PROGRESS IN REGIONAL COOPERATION AND INTEGRATION

Introduction

With the global economy immersed in double-track growth—emerging economies expanding faster than advanced countries—Asia is forging ahead in part due to regional cooperation and integration.

Developing Asia's economic growth forecasts may have been revised down slightly. But they remain robust nonetheless, particularly against the advanced economies of Europe and the United States (US) (see Table 1). The dynamics of this "double-track" growth are complex and will continue to define the global economy for some time to come. One reason Asia continues to forge ahead is increasing economic integration. It has happened through both better business opportunities and, increasingly, government cooperation. Intraregional trade is growing, as is trade with other emerging markets. It is one of the driving forces behind the relative strength of the Asian economy. Where trade flows, so must money. Financing trade—and investment—requires better integrated financial systems, to ease the flow of capital and more efficiently allocate excess savings. Indeed, Asia is increasingly more integrated. Unilateral trade liberalization that supports the growing production networks—further enhanced by cooperation through free trade agreements (FTAs), accelerate trade integration, while unilateral financial liberalization and regional cooperation help strengthen financial integration. To facilitate the process of integration and minimize the risks that may arise, including the risk of contagion-driven crisis, regional cooperation has indeed increased. How far has Asian integration progressed? This section aims to provide some answers.

Asia can sustain robust growth by contributing to global economic rebalancing.

Developing Asia led the world out of the 2008/09 global financial crisis. Its rapid recovery has moderated since 2010. But the region's economic growth remains strong despite the current eurozone financial crisis and lackluster recovery in the US. It appears that a new global order—a "new normal"—is emerging, characterized by a protracted slowdown in the US and Europe. This means export-oriented Asia can no longer rely only on these mature markets. It needs to develop new sources of growth, both domestically and regionally.

Asia is one of the most dynamic regions of the world. It accounts for 36.6% of global gross domestic product (GDP), 25.4% of the earth's land mass,[1] and 56.2% of the global population **(Table 2)**. It includes some of the world's richest and most dynamic economies. Asia also remains the home of two-thirds of the world's poor[2]—marking Asia's diversity in terms of economic development.

In this section, Asia refers to the 48 regional member countries of the Asian Development Bank (ADB). The *Asian Economic Integration Monitor* (AEIM) further divides Asia into six subregions: (i) Central Asia, (ii) East Asia, (iii) South Asia, (iv) Southeast Asia, (v) the Pacific, and (vi) Oceania **(Table 3)**. However, coverage can sometimes differ across subsections or even across indicators, depending on data availability and other special exceptions.

This section reviews the status and progress of economic integration in the region. Since integration is a multi-faceted concept, the following areas are examined in detail: (i) production networks and trade, (ii) financial integration, (iii) macroeconomic interdependence, (iv) international and regional transmigration, (v) infrastructure connectivity, (vi) cooperation in trade policy, and (vii) macroeconomic and financial cooperation. The discussion also touches on the costs and benefits of regional integration (see *Regional Integration: A Balanced View* for more detail). Box 1 discusses some basic terms on regionalism.

How far have Asia's economies integrated?

An analysis of five selected indicators—share of intraregional flows in total trade, foreign direct investment (FDI), capital markets (equity and debt security holdings), tourism, and output correlations—shows how far the region has progressed since the 1990s

[1]ADB calculations using data on land area in square kilometers from *World DataBank,* World Bank. http://databank.worldbank.org/Data/Home.aspx

[2]ADB calculations using data on poverty head count from *Human Development Report 2011* (Table 5: Multidimensional Poverty Index), United Nations Development Programme. http://hdr.undp.org/en/statistics/mpi/

Table 2: Basic Economic Indicators by Region and Subregion

	Share of World Population (%) 2010	Share of World GDP (%, PPP) 2011	Real GDP Growth (%)[1]		Per Capita GDP (PPP)	
			Average 2000–2007	Average 2008-2011	$ 2011	Average Growth (%) 2000–2007
Asia	56.2	36.6	6.2	5.8	7,376	7.0
East Asia	22.5	23.5	6.3	5.9	11,896	7.7
Central Asia	1.2	0.7	10.3	5.9	6,396	9.8
Southeast Asia	8.7	4.2	5.5	4.5	5,476	6.0
South Asia	23.3	6.9	6.8	7.0	3,325	7.4
The Pacific and Oceania	0.5	1.3	3.4	2.0	29,623	3.5
European Union	7.2	20.1	2.6	0.0	31,607	3.6
North America	6.6	23.0	2.6	0.4	39,450	3.1
World[2]	100.0	100.0	4.2	2.8	10,821	4.7

GDP = gross domestic product, PPP = purchasing power parity.
Notes: The list of countries in each subregion is shown in Table 3. European Union (EU) refers to the aggregate of the 27 EU members. North America includes Canada, Mexico, and the United States.
[1]Weighted by nominal GDP in PPP.
[2]Per capita GDP as of end-2010.
Source: ADB calculations using data from *Asian Development Outlook 2012,* Asian Development Bank; *World Economic Outlook Database April 2012,* International Monetary Fund; and *World Development Indicators*, World Bank.

Table 3: Country Coverage for the AEIM

Central Asia		
Armenia	Kazakhstan	Turkmenistan
Azerbaijan	Kyrgyz Republic	Uzbekistan
Georgia	Tajikistan	
East Asia		
PRC	Japan	Mongolia
Hong Kong, China	Republic of Korea	Taipei,China
South Asia		
Afghanistan	India	Pakistan
Bangladesh	Republic of the Maldives	Sri Lanka
Bhutan	Nepal	
Southeast Asia		
Brunei Darussalam	Malaysia	Singapore
Cambodia	Myanmar	Thailand
Indonesia	Philippines	Viet Nam
Lao PDR		
The Pacific		
Cook Islands	Nauru	Timor-Leste
Fiji	Palau	Tonga
Kiribati	Papua New Guinea	Tuvalu
Marshall Islands	Samoa	Vanuatu
Federated States of Micronesia	Solomon Islands	
Oceania		
Australia	New Zealand	
Asia = Central Asia + East Asia + Southeast Asia + South Asia + the Pacific + Oceania.		

PRC = People's Republic of China, Lao PDR = Lao People's Democratic Republic.

Box 1: Regionalism Vocabulary

The technical vocabulary of regionalism has yet to be standardized and different authors often use the same terms to mean different things. For consistency, the *Asian Economic Integration Monitor* has adopted the following definitions based on their commonly applied economic usage.

Regional integration. A process that leads to greater interdependence within a region, whether market-driven or policy-led, or a combination of both. Global integration refers to a similar process operating globally.

Regional interdependence. Regional economic interaction through trade, investment, finance, and other channels. The degree of interdependence affects the way a region's economies move together and how changes are transmitted among them.

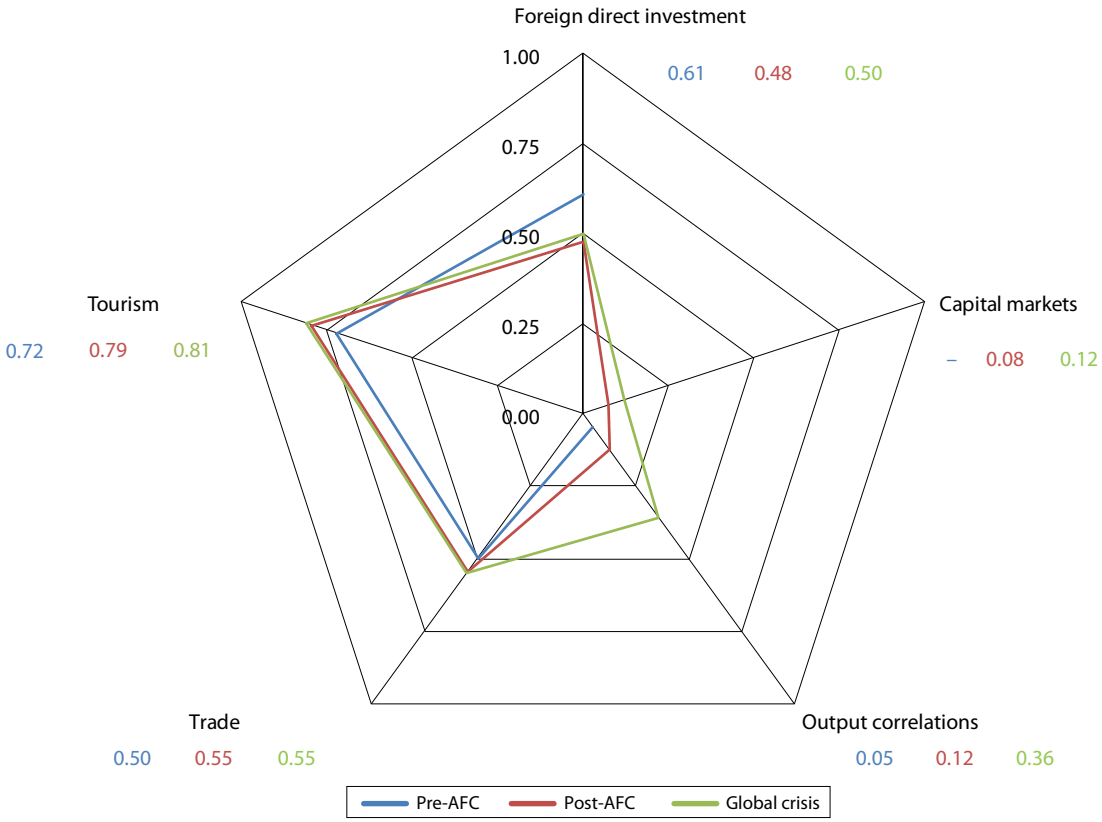
Regional cooperation. Official activities that encourage regional integration and/or help to shape coordinated action and responses to developments that affect the region, such as intergovernmental dialogue, the provision of regional public goods, and regional institution building.

Regionalism. A policy perspective that focuses on the importance of regional integration and promotes regional cooperation. Regionalism lies at an intermediate level between nationalism and globalism.

Regionalization. A process that promotes the formation of regions. Regionalization usually refers to market-led integration and is often used in contrast to **globalization** to indicate a world with stronger regional focus.

Source: *Emerging Asian Regionalism: A Partnership for Shared Prosperity,* ADB.

Figure 14: Advancing Integration: Regional Indicators (Pre-AFC, post-AFC, and global crisis)



AFC = 1997/98 Asian financial crisis, global crisis = 2008 to present, – = unavailable.
Notes:
Data calculated for Asia unless otherwise noted.
Foreign direct investment: Average share of the intraregional foreign direct investment inflows. Pre-AFC = 1990–1996; post-AFC = 2000–2007; global crisis = 2008–2009. Data unavailable for Afghanistan; Bhutan; the Cook Islands; Kiribati; Republic of the Maldives; the Marshall Islands; the Federated States of Micronesia; Mongolia; Nauru; Nepal; Palau; Samoa; Solomon Islands; Sri Lanka; Taipei,China; Tajikistan; Timor-Leste; Tonga; Turkmenistan; Tuvalu; Uzbekistan; and Viet Nam. Data unavailable for Central Asia for 1990-1992.
Trade: Average share of intraregional trade. Pre-AFC = 1990–1996; post-AFC = 2000–2007; global crisis = 2008–2011. Reporter data unavailable for Bhutan, Kiribati, Nauru, Palau, Timor-Leste, and Tuvalu. Reporter and partner data unavailable for the Cook Islands, the Marshall Islands, and the Federated States of Micronesia. Data unavailable for Central Asia for 1990-1991.
Capital markets: Average share of intraregional debt and equity investment based on investments from Hong Kong, China; India; Indonesia; Japan; Kazakhstan; the Republic of Korea; Malaysia; Pakistan; the Philippines; Singapore; Thailand; and Vanuatu. Post-AFC= 2001–2007; global crisis = 2008–2011. Does not include Oceania. Recipient data unavailable for Azerbaijan, Bhutan, the Federated States of Micronesia, Palau, Samoa, Tonga, Turkmenistan, and Tuvalu. Data available from 2001. Capital markets do not have a pre-1997 benchmark as data unavailable.
Output correlations: Based on simple averages of 3-year rolling bilateral correlations of annual growth rates (difference of natural logarithms) of detrended GDP series (2005 base year). Pre-AFC = 1991–1996; post-AFC = 1999–2007; global crisis = 2008–2011. Data unavailable for Afghanistan, the Cook Islands, the Marshall Islands, the Federated States of Micronesia, Myanmar, Nauru, Palau, Timor-Leste, and Tuvalu.
Tourism: Average share of intraregional tourist flows. Pre-AFC = 1995; post-AFC = 2000–2007; global crisis = 2008–2010. Does not include Oceania.
Source: ADB calculations using data from Bloomberg; CEIC; *Asia Regional Integration Center*, Asian Development Bank; *Coordinated Portfolio Investment Survey*, International Monetary Fund; *Direction of Trade Statistics*, International Monetary Fund; *World Economic Outlook Database April 2012*, International Monetary Fund; United Nations Conference on Trade and Development; and United Nations World Tourism Organization.

(Figure 14).[3] Economic integration is strongly evident mostly by way of trade, tourism, and capital markets.[4] The only exception is FDI inflows, which remain below pre-1997 levels. Production across the region also shows a higher level of co-movement, implying increased economic interdependence, although this partly reflects the impact of the global shocks facing the region.

Asian integration is market driven, multi-speed, and multi-track.

More broadly, progress in regional integration has come about as a result of the expanding scope of Asian markets; the rise of various functional programs (trade, money and finance, infrastructure); emergence of subregional institutions and intraregional forums—such as the Association of Southeast Asian Nations (ASEAN), ASEAN+3, East Asia Summit (EAS), Asia–Pacific Economic Cooperation (APEC), Asia–Europe Meeting (ASEM), Greater Mekong Subregion (GMS) Program, the South Asian Association for Regional Cooperation (SAARC),

[3]This is an indicative guide of how regional economic integration and cooperation has developed over the medium-term.

[4]Capital markets, measured by total debt and equity security holdings, do not have a pre-1997 benchmark as data unavailable.

Table 4: Progress in Regional Integration (2008–2011)

	Production Network and Trade		Capital Markets		Macroeconomic Links	Transmigration	
	Intraregional FDI (%)	Intraregional Trade (%)	Intraregional Equity Holdings (%)	Intraregional Bond Holdings (%)	Intraregional Output Correlations	Intraregional Tourism (%)	Migrant to Population Ratio (%)
Asia	**50.08** ▲	**55.02** ▲	**24.98** ▲	**6.36** ▲	**0.36** ▲	**81.07** ▲	**0.51** ▼
Central Asia	0.02 ▼	5.33 ▼	– –	– –	0.35 ▲	32.20 ▲	1.56 –
East Asia	41.81 ▲	36.17 ▼	17.65 ▲	2.84 ▲	0.59 ▲	75.32 ▲	0.26 ▲
Southeast Asia	6.32 ▼	24.61 ▲	9.54 ▼	9.49 ▼	0.70 ▲	69.69 ▲	0.66 ▲
South Asia	0.03 ▲	4.61 ▼	– –	– –	0.04 ▼	13.17 ▼	0.47 ▼
The Pacific and Oceania	1.91 ▼	8.05 ▼	– –	– –	0.46 ▲	2.43 ▼	0.09 ▼

▲ = increase from 2000-2007 average; ▼ = decrease from 2000-2007 average; – = unavailable.

Notes:

Data calculated for Asia unless otherwise noted.

Foreign direct investment (FDI): Average share of intraregional foreign direct investment inflows in 2008–2009. Data unavailable for Afghanistan; Bhutan; the Cook Islands; Kiribati; Republic of the Maldives; the Marshall Islands; the Federated States of Micronesia; Mongolia; Nauru; Nepal; Palau; Samoa; Solomon Islands; Sri Lanka; Taipei,China; Tajikistan; Timor-Leste; Tonga; Turkmenistan; Tuvalu; Uzbekistan; and Viet Nam.

Trade: Average share of intraregional trade. Reporter data unavailable for Bhutan, Kiribati, Nauru, Palau, Timor-Leste, and Tuvalu. Reporter and partner data unavailable for the Cook Islands, the Marshall Islands, and the Federated States of Micronesia.

Equity holdings: Average share of intraregional equity investment in 2008–2010 based on investments from Hong Kong, China; India; Indonesia; Japan; Kazakhstan; the Republic of Korea; Malaysia; Pakistan; the Philippines; Singapore; Thailand; and Vanuatu. Excludes Oceania. Recipient data unavailable for Azerbaijan, Bhutan, the Federated States of Micronesia, Palau, Samoa, Tonga, Turkmenistan, and Tuvalu as investment destinations.

Bond holdings: Average share of intraregional investment in bonds in 2008–2010 based on investments from Hong Kong, China; India; Indonesia; Japan; Kazakhstan; the Republic of Korea; Malaysia; Pakistan; the Philippines; Singapore; Thailand; and Vanuatu. Excludes Oceania. Recipient data unavailable for Azerbaijan, Bhutan, the Federated States of Micronesia, Palau, Samoa, Tonga, Turkmenistan, and Tuvalu as investment destinations.

Output correlations: Based on simple averages of 3-year rolling bilateral correlations of annual growth rates (difference of natural logarithms) of detrended GDP series (2005 base year). Data unavailable for Afghanistan, the Cook Islands, the Marshall Islands, the Federated States of Micronesia, Myanmar, Nauru, Palau, Timor-Leste, and Tuvalu.

Tourism: Average share of intraregional tourist flows in 2008-2010. Does not include Oceania.

Migrant to population ratio: Share of migrant stock to population in 2010. Figure compared with 2000 estimate. Does not include Oceania. Data unavailable for Afghanistan and Pakistan. Data insufficient to conclude progress in Central Asia due to unavailability of similar data for 2000.

Source: ADB calculations using data from Bloomberg; CEIC; *Asia Regional Integration Center*, Asian Development Bank; *Coordinated Portfolio Investment Survey*, International Monetary Fund; *Direction of Trade Statistics*, International Monetary Fund; *World Economic Outlook Database April 2012*, International Monetary Fund; *Bilateral Migration Database 1990-2000*, World Bank; *Bilateral Migration Matrix 2010*, World Bank; United Nations Conference on Trade and Development; and United Nations World Tourism Organization.

the South Asia Subregional Economic Cooperation (SASEC) Program, and Central Asia Regional Economic Cooperation (CAREC), among others; and the creation of mechanisms for macroeconomic and financial cooperation—such as the Asian Bond Markets Initiative (ABMI). The key characteristic of Asian integration is that it is largely market driven, multi-speed, and multi-track (subregional). While cooperation is accelerating, however, there needs to be more focus on building institutional capabilities.

The overall level of Asian economic integration remains uneven across subregions and sectors.

A closer examination of seven selected indicators—intraregional FDI, trade, equity holdings, bond holdings, tourism flows, migrant to population ratio, and output correlations—suggests a diverse picture of Asian integration across different subregions **(Table 4)**. East Asia appears to be the most integrated subregion with all indicators improving except intraregional trade. Southeast Asia follows, recording improvement in all indicators except intraregional FDI and portfolio holdings. Except for intraregional FDI, all indicators in South Asia record a fall.

Despite progress in regional integration, large portions of the population in Asia do not benefit from increased prosperity.

Many low-income countries have undeveloped trade infrastructure, limiting their ability to expand and diversify trade. Nearly half a billion Asians still lack access to safe drinking water. Infant mortality in a number of Asian economies is more than 10 times higher than the levels seen in developed economies. Financial inclusion in the region remains poor with many people lacking access to basic banking and financial services. Landlocked and poor communities in the region continue to be isolated by poor roads and a lack of telecommunications facilities.

What follows are more in-depth examinations of stylized facts for each area of regional integration in Asia and its subregions.

Production Networks and Trade

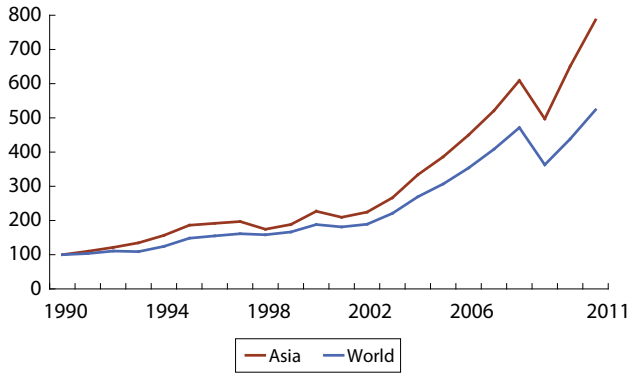
Asia is leading the growth in global trade through increased openness.

Comparatively, Asia's trade openness surpasses the world **(Figure 15)**. Its trade-to-GDP ratio has grown much faster than those of the EU, North America, and other regions globally—such that the difference with Europe has narrowed **(Table 5)**. Broadly, this came about because of strong export demand from advanced economies over the past two decades and increasing trade within the region itself. A robust production network has been featured prominently in this trade pattern. In turn, Asia's share of world exports rose from 23.4% in 1990 to 34.3% in 2011. If this trend continues, the region could account for more than 50% of global trade by 2050.[5]

Asia's intraregional and "South-South"[6] trade is growing faster than trade with traditional markets in the US and Europe.

In the first 3 months of 2009, Asia's exports plummeted close to 25% quarter-on-quarter. The fall could have been larger had Asia's direction of trade remained the same. But it has shifted recently—trade with NAFTA and the EU-15 declined from 16.1% in 2007 to 13.1% by 2011—or by about $530 billion **(Figure 16)**. By export share, in January 2012 the EU and the US accounted for 25.3% of Asia's trade—down 4.9 percentage points from 30.2% in 2007. This was partly offset by a 2.3 percentage point rise in the share of exports to Latin America, Africa, and the Middle East; and a 1.5 percentage point rise in the share of intraregional exports. The reduction in export share to Europe and the US reflects weak demand from advanced economies amid the fragile US recovery and Europe's sovereign debt problems. As a result, unlike in Europe and North America, the intraregional trade share within Asia continued to increase **(Figure 17)**.

Figure 15: Trade Index (1990 = 100)



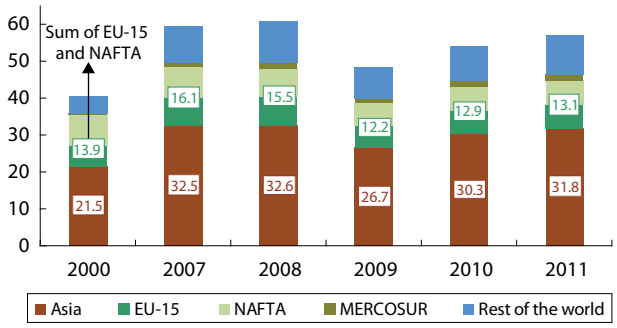
Source: ADB calculations using data from *Direction of Trade Statistics,* International Monetary Fund; and CEIC for Taipei,China.

