	✓	✓	✓					
Institute SME programs		✓	✓	✓	✓	✓	✓			✓	✓	✓
Support trade finance	✓	✓	✓	✓	✓	✓	✓		✓			✓
Secure Fed swap lines	✓					✓	✓		✓			✓

Sources: Bank for International Settlements; Economist Intelligence Unit (2010); and Asmundson and others (2011).

**Figure 3.6. Debt-to-Equity Ratio in Financial Firms at End-2007**  
(Total asset-weighted average)



**Figure 3.7. Selected Asia: Real Policy Rates<sup>1</sup>**  
(In percent per year)



**Table 3.3. Selected Asia: Impact on Tier 1 Capital Adequacy Ratios (CARs) following Deleveraging by European Banks<sup>1</sup>**  
(In percent)

	Latest reported tier 1 CAR <sup>2</sup>	Estimated tier1 CAR under deleveraging scenarios <sup>3</sup>			
		Deleveraging by euro area banks only		Deleveraging by euro area and U.K. banks	
		25%	50%	25% each	50% each
Australia	9.8	9.4	8.9	9.1	8.5
China	10.3	10.2	10.2	10.1	9.9
India	8.8	8.5	8.2	8.1	7.4
Indonesia	12.3	11.7	11.1	11.1	10.2
Japan	13.5	13.1	12.7	12.9	12.3
Korea	11.6	11.1	10.7	10.4	9.4
Malaysia	12.7	12.4	12.1	11.6	10.6
Philippines	11.9	11.4	10.9	10.9	10.0
Singapore	13.6	12.9	12.3	12.1	10.9
Thailand	15.0	14.8	14.5	14.4	13.8

Sources: Bank for International Settlements; Bankscope; Bloomberg L.P.; and IMF staff calculations.

<sup>1</sup> Asset-weighted average of top three banks in each country.  
<sup>2</sup> Latest available data are from September 2011 for most banks.  
<sup>3</sup> Deleveraging is in percent of consolidated foreign claims as of 2011:Q2. Assumes that in each country domestic banks expand balance sheets in proportion of their relative asset sizes in different deleveraging scenarios. A 100 percent risk weight for newly created assets is assumed for each bank with no new capital injections.

## C. What Are the Implications of a Future Shock?

Looking ahead, Asia’s policymakers still have ample room to respond aggressively to a sharp deleveraging of foreign banks arising from a euro area shock. The space for a macro-policy response is smaller than it was before the global financial crisis. As mentioned in Chapter 1, compared to other regions of the world, Asia is still well placed to respond to shocks with countercyclical fiscal policy, but many economies have higher public debt levels than they did at the end of 2007. And as real policy rates are considerably below historical averages in all economies in the region in March 2012, the room to ease monetary policy is also less than before the global financial crisis (Figure 3.7). But policymakers in the region still have a large menu of measures at their disposal to stabilize financial markets and backstop liquidity in their banking systems. During the Lehman crisis, swap lines with the Federal Reserve played an important role in alleviating dollar shortages, both by expanding the supply of dollars and through their signaling effect. Such arrangements may need to be activated again should stresses escalate, along with regional pooling arrangements and, in several countries, drawing down on the large stock of international reserves. Time-bound deposit guarantees and programs to support trade finance and lending to SMEs could also play a role again.

At the same time, relatively healthy local banking systems should provide a buffer as they did after the global financial crisis. Asian bank balance sheets remain strong in general, owing to strong economic growth and conservative bank regulators. Capital adequacy ratios exceed regulatory norms in most economies, while nonperforming loan ratios are low in most of the region. Table 3.3 summarizes four European deleveraging scenarios of differing severity, calculates the nominal flow of credit that will need to be substituted by local banks in order for credit supply to remain unaffected, and traces out the implications for local banks’ capital adequacy ratios.<sup>15</sup> In most Asian

<sup>15</sup> The analysis here abstracts from several factors which could bolster or hinder Asian banks’ ability to take up the slack from European banks. For example, a large disruption in the euro area is

(continued)

economies, the large local banks can step in and make up for the reduced claims by euro area and U.K. banks. That said, under the most severe scenario, tier 1 capital ratios would sink to low levels in some countries.<sup>16</sup> Moreover, the asset-weighted averages presented in this table mask vulnerabilities in specific banks in some countries.

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likely to affect Asia's growth through trade linkages. If unemployment rises and asset prices fall, then the asset quality of domestic Asian banks would decline. Some of their existing capital buffers would be needed to absorb credit losses and would therefore be unavailable to support balance sheet expansion. On the other hand, the exercise conservatively assumes a 100 percent risk weight on all loans migrating from foreign to domestic banks. To the extent that actual substituted lending carries a lower risk weight, Asian banks would have more room to expand assets.

<sup>16</sup> As shown in the previous section, leverage ratios in Asian banking systems are generally low, so that the binding constraint for credit supply is likely to be the regulatory capital ratio rather than a leverage target.



## IV. IS CHINA REBALANCING? IMPLICATIONS FOR ASIA

As the recovery in advanced economies is suffering new setbacks, the need for economic rebalancing in Asia has assumed even greater urgency. At the same time, China's trade surplus is declining faster than previously anticipated, raising hopes that the much-needed shift of global demand to major surplus economies is finally taking place. Against that background, this chapter first explores recent trends in China's trade balance and assesses the extent to which a sustained reduction in China's external surplus is taking place. Based on an assessment of the factors determining recent changes in China's trade surplus, the chapter will then present the implications for regional trading partners.

