

# The Ascent of Asia

Asia's share of world GDP

Asia is regaining its place, but  
much will depend on policy



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## Foreword

As Asia's largest global investment bank, Nomura has long had a widespread presence across the whole of the Asian region. Nomura has also long had a significant presence in Europe, the Middle East and Africa, as well as in North America. But through its recent acquisition of the Asian and European businesses of Lehman Brothers, Nomura has now greatly increased its profile in Europe; and is also rapidly building out its presence in the United States.

We at Nomura thereby consider ourselves well placed to serve our rapidly expanding global client base. With our roots in Asia, we see at first hand the reasons underlying our optimistic outlook for the region. We see an exciting Asia that is growing and developing rapidly; an Asia that has ridden the waves of the recent financial and economic crisis; and an Asia that has emerged well placed to progress yet further as the world economy recovers.

That said, we are not complacent. These are difficult times for all economies, all financial systems, and almost all industries. We therefore felt that our enthusiasm needed to be independently tested. To what extent has Asia been affected by the global economic crisis, and how will it be affected in the longer term? How soundly-based is Asia's recovery? What challenges is Asia likely to face over the coming year or two as – we hope – the world economy recovers? Even more importantly, can Asia sustain its past rapid pace of economic growth over the coming decade? And if it can, what has to be done to give this potential the best possible chance of becoming reality?

Accordingly, we asked Dr John Llewellyn, of Llewellyn Consulting, who had already published on a number of key thematic issues, including climate change, and the prospects for India (while at Lehman Brothers), and the global implications of ageing populations (while at Nomura), to lead a study looking at Asia in the broad, working closely with our Asia-based economists and drawing freely on Nomura resources.

The results and conclusions are presented in this study. Asia has major supply-side potential. Moreover, the region has weathered the biggest global recession since the Great Depression of the 1930s better than many western economies. We therefore judge that Asia is well poised to resume the rapid growth and development that characterised the past decade.

At the same time, there remain challenges. Over the coming decade, Asia will have to ensure the brisk, domestic-demand-oriented stimulus that it has put in place to cope with the crisis translates into a pattern of demand that is sustainable in the long term. This will require patterns of growth that not only reflect, but also build on, the different stages of development of Asia's highly diverse economies and societies.

The basic conclusion of the study is that this is in principle achievable, but that it will require a succession of appropriate and timely policy changes. And these would not be merely standardised and time-worn short-term macroeconomic policy initiatives. They would include a number of politically more difficult structural reforms in areas such as labour policy, social policy, industrial policy and financial policy. Prerequisites to tackling these issues most importantly are strengthening trade linkages within Asia, while bringing exchange rate regimes into line with Asia's evolving place in the world economy.

These challenges are not easy, and some countries will be more successful than others. Nevertheless, having analysed the matter in this depth, we are if anything more optimistic about the prospects for Asia than we were before.

This is not the last word on the prospects for Asia. Indeed, Nomura looks forward to bringing out further studies which, like this one, will examine Asia's growing importance in the context of an evolving global economy.

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## Acknowledgements

The idea for this study came from Sadeq Sayeed (Chief Executive Officer, EMEA), who wanted to commission an independent assessment of Asia's medium-term economic prospects, considered in a global context. He did not want an encyclopaedia, he explained, rather an analysis of likely key issues, presented as clearly and as simply as possible. Having commissioned the study, he left us completely alone to form our own judgements, in the light of the evidence as we saw it. No researcher could ask more than that.

Appreciation is due also to my co-author, Lavinia Santovetti, who immersed herself in the economics, wrestled with data, was fastidious in matters of presentation, continually tested our thinking, and maintained good humour throughout.

Considerable intellectual debt is owed to the many people who gave of their time to discuss issues with us.

Professor Robert Wade, of the Development Studies Institute, London School of Economics, and a friend of long standing, was generous with his time in discussing, on a number of occasions, including over two long dinners, the principal ideas in his wide-ranging, informed, and challenging book, *Governing the Market*. Neither instinctively orthodox nor automatically rebellious, Wade bases his arguments on evidence. In these troubled days for the current economic orthodoxy, he warrants close reading.

Richard Herd, of the Organisation for Economic Cooperation and Development, who was working on the now just-published OECD report on China, shared his extensive knowledge and thoughts with us at the outset of our research.

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Stephen King generously let us read a pre-publication version of his fascinating and wide-ranging book, *Losing Control: The Emerging Threats to Western Prosperity*, to be published by Yale University Press in May 2010.

Professor Niall Ferguson of Harvard University kindly took no exception, on the occasion of my chairing his magisterial Chatham House presentation on Chimerica, to my shamelessly taking advantage of the time before and afterwards to test a number of the principal thoughts in this Study.

Richard Koo, Chief Economist of Nomura Research Institute, provided a number of intriguing insights over a memorable fish and chip supper in London.

We benefitted considerably from a number of general discussions on Asia, including with Dr Linda Yueh, Fellow in Economics at St. Edmund Hall, University of Oxford; Dr Kerry Brown, Senior Fellow at Chatham House on the Asia Programme; and James Kynge, Editor, China Confidential, on the occasion of a seminar at HM Treasury on *China: Global prospects and local constraints*.

Officials from a range of countries spoke widely and freely to us. It might not be helpful to give some of their names, but they know who they are, and are aware of our gratitude.

We also engaged in discussions or exchanges on specific issues with a range of people, including Professor Charles Adams, of the Lee Kuan Yew School of Public Policy at the National University of Singapore; Elizabeth Economy, C.V. Starr Senior Fellow and Director, Asia Studies, Council on Foreign Relations; and Hal S. Scott, Nomura Professor of International Financial Systems at Harvard Law School.

John Nugée spoke to us most interestingly about the likely development of capital markets in Asia. Andrew Fraser, Senior Adviser, Mitsubishi Corporation (UK) Plc told us a lot about investment trends within Asia and between Asia and the rest of the world. Preya Sharma kindly commented on all the central economic theses in the Study and brought her deep regional knowledge to bear on them. And Lord Eatwell, Rachel Lomax, and Angus Armstrong were thought-provoking on Asia's evolving economic and financial relationships with the rest of the world.

Many members of Nomura contributed importantly. Hideyuki Takahashi, Head of Global Research and Hua He, Head of Equity and Fixed Income Research, Asia, lent their backing and support. And we owe much to Paul Sheard, Global Chief Economist, Robert Subbaraman, Chief Economist for Asia, and Takahide Kiuchi, Chief Economist for Japan. Paul was a solid source of support and encouragement throughout. Rob, together with Tomo Kinoshita, not only provided some of the most interesting material, but also helped on innumerable occasions with co-ordination and liaison.