Table 5: Trade-to-GDP Ratio by Region and Subregion (%)

	1990	2000	2010	2011
Asia	**30.1**	**40.4**	**54.1**	**57.3**
East Asia	26.7	34.1	51.1	52.8
People's Republic of China	29.9	39.6	50.2	49.9
Southeast Asia	89.4	130.8	107.2	116.1
ASEAN-4	62.9	103.7	78.1	86.0
BCLMV	75.3	84.4	110.1	130.8
Singapore	293.1	289.3	292.3	299.4
Central Asia	–	62.8	52.4	59.7
South Asia	16.0	23.0	36.7	44.0
India	12.9	19.5	35.9	44.2
The Pacific and Oceania	28.3	37.3	36.3	37.8
European Union	**–**	**57.6**	**62.5**	**67.2**
North America	**18.4**	**25.6**	**27.4**	**29.9**
World	**31.1**	**40.2**	**48.0**	**51.9**

ASEAN-4 = Indonesia, Malaysia, the Philippines, and Thailand; BCLMV = Brunei Darussalam, Cambodia, the Lao People's Democratic Republic, Myanmar, and Viet Nam; GDP = gross domestic product; North America = Canada, Mexico, and the United States; – = unavailable.
Notes: Figures refer to the ratio of total trade to gross domestic product (GDP) for the specified years. Values were derived by dividing total trade (exports plus imports) by nominal GDP (both in $).
Source: ADB calculations using data from *Direction of Trade Statistics* and *World Economic Outlook Database April 2012,* International Monetary Fund; and CEIC for Taipei,China.

Figure 16: Asia's Trade Links: Direction of Trade[1] (% of GDP)

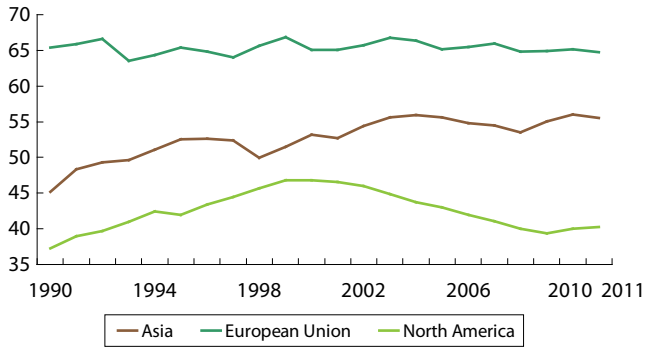


GDP = gross domestic product, NAFTA = North American Free Trade Agreement.
[1]Refers to total trade (exports plus imports). European Union-15 (EU-15) includes Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, the Netherlands, Portugal, Spain, Sweden, and the United Kingdom. NAFTA includes Canada, Mexico, and the United States. MERCOSUR includes Argentina, Brazil, Paraguay, and Uruguay as founding members; Bolivia, Chile, Colombia, Ecuador, and Peru as associate members; and Venezuela, which signed a membership agreement in 2006.
Source: ADB calculations using data from *Direction of Trade Statistics* and *World Economic Outlook Database April 2012,* International Monetary Fund; and CEIC for Taipei,China.

[5]H.S. Kohli, A. Sharma, and A. Sood, eds. 2011. *Asia 2050: Realizing the Asian Century.* Singapore: Sage Publications.

[6]The South refers to Africa, developing Asia, Latin America, and the Middle East.

Figure 17: Intraregional Trade Share[1]—World (%)

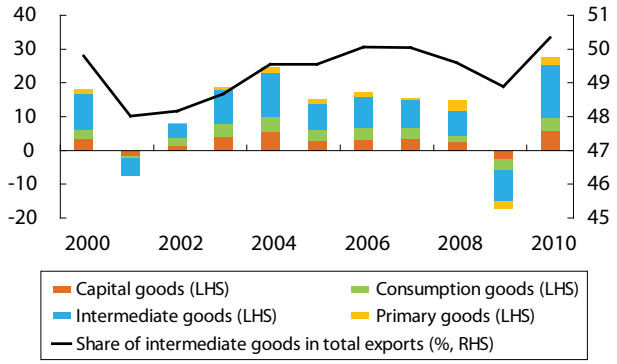


Note: European Union (EU) refers to the aggregate of 27 EU members. North America includes Canada, Mexico, and the United States.

[1]Intraregional trade share of region i is defined as $ITS_i = (X_{ii}+M_{ii})/(X_i+M_i)$; where X_{ii} = exports of region i to region i, M_{ii} = imports of region i to region i, X_i = total exports of region i, and M_i = total imports of region i.

Source: ADB calculations using data from *Direction of Trade Statistics*, International Monetary Fund; and CEIC for Taipei,China.

Figure 18: Contribution to Export Growth by Stages of Production—Asia (percentage points)



LHS = left-hand scale, RHS = right-hand scale.

Notes: Based on Broad Economic Categories, which classifies traded goods by stages of production. Primary goods include food and beverages, and fuel, lubricants, and primary industrial supplies for industry. Intermediate goods include processed goods mainly for industry and parts and components for capital goods and transport equipment. Capital goods include machinery and equipment used by producers as inputs for production. Consumption goods are household goods and government final product purchases. Data for Taipei,China unavailable.

Source: ADB calculations using data from *UN Comtrade Database*.

Most of the increase in Asia's intraregional trade occurred in intermediate goods.

Widening and increasingly complex supply chains and production networks—along with rising personal consumption—have helped boost intraregional trade and integration.[7] This resulted from a significant increase in intraregional trade in intermediate goods. In 2010, intermediate goods accounted for 50% of total exports, of which 30% were traded within the region. Indeed, the ups and downs of export growth in Asia have been largely driven by the growth of intermediate goods **(Figure 18)**.

However, the growth of regional demand is also quite broad-based, supported by rising capital and consumer goods exports as well. In particular, the share of intra-Asian capital goods exports rose from 36.2% in 2000 to 46.3% in 2010. During the same period, the share of intraregional consumer goods exports rose from 30.5% to 33.1% **(Table 6)**.

The strength of regional demand was partially boosted by the strong policy response in Asia. Fourteen Asian central banks[8] cut policy rates during the 2008/09 global financial crisis—ranging from 40 to 850 basis points. Fiscal stimulus was used in 11 East Asian and Southeast Asian countries[9] via infrastructure investment, tax cuts and incentives, credit guarantees, subsidies, and direct cash transfers. Fiscal stimulus packages in these countries ranged from 1.1% of GDP in Taipei,China to 22.1% of GDP in Viet Nam—the regional average was about 7% of GDP.

The depth of trade integration varies across subregions, with inter-subregional trade also contributing to closer trade integration.

The degree of trade integration varies across Asia's subregions. East Asia is the most integrated with its intra-subregional trade share reaching 35.4%, followed by Southeast Asia at 24.7% **(Figure 19)**. In contrast, Central Asia and the Pacific countries do not trade much within their respective subregions and in fact this trade has declined over time. The level of trade integration in South Asia, on the other hand, has been increasing but remains low at 4.6%.

Trading of goods across subregions also supported the region's trade integration. For example, the Pacific had a 60.3% inter-subregional trade share (ISTS) in 2011—the highest in Asia **(Figure 20)**. Trade flows from the Pacific to other regions were mostly primary commodities used

[7]As a measure of integration, intraregional trade share—the percentage of trade within the region to the region's total trade—has limitations. First, it increases with the size of the region and therefore comparisons across regions are not meaningful. It is also quite cyclical and tends to drop during periods of economic crisis such as during the 1997/98 Asian financial crisis and the 2008/09 global financial crisis.

[8]The People's Republic of China; Hong Kong, China; India; Indonesia; Japan; Kazakhstan; the Republic of Korea; Malaysia; Pakistan; the Philippines; Sri Lanka; Taipei,China; Thailand; and Viet Nam.

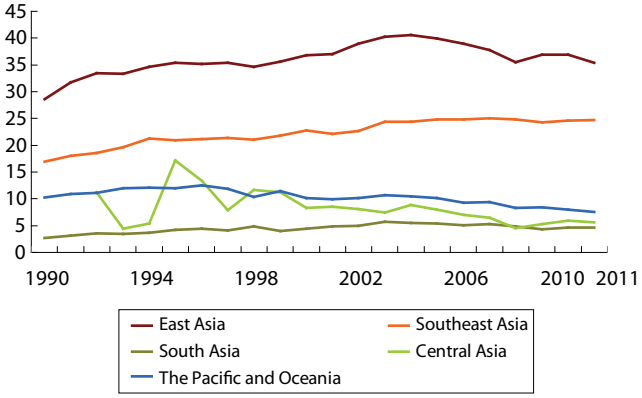
[9]The People's Republic of China; Hong Kong, China; Indonesia; Japan; the Republic of Korea; Malaysia; the Philippines; Singapore; Taipei,China; Thailand; and Viet Nam.

Table 6: Destination of Asia's Exports by Stages of Production (% of total)

Destination	Primary Goods		Intermediate Goods		Capital Goods		Consumption Goods		Total Exports	
	2000	2010	2000	2010	2000	2010	2000	2010	2000	2010
Asia	**60.5**	**69.5**	**55.5**	**61.4**	**36.2**	**46.3**	**30.5**	**33.1**	**45.5**	**52.6**
G2	**15.9**	**18.8**	**28.9**	**19.7**	**45.3**	**32.1**	**53.0**	**41.9**	**37.6**	**26.8**
European Union	10.6	16.0	11.8	10.6	19.4	15.8	18.6	18.2	14.9	13.6
United States	5.3	2.7	17.1	9.1	25.8	16.3	34.4	23.6	22.7	13.1
"South" Economies[1]	**4.8**	**3.8**	**5.5**	**9.6**	**8.7**	**13.5**	**8.6**	**15.0**	**6.8**	**11.2**
Africa	0.4	0.5	0.9	1.9	1.6	3.3	1.4	3.1	1.1	2.4
Latin America	2.5	1.0	2.4	3.5	4.8	6.5	2.9	4.2	3.0	4.2
Middle East	1.9	2.3	2.2	4.2	2.4	3.7	4.3	7.8	2.7	4.6
Rest of the World	**18.8**	**7.9**	**10.1**	**9.3**	**9.9**	**8.1**	**7.9**	**10.0**	**10.1**	**9.4**
Total	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

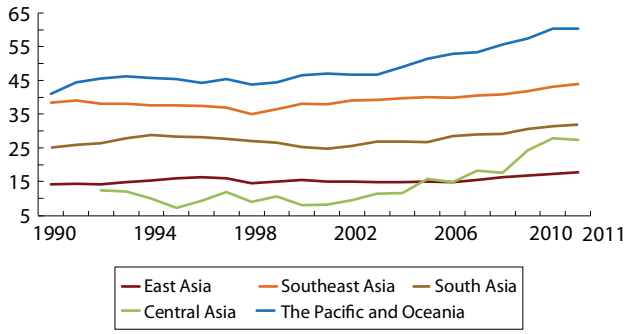
Notes: Based on Broad Economic Categories. See Figure 18 for definition of primary, intermediate, capital, and consumption goods. Data for Taipei,China unavailable.
[1]Country grouping based on *Asian Development Outlook 2012: South-South Economic Links*, Asian Development Bank.
Source: ADB calculations using data from *UN Comtrade Database*.

Figure 19: Intra-subregional Trade Share[1]—Asia (%)



[1]Intra-subregional trade share of region i is defined as $INTS_i = (X_{ii}+M_{ii})/(X_{i.}+M_{i.})$; where X_{ii} = exports of region i to region i, M_{ii} = imports of region i to region i, $X_{i.}$ = total exports of region i, and $M_{i.}$ = total imports of region i.
Source: ADB calculations using data from *Direction of Trade Statistics*, International Monetary Fund; and CEIC for Taipei,China.

Figure 20: Inter-subregional Trade Share[1]—Asia (%)



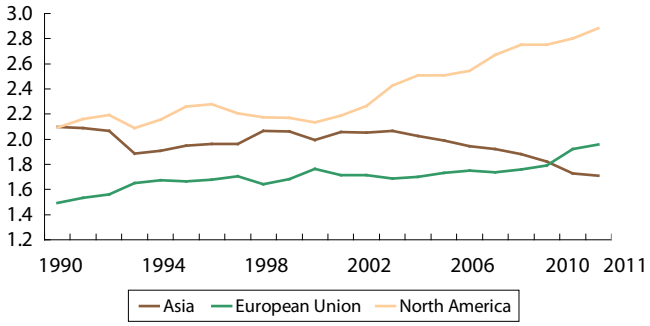
[1]Inter-subregional trade share of region i is defined as $ISTS_i = [\Sigma_{j=1} (X_{ij}+M_{ij})]/(X_{i.}+M_{i.})$; where X_{ij} = exports of region i to region j, M_{ij} = imports of region i from region j, $X_{i.}$ = total exports of region i, and $M_{i.}$ = total imports of region i.
Source: ADB calculations using data from *Direction of Trade Statistics*, International Monetary Fund; and CEIC for Taipei,China.

as inputs for regional production. Southeast Asia had the second highest ISTS in 2011—at 43.9%. The bulk of Southeast Asia's trade with other subregions was largely intermediate goods. Its key subregional trading partners are mostly in East Asia—particularly the PRC—and South Asia. The degree of inter-subregional trade for South Asia is also increasing, reaching 31.9% in 2011. The degree of inter-subregional linkages could actually be stronger than what data suggest, as some trade runs through a third party and thus not captured by the data.

An alternative measure of trade integration is intraregional trade intensity (IRTI), which measures whether the region is more inwardly or externally oriented. It is calculated as the ratio of intraregional trade share relative to the region's share in world trade. If the ratio is less than one, IRTI suggests the region's trade is more externally than internally oriented. If it is greater than one, then the inward orientation is stronger.

Based on this indicator, Asia is more inwardly oriented. This is evident from the region's IRTI which has remained above one **(Figure 21)**. It is noteworthy that Asia's IRTI started to decline beginning in 2003—which appears consistent with the plateauing of Asia's intraregional trade share. One explanation is that, as global trade rises,

Figure 21: Intraregional Trade Intensity[1]



Note: European Union (EU) refers to the aggregate of 27 EU members. North America includes Canada, Mexico, and the United States.

[1]Intraregional trade intensity of region i is defined as $IRTI_i = [(X_{ii}+M_{ii})/(X_i+M_i)] / [(X_j+M_j)/(X..+M..)]$; where X_{ii} = exports of region i to region i, M_{ii} = imports of region i to region i, X_i = total exports of region i, M_i = total imports of region i, X_j = total world exports to region i, M_j = total world imports from region i, X.. = total world exports, and M.. = total world imports.

Source: ADB calculations using data from *Direction of Trade Statistics*, International Monetary Fund; and CEIC for Taipei,China.

other external markets are increasingly becoming linked to Asia, particularly to the PRC. Trade between Asia and other emerging markets has been clearly on the rise.

"South-South" trade is increasingly becoming more important for Asia. From a market that absorbed around 6.8% of Asia's total exports in 2000, South-South trade now accounts for about 11% to 12% of the region's exports in 2010 and 2011. It is likely that South-based emerging economies will become increasingly important as these markets are large and growing fast. As wages in Asia rise, some of the South economies could also offer cost advantages. In addition, these economies are endowed with natural resources needed in Asia, particularly the PRC.

Trade in intermediate goods between subregions reflects expanding regional production networks.

The rise in production networks in Asia has been marked by fragmenting production into distinct chunks or tasks, which are then located in different countries to minimize costs. This has led to the large role intermediate and primary goods play in export growth between subregions **(Figure 22)**. Export growth in East Asia, Southeast Asia, and South Asia have largely been derived from intermediate goods exports.

Why do regional production networks in East Asia and Southeast Asia flourish?

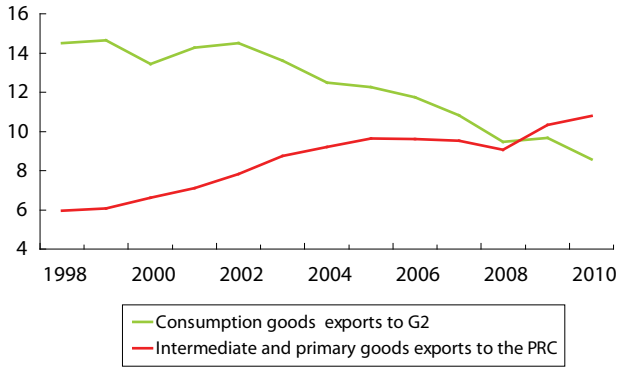
First, the subregions show great diversity in labor supply conditions and wages, providing a means to shift labor-intensive work to lower-wage countries. Second,

Figure 22: Contribution to Export Growth by Stages of Production—Asian Subregions (percentage points)

Notes: Based on Broad Economic Categories, which classifies traded goods into stages of production. See Figure 18 for definition of primary, intermediate, capital, and consumption goods. Data for Taipei,China unavailable.

Source: ADB calculations using data from *UN Comtrade Database.*

Figure 23: Exports to G2 and the PRC—Asia (% of total exports)



PRC = People's Republic of China; G2 = European Union (refers to the aggregate of 27 EU members), and the United States.

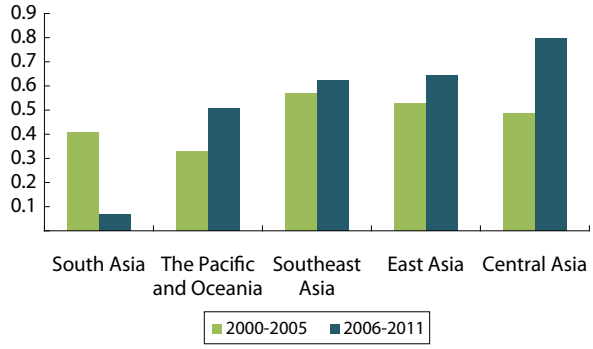
Notes: Data based on Broad Economic Categories classification. See Figure 18 for definition of consumption, intermediate, and primary goods. Data for Taipei,China unavailable.

Source: ADB calculations using data from *UN Comtrade Database*.

liberal trade and investment regimes, relatively efficient port and communication systems, and flexible logistics and transport system make for efficient production fragmentation. Finally, rapid economic growth and structural transformation in several countries expanded market size and outsourcing.

The emergence of the PRC as a low-cost assembly center and manufacturing hub is also behind the increase in trade integration. As production is divided into several sequential production blocks that are located in different countries, the flow of intermediate and processed goods for assembly in the PRC have increased rapidly. The share of Asia's primary and intermediate goods exports to the PRC almost doubled—from 6% in 1998 to about 11% in 2010 **(Figure 23)**. In dollar terms, this flow is now larger

Figure 24: Correlation of Asian Subregions' Exports to PRC with PRC's Exports[1] (one-quarter lag)



PRC = People's Republic of China.
[1]Exports series were detrended using the Hodrick-Prescott (HP) filter.
Source: ADB calculations using data from *Direction of Trade Statistics*, International Monetary Fund; and CEIC for Taipei,China.

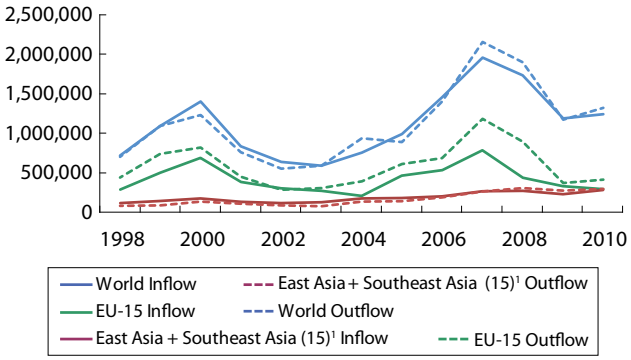
than Asia's exports of consumption goods to the US and EU combined. The importance of subregional links to the PRC is also evident from the increasing correlation between subregional exports to the PRC and the PRC's exports to the world **(Figure 24)**. Across subregions, the correlation has strengthened recently, except for South Asia. Central Asia shows the strongest correlation, followed by East Asia and Southeast Asia.

In the aftermath of the 2008/09 global financial crisis, foreign direct investment globally has fallen sharply, including flows to Asia.

While global foreign direct investment (FDI) grew an average of 5% annually from 2000 to 2007, it fell an average of 22% a year from 2007 to 2009 **(Figure 25)**. The fall is even sharper for EU-15, where FDI inflows contracted an average 37% a year during the same period. For 15 East Asian and Southeast Asian economies, FDI fell a mere 8% per year. As a result, while their FDI was only about 23% of the EU-15 level in 2000, they are now equal in size.

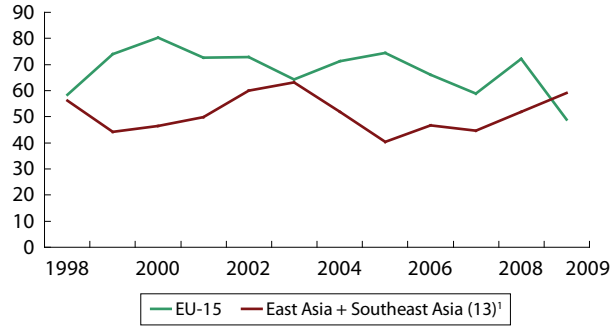
FDI inflows within the 13 East Asian and Southeast Asian economies are up despite the global decline in FDI inflows. The share of intraregional FDI inflows to total inflows increased from 44.6% in 2007 to 60.0% in 2009 **(Figure 26)**. However, these figures should be treated with caution as some FDI are coursed through third-countries. For example, FDI from the PRC mostly flow via the British Virgin Islands; Cayman Islands; and Hong Kong, China. It is possible that some of this FDI returns as FDI to other Asian economies. On the other hand, other Asian countries' FDI in Hong Kong, China, are actually destined for countries outside the region.

Figure 25: Total Foreign Direct Investment Flows ($ million)



EU-15 = European Union-15 (Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, the Netherlands, Portugal, Spain, Sweden, and the United Kingdom).
[1]Refers to 15 economies: Brunei Darussalam; Cambodia; the People's Republic of China; Hong Kong, China; Indonesia; Japan; the Republic of Korea; the Lao People's Democratic Republic; Malaysia; Myanmar; the Philippines; Singapore; Taipei,China; Thailand; and Viet Nam.
Source: ADB calculations using data from United Nations Conference on Trade and Development, http://unctadstat.unctad.org.

Figure 26: Intraregional Foreign Direct Investment Share
(% share of total inflows)



[1]Refers to 13 economies: Brunei Darussalam; Cambodia; the People's Republic of China; Hong Kong, China; Indonesia; Japan; the Republic of Korea; the Lao People's Democratic Republic; Malaysia; Myanmar; the Philippines; Singapore; and Thailand.
Source: ADB calculations using data from United Nations Conference on Trade and Development and CEIC.

Cumulative FDI net inflows within ASEAN have remained small compared with East Asia. For 2008–10, intra-ASEAN cumulative FDI net inflows reached $27 billion or 16.7% of total ASEAN cumulative FDI net inflows **(Table 7)**. This amount is broadly similar to the cumulative net inflows recorded in 2006–08. The largest net inflows are going to Indonesia, Singapore, Viet Nam, Thailand, and Malaysia.

