



# Economic Scenarios for Asia

## Regional Impact of an Economic Slowdown in the People's Republic of China: Three Alternative Scenarios

### Introduction

Developing Asia's trade and economic growth have benefited greatly from the emergence of the People's Republic of China (PRC) as a major economic power.<sup>1</sup> Over the past 2 years, for example, exports from developing Asia to the PRC have soared by an average annual rate of 30%. But if a buoyant PRC has helped lift regional growth rates, what will be the impact on Asia of a slowdown in that country?

This question is timely because the PRC Government is making serious efforts to slow several key sectors of its economy, including automobiles, property, and steel, where excessive investment has caused sharp price rises in raw materials and bottlenecks in the supply of power and transportation. The authorities have used monetary, fiscal, and administrative measures over the past year to damp fixed asset investment in those sectors, with some success (see the PRC chapter in Part 2). The macroeconomic tightening reined in gross domestic product (GDP) growth rates from 9.9% in the fourth quarter of 2003 to 9.8% in the first quarter of 2004 and 9.6% in the second. It seems likely that the PRC economy will slow to a soft landing and achieve a more sustainable growth path of 7–8% from 2005, though the risk of a hard landing remains.

So far, the PRC's investment slowdown has not had a perceptible effect on the exports or economic growth of its trading partners. Moreover, an economic modeling exercise, detailed below, to gauge the effect on the region of a significantly sharper cut in PRC industrial investment suggests that the impact on regional economies

of this scenario would be moderate. Hong Kong, China is the most vulnerable to such a development. The Republic of Korea (Korea); Singapore; and Taipei, China are next. Southeast Asian nations generally would avoid any significant losses in output, and South Asia is the most insulated from developments in the PRC. The results of the exercise also suggest that if the United States (US) and Japan achieve stronger than expected growth, this could more than offset the reductions in growth caused by the PRC slowdown for most of developing Asia's economies.

### How a Slowdown in the PRC Affects Other Economies in Developing Asia

Given that trade links dominate the economic relationship between the PRC and its developing Asian neighbors, it is through the trade channel that most impact is likely to be felt when the PRC's economy slows significantly, in the process lowering demand for manufactured exports from the region. The prices of those exports may also fall. The boom in the PRC has contributed to recent strength in world commodity markets, so a slowdown in the PRC could also reduce exports from regional economies of rubber, metals, and other primary products.

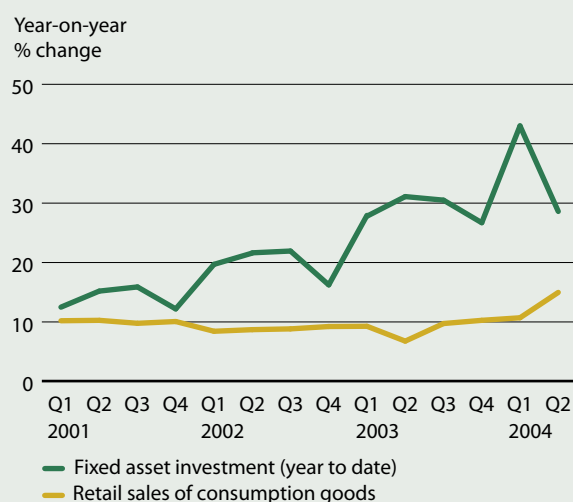
The extent of these effects depends on the characteristics of each PRC trading partner and its trade relationship with the PRC, as well as the nature of the slowdown in the PRC.

In the current situation, the PRC's tightening measures are aimed at slowing fixed asset investment in selected industries, meaning that investment (capital) goods sectors might be

severely affected, but the export sector could avoid the slowdown (Figure 3.1). Consumption is likely to be spared because of rising urban and rural incomes, and low interest rates. So the impact on the PRC of these tightening measures could be contained within a few sectors.

