

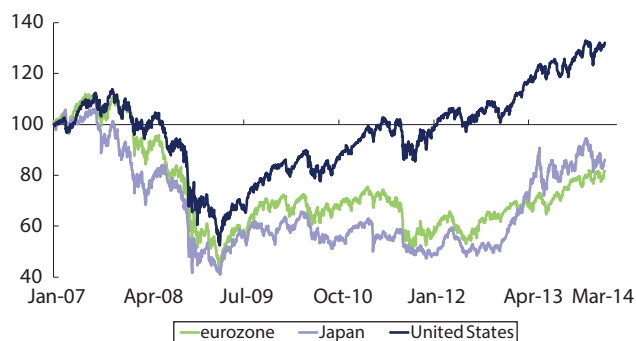
REGIONAL ECONOMIC UPDATE

External Economic Environment

The external environment for developing Asia should improve through 2015 with the US, Japan, and eurozone all showing signs economic recovery is finally gaining traction.

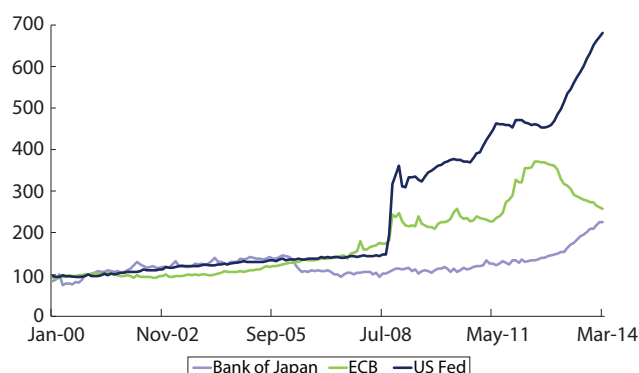
Financial markets in G3 economies remain relatively bullish as the United States (US) recovery matures, investor sentiment improves and financial markets pick up across advanced economies—partly supported by expanding central bank assets in the US and Japan (**Figures 1, 2**).¹ This allows the US Federal Reserve (US Fed) to continue tapering its quantitative easing (QE) program despite market sensitivity to any change in US Fed policy announcements. As increased demand sparked a rise in global trade, the slowdown in manufacturing production reversed (**Figure 3**). On balance, national policies continue to support growth. The US legislature passed a Bipartisan Budget Act (BBA) that, while not providing economic stimulus, boosted confidence merely by the fact it passed. Japan's Diet approved a mini-fiscal stimulus program. And economies in the European Union (EU) began to ease fiscal austerity measures. Consumer confidence indexes in the US and Japan rose to their highest levels since the 2008/09 global financial crisis (**Figure 4**). Unemployment rates in the two economies continue to drop.

Figure 1: Stock Price Indexes—G3 (1 Jan 2007=100)



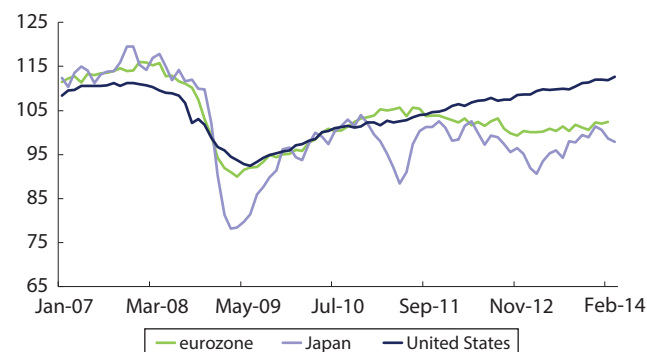
Note: Daily stock price indexes refer to MSCI EMU Index for eurozone, Nikkei 225 Index for Japan, and Dow Jones Industrial Average for the United States. Data as of 31 Mar 2014.
Source: ADB calculations using data from Bloomberg.

Figure 2: Central Bank Assets—G3 (2000=100)



ECB = European Central Bank, US Fed = United States Federal Reserve.
Source: ADB calculations using data from Bank of Japan, European Central Bank, and US Fed.

Figure 3: Industrial Production Indexes—G3 (seasonally adjusted, 2010=100)



Note: Data for Japan based on 3-month moving average. Data for eurozone until Jan 2014.
Source: ADB calculations using data from CEIC.

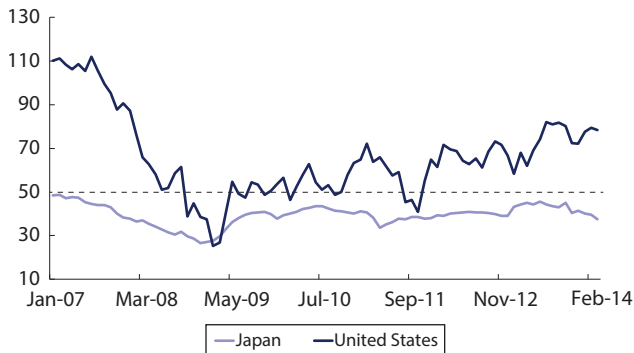
Overall, US economic growth bounced back strongly as 2013 progressed; but policy mistakes, market sensitivity to poorly-communicated US Fed announcements, and mid-term election debates over fiscal policy could be key risks.

After a weak first half—which ultimately dragged full year growth to 1.9% in 2013 from 2.8% in 2012—the US economy appears to be hitting its stride with growth reaching 4.1% and 2.6% in the last 2 quarters.²

¹G3 economies refer to the eurozone, Japan, and the United States.

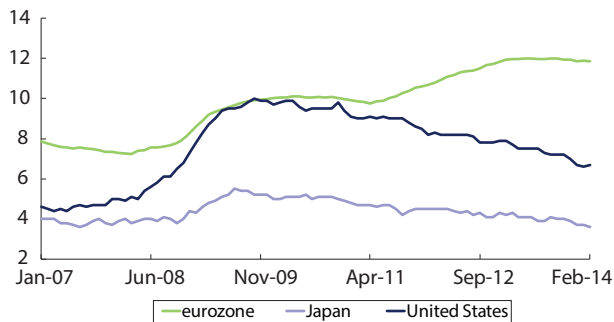
²quarter-on-quarter seasonally-adjusted annualized rate (q-o-q, saar).

Figure 4: Consumer Confidence Indexes—Japan and United States



Note: Japan index from Economic and Social Research Institute; United States index from The Conference Board. A reading below 50 suggests consumer pessimism.
Source: ADB calculations using data from CEIC and national sources.

Figure 5: Unemployment Rate—G3
(seasonally adjusted, % of labor force)



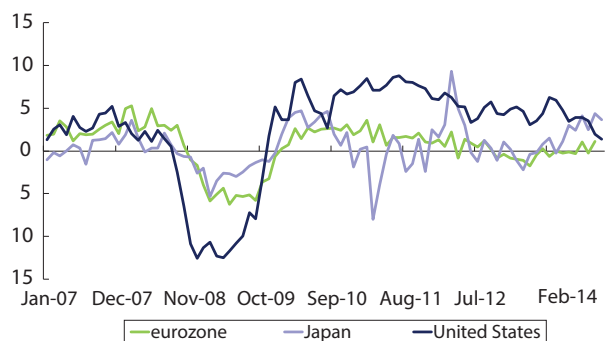
Source: US Bureau of Labor Statistics, European Central Bank, and CEIC.