FDI inflows coming from outside ASEAN remain the dominant source of direct investments in the region. However, this flow has contracted from $155.9 billion in 2006–08 to $134.6 billion in 2008–10. Other Asian countries are the biggest contributors of FDI inflows in ASEAN—about $39.5 billion. The EU comes next contributing $33.2 billion.

Table 7: Foreign Direct Investment Net Inflows to ASEAN members

	Cumulative Net Inflows 2008-2010 ($ million)			Share of Total (%)	
	Intra–ASEAN	Extra–ASEAN	Total Net Inflows	Intra–ASEAN	Extra–ASEAN
Brunei Darussalam	93.7	1,144.7	1,238.4	7.6	92.4
Cambodia	764.0	1,372.9	2,136.9	35.8	64.2
Indonesia	10,682.3	16,816.9	27,499.2	38.8	61.2
Lao PDR	240.4	638.6	879.0	27.3	72.7
Malaysia	1,901.4	15,883.9	17,785.3	10.7	89.3
Myanmar	343.0	2,046.1	2,389.1	14.4	85.6
Philippines	127.2	5,092.8	5,220.0	2.4	97.6
Singapore	6,144.8	53,243.3	59,388.1	10.3	89.7
Thailand	2,268.0	17,566.7	19,834.8	11.4	88.6
Viet Nam	4,434.6	20,744.4	25,179.0	17.6	82.4
Total			**161,549.6**		
Intra–ASEAN	**26,999.3**			**16.7**	
Extra–ASEAN		**134,550.3**			**83.3**
Other Asian countries[1]		39,474.5			22.2
European Union		33,167.5			20.5
United States		16,182.4			10.0
Rest of the World		45,725.9			8.5

Lao PDR = Lao People's Democratic Republic.
[1]Includes Australia, the People's Republic of China, India, Japan, the Republic of Korea, and New Zealand.
Source: ADB calculations using data from *ASEAN Foreign Direct Investment Statistics Database*, www.aseansec.org/18144.htm.

Financial Integration

Asia's financial integration lags behind trade integration; although domestic markets and global market links still dominate financial transactions, the impact of the 2008/09 global financial crisis may have included a boost to cross-border flows within the region.

Capital mobility in Asia has increased since the early 1990s, reflecting both the growth of intraregional trade and unilateral commitments to greater liberalization and market deregulation. While this has allowed the region—particularly East Asia—to forge stronger links with global markets, it has not necessarily led to greater investment flows within the region. In general, Asian investors still prefer to invest either in their home markets or in mature markets such as the US and Europe. Indeed, the degree of regional financial integration within Asia is far smaller than the degree of global financial integration.[10] This trend continued even after the 1997/98 Asian financial crisis, when the region shifted from current account deficits to consistent current account surpluses. Asian investors by and large were willing to forego the region's higher yields and to pay intermediation costs to external markets. In 2010, 23.7% of the region's cross-border assets were held in Asian equities, with a mere 7.3% in debt securities. Compared with the 55.5% of total Asian trade that was intraregional in 2011, the gap between trade and financial integration becomes clear.

However, there are signs that financial integration may have reached a turning point after the 2008/09 global financial crisis, as dispersion in returns and yields has declined, meaning there have been rising co-movements between Asian markets. Along with increased intraregional trade, cross-border flows of some asset investments and bank claims have also increased. The size of the cross-border equity holdings is much higher than that of debt, but the share of both has been increasing. Strong growth prospects and attractive returns in the face of weak and volatile global market conditions since 2008 are behind the rise in intraregional asset holdings. These market trends have been complemented by national efforts to liberalize domestic capital markets and market infrastructure.

[10]S. Kim and J-W. Lee. 2012. Real and Financial Integration in East Asia. *Review of International Economics.* 20 (2). pp 332–349.

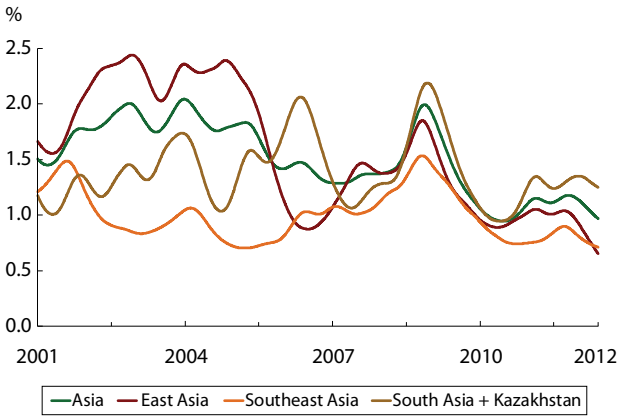
Co-movements in returns and yields vary by asset class and across subregions, with recent volatility more influenced by markets in mature economies.

Prior to the 2008/09 global crisis, there were co-movements in Asian equity and bond markets. But that trend has been disrupted somewhat in the years since, particularly for bond yields that are more diverse, while equity returns show some convergence—mainly in Southeast Asia. Local currency bond markets in several economies remain small, diverse, and more influenced by local factors than global or regional issues. Nonetheless, local currency bond yields have been declining in most markets in recent years, supported by robust growth in local debt markets across the region.

Price indicators[11] that track equity markets mask subregional variations **(Figure 27)**. The dispersion of equity returns has declined the most for East Asia, while South Asia and Kazakhstan[12] do not show any clear decline. The level of dispersion in Southeast Asia has generally been lowest (indicating the strongest co-movement), followed by East Asia. In contrast, values for South Asia and Kazakhstan have been relatively larger (indicating weaker co-movement). The levels of dispersion are consistent with levels of subregional market development. For instance, market capitalization-to-GDP ratios are highest in Southeast Asia—with Malaysia, the Philippines, Singapore, and Thailand close to or above 80%[13]—while East Asia (excluding Mongolia) is above 70%. In contrast, ratios for South Asia and Central Asia are below 50%, with the exception of India (93%).

Heightened uncertainty and increased financial market volatility during the 2008/09 global crisis also led to rising volatility in some Asian markets, especially where foreign investors hold considerable market share. European bank deleveraging exacerbated co-movements, causing correlations between equity markets in these economies and the US and Europe to increase. Indeed, recent Asian market volatility has been caused by heightened uncertainty in global markets and mature economies rather than regional factors.[14]

Figure 27: Cross-Market Dispersion of Equity Returns



Notes: Cross-market standard deviation of daily stock market returns, detrended using Hodrick-Prescott (HP) filter. Asia includes East Asia, Southeast Asia, South Asia, and Kazakhstan. East Asia includes the People's Republic of China; Hong Kong, China; Japan; the Republic of Korea; Mongolia; and Taipei,China. Southeast Asia includes Indonesia, Malaysia, the Philippines, Singapore, Thailand, and Viet Nam. South Asia includes Bangladesh, India, Pakistan, and Sri Lanka. Data until May 2012.

Bond yields tend to increase in economies with weak macroeconomic conditions and decline in healthier economies. Countries with high inflation and large current account or fiscal deficits—most South Asian countries and Viet Nam, for example—saw yields rise, while East Asia, with lower inflation rates and larger current account surpluses, saw yields fall. Flight to quality also contributed. Bond yield spreads have tended to converge within the ASEAN-4 markets of Indonesia, Malaysia, the Philippines, and Thailand, while diverging when Viet Nam is included (see "Southeast Asia" in **Figure 28**), due to its different risk profile.[15]

[11] To monitor financial development and integration, a price indicator is used to measure the extent of integration or development in Asian financial markets in terms of co-movements of financial-asset returns—specifically by cross-market dispersion of daily stock-index returns and of 10-year bond yields. A declining index value (lower dispersion) indicates markets are integrating—on the assumption that under perfect capital mobility returns on similar assets would converge to the same level after appropriate risk adjustments are made. The price indicator is, however, a rough measure; increased co-movements are not necessarily due to strengthening ties between Asian markets. Moreover, the indicator is unable to distinguish changes in co-movements arising from external shocks (such as the global crisis).

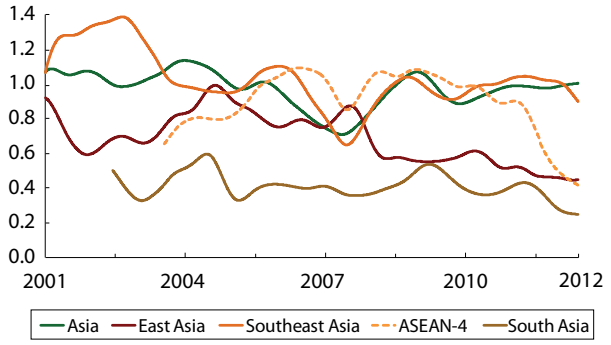
[12] As only Kazakhstan has stock market data among Central Asian countries, it was added to South Asia (Bangladesh, India, Pakistan, and Sri Lanka). Adding Kazakhstan did not change overall trends.

[13] Data as of 2010. World Bank. *World Development Indicators.* http://data.worldbank.org/data-catalog/world-development-indicators/

[14] ADB. 2011. *Asia Capital Markets Monitor.* August. Manila.

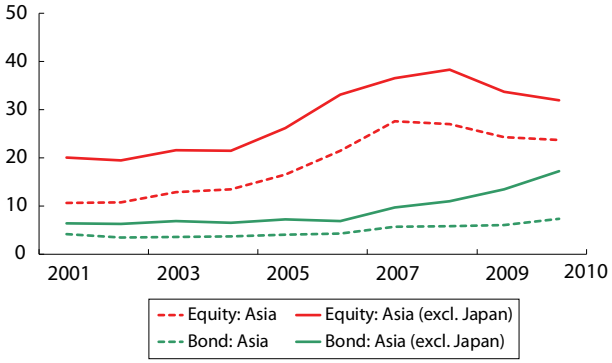
[15] Meanwhile, variations between Asia's 10-year bond yields and US bond yields widened.

Figure 28: Coefficient of Variation of 10-Year Bond Yield Spreads



Notes: Coefficient of variation of 10-year government bond yield spreads over benchmark US Treasuries, detrended using Hodrick-Prescott (HP) filter. Asia includes East Asia, Southeast Asia, South Asia, and Kazakhstan. East Asia includes the People's Republic of China; Hong Kong, China; Japan; the Republic of Korea; and Taipei,China. ASEAN-4 includes Indonesia, Malaysia, the Philippines, and Thailand. Southeast Asia includes ASEAN-4 plus Singapore and Viet Nam. South Asia includes India, Pakistan, and Sri Lanka. Asia includes East Asia, Southeast Asia, and South Asia. Data until May 2012.
Source: ADB calculations using data from Bloomberg.

Figure 29: Intraregional Holdings of Equity and Bonds
(investment source, % share)



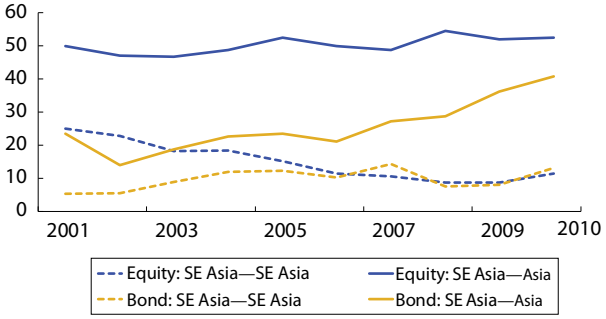
Notes: Asia includes East Asia, Southeast Asia, Central Asia, South Asia and the Pacific. Australia and New Zealand are excluded due to differences in the structure of their economies with the rest of the countries in Asia. Countries included in Asia as recipient region differ from that of Asia as source region due to data unavailability. In particular, data for the People's Republic of China as source is not available.
Source: ADB calculations using data from *Coordinated Portfolio Investment Survey*, International Monetary Fund.

Between 2001 and 2010, Asia's intraregional equity investments grew sporadically; but debt securities saw persistent growth, sharply in Southeast Asia; in absolute terms, however, amounts remain low.

Volume indicators[16] show intraregional investments in equity markets above those in debt markets. Asia's equity investments in other Asian economies increased from 10.7% in 2001 to 27.6% in 2007.[17] Because Asian stock prices generally dropped more than prices in advanced markets following the September 2008 Lehman Brothers shock, the intraregional share in total equity investment declined to 23.7% in 2010 **(Figure 29)**.

Asia's cross-border debt investments in 2010 were 7.3% of the region's total cross-border holdings, up from 4.2% in 2001 (see Figure 29). Excluding Japan, the share rose from 6.4% in 2001 to 13.5% in 2009, before jumping to 17.2% in 2010. The sharp increase amid the global crisis was driven by Southeast Asian intraregional debt investments, which rose from 36.2% in 2009 to 40.7% in 2010.

Figure 30: Southeast Asia's Equity and Bond Holdings
(by investment source, % share)



Notes: Southeast Asia (SE Asia) as the recipient region includes Brunei Darussalam, Cambodia, Indonesia, the Lao People's Democratic Republic, Malaysia, Myanmar, the Philippines, Singapore, Thailand, and Viet Nam. Southeast Asia as source region includes Indonesia, Malaysia, the Philippines, Singapore and Thailand. Asia includes East Asia, Southeast Asia, Central Asia, South Asia and the Pacific. Australia and New Zealand are excluded due to differences in the structure of their economies with the rest of the countries in Asia. SE Asia-SE Asia refers to intra-subregional holdings. SE Asia-Asia refers to intra-subregional plus rest of Asia holdings.
Source: ADB calculations using data from *Coordinated Portfolio Investment Survey,* International Monetary Fund.

In 2010, 52.4% of Southeast Asian equity investments and 40.7% of its debt security holdings were in Asian assets, but only 11.4% and 13.0% of its equity and debt security investments, respectively, in Southeast Asian assets (**Figure 30**). The growth in Southeast Asia's holdings of Asian debt securities was modest but steady, from 23.4% in 2001 to 28.7% in 2008. But as the impact of the global crisis lingered, the share spiked to 40.7% in 2010. In contrast, the share of the subregion's Asian equity holdings showed only a slight increase from 49.9% in 2001 to 52.4% in 2010. Southeast Asians tended to favor inter-subregional investments more than intra-subregional investments—particularly in equity markets. While the share of intra-subregional debt holdings

[16]Volume indicators track how much Asian assets are bought by Asian investors. The ratios of Asian assets to total cross-border assets held by Asian economies are calculated. They are sourced from the IMF's Coordinated Portfolio Investment Survey (CPIS), which covers most Asian countries as investment recipients, but lacks some important economies such as the PRC and Taipei,China as investors.

[17]These figures and those cited in the following two paragraphs may be overestimated as investments from other Asian countries to Singapore and Hong Kong, China are counted as intraregional investments, but could be destined for reinvestment outside of the region.

increased from 5.2% in 2001 to 13.0% in 2010, its intra-subregional equity portfolio decreased sharply from 25.0% in 2001 to 11.4% in 2010. These trends suggest that for Southeast Asia's investments, extra-subregional rather than intra-subregional factors were the main drivers of intraregional holdings.

While Japan continues to receive the largest share of intraregional investments in both equities and debt securities, a greater number of economies within Asia have become destinations for Asian investments. Those showing the largest increases differ for equities and debt securities. Increasing shares of intraregional equity investments go mainly to the two giant emerging economies of the PRC and India, while those receiving bond investments are spread widely across subregions. The PRC and the Republic of Korea in East Asia and Indonesia, Malaysia, and Singapore in Southeast Asia dominate, as well as India in South Asia.

Asia's debt markets hold strong local appeal; but they are increasingly attractive to intraregional investors as well.

In the past, Asians were generally reluctant to invest in regional markets. But the 2008/09 global crisis changed that. While there remains a strong local bias, Asian investors have become more regional-savvy. Indeed, there is evidence that after the crisis, home bias deepened in some markets. But there was no statistically significant difference between regional and global markets. This is in stark contrast to the situation pre-crisis—when Asian investors clearly favored markets abroad.[18]

Policymakers in individual countries—as well as those involved with regional initiatives—are working to remove remaining trade barriers, attempting to harmonize rules, bring about mutual recognition of credit ratings, and strengthen related market infrastructure in order to facilitate cross-border issuance of and demand for local currency debt.[19] These can affect Asian investors' decisions—hence the degree of financial integration.

A research in the *Asian Bond Monitor April 2012* found that cross-border debt investments are influenced by returns, bilateral trade, financial openness, expected currency appreciation, liquidity, and the size of financial markets. Returns remain the primary motive for investors, while enormous weight is placed on the economic and political stability of destination markets. Liquidity, openness, trading barriers, and regulatory hurdles are also cited as key factors.

National efforts complemented by regional initiatives have been yielding results. The Malaysian ringgit bond market has had a slew of foreign issuers, including some high-grade companies from the Republic of Korea. More recently, Asian investors bought more than half of the 10-year sovereign US dollar bonds sold by Indonesia in April. At the time of writing, First Metro Investment Corporation is looking to manage Philippine peso-denominated debt sales for companies in Viet Nam, Indonesia, and the Republic of Korea as Asian issuers diversify across borders to seek funding opportunities.

Japanese bank lending in the region increased since 2005 and accelerated after the global crisis, in effect substituting for European bank deleveraging.

The share of Asian loans in Japanese banks' international claims[20] increased steadily from 6.3% in the first quarter of 2005 to 11.1% in the fourth quarter of 2011. Correspondingly, Asian reliance on Japanese lending also increased, with Southeast Asia most dependent due to deepening production networks. Japanese claims on Asian liabilities to foreign banks increased from 11.1% the first quarter of 2005 to 14.0% the fourth quarter of 2011 **(Figure 31)**. The increase in Japan's share is significant—it occurred as Asia increased liabilities to international banks by 32% from its pre-crisis peak in 2008. Furthermore, given that the share of European banks (excluding the United Kingdom) declined considerably after the crisis, Japanese lending has in effect eased the impact of deleveraging.

Greater financial integration can increase the risk of contagion; it therefore should be managed through regional cooperation.

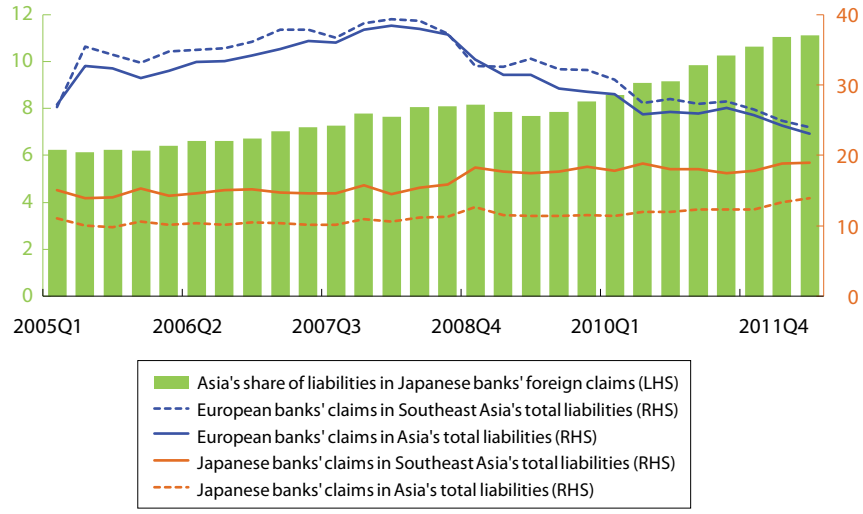
Regional financial integration or increased cross-border capital flows do not necessarily lead to greater risk-sharing. More importantly, greater financial integration

[18]ADB. 2012. *Asia Bond Monitor April 2012*. Manila.

[19]The ASEAN+3 Bond Market Forum (ABMF)—comprising of bond market experts from the region—was established in September 2010 to facilitate this market harmonization process.

[20]Cross-border claims of the banking sector are limited to 24 reporting countries (as sources of investment) of the Bank for International Settlement's Quarterly Review data, with Australia, India, Japan, and Turkey as the only ADB member countries covered.

Figure 31: Japanese and European[1] Banks' Foreign Claims in Asia[2] (% share out of total claims[3])



LHS = left-hand scale, RHS = right-hand scale.
[1]European banks (excluding United Kingdom banks) based on Bank for International Settlements (BIS) definition.
[2]Asia excludes Australia, Japan, and New Zealand due to differences in the structure of their economies with the rest of Asia.
[3]Total foreign claims of banks from 20 BIS reporting economies.
Source: ADB calculations using data from Bank for International Settlements (Table 9D).

raises the risk of a contagion-driven crisis—whether from exogenous shocks or inflation and asset bubbles fueled by excessive capital flows (see *Regional Integration: A Balanced View,* page 54). To assure net benefits outweigh potential costs, financial integration requires these risks to be properly managed.

Significant national reforms since the 1997/98 Asian financial crisis have led to impressive growth in the region's capital markets—particularly local currency bond markets. These have provided some stability to national markets by reducing dependence on foreign borrowings and excessive intermediation through local banks. It has also helped address the problem of maturity mismatches.

While regional trade integration has been largely market-led—supported by unilateral trade liberalization, primarily in East and Southeast Asia—monetary and financial cooperation has grown out of public sector initiatives organized initially in the aftermath of the 1997/98 Asian financial crisis and later in response to the global crisis (and the current eurozone banking and sovereign debt crisis). East and Southeast Asian policymakers have launched several initiatives, such as the Asian Bond Fund (ABF), the Asian Bond Markets Initiative (ABMI)—including its associated Credit Guarantee and Investment Facility (CGIF)—and the ASEAN Infrastructure Fund (AIF), to tap the region's massive savings, not just to deepen regional markets, but to finance widening infrastructure and social development gaps (see *Macroeconomic and Financial Cooperation,* page 47).

To conclude, financial integration in Asia has lagged trade integration. But the global crisis has given it a boost. Co-movements in returns have begun to increase in some markets, and cross-border investment holdings are rising—led by market forces and supported by national reforms. Regional initiatives are helping better integrate debt markets. These trends will accelerate as global market conditions remain gloomy and as the PRC steps up efforts to internationalize the renminbi—settling increasing amounts of intraregional trade in its own currency (see *Macroeconomic and Financial Cooperation,* page 47).

Macroeconomic Interdependence

Closer trade, investment, and financial ties are expected to make the region's economies more interdependent.

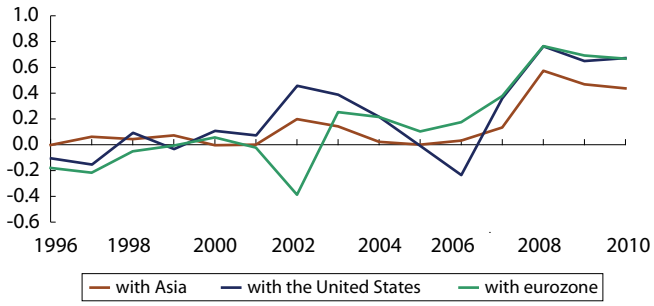
As economic ties are strengthened across the region, there should be greater spillover effects from one economy to another. With regional trade and financial links increasing, a slowdown in one economy will have a bigger impact on its neighbors. At the same time, closer economic links within the region are expected to promote growth in the poorer economies, which

can help narrow income disparity across Asia. For example, greater trade and investment ties can give less developed economies access to export markets and capital, which can help promote growth.