With regard to the PRC's trade relationship

**Figure 3.1 PRC Fixed Asset Investment and Retail Sales, Q1 2001–Q2 2004**



Source: CEIC Data Co. Ltd.

with the rest of the region, links have become much more extensive in recent years, but the country is still a relatively small trading partner for most developing Asian economies compared with the US, Japan, and European Union (EU). The PRC accounted for 16.9% of developing Asia's trade in 2003, while the US, Japan, and EU together accounted for 39.0% (Table 3.1). The newly industrialized economies (NIEs) of Hong Kong, China; Korea; Singapore; and Taipei, China have closer trade relationships with the PRC, with 42.7% of Hong Kong, China's exports and 14.9% of Taipei, China's exports going to the PRC in 2003—though this probably underestimates shipments from Taipei, China because some that are destined for the PRC go through Hong Kong, China. Korea, too, is vulnerable because the PRC became its biggest export destination in 2003, taking 20.0% of its exports.

Southeast Asia is less dependent on the PRC. The share of total exports from the Association

**Table 3.1 Regional Distribution of Merchandise Trade in Developing Asia, 2003, %**

Economy or Region	PRC	US	EU	Japan
Developing Asia	16.9	14.1	12.9	12.0
NIEs (excl. Hong Kong, China)	17.8	22.1	18.0	19.2
Hong Kong, China	30.4	8.4	7.6	6.1
ASEAN (excl. Singapore)	8.7	14.5	12.2	15.4
South Asia	1.8	4.0	6.9	1.1

ASEAN = Association of Southeast Asian Nations, EU = European Union, NIEs = newly industrialized economies, PRC = People's Republic of China, US = United States.

Source: CEIC Data Co. Ltd.

of Southeast Asian Nations (ASEAN) economies, excluding Singapore, to the PRC has doubled from 4.3% in 2001, but to just 8.8% of total exports from the group, excluding Singapore, in 2003 (Table 3.2). Similarly, India boosted its share of exports to the PRC, from 1.8% in 2000 but only to 6.3% in 2003. The PRC is Japan's second-biggest market (after the US), buying 12.2% of Japan's exports.

In addition to extent, the composition of trade between the PRC and its regional partners is also relevant to assessing the impact of an economic slowdown in the PRC. A large part of developing Asia's exports to the PRC involves intermediate goods that are processed and reexported, so

**Table 3.2 PRC Share in Exports of Selected Asian Economies, 2001–2003, %**

Economy or Region	2001	2002	2003
Japan	7.7	9.6	12.2
<b>Developing Asia</b>			
NIEs	16.8	19.3	23.5
Hong Kong, China	36.9	39.3	42.7
Korea	12.1	14.7	20.0
Singapore	4.4	5.5	7.0
Taipei, China	3.9	7.6	14.9
ASEAN (excl. Singapore)	4.3	5.2	8.8
Indonesia	3.9	5.1	7.2
Malaysia	4.3	5.6	10.5
Philippines	2.5	3.9	11.9
Thailand	4.4	5.2	7.1
South Asia	2.8	3.3	5.0
India	3.4	4.1	6.3

ASEAN = Association of Southeast Asian Nations, NIEs = newly industrialized economies.

Sources: International Monetary Fund, *Direction of Trade Statistics*, July 2004; Datastream, downloaded 15 August 2004.

much of the PRC's import growth is related to demand levels outside the region. A strong trend has been apparent in recent years toward vertical specialization, where steps in the manufacturing production process are divided between several Asian countries and where the components are shipped to another country for final processing and assembly and then reexport. Improvements in transportation and communications, as well as falling trade and investment barriers, have bolstered this trend. The PRC has developed many of the centers for final processing and assembly because it has the biggest low-cost labor force and has attracted substantial inflows of foreign direct investment to build the facilities. As a result, the PRC's demand for intermediate goods from developing Asia has grown sharply while its exports of final goods to industrial countries have also increased significantly. During 2001–2003, the PRC's trade surplus with the US and EU burgeoned from \$33 billion to \$77 billion, but over the same period the PRC ran a deficit of about the same size with Korea; Taipei, China; and the ASEAN economies (Figure 3.2).