A steady rise in personal consumption contributed, partly offsetting the impact of the 2-week October government shutdown on public spending. Net exports surged in the fourth quarter as the shale and gas revolution contributed to rising overseas demand. The late December passage of the BBA improved growth prospects, leaving the fiscal political debate to the November 2014 mid-term elections. Together with rising home sales, corporate balance sheets improved and employment opportunities rose—although job gains slowed slightly in December (**Figure 5**). Citing the “growing underlying strength” in the economy, the US Fed has already trimmed its asset purchases by a total of \$30 billion since January to \$55 billion in March. In turn, economic growth is expected to accelerate to 2.8% in 2014 and 3.0% in 2015.

After 18 months in recession, the eurozone is showing limited economic recovery, hampered by continued deleveraging and uncertainty from unfinished banking sector reform.

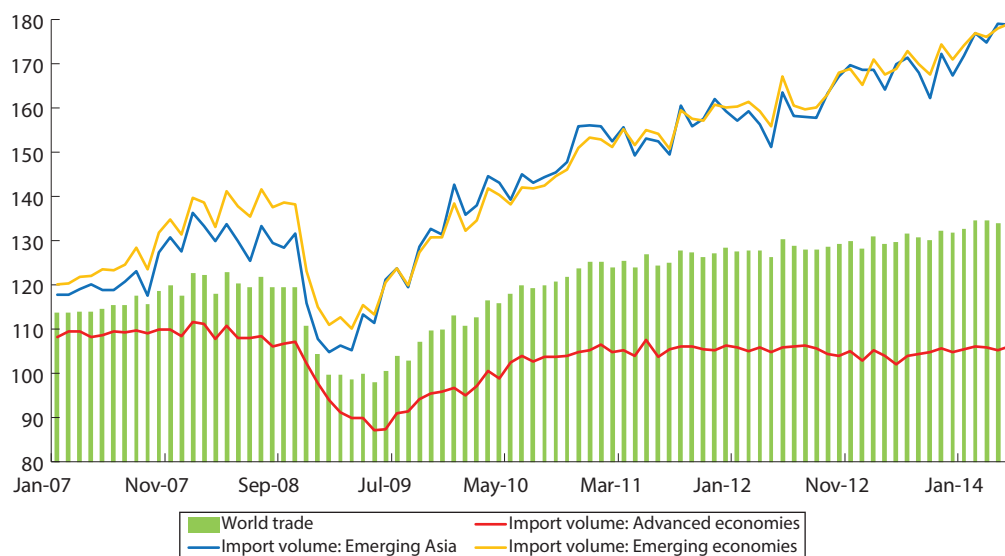
The eurozone economy had its third consecutive quarter of positive growth in the fourth quarter of 2013 (1.1% q-o-q, saar), indicating firmer recovery emerging after 6 quarters of recession. Both external and domestic demand improved, while higher government spending also contributed. Economic growth in the region is now more evenly spread between Europe’s core and periphery economies. Modest growth continued in Germany, France, and Portugal; gross domestic product (GDP) contraction slowed in Greece; and Italy and Spain appear to have edged out of recession. Consumer confidence has risen steadily from October 2012 to March this year. Manufacturing recovered, partly on market optimism that the European Central Bank (ECB) will act as stability anchor for the region. Nonetheless, economic conditions remain fragile as high private sector debt weighs down domestic demand and nonperforming loans rise, particularly in periphery economies. This adds to financial strain on the banking sector. Negligible retail sales growth over the past 15 months and still high unemployment (11.9% in February) weakens prospects (**Figure 6**). GDP growth is expected to rise to 1.4% in 2015 from a 2014 forecast of 1.0%.

Figure 6: Retail Sales Growth—G3
(seasonally adjusted, y-o-y, %)



Note: Data for eurozone until Jan 2014.
Source: ADB calculations using data from CEIC.

Figure 7: World Trade and Import Volume (seasonally adjusted, 2005=100)



Source: *World Trade Monitor*, CPB Netherlands Bureau for Economic Policy Analysis.

While Japan’s near-term economic conditions remain positive, economic growth will likely consolidate until markets perceive the government’s announced structural reform policies are taking hold and having impact.

In the year since the government launched its three-pronged economic rejuvenation program (popularly known as “Abenomics”), the yen weakened over 19%, exports grew an average 9.7%, deflation was broken, and Japan’s recession ended. The economy grew 1.5% in 2013—marginally higher than 2012 growth—as demand accelerated in anticipation of the 3% April 2014 rise in sales tax.³ Consumption and public investments remain the primary contributors to growth. Several leading indicators have reached historic highs. In January, the manufacturing purchasing managers’ index hit its highest level in nearly 8 years. Inflation reached a 5-year high in December. In March this year, consumer confidence returned to levels unseen since the 2008/09 global financial crisis. However, while short-term economic conditions remain positive, economic growth may initially slow from the combined effects of the April tax hike and slowing growth in sectors where deep-seated structural reforms are being implemented. Without these reforms, the fiscal and monetary

components of the government’s comprehensive program will likely fail. Japan’s GDP is forecast to rise 1.3% in 2014 and 2015.

Growth in global trade should continue strengthening, led by rising demand from both advanced and emerging economies (**Figure 7**). World merchandise trade volume has been at an all-time high since October, nearly 10% above its early 2008 peak. Trade volumes have been growing faster in emerging economies for both exports and imports.

Commodity prices eased in step with decelerating growth in the People’s Republic of China (PRC) and improving oil supplies. The S&P Goldman Sachs Commodity Index and other key benchmark indexes fell sharply in 2013, led by precious metals and agricultural prices. Gold futures price was down 28% in its worst year since 1981, while corn had its worst year since 1970. Much of the price drop was due to improved global supply, at least for agricultural commodities and industrial metals like copper and aluminum.

³The Japanese consumption tax is a value added tax. In general, a company pays consumption taxes on domestic purchases or importation of goods and/or services (input consumption tax), and collects consumption tax from customers on a sale (output consumption tax).

Regional Economic Outlook

Even as growth in some of the region's largest economies moderates, developing Asia should see a marginal increase in growth over the next 2 years as improved demand from advanced economies spurs exports and several economies boost investment.

Some of the region's largest economies are slowing from the combination of reduced stimulus and feeble growth in domestic demand (**Table 1**). The more open, trade-dependent economies are benefiting from robust global trade. Growth in the PRC has stabilized at a lower, more sustainable level as authorities work to contain excess credit and investment growth while enhancing market-based resource allocation and competition. Economic growth in East, Southeast, and Central Asia will be flat, though some economies may moderate on slower investment and consumption growth. In contrast, economic growth in India is accelerating on stronger net exports and investment, while growth in the Pacific

will strengthen as Papua New Guinea (PNG), its largest economy, begins liquefied natural gas exports in late 2014 and 2015. Overall, economic growth in developing Asia will rise slightly to 6.2% in 2014 and 6.4% in 2015.