Substantial written contributions are generally acknowledged in the text proper. But we would particularly like to acknowledge how delighted we were when Takashi Nishizawa, Senior Economist, whose excellent research on Asia was already known to us, agreed to contribute two substantial Chapters to this Study. And we are obliged to Yougesh Khatri, formerly of the IMF, and now at Nomura, who freely gave of his own time both to discuss the main thrusts of this Study with us, and to add his input to the discussion of the ASEAN countries.

Melanie Saint Cyr and Kate Banham went carefully through the entire report, editing and checking everything from the drafting to the logic. And we are obliged also to Joan Male and Ruth Llewellyn, both of whom read the final, final version with great care. Inevitably, however, errors will remain: and for those we ourselves are solely responsible.

John Llewellyn, February 2010.

## Executive Summary

- Asia's medium-term economic prospects look bright. The region has major, largely untapped, resources, suggesting that it has the supply-side capacity to maintain the strong growth of previous decades.
- The global crisis hit Asia hard, but its good macroeconomic fundamentals enabled it to take strong policy action that proved effective in boosting domestic demand,
- Asia thereby recovered quickly from the global crisis, and this accelerated the shift in economic and political power from the West to the East that has been taking place over the past 30 years.
- Asia's economic resurgence has thus not come at the overall expense of the economies of the West, although some individual industries in the West are being challenged hard by competition from Asia.
- Realising Asia's supply-side potential over the medium term will require that the recent strong growth of aggregate demand be maintained. For this, the structure of that demand has to be sustainable.
- Asia's policymakers would be unwise to assume that, once the world economy recovers, they will be able to count on strong export-driven growth. Western opposition to penetration of its markets by Asia is growing.
- Asia should instead plan on taking part in a global rebalancing of demand: faster Asian domestic demand growth, and slower growth of exports to outside the region – with the converse in the West.
- Continental-sized economies have the requisite potential for growth to be driven by domestic demand. The US until the early 1960s, and India since independence in 1947, are two important historical examples.
- China has had strong export growth over the past 30 years, but domestic demand growth has been strong, too. History suggests that China's future growth could be led, sustainably, by domestic demand.
- India's growth has been led fundamentally by the growth of domestic demand, and this should continue for the foreseeable future.
- Smaller economies, by contrast, depend importantly on export growth: their home markets are individually too small to offer economies of scale, and the spill-over of domestic expenditure into imports too substantial.
- Collectively, however, Asia's smaller economies add up to around 6% of world GDP. By linking themselves through trade they can emulate a medium-sized economy and so depend less on exports to the West.
- Japan continues to rely heavily on exports. However, with its real wages now high, it, too, is less able to depend on export growth. Spurring domestic demand through supply-side reforms has become urgent.
- China, and possibly India, will also need to achieve a rebalancing of the main components of domestic demand: away from investment towards consumption.
- Investment, a potentially volatile component of demand, accounts for a high proportion of total demand in these economies. Over time, it will probably need to come down to reduce the risk of economic instability.
- Asia's economies, like their OECD partners before them, will experience a growing need to embark on a range of structural reforms, including labour, competition, financial market, social, and trade policies.
- A prerequisite to success with structural policies and trade policies, however, is resolution of the issue that has long been at the forefront of policy concern – exchange rate policy, particularly as regards the renminbi.
- Continual government intervention to prevent currency appreciation is not only causing trade frictions with the West; it is also creating internal problems, including a loss of control over monetary policy.
- To minimise instabilities caused by currency appreciation, China will have to proceed cautiously, in stages. As it does so, it will become easier for other Asian economies to accept appreciation of their currencies.
- Asia's rapid growth has brought with it pollution problems that are becoming important nationally and, in the case of greenhouse gas emissions, globally.
- Addressing these environmental problems will inevitably impose a cost. But given that all economies globally will be facing similar costs, these should not reduce the competitiveness of Asia's producers.
- Furthermore, world-wide, policy-induced increases in the (relative) price of carbon, and increasing pollution standards worldwide, offer huge potential opportunities to producers of green technologies.
- Asia's policymakers face considerable challenges in implementing the policies that will ensure that their economic growth remains sustainable. But the potential rewards are huge: Asia has everything to play for. ■

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## Introduction

Asia is the world's largest and most populous continent. Geographically, it is often defined as the territory bounded by the Suez Canal to the west, the Pacific Ocean to the east, the Indian Ocean to the south and the Arctic Ocean to the north, a definition that takes in the countries of the Arabian Peninsula. For this study, however, we define Asia as the area that embraces East and South East Asia, bounded by India and China's western borders and China's northern frontier.

**Asia is home to half the world's population...**

Asia thus defined is home to half of the world's population – 3.4bn people out of a global total of 6.8bn. Asia has four of the world's 10 most populous countries (China, India, Indonesia and Japan), and three of the world's 10 largest economies (Japan, China, and India). And the region embraces an array of cultures, religions, languages, environments and histories. (For more, see Box: *Asia's Diversity*.)

With a surface area of 28mn sq km (10.4mn sq miles), Asia, as we define it, occupies about 18% of the earth's land surface and produces slightly more than 20% of the world's output (Figure 1) – some \$12trn of GDP, on conventional measures. The informal sector, however, is large – perhaps around 25%<sup>1</sup>, compared with around 15% in the most developed countries.

**...but produces only around 20% of the world's output**

Having 50% of the world's population yet producing only around 20% of world output, Asia is a comparatively poor region in terms of income per capita. However, this average figure is not particularly meaningful given wide differences across the region. Whereas income per capita in Japan, Singapore and Hong Kong is in the \$30,000-40,000 range, and in South Korea and Taiwan is just below \$20,000, in most Asian economies it is below \$10,000. Indeed, across all of Asia's economies, income per capita ranges by a factor of more than 35.

Adjusting these figures for differences in purchasing power – an adjustment that, in low per capita income economies, generally revises upwards the value of the output of the non-internationally-traded, mainly services, sector – changes this picture, though only slightly: income differentials still range by a factor of nearly 20 (Figure 2).

**Asia has experienced three decades of brisk growth...**

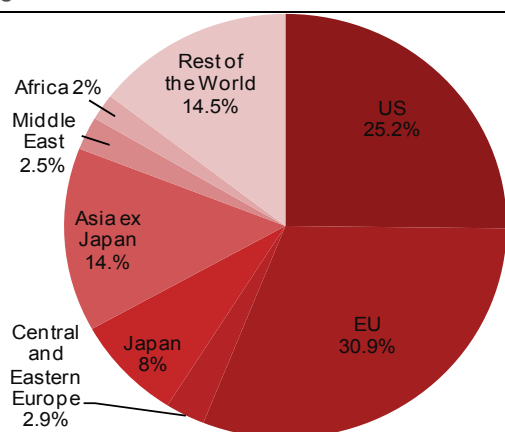
Asia's relative position in the world is changing, however. The region has registered three decades of rapid economic expansion since the early 1980s, considerably exceeding the growth pace of the developed world (Figure 3). The strongest performers have been China and India.