Consistent with the rising vertical specialization of production within Asia, there has been an increase in the proportion of intra-industry trade, especially for electronics, within intraregional trade. The International Monetary Fund has estimated that intra-industry trade accounted for 75% of total trade growth in East and Southeast

Asia on average in 1996–2000, much higher than in other developing regions. There is evidence from other studies (e.g., Frankel and Rose 1998) that countries with closer trade linkages have highly correlated business cycles, and that intra-industry trade is the major channel through which the business cycles of East Asian economies become synchronized (Shin and Wang 2003).

It is clear that increasing vertical specialization and intra-industry trade have created a new channel to transmit economic shocks through Asia. A slowdown in one country's demand will not only lead to reduced exports, but also to lower demand for imported intermediate inputs and capital goods by its trading partners. Therefore, besides the direct and indirect demand effects associated with the income decline, there are production-related demand effects that can quickly travel along the production chain.

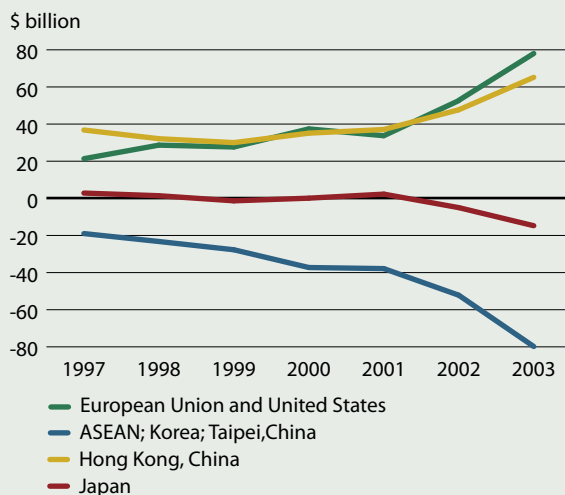
However, the current slowdown in the PRC is less likely to exert strong demand reduction effects through the region because developing Asia's production chain depends on final demand from industrial countries, and the linkage between the PRC's export processing sector and its internal economy is relatively weak.

### Assessing the Impact of a Sharper PRC Slowdown

To quantify the potential impact of a sharper slowdown in the PRC, a global trade simulation model—Linkage—is used, to assess the effects on trade flows, terms of trade, income and output of different regions under various scenarios. The Linkage model is a multiregion, multisector, dynamic computable general equilibrium model that captures the geographic and sector structure of global trade flows (see van der Mensbrugge 2003). A baseline is established, in which economic growth and other macroeconomic indicators are broadly assumed to be consistent with the benchmark projections of the *ADO 2004 Update*. Under the baseline scenario, the PRC is set to achieve a soft landing, with its GDP growth rate slowing from 8.8% in 2004 to 8.0% in 2005. This is expected to have only a slight impact on the PRC's trading partners.

Three alternative scenarios for 2005 are then considered:

Figure 3.2 PRC Trade Balance, 1997–2003



Source: CEIC Data Co. Ltd.

- a cut in real investment growth in the PRC from 10.2% to 5.0% in 2005;<sup>2</sup>
- an identical investment cut in the PRC and an acceleration of growth in the US and Japan by 1 percentage point from the baseline; and
- an identical investment cut in the PRC and growth slowdowns in the US (to 2.0%) and Japan (to 1.0%)—simultaneous slowdowns in all three countries.

### Effects on Output and Trade

The first alternative scenario (investment growth cut in the PRC) looks at the potential results of a further slowdown in the PRC economy. As a result of the simulated reduction in investment, private consumption growth in the PRC would decline by 0.5 percentage points to 6.6%, export growth from 7.6% to 7.2%, import growth from 8.9% to 7.0%, and the PRC's GDP growth rate from 8.0% to 6.0%.

The simulation results suggest that such a slowdown would have a moderate impact on the region in 2005. Hong Kong, China would

be most affected, with a loss of 0.95 percentage points of GDP (Table 3.3). The other three NIEs would also experience relatively large losses in output, with their GDP growth rates falling by 0.39–0.43 percentage points from the baseline position. The adverse growth effects on ASEAN countries (excluding Singapore) would be generally smaller, from 0.15 to 0.32 percentage points. South Asia is the most insulated from a PRC slowdown—its subregional GDP growth would be clipped by 0.09 percentage points in 2005.