Interdependence is the degree to which individual economies interact with one another. In a group of economies where there is macroeconomic interdependence, there are co-movements between both growth rates and inflation levels. These co-movements can be driven by economies in the region sharing similar industrial structures and thus being affected by common external shocks. These shocks can emanate from either the demand or supply side. When demand for mobile phones goes up, for example, a boost in growth across the region can be expected, spurred by the economies that are important producers of electronic components. Similarly, if there is a global commodity price increase, inflation should rise across the region. While both examples refer to shocks originating from outside the region, regional interdependence could also be driven by shocks from within the region. An example is the construction boom in the PRC that has contributed to increased demand for raw materials across Asia.

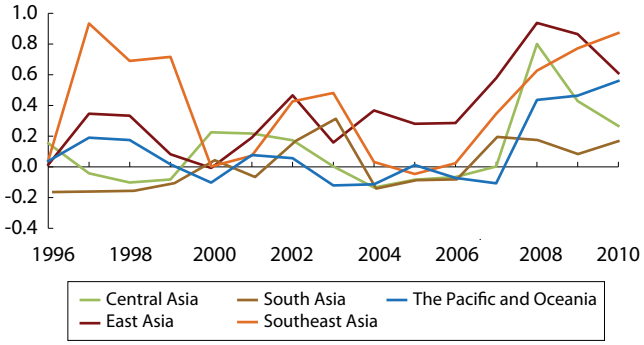
Output growth and inflation correlations among the region's economies can be used as indicators of how closely the region's economies are moving together. The trend in macroeconomic interdependence since 1995 can thus be analyzed with particular focus on what happened during and after the 2008/09 global financial crisis. As the quarterly GDP series is quite volatile, more stable annual GDP growth rates are used. This has the added benefit of allowing coverage of nearly all Asian economies—quite a few countries lack quarterly data.

Figure 32: Output Correlations—Asian



eurozone = Austria, Belgium, Cyprus, Estonia, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, Malta, the Netherlands, Portugal, Slovakia, Slovenia, and Spain.
Notes: Asia does not include Afghanistan, the Cook Islands, the Marshall Islands, the Federated States of Micronesia, Myanmar, Nauru, Palau, Timor-Leste, and Tuvalu due to data unavailability. Correlations based on simple averages of 3-year rolling bilateral correlations of annual growth rates (difference of natural logarithms) of members' annual GDP series (2005 base year). Year labels refer to the midpoint of the 3-year range.
Source: ADB calculations using data from CEIC and *World Economic Outlook Database April 2012*, International Monetary Fund.

Figure 33: Output Correlations—Asian Subregions



Notes: South Asia does not include Afghanistan; Southeast Asia does not include Myanmar; the Pacific does not include the Cook Islands, the Marshall Islands, the Federated States of Micronesia, Nauru, Palau, Timor-Leste, and Tuvalu due to data unavailability. Correlations based on simple averages of 3-year rolling bilateral correlations of annual growth rates (difference of natural logarithms) of members' annual GDP series (2005 base year). Year labels refer to the midpoint of the 3-year range.
Source: ADB calculations using data from CEIC and *World Economic Outlook Database April 2012*, International Monetary Fund.

The region's output correlations rose sharply during the 2008/09 global financial crisis, largely reflecting the impact of the global shock.

The degree of correlation within Asia was relatively low leading up to the global financial crisis. But there was a sharp rise during the crisis, when all of the region's economies slumped simultaneously **(Figure 32)**. After the crisis, the degree of correlation eased somewhat, but remained at historical highs. The close correlations could be the result of closer trade and financial links within Asia. A key aspect is the importance of intra-industry trade in parts and components, which helped spread shocks across the region.

The increase in output correlations largely reflects the impact of a global shock propagated throughout Asia. While the region's economies have become more interdependent with one another, the US and eurozone remain important markets for the region's exports. Thus, it is no surprise to see that the rise in output correlations in Asia is accompanied by an even greater rise in correlations with the US and eurozone (see Figure 32). This suggests that while Asia is becoming more interdependent, it retains strong trade and financial links with the US and Europe.

The economies of East Asia and Southeast Asia have increased output correlations within their respective subregions, suggesting greater economic interdependence. Rising output correlations within

East Asia and Southeast Asia are in large part due to the growing trade among the economies in these two subregions, with the PRC serving as the manufacturing and assembly hub **(Figure 33)**. Hence, a shock to one country within the production network will likely propagate to other economies in the subregion. On the other hand, correlations of output within the subregions of South Asia and Central Asia are relatively low. This likely reflects the smaller degrees of trade and financial links across economies in these two subregions.

Greater trade and financial integration could strengthen the links through which prices are transmitted across Asia.

Increased trade between two countries can help transmit price changes from one country to the other. However, this effect will be smaller if most of the trade is in intermediate goods that are not consumed in either of the two. As economies become more open, they can also become more influenced by global commodity price shocks or exchange rate movements. Another channel for price transmission can be greater financial integration. This could lead to greater policy coordination by monetary authorities, leading to higher inflation co-movements.

While there has been a sharp rise in the correlations of inflation in Asia since 2006–2008, it was largely due to the global commodity price shock, which affected the entire region. Across Asia, the inflation correlations remained very low during 2005–2007 **(Figure 34)**. Starting in 2006–2008, there was a spike in inflation correlations. This coincided with the period when world commodity prices rose sharply. The correlation of the region's inflation with the US and eurozone also rose during the period. This suggests that the stronger price linkages across Asia were being driven by the global commodity price shock rather than any price shock transmitted from within the region. Furthermore, inflation correlations began to wane in 2009–2011, as the effects of the global commodity price shock dissipated.

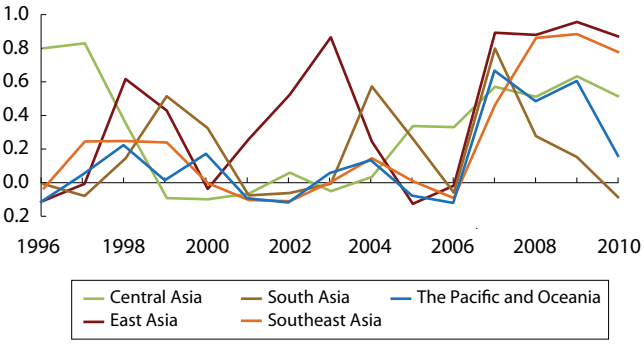
Co-movements of inflation within Asia's subregions have been volatile, with correlations of inflation in East Asia and Southeast Asia increasing recently. Correlations of inflation within Asia's subregions have tended to be quite volatile **(Figure 35)**. This suggests that even within subregions with a smaller number of economies, there is no clear trend toward greater price linkages. The correlations within each Asian subregion rose dramatically during 2006–2008 due to the rise in global commodity prices; but for most subregions, the correlations dropped quickly afterward. However, in East Asia and Southeast Asia, inflation correlations within the subregion remained high, suggesting there may be signs of stronger price linkages in both cases at the subregional level.

Overall, the analysis shows that the region's output correlation is slightly higher than the inflation correlation. The correlation in output growth is more likely driven by greater trade integration. However, correlation in inflation will be more influenced by increased links in the financial sector. The higher level of correlation in output growth suggests that trade integration in Asia has progressed further than financial integration.

Figure 34: Inflation Correlations—Asia

Notes: Asia does not include Afghanistan, the Cook Islands, the Marshall Islands, the Federated States of Micronesia, Nauru, Palau, Timor-Leste, and Tuvalu due to data unavailability. See Figure 32 for coverage of eurozone. Correlations based on simple averages of 3-year rolling bilateral correlations of annual growth rates (difference of natural logarithms) of members' annual CPI series (2005 base year). Year labels refer to the midpoint of the 3-year range.
Source: ADB calculations using data from CEIC and *World Economic Outlook Database April 2012*, International Monetary Fund.

Figure 35: Inflation Correlations—Asian Subregions



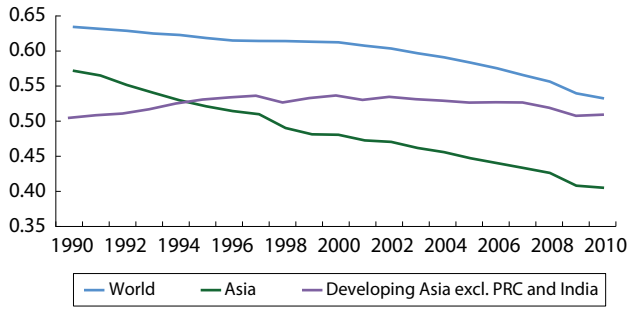
Notes: South Asia does not include Afghanistan; the Pacific does not include the Cook Islands, the Marshall Islands, the Federated States of Micronesia, Nauru, Palau, Timor-Leste, and Tuvalu due to data unavailability. Correlations based on simple averages of 3-year rolling bilateral correlations of annual growth rates (difference of natural logarithms) of members' annual CPI series (2005 base year). Year labels refer to the midpoint of the 3-year range.
Source: ADB calculations using data from CEIC and *World Economic Outlook Database April 2012*, International Monetary Fund.

Strong economic growth in the PRC and India has contributed to a reduction in income disparity across the region.

Apart from examining whether economic cycles within the region are merging, determining whether there is a trend toward greater convergence in income levels within Asia has merit. One measure of income disparity in the region is the Gini coefficient. While the Gini coefficient has traditionally been used to measure inequality within a country, it can be used to quantify income disparities between economies. To cover the most countries over the longest period, this exercise uses countries as its units of observation. In effect, estimates for the Gini coefficient assume that income is evenly distributed within each country with each person receiving the same per capita income. Thus, this is more a measure of income convergence in the region than the dispersion of the income distribution in the usual sense. The results show that Asian income disparity as measured by the Gini coefficient has fallen substantially over the past 2 decades, outpacing the decline in the world as a whole **(Figure 36)**. However, most of the improvement in Asia is attributable to rapid growth in the PRC and India. Excluding these two countries, the estimates indicate that income disparity in developing Asia has, in fact, edged up slightly.

Another measure of income disparity across countries is how much income varies among countries in the region—or income dispersion. This is measured by the coefficient of variation of per capita income across economies in a particular region. The results are similar to those of the Gini coefficient exercise in that a strong downward trend in income dispersion in Asia can be observed over the past 2 decades **(Figure 37)**. However, excluding the PRC and India results in a slight upward trend in income dispersion. On income dispersion in each of the subregions, the estimates suggest that there has been a strong decline in East Asia due to the rapid growth of the PRC **(Figure 38)**. However, income dispersion in other subregions has remained relatively stable. It is lowest in South Asia, reflecting the broadly similar level of income per capita among that subregion's economies. Southeast Asia, with its mix of high-income and low-income countries, has the highest level of income dispersion. Meanwhile, Central Asia showed the biggest increase in income dispersion since 1990.

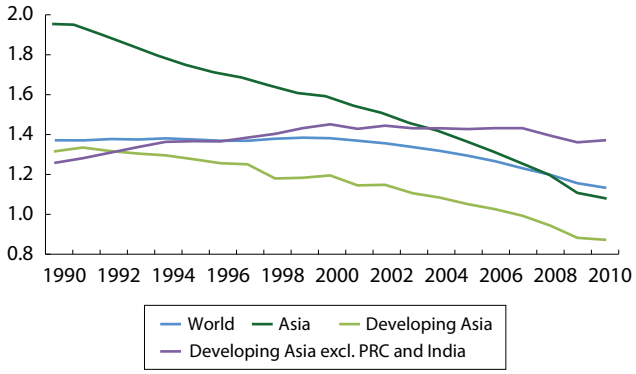
Figure 36: Gini Index[1]



PRC = People's Republic of China.
Notes: Developing Asia is Asia excluding Japan and Oceania. Data unavailable for Afghanistan, the Cook Islands, Republic of the Maldives, the Marshall Islands, Nauru, and Timor-Leste.
[1]Gini Coefficient is computed as follows: $Gini = \frac{-(n+1)}{n} + \frac{2}{n^2 \mu_x} \sum_{i=1}^{n} i x_i$

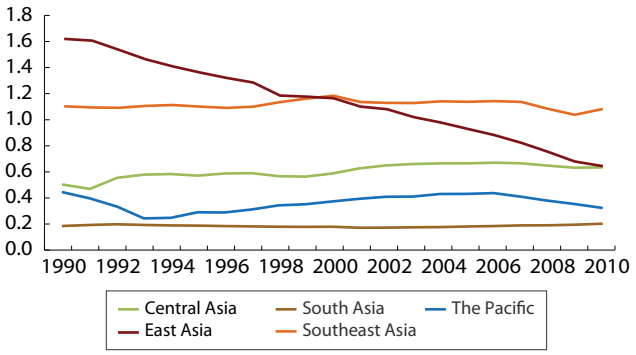
where x_i is the income of country i, μ_x is the average income of the population, and n is the total number of countries in the population. The Gini coefficient ranges from 0 (all countries have equal income) to 1 (all income held by one country).
Source: ADB calculations using data from *World Development Indicators*, World Bank and Penn World Table (PWT) 7.0 for Taipei,China.

Figure 37: Income Dispersion—World and Asia
(coefficient of variation[1])



PRC = People's Republic of China.
Notes: Developing Asia is Asia excluding Japan and Oceania. Data unavailable for Afghanistan, the Cook Islands, Republic of the Maldives, the Marshall Islands, Nauru, and Timor-Leste.
[1]Coefficient of variation is computed as the ratio of standard deviation to the mean of series.
Source: ADB calculations using data from *World Development Indicators,* World Bank (accessed 23 May 2012) and Penn World Table (PWT) 7.0 for Taipei,China.

Figure 38: Income Dispersion— Developing Asia Subregions
(coefficient of variation[1])



[1]Coefficient of variation is computed as the ratio of standard deviation to the mean of series. Due to unavailable data, South Asia does not include Afghanistan and Republic of the Maldives; the Pacific does not include the Cook Islands, the Marshall Islands, Nauru, and Timor-Leste.
Source: ADB calculations using data from *World Development Indicators*, World Bank (accessed 23 May 2012) and Penn World Table (PWT) 7.0 for Taipei,China.

While closer economic links may have helped reduce income disparities across Asia, there are concerns it may have also contributed to widening inequality within countries.

Trade integration, for example, could increase the demand for skilled workers relative to unskilled workers, thus increasing the wages of skilled workers. Meanwhile, financial integration could increase a country's access to finance, but also increase the risk of suffering financial crises, which disproportionately hurt the poor. Over the past 30-year period of rising economic integration in Asia, 11 countries, representing 82% of developing Asia's population, experienced rising inequality in either per capita expenditure or income.[21]

International and Regional Transmigration

International transmigration—including labor mobility within Asia—is increasingly important as migrants contribute to growth both in host economies and via remittances back home.

Moving people across borders is as important as trade in helping define and shape regional cooperation and integration (RCI). First, it brings people together and closer in many respects. Second, it results in a key factor of production—labor—moving in the hope of finding better economic opportunities. Third, it leads to shared prosperity between source and host countries through remittance flows and increased productivity. Fourth, it brings benefits, but also major challenges; and like any RCI initiative, policymakers aim to maximize the net benefits of labor mobility.

Asia is home to many major labor-exporting economies. The massive amounts of remittance inflows to Asia support household investment and consumption besides contributing significantly to economic growth. Also, returning migrants boost labor productivity and entrepreneurial activity by transferring back the knowledge they gained overseas. Within Asia itself, several economies have become more open to migrant workers to ease labor shortages and job mismatches. While migration poses complex economic and social challenges, it opens the door to greater regional cooperation. For example, authorities need to confront the flow of unskilled and illegal overseas workers, who account for a significant share of Asian transmigration. Source countries need to take measures to manage these flows, besides boosting economic opportunities in border areas. Host countries need to improve living conditions. Effective management can reduce potential conflicts between source and host countries. Yet, given the net benefits from factors of production flowing to its best possible use, Asia has much to gain from greater mobility of people.

Migrant stock data, tourism flow data, and remittance flow data are rich sources of information in assessing international and regional transmigration.[22] The most recent comprehensive migrant stock data are for 2000 and 2010. They capture intra- and inter-subregional as well as inter-regional migration.[23] However, they may not capture illegal migration, as census coverage varies across economies.[24] Tourism data, mostly annual, can complement migrant stock data. They include bilateral flows, and can be a proxy for primarily short-term transmigration but a weak proxy for labor mobility. Remittance data—if sufficiently detailed—can reveal movements of both official and unofficial labor, though they also reflect economic conditions in host and source economies (aside from currency variations).[25] Notwithstanding these limitations, the three data sets together offer a glimpse into Asia's international and regional transmigration.

Migrant stock data show that, while increasing between 2000 and 2010, regional transmigration remains low; yet, migrants increasingly favor countries outside Asia.

Asian migrants globally grew by 11 million between 2000 and 2010, to a total of 62.6 million **(Table 8)**. Correspondingly, the ratio of Asian migrants to Asia's population increased—albeit at a slower pace—from 1.5% in 2000 to 1.7% in 2010. This remains below the

[21] ADB. 2012. *Asian Development Outlook 2012*. Manila.

[22] Migrant stock data cover both labor and non-labor migration. The analyses in this section used the Bilateral Migration Database for 2000 and Bilateral Migration Matrix for 2010 (both from the World Bank), tourist flow data from the World Tourism Organization, and remittance estimates from the World Bank.

[23] In this section, Asia excludes countries in Oceania, i.e., Australia and New Zealand.

[24] C.R. Parsons, R. Skeldon, T.L. Walmsley, and L.A. Winters. 2007. Quantifying International Migration: A Database of Bilateral Migrant Stocks. *World Bank Policy Research Working Paper Series*. No. 4165, March 2007.

[25] Remittance data used in this section do not contain bilateral information. However, there are several bilateral flow estimates based on migrant stock data, and several Asian countries have very good bilateral remittance data.

Table 8: Migrant Stock Matrix, 2000 and 2010 ('000s)

From \ To	Asia	Central Asia	South Asia	East Asia	Southeast Asia	The Pacific	Oceania	European Union[1]	North America[2]	Middle East[3]	World
2000											
Asia	**20,871**	1,462	10,774	4,339	4,174	37	1,303	3,717	9,754	7,238	51,267
Central Asia	1,527	**1,445**	3	64	16	0	3	269	196	737	10,140
South Asia	11,223	3	**10,637**	123	443	6	212	1,793	1,981	5,624	21,058
South Asia (excl. India)	6,461	3	**6,202**	60	195	1	97	988	626	3,276	11,541
East Asia	4,428	12	6	**3,432**	973	4	370	775	3,719	22	9,885
Southeast Asia	3,667	1	126	794	**2,730**	16	525	874	3,738	855	9,798
The Pacific	26	0	2	1	13	**11**	193	6	120	0	385
Oceania	97	0	5	53	21	17	**407**	278	131	16	964
European Union[1]	312	89	29	76	110	8	2,156	**14,005**	6,928	1,737	30,282
North America[2]	228	2	21	128	73	4	103	748	**10,989**	165	12,989
Middle East[3]	176	54	44	22	56	1	221	6,339	1,490	**6,025**	16,207
World	26,998	5,929	10,938	5,542	4,517	72	4,713	36,097	40,868	17,625	**167,067**
2010											
Asia	**19,102**	1,312	7,641	4,299	5,817	33	2,078	5,545	12,024	12,686	62,645
Central Asia	1,263	**1,250**	2	10	0	0	5	371	173	375	10,710
South Asia	8,297	59	**7,528**	85	618	6	422	2,590	3,108	10,846	26,654
South Asia (excl. India)	5,678	59	**5,270**	62	287	1	165	1,598	936	5,920	15,293
East Asia[4]	5,032	2	39	**3,754**	1,238	2	642	1,173	4,289	85	11,945
Southeast Asia	4,492	0	72	450	**3,955**	16	752	1,397	4,324	1,380	12,852
The Pacific	15	0	0	1	6	**9**	256	15	129	0	484
Oceania	72	0	4	19	25	25	**556**	259	130	6	1,067
European Union[1]	402	228	10	54	105	5	2,557	**16,800**	6,015	1,684	31,712
North America[2]	193	2	5	109	75	3	156	872	**13,345**	79	15,468
Middle East[3]	129	82	21	12	14	0	330	9,383	1,869	**7,546**	21,671
World	27,648	2,558	12,170	6,134	6,700	87	6,448	46,820	50,105	29,341	**203,135**

Note: 2010 inbound data for Afghanistan, Algeria, the People's Republic of China, Lebanon, Republic of the Maldives, Morocco, Pakistan, Tuvalu, and Viet Nam are totals. Bilateral migration data for these countries are unavailable.

[1]Refers to 27 members: Austria, Belgium, Bulgaria, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, and the United Kingdom.

[2]Refers to Canada, Mexico, and the United States.

[3]Includes 21 countries: Algeria, Bahrain, Egypt, Iran, Iraq, Israel, Jordan, Kuwait, Lebanon, Libya, Morocco, Oman, Palestine, Qatar, Saudi Arabia, Sudan, Syria, Tunisia, Turkey, United Arab Emirates, and Yemen. No data for Palestine. No outbound data for Saudi Arabia.

[4]Data for Taipei,China unavailable.

Source: ADB calculations using data from *Global Bilateral Migration Database* (Global matrixes of bilateral migrants covering 1960–2010), World Bank, http://econ.worldbank.org (accessed 10 May 2012).