China's real GDP growth has averaged almost 10% per year since economic reform began in 1978 with the relaxation of the policy of economic independence and the opening of the economy to international trade. India's real GDP growth has accelerated in every cycle since the country achieved independence in 1947, reaching 7.2% per year, on average, in the 2000-07 cycle.

East Asia has been the world's fastest growing region for nearly three decades: South Korea, Hong Kong, Singapore, and Taiwan – the "Asian tigers" – averaged annual growth of 6% in 1980-2008 (Figure 3).

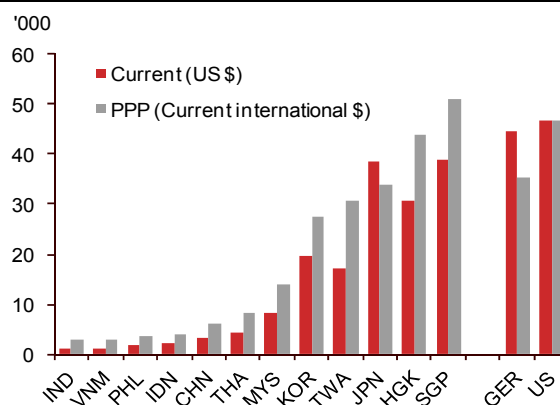
Expressing these data in purchasing power parity (PPP) terms suggests that real output per head has been growing at similar rates in the great majority of Asian economies. China and Japan are the only major exceptions: in China, real per capita income on a PPP basis has grown

Figure 1. Share of world GDP



Note: Data are for 2007 and in current market prices  
Source: IMF, World Bank, the World Factbook CIA and Nomura.

Figure 2. GDP per capita



Note: Data are for 2008  
Source: IMF World Economic Outlook and Nomura.

## Asia's diversity

*Asia is culturally diverse, economically even more so. This presents policy opportunities and challenges.*

Asia can be defined widely, as the landmass of Eurasia to the east of the Suez Canal, east of the Ural Mountains, and south of the Caucasus Mountains and the Caspian and Black Seas; bounded on the east by the Pacific Ocean, on the south by the Indian Ocean, and on the north by the Arctic Ocean. Usually, however, the term 'Asia' is often taken to represent what used to be termed "East Asia" – basically, Asia as defined above, less the Middle East. It is essentially that definition of Asia that, together with Australia, is the subject of this Study.

Until recently, it was thought that the modern humans who settled in East Asia (hereinafter "Asia") came either from Southeast Asia or from northern Asia. Very recent evidence, however, (see Chi et al. (2008) and Stanyon et al. (2009)), based on analysis of Y-chromosome genetic diversity, suggests that modern humans arrived in the subcontinent from Africa about 70,000 years ago. Migration, probably coastal, in turn led to the arrival, around 60,000 years ago, of humans in southern East Asia, whence they proceeded to occupy northern East Asia and Japan.

In the process, Asia has developed as a culturally diverse region. In a study of 820 ethnic groups (in 160 countries) that made up at least 1% of a country's population in the early 1990s, Fearon (2003) calculates an index of cultural – including linguistic – fractionalisation. A score of 0 represents complete homogeneity, and 1 complete diversity (Figure A):

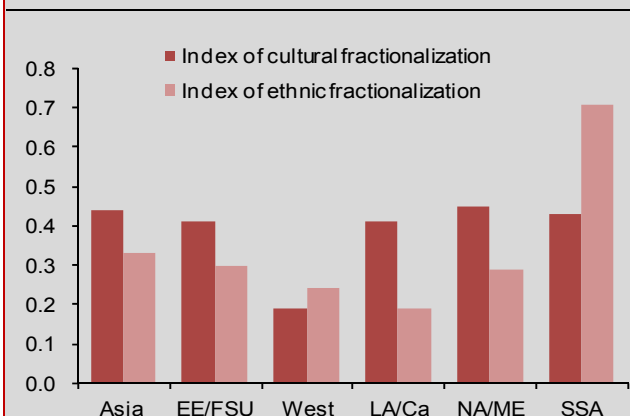
- The calculated figure for Asia, 0.44, is significantly greater than that for the so-called West (basically the United States and Western Europe) which scores 0.19. And no region is significantly more diverse than Asia.
- If linguistic divergence is ignored, Asia (0.33) is the most divergent of all the major regions of the world, bar sub-Saharan Africa (0.71).

In economic terms, Asia is markedly more diverse than, for example, Europe. As far back as 1950, the per capita income of the United Kingdom, then the richest country in Europe, was only about three times that of Portugal, one of the poorest (Maddison, (2001)). And today, notwithstanding the recent admission of a number of previously relatively poor countries into the European Union, the per capita income of the top four countries is only three times that of the poorest four (World Bank World Development Indicators).

In Asia, by contrast, cross-country differences in per capita incomes have remained wide, the consequence of having grown at strikingly similar rates across nearly all the economies (Figure B). Thus, even on a purchasing power parity basis, income per capita in Asia today ranges from less than \$3,000 in the subcontinent and Vietnam to more than \$30,000 in Japan, Hong Kong, and Singapore (Figure B). And the per capita income of the top four Asian countries taken together (unweighted) is 16 times that of the poorest four (World Bank World Development Indicators).

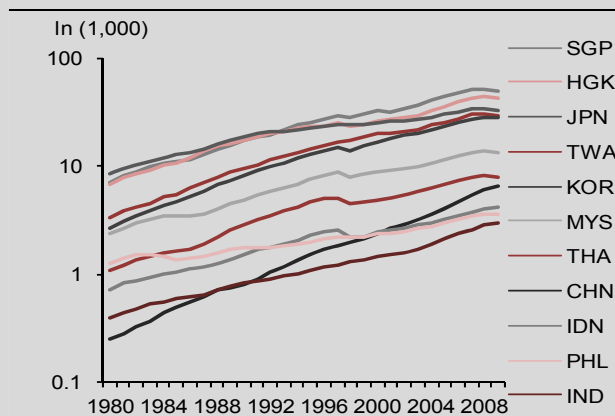
This high degree of cultural and economic diversity in Asia represents immense potential for social and economic growth and development in the region. At the same time, realising that potential represents a considerable challenge for policy. Not only will Asian authorities have to make policies appropriate to the many issues specific to their own countries, but they will also, collectively, have to ensure that their policies work optimally together. This theme recurs throughout this Study, in a range of policy contexts. ■

Figure A. Impact of assumption changes on GDP growth



Note: EE/FSU = Eastern Europe plus former Soviet Union; LA/Ca = Latin America plus Caribbean; NA/ME = North Africa plus Middle East; SSA = sub-Saharan Africa. Source: Fearon (2003) and Nomura.