Growth in the PRC will continue to ease slightly through 2015 as authorities work to establish more sustainable economic expansion; this will likely affect other economies in the region through trade and finance.

The PRC economy grew 7.7% in 2013, the same as in 2012. The government is working to slow investment-driven growth while increasing consumption. Yet investments still accounted for 54.5% of 2013 GDP growth, above the 49% contribution from consumption; while net exports subtracted 3.5% (**Figure 8**). Structural reforms proposed during the "Third Plenum" in November 2013 will likely have a positive impact on private consumption and private investment. However, its impact may be limited by measures to curb local government debt—which has reached nearly \$3 trillion

Table 1: Regional GDP Growth¹ (y-o-y, %)

	2009	2010	2011	2012	2013 ⁸	Forecast ⁹	
						2014	2015
Developing Asia²	6.1	9.2	7.4	6.1	6.1	6.2	6.4
Central Asia³	3.2	6.8	6.8	5.6	6.5	6.5	6.5
East Asia⁴	6.8	9.8	8.2	6.6	6.7	6.7	6.7
People's Republic of China	9.2	10.4	9.3	7.7	7.7	7.5	7.4
South Asia⁵	7.6	8.4	6.4	4.7	4.8	5.3	5.8
India	8.6	9.3	6.7	4.5	4.9	5.5	6.0
Southeast Asia⁶	1.4	8.0	4.8	5.7	5.0	5.0	5.4
The Pacific⁷	4.3	6.1	8.9	6.1	4.8	5.4	13.3
G3							
eurozone	4.4	2.0	1.6	-0.7	-0.4	1.0	1.4
Japan	-5.5	4.7	-0.5	1.4	1.5	1.3	1.3
United States	-2.8	2.5	1.8	2.8	1.9	2.8	3.0

¹Aggregates weighted by gross national income levels (Atlas method, current \$) from *World Development Indicators*, World Bank.

²Refers to the 45 developing members of the ADB.

³Includes Armenia, Azerbaijan, Georgia, Kazakhstan, the Kyrgyz Republic, Tajikistan, Turkmenistan, and Uzbekistan.

⁴Includes the People's Republic of China; Hong Kong, China; the Republic of Korea; Mongolia; and Taipei, China.

⁵Includes Afghanistan, Bangladesh, Bhutan, India, the Maldives, Nepal, Pakistan, and Sri Lanka. Data for Bangladesh, India, and Pakistan are fiscal year. For India, fiscal year is from April of the specified year through the following March. For Bangladesh and Pakistan, fiscal year is from July the previous year through June of the specified year.

⁶Includes Brunei Darussalam, Cambodia, Indonesia, the Lao People's Democratic Republic, Malaysia, the Philippines, Singapore, Thailand, and Viet Nam. Excludes Myanmar as weights unavailable.

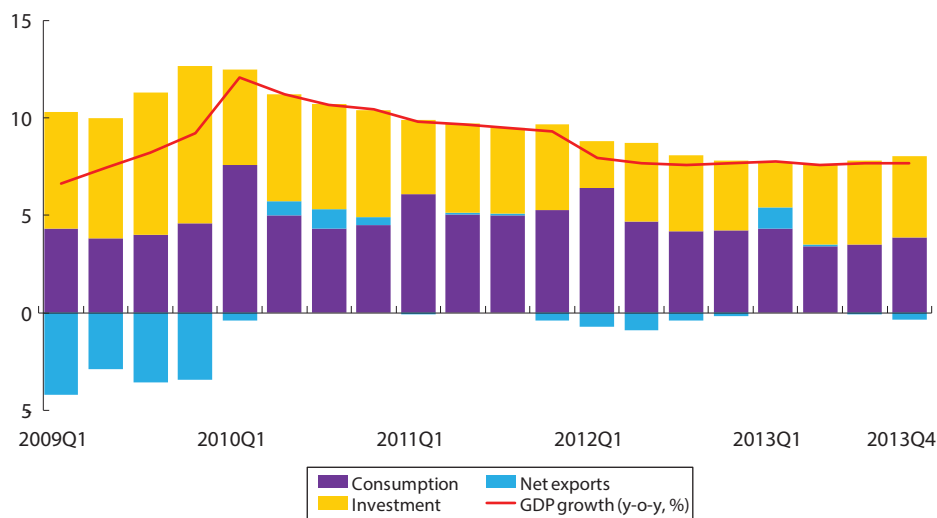
⁷Includes the Cook Islands, Fiji, Kiribati, the Marshall Islands, the Federated States of Micronesia, Palau, Papua New Guinea, Samoa, Solomon Islands, Timor-Leste, Tonga, Tuvalu, and Vanuatu. Excludes Nauru as weights unavailable.

⁸ADB estimates except for the People's Republic of China, India, eurozone, Japan, and the United States which are actual values.

⁹ADB forecasts from *Asian Development Outlook 2014*.

Source: ADB calculations using data from various issues of the *Asian Development Outlook*, ADB; CEIC; and national sources.

Figure 8: Contributions to GDP Growth—People’s Republic of China (percentage points, year to date)



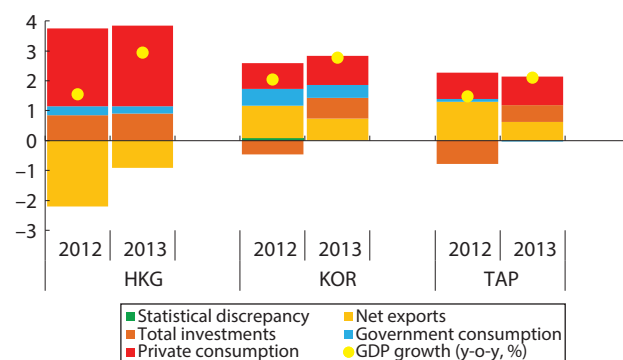
Source: Asian Development Outlook 2014, ADB.

as of June 2013 (or some 35% of GDP)—and shadow banking. The central bank has hinted at deleveraging to rein in credit growth, while public investments are expected to slow somewhat in a move to curtail local government borrowing. The turbulence in the PRC interbank market in June 2013 also left some uncertainty on whether the government can control credit without excessively slowing economic growth. GDP growth is forecast to ease to 7.5% in 2014 and 7.4% in 2015.

East Asian economies are forecast to post flat growth as improvements in net exports and domestic demand in newly industrialized economies are tempered by moderating growth in the PRC.