The main findings can be summarized as follows:

- It appears increasingly likely that persistent forces are weighing on China's trade surplus. Externally, these include an apparent secular deterioration in China's terms of trade and sustained strength in imports, particularly of commodities and capital goods. Robust imports in turn are linked to strong demand centered on a heavy reliance on investment, which raises the concern that new domestic imbalances may be growing, even as the external imbalances retreat.
- For its Asian trading partners, which have benefited from China's strong demand for commodities and capital goods, rebalancing in China offers benefits that would be larger and more lasting if these partners are able to successfully expand their direct and indirect access to Chinese consumers. On the other hand, if the rapid growth of Chinese exports

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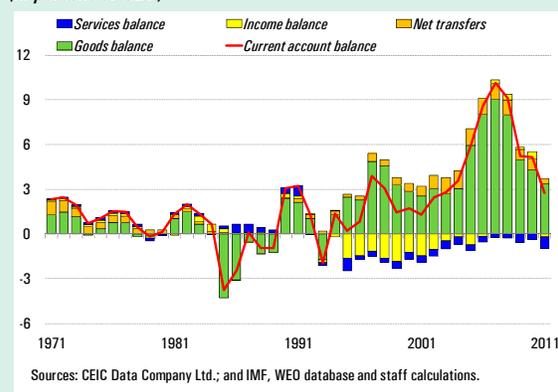
Note: The main authors of this chapter are Ashvin Ahuja, Nigel Chalk, Adil Mohommad, Malhar Nabar, Papa N'Diaye, Olaf Unterberdoerster, and Jade Vichyanond. The chapter presents key findings from recent research papers by IMF staff on temporary and permanent factors driving China's trade surplus (Ahuja and others, forthcoming) and the rapidly changing trade networks in the Asia region (Mohommad, Unterberdoerster, and Vichyanond, forthcoming).

slows, then Asian trading partners will face significant headwinds due to their downstream supply linkages with China, a situation that would be exacerbated if China were to "on-shore" a larger chunk of regional supply chains.

### A. Is China Rebalancing?

China's current account surplus declined from a precrisis peak of 10.1 percent of GDP in 2007 to 2.8 percent of GDP in 2011. The compression in the trade balance (from 9 percent of GDP in 2007 to around 3.3 percent in 2011) accounts for most of the decline, but the income balance also appears to have deteriorated more recently (Figure 4.1).

**Figure 4.1. China: Current Account Balance and Components**  
(In percent of GDP)

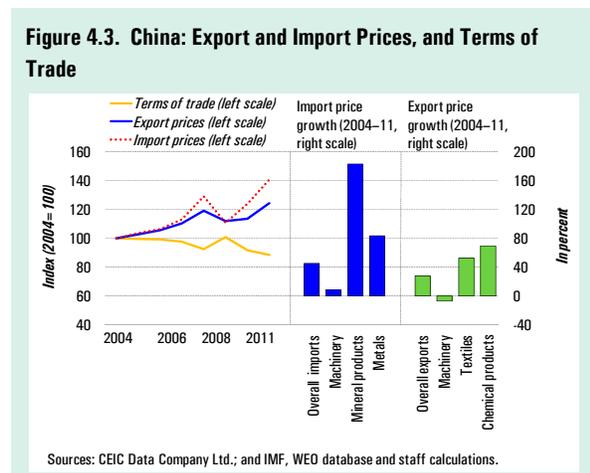
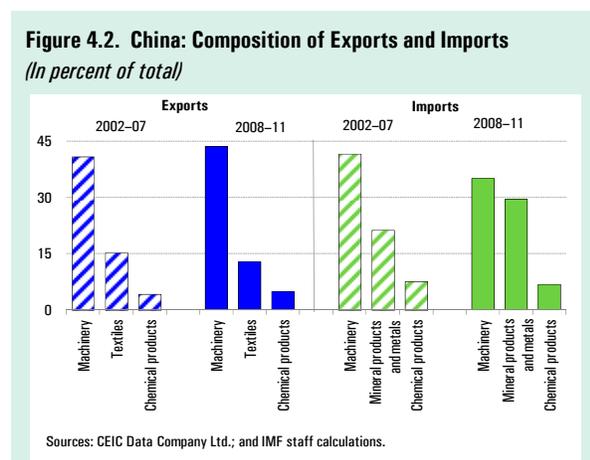


These developments are related, in part, to cyclical forces, but the sustained downward trend may also reflect structural realignments (both external and domestic) that could have a bearing on China's external balances beyond the eventual recovery in the cycle. To that end, this section identifies factors that may be contributing to the recent developments and assesses the prospects for the external balances.

### Patterns in China's External Trade

Disaggregated data suggest that there are important realignments in China's external trade patterns.

- Terms of trade.** China's exports have become increasingly weighted toward machinery goods, while its imports have shifted toward commodities and minerals (Figure 4.2). Combined with the decline in the relative price of machinery and capital goods, this has meant that China's terms of trade have been steadily deteriorating (Figure 4.3). The experiences of other economies that have witnessed export-oriented growth (for example, Japan and Korea) suggest that the terms-of-trade decline is likely to persist, and is likely to exert a significant drag on the trade surplus going forward.



- Strong imports.** These have also been an important factor behind the sustained compression in the trade surplus since 2007. Some of the surge in imports, particularly of key minerals, was tied to the infrastructure build-out during the 2008–09 stimulus package (Figure 4.4). But the persistent strength in imports also reflects other investment spending, such as capacity building in new growth industries and the inland relocation of manufacturing facilities in traditional industries. The worsening terms of trade and the persistent strength of imports tied to investment spending have had a substantial impact on China's current account surplus. IMF staff estimates suggest that close to two-thirds of the decline in the current account surplus since 2007 can be accounted for by the deterioration in the terms of trade and the acceleration in investment (see Ahuja and others, forthcoming; and Box 1.3 of the April 2012 *World Economic Outlook*, IMF, 2012c).

- Exports.** China has successfully sustained the pace of export market share growth, even following the global financial crisis. However, China's share of global exports is already higher than the levels at which other export-oriented economies, such as Japan and Korea, began struggling in their efforts to gain market share. Although China may continue to increase its export market share, particularly as its export basket rotates toward higher-end manufacturing, the pace at which this occurs may well moderate in the coming years.