Figure B. Impact of assumption changes on inflation



Source: IMF World Economic Outlook Database (October 2009) and Nomura.



faster than the average and accelerated in the mid-1990s. In Japan, the opposite occurred.

...albeit with differences across countries

During the 1960s, 1970s, and 1980s, Japan registered exuberant growth – the so-called “Japan Miracle” – with GDP growth averaging 8% per year. In the early 1990s, however, the economic collapse that followed the unprecedented booms in the stock and real estate markets triggered a “lost decade” of stagnation and prolonged deflation. Signs of recovery emerged only after 2005. As a result, Japan’s annual real GDP growth averaged just 2.3% in 1980–2008, somewhat below that of the US (2.9%), and similar to that of Europe (2.2%) (Figure 3).

Asia is on the way to (re)assuming its weight in the world

Taking all its economies together, Asia as a region is on the way to (re)assuming a weight in the world economy more commensurate with its population. That said, Asia is only part of the way down this road. Even if present growth rates are maintained over the coming decade, Asia in 2020 will account for around 40% of the world economy (on a PPP basis). Although similar to its position in the mid-1800s (see the cover chart), this would still be below Asia’s (50%-odd) share of the world’s population.

### Asia’s prospects before the crisis

A basic question about Asia’s future concerns how, and to what extent, the recent global financial crisis, the subsequent economic recession, and the policies adopted domestically and abroad as a result, will affect the region’s economies in the coming decade.

Good fundamentals suggested that...

Right up to the moment when the global financial crisis began to unfold in 2007, Asia’s prospects appeared bright. Following the 1997-98 Asian crisis, the region had progressively restored its economic fundamentals. Recovery had been helped by a decade of structural reforms and the information technology (IT) boom, although it was hindered in a few countries by political instability. Between the end of the 1990s and 2006, growth had averaged about 6% (7.2% in Asia ex Japan). Growth was expected to ease in 2007, but only slightly – in the summer of 2007, the consensus was for a slowdown of less than 0.5pp (Figure 4).

...Asia was well placed to weather a US slowdown...

An optimistic view was often expressed that, although any slowing of US import demand, and thereby of Asia’s exports, would inevitably have a knock-on effect on Asia’s economic growth, the overall impact would be contained. Rising intra-regional trade, it was contended by those who propounded this “decoupling” thesis, could and quite probably would counterbalance weaker exports to the US. Taken together with signs of still-robust external demand for electronic goods, and given the ample room in several Asian economies for counter-cyclical monetary and fiscal policy, it was conjectured that the region might well withstand even a sharp US slowdown.

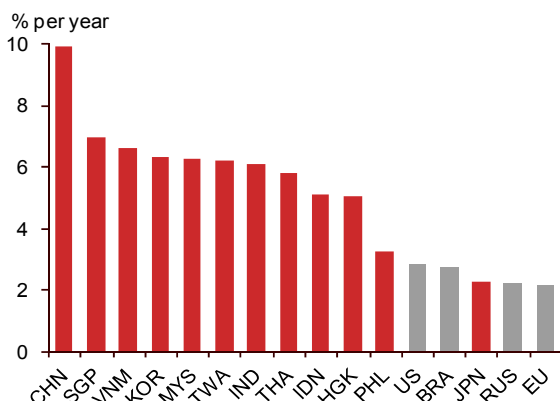
### The impact of the crisis

...but, in the event, it was hit hard

In the event, however, what followed was not just a US slowdown, but a global recession, implying larger than originally expected effects on Asia. However, even after allowing for the unexpected breadth and depth of the world slowdown, the initial severity of the impact on Asia came as something of a surprise. Asia’s recession was deeper even than the one that followed the region’s own crisis at the end of the 1990s. Peak-to-trough, the fall in Asia-ex-Japan’s GDP was 4¼% in the 1997/1998 crisis. In the recent recession, by contrast, the fall was 7½% (Figure 5).

At least part of the reason that Asia was hit so hard lies in the region’s high degree of economic integration with the rest of the world. By the time of the recent global financial crisis, exports as a percentage of GDP in almost all Asian countries were well above the 30%-odd average of the

Figure 3. Real GDP growth (average 1980–2008)



Source: IMF WEO and Nomura

Figure 4. Pre-crisis consensus GDP growth forecast

	2005	2006	2007
Japan	1.9	2.2	2.3
Hong Kong	7.5	6.8	5.4
South Korea	4.2	5	4.5
Singapore	6.6	7.9	6
Taiwan	4	4.6	4.2
China	10.4	10.7	10.4
India	8.7	9.1	8.2
Indonesia	5.7	5.5	6.1
Malaysia	5.2	5.9	5.7
Philippines	5	5.4	5.7
Thailand	4.5	5	4.1
Vietnam	8.4	8.2	8.1
Asia	7.2	7.6	7.2

Source: Consensus forecasts and Nomura Global Economics

OECD economies (Figure 6).

The region is closely linked to the West through trade...

Moreover, hopes that the rapid, decades-long expansion in Asian trade would enable Asia to decouple from developments in the advanced economies of the West proved to be misplaced. A large proportion of Asia's intra-trade – more than 70%, according to estimates by the Asian Development Bank<sup>2</sup> (ADB) – consists of intermediate goods used in intra-industry processing and assembly through vertically-integrated production chains. Furthermore, more than 40% of Asia's final output is eventually consumed in the EU, the US, and Japan.

...so exports, and hence GDP, plummeted

It was therefore inevitable that the collapse of demand in the advanced economies would propagate rapidly across the region via the integrated supply chain. The spillover was amplified by Asia's product mix. Much of Asia specialises in producing the types of goods – medium-technology manufactures, especially motor vehicles and electronic goods – that were hit hardest by the slowdown in private consumption, particularly in the US.

The shock was unprecedentedly large

Asia's exports plummeted. Between September 2008 and February 2009, exports fell at an annualised rate of 70% in emerging Asia, almost three times faster than during the Asian crisis of the late 1990s. A major drying-up of trade finance hit durable goods exports – Asia's bread and butter. Moreover, Asian capital markets, which had grown fast and become integrated with world financial markets, experienced a major withdrawal of international loans by European banks. Both factors were short-lived, but they were severe while they lasted.

Asia's economies have never, in the more than 60 years since the end of the Second World War, been subjected to a shock of this type or of this magnitude. Just as there was no close historical precedent from which to predict it, neither have there been any conclusive signals as to its likely consequences. However, evidence from other, similar – though by no means identical – recessions around the world is instructive.