Improvement of net exports in Hong Kong, China and investments in the Republic of Korea and Taipei,China have supported growth recovery in the highly open East Asian economies (Figure 9). GDP growth in Hong Kong, China almost doubled in 2013, benefitting from an increase in trade and robust private consumption, along with improved financial market activity. The next 2 years should see GDP growth improve further to 3.5% and 3.6%. In the Republic of Korea, the surprisingly strong 2013 GDP growth was driven by robust domestic demand spurred by monetary and fiscal stimulus. Growth will rise further to 3.7% and 3.8% in the next 2 years as the global outlook favors exports. However, yen depreciation could dampen the growth outlook, as exports lose competitiveness against Japan, particularly in the many markets they share. In Taipei,China, a strong fourth quarter pushed 2013 GDP growth up to 2.1%

Figure 9: Contributions to GDP Growth—Hong Kong, China; Republic of Korea; and Taipei,China (percentage points)



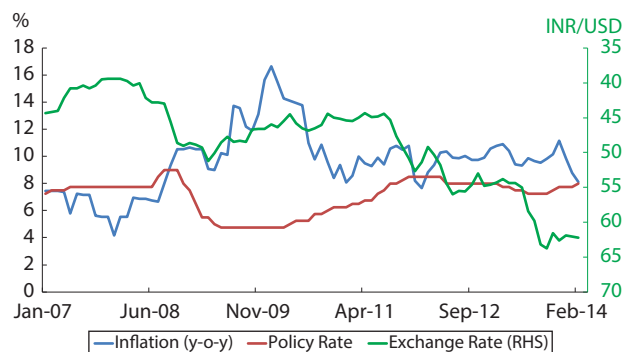
HKG = Hong Kong, China; KOR = Republic of Korea; TAP = Taipei,China. Source: Asian Development Outlook 2014, ADB.

from 1.5% in 2012 as exports rebounded on strong demand from the US and EU; although slowing growth in the PRC tempered some of the gains. GDP growth in Taipei,China is forecast to increase 2.7% in 2014 and 3.2% in 2015. Overall, GDP growth in East Asia, including the PRC, is expected to remain steady at 6.7% for both 2014 and 2015.

Economic growth in India is forecast to recover after a good monsoon helped agriculture grow strongly; however, weaknesses from rising inflation, tight monetary policy, and fiscal drag remain to cast a shadow on growth.

As borrowing costs rose, GDP growth eased slightly to 4.7% in the third quarter of fiscal year (FY) 2013

Figure 10: Inflation, Policy Rate, and Exchange Rate—India



INR/USD = Indian rupee per dollar, RHS = right-hand scale.
 Note: Inflation is based on year-on-year growth. Policy rate refers to repurchase rate.
 Source: CEIC.

(October-December) from 4.8% in the second quarter. However, a good monsoon in 2013 helped food grain production rise 2.4% in FY2013. Growth is expected to rise through 2015 as measures to revive foreign direct investment (FDI) and expedite the approval of stalled infrastructure projects begin to bear fruit. Government actions to address structural impediments to industry and investment will also help as domestic consumption will likely rebound from expected price easing from improved food grains supply. Overall growth for FY2013 (ending in March 2014) is forecast to rise to 4.9% from 4.5% in FY2012, although this remains below the 8.0% average growth from 2009 to 2011. Despite improving growth prospects, several key challenges must be overcome. Since the May 2013 announcement of possible early QE tapering in the US, the rupee depreciated about 10%, which also contributed to a higher 9.9% inflation rate in December (Figure 10). In response, the Reserve Bank of India hiked its policy rate 25 basis points to 8.0% since January 2013. Last year, the government also extended its food-subsidy program—offering rice, wheat, and other food grains at a fraction of market prices to the poor. While expected to soften the inflationary impact on these vulnerable segments, the subsidies have exacerbated the budget deficit. Several important reforms remain to be passed—and they will likely continue to face delays until after the upcoming parliamentary elections in May.

Growth momentum in Pakistan and Bangladesh will slow while other South Asian economies will see a modest rise.

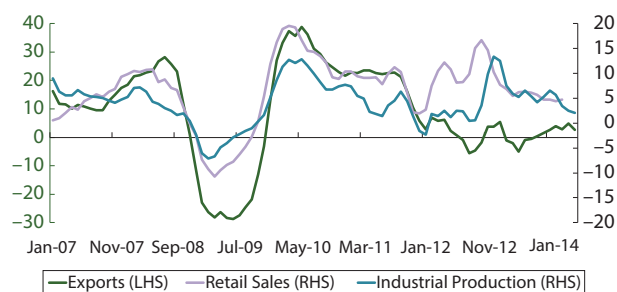
The financial support facilities provided by the International Monetary Fund (IMF) and US government

to Pakistan—and subsequent corrective measures undertaken by the State Bank of Pakistan—calmed restive markets and helped restore stability to the Pakistan rupee. However, foreign exchange reserves remain thin, continuing to pressure the balance of payments over the short term. These vulnerabilities and high inflation will ease FY2014 (ending in June 2014) growth to 3.4% from 3.6% in FY2013. Conditions should improve in FY2015 as vital government reforms begin to gain traction. Bangladesh should see economic growth dip to 5.6% in FY2014 (ending in June) from 6.0% growth in FY2013 on weaker exports, declining overseas worker remittances, and the impact from political events that led to parliamentary elections in January. Nonetheless, with economic fundamentals still sturdy, growth should accelerate again in FY2015. Elsewhere in the region, Sri Lanka’s economy is benefiting from vibrant domestic demand. Led by tourism-fuelled services and rapidly expanding mining and construction, Sri Lanka was estimated to have grown 7.3% in 2013 and is projected to grow 7.5% in 2014 and 2015. Afghanistan, Bhutan, the Maldives, and Nepal are also expecting modest upticks in economic growth in 2014 and 2015 with macroeconomic risks largely at bay and inflation remaining manageable. As a group, South Asia is forecast to grow 5.3% in 2014 and 5.8% in 2015.

Together, Southeast Asian economies will see growth flatten, with some economies slowing due to weaker domestic demand arising from idiosyncratic domestic shocks.

The region’s growth moderated to 5.0% in 2013 from 5.7% in 2012 due to weaker domestic demand in some of the largest economies. Growth is expected to remain steady in 2014 before bouncing back in 2015 due to a recovery in exports and investments. In Thailand, private consumption and investment could slow further in response to the continuing political turmoil. Indonesia’s monetary tightening and large current account deficit—mainly due to falling non-oil exports and a ban on mineral exports—could damage the growth outlook even as election spending could spur consumption. In the Philippines, after 2 years of strong growth, GDP growth is expected to slow, while potential power shortages and rising power prices could also tame growth and feed inflation—averaging around 4% since December 2013. Singapore’s GDP growth is expected to slow somewhat due to ongoing domestic economic restructuring to raise labor productivity, but a recovery in exports will push growth in 2015. Meanwhile, Malaysia’s fiscal consolidation may curb domestic demand, even as higher export earnings help GDP growth stay

Figure 11: Merchandise Export, Retail Sales, and Industrial Production Growth—Southeast Asia (y-o-y, %)



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

Note: 3-month moving average. Export and industrial production data cover Indonesia, Malaysia, the Philippines, Singapore, Thailand, and Viet Nam. Retail sales data cover the Philippines, Singapore, Thailand, and Viet Nam. Retail sales data until Nov 2013.