### Patterns in China's Domestic Economy

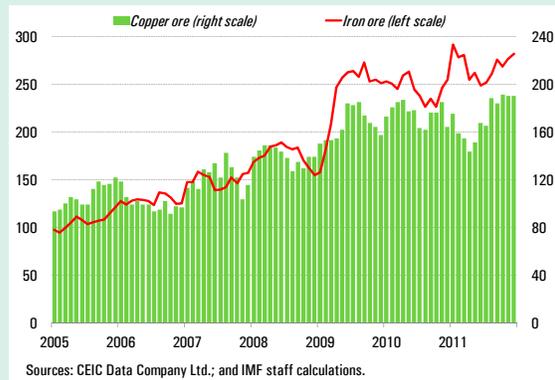
Accompanying these shifts in the composition of exports and imports are important changes in domestic spending patterns and cost pressures that may offer insights into the durability of the compression of China's trade surplus.

- Domestic demand.** One possible sign of a durable turnaround is if consumption growth is picking up. Available official data, which cover the

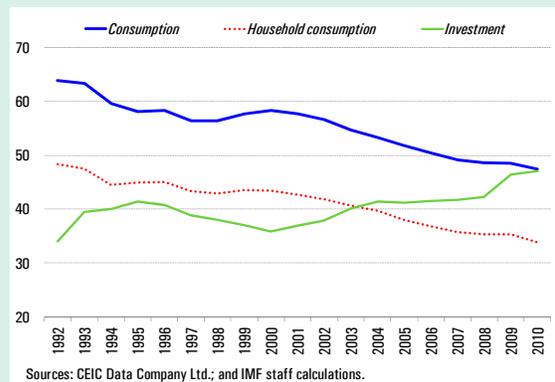
period until the end of 2010, do not yet indicate that private consumption is rising as a share of GDP (Figure 4.5). Investment continues to be the most important component of domestic demand, and it increased further as a share of GDP in the latest available data (to close to 50 percent). Trade data also confirm the importance of investment in domestic demand. A breakdown of imports into consumer, intermediate, and capital goods shows that, although the volume of consumer goods imports has increased rapidly since 2009, capital goods imports have risen even faster (Figure 4.6). China is increasingly becoming a source of final consumer demand for the world economy, but its imports of consumer goods continue to grow at a slower pace than its imports of machinery and equipment. In part, the import of capital goods is tied to investment in export sectors. But if structural reforms to strengthen the social safety net, boost wages, and improve access to low-income housing (as outlined in the 12th Five Year Plan) successfully catalyze Chinese consumer spending, then this capacity could increasingly be deployed domestically and the economy would achieve the handoff from investment- to consumption-led growth. However, a rebalancing of this kind need not entail a large increase in consumer goods imports (discussed in more detail in Section B of this chapter).

- *Composition of investment.* Some of the elevated investment is due to the 2008–09 stimulus efforts and the more recent emphasis on social housing, but a closer look at the data shows that investment and capacity building continue to be particularly strong within relatively higher-end manufacturing. The shifting composition of manufacturing is also seen in changes in the employment shares, with the high-end manufacturing share of employment growing (Figure 4.7). The growth in capacity in these areas could lead to future increases in exports as China pushes the capacity onto global markets. Some of the capacity building has already begun to show up in new growth areas for exports as

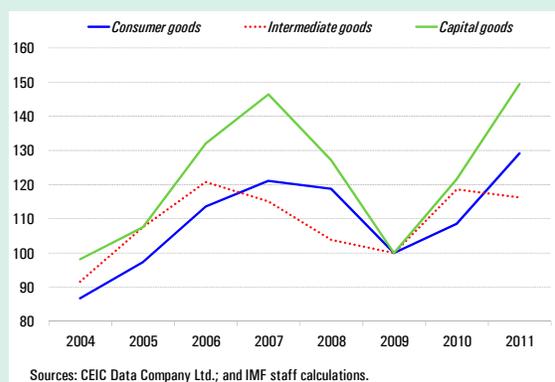
**Figure 4.4. China: Mineral Import Volumes**  
(Index, 2005:Q1 = 100, three-month moving average)



**Figure 4.5. China: Domestic Demand**  
(In percent of GDP)

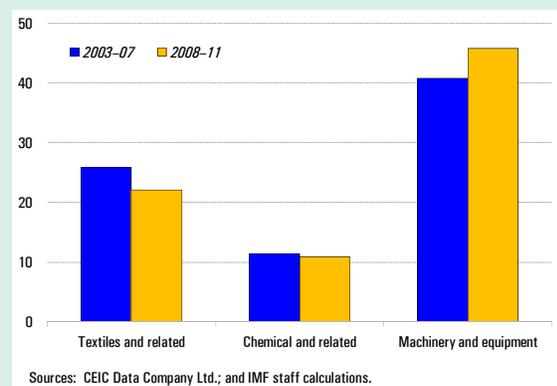


**Figure 4.6. China: Import Quantum Index**  
(2009 = 100)

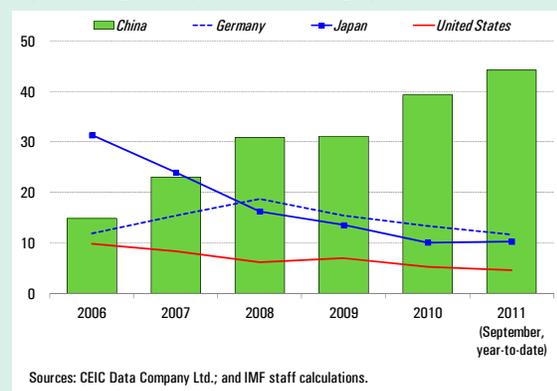


China makes a concerted push into higher-value-added segments typically dominated by Germany, Japan, Korea, and the United States. Prominent examples of the new growth areas are wind turbines, solar panels, automobiles, shipbuilding, and semiconductor devices (Figure 4.8).