**Evidence from past episodes**

There are no perfect parallels

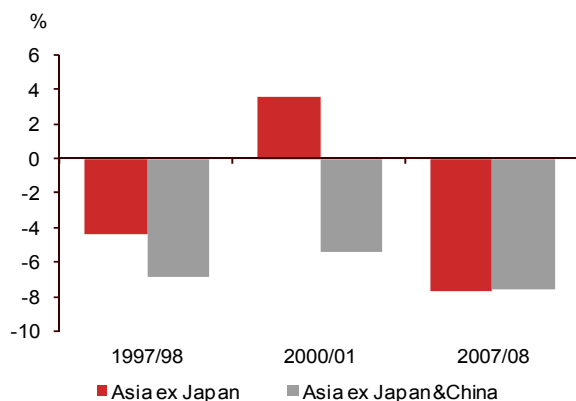
The recent recession, caused by a financial crisis, has parallels with the events that led to the Great Depression of the 1930s. Both began in the US and, in both, rapid credit expansion and financial innovation led to high leverage. But the credit boom of the 1920s was largely specific to the US, whereas in 2004-07 the boom was global. Moreover, economic integration and, even more so, financial integration, are today markedly higher than during the interwar period.

Recessions that are financial in origin and highly synchronous...

Neither does the period since the Great Depression offer perfect parallels. Although there have been many financial crises over the past 50 years, and numerous downturns that have affected a number of economies more or less simultaneously, there has been no financial crisis as big as the present one. Moreover, few economic downturns have been so highly synchronous.

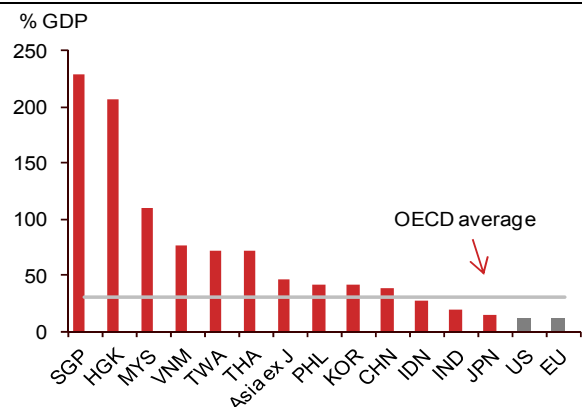
The most comprehensive examination of the broad characteristics of recessions and recoveries since the Great Depression has been conducted by the International Monetary Fund<sup>3</sup> (IMF). In an examination of 21 advanced economies<sup>4</sup> over the past 50 years, the IMF classified recessions (peak-to-trough in the level of GDP) and recoveries (trough-to-pre-crisis-peak-of GDP) according to their underlying causes.

Figure 5. Peak-to-trough change in real GDP



Source: CEIC, Eurostat, OECD and Nomura Global Economics

Figure 6. Exports of goods and services



Note: Data are for 2007  
Source: CEIC, Eurostat, OECD and Nomura.

For recessions, the evidence (Figure 7) is that:

- Downturns typically have lasted for about four quarters, with the GDP fall between the peak and trough quarters averaging about 2¾%;
- Financially induced downturns, by contrast, have generally been more severe, lasting about six quarters, with the GDP fall around 3¼%;
- Downturns that were highly synchronous<sup>5</sup> across countries were also more severe than average, lasting around five quarters, with the GDP fall around 3¼%;
- Hence, as might be expected, downturns that have been both financial in origin and highly synchronous across countries were particularly severe, lasting around seven quarters, with a GDP fall of about 4¾%.

The reason why financial and synchronised downturns last longer than average owes in part to the nature of the expansion that preceded the downturn.

**...last longest and are the most severe...**

Financial crises are generally preceded by credit booms that produce accelerating goods and services inflation, asset-price bubbles, or both. These bouts induce inflated notions in the minds of individuals and companies about their wealth and likely future prosperity.

When the asset-price bubble bursts, households and companies experience a loss in perceived wealth (in reality, that wealth never really existed, as becomes evident from the way that asset prices collapse almost as soon as selling starts). Aggregate spending starts to fall, in turn pulling down aggregate output and employment.

**...and their recoveries are the slowest**

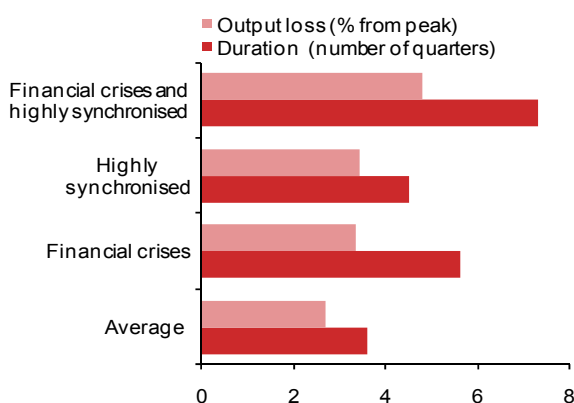
After several years of behaviour predicated on the belief that economic prospects have permanently improved and that increases in wealth are real, households and companies are forced to adjust their expectations. They set about restoring at least part of their past, albeit imaginary, wealth. The only way for households and companies to do this is to raise the proportion of income that they save. If the amount of wealth that they see themselves as having lost is large, reconstituting even a portion of that lost wealth may take many years. Meanwhile, unless offsetting policy action is taken, output and incomes slide further.

As regards recoveries, the evidence (Figure 8) is that:

- The time taken to regain the level of activity of the previous peak typically was about 3 quarters;
- Recovery from financially-induced recessions, however, has taken longer – about six quarters;
- Similarly, recoveries from downturns that are highly synchronous across countries also have taken longer than average – around four quarters;
- Hence, recoveries from downturns that were both financial in origin and synchronous across countries have been particularly slow – around seven quarters.

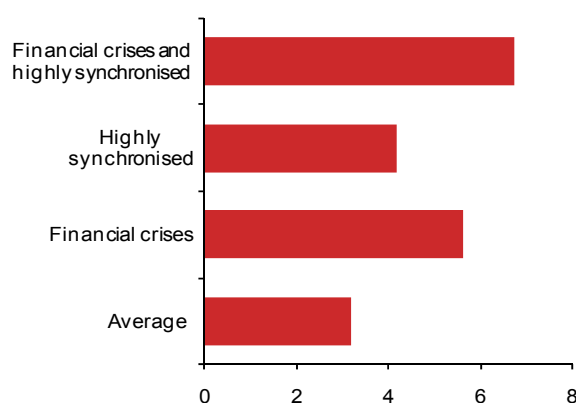
The nature of the expansion that preceded the downturn also does much to explain why recoveries from financially caused, synchronous recoveries are comparatively slow. Asset prices typically continue to decline after the trough in GDP and credit growth remains weak. Households and firms revise their expectations down and, to restore their lost wealth, continue to save more heavily than in the past. Resulting weak consumption in turn leads firms to reduce their investment intentions, further compounding the downturn.