Table 9: Migrant to Population Ratio, 2000 and 2010 (%)

From \ To	Asia	Central Asia	South Asia	East Asia	Southeast Asia	The Pacific	Oceania	European Union[1]	North America[2]	Middle East[3]	World
2000											
Asia	**0.61**	0.04	0.31	0.13	0.12	0.00	0.04	0.11	0.28	0.21	1.49
Central Asia	2.12	**2.01**	0.00	0.09	0.02	0.00	0.00	0.37	0.27	1.03	14.11
South Asia	0.83	0.00	**0.79**	0.01	0.03	0.00	0.02	0.13	0.15	0.42	1.56
South Asia (excl. India)	2.01	0.00	**1.93**	0.02	0.06	0.00	0.03	0.31	0.19	1.02	3.58
East Asia	0.30	0.00	0.00	**0.23**	0.07	0.00	0.03	0.05	0.25	0.00	0.67
Southeast Asia	0.67	0.00	0.02	0.15	**0.50**	0.00	0.10	0.16	0.69	0.16	1.80
The Pacific	0.34	0.00	0.02	0.01	0.16	**0.14**	2.50	0.07	1.55	0.00	4.99
Oceania	0.42	0.00	0.02	0.23	0.09	0.08	**1.76**	1.20	0.57	0.07	4.17
European Union[1]	0.07	0.02	0.01	0.02	0.02	0.00	0.45	**2.95**	1.46	0.37	6.37
North America[2]	0.06	0.00	0.01	0.03	0.02	0.00	0.02	0.18	**2.67**	0.04	3.16
Middle East[3]	0.05	0.01	0.01	0.01	0.01	0.00	0.06	1.70	0.40	**1.61**	4.33
World	0.45	0.10	0.18	0.09	0.08	0.00	0.08	0.60	0.68	0.30	**2.80**
2010											
Asia	**0.51**	0.04	0.21	0.12	0.16	0.00	0.06	0.15	0.32	0.34	1.69
Central Asia	1.57	**1.56**	0.00	0.01	0.00	0.00	0.01	0.46	0.22	0.47	13.33
South Asia	0.52	0.00	**0.47**	0.01	0.04	0.00	0.03	0.16	0.19	0.68	1.66
South Asia (excl. India)	1.37	0.01	**1.27**	0.01	0.07	0.00	0.04	0.38	0.23	0.42	3.68
East Asia[4]	0.35	0.00	0.00	**0.26**	0.09	0.00	0.05	0.08	0.30	0.01	0.84
Southeast Asia	0.75	0.00	0.01	0.07	**0.66**	0.00	0.13	0.23	0.72	0.23	2.14
The Pacific	0.16	0.00	0.00	0.01	0.06	**0.09**	2.66	0.15	1.34	0.00	5.03
Oceania	0.27	0.00	0.01	0.07	0.09	0.09	**2.07**	0.97	0.48	0.02	3.98
European Union[1]	0.08	0.05	0.00	0.01	0.02	0.00	0.51	**3.36**	1.20	0.34	6.35
North America[2]	0.04	0.00	0.00	0.02	0.02	0.00	0.03	0.19	**2.93**	0.02	3.39
Middle East[3]	0.03	0.02	0.00	0.00	0.00	0.00	0.07	1.92	0.38	**1.55**	4.45
World	0.41	0.04	0.18	0.09	0.10	0.00	0.09	0.69	0.74	0.43	**2.98**

Note: 2010 inbound data for Afghanistan, Algeria, the People's Republic of China, Lebanon, Republic of the Maldives, Morocco, Pakistan, Tuvalu, and Viet Nam are totals. Bilateral migration data for these countries are unavailable.

[1]Refers to 27 members: Austria, Belgium, Bulgaria, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, and the United Kingdom.

[2]Refers to Canada, Mexico, and the United States.

[3]Includes 21 countries: Algeria, Bahrain, Egypt, Iran, Iraq, Israel, Jordan, Kuwait, Lebanon, Libya, Morocco, Oman, Palestine, Qatar, Saudi Arabia, Sudan, Syria, Tunisia, Turkey, United Arab Emirates, and Yemen. No data for Palestine. No outbound data for Saudi Arabia.

[4]Data for Taipei,China unavailable.

Source: ADB calculations using data *Global Bilateral Migration Database* (Global matrixes of bilateral migrants covering 1960–2010), World Bank, http://econ.worldbank.org (accessed 10 May 2012). Population data (for countries with available data) from *World Economic Outlook Database April 2012*, International Monetary Fund.

world average of 3.0% **(Table 9)**. Only in Central Asia (13.3%) and in the Pacific (5.0%) did outward migration surpass the world average. However, the ratio of Asian migrants within Asia declined—from 40.7% to 30.5%[26]—while the share of Asian migrants to the Middle East and EU increased **(Table 10)**.

Intra-Asian migration—moving from one Asian economy to another—comprises intra- and inter-subregional migration. Intra-subregional migration captures transmigration within a subregion. This increased in East Asia and Southeast Asia, while decreased in South Asia and the Pacific.[27] Inter-subregional migration—or moving from one Asian subregion to another—increased from South Asia and East Asia to Southeast Asia. The others did not. In absolute numbers, South Asia had the highest number of intra-subregional migrants (7.5 million) in 2010.

Intraregional transmigration increased in Southeast Asia due to greater movements to Malaysia, Singapore, and Thailand.

Southeast Asia is unique in that it is both a major labor exporter and importer—and thus a significant contributor to intraregional transmigration. Indonesia and the Philippines remain large sources of overseas workers, while Malaysia, Singapore, and Thailand have become important host countries. The flow of people from Indonesia to Malaysia, for instance, accounts for some 40% of the increase in overall outward movements within Southeast Asia. Though the PRC dominates increased migration from East Asia, there has also been increasing movements from Japan to Southeast Asia, in part due to deepening global production networks.

Migration characteristics vary between subregions. While Central Asia has the highest overall mobility of any subregion globally, 62.0% of its migrants headed to the Russian Federation in 2010—its intra-subregional migration is lower than the 3.0% world average, measured as the ratio of global migration to global population.[28] Interestingly, over the decade surveyed, Turkmenistan, Armenia, and Uzbekistan saw their role as host countries growing, while migrant populations declined in Kazakhstan, although it remains the largest host country in Central Asia.

South Asia is increasingly becoming a large and growing labor exporter globally and across Asian subregions—with the number of migrants increasing by 5.6 million to 26.7 million from 2000 to 2010. Migrant to population ratios in South Asia as a whole are lower than world average (1.6% in 2010), given the size of India's population; excluding India, the subregion's population mobility is higher than the world average (3.7% in 2010). However, intra-subregional migration declined over the decade as fewer migrants moved to India from other South Asian countries.[29] The Middle East remains a major and growing destination for South Asia, host to 40.7% of South Asian migrants in 2010.

East Asia shows the lowest transmigration by Asian subregion in terms of ratio of migrants to population, though the ratio rose slightly due to migration from the PRC to other parts of Asia and the world. Nonetheless, in 2010 the PRC held the world's third largest migrant stock behind Mexico and India. North America is the dominant destination outside Asia, while intra-subregional mobility is dominated by PRC migration to Hong Kong, China.

The Pacific has the strongest migrant links outside Asia, mostly to Oceania and North America. Notably, many Pacific countries hold extremely high ratios of total migrant-to-population—Samoa leads with 66.2% of its population living abroad, followed by Tonga with 45.5%. The overall ratio falls to 5.0% once Papua New Guinea and Timor-Leste—with the two largest and least mobile populations—are included.

Tourism data show a much higher Asian bias than migration data, with an increase in intraregional tourism. Unlike migrant stock data, tourism data show that 81% of Asian tourists chose Asia as their destination, presumably due to lower travel costs **(Table 11)**. Tourism data also show some similar trends as migrant stock data—especially, increased tourism from South Asia to Southeast Asia and less intra-subregional tourism in South Asia. There are increased visitors between Central Asia and East and Southeast Asia, though the overall level is low. Tourists from Central Asia to East Asia (mainly the PRC) and Southeast Asia (mainly Thailand) quadrupled between 2000 and 2010, while those from East Asia (mainly the PRC) and Southeast Asia (various countries led by the Philippines) to Central Asia (mainly

[26]The actual decline could be significantly smaller than stated, given the likelihood of unreported bilateral movements.

[27]Data are insufficient to conclude progress of intra-subregional migration in Central Asia and inter-subregional migration from Central Asia to other Asian subregions. While Table 8 shows a decline, it may be due to the unavailability of similar data for 2010. Analysis for South Asia in 2010 excludes Afghanistan and Pakistan.

[28]See footnote 27.

[29]Ibid.

Table 10: Regional Share of Migrant Destinations (% of total)

From \ To	Asia	Central Asia	South Asia	East Asia	Southeast Asia	The Pacific	Oceania	European Union[1]	North America[2]	Middle East[3]	World (Total in '000s)
2000											
Asia	**40.71**	2.85	21.02	8.63	8.14	0.07	2.54	7.25	19.03	14.12	51,267
Central Asia	15.06	**14.25**	0.03	0.63	0.15	0.00	0.03	2.65	1.94	7.27	10,140
South Asia	53.30	0.02	**50.51**	0.63	2.10	0.03	1.01	8.51	9.41	26.71	21,058
South Asia (excl. India)	55.98	0.03	**53.74**	0.52	1.69	0.01	0.84	8.56	5.42	28.38	11,541
East Asia	44.79	0.13	0.06	**34.72**	9.84	0.04	3.75	7.84	37.62	0.22	9,885
Southeast Asia	37.43	0.01	1.29	8.11	**27.86**	0.16	5.36	8.92	38.15	8.73	9,798
The Pacific	6.80	0.03	0.48	0.20	3.29	**2.80**	50.10	1.46	31.11	0.04	385
Oceania	10.02	0.00	0.57	5.47	2.17	1.81	**42.21**	28.81	13.57	1.65	964
European Union[1]	1.03	0.29	0.10	0.25	0.36	0.03	7.12	**46.25**	22.88	5.74	30,282
North America[2]	1.75	0.02	0.17	0.98	0.56	0.03	0.79	5.76	**84.60**	1.27	12,989
Middle East[3]	1.09	0.33	0.27	0.14	0.34	0.00	1.36	39.11	9.19	**37.18**	16,207
World	16.16	3.55	6.55	3.32	2.70	0.04	2.82	21.61	24.46	10.55	**167,067**
2010											
Asia	**30.49**	2.09	12.20	6.86	9.29	0.05	3.32	8.85	19.19	20.25	62,645
Central Asia	11.79	**11.67**	0.02	0.10	0.00	0.00	0.04	3.46	1.62	3.50	10,710
South Asia	31.13	0.22	**28.24**	0.32	2.32	0.02	1.58	9.72	11.66	40.69	26,654
South Asia (excl. India)	37.13	0.38	**34.46**	0.40	1.88	0.01	1.08	10.45	6.12	38.71	15,293
East Asia[4]	42.15	0.02	0.32	**31.43**	10.36	0.02	5.38	9.82	35.91	0.71	11,945
Southeast Asia	34.95	0.00	0.56	3.50	**30.77**	0.12	5.85	10.87	33.65	10.74	12,852
The Pacific	3.20	0.00	0.04	0.12	1.26	**1.79**	52.93	3.00	26.70	0.01	484
Oceania	6.73	0.00	0.34	1.74	2.32	2.34	**52.06**	24.28	12.15	0.56	1,067
European Union[1]	1.27	0.72	0.03	0.17	0.33	0.02	8.06	**52.98**	18.97	5.31	31,712
North America[2]	1.25	0.01	0.03	0.70	0.48	0.02	1.01	5.64	**86.28**	0.51	15,468
Middle East[3]	0.59	0.38	0.10	0.05	0.06	0.00	1.52	43.30	8.62	**34.82**	21,671
World	13.61	1.26	5.99	3.02	3.30	0.04	3.17	23.05	24.67	14.44	**203,135**

Note: 2010 inbound data for Afghanistan, Algeria, the People's Republic of China, Lebanon, Republic of the Maldives, Morocco, Pakistan, Tuvalu, and Viet Nam are totals. Bilateral migration data for these countries are unavailable.
[1]Refers to 27 members: Austria, Belgium, Bulgaria, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, and the United Kingdom.
[2]Refers to Canada, Mexico, and the United States.
[3]Includes 21 countries: Algeria, Bahrain, Egypt, Iran, Iraq, Israel, Jordan, Kuwait, Lebanon, Libya, Morocco, Oman, Palestine, Qatar, Saudi Arabia, Sudan, Syria, Tunisia, Turkey, United Arab Emirates, and Yemen. No data for Palestine. No outbound data for Saudi Arabia.
[4]Data for Taipei,China unavailable.
Source: ADB calculations using data *Global Bilateral Migration Database* (Global matrixes of bilateral migrants covering 1960–2010), World Bank, http://econ.worldbank.org (accessed 10 May 2012).

Kazakhstan) tripled, and their shares as destination in each subregion's tourism doubled.

Surging remittance inflows to Asia suggest labor mobility in Asia increased significantly during the recent decade.

Gross remittance inflows to Asia expanded nearly five-fold between 2000 and 2010—from $40.8 billion to $191.7 billion, suggesting that labor mobility increased significantly in Asia. The rapid rise also demonstrates outward transmigration is an increasingly important source of income for many Asian economies **(Figure 39)**. The ratio of remittances to GDP peaked in 2009 at 1.2% from 0.5% in 2000—although there are considerable variations between subregions. South Asia relies most on remittances (4.2% of GDP), followed by the Pacific (2.3%), Southeast Asia (2.1%), Central Asia (2.1%) and East Asia (0.5%).

Table 11: Regional Share of Tourist Arrivals (% of total)

From \ To	Asia	Central Asia	South Asia	East Asia	Southeast Asia	The Pacific	Oceania	European Union[1]	North America[2]	Middle East[3]	World (Total in '000s)
2000											
Asia	**76.73**	1.02	1.12	56.47	18.05	0.06	1.78	4.29	6.01	2.66	145,963
Central Asia	21.79	**19.38**	0.22	2.01	0.18	0.00	0.03	0.22	0.35	0.53	7,299
South Asia	42.21	0.10	**17.00**	7.42	17.70	0.00	1.10	6.49	6.77	39.12	6,232
East Asia	80.46	0.06	0.30	**70.56**	9.47	0.07	1.47	5.02	6.97	0.43	109,887
Southeast Asia	86.69	0.01	0.99	19.17	**66.49**	0.04	3.44	1.46	2.95	4.21	22,292
The Pacific	12.30	0.00	0.79	3.99	4.13	**3.39**	59.88	0.67	6.62	0.21	254
Oceania	42.74	0.02	1.61	11.69	25.51	3.91	**18.59**	19.10	12.33	3.21	7,482
European Union[1]	3.37	0.04	0.66	1.00	1.65	0.03	0.51	**73.58**	4.63	6.17	283,528
North America[2]	6.70	0.03	0.59	3.77	2.19	0.11	0.78	18.67	**57.86**	1.90	104,315
Middle East[3]	3.64	0.22	0.79	0.70	1.92	0.00	0.29	13.52	3.88	**75.28**	22,425
World	22.81	0.27	0.72	16.09	5.63	0.10	1.03	40.39	14.04	6.54	**645,088**
2010											
Asia	**80.93**	1.82	1.11	55.68	22.25	0.07	1.24	2.93	3.10	3.36	240,924
Central Asia	32.49	**28.05**	0.15	3.88	0.41	0.00	0.01	0.17	15.23	0.23	14,646
South Asia	50.75	0.34	**11.89**	11.47	27.00	0.04	1.79	6.37	26.65	7.58	11,658
East Asia	84.28	0.13	0.44	**74.68**	8.96	0.08	1.01	3.55	0.59	3.97	163,271
Southeast Asia	91.31	0.02	1.05	20.18	**70.00**	0.06	1.87	0.97	2.30	1.33	51,081
The Pacific	15.04	0.00	1.43	5.43	5.64	**2.53**	70.65	0.46	0.64	4.42	268
Oceania	48.51	0.08	1.99	13.28	27.98	5.18	**16.58**	16.90	3.12	9.86	13,759
European Union[1]	4.81	0.12	0.76	1.58	2.32	0.02	0.49	**67.31**	9.58	3.91	336,705
North America[2]	9.09	0.15	1.08	5.01	2.77	0.08	0.70	15.26	**2.30**	55.17	119,728
Middle East[3]	6.44	1.02	0.85	1.57	2.99	0.00	0.32	10.10	76.77	**2.17**	44,072
World	29.22	0.79	0.86	19.48	7.97	0.12	0.92	32.26	9.66	10.72	**900,516**

[1]Refers to 27 members: Austria, Belgium, Bulgaria, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, and the United Kingdom.
[2]Refers to Canada, Mexico, and the United States.
[3]Includes 21 countries: Algeria, Bahrain, Egypt, Iran, Iraq, Israel, Jordan, Kuwait, Lebanon, Libya, Morocco, Oman, Palestine, Qatar, Saudi Arabia, Sudan, Syria, Tunisia, Turkey, United Arab Emirates, and Yemen.
Source: ADB calculations using United Nations World Tourism Organization data.

The largest remittance inflows go to countries with the largest populations, but dependence on remittances is highest among landlocked and small island countries.

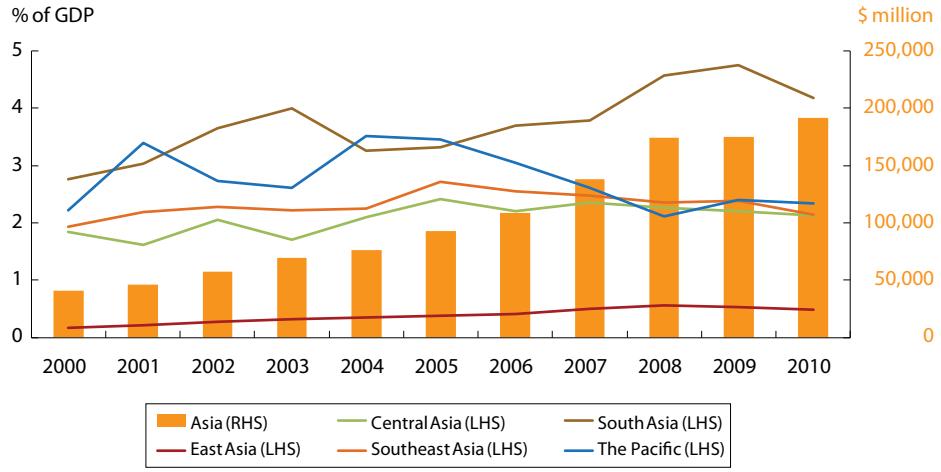
Though the remittance to GDP ratio[30] is low in East Asia, the PRC is the largest net recipient globally,[31] receiving one third of total net flows to Asia ($51.3 billion in 2010 from a mere $4.0 billion in 2000) **(Tables 12a, 12b)**.

With the world's second largest population, India, is second ($50.1 billion in 2010). Other countries with large populations also receive large remittance inflows—the Philippines ranks third globally, Bangladesh fourth, Pakistan seventh, and Indonesia fourteenth. Remittance inflows are particularly significant in some landlocked and small island countries. The net remittance inflows-to-GDP ratio was roughly 20% in five Asian countries in 2010—Tajikistan (24.8%), Samoa (22.0%), Nepal (21.9%), the Kyrgyz Republic (20.4%), and Tonga (19.5%). Except for Samoa, remittances are a new phenomenon for these countries, gaining in importance only over the last decade. With many Asian countries ranking at the top of the list of remittance inflows shows the growing importance of Asia as a net labor exporter, while the large reliance of a few economies on remittances show their vulnerability to regional or global economic stress.

[30]Net remittances can be a better gauge than gross inflows in capturing transmigration as it identifies both the source country as net recipient and host country from where remittances were sent, if immigrants to and emigrants from a country can be assumed to have homogeneous remittance behavior.

[31]Remittance data for 2011 are only available for gross inflows (not outflows), and presents a similar picture as 2010 data, with minor differences. For 2011, India receives the largest inflows globally, followed by the PRC. Gross inflows to GDP in 2011 were 31.0% for Tajikistan, 22.5% for Samoa, 20.8% for the Kyrgyz Republic, 20.0% for Nepal, and 19.7% for Tonga.

Figure 39: Gross Remittance Inflows (level and ratio to GDP)



GDP = gross domestic product, LHS = left-hand scale, RHS = right-hand scale.
Note: GDP shares are computed as total remittances for a subregion by total GDP of a subregion. Central Asia includes Armenia, Azerbaijan, Georgia, Kazakhstan and the Kyrgyz Republic. The Pacific includes Fiji, Papua New Guinea, Samoa, Solomon Islands (1999 onwards only), and Vanuatu.
Source: ADB calculations using World Bank estimates based on *Balance of Payments Statistics Yearbook 2011*, and *World Economic Outlook Database April 2012*, International Monetary Fund.

Table 12a: Top 15 Remittance Sources, 2000

Net Remittance Inflows ($ million)		Net Remittance Outflows ($ million)		Net Remittance Inflows (% of GDP)		Net Remittance Outflows (% of GDP)	
India	12,397	United States	30,002	Lesotho	58.6	Vanuatu	14.0
Philippines	6,940	Switzerland	6,472	Bosnia and Herzegovina	28.9	Luxembourg	10.5
France	4,841	Germany	5,091	Jordan	19.5	Oman	7.3
People's Republic of China	4,032	Israel	2,855	Samoa	18.8	Republic of the Maldives	5.5
Portugal	3,040	Luxembourg	2,141	Cape Verde	16.0	Mozambique	2.9
Egypt, Arab Republic of	2,820	Netherlands	1,965	Haiti	14.3	Kyrgyz Republic	2.7
Spain	2,373	Japan	1,793	El Salvador	13.3	Switzerland	2.6
Morocco	2,132	Oman	1,412	Republic of Yemen	12.7	Côte d'Ivoire	2.6
Bangladesh	1,963	Norway	789	Moldova	10.3	Israel	2.3
Dominican Republic	1,820	Italy	645	Philippines	8.6	Botswana	2.1
El Salvador	1,746	Libya	454	Grenada	8.2	Uganda	1.9
Greece	1,649	South Africa	342	Ecuador	8.1	Kazakhstan	1.7
Jordan	1,648	Kazakhstan	318	Jamaica	7.9	Gabon	1.4
Bosnia and Herzegovina	1,605	Venezuela, RB	314	Georgia	7.7	Rwanda	1.2
United Kingdom	1,569	Czech Republic	308	Dominican Republic	7.7	Libya	1.2

Source: ADB calculations using World Bank estimates based on *Balance of Payments Statistics Yearbook 2011* and *World Economic Outlook Database April 2012*, International Monetary Fund.

Table 12b: Top 15 Remittance Sources, 2010

Net Remittance Inflows ($ million)		Net Remittance Outflows ($ million)		Net Remittance Inflows (% of GDP)		Net Remittance Outflows (% of GDP)	
People's Republic of China	51,284	United States	46,320	Lesotho	32.6	Luxembourg	16.6
India	50,146	Saudi Arabia	26,833	Tajikistan	24.8	Oman	9.8
Philippines	21,361	Switzerland	19,049	Samoa	22.0	Saudi Arabia	5.9
Bangladesh	10,843	Russian Federation	13,532	Nepal	21.9	Bhutan	5.5
France	10,366	Netherlands	9,089	Moldova	21.6	Republic of the Maldives	5.1
Nigeria	9,997	Luxembourg	8,845	Haiti	20.8	Switzerland	3.6
Pakistan	9,671	Oman	5,664	Kyrgyz Republic	20.4	Papua New Guinea	3.1
Egypt, Arab Republic of	7,470	Italy	5,398	Tonga	19.5	Côte d'Ivoire	2.5
Morocco	6,360	Malaysia	5,227	Honduras	17.2	Malaysia	2.2
Belgium	6,138	Germany	4,570	El Salvador	16.2	Kazakhstan	1.8
Poland	6,039	Norway	3,365	Kosovo	14.0	Libya	1.7
Ukraine	5,583	Kazakhstan	2,730	Jamaica	12.6	Seychelles	1.6
Guatemala	4,209	Republic of Korea	2,677	Jordan	11.9	Netherlands	1.2
Indonesia	4,076	Japan	2,672	Bosnia and Herzegovina	11.2	Cyprus	1.1
United Kingdom	4,004	Denmark	2,551	Philippines	10.7	Israel	1.1

Source: ADB calculations using World Bank estimates based on *Balance of Payments Statistics Yearbook 2011* and *World Economic Outlook Database April 2012*, International Monetary Fund.