**Figure 4.7. China: Number of Employees**  
(In percent of downstream employment)



**Figure 4.8. Global Shares in Photosensitive Semiconductor Devices Exports**  
(In percent of global exports of same category; value)



- Cost pressures.* In recent years, there has been a greater policy emphasis on market-based pricing of factor inputs and the scaling back of subsidies (for details see Ahuja and others, forthcoming; and IMF, 2011c). Official data also suggest that nominal wages are rising at close to 15 percent per year. So far at least, despite significant anecdotal evidence of rising costs in China, these changes have not manifested themselves in tighter margins, or other apparent

signs of distress in lower-end manufacturing. Profit ratios have been rising, and the share of loss-making enterprises has been declining in textiles and traditional areas, similar to developments in high-end manufacturing. Cost pressures do not seem more acute in the lower segments: if anything, they seem to have subsided along with the pressures on the higher-end segments (Figure 4.9). And this does not seem to be simply a result of rationalization or the weeding out of weaker enterprises at a relatively faster rate in textiles since the *total* number of enterprises has continued to grow in these segments.

### Where Next for China?

Assuming that (i) global demand recovers as projected in the April 2012 *World Economic Outlook* (IMF, 2012c), (ii) China continues to gain global market share at the average pace of the past decade, (iii) its terms of trade deteriorate by about ½ percent per year, and (iv) its domestic investment remains close to current levels, then it is unlikely that China’s current account surplus will rise above 4–4½ percent of GDP over the medium term. Furthermore, if China continues to appreciate its currency in real effective terms from current levels (either due to faster nominal appreciation or due to a sustained increase in domestic cost pressures that translate into larger inflation differentials relative to trading partners), the surplus is likely to fall even below that range.

So far, however, this decline in China’s external surplus has been largely accomplished through higher investment, and the evidence does not yet indicate that household consumption is rising as a share of GDP. This investment has led to capacity building in a range of manufacturing areas in which China has previously not had a foothold. Nevertheless, the policy thrust of the 12th Five Year Plan is very much focused on raising household income, boosting consumption, and facilitating an expansion of the service sector. In the coming years, if these ongoing structural reforms to catalyze consumer spending are successful, the decline in

China’s external imbalances would ultimately prove more sustainable.

## B. What Are the Implications for Asia?

This section looks at the implications of the changes in China’s current account for other Asian economies, for which China can be a market for final goods, a supply chain hub, and a potential competitor.

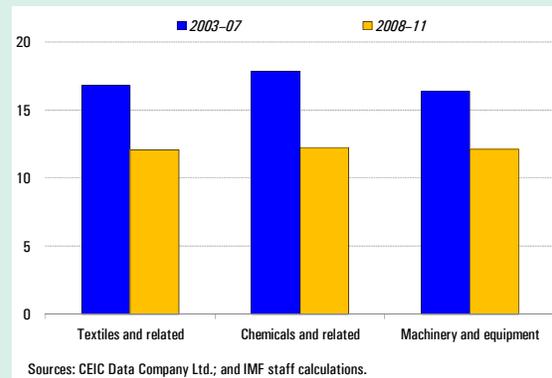
### China as Source of Regional Final Demand

Which economies in Asia will benefit from more domestic demand-led growth in China? As highlighted in section A, it is important to distinguish between investment- and consumption-led growth. Indeed, while China has become a growing source of demand for other economies in Asia, its demand for investment goods has risen more sharply than its demand for consumer goods, generally by a ratio of two to one (Figure 4.10).<sup>1</sup> The traditional capital goods exporters in Asia—Japan and Korea—have been particularly exposed to China’s investment demand.

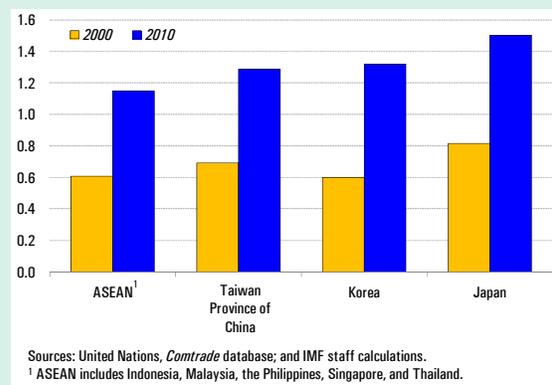
However, while high investment ratios in China may not be sustainable from a domestic perspective, these ratios might also fall if China’s export growth were set to slow permanently. There is a close relationship between China’s investment and its exports. First, both exports and manufacturing fixed-asset investment have been shifting from low- to high-tech products. Second, China’s major sources of foreign direct investment are aligned with its major import sources in the manufacturing process (Figure 4.11), which is a result of growing vertical trade integration that has fueled China’s rise as a leading exporter (see below). Were China to rebalance through consumption-led growth, ASEAN economies appear well positioned to benefit, given their relative strength in consumer

<sup>1</sup> This is estimated based on value-added-based trade flows, which net out intermediate goods exports destined for third markets other than China.

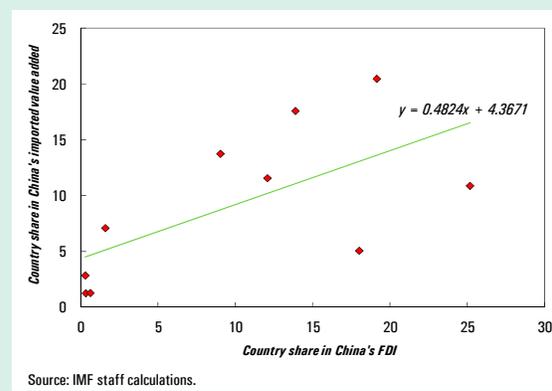
**Figure 4.9. China: Loss-Making Enterprises**  
(In percent of total in each sector)



**Figure 4.10. Selected Asia: Value Added Linked to China’s Final Demand**  
(Investment demand relative to consumption demand)