Figure 7. Duration and amplitude of recessions



Source: IMF World Economic Outlook (Apr 2009) and Nomura.

Figure 8. Duration of recoveries (number of quarters)



Source: IMF World Economic Outlook (Apr 2009) and Nomura.

Moreover, whereas in single-country downturns it is often possible, by means of a weaker currency, to offset weak domestic demand by stronger export demand, in a synchronised recession, world trade is not buoyant. And countries cannot all simultaneously increase their export market shares by devaluing their currencies.

Such evidence should be applied to Asia with caution, however, not least because the six principal episodes from which the conclusions have been derived are all European: Germany (1980); Finland (1990); Sweden (1990); France (1992); Greece (1992); and Italy (1992).

### Episodes in Asia

Limiting the analysis to the Asian economies (and to the post-1980 period because of rapid changes in the economic structure of the region) reveals that past downturns in the Asian region have typically been neither very long, nor particularly deep.

IMF analysis<sup>6</sup> has found the median duration of downturns in Asia to have been three quarters, similar to those in advanced economies and other emerging markets. And the median GDP fall during Asian downturns has been around 5%, which compares with a median loss of about 3% in advanced economies, and around 10% in other emerging markets.

The recovery phase has usually taken a little longer in Asia than in other emerging economies: typically it has taken three quarters in emerging Asian economies to re-attain pre-recession output levels, whereas other emerging markets have taken two quarters, on average, even though they were recovering from an output fall that was, in general, about twice as large.

One reason for this (modest) difference between Asian and non-Asian emerging economies in the recovery phase has been that, whereas non-Asia emerging economies have typically benefited from a strong V-shaped recovery in investment, recoveries in Asia have tended to be characterised by a strong rebound in exports, with a relatively weak contribution from domestic demand, including investment. Fully 60% of recoveries in Asia have been led by exports, compared with just 30% by consumption, and only 10% by investment (Figure 9).

Most of these export recoveries took place when growth in the major western economies was buoyant. Instances include the rebound after the Asian crisis, and the post-2001 rebound, which coincided with the recovery of the US and Europe from their own recessions (Figure 10). Moreover, these export rebounds in Asia were helped by currency depreciation – generally, the bigger the depreciation, the bigger the export recovery.

### Help from demand management policy

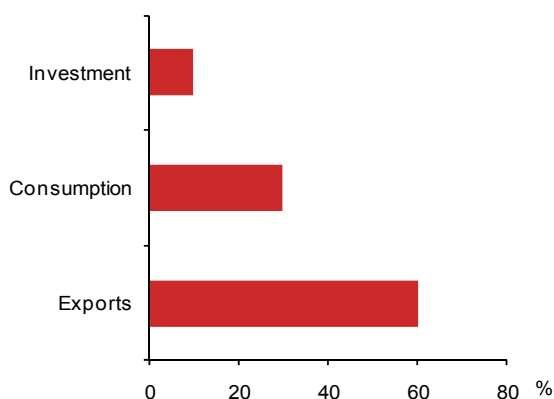
Policy has the potential to assist recovery. Evidence across all types of downturns<sup>7</sup> is that monetary and fiscal policies can mitigate the duration of the downturn and help strengthen the recovery. Four conclusions bear particularly on the present situation:

- Conventional monetary policy action is likely to have less of an impact in financial crises than in other crises because stress in financial markets hampers the effectiveness of the bank lending channels of the monetary policy transmission mechanism.
- Expansionary fiscal policy – particularly an increase in government consumption – significantly increases the probability of exiting recession, especially financial recessions, because it can break the negative feedback between the real economy and financial

Recoveries in Asia have typically been led by exports

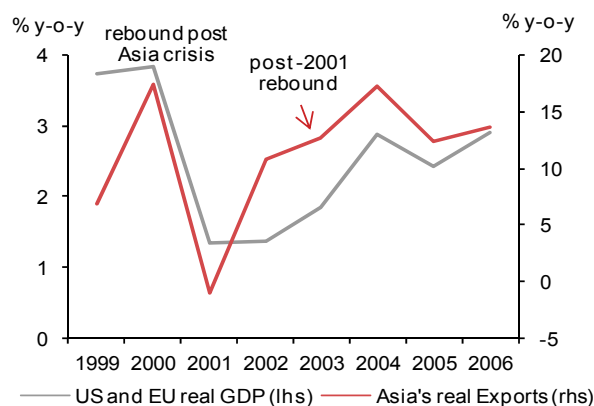
Policy action can limit downturns and aid recovery

Figure 9. Recovery in Asia by drivers, post-1980



Source: IMF Regional Economic Outlook (May 2009) and Nomura

Figure 10. Asia's export growth and Western GDP growth



Note: Estimates for China's exports volumes  
Source: OECD, Eurostat, Cabinet Office, CSO and Nomura

conditions by acting as a “spender of last resort”.

- The effectiveness of fiscal policy is likely to be greatest when initial public sector indebtedness is comparatively low.
- Action to restore the health of the financial sector, particularly coherent and comprehensive moves to restore financial institutions’ balance sheets, thereby removing funding uncertainty, is a prerequisite for sustained recovery.

Since the 2007/08 global financial crisis, the size of the global fiscal and monetary policy stimulus (both conventional and unconventional) has been exceptionally large. Moreover, there has been an unusually high degree of international coordination in the policy response.

The 2008/09 policy stimulus was exceptionally large

## Asia had “saved for a rainy day”

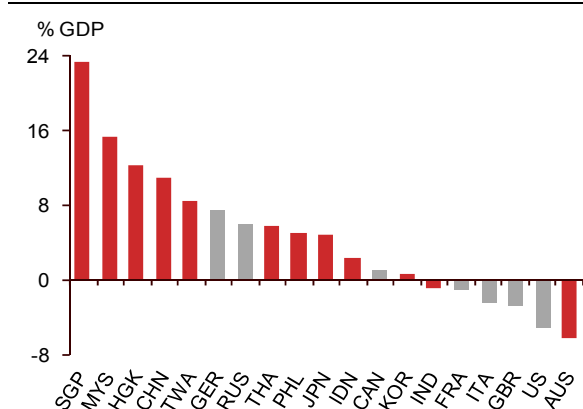
In Asia, as in much of the rest of the world, the policy response has been substantial. The decline in policy rates has been four times greater than the average of past recessions. And the fiscal response has been twice as large as that which followed the Asian crisis. Taken together, the size of the fiscal and monetary policy easing has been unprecedented.