In terms of outward remittances, Asian economies do not rank very high; but several are becoming a major source of remittances. Malaysia tops the list of Asian countries in net remittance outflows—ranked ninth globally in 2010, followed by Kazakhstan (12), the Republic of Korea (13), and Japan (14). Malaysia's growth as a source of remittances has been rapid, with net outflows jumping to $5.2 billion (2.2% of GDP) in 2010, 20 times its 2000 value of $0.26 billion, or 0.3% of GDP.

In sum, Asia's international and regional transmigration is growing in importance; Asian economies have benefited—with variations across subregions and countries.

As trade and interconnectivity expand between Asian countries, greater labor and capital mobility will follow suit—both within and between subregions. Specifically, Asia is expected to see growth in services trade in the coming years—also likely to have an upward impact on labor mobility. The ongoing process of global rebalancing will most likely lead to significant shifts of production networks within the region. In turn, this will lead to greater cooperative arrangements between countries—including in labor mobility, technology transfer, and skills and knowledge sharing. While migrants currently continue to prefer moving to destinations outside Asia, there is a need to focus more on labor mobility—to better manage international and regional transmigration. Among others, initiating regional dialogue on specific migratory issues will help shape and coordinate future policy responses among countries in the region.

Infrastructure Connectivity

Asia's infrastructure gap is huge, requiring more cross-border connectivity to strengthen intraregional trade and regional demand.

With external demand expected to remain soft due to the global financial and eurozone crises, Asia must expand national and regional "cross-border" infrastructure connectivity to support intraregional trade and domestic demand. Despite large infrastructure development during the last 2 decades, economic growth has outpaced infrastructure investment. Gaps are widening. The costs and time required to move goods and services around the region remain well above average costs in high-income countries.

Infrastructure connectivity provides the backbone for economic integration, sustained economic growth, and poverty reduction.

Investing in national and regional infrastructure connectivity reduces costs of transport and cross-border transactions—from trade in goods to trade in services. The development of regional infrastructure fosters physical connectivity through improved and integrated roads, railways, air transport, seaports, and energy and telecommunication networks. Better cross-border infrastructure also paves the way for more integrated markets. This connectivity promotes trade, investment, and finance, creating greater business opportunities and private sector development. Over time, these links foster resource- and knowledge sharing that improve productivity, competitiveness, and economic growth. It also eases the urban-rural divide as it connects landlocked, isolated, and poor communities to markets beyond their borders. It brings greater access to resources, services, and knowledge for the poor, and offers new economic opportunities—which can thus spread prosperity across the region more evenly and reduce poverty.

Studies show that cross-border infrastructure investments bring substantial macro- and microeconomic benefits. Parpiev and Sodikov (2008) argued that if required improvements and upgrading of selected Asian Highway (AH) roads (15,842 km) are completed, total intraregional trade in 18 of 32 AH member countries would increase by 35%, equivalent to $89.5 billion annually.[32] An ADB study on the impact of the Second Mekong International Bridge also showed that inter-regional transport costs from Mukdahan to Savannakhet were reduced by about 4%.[33] In the short-run, inter-regional trade between these countries also increased, albeit modestly. Studies on GMS projects have documented similar benefits. The Phnom Penh to Ho Chi Minh City highway project reduced travel time for local health care services by around 30% and to schools and markets by around 40%. In a broader study of the impact of the GMS project, Edmonds and Fujimura (2008) found that cross-border road density has had a positive impact on regional trade flows.[34]

However, comparing transport costs, trade, and logistics within Asia shows the region is poorly connected internally—with few links between national and regional roads. Road density in the poorest developing countries is about one-third that of the better off Asian economies and about one-sixth that in advanced countries.[35] Differences in quality are also striking. And intermodal facilities are lacking, which hampers the efficient movement of goods across the region. Electricity supply is often unreliable and fragmented, contributing to high power costs. Moreover, harmonized and standardized rules are lacking. More transparent governance systems and stronger rule of law—particularly over property rights—would help facilitate better connectivity.

Infrastructure investment has not kept pace with economic growth.

Due to rapid economic growth over the past 2 decades, the infrastructure gap is large and growing; the problem is further aggravated by Asia's fast growing population and rapid urbanization. Estimates show that between 2010 and 2020, the region will need to invest an estimated $8.2 trillion—$750 billion per year—to cover national and regional investments in energy, transport, telecommunications, water, and sanitation. Of these, over 1,200 regional infrastructure projects—worth $320 billion—are needed in transport, energy, and telecommunications **(Table 13).** Electricity accounts for the largest portion ($4.0 trillion), followed by transport ($2.9 trillion). By subregion, East and Southeast Asia account for more than half of the infrastructure gap, mostly in electricity and transport. South Asia's investment requirements are also large and growing, largely concentrated in transport.

While some existing infrastructure in Asia is world class, most of it remains below average.

According to the World Economic Forum's *Global Competitiveness Report 2012*, the quality of infrastructure in the region in 2011 improved nine index points—or

[32] Z. Parpiev and J. Sodikov. 2008. The Effect of Road Upgrading to Overland Trade in Asian Highway Network. *Eurasian Journal of Business and Economics.* 1(2). pp. 85–101.

[33] The project, completed in 2006, spans the Mekong river between Mukdahan province in Thailand and Savannakhet province in the Lao PDR. See P. Warr, J. Menon, and A.A. Yusuf. 2010. Regional Economic Impacts of Large Projects: A General Equilibrium Application to Cross-Border Infrastructure. *Asian Development Review*. 27 (1).

[34] ADB and ADBI. 2009. *Infrastructure for a Seamless Asia*. Tokyo: Asian Development Bank Institute.

[35] A. Estache. 2006. *Infrastructure: A Survey of Recent and Upcoming Issues.* http://siteresources.worldbank.org/INTDECABCTOK2006/Resources/Antonio_Estache_Infrastructure_for_Growth.pdf

Table 13: Asia's Infrastructure Requirements, 2010-2020 (2008 $ billion),

Sector	East Asia and Southeast Asia	South Asia	Central Asia	The Pacific	Total
Electricity	3,182.5	653.7	167.2	–	4,003.3
Transportation	1,593.9	1,196.1	104.5	4.4	2,898.9
Telecommunications	524.8	435.6	78.6	1.1	1,040.1
Water and sanitation	171.3	85.1	23.4	0.5	280.2
Total	**5,472.3**	**2,370.5**	**373.7**	**6.0**	**8,222.5**

– = unavailable.
Source: B. Bhattacharyay. 2010. Estimating Demand for Infrastructure in Energy, Transport, Telecommunications, and Water and Sanitation in Asia and the Pacific: 2010–2020. *ADBI Working Paper* No. 248. Tokyo: Asian Development Bank Institute.

Table 14: Infrastructure Quality Index—Asian Subregions (% share of G7 average,[1] 2011)

	Overall Infrastructure		Infrastructure Type									
			Road		Rail		Port		Air		Electricity	
Asia[2]	**76**	**(+9)**	**71**	**(+6)**	**69**	**(+2)**	**75**	**(+3)**	**80**	**(+1)**	**67**	**(+3)**
East Asia	90	(+9)	87	(+5)	98	(+9)	92	(+3)	89	(+1)	90	(+7)
Southeast Asia	80	(+6)	79	(+5)	58	(-1)	83	(+3)	86	(-2)	73	(0)
Central Asia	71	(+10)	59	(+5)	64	(-3)	55	(-4)	71	(-1)	63	(+7)
South Asia	61	(+10)	60	(+6)	55	(+3)	70	(+7)	72	(0)	41	(-3)

G7 = Group of Seven (Canada, France, Germany, Italy, Japan, the United Kingdom, and the United States).
[1]Values are regional/subregional averages. Figures show the ratio between the indexes of the individual countries/regions and the G7 average. Figures in parentheses show the increase/decrease in index points from 2008.
[2]Asia does not include the Pacific and Oceania.
Source: ADB calculations using data from *The Global Competitiveness Report 2011-2012*, World Economic Forum, available at http://gcr.weforum.org/gcr2011/.

13%—compared with 3 years ago **(Table 14).** The improvement was observed across all infrastructure types, with roads showing the largest gains. Still, infrastructure quality in the region remains way below the G7 average.

Across Asia and across infrastructure types, infrastructure quality remains uneven. Infrastructure quality in East Asia is closest to the G7 average with South Asia and Central Asia the furthest behind. By type of infrastructure, air transport in Asia is closest to G7 levels, with electricity and railways lagging. Railways and ports in East Asia are comparatively well developed, while electricity and railways in South Asia are of particularly poor quality. Telecommunications look more promising **(Table 15).** In particular, the number of mobile phone subscriptions per 100 population in East Asia, Southeast Asia, and Central Asia are very close to the G7 average. For fixed telephone line density, Southeast Asia and Central Asia rank similarly. South Asia has the lowest telephone and mobile phone density in the region.

Table 15: Telecommunication Density—Asian Subregions
(% share of G7 average,[1] 2011)

	Fixed Telephone Lines/ 100 Population	Mobile Telephone Subscriptions/ 100 Population
Asia[2]	**41**	**88**
East Asia	89	104
Southeast Asia	33	104
Central Asia	31	93
South Asia	11	53

G7 = Group of Seven (Canada, France, Germany, Italy, Japan, the United Kingdom, and the United States).
[1]Values are regional/subregional averages. Figures show the ratio between the index of the individual countries/regions and that of the G7 average.
[2]Asia does not include the Pacific and Oceania.
Source: ADB calculations using data from *The Global Competitiveness Report 2011-2012*, available at http://gcr.weforum.org/gcr2011/.

In addition to physical infrastructure, for effective connectivity, Asia needs to strengthen its soft infrastructure—policy, legal, regulatory, and institutional frameworks, along with systems and procedures.

Despite significant trade liberalization, the costs of moving goods in and out of the region remain quite high due to weak soft infrastructure—resulting in high trade costs. There are many institutional barriers, including weak border transit points and other behind-the-border trade barriers that impede the efficient flow of goods and services. Complicated and differentiated trade procedures, cumbersome customs clearance requirements, stringent border security, discriminatory trade and investment policies, and cumbersome regulations are some of the barriers faced. Data from the World Bank's *Cost of Doing Business Survey* indicate that, in Asia, the real costs of exporting and importing a container in terms of daily worker output—costs associated with documents, customs administrative fees, customs broker fees, terminal charges, and inland transport—are about 1.5 to 2.0 times those of the average Organisation for Economic Co-operation and Development (OECD) high-income economy. But they vary across the subregions **(Table 16)**. East Asia's costs are the closest to the OECD high-income average. Central and South Asia's are the highest in the region. Compared with Latin America, East Asia and Southeast Asia have lower real trade costs.

It also takes longer to prepare goods for export or import in Asia—about 15–16 days compared with the average OECD high-income economy of about 9 days (see Table 16). These costs are also quite diverse across subregions—very high in Central Asia and considerably lower in South Asia. Within subregions, the dispersions are equally wide compared with those in East Asia or Southeast Asia. This underscores the uneven distribution of trade costs across Asian subregions. However, compared with Latin America, Asia can move goods in and out of its geographic area more rapidly.

Financing and producing cross-border infrastructure are a daunting challenge, and Asia's excess savings should be tapped to help close the infrastructure gap.

One of the most important challenges for the region is how to finance large national and cross-border infrastructure demand. Government budgets in Asia are still recovering from the impact of the global financial crisis, which weakened economic activity and revenue generation. Also, government spending in response to the crisis reduced the fiscal space needed to absorb more public debt for infrastructure. Adding to the financial challenge, other funding sources—mostly institutional investors—continue to be affected by financial volatilities. The public sector alone cannot meet this huge demand, and private sector participation in infrastructure development is essential. Public-private partnerships must expand.

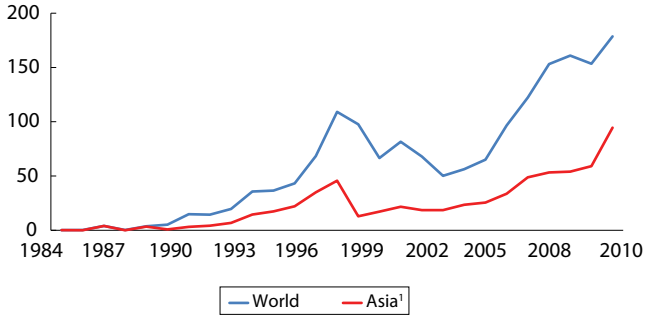
Historically, private sector participation in infrastructure has been minimal. The last 10 years saw a total of 1,471 infrastructure projects, which translate into

Table 16: Trade Facilitation Costs per Subregion (2012)

	Real cost to export (man days)[1]	Real cost to import (man days)[1]	Time to export (days)	Time to import (days)	Documents to export (number)	Documents to import (number)
High-income countries[2]	6.0	6.4	8.9	8.6	4.0	4.7
Latin America	25.1	28.5	20.7	15.2	6.2	6.3
Africa	114.7	152.3	38.3	29.5	9.1	8.2
Asia	**9.9**	**12.0**	**16.4**	**14.8**	**5.7**	**5.4**
East Asia	7.2	7.6	16.0	14.1	5.7	4.7
Southeast Asia	9.4	11.7	13.2	13.2	4.9	5.9
Central Asia	41.4	64.8	56.5	59.9	8.6	10.2
South Asia	34.5	35.6	20.4	17.2	7.8	8.7

Note: Asia does not include the Pacific and Oceania.
[1]Nominal costs to export/import per country were deflated by gross domestic product per worker (in constant 1990 purchasing power parity $) per country and weighted based on each country's contribution to total regional/subregional export and import 2011 values.
[2]Organisation for Economic Co-operation and Development (OECD) high-income countries excluding Japan and the Republic of Korea.
Source: ADB calculations using data from *Doing Business 2012 Database,* World Bank.

Figure 40: Private Participation in Infrastructure — Total Investment Commitments (current $ billion)



[1]Does not include Australia; Brunei Darussalam; the Cook Islands; Hong Kong, China; Nauru; New Zealand; Palau; Singapore; Taipei,China; and Tuvalu as data unavailable.
Source: ADB calculations using data from *Private Participation in Infrastructure Database,* World Bank.

total investment commitments of $451 billion for Asia **(Figure 40).** Put differently, average total regional public-private partnerships investments per year were just about $41 billion—insignificant compared with Asia's estimated annual investment requirement (see Table 13). In addition, these projects were concentrated in telecommunications and energy, and only in a few countries—primarily the PRC, India, Indonesia, Malaysia, and the Philippines.

Policy and institutional constraints—particularly legal and regulatory impediments—keep private capital away from infrastructure. Most Asian economies lack the investment climate needed to attract private investment in infrastructure. Policy frameworks are not investor friendly, contain many restrictions, and are prone to policy reversals. The legal and regulatory environment augers against a fair return on risk—for example, there is scant protection of property rights.

There is also limited experience in managing large, complex project risk, and contractual agreements are often below investment grade. Financial and capital markets also lack the sophistication needed to develop financial instruments suited to institutional investors or greenfield investment projects. It thus takes as much good faith as risk mitigation to entice the private sector to join these complex, expensive, and long-term projects.

One major problem in infrastructure finance is the lack of appropriate financial mechanisms and instruments for mobilizing Asian regional and international savings. This calls for regional cooperation such as the development of local currency bond markets. But a more important challenge is how to channel funds raised through such markets into infrastructure spending. Increasingly, the problem is not just about financing source, but more about the difficulties associated with utilizing the available funds for infrastructure projects. Problems outlined above reflect some of the difficulties and the bottlenecks.

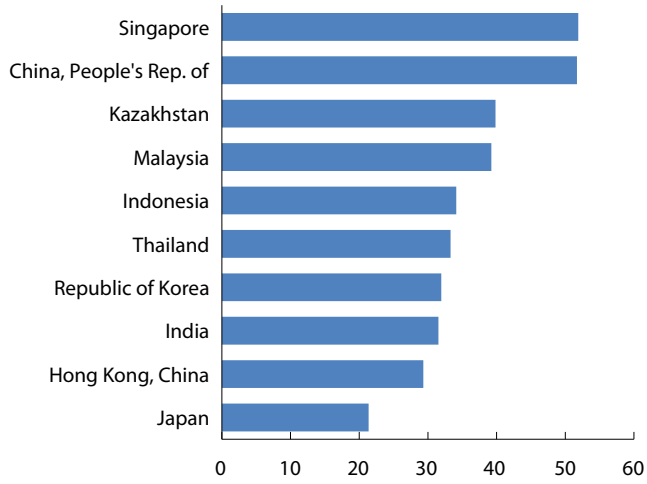
Indeed, Asia has enough savings to meet infrastructure demand; the challenge is to develop ways to activate Asian savings for infrastructure investment.

Gross saving in Asia was estimated at almost $6 trillion in 2010—equivalent to over 45% of the region's GDP. The PRC and Singapore save over 50% of their annual GDP **(Figure 41)**. Asia also maintains huge foreign exchange reserves, another potential source of funding. In 2011 they totaled over $5 trillion—equivalent to about 39% of the region's GDP **(Table 17).**

Asia has several regional and subregional initiatives and cooperation programs for infrastructure connectivity **(Box 2)**. It needs to strengthen existing initiatives and develop new regional or subregional infrastructure funds as, for instance, the newly established ASEAN Infrastructure Fund (AIF). Furthermore, regional financial markets—especially local currency bond markets—should be strengthened, deepened, and integrated for freer movement of capital for infrastructure finance.

In May 2012, the AIF was launched to promote infrastructure finance as well as regional cooperation and integration on cross-border projects. Nine of the 10

Figure 41: Gross Domestic Saving—Selected Asian Economies (2010, % of GDP)



Source: *World Development Indicators* and *Global Development Finance,* World Bank.

Box 2: Selected Major Regional Infrastructure Connectivity Programs in Asia

Over the years, several cross-border infrastructure and connectivity initiatives have been implemented across Asia. Broadly, these initiatives aim to develop and improve transport connectivity programs and projects that link neighboring countries and ease the flow of goods and services in the region. These programs and projects have contributed to the development of economic corridors that play important roles in creating seamless connections and promoting economic development across the region. On this front, ADB has been a key player. Over the last two decades, ADB in partnership with developing member countries (DMCs) and other multilateral donors has mobilized around $35 billion to promote connectivity and integration in the region. The following summarizes some of the largest cross-border infrastructure and connectivity initiatives in Asia.

The Greater Mekong Subregion (GMS) Economic Cooperation Program— Initiated in 1992, the GMS program covers Cambodia, two provinces of the PRC, the Lao People's Democratic Republic (Lao PDR), Myanmar, Thailand, and Viet Nam. Its main focus is to enhance the so-called "3Cs"—connectivity, competitiveness, and community. Key activities include the development of economic corridors, with cross-border roads as the backbone to improve access, institutional and policy support to facilitate trade, and transit policy harmonization to reduce logistics costs across the subregion. The development of priority economic corridors (north-south, east-west, and southern) is in full swing. As of the end of December 2011, 56 priority projects worth around $15 billion either have been completed or are being implemented. Progress is also being achieved in power interconnections and hydropower projects, the information superhighway network, and the implementation of the Cross-Border Transport Agreement (CBTA). GMS leaders have also endorsed the 2012–2022 GMS Strategic Framework that focuses on multisector investments to widen and deepen GMS economic corridors, including urban development, connections to maritime gateways, improved transport and trade facilitation, and other means to enhance competitiveness of the corridors.

The Central Asia Regional Economic Cooperation (CAREC) Program— The CAREC program, set up in 2001, covers Afghanistan, Azerbaijan, the PRC, Kazakhstan, the Kyrgyz Republic, Mongolia, Pakistan, Tajikistan, Turkmenistan, and Uzbekistan. Under its new 10-year (2011-2020) strategic framework (CAREC 2020), CAREC's strategic objectives are to expand trade in the subregion and improve competitiveness by implementing focused, action-oriented, and results-driven regional programs and projects in energy, trade facilitation, trade policy, transport, and economic corridor development. During 2001-2011, the CAREC Program has implemented 121 priority projects worth $17.7 billion. Some key achievements of the program include the improvement of 4,000 km of roads and 2,240 km of railways along six priority transport corridors traversing the region east-west and north-south, the pilot-testing of the Kazakhstan–PRC and Mongolia–PRC joint customs control, the adoption of Customs Codes based on the Revised Kyoto Convention in order to simplify and harmonize customs procedures in all CAREC countries, the expansion of power generation capacity and interconnection, and the formulation of a regional power master plan. CAREC 2020 is accompanied by a rolling medium-term priority projects (MTPP) list, which contains high-priority projects in energy, trade facilitation, and transport that have been agreed to by the CAREC sector coordinating committees. The initial MTPP list includes 68 transport projects worth over $24 billion, 41 energy projects worth almost $33 billion, and five trade facilitation projects worth $570 million.

Regional Cooperation and Integration (RCI) in South Asia—South Asia has followed a multi-track and multi-speed approach to RCI. These are mainly carried out through three RCI programs—the South Asian Association for Regional Cooperation (SAARC), Bay of Bengal Initiative for Multi-sectoral Technical and Economic Cooperation (BIMSTEC), and the South Asia Subregional Economic Cooperation (SASEC). SASEC is the key program delivering cross-border infrastructure and connectivity. Since its inception in 2001, major headways have been achieved in a number of fronts: these include assessing the need for priority road corridors, upgrading some of these corridors, installing border checkpoints, improving information communication technology and automation, and addressing border- and behind-the-border issues through trade facilitation. Financial support was also extended to promote rural electrification, cross-border electricity trading and interconnection, and the adoption of clean energy technology. In addition, technical studies were conducted to promote the Bangladesh-India Interconnection Grid project. In November 2011, SASEC officials endorsed investment projects worth $2 billion to strengthen transport connectivity, trade facilitation, and energy cooperation.

The Brunei Darussalam-Indonesia-Malaysia-Philippines East ASEAN Growth Area (BIMP-EAGA) and the Indonesia-Malaysia-Thailand Growth Triangle (IMT-GT)—BIMP-EAGA was established in 1994 to further improve trade and economic links to narrow the development gaps within and between countries. One strategy was to enhance connectivity between the four countries. On the other hand, IMT-GT was established in 1993 to promote greater

Box 2 continued

economic and information links and to develop economic corridors. At their Summits in 2012 in Phnom Penh, the Leaders of each group endorsed their respective Implementation Blueprint for 2012–2016. IMT-GT supports developing five economic corridors. As of March 2012, priority connectivity projects worth $5.2 billion have been identified and endorsed. On the other hand, BIMP-EAGA pursues a four-pronged strategy that includes enhancing connectivity. Over the same period, priority projects worth $1 billion have also been identified and endorsed.

Council of Regional Organisations in the Pacific (CROP)— Established in 1988, the CROP program covers 21 countries and territories in the Pacific. A key initiative, the Pacific Regional Information and Communications Technology Connectivity Project aims to connect Samoa, Solomon Islands, Tonga, and Vanuatu—and possibly other countries—by submarine optic fiber cables to the existing global submarine cable network. Ongoing projects include the installation of 827 kilometers of cable linking Nuku'alofa (Tonga) and Suva (Fiji), and preparations for the development, installation, and operation of a submarine fiber optic communication cable system (SCS) linking the Solomon Islands to an existing international submarine cable network that runs between Guam and Sydney. The SCS will comprise an international spur into Guadalcanal (landing in Honiara) and two domestic spurs linking Guadalcanal with Malaita (landing in Auki) and the Western Province (landing in Noro).