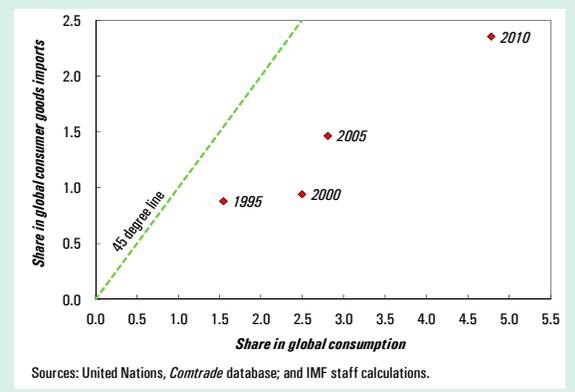


**Figure 4.11. China: Distribution of FDI and Imported Value Added**



goods exports. However, the benefits for regional trading partners might be small. First, despite rapid growth, China’s role as an importer of consumer goods is still marginal, as it accounts for only 2 percent of global consumer goods imports. Second, its share in global consumer goods imports has increased less since 1995 than its share in global consumption (Figure 4.12). In other words, Chinese consumers have turned increasingly toward domestically produced goods. This may reflect the inability of foreign producers to overcome implicit barriers, such as setting up large retail and distribution networks, increased competitiveness from domestic producers, and differences in consumer preferences as well as the need to be closer to the customer. Whatever the reasons for the relative decline in imports, a shift in global demand shares toward China would not automatically imply a commensurate shift in global import demand, resulting in a demand gap for exporters.

**Figure 4.12. China: Share in Global Consumption versus Share in Global Consumer Goods Imports**  
(In percent of total)



### China as a Supply-Chain Hub

How would potentially slowing export growth in China affect the rest of Asia? The rise of China as a leading exporter has been closely linked to the rapid growth of supply chain networks in Asia that are centered on China. Based on direct and indirect trade flows for intermediate goods, and on data from Asian input-output tables, China’s share in all intra-Asian imports of intermediate goods increased substantially between 1995 and 2010 (Figure 4.13).

China now accounts for about 50 percent of all intraregional intermediate imports, making it the center of Asia’s supply chain.

The effect of vertical trade integration appears to dominate export-demand relationships between China and its Asian trading partners.

- Overall, intermediate goods exports have accounted for about 70 percent of the annual export growth in Asia over the last decade, more than double the contribution of final (consumer and capital) goods.
- As a result of greater vertical integration, the correlation of Asian economies’ exports to China with Chinese exports has increased for most economies over the last decade (Figure 4.14).
- Regression estimates suggest that a 1 percentage-point drop in Chinese export growth would lower the growth of exports of other Asian economies to China by about  $\frac{2}{3}$  percentage point.<sup>2</sup>
- At the same time, for most Asian economies whose exports are mainly in manufactured goods as opposed to commodities, exports to China are mainly a function of Chinese exports, rather than Chinese domestic demand, which would be suggested by standard trade models. By contrast, for those few economies in the region which predominantly export commodities, exports to China are determined by Chinese domestic demand (Table 4.1).

### China as a Competitor

Because of vertical trade integration, shifts in export (and import) market shares do not fully capture China’s changing role as a competitor to other Asian economies. In fact, the increase of

<sup>2</sup> Based on a country-fixed-effects panel regression (1995–2010) of countries’ exports to China on the real bilateral exchange rate, Chinese real domestic demand, and Chinese real exports.

China's share in leading markets (using gross exports based on direction of trade statistics) overstates its share on a value-added basis with direct and indirect inputs from other Asian economies netted out. In the case of the United States, for example, China's direct share of gross imports of final goods from Asia has increased to 62 percent in 2010, whereas, on a value-added basis, China's share is less than 50 percent (Figure 4.15). In other words, greater vertical specialization has so far mitigated the impact of horizontal competition.

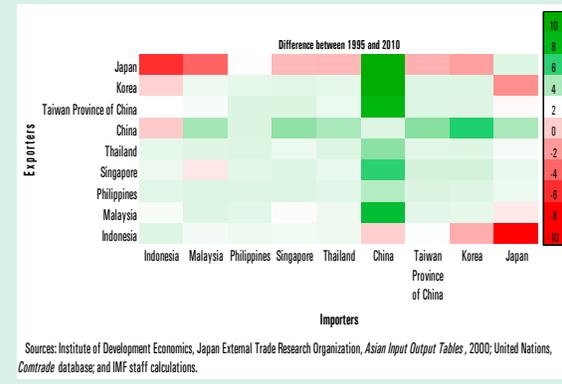
For more-advanced economies in Asia, the increase in competition as China's exports shift increasingly toward high-tech goods will thus also depend on China's ability to capture a larger share of the value chain. While the imported content in Chinese exports gradually increased through the mid-2000s, it has started falling in recent years.<sup>3</sup> These trends could be reinforced by China's rapid buildup in physical and human capital, allowing it to capture large parts of the technology-intensive value chain. In addition, rising fuel and transportation costs could also lead to a partial reversal of vertical trade integration by reducing the number of locations in a production chain. On the other hand, China's industrial upgrading could create room for low-income countries in the region to expand.

### C. Conclusion

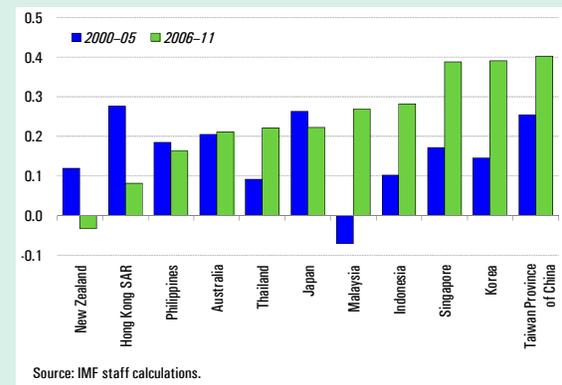
What does the recent sharp decline in China's external trade surplus reflect? In the main, it is a product of a secular worsening of China's terms of trade as well as robust import growth fuelled by investment demand. Moreover, prospects for China to sustain the high export growth of the past decade remain uncertain. Taken together, while China's external imbalances retreat, there is a concern that new domestic imbalances may be emerging. As a result, Asian trading partners that have benefitted

<sup>3</sup> IMF staff estimates based on Asian input-output tables suggest that the domestic value added in Chinese manufactured goods fell from about 90 percent in 1995 to 75 percent in 2005, but has increased since then to about 80–85 percent in 2010.