Thanks to sound economic fundamentals...

The Asian economies were generally well placed to undertake such actions because, having been hit hard by the crisis of 1997-98, their economies had long since restored their macroeconomic fundamentals – for more, see Subbaraman, R., Kinoshita, T. et al. (2008). Moreover, economic fundamentals were, by most metrics, in considerably better shape in Asia than in other regions.

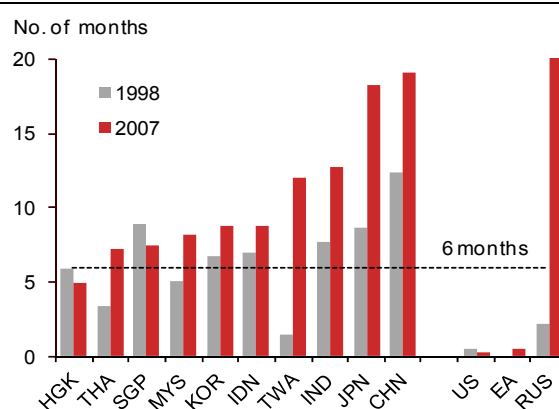
- **Balance of payments.** Over the preceding decade, exports, aided by undervalued currencies, had grown at double digit-rates. Most Asian economies had accumulated substantial current account surpluses (Figure 11). The surpluses in Singapore (23.5% of GDP), Malaysia (15.4%), Hong Kong (12.3%) and China (11%) were particularly large.
- **Foreign exchange reserves.** The build-up of large current account surpluses and net capital inflows had resulted in the accumulation of substantial foreign exchange reserves. China had accumulated particularly substantial reserves – by 2007 they had reached US\$1.5trn. Foreign exchange reserves were large elsewhere in Asia, too, not only in absolute terms, but also relative to imports and GDP. Almost all of the Asian economies had foreign exchange reserves sufficient to cover at least six months of imports – a figure generally considered to represent adequate cover (Figure 12).
- **External debt.** Most Asian countries had reduced their foreign debt outstanding over the past decade. Moreover, in all economies except Hong Kong and South Korea, the level of current account surpluses/deficits and foreign exchange reserves exceeded short-term external debt and inward security investments, such that even a sudden reversal of all short-term loans and security investments could be covered by domestic sources.
- **Public sector finances.** Many Asian economies entered the crisis with significant room for countercyclical fiscal support. The ratio of public debt to GDP was markedly below the OECD average, which exceeds 100% of GDP, albeit with considerable differences across countries. Japan, with a ratio of nearly 200%, was the major Asian exception. India, the other Asian economy with a fairly high debt-to-GDP ratio, was nevertheless below the OECD average (Figure 13).

Figure 11. Pre-crisis current account balances



Note: Data are for 2007  
Source: IMF WEO database and Nomura

Figure 12. Pre-crisis FX reserves (months of imports covered)



Source: IMF (IFS and DOT) and Nomura Global Economics

- **Domestic leverage** in the region was low. The loan-to-deposit ratio across nearly all the major Asian economies was below 1 – frequently taken to be a critical value – South Korea being the only exception, with a ratio of 1.4. Moreover, Asia’s domestic leverage was low by international standards, being below the average both of OECD countries and of most other emerging economies.
- **Financial sector soundness.** Asian banks entered the crisis with generally strong capital positions, and generally held much less of the various types of problematic assets than did their counterparts in the West.

...Asia was able to implement large stimulus measures...

Accordingly, when the 2007/08 crisis started to unfold, the region had ample scope to respond. Sound macroeconomic fundamentals in general, and good public sector finances in particular, enabled the region to implement significant discretionary fiscal stimulus packages. In 2009, these were in general larger than the G-20 average (Figure 14).

Discretionary measures were particularly needed in Asia because most of its economies do not have the extensive “automatic stabilisers” (notably unemployment benefit systems) that are a feature of many Western economies and that quickly provide support to aggregate demand when output and employment weaken.

...weighted towards investment spending

Relative to the G-20 as a whole, stimulus packages in the Asian G-20 countries were more heavily weighted towards spending, with a particular emphasis on investment and infrastructure and less on social safety nets. The Chinese fiscal stimulus, of about RMB 4trn (nearly 3% of GDP in 2009, and around 12% of GDP over 2-3 years), was particularly investment-focused.

### The consequences for output

Past recessions have typically entailed not only cyclical, but also permanent, losses in output. In a typical recession, GDP may grow faster than trend in the early stages of recovery, but it does not normally make up anything like all of the “lost ground”. Even seven years after a crisis, output is typically around 10% below where it would have been had it remained on its pre-crisis trend.

The loss of GDP...

This GDP loss stems mainly from reductions in the main factors of production: labour (initially via unemployment, and subsequently through a deterioration in skills) and capital, mainly through investment foregone. Investment, which is typically more volatile than consumption, usually falls in such crises by about 30% relative to its pre-crisis trend – around twice the fall in consumption.

...looks to have been substantial in the US and the EU...

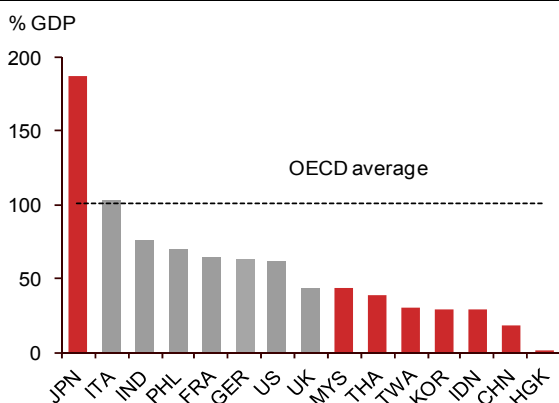
This experience looks as if it is being repeated in the US and the EU. On the assumption that the trough in GDP has now been passed in both economies, it looks as if output will have fallen to a little more than 5% below trend in the US (Figure 15), and around 8% below in the EU.

Moreover, on the basis of projections that appear plausible at the moment, even 10 years after the onset of the downturn, output in the US and in the EU is likely to be many percentage points (pp) below the pre-crisis extrapolated trend.