Source: ADB calculations using data from CEIC.

near 5% in 2014 and 2015. Leading indicators point to continued softening across Southeast Asia, with industrial production growth declining and exports and retail sales growing modestly in recent months (Figure 11). Thus, Southeast Asia's GDP growth is expected to stay flat at 5.0% in 2014, before rising to 5.4% in 2015. Growth in the five largest economies (Indonesia, Malaysia, the Philippines, Singapore, and Thailand) is forecast to remain flat at 5.2% in 2014, rising to 5.6% in 2015.

The economies of Central Asia are recovering gradually, led by stronger GDP growth in Kazakhstan and Azerbaijan.

Kazakhstan's improved outlook is mainly due to strong growth in services and moderate growth in industry, construction, and agriculture. While Azerbaijan's oil sector is just emerging from recession, public spending—especially infrastructure—contributed to higher growth in non-oil sectors and helped push GDP growth to 5.8% in 2013 from 2.2% in 2012. In contrast, the economic slowdown in the Russian Federation continues to drag growth in Armenia, while falling government spending dampened Georgia's GDP growth. In aggregate, growth in Central Asia is forecast to remain steady at 6.5% in 2014 and 2015.

Economic growth in the Pacific will strengthen, led by its two largest economies, PNG and Timor-Leste.

Growth across Pacific developing member countries (Pacific DMCs) should accelerate in 2014 and 2015, driven mainly by PNG, which carries a 52% weight in the regional

average. Growth in the Pacific DMCs should rise from 4.8% in 2013 to 5.4% in 2014 and to 13.3% in 2015—a major boost as PNG begins liquefied natural gas (LNG) exports late this year, accelerating in 2015 on its first full year of LNG exports. Growth in PNG and Timor-Leste, the subregion's second largest economy, will also depend on the effectiveness of expansionary government expenditures. Most economies are expected to grow stronger in 2014, mainly driven by fiscal stimulus tied to large infrastructure projects. Reconstruction and rehabilitation should fuel growth in Nauru, Tonga, and Samoa. Getting delayed infrastructure projects off the ground in Kiribati, the Marshall Islands, Tuvalu, and Vanuatu should raise 2014 growth forecasts in these economies. Fiji's growth is set to slow in 2014 but will pick up in 2015. If Fiji's September elections proceed without any major incident, it should improve prospects for increased FDI—an upside risk to the growth forecast.

Risks to the Outlook and Policy Issues

There are three main downside risks to the outlook, none of which are new and all have been on policymakers' radar for some time: (i) an economic shock or reversal in any G3 economy could derail the nascent global recovery; (ii) the PRC economy moderates too quickly, affecting the rest of developing Asia; and (iii) volatile capital flows affect financial conditions across the region.

A jolt to the US or eurozone economy could be triggered by a policy misstep in the US (yet another political impasse, for example), renewed financial stress in Europe (banks or sovereign debt), or cross-border political tensions (economic sanctions). The pace of QE tapering and its impact on global interest rates could shake markets once again—even if the net effects of a gradual QE exit remain positive. In Europe, financial fragmentation, unfinished banking reform, and high levels of public and corporate debt could derail confidence and reignite a crisis. Heightened political tensions over Ukraine, for example, could also stir markets globally. In Japan, market skepticism over the success of deep-seated reforms needed to back the fiscal and monetary stimulus already undertaken could fail to reinvigorate the economy. A slowdown in Japan could affect developing Asia through trade and financial channels. Economies with strong trade links with Japan include Taipei, China; Indonesia; Thailand;

the Philippines; Malaysia; and Viet Nam. Bank lending from Japan could also drop—as of end-September 2013, Japan's outstanding loans to Asia reached \$391.8 billion. FDI outflows from Japan could also slow—in 2012 alone, Japanese firms invested \$235.6 billion in the region.

If the PRC economy moderates too quickly, the rest of developing Asia will be affected, especially those with strong trade links, such as Hong Kong, China; Indonesia; the Republic of Korea; Myanmar; Thailand; and Viet Nam. There could also be direct and indirect effects through the financial channel. The region's equity markets and currencies could weaken as investor confidence falls with slower growth in the PRC.

With QE tapering underway—and orderly for now—market volatility has subsided, although it remains highly sensitive to short-term market sentiment (**Box 1**). Also, the continued US and eurozone recovery is boosting the outlook for Asia's export-oriented economies. And with global equity indexes up since mid-February, there is high probability that potential asset bubbles and financial vulnerabilities are again on the rise. Thus, it is likely markets in the region will remain vulnerable to disruptive events—whether global, regional, or national.

Box 1: How Tapering Quantitative Easing Affected Selected Asian Economies

When central bank policy rates and interbank rates are zero or near zero, one unconventional monetary policy that can stimulate an economy is quantitative easing (QE). In essence, massive buying of long-term securities pumps new liquidity into the financial system. It also reduces expectations of rising longer-term interest rates, thereby stimulating more loans, investments, and consumption.

The US Federal Reserve (US Fed) has been using QE—buying of mortgage-backed securities (MBS), long-term government securities, and other financial assets—to ease the impact of the 2008/09 global financial crisis and stimulate US economic recovery. QE was done in three stages: QE1, which started end-November 2008, helped stabilize the US economy in the wake of the Lehman Brothers collapse; QE2, which ran from November 2010 through June 2011, was in response to a weak US recovery compounded by the eurozone debt crisis; and QE3, which started in September 2012 with bond purchases eventually reaching \$85 billion per month. Combined, QE expanded the US Fed's balance sheet from \$900 billion before Lehman Brothers collapsed to over \$4 trillion by end-2013. Most believe the three QE programs helped increase portfolio flows and currency appreciation in emerging markets. These large capital inflows triggered fears over possible asset bubbles forming in housing and credit markets.

By early 2013—as the eurozone debt crisis eased, the gradual US recovery strengthened, and the US unemployment rate dropped (see Figure 5)—rumors began that the massive buying of new US bonds by the Fed might slow beginning the second quarter of 2013. On 22 May 2013, then-US Fed Chairman Ben Bernanke hinted at the possibility of an early QE exit—probably starting in September with interest rates rising afterward. This instantly spooked markets. However, when September arrived the US Fed decided to delay tapering due to weak economic data and the fiscal impasse in the US Congress. It took until 18 December 2013 for the US Fed to announce its initial

\$10 billion reduction in purchases, to begin in January 2014. Again, on 29 January, it announced a second \$10 billion reduction from February, with a third announced in March. How did QE tapering affect the region's financial markets?

Average daily changes in market indexes were calculated covering the periods of “tapering fears” (19 May 2013 to 18 September 2013), “tapering postponement” (19 September 2013 to 18 December 2013), and the tapering period beginning 19 December 2013 (**Box figure 1**). The three asset markets (equity, currency, and sovereign bonds) in several economies performed better during the post-18 December 2013 tapering period than the two earlier periods, reinforcing the belief that tapering fears were largely unfounded and led to market overreaction in the periods before actual tapering began.