**Figure 4.13. Selected Asia: Change in Intermediate Goods Flows**  
(Change in percent share in regional flows)



**Figure 4.14. Selected Asia: Correlation of Exports to China with China's Exports**  
(One-quarter lag)



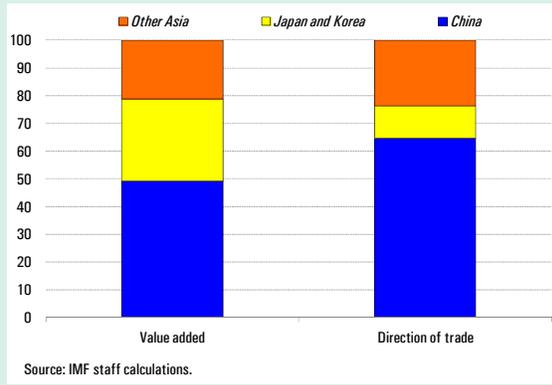
**Table 4.1. Determinants of Asian Exports to China<sup>1</sup>**

	Chinese domestic demand	Chinese exports
Commodity exporters	Australia (1.79) Indonesia (0.68) New Zealand (1.66)	
Manufacturing exporters		India (1.03) Hong Kong SAR (0.81) Japan (1.28) Korea (1.18) Malaysia (0.90) Philippines (2.95) Singapore (1.78) Thailand (1.37)

Source: IMF staff estimates.

<sup>1</sup> Numbers in parentheses denote elasticity of exports to China at 5 percent level of significance. Shaded areas indicate no significance at 5 percent level.

**Figure 4.15. U.S. Imports from Asia for Final Demand, 2010**  
*(Percent market share by source)*



from investment-led growth in China may face growing headwinds to their exports. Given the importance of vertical supply chain links with China, they would also be hurt if China's exports were to slow. By contrast, increasing direct and indirect access to the Chinese consumer goods markets could offer lasting benefits for Asian trading partners.

## V. ASIAN LOW-INCOME AND PACIFIC ISLAND COUNTRIES: OPPORTUNITIES AND RISKS FROM INCREASED REGIONAL INTEGRATION

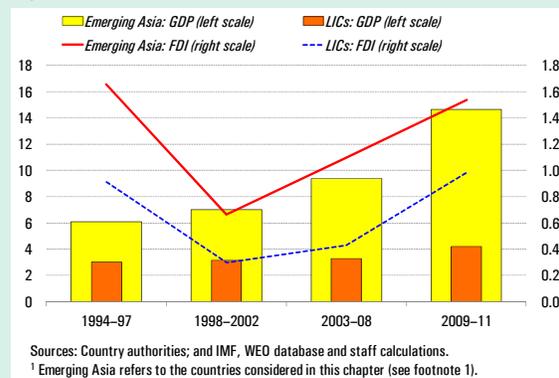
Regional integration of Asian low-income countries (LICs) and Pacific Island countries (PICs) has increased, presenting these economies with risks and opportunities. Greater FDI inflows from advanced economies have played a key role in developing the commodity sector in resource-rich countries, and in helping economies with abundant low-skilled labor diversify into the manufacturing and tourism sectors. But it has also exposed Asian LICs and PICs to the effects of advanced economies' business cycles. Over the last decade, an increasing share of overall FDI to Asian LICs and PICs came from within the region, especially from China. As Emerging Asia gradually rebalances its growth model toward domestic demand, Asian LICs' and PICs' economic fortunes will increasingly depend on their resilience to shocks stemming from within the region.

### A. Regional LICs Receive More Investment from within Asia

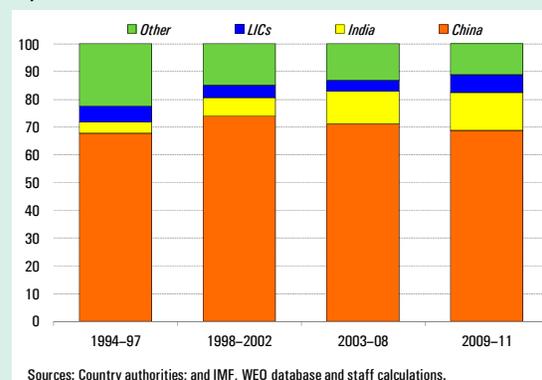
Over the last two decades, Emerging Asia continued to receive a high share of global FDI, commensurate with its rising share in world output, but the pattern of FDI within the region has changed (Figure 5.1).<sup>1</sup>

- China's large share as a recipient of inward FDI to Emerging Asia has remained relatively constant since the mid-1990s, at about 70 percent (Figure 5.2). However, in recent years, China has also increasingly invested abroad, particularly since the global financial crisis (Figure 5.3), and in

**Figure 5.1. Selected Emerging Asia: Share in Global Output and FDI<sup>1</sup>**  
(In percent)



**Figure 5.2. Selected Emerging Asia: Share in Regional FDI**  
(In percent)

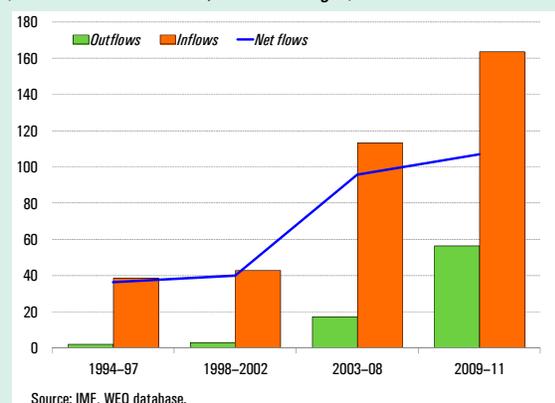


neighboring countries. Some of this investment went to Asian LICs that have large natural resources (for example, the Lao People's Democratic Republic, Mongolia, and Myanmar). Some ASEAN economies, including Cambodia, Malaysia, the Philippines, and Thailand, also saw a sharp increase in FDI from China, although these flows remain small compared to those from more-advanced Asian economies, such as Japan, Korea, and Singapore.