Industrial economies would also be affected under this scenario, although the negative effect would be small. Japan appears to be more exposed than the US or EU because of its stronger export dependence on the PRC. Through trade linkage and multiplier effects, such a slowdown in the PRC could lower world GDP growth by 0.24 percentage points in 2005.

Changes in net exports, or the trade balance, driven by the PRC slowdown are key factors that determine the above growth effects. The simulation results show that the investment cut

**Table 3.3 Effects of the Investment-Induced PRC Slowdown on GDP and Trade, 2005**  
(first alternative scenario; % change relative to the baseline)

Economy or Region	GDP Growth (percentage points)	Exports (%)	Imports (%)	Trade Balance	
				(percentage points of GDP)	(\$ billion)
PRC	-2.00	-0.39	-1.71	0.58	10.24
United States	-0.11	-0.18	-0.14	-0.01	-1.49
Japan	-0.24	-0.40	-0.20	-0.04	-2.16
European Union	-0.12	-0.14	-0.11	-0.02	-2.55
Rest of OECD	-0.13	-0.15	-0.11	-0.02	-0.56
NIEs	-0.50	-0.57	-0.40	-0.11	-1.49
Korea	-0.39	-0.55	-0.31	-0.10	-0.70
Hong Kong, China	-0.95	-1.01	-0.70	-0.18	-0.32
Taipei, China	-0.43	-0.49	-0.32	-0.10	-0.35
Singapore	-0.43	-0.38	-0.37	-0.11	-0.12
ASEAN (excluding Singapore)	-0.24	-0.33	-0.25	-0.08	-0.65
Indonesia	-0.23	-0.32	-0.22	-0.07	-0.17
Malaysia	-0.32	-0.38	-0.30	-0.22	-0.26
Philippines	-0.28	-0.29	-0.26	-0.03	-0.02
Thailand	-0.25	-0.31	-0.23	-0.08	-0.14
Others	-0.15	-0.23	-0.21	-0.03	-0.04
South Asia	-0.09	-0.16	-0.13	-0.02	-0.16
Latin America	-0.22	-0.23	-0.19	-0.02	-0.31
Rest of the World	-0.19	-0.22	-0.17	-0.03	-0.88
The World	-0.24	-0.24	-0.24	0.0	0.0

NIEs = newly industrialized economies, OECD = Organisation for Economic Co-operation and Development, PRC = People's Republic of China.

Source: Linkage model simulations.

and subsequent growth slowdown would reduce the PRC's imports by 1.71% from the baseline, and increase its net exports by \$10.24 billion, or 0.58 percentage points of GDP. This would be accompanied by a global trade adjustment. As shown in Table 3.3, world trade would decline by 0.24% from the baseline. Economies with closer trade links to the PRC would suffer sharper declines in exports. Hong Kong, China's total exports would fall by 1.01% from the baseline in 2005. Its imports would decline by 0.70% given that a larger proportion of its trade is entrepôt trade where imports are reexported. Korea and Taipei, China would be the second- and third-biggest losers in terms of exports, with declines of 0.55% and 0.49%, respectively. The PRC slowdown would damp export growth in Japan, Malaysia, and Singapore by around 0.40%. Exports from the other economies generally would fall by 0.20–0.30% relative to the baseline.

The increased trade surplus of the PRC would cause a reduction in the trade balances of many industrial economies. In the US, Japan, and EU the reductions in the trade balances would be \$1.49 billion, \$2.16 billion, and \$2.55 billion, respectively. Trade balance reductions in developing Asia's economies would be proportionately larger because their economies are smaller. For example, Hong Kong, China's trade balance would decline by 0.18 percentage points of GDP. Also, given these economies' often heavy dependence on

external trade, the reduction in external demand contributes significantly to a decline in GDP in developing Asia.