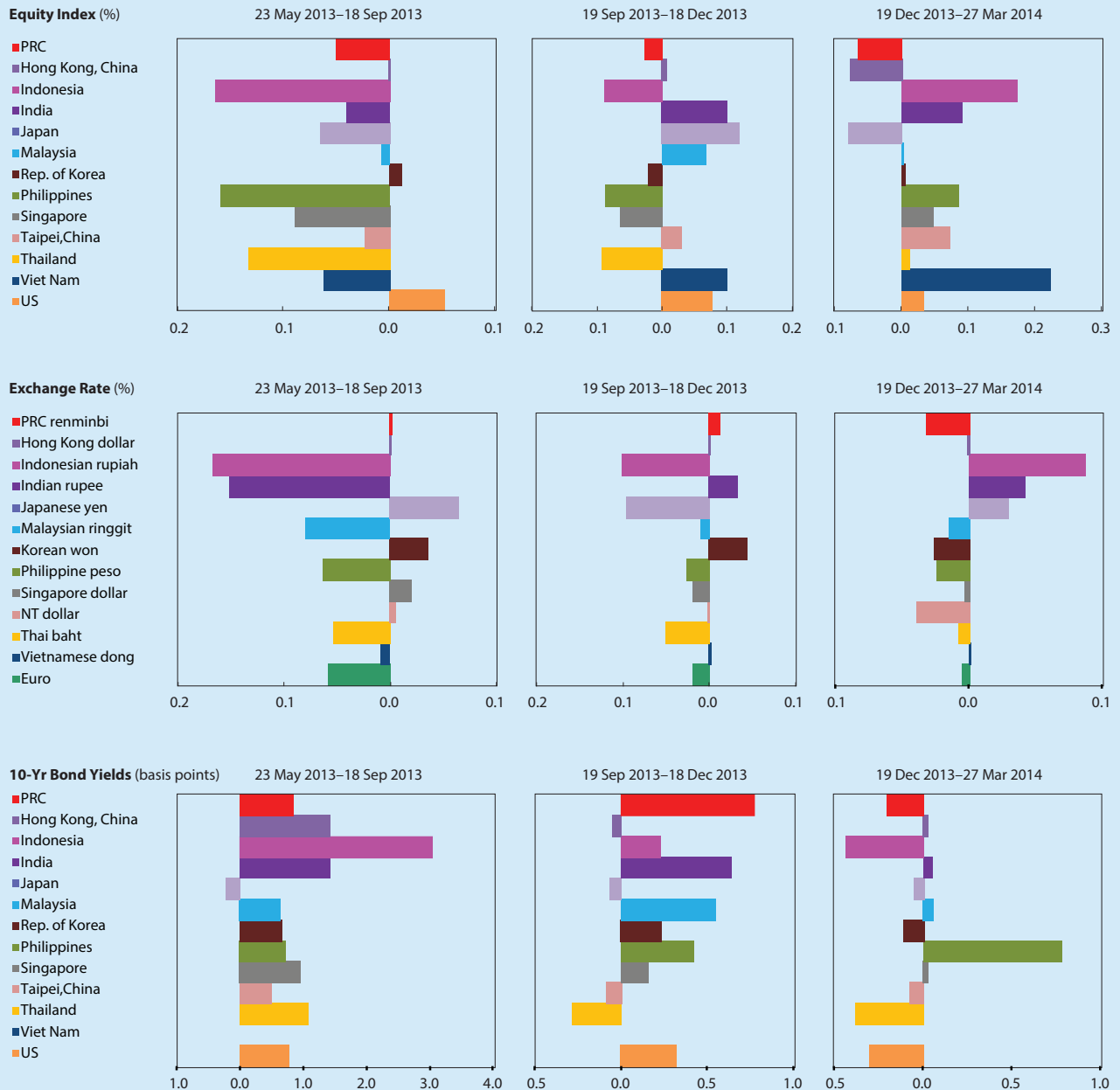
An expectations-driven panel regression was done to understand the effects of QE tapering on (i) the growth of the nominal exchange rate (ER) and nominal effective exchange rate (NEER), (ii) the growth of the S&P Investable Funds Total Return (S&P), and (iii) the change in 10-year country bond yields (**Box table**).¹ Five emerging Asian markets were chosen—India, Indonesia, Malaysia, the Philippines and Thailand—because they were heavily affected by QE and news or decisions concerning QE tapering. The simple model used is based on Robin Koepke's (2013) paper written for the International Institute of Finance (IIF).² The key explanatory variable representing QE tapering is the expected US Fed policy rate reflected in the US Federal Fund Futures (FFF)

¹The S&P Investable Funds is a composite price index per country made up mostly of equities open to foreign investors.

²R. Koepke. 2013. Quantifying the Fed's Impact on Capital Flows to EMs. *IIF Research Note*. Washington D.C.: The Institute of International Finance.

Box 1 continued

1: Asian Financial Markets—Average Day-on-Day Changes on US QE Tapering News



PRC = People's Republic of China, QE = quantitative easing, US = United States.

Note: 22 May—US Federal Reserve (US Fed) first QE tapering announcement; 18 Sep—Postponement of US Fed QE tapering; 18 Dec—US Fed begins QE tapering. Equity indexes used are Shanghai Stock Exchange Composite Index for the PRC; Hang Seng Index for Hong Kong, China; Jakarta Composite Index for Indonesia; Bombay Stock Exchange 100 for India; Nikkei 225 for Japan; Kuala Lumpur Composite Index for Malaysia; Korea Stock Exchange KOSPI Index for the Republic of Korea; Philippine Stock Exchange Index for the Philippines; Strait Times Index for Singapore; TWSE is the stock exchange index for Taipei, China; Stock Exchange of Thailand Index for Thailand; Viet Nam Ho Chi Minh Stock Index for Viet Nam; and S&P 500 for US.

Source: ADB calculations using data from Bloomberg and CEIC.

Panel Data Regression Using Five Asian Economies

Variables	PCER _t	PCNEER _t	PCS&P _t	PCBondY _t	
DepVar _{t-1}	0.35***	0.37***	-0.12**	-0.09	0.01
ΔExp_FFF _t	-1.93***	-1.02***	-3.52**	-1.82	38.14***
Risk _t	-7.38***	-4.64***	-27.61***	-25.03***	36.09**
ΔExp_FFF _t *taper1	-1.16	-3.68***		-14.87***	
IPgrowth_PRC _{t-1}	0.05	0.06*	0.26*	0.27*	-1.12
Indonesia	0.01	0.01	0.72	0.71	-4.48
Malaysia	0.43	0.42*	1.3	1.26	-2.49
Philippines	0.41	0.41*	2.10*	2.04*	-10.49*
Thailand	0.38	0.41	1.85	1.8	-2.79
Constant	-1.25***	-1.22***	-4.01**	-4.00**	20.40*
Adj R-Square	0.38	0.33	0.23	0.25	0.09
F-test	***	***	***	***	***

***significant at 1%, **significant at 5%, *significant at 10%.

Notes:

1. Period from Jan 2010 to Dec 2013.
2. PCER_t is the percentage change in the nominal exchange rate from month t-1 to month t. A positive change means appreciation.
3. PCNEER_t is the percentage change in the nominal effective exchange rate from month t-1 to month t. A positive change means appreciation.
4. While the coefficient estimates for the lag of PCER and PCNEER are positive, they are less than one and could reflect persistent effects of exchange rate movements in the past; particularly since the lag is just 1 month.
5. PCS&P_t is the percentage change in the S&P Investable Funds Total Return, which is mainly a composite price index for equities that are open to foreign investors (from month t-1 to month t) in each economy.
6. PCBondY_t is the percentage change in the country bond yield from month t-1 to month t.
7. DepVar_{t-1} is the value of the dependent variable lagged one period (month).
8. ΔExp_FFF_t is the change from month t-1 to month t of 100 minus the US Federal Funds Futures contract price (Dec 2015 maturity). 10-year Eurodollars contract (Q4 2015 maturity) used for data prior to Dec 2012.
9. Risk_t is the global risk measured by the change in the BBB-rated US corporate bonds spread over the US 10-year treasury rate for month t.
10. Taper1 is dummy variable for fears for Jun–Sep 2013.
11. IPgrowth_PRC_{t-1} is the y-o-y growth of industrial production of the People's Republic of China, lagged one period.
12. Indonesia, Malaysia, the Philippines, Thailand are dummies for the countries. The default country is India.

contract maturing by end-December 2015.³ The other key variable is “perceived global risk”, as measured by the changes in the spread of BBB-rated US corporate bonds over the US 10-year treasury rate.⁴ The growth of industrial production in the People's Republic of China (PRC)—lagged one period—was also included in the regression. Country dummies were

used in the fixed-effect panel regressions. The model assumes there is a stronger slope coefficient for the key variable of expected FFF rate during the period from 23 May 2013 to 18 September 2013 (ΔExp_FFF_t*taper1). Because the regressions use monthly data, the dummy ‘taper1’ would include the months of June 2013 to September 2013.⁵

³The expected US Fed policy rate is computed as 100 minus the average daily US Fed Funds Futures Contract price for the delivery month—for example, a 6.5% rate equals a 93.50 contract price. It acts as a forecast of the average monthly level of the Fed funds rate. It is postulated that if QE is expected to continue as is, there would be low expected future interest rates, and investors will have a stronger risk appetite to invest in emerging market portfolios. On the other hand, if QE is expected to be “tapered” by significant amounts, there would be significantly higher future interest rates, and investors will reduce their risk appetite to invest in emerging market portfolios.

⁴A BBB-rated corporation refers to a corporate entity seen to have adequate capacity to fulfill its financial obligations. This capacity, however, can be weakened during adverse economic conditions. Thus the spread between this and the rate of the least risky bond—the US 10-year treasury note—is seen as a measure of the perceived risk to a medium investment-grade firm.

There were several key results. First is the significant role played by expected increases in the US Fed interest rate (as reflected by the FFF contract maturing December 2015). The stronger the US Fed's QE tapering or higher expected Federal Funds rate, *ceteris paribus* (all other variables constant), (i) the less foreign capital inflows would be invested in emerging market equities, (ii) the more Asian currencies would depreciate, and (iii) the more domestic bond yields would rise.

⁵A change in the dummy from May 2013 to September 2013 showed almost the same results as the regressions presented in Box table.

Box 1 continued

Countering this is the impact of the global risk variable—measured by the interest rate spread between BBB-rated US corporate bonds and US 10-year treasuries—incorporating risks embodied mainly in the US economy, and secondarily in the economy of the European Union (EU). This variable is even more significant in affecting foreign capital inflows to equities as well as currencies. It also has a significant effect on domestic bond yields, but less than the expected Fed Funds rate. Thus, the lower the global risk perception due to global economic recovery, *ceteris paribus*, the more foreign inflows will go to emerging markets, Asian currencies will appreciate, and sovereign bond yields will fall.

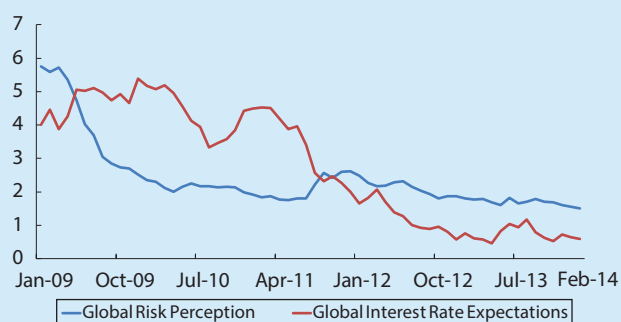
Furthermore, the regressions show that the S&P index of stocks open to foreign investors and the nominal effective exchange rate were hurt more by the tapering fears from end-May to mid-September 2013, as shown by the highly significant negative coefficient of $\Delta \text{Exp_FFF}_t^* \text{taper}_1$, than the definitive announcement that tapering would begin.⁶ It is clear the mid-2013 market jitters were heightened by the uncertainty and lack of information on the size of tapering and future US Fed interest rate policy. This was aggravated by Bernanke's statements that tapering might start reducing new asset purchases by \$20 billion in September 2013 and end QE completely by mid-2014. Interest rates may then rise afterward.

Markets felt the impending US Fed tapering and increase in interest rates were too soon and too fast.

In contrast, the 18 December 2013 and 29 January 2014 announcements of actual tapering (coming 3 and 4 months after the time when tapering was supposed to have begun—based on Bernanke's earlier testimony) were very clear. Only \$10 billion of monthly asset purchases would be reduced each month and interest rates would remain at their current low levels until the unemployment rate drops below 6.5%.

⁶The nominal effective exchange rate can measure currency movements vis-à-vis the US, EU, and Japan—the economies' top trading partners.

2: Global Interest Rate Expectations versus Global Risk Perception (%)



Notes: Global interest rate expectations is proxied by the 30-day US Federal Funds Futures Contract (a 3-year contract maturing on Dec 2015); data on Eurodollar Futures Contract is used prior to Dec 2012. Global risk perception is proxied by the BBB-rated US corporate bond yields spread over US 10-year Treasury.

Source: ADB calculations using data from Bloomberg.

In the regressions, the lagged industrial production growth rate in the PRC also figured significantly at the 10% level for the nominal effective exchange rate and the S&P composite stock price index.

Recent financial volatility could be explained by the interplay of the FFF and global risk variables (**Box figure 2**). Both FFF and global risks declined from the second half of 2012 to April 2013—a period when portfolio inflows to emerging markets also became strong and, in many cases, contributed to currency appreciation. In the end-May to mid-September 2013 period, FFF is rising significantly from a downward trend (due to QE), while global risks remained stable or did not decline. Note that FFF declined in September with the tapering postponement to approximately where it was before the jitters began. The evidence of market overreaction to US Fed tapering jitters in May to September 2013 can therefore be seen in (i) the steeper negative slope coefficient for the FFF variable revealed by the regressions on the nominal effective exchange rate and

As US quantitative easing is further reduced, policy normalization offers both opportunities and challenges for regional cooperation and integration in developing Asia; last year's market turbulence exhibited contagion, for example, through capital flows and an exchange rate channel.