The Asian Highway (AH) and the Trans-Asian Railway (TAR) Network—These networks are part of an existing pan-Asian infrastructure initiative called the Asian Land Transport Infrastructure Development (ALTID) Project, which was established in 1992 by the United Nations Economic and Social Commission for Asia and the Pacific. Its main goal is to improve transport and communication links within the region as well between regions. The AH project comprises about 142,926 kilometers (km) of highways—of which developing about 34,994 km (worth $31.48 billion) are key priorities. The majority are located in Central Asia (10,559 km), South Asia (7,758 km), and Southeast Asia (7,748 km). The TAR project comprises about 312,726 km of railways—of which 23,429 km are key priorities and 8,169 km are actually missing links—mostly in Southeast Asia, the PRC, and Central Asia. TAR priorities would require about $69.6 billion to finish. (For more detailed information, please refer to UNESCAP's publication: *Growing Together, Economic Integration for an Inclusive and Sustainable Asia-Pacific Century* http://www.unescap.org/pdd/publications/themestudy2012/index.asp).

Table 17: Total Foreign Exchange Reserves (excl. gold)

	2010		2011	
	($ billion)	(% GDP)	($ billion)	(% GDP)
Bangladesh	–	–	8.5	7.5
Brunei Darussalam[1]	1.6	12.6	1.7	11.1
Cambodia[2]	3.3	28.9	3.4	26.7
China, People's Rep. of	2,866.1	48.3	3,202.8	43.9
Hong Kong, China	268.6	119.8	285.3	117.3
India	–	–	270.1	16.1
Indonesia	92.9	13.1	106.5	12.6
Kazakhstan	–	–	25.4	14.3
Korea, Republic of	291.5	28.7	304.2	27.3
Lao PDR	0.7	10.9	–	–
Malaysia	104.9	44.1	131.8	47.3
Pakistan[3]	–	–	15.7	7.5
Philippines	55.4	27.7	67.3	31.6
Singapore	225.8	99.3	237.7	91.5
Sri Lanka[3]	–	–	6.9	11.6
Taipei,China	382.0	88.8	385.5	82.6
Thailand	167.5	52.5	167.4	48.4
Viet Nam[1]	12.5	12.0	12.2	10.0

GDP = gross domestic product, – = unavailable.
[1]Total reserves data for Brunei Darussalam and Viet Nam as of March 2011.
[2]Total reserves data for Cambodia as of June 2011.
[3]Total reserves data for Pakistan and Sri Lanka as of September 2011.
Source: ADB calculations using data from CEIC; *International Financial Statistics* and *World Economic Outlook Database April 2012*, International Monetary Fund.

members of the ASEAN—and ADB—provided equity contributions of $485 million plus a mixture of capital and debt issuance to the Fund. The AIF is expected to combine its resources with those from ADB and other development partners to enhance infrastructure development and physical connectivity within ASEAN. With projected lending approvals of $300 million growing to an annual level of about $450 million by 2018, the AIF is targeting an outstanding loan balance of about $2.1 billion by 2020 and $4 billion by 2026. The AIF can also finance public portions of public-private partnership projects to help leverage additional resources from the private sector.

Cooperation in Trade Policy

Despite coordinated regional efforts, cooperation in trade policy has developed most effectively in Asia through a combination of unilateral actions.

Cooperation in trade policy takes various forms and occurs at different levels. The formal legal initiatives that aim to improve regional cooperation along with developments at the national, multilateral, and regional levels have pushed the process forward. In Asia, trade policy has been so far most effectively advanced through unilateral action in light of the impasse in the WTO Doha Round negotiations and despite the proliferation of free trade agreements (FTAs).

Unilateral Actions and Assistance toward Cooperation

The main avenue for trade liberalization continues to be unilateral action.

Despite its significance, unilateral action or preference programs do not garner as much attention as bilateral and multilateral initiatives, possibly due to institutional and political factors. The World Bank estimates that, between 1983 and 2003, unilateral actions comprised the bulk of liberalization—or 65% of developing-country tariff reductions.[36]

The way in which the original ASEAN members implemented their FTA shows how unilateralism can extend regional cooperation. As members of the ASEAN Free Trade Area (AFTA), the five original ASEAN members[37] had to extend trade preferences to each other. But this did not prevent them from voluntarily extending the same preferences to nonmembers.[38] The extension of preferential access to nonmembers eliminated the margins of preference (MoPs) and thus reduced the potential for trade diversion. Most ASEAN exports currently have zero MoPs (they apply to all but the "sensitive" products).

Some argue that Asia's emerging economies have actually engaged in a "race-to-the-bottom" unilateralism. Unilateral tariff reductions could be motivated, for example, by competition to attract foreign direct investment (FDI). Tariffs on parts and components—an important determinant of where firms choose to invest—converge across FDI-competing countries. This has undoubtedly been aided by the Information Technology Agreement (ITA), which allows participants to completely eliminate duties on information technology products covered by the Agreement. All of the key players in production networks in Asia—the ASEAN-5; the PRC; Hong Kong, China; Japan; the Republic of Korea; and Taipei,China—are signatories of the ITA. These countries account for more than half the exports covered by the ITA worldwide.[39]

In the PRC, trade policy has been undergoing a gradual process of liberalization that began even before its 2001 accession to the WTO. The protective effect of non-tariff barriers has declined to less than 5% and the simple average of tariff rates has dropped from 42% in 1992 to 9.7% in 2010—a figure well below the developing country average. Most of these reductions have come through unilateral actions.

A second category of unilateral actions are the institutionalized preference programs known as the Generalized System of Preferences (GSP) and the Global System of Trade Preferences (GSTP). In both programs, tariff concessions for specific goods are offered to developing countries. Under the GSP, advanced economies such as Japan offer preferential market access to a particular group of beneficiaries—in Japan's case, 151 countries and territories are eligible. The GSTP was initiated by the Group of 77, under which developing countries, such as Thailand and Indonesia, offer preferential access in certain goods to other developing countries.

Effectively, trade cooperation can be viewed from the perspective of trade liberalization. In Asia, most favored nation-applied tariff rates have steadily declined **(Figure 42)**. Since the Doha Round negotiations stalled and FTA utilization rates are still relatively low, it can be deduced that the tariff reductions have been mostly due to unilateral actions.

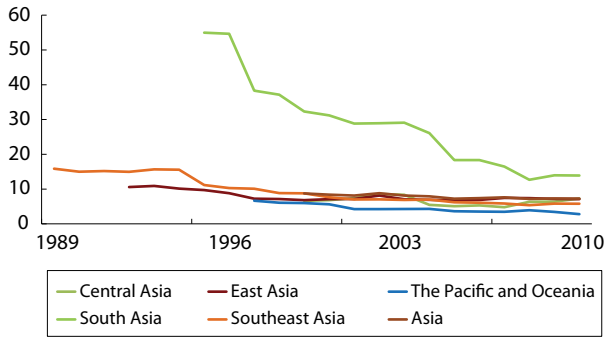
[36]The GATT Uruguay Round accounted for 25% of the developing-country tariff liberalization and FTAs possibly contributed the residual 10% or so. See World Bank. 2005. *Global Economic Prospects 2005: Trade, Regionalism, and Development*. Washington, DC: World Bank.

[37] Indonesia, Malaysia, the Philippines, Singapore, and Thailand.

[38]See J. Menon. 2007. Building Blocks or Stumbling Blocks? The GMS and AFTA in Asia. *ASEAN Economic Bulletin*. 24 (2). pp. 254–66.

[39]See M. Anderson and J. Mohs. 2010. The Information Technology Agreement: An Assessment of World Trade in Information Technology Products. *Journal of International Commerce and Economics*. http://www.usitc.gov/publications/332/journals/info_tech_agreement.pdf

Figure 42: MFN Tariff Trends—Asia (weighted average[1])



MFN = most favored nation.
[1]Weighted using imports.
Note: Central Asia excludes Armenia for 1999-2000, Azerbaijan for 1999-2001, Tajikistan for 1999-2001, and Uzbekistan for 1999-2000; East Asia excludes Mongolia; the Pacific and Oceania excludes Vanuatu for 1997-2001, Fiji, Kiribati, the Marshall Islands, Palau, Samoa, Timor-Leste, Tonga, and Tuvalu; South Asia excludes Afghanistan, Bhutan, and Republic of the Maldives; Southeast Asia excludes Brunei Darussalam for 1989-1991, Cambodia, the Lao People's Democratic Republic, and Myanmar.
Source: ADB calculations using data from *World Development Indicators,* World Bank and *Direction of Trade Statistics*, International Monetary Fund.

Multilateral Cooperation

The World Trade Organization (WTO) is the global regulatory institution on trade. WTO agreements and processes are responsible for maintaining the framework of the international trading system and for resolving trade disputes. To liberalize trade further and enact new trading rules that would strengthen support for developing countries, the WTO launched the current round of negotiations—the Doha Development Round—in November 2001. Unfortunately, the negotiations turned out to be highly contentious, and disagreements have persisted over agricultural subsidies and provisions on special and differential treatment to developing countries. Nonetheless, its dispute settlement process continues to advance international law on trade-related issues.

Most Asian economies are active WTO members, with eight in the process of acceding to membership.

Some 31 economies in Asia have acceded to the WTO. Asia has also been an active participant in WTO processes. For example, the region has been active in pursuing cases involving anti-dumping and countervailing duties **(Table 18)**. But multilateral cooperation goes beyond the design and use of existing measures. International law often progresses through adjudication, particularly since the Doha Round has stalled. Middle- and high-income Asian economies have been active participants in dispute settlement since the WTO was established in 1995 **(Table 19)**. In addition,

Table 18: Number of Anti-Dumping Dispute Cases with WTO

Year	Within Asia	Asia-ROW		ROW
		Asia as Complainant	Asia as Respondent	
2000	1	2	0	7
2001	0	1	0	5
2002	0	1	0	6
2003	0	0	1	5
2004	3	3	0	2
2005	0	1	0	3
2006	0	2	0	6
2007	0	1	0	0
2008	0	4	0	1
2009	0	2	0	1
2010	0	2	2	1
2011	0	2	2	1
2012	0	1	0	0
TOTAL	**4**	**22**	**5**	**38**

ROW = rest of the world, WTO = World Trade Organization.
Note: Based on chronological listing of cases filed with WTO's Dispute Settlement Body as of April 2012. Within Asia—both complainant and respondent are from Asia; Asia-ROW—either a complainant or respondent is from Asia, partnered with a country outside Asia; ROW—both complainant and respondent are outside Asia.
Source: World Trade Organization.

Table 19: Number of Dispute Cases with WTO

Year	Within Asia	Asia-ROW		ROW
		Asia as Complainant	Asia as Respondent	
2000	1	5	1	27
2001	0	3	0	20
2002	2	9	3	23
2003	0	6	2	18
2004	4	4	1	10
2005	0	1	0	11
2006	1	2	4	13
2007	1	1	5	6
2008	1	6	7	5
2009	0	4	6	4
2010	0	5	6	6
2011	0	2	2	4
2012	1	3	5	0
TOTAL	**11**	**51**	**42**	**147**

ROW = rest of the world, WTO = World Trade Organization.
Note: Based on chronological listing of cases filed with WTO's Dispute Settlement Body as of April 2012. Within Asia—both complainant and respondent are from Asia; Asia-ROW—either a complainant or respondent is from Asia, partnered with a country outside Asia; ROW—both complainant and respondent are outside Asia.
Source: World Trade Organization.

Asian nationals have served as panelists to disputes, and several Asian representatives sit on the Appellate Body, which hears appeals from panel cases and cannot be overridden.

Regional Cooperation and Free Trade Agreements (FTAs)

The number of FTAs involving at least one Asian country has dramatically increased over the past decade.

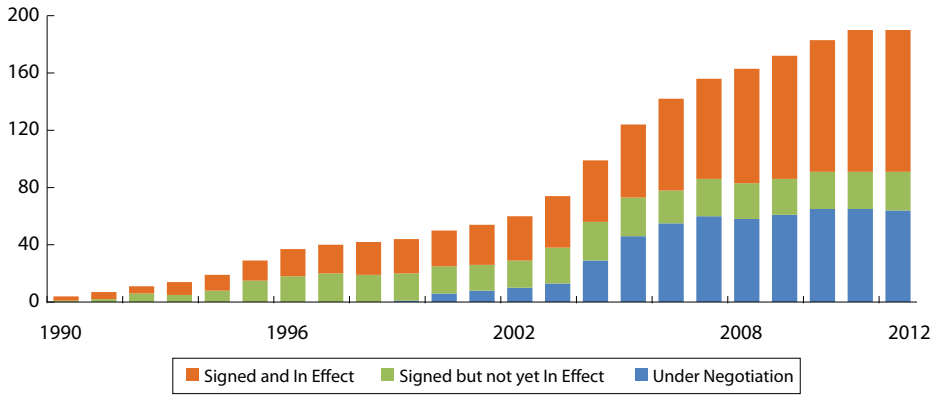
Asia has been particularly active in negotiating and completing regional trade agreements. While these are clear evidence of regional cooperation, they are often restrictive in scope and not all aspects are easy to implement. The utilization of facilities offered by FTA is so far relatively low.[40]

The proliferation of FTAs involving Asian countries has generated a tangled web of overlapping bilateral and plurilateral trade agreements, often described as the "noodle-bowl" effect. An inventory of FTA initiatives by country and subregion (as of January 2012) shows that Singapore (with 31) has the greatest number of initiatives, followed by India (26) and Thailand (19) **(Table 20)**. At the other end of the spectrum are Mongolia and Timor-Leste with none. It appears that different subregions have differing FTA preferences: Southeast Asia tends to have initiatives with counterparties in Asia and within its subregion. In contrast, Central Asia generally engages countries outside the region or outside its subregion. East Asia, on the other hand, is engaged more with countries outside the region or within its subregion. Finally, in South Asia and the Pacific and Oceania, FTA initiatives are dominated by India and Pakistan in the former and Australia and New Zealand in the latter.

Regional and bilateral agreements take a number of different forms, the more prominent being FTAs. As of January 2012, there were 190 FTAs involving at least one Asian country, 126 of which had been concluded **(Figure 43)**. During the last decade, these agreements involve partners from outside the region—indicative of Asia's strong trade relations outside the region, especially in final goods **(Figure 44)**. While this pattern is likely to persist, the trend of increased intraregional trade will continue, with or without FTAs.

Inconsistencies between agreements, however, may raise costs of doing business and cause welfare losses associated with trade diversion. Differences across FTAs such as varying schedules for phasing out tariffs, different rules of origin and exclusion lists, conflicting standards, and differences in rules on anti-dumping can limit their effectiveness and weaken efficiency. Indeed, a consequence has been that FTA utilization rates have remained low in the aggregate, especially when MoPs are low.[41]

Figure 43: FTA Initiatives by Status (cumulative as of Jan 2012)



FTA = free trade agreement.
Note: Includes FTAs involving at least one country from Asia; does not include FTA initiatives in the proposal stage. **Under Negotiation**—parties initially negotiate a framework of agreement (FA) or begin negotiations without an FA, **Signed but not yet In Effect**—parties sign the agreement after negotiations have been completed, **Signed and In Effect**—provisions of FTA effective.
Source: *Asia Regional Integration Center,* Asian Development Bank.

[40]M. Kawai and G. Wignaraja, eds. 2011. *Asia's Free Trade Agreements: How is Business Responding?* Cheltenham, UK: Edward Elgar.

[41]Ibid.

Table 20: FTA Status—Asia (cumulative as of Jan 2012)

	Concluded	Under Negotiation	Total[1]	Total		With Countries Inside Asia	
				With Countries Outside Asia	With Countries Inside Asia	Outside Own Subregion	Inside Own Subregion
Total	**126**	**64**	**190**	**115**	**75**	**42**	**33**
Plurilateral	24	25	**49**	37	12	7	5
Bilateral	102	39	**141**	78	63	35	28
by Subregion and Country							
Southeast Asia							
Brunei Darussalam	8	3	**11**	4	7	1	6
Cambodia	6	1	**7**	1	6	1	5
Indonesia	9	5	**14**	4	10	1	9
Lao People's Democratic Republic	8	1	**9**	1	8	2	6
Malaysia	12	6	**18**	7	11	1	10
Myanmar	6	2	**8**	1	7	1	6
Philippines	7	1	**8**	1	7	1	6
Singapore	21	10	**31**	18	13	1	12
Thailand	12	7	**19**	6	13	2	11
Viet Nam	8	2	**10**	3	7	1	6
Central Asia							
Armenia	9	0	**9**	4	5	5	0
Azerbaijan	9	1	**10**	6	4	4	0
Georgia	10	0	**10**	5	5	5	0
Kazakhstan	8	4	**12**	7	5	5	0
Kyrgyz Republic	9	1	**10**	6	4	4	0
Tajikistan	9	1	**10**	7	3	3	0
Turkmenistan	3	1	**4**	1	3	3	0
Uzbekistan	10	1	**11**	6	5	5	0
East Asia							
People's Republic of China	12	6	**18**	9	9	2	7
Hong Kong, China	3	0	**3**	1	2	1	1
Japan	13	2	**15**	5	10	0	10
Republic of Korea	9	7	**16**	10	6	0	6
Mongolia	0	0	**0**	0	0	0	0
Taipei,China	5	2	**7**	6	1	1	0

Continued on next page

Several proposals have been put forward, broadly grouped into consolidation and multilateralization.

Consolidation—which involves creating a regional FTA to help harmonize bilateral FTAs. The expectation is that a broader-based FTA would spur growth in Asian trade and investment by helping create a larger regional market, thus generating economies of scale and fostering technological transfer.

Multilateralization—which extends preferences to nonmembers on a nondiscriminatory basis, eliminating any MoP—the difference between MFN and preference rates—and therefore the potential for trade diversion.

These two approaches, however, need not be mutually exclusive. Even if the consolidation approach leads to the establishment of a region-wide FTA, this does not preclude implementing multilateralization. The

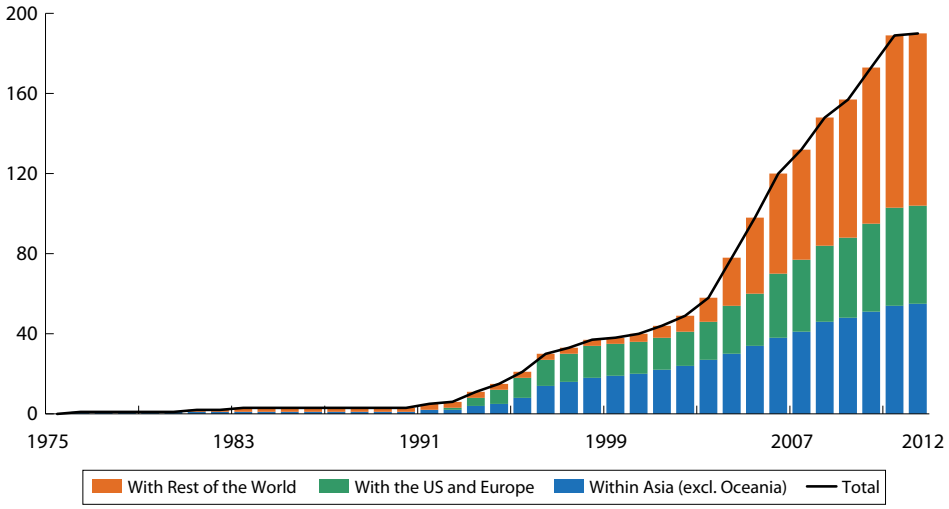
Table 20 continued.

	Concluded	Under Negotiation	Total[1]	Total		With Countries Inside Asia	
				With Countries Outside Asia	With Countries Inside Asia	Outside Own Subregion	Inside Own Subregion
South Asia							
Afghanistan	3	1	**4**	2	2	2	0
Bangladesh	3	3	**6**	2	4	2	2
Bhutan	2	1	**3**	0	3	2	1
India	13	13	**26**	10	16	5	11
Republic of the Maldives	1	2	**3**	1	2	1	1
Nepal	2	1	**3**	0	3	2	1
Pakistan	9	7	**16**	9	7	3	4
Sri Lanka	5	1	**6**	1	5	3	2
The Pacific and Oceania							
Australia	8	10	**18**	5	13	3	10
Cook Islands	2	2	**4**	2	2	1	1
Fiji	3	2	**5**	2	3	2	1
Kiribati	2	2	**4**	2	2	1	1
Marshall Islands	2	2	**4**	2	2	1	1
Federated States of Micronesia	2	2	**4**	2	2	1	1
Nauru	2	2	**4**	2	2	1	1
New Zealand	9	6	**15**	4	11	2	9
Palau	2	2	**4**	2	2	1	1
Papua New Guinea	4	2	**6**	2	4	3	1
Samoa	2	2	**4**	2	2	1	1
Solomon Islands	3	2	**5**	2	3	2	1
Timor-Leste	0	0	**0**	0	0	0	0
Tonga	2	2	**4**	2	2	1	1
Tuvalu	2	2	**4**	2	2	1	1
Vanuatu	3	2	**5**	2	3	2	1

FTA = free trade agreement.
Note: Plurilateral—a preferential trading arrangement that involves more than two parties; bilateral—involves two parties; concluded—an FTA is either signed but not yet in effect or in effect.
[1]Total number of FTAs is the sum of FTAs concluded and under negotiation; excludes those in the proposal stage. The number is split into those FTAs with partners outside Asia (extraregional) and those within the region (intraregional). The number of FTAs partnered within the region are divided into those outside the subregion (extra-subregional) and those inside the subregion (intra-subregional).
Source: *Asia Regional Integration Center,* Asian Development Bank.

preferences of the new regional FTA could still be offered to nonmembers on a nondiscriminatory basis. Consolidation could also be a stepping stone to a WTO Doha Round deal, as concessions in agriculture and industrial goods—stumbling blocks to a successful round—might already be agreed upon in a region-wide FTA. However, questions relating to the implementation of the consolidation approach raise concerns over its effectiveness. These include issues such as (i) how multiple bilateral agreements, each with its own defining rules and characteristics, can be folded into one agreement without resorting to the lowest common denominator and (ii) how cross-regional bilateral agreements, which constitute the vast majority of FTAs, might be handled. These questions do not arise with the multilateralization approach. In short, while the consolidation approach requires multilateralization as a complement to fill in the gaps, the multilateralization approach is self-contained and can be implemented independently.

Figure 44: FTA Initiatives[1]—Asia[2] (number of FTAs)



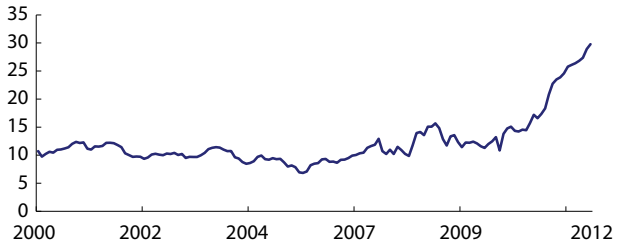
FTA = free trade agreement, US = United States.
[1]Does not include FTA initiatives in the proposal stage. Refers to FTAs either under negotiation, signed but not in effect, or in effect. Numbers are cumulative as of January 2012.
[2]Excludes Oceania.
Source: *Asia Regional Integration Center,* Asian Development Bank.