The extent of the impact on economic growth also depends on the magnitude of the Keynesian demand multiplier in individual economies. The Keynesian multiplier is the rate at which changes in exogenous demand are magnified into changes in the overall level of income. Countries with higher propensities to consume tend to have larger multipliers. This explains why the Philippines would suffer a similar loss of GDP as Indonesia and Thailand, even though the reduction in its trade balance as a ratio to GDP would be smaller.

The output reduction in 2005 would vary across sectors (Table 3.4). In the PRC, services, including construction, and capital goods sectors such as motor vehicles and ferrous metals would be the major losers. Output in these industries in the PRC would shrink by 2.21–3.32% relative to the baseline. Clothing, electronics, and food would be the least affected, but they too would suffer output contractions of 0.49–0.87% because of the general economic slowdown. In Japan, textile output would contract by 0.55% due to reduced exports to the PRC. The NIEs would likely experience some production losses in their chemicals, energy and mining, metals, services, and textile sectors. Declines in industrial output in Southeast Asia would be relatively evenly

**Table 3.4 Effects of Investment-Induced PRC Slowdown on Sector Output, 2005**  
(first alternative scenario; % change relative to baseline)

Sector	PRC	US	Japan	EU	NIEs	ASEAN (excluding Singapore)	South Asia	Rest of the World
Agriculture	-1.05	-0.08	-0.09	-0.06	-0.23	-0.22	-0.08	-0.17
Energy and mining	-1.79	-0.10	-0.25	-0.12	-0.61	-0.27	-0.13	-0.22
Foods	-0.87	-0.05	-0.09	-0.07	-0.25	-0.21	-0.08	-0.17
Textiles	-1.03	-0.05	-0.55	-0.09	-0.66	-0.21	-0.13	-0.17
Clothing	-0.49	-0.05	-0.21	-0.09	-0.47	-0.19	-0.10	-0.17
Chemical	-1.55	-0.09	-0.29	-0.11	-0.62	-0.36	-0.10	-0.20
Ferrous metals	-2.21	-0.07	-0.32	-0.10	-0.54	-0.23	-0.07	-0.21
Other metals	-1.94	-0.07	-0.36	-0.08	-0.61	-0.35	-0.08	-0.25
Motor vehicles	-3.32	-0.04	-0.15	-0.09	-0.21	-0.19	-0.01	-0.11
Electronics	-0.49	-0.15	-0.30	-0.10	-0.44	-0.42	-0.08	-0.14
Other manufacturing	-2.05	-0.06	-0.24	-0.09	-0.47	-0.23	-0.07	-0.15
Services	-2.48	-0.12	-0.24	-0.13	-0.54	-0.20	-0.09	-0.17

EU = European Union, NIEs = newly industrialized economies, PRC = People's Republic of China, US = United States.

Source: Linkage model simulations.

distributed across sectors, ranging from 0.19% in clothing to 0.42% in electronics.

### Price Effects

The increasing importance of the PRC in global commodity markets has raised concerns that a slowdown in its economy might hit commodity prices and so erode the terms of trade for its trading partners. To capture the price effects of a PRC slowdown, a separate simulation is run, based on different adjustment mechanisms for factor markets and external accounts.<sup>3</sup> This simulation also assumes the further cut in PRC investment, resulting in the GDP growth rate slowing from 8.0% to 6.0%. The simulation results reported in Table 3.5 suggest that in the face of falling global demand due to such a PRC slowdown, the other economies would depreciate their real effective exchange rates against the yuan by around 0.70–1.20% to maintain their trade balances at the baseline level. As a result of the global price adjustment, the PRC would receive

a modest terms-of-trade gain of 0.88% and the terms of trade of its trading partners would deteriorate slightly.<sup>4</sup>

### What Happens if Japan and the US Speed Up or Slow Down?

As developing Asia's economies generally have large exposures to swings in the business cycles of industrial countries, the second and third alternative scenarios are used to examine the consequences of the interaction between a PRC slowdown and changes in growth conditions in Japan and the US. The second alternative scenario assumes an identical investment cut in the PRC, with growth acceleration in the US and Japan of 1.0 percentage point from the baseline due to increases in investment spending. The third alternative scenario—simultaneous slowdowns in all three countries—assumes an investment-induced PRC GDP growth slowdown, with growth slowdowns in the US (to 2.0%) and Japan (to 1.0%) from the baseline. The major simulation results are reported in Table 3.6.