The start of policy normalization in key economies should help create more balanced global growth, with advanced economies increasing their contribution

just as emerging economies see growth moderate somewhat. This new equilibrium will see a more “normal” setting of macroeconomic levers. However, as these levers are adjusted, financial markets will adjust accordingly, leading to greater near-term volatility. This presents some clear challenges to the region's policymakers: (i) correct existing national economic and financial imbalances; (ii) pursue broader and deeper structural reforms to raise productivity; (iii) promote financial market stability; and (iv) engender more sustainable economic growth. However, as expanding

the price index of stocks open to foreign investors, and (ii) the temporary spike in the FFF variable during the period.

The model predicts that an improving global economy—especially if it is quite strong and permanent—will most likely prevent a repeat of the panic during the first tapering fear period of 23 May 2013 to 18 September 2013, as most economies will benefit with the increase in world trade and the strengthening of global financial markets. This is especially true as the risk perception variable exerts a stronger (with higher significance level) effect on the PCS&P and PCNEER variables.

On the other hand, it appears there was herd mentality driving capital inflows (to QE itself) and outflows (tapering fears). Strong capital outflows, significant currency depreciation, and increases in bond yields hit economies with strong macro fundamentals—such as Malaysia, the Philippines, and Thailand—during the tapering fears from May to September 2013. Economies with weaker macroeconomic fundamentals—such as India and Indonesia—barely coped with the outflows from May to September 2013. They suffered temporary mini-crises with unusually sharp currency depreciation, alarmingly strong increases in bond yields, huge capital outflows, and reserve losses. Jacking up interest rates and imposing capital controls proved ineffective. They were saved when the tapering was postponed. When actually announced in December, there was some brief market turbulence; but that ended a week after the late-January 2014 announcement was made.

The latest announcement on 19 March 2014 changed the rules again, as new US Fed chair Janet Yellen dropped the 6.5% unemployment threshold, hinted at an end to QE by the fall of 2014, and hinted at a sooner-than-expected increase in interest rates 6 months later—in the spring of 2015 instead of June 2015 as markets expected. Thus, market volatility occurred right after the announcement. But the fears seemed to have died down in succeeding days even amid the Ukraine-Russia geopolitical crisis and the fear of a major slowdown in the PRC.

QE tapering is inevitable once the US and other major economies recover sufficiently. Emerging markets must readjust after the exaggerated inflows and currency appreciation that came as a result of QE. It is clear that a strong

recovery in advanced economies will be good for Asia's export-oriented economies. And Japan's continuing QE may help tame any rise in global interest rates.

However, financial markets remain highly sensitive to any news of future interest rate increases, and any hints that this would happen sooner and faster will again bring exaggerated fears and rumblings in the markets, with possible irrational panic and herd mentality. Thus, regional cooperation initiatives must be ready in case market overreaction reappears as Fed tapering brings QE to an end and leads to a rise in global interest rates. At the height of the US Fed tapering fears, cooperation in the region did actually occur (at least bilaterally). The PRC, at the peak of tapering fears in early September 2013, called on Asian economies to create more currency swap deals to facilitate capital flows. At around the same time, India and Japan decided to increase their currency swap arrangement from \$15 billion to \$50 billion. Indonesia and the Republic of Korea agreed to a \$10 billion currency swap arrangement on March 2014 to protect Indonesia from global shocks, such as another strong US Fed tapering of QE. More coherent and multilateral regional cooperation and initiatives will enhance the protection of economies vulnerable to global external shocks and sharp capital outflows. Equally important to offset market overreaction, economies with weaker macroeconomic fundamentals must commit to implement clear and meaningful structural reforms as soon as possible.

The market turmoil associated with last year's US Fed tapering episode flashed warning signals to economies with weak macroeconomic fundamentals—like large current account or fiscal deficits, unsustainable debt, and high inflation. India and Indonesia took the necessary initial steps toward structural reform after being hit hard by the first tapering fears. This also explains why they were less affected when tapering was actually announced in December 2013 and January 2014.

regional trade and finance strengthen links between economies, policy tightening from any large economy could hurt the rest of the region, especially if several economies tighten rapidly. Thus there is an urgent need to further strengthen regional economic surveillance and policy dialogue to better manage the risks and costs of integration.

Global and regional supply chains continue to evolve, affecting the nature and dynamics of FDI and trade integration; this presents an opportunity to further open individual economies and strengthen trade and investment regimes.

Widening unemployment gaps between advanced and Asian economies, changing demographics, and rising wages in key economies in developing Asia could all affect regional competitiveness. Asia must build on the

success of its trade liberalization by removing non-tariff barriers and promoting trade facilitation—such as deregulating and harmonizing standards. Recent and continuing negotiations on a Regional Comprehensive Economic Partnership (RCEP), for example, require sufficient political commitment for the initiative to succeed.

The recent bout of regional financial market volatility highlights the critical link between finance and macroeconomic stability; the financial sector must be strengthened to ensure it contributes to—rather than detracts from—more sustainable and inclusive economic growth.

The effects of last year’s financial market turmoil on India, Indonesia, and other developing economies underscore the need to strengthen and further reform financial markets. Asia has the opportunity to reinforce growth prospects by working on “hard” infrastructure investment and structural “software” reform. Easing supply-side bottlenecks to cut the costs of doing business, encourage investment, and spur growth would help—as would deepening and broadening financial markets to provide a solid financial base for economic expansion.

As Asia becomes more integrated regionally and globally, policymakers should strengthen financial integration through national and regional policies that buttress financial market stability.

Since the 1997/98 Asian financial crisis, Asia has shown growing resilience to financial market volatility. Over time, its economies have pursued more flexible exchange rates, maintained higher foreign exchange reserves, and kept healthier current account balances.

They have also improved financial regulations and more optimally restructured external liabilities. Recently, however, there has been increasing exposure to short-term external debt, which can lead to heightened vulnerabilities. Banks are also highly leveraged. Corporate and bank balance sheets—while healthy—could become stressed if borrowing costs rise to more normal levels. Thus, a key priority for the region is to develop a system-wide macroprudential supervisory framework that can avoid the build-up of systemic risk in the region. Asia would also benefit from strengthening regional financial safety nets through bilateral and multilateral swap agreements to counter regional contagion. For instance, measures to strengthen the current \$240 billion ASEAN+3 Chiang Mai Initiative Multilateralization (CMIM) will bolster regional financial stability.

Closer consultation and more effective policy dialogue can ensure better policy coordination when responding to global and regional economic shocks.

Close and effective dialogue among the region’s policymakers ensures information and knowledge sharing on common challenges, helps policy coordination when responding to global and regional economic shocks, and institutionalizes the ability to tackle tough issues as they arise in a collegial fashion.

National structural reforms—to boost productivity, reduce inequalities, and mitigate vulnerabilities—build the backbone for stronger regional cooperation and integration (RCI). But the reverse is true as well—RCI, CMIM, regional agreements (free trade agreements and negotiations for the RCEP), and initiatives (such as the ASEAN+3 Bond Market Initiative [ABMI]) can work to reinforce and facilitate the adoption of the more difficult national reforms.