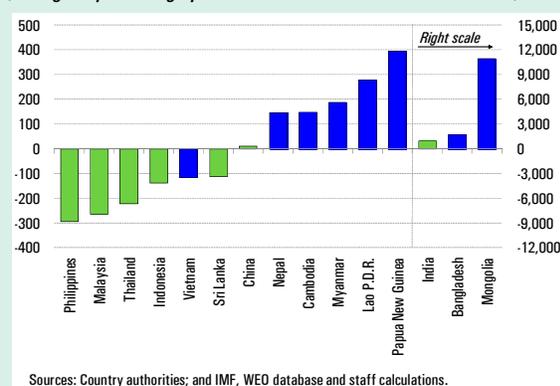
Note: The main authors of this chapter are Nombulelo Duma, Alexander Pitt, and Yiqun Wu.

<sup>1</sup> In this chapter Emerging Asia comprises seven Emerging Asian market economies (China, India, Indonesia, Malaysia, the Philippines, Sri Lanka, and Thailand) and seven Asian LICs (Bangladesh, Cambodia, the Lao People's Democratic Republic, Mongolia, Myanmar, Papua New Guinea, and Vietnam).

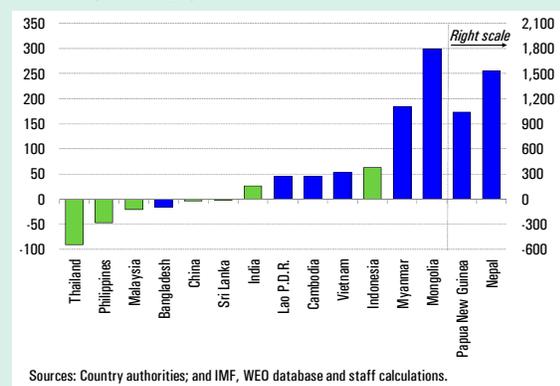
**Figure 5.3. China: Foreign Direct Investment**  
(In billions of U.S. dollars; annual averages)



**Figure 5.4. Selected Emerging Asia: Growth in FDI Relative to Regional Average**  
(Change in percentage points between 1994-97 and 2009-11)



**Figure 5.5. Selected Emerging Asia: Growth in FDI Relative to Regional Average**  
(Change in percentage points between 2003-08 and 2009-11)



- India significantly increased its share as a recipient of FDI to the region, while the share going to middle-income ASEAN economies (Indonesia, Malaysia, the Philippines, and Thailand) has declined by more than half since the mid-1990s.
- While the share of Asian LICs in total FDI remained small, FDI growth in these economies was generally faster than in the overall sample (Figure 5.4), especially after the global financial crisis (Figure 5.5). Since FDI tends to have a positive impact on GDP growth in LICs (Dabla-Norris and others, 2010), this has helped Asian LICs buffer the impact of the crisis.

The surge in FDI to Asian LICs reflects greater investment in natural resource sectors following the spike in commodity prices since 2005. FDI inflows have increased especially rapidly in the Asian LICs with significant natural resources, such as Mongolia, and to a lesser extent, Lao People’s Democratic Republic, Myanmar, and Papua New Guinea. From 1994–97 to 2009–11, FDI in these economies grew more than nine-fold in U.S. dollar terms and more than twice as rapidly as in the region as a whole. FDI is also playing a much more important role in these economies, as on average it almost tripled as a share of GDP to 22 percent.

But the increase of FDI to Asian LICs also reflects their increasing regional integration over the last two decades, through continued liberalization of trade within ASEAN economies, as well as new free trade agreements (FTAs) with other emerging and advanced economies in the region (such as Australia, China, India, Japan, Korea, and New Zealand). Indeed, trade openness appears positively associated with FDI (Figure 5.6). Baltagi, Egger, and Pfaffermayr (2007) and Ponce (2006) show that FDI is positively associated with FTAs, as freer trade flows allow the realization of multi-plant economies of scale to serve larger aggregate markets.

While FDI has been critical in raising productivity and economic growth, it has increased Asian LICs’ exposure to advanced economies’ business cycles. An escalation of the euro area debt crisis and sharply lower

global growth would severely hit Asian LICs. Of course, pressure points would differ depending on country circumstances. For economies with a rapidly growing industrial sector, direct export exposures to Europe and other advanced economies are substantial, exceeding 20 percent of GDP in the case of Cambodia and Vietnam (Figure 5.7). By contrast, commodity exporters are mainly exposed to export demand from China and other economies in Emerging Asia, and would suffer mainly indirectly from a decline in commodity prices. A third group of economies would be mainly hit as a result of a decline in tourism (Bhutan, Cambodia, Maldives, and Vietnam). Increased global volatility could also expose weaknesses that are already evident in some of the region’s banking systems and, in some cases, provide a catalyst for greater financial pressures (for example, Nepal).

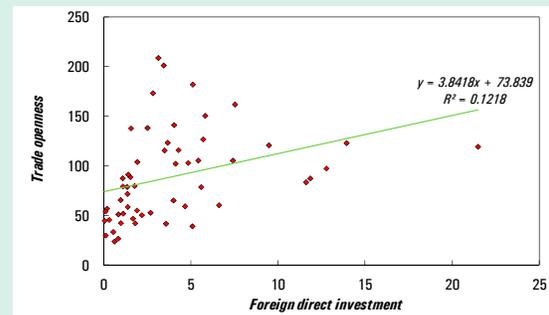
Greater FDI from within the region offers Asian LICs the potential for insurance against these risks. Fast-growing economies—in particular China—are moving up the production ladder and rebalancing internally and externally. China’s increasing investment abroad is an indication that this process is already underway. As multinational companies are also diversifying their production within the region, this should help boost FDI to Asian LICs. Further regional integration should support this process, although policymakers should ensure that the proliferation of FTAs does not lead to distortions, such as from different rules on local content, FDI incentives, or competition policies, as well as increased costs for businesses to comply with them.

## B. Pacific Island Countries: Links to Regional Economies Already Matter More

PICs have also increased their integration with regional economies over the last two decades.