In the case where growth accelerates in Japan and the US while growth slows in the PRC, the simulation indicates that the adverse effects of the PRC slowdown on the GDP of most countries would be more than offset by the stronger growth in Japan and the US. Global economic growth would be raised by 0.43 percentage points. Only Hong Kong, China; Korea; and Taipei, China would still suffer declines in their GDP growth rates. The Philippines, Latin America, and other OECD countries would gain most in terms of GDP growth.

The differences between Table 3.6 and Table 3.3 show that most economies would benefit from an additional 0.30–0.50 percentage point gain in GDP growth from such pickups in Japan and the US. Singapore and the Philippines would benefit most—their GDP growth rates would increase by about 0.55 percentage points compared with the earlier scenario of just a PRC slowdown. But GDP gains in South Asia and the PRC from the accelerated growth in the US and Japan are less than 0.20 percentage points.

In the scenario of simultaneous slowdowns in the PRC, US, and Japan, global economic growth would be reduced by 1.0 percentage point from

**Table 3.5 Price Effects of Investment-Induced PRC Slowdown, 2005**  
(first alternative scenario; % change relative to baseline)

Economy or Region	Terms of Trade	REER Relative to PRC
PRC	0.88	0.00
United States	-0.07	0.65
Japan	-0.14	0.77
European Union	-0.04	0.68
Rest of OECD	-0.05	0.69
NIEs	-0.19	0.89
Korea	-0.12	0.85
Hong Kong, China	-0.59	1.16
Taipei, China	-0.07	0.78
Singapore	-0.10	1.02
ASEAN (excluding Singapore)	-0.04	0.76
Indonesia	-0.06	0.80
Malaysia	-0.04	0.81
Philippines	-0.02	0.74
Thailand	-0.04	0.75
Others	-0.08	0.68
South Asia	-0.06	0.69
Latin America	-0.04	0.72
Rest of the World	-0.05	0.71

PRC = People's Republic of China, NIEs = newly industrialized economies, OECD = Organisation for Economic Co-operation and Development, REER = real effective exchange rate.

Source: Linkage model simulations.

**Table 3.6 Effects of Investment-Induced PRC Slowdown plus Changes in US and Japanese Growth**  
(% change relative to baseline)

Economy or Region	PRC Slowdown but US and Japan Acceleration <sup>a</sup>		Simultaneous PRC, US, and Japan Slowdown <sup>b</sup>	
	GDP Growth (percentage points)	Trade Balance (\$ billion)	GDP Growth (percentage points)	Trade Balance (\$ billion)
PRC	-1.81	11.99	-2.20	8.40
United States	1.00	-10.04	-1.67	12.27
Japan	1.00	-6.11	-0.87	-2.00
European Union	0.09	1.98	-0.36	-7.45
Rest of OECD	0.35	1.48	-0.75	-3.21
NIEs	-0.15	-0.33	-0.89	-2.76
Korea	-0.12	-0.17	-0.69	-1.28
Hong Kong, China	-0.54	-0.17	-1.39	-0.49
Taipei, China	-0.04	-0.01	-0.86	-0.71
Singapore	0.11	0.02	-1.01	-0.28
ASEAN (excluding Singapore)	0.12	0.25	-0.59	-1.54
Indonesia	0.07	0.06	-0.49	-0.38
Malaysia	0.07	0.06	-0.74	-0.61
Philippines	0.27	0.02	-0.87	-0.08
Thailand	0.12	0.08	-0.62	-0.37
Others	0.10	0.03	-0.40	-0.12
South Asia	0.05	0.09	-0.27	-0.45
Latin America	0.19	0.26	-0.70	-0.99
Rest of the World	0.08	0.43	-0.47	-2.27
The World	0.43	0.00	-1.00	0.00

NIEs = newly industrialized economies, OECD = Organisation for Economic Co-operation and Development, PRC = People's Republic of China. <sup>a</sup> Second alternative scenario. <sup>b</sup> Third alternative scenario.