Macroeconomic and Financial Cooperation

The 2008/09 global financial crisis provided further impetus to regional macroeconomic and financial cooperation—necessary to facilitate further Asian integration in trade, production, and finance.

Macroeconomic and financial cooperation in Asia, particularly East Asia and Southeast Asia, started in the late 1990s in response to the 1997/98 Asian financial crisis. Regional initiatives launched in the early 2000s aimed to ensure rapid and sustained economic growth by promoting macroeconomic and financial stability, preventing the recurrence of balance of payments and currency crises, and developing the region's financial markets to help channel regional savings toward regional investments. The 2008/09 global financial crisis revealed the vulnerabilities of Asian economies, as the US-originated financial meltdown had a severe adverse impact on Asia via strong trade and financial links. While Asia staged a robust V-shaped recovery in 2010 and 2011, the ongoing eurozone sovereign debt crisis and fragile recovery in the US have prompted Asia's authorities to enhance macroeconomic and financial cooperation to ensure macroeconomic and financial stability in the region.

Figure 45: Regional Real Exchange Rate Dispersion—ASEAN+3[1] (coefficient of variation, %)[2]



ASEAN+3 = ASEAN plus the People's Republic of China, Japan, and the Republic of Korea.
[1]Includes Hong Kong, China. Exchange rates of Indonesia, the Lao People's Democratic Republic, and Myanmar are excluded as they have undergone large idiosyncratic changes that cloud the overall pattern. Data available until March 2012.
[2]Coefficient of variation of real exchange rates against an Asian Monetary Unit (AMU), normalized to 100 over the sample period. The AMU is a trade-weighted basket of 14 currencies (ASEAN+3 including Hong Kong, China). Real effective exchange rates are computed using the deviation indicator.
Source: ADB calculations using data from Japan's Research Institute of Economy, Trade, and Industry (RIETI).

After the global financial crisis, some regional currencies appreciated significantly against the US dollar in both nominal and real effective terms, while others remained relatively unchanged and some even depreciated. Furthermore, in real terms, the region's individual currencies—as measured against a regional basket—have become far more widely dispersed since early 2007 **(Figure 45)**. The increase in intraregional exchange rate fluctuations is detrimental to expanding intraregional trade based on rising production fragmentation. Risks of financial contagion have also led to calls for the establishment of effective regional financial safety nets.

Macroeconomic and Financial Cooperation in East Asia and Southeast Asia

In response to the 1997/98 Asian financial crisis and the 2008/09 global financial crisis, several initiatives were launched in East Asia and Southeast Asia to enhance regional cooperation, given the impact from the contagion that these banking and currency crises had on the region as a whole. Initiatives centered on regional surveillance and information sharing, liquidity support, and bond market development.[42] Over the years, the Association of Southeast Asian Nations (ASEAN) and its East Asian partners, the PRC, Japan and the Republic of Korea—ASEAN+3—have cooperated on three broad areas of macroeconomic and financial policies: (i) economic review and policy dialogue, (ii) regional financial safety nets, and (iii) regional financial markets. These initiatives have been further strengthened in the aftermath of the 2008/09 global financial crisis.

Economic Review and Policy Dialogue

The most important information exchange on economic conditions and policies in East Asia and Southeast Asia is the ASEAN+3 Economic Review and Policy Dialogue.

There are many forums for regional economic information exchange, analysis, and policy dialogue. These include the ASEAN Surveillance Process for ASEAN finance ministers; the Economic Review and Policy Dialogue (ERPD) process for ASEAN+3 finance ministers and central bank governors; Executives' Meeting of East Asia Pacific Central Banks (EMEAP); South East Asian Central Banks (SEACEN) and South East Asia, New Zealand, and Australia (SEANZA) meetings for central bank officials; and transregional processes such as the Asia–Pacific Economic Cooperation (APEC) finance ministers' meeting and Asia–Europe Meeting (ASEM) of finance ministers.[43] The ASEAN Surveillance Process, established in October 1998, was intended to monitor macroeconomic and financial vulnerabilities and strengthen policy dialogue and policymaking capacities through peer review. In May 2000, ASEAN+3 finance ministers launched the ERPD Process.

The ERPD aims to prevent financial crises by detecting macroeconomic and financial vulnerabilities early, and implementing swift, remedial policy actions in the region; by promoting information sharing, policy dialogue, and coordination; as well as by collaborating on financial, monetary, and fiscal issues of common interest. The ERPD has played an integral role in helping formulate the regional liquidity support facility—the Chiang Mai Initiative (CMI)—and in forming a crisis prevention system to both reduce and better manage future crises in the region. It is critical that regional surveillance complements global surveillance conducted by the International Monetary Fund (IMF) and other multilateral organizations.[44]

Regional surveillance and information sharing through the ERPD is conducted in two stages. The first stage is at the ASEAN+3 finance and central bank deputies' meetings (AFDM+3), held twice a year; and the second stage is at the ministerial level (AFMM+3), usually held annually at the sideline of the Asian Development Bank's Annual Meeting. International organizations such as the IMF and ADB are invited to present the global and regional economic outlooks. While central banks have been involved in AFDM+3 for many years, they did not participate in the ministerial meetings until 2012. This year was the first time that central bank governors from ASEAN+3 participated in the ministerial meetings, upgrading it to become the ASEAN+3 Finance Ministers and Central Bank Governors' Meeting (AFMGM+3).

The ASEAN+3 Macroeconomic Research Office has strengthened the institutional mechanism for regional economic review and policy dialogue.

Creating an independent surveillance unit— the ASEAN+3 Macroeconomic Research Office (AMRO)—was an important step in institutionalizing the ERPD and a multilateralized version of the CMI, or CMIM. It was established by ASEAN+3 finance ministers in May 2009 and became operational in mid-2011. AMRO monitors and analyzes regional economies, seeks to detect risks early, and oversees the operations of the CMIM. As such, ASEAN+3 decided in 2011 to further strengthen AMRO's capabilities by increasing its human resources. AMRO is governed by an executive committee, which comprises ASEAN+3 finance ministry and central bank deputies, and is advised by an advisory panel of six prominent economic and policy experts. As of June 2012, AMRO

[42] For earlier discussions of macroeconomic and financial cooperation in East Asia and Southeast Asia, see, for example, ADB. 2008. *Emerging Asian regionalism: A partnership for shared prosperity.* Manila; and ADB. 2010. *Institutions for Regional Integration: Toward an Asian Economic Community.* Manila.

[43] See ADB. 2008. *Emerging Asian regionalism: A partnership for shared prosperity*. Manila. pp. 179-182 for a brief discussion of these mechanisms.

[44] ADB. 2009. Regional Surveillance for Economic Stability. *Asia Economic Monitor December 2009.* Manila.

has a staff of 20 and is led by Director Yoichi Nemoto of Japan, who succeeded its inaugural director, Benhua Wei of the PRC, in May 2012.[45] The director is assisted by three senior economists.

Regional Financial Safety Nets

The CMIM is the premier regional financial safety net for providing liquidity support to ASEAN+3 countries.

Countries with fundamentally sound economic policies can nevertheless find themselves caught up in episodes of global financial instability through no fault of their own. Beyond seeking to self-insure against financial contagion by accumulating large stocks of foreign exchange reserves, countries can also tap into various financial safety nets to obtain external liquidity support.

Financial safety nets that can mitigate the impacts from contagion include financing facilities at the IMF, regional financial arrangements such as those in Asia, Europe, and Latin America, and various bilateral swap lines between central banks. By making emergency financing available during periods of global and regional financial stress, these facilities can help member countries to mitigate crisis pressures and protect "innocent bystanders" from contagion-driven financial crises.

The original CMI strengthened long-standing ASEAN swap arrangements by expanding the network to include all ASEAN+3 members. Its purpose is to "provide sufficient and timely financial support to ensure financial stability" in East Asia and Southeast Asia, and to "supplement existing international facilities." Over the last decade or so, the CMI has undergone significant changes. The ceiling for CMI swap activation without an IMF program in place was increased from 10% to 20% in 2005. The size of the initiative has also grown over the years, increasing to $120 billion in 2009. In 2010, the CMI was multilateralized to become a collectively managed reserve-pooling arrangement (CMIM) governed by a single contract.

In May 2012, ASEAN+3 further strengthened the CMIM by improving its crisis resolution mechanism and introducing a crisis prevention facility.

The total size of the CMIM was doubled to $240 billion in 2012, while the IMF-delinked portion of the fund was increased again to 30% in 2012, with the possibility of a further increase to 40% in 2014 **(Table 21)**. The maturity and supporting period for the IMF-linked portion increased from 90 days to 1 year and from 2 years to 3 years, respectively; and those for the IMF-delinked portion increased from 90 days to 6 months and from 1 year to 2 years, respectively.[46] Moreover, the CMIM also introduced a crisis prevention facility called the CMIM Precautionary Line (CMIM-PL). Pre-qualifications and ex-post conditionality will be based on five criteria: (i) external position and market access, (ii) fiscal policy, (iii) monetary policy, (iv) financial sector soundness and supervision, and (v) data adequacy.

Looking ahead, strengthening the CMIM is urgently needed given the high risk of contagion-driven crisis. Raising the committed amount and reducing the portion of the IMF-link will strengthen the credibility of this regional financial safety net facility. For this to happen, stronger support from member countries are needed because the progress of regional cooperation of this type often collides with flagging political will. This is not to say that the region is in danger of an imminent crisis. But there is a risk that future crisis can be rooted *alas* in new vulnerabilities, transmitted through new channels which we may or may not be able to detect. Even in an economy with relatively robust macroeconomic and financial sector, domestic safety nets alone may not be adequate to deal with such vulnerabilities, especially when the contagion channels do not mirror past events.[47]

[45] ASEAN+3 Macroeconomic Research Office. http://www.amro-asia.org/

[46] ASEAN. 2012. *Joint Media Statement of the 15th ASEAN+3 Finance Ministers and Central Bank Governors' Meeting.* 3 May. http://www.aseansec.org/Joint%20Media%20Statement%20of%20the%2015th%20ASEAN+3%20Finance%20Ministers%20and%20Central%20Bank%20Governors'%20Meeting.pdf

[47] I. Azis. 2012. Asian Regional Financial Safety Nets? Don't Hold Your Breath. *Public Policy Review*. 8 (1).

Table 21: CMIM Contributions, Purchasing Multiple, Maximum Swap Amounts and Voting-Power Distribution

Countries		Financial Contribution ($ billion)		Share (%)		Purchasing Multiple	Maximum Swap Amount ($ billion)	Basic Votes	Votes Based on Contribution	Total Voting Power	
											%
Plus Three		**192.00**		**80.00**			**117.30**	**9.60**	**192.00**	**201.60**	**71.59**
PRC	PRC (excl. Hong Kong, China)	76.80	68.40	32.00	28.50	0.5	34.20	3.20	68.40	71.60	25.43
	Hong Kong, China		8.40		3.50	2.5	6.30	0.00	8.40	8.40	2.98
Japan		76.80		32.00		0.5	38.40	3.20	76.80	80.00	28.41
Republic of Korea		38.40		16.00		1	38.40	3.20	38.40	41.60	14.77
ASEAN		**48.00**		**20.00**			**126.20**	**32.00**	**48.000**	**80.00**	**28.41**
Indonesia		9.104		3.793		2.5	22.76	3.20	9.104	12.304	4.369
Thailand		9.104		3.793		2.5	22.76	3.20	9.104	12.304	4.369
Malaysia		9.104		3.793		2.5	22.76	3.20	9.104	12.304	4.369
Singapore		9.104		3.793		2.5	22.76	3.20	9.104	12.304	4.369
Philippines		9.104		3.793		2.5	22.76	3.20	9.104	12.304	4.369
Viet Nam		2.00		0.833		5	10.00	3.20	2.00	5.20	1.847
Cambodia		0.24		0.100		5	1.20	3.20	0.24	3.44	1.222
Myanmar		0.12		0.050		5	0.60	3.20	0.12	3.32	1.179
Brunei Darussalam		0.06		0.025		5	0.30	3.20	0.06	3.26	1.158
Lao PDR		0.06		0.025		5	0.30	3.20	0.06	3.26	1.158
Total		**240.00**		**100.00**			**243.50**	**41.60**	**240.00**	**281.60**	**100.00**

AMRO = ASEAN+3 Macroeconomic Research Office, ASEAN = Association of Southeast Asian Nations, PRC = People's Republic of China, CMIM = Chiang Mai Initiative Multilateralisation, Lao PDR = Lao People's Democratic Republic.
Note: CMIM funded amount is $240 billion with an International Monetary Fund-delinked portion of 30%.
Source: AMRO website. http://www.amro-asia.org/wp-content/uploads/2012/05/Fact-Sheet-at-AFMGM+3-in-Manila.pdf

Developing Regional Financial Markets

The double mismatch during the 1997/98 Asian financial crisis spurred efforts to develop regional financial markets.

Currency and maturity mismatches and heavy reliance on bank loans played an important role in the 1997/98 Asian financial crisis. Developing local currency bond markets can help reduce the probability of such double mismatch. It is also key to increasing the resilience of national financial systems to economic shocks and better channeling savings into productive investments in the region. Thus, developing local currency bond markets has become a priority of the region's policymakers. ASEAN+3's Asian Bond Markets Initiative (ABMI), launched in 2003, aims to promote domestic reforms that help expand the size of national and regional bond markets, attract regional and foreign investors, and strengthen bond market infrastructure. Asian Bond Fund (ABF), supported by EMEAP, promote the development of national and regional bond markets by directly creating bond funds. The first such fund, ABF1, was launched in 2003.

Since 2003, the ABMI has played an important role in promoting local currency bond markets, with more diversified issuers and types of bonds issued. Along with national (own-country) efforts the ABMI has contributed greatly to developing efficient and liquid bond markets in the region by directing local and regional savings toward local and regional investments. The ABF, which completed Phase 2 of the eight ABF2 single market funds in May 2011,[48] has provided low-cost and efficient products in the form of passively managed bond funds, and encouraged regulatory and tax reforms in support of bond market development. It has also introduced a set of transparent, replicable, and credible Asian bond indexes, which can serve as benchmarks for other fixed-income or derivative products. Helped by these regional initiatives, total local currency bonds outstanding in

[48]The PRC; Hong Kong, China; Indonesia; the Republic of Korea; Malaysia; the Philippines; Singapore; and Thailand.

East Asia and Southeast Asia (excluding Japan) increased by an annual average rate of 15.1% over a 5-year period to reach $5.7 trillion in 2011, although own-country investment remains far more dominant than regional investment .[49]

To produce tangible results and reinvigorate discussions over the ABMI, ASEAN+3 adopted a "New Roadmap+" for ABMI in May 2012.

The New Roadmap+ will be subject to periodic reviews to reprioritize existing items on its agenda and/or introduce new items. There are three objectives of the New Roadmap+: (i) producing tangible results; (ii) strengthening momentum for ABMI discussions; and (iii) meeting and adapting to changing global financial needs, including mitigation of volatility in capital flows. Nine priorities based on these three directions include: (i) launching guarantee programs under the Credit Guarantee and Investment Facility (CGIF); (ii) developing infrastructure-financing schemes (including a pilot project involving the Lao PDR and Thailand); (iii) fostering an investment-friendly environment for institutional investors and sharing ABMI expertise with them; (iv) enhancing ASEAN+3 Bond Market Forum (ABMF) activities (including the Common Bond Issuance Program); (v) facilitating the establishment of the Regional Settlement Intermediary (RSI); (vi) further developing government bond markets; (vii) enhancing financial access to consumers and small and medium-sized enterprises (SMEs); (viii) strengthening the foundation for a regional credit rating system; and (ix) raising financial awareness.

In May 2010, ASEAN+3 finance ministers announced the establishment of the CGIF as an ADB trust fund with initial capital of $700 million. ADB contributed $130 million as paid-in capital for the CGIF. It was designed to promote resilience of financial markets and avoid potential crisis disruptions by deepening local currency and regional bond markets. The main function of the CGIF is to provide credit enhancement to allow investment-grade issuers to issue local currency bonds in ASEAN+3 countries, making it easier for firms to have access to longer-maturity financing. The CGIF, which became fully operational in late 2011, could evolve into an investment facility in the future.[50]

ASEAN is intensifying efforts to build integrated financial markets, while the PRC, the Republic of Korea, and Japan are encouraging cross-border investment in each other's government bond markets and direct trading of local currencies.

ASEAN is in the process of creating an ASEAN Economic Community (AEC) to facilitate the free movement of goods, services, investment, skilled labor, and capital. The AEC roadmap for monetary and financial integration is broadly structured around three themes: (i) harmonizing regulations, market standards, and rules; (ii) developing market infrastructure and regionally focused products and intermediaries; and (iii) strengthening member countries' capacities. ASEAN is making progress toward these goals. At their 16th Meeting in Cambodia in April 2012, ASEAN finance ministers noted achievements in financial integration, and encouraged more cooperation on capital market development, financial service liberalization, and capital account liberalization.

In May 2012, the PRC, Japan, and the Republic of Korea agreed to encourage investment in each others' government bond markets, following an earlier agreement between the PRC and Japan in December 2011 to promote the use of local currencies in cross-border transactions and allow Japanese authorities to invest in PRC government bonds. Effective 1 June 2012, the PRC renminbi and Japanese yen could be traded directly in both countries' foreign exchange markets. This will not only help countries in the region diversify their foreign exchange reserves, but also help promote the use of local currencies in regional cross-border transactions, and thus facilitate the development of regional financial markets.

The PRC has stepped up measures to broaden regional use of its currency.

The PRC has been promoting the international use of its currency—particularly in trade settlement—over the past few years. Given the PRC's share in global and regional output, it is perhaps only natural for renminbi

[49]ADB. 2012. *Asia Bond Monitor April 2012.* Manila.

[50]The CGIF's core management has already been appointed and all staff positions are expected to be filled by the second half of 2012. The countries of CGIF's initial focus are Indonesia, Malaysia, the Philippines, Singapore, and Thailand, with the execution of the first guarantee deal targeted for the third quarter of 2012.

internationalization to begin through its use as a regional invoicing currency. The global financial crisis may have hastened the process. The renminbi's potential as eventual reserve currency could help the PRC shield its domestic economy from US dollar volatility. To date, the results have been profound and have far-reaching implications for both regional and global economic cooperation and integration.

In the first quarter of 2012, current account transactions settled in renminbi was 8.6% of the PRC's total current account transactions, well above the 5.7% in the first quarter of 2011. Since late 2008, the PRC has established 20 bilateral local currency swap agreements with countries within and outside Asia—totaling over CNY1.6 trillion, partly to facilitate use of the currency internationally. These currency swaps allow the PRC to receive renminbi instead of the US dollar for exports to those economies, thereby expanding its use as a trade settlement currency.

Internationalizing the renminbi should boost regional cooperation and integration, particularly in East and Southeast Asia.

The trading settlement mechanism will be backed by a complex financial infrastructure that provides a full range of financial services to execute transactions. The first such arrangement was set up between the People's Bank of China (PBOC) and the Hong Kong Monetary Authority (HKMA). In August 2010, HKMA allowed all authorized institutions to take part in the interbank bond market using renminbi through a settlement agent and after PBOC approval. Hong Kong, China; Singapore; and London all have some international trade settled in renminbi—with Hong Kong, China taking the lead. In early July 2012, the Singapore Exchange announced that it is ready to list, quote, trade, clear and settle securities denominated in renminbi. The direct trading between renminbi and yen fills an important gap in the regional currency market.

The growth of the offshore renminbi market in Hong Kong, China has been phenomenal. The market is unique as no country has attempted an offshore currency market while retaining tight capital controls. The rapid growth of renminbi deposits in Hong Kong, China and the issuance of renminbi-denominated bonds by regional companies is another indication of growing financial links between the PRC and the region. PRC authorities have allowed other countries to invest in PRC government bonds, such as those under the recent agreement between the PRC, Japan, and the Republic of Korea for local currency bond market development. Foreign direct investment in the PRC can also be settled in renminbi. Aside from reserve diversification, it adds impetus to Asia's still low investment in intraregional debt.

The PRC's large trade with other Asian economies and the increasing trend of Asian investors to invest in the PRC implies that both direct trade and financial integration will likely expand. With the increasing use of the currency in regional trade and investment, the PRC could play a bigger role in regional monetary and financial cooperation. As countries in the region develop deeper trade, investment, and financial ties with the PRC, they would have greater incentive to use the currency in transactions and as reserve holdings. Therefore, it is possible that the renminbi may emerge as a regional anchor currency in the not too distant future. This would help the region integrate their economies and cooperate on monetary and financial issues, as well as gradually open up PRC's domestic financial markets. However, for this to take root, liberalization is a necessary, but not sufficient condition. More open markets and stronger infrastructure has to be accompanied by harmonization of standards, improved legal norms, better creditor rights, establishing clearing and settlement systems, adopting global accounting and auditing best practices, among others.

Macroeconomic and Financial Cooperation in South Asia

Macroeconomic and financial cooperation is emerging in South Asia, with India offering swap arrangements to its neighbors.

Finance ministers from the South Asian Association for Regional Cooperation (SAARC) have been meeting regularly since 2006 to develop a roadmap for achieving a South Asian Economic Union (SAEU).[51] They discuss the economic outlook for SAARC economies and impact of the global economic situation on South Asia. The Fifth Meeting of SAARC Finance Ministers, held in Bangladesh 29–30 January 2012, reviewed progress in cooperation on financial matters under SAARC, and authorized a detailed study on a strategy to develop a regional surveillance mechanism in SAARC. To strengthen cooperation on international finance and monetary issues, SAARC member countries also set

[51] Afghanistan, Bangladesh, Bhutan, India, Republic of the Maldives, Nepal, Pakistan, and Sri Lanka.

up SAARCFINANCE in September 1998 as a regional network of the SAARC central bank governors and finance ministers and secretaries. SAARCFINANCE aims to promote cooperation among its members through close consultation and coordination of macroeconomic policies, enhancement of institutional capacity by way of staff training and exchange programs, and monitoring of international financial and monetary systems.

To provide short-term liquidity support and strengthen regional economic and financial ties, the Reserve Bank of India offered to finance a SAARC swap arrangement of $2 billion on 26 May. The SAARC swap facility was established to supplement international financing arrangements. The swap line will be offered in US dollars, euros, or Indian rupees against the domestic currency or domestic-currency-denominated government securities of the requesting country. The SAARC swap arrangement will have a total size of $2 billion, with India contributing the entire fund. The swap amounts available are broadly based on 2 months' import cover, subject to a minimum of $100 million and a maximum of $400 million per country. The swap arrangement is a major step toward greater macroeconomic and financial cooperation in South Asia.