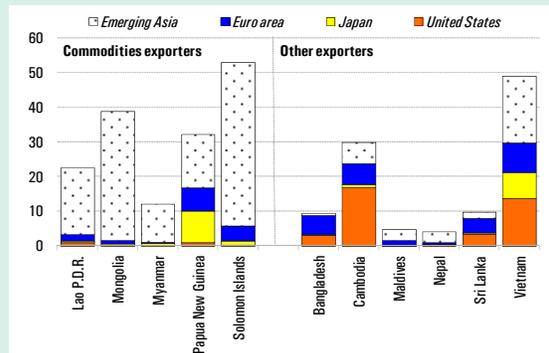
- The stronger linkages are with Australia and New Zealand. Australia is by far the largest provider of aid and FDI to the PICs (Figure 5.8). Trade with Australia and New Zealand accounts on average for one-third of total PICs trade, while remittances

**Figure 5.6. Selected Emerging Asia: Trade Openness and FDI<sup>1</sup>**  
(In percent of GDP)



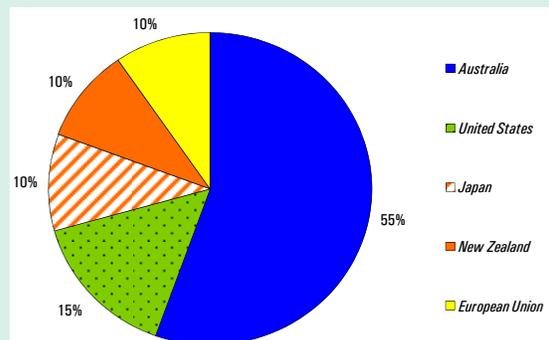
Sources: IMF, WEO database and staff calculations.  
<sup>1</sup> Trade openness is defined in terms of sum of exports and imports in goods and services. The chart uses the annual averages for the periods 1994–97, 1998–2002, 2003–08, and 2009–11.

**Figure 5.7. Selected Emerging Asia: Exports Exposure**  
(In percent of GDP)



Sources: IMF, *Direction of Trade Statistics* and staff calculations.

**Figure 5.8. PICs: Official Development Aid by OECD Donors**  
(In percent of total aid, 2010)



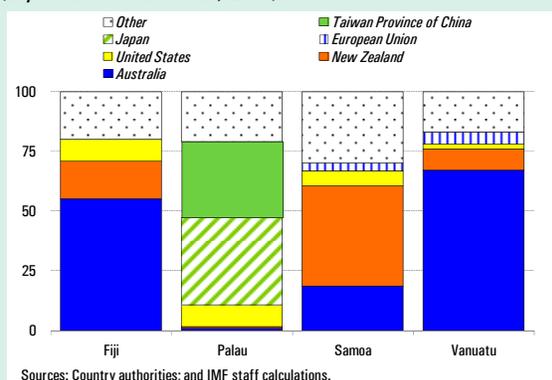
Source: Organization for Economic Cooperation and Development.

## REGIONAL ECONOMIC OUTLOOK: ASIA AND PACIFIC

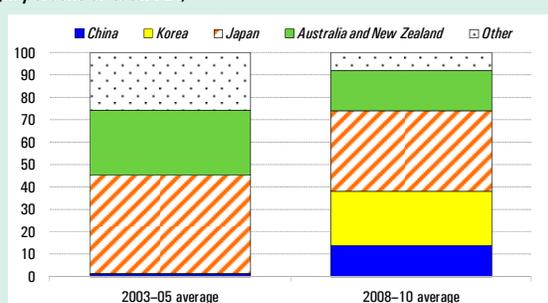
from these two economies account for about 60 percent of total remittances in Fiji and Samoa. Tourist arrivals from Australia and New Zealand represent about 60–70 percent of total arrivals in Fiji, Vanuatu, and Samoa (Figure 5.9). Also, the financial sector mainly consists of Australian banks.

- But linkages with Emerging Asia have grown substantially, especially over the last 10 years. In particular, trade with China has increased by seven times on average for PICs since the early 2000s, with China even becoming the first trading partner for some (for example, the Solomon Islands). Similarly, FDI patterns have become more diverse, with the share of inward FDI from China and other East Asian trading partners, notably Korea, growing at the expense of traditional investors from Australia and New Zealand, and, to a lesser extent, Japan (Figure 5.10).

**Figure 5.9. Selected PICs: Tourist Arrivals by Country of Residence**  
(In percent of total arrivals, 2010)



**Figure 5.10. PICs: FDI by Country of Origin<sup>1</sup>**  
(In percent of total FDI)



<sup>1</sup> Includes Australia, China, France, Germany, Italy, Japan, Korea, Luxembourg, the Netherlands, New Zealand, Sweden, the United Kingdom, and the United States.

Not surprisingly, spillovers from regional economies are more important for PICs than those from advanced economies outside Asia.<sup>2</sup> Australia is by far the main source of direct and indirect spillovers, both in the short and long term, with the exception of the compact countries (Marshall Islands, the Federated States of Micronesia, and Palau), for which the United States appears to be the most important partner (consistent with the large size of U.S. aid). Spillovers from New Zealand are also highly relevant for several PICs, such as Samoa and Tonga. Over the last decade, shocks from Emerging Asia have had a greater impact on PICs' business cycles, while the role of more traditional partners, such as Japan, has declined. In the short run, the elasticity of output with respect to regional partners is higher than one for a number of PICs.

Notwithstanding greater regional linkages, PICs remain particularly vulnerable to global commodity price shocks. The impact on PIC growth from an adverse oil shock scenario (wherein oil prices are 50 percent higher than in the baseline, consistent with Chapter 1) would be substantial, averaging about three-quarters of a percentage point of GDP, and in some cases would be even larger than from a negative global demand shock scenario (as described in the April 2012 *World Economic Outlook*, IMF, 2012c). In part, the greater sensitivity to global oil and commodity prices reflects the large weight of fuel and food in the consumer price index basket and the relatively large share of imported items in PICs consumption and investment, due to their smaller domestic manufacturing base.

<sup>2</sup> Details on these results and those in the following paragraph can be found in Sheridan, Tumbarello, and Wu (forthcoming).

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