Source: Linkage model simulations.

the baseline in 2005. The PRC's growth rate would fall by an additional 0.20 percentage points, to 5.80%, as a result of slower growth in the US and Japan. Hong Kong, China would still be the largest loser in terms of economic growth, with a loss of 1.39 percentage points of GDP. The other NIEs, as well as the Philippines and Malaysia, are more exposed than other Asian economies. Their GDP growth would slow by around 0.7–1.0 percentage point. The rest of the OECD and Latin America would also experience relatively large output losses due to their strong dependence on the US economy. Again, the adverse effect on South Asia is smallest given its relatively weak linkages to the rest of the world.

### Conclusion and Policy Implications

The model-based analysis suggests that a further cut in PRC fixed investment and reduction in its GDP growth rate from 8.0% to 6.0% would have a moderate impact on Asian economies,

reducing GDP by less than 0.45 percentage points in most Asian economies. Hong Kong, China is the most vulnerable, while South Asia is the most isolated from changes in the PRC. Furthermore, the simulations suggest that the adverse effects of such a PRC slowdown would be more than offset for most developing Asian economies if GDP growth rates in Japan and the US were to rise by 1.0 percentage point.

Two alternative estimates of the PRC's output multiplier effects using a macroeconomic model from Oxford Economic Forecasting (Huang and Hanna 2004) and a structural vector autoregression (Abeyasinghe and Lu 2003) generally lead to conclusions that are consistent with the Linkage simulation analysis.

However, there are several important limitations in the Linkage simulation exercise. First, it captures the trade channel of international business cycle linkage only. It does not include some other transmission channels, such as private capital flows and contagion in regional financial

markets. Second, it lacks financial variables and nominal prices changes. This limits its ability to incorporate macroeconomic adjustments and policies that are important to determine the transmission of macroeconomic fluctuations. Third, the model has only 12 sectors so it may underestimate the impact of a collapse of the PRC's investment growth in some special commodity markets. Therefore, the results should be viewed as indications rather than predictions.

Two major policy implications emerge from the simulation exercise. The export orientation of most developing Asian economies makes them vulnerable to the business cycles in the industrial countries and to global current account imbalances. Although the rise of the PRC economy and increasing intraregional trade have helped buffer the demand shocks from the industrial countries, developing Asian economies remain

dependent on the levels of final demand in the US, Japan, and EU. Reducing the vulnerability to external events so as to achieve sustained prosperity requires governments to put more emphasis on domestic demand-led growth, and indeed, signs have emerged in recent years of strengthening domestic consumption. A further structural shift toward domestic demand requires improvements in income distribution and in domestic financial markets to mobilize savings for domestic investment.

In the longer term, continued growth in the PRC economy and in the regional production chain will make developing Asia's economies more exposed to economic events in the PRC and lead to greater synchronization of business cycles in regional economies. This calls for Asian countries, including Japan, to strengthen coordination of macroeconomic policies.

### Endnotes

- 1 "Developing Asia" in this section excludes Central Asia and the Pacific.
- 2 This policy simulation assumes that total investment is exogenous and the unemployment rate is endogenous for adjusting income and savings. The real exchange rate is fixed and foreign savings are endogenous. This specification corresponds to the Keynesian macro model adjustment mechanism in the computable general equilibrium literature (e.g., Taylor 1990, Robinson 1991) and makes the model behave like a Keynesian trade multiplier model.
- 3 In factor markets, the supply of factors is assumed to be fixed and factor prices are assumed to be endogenous to clear the market. The trade balances are fixed at the baseline level and changes in relative domestic prices (i.e., the real exchange rate) bring about equilibrium in the foreign exchange market. Total investment in each region is endogenous and determined by aggregate savings (domestic and foreign).
- 4 The results should be viewed as an extreme case because the model assumes that the adjustment would be made fully through exchange rate changes. The actual result would likely be a mix of exchange rate and trade balance adjustments.

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