...but much smaller in Asia

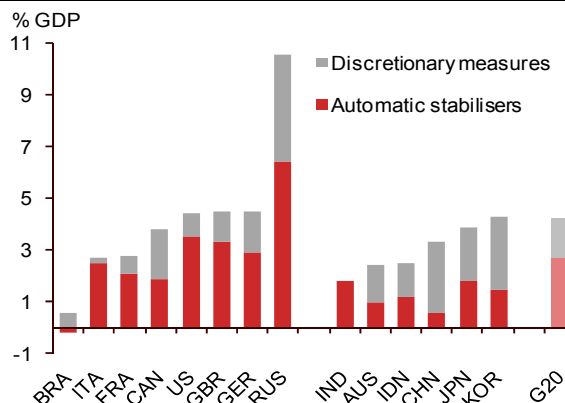
It looks, however, as if Asia’s experience will be quite fundamentally different. China and India, in particular, suffered no reduction in GDP relative to trend – indeed China’s GDP growth accelerated slightly (Figure 16). A number of other Asian economies did see falls in output to below trend, but for the region as a whole this has been only slight.

Figure 13. Pre-crisis public sector debt



Note: Data are for 2007  
Source: IMF WEO Database, National Central Banks and Nomura Global Economics

Figure 14. Fiscal stimulus in 2009



Source: IMF (April 2009) and Nomura

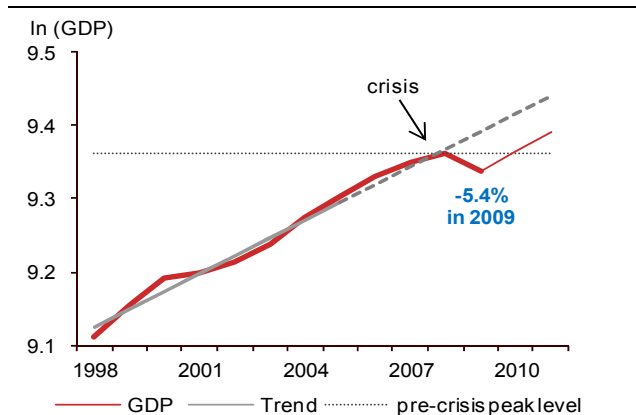
Thus, Asia's ability to undertake substantial, and credible, policy expansion has benefited the region considerably:

- Good macroeconomic fundamentals contributed to the effectiveness of policy stimuli.
- The downturns in Asia's economies have, as a result, been shallower, so less output has been lost than might otherwise have been the case.
- Hence, as Asian growth resumes, it will do so from a higher level of GDP than would otherwise have been the case;

**Thus, growth in Asia will resume from a higher level**

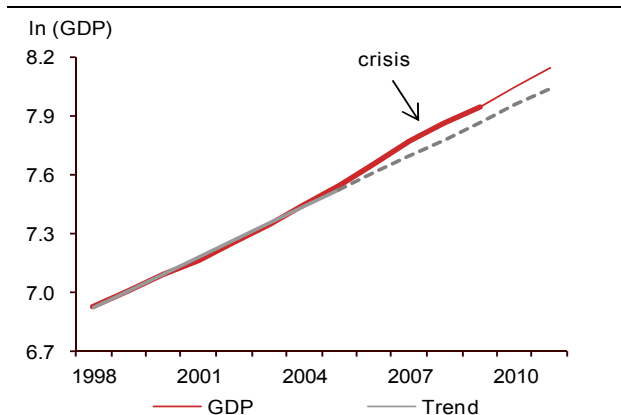
These developments have served to accelerate the trend decline in the economic "hegemony" of the Western world that has been taking place for around 30 years. Looking ahead, Asia stands to have a bright future, provided that it can capitalise upon its considerable supply-side potential by achieving brisk and balanced growth of aggregate demand.

**Figure 15. US GDP over the crisis**



Note: The pre-crisis trend is estimated up to 3 years prior to the crisis (i.e. 2005), and is extrapolated thereafter.  
Source: IMF World Economic Outlook (October 2009) and Nomura

**Figure 16. China GDP over the crisis**



Note: The pre-crisis trend is estimated up to 3 years prior to the crisis (i.e. 2005), and is extrapolated thereafter.  
Source: IMF World Economic Outlook (October 2009) and Nomura

## Asia's medium-term prospects look bright

In considering Asia's prospects for the coming decade, this section first highlights the enormous supply-side potential of most of Asia's economies. This is the region's basic endowment. Mobilising this supply-side potential, however, will depend crucially on policy – both on the demand side and on the structural side.

On the demand side, it is necessary not only to have rapid growth of nominal demand, but also for the configuration of that aggregate demand to be sustainable over the medium term.

Often, however, a brisk, sustainable growth of aggregate demand, while necessary, is not sufficient to mobilise the economy's supply-side potential. Structural policies to facilitate the flow of resources to their most productive uses can thus be equally important.

### The supply side – a great deal of potential

Asia's supply side offers much potential

The supply side offers considerable scope for the Asian region to continue to increase output in the coming decade at a broadly similar rate to that achieved over the past two or three decades:

- Domestic saving rates are high.
- Investment rates are also high in some Asian economies.
- Urbanisation rates are still low.
- Demographics are favourable in a number of countries.
- Labour is underutilised in most countries.
- Education and skill levels are in many cases low, but rising.
- Health systems offer considerable scope for improvement.
- Service industries are inefficient and over-regulated, offering considerable potential.

For Asia's considerable supply-side potential to continue to be realised, however, aggregate demand has to develop commensurately briskly. Realising this brisk growth of aggregate demand, in a sustainable manner, is perhaps the greatest economic policy challenge facing the Asian economies in the decade ahead.

### The demand side – the “rebalancing” challenge

Asian growth has been driven by exports...

In past decades, Asia's growth of aggregate demand has been driven largely from abroad – that is, by the rapid growth of (mainly Western) demand for Asia's exports. This “export led-model” has proved highly successful, with (real) aggregate demand, and thereby GDP, growing at nearly 6% per year on average across Asia as a whole since the 1980s.

Several factors have contributed to this success, including: undervalued currencies vis-à-vis the Western economies in particular; increasing trade liberalisation across Asia; and the establishment of an elaborate cross-country production network. These factors have enabled the region to develop and exploit comparative advantages in the production of consumer durable goods, particularly in high-tech industries.

...which have grown twice as fast as domestic demand...

From the end of the 1990s, exports grew by, on average, nearly 10% per year across the main Asian economies. The growth of domestic demand was, by contrast, relatively modest, rising at less than half the pace of exports (by about 4½% on average; Figure 17).

As Asia's export volumes grew, their weight in GDP increased in most countries. China and India have export-to-GDP ratios of 32% and 22%, respectively. These figures are well above the 13% ratios recorded by the US and the EU (taken as a single entity; i.e., excluding inter-European trade) (Figure 18).

...in contrast with developments in the West

In smaller Asian economies, such as Korea, Taiwan, Thailand, and Malaysia, exports now stand at between 50% and 100% of GDP. And in Hong Kong and Singapore, exports are twice the size of GDP, although this is a potentially misleading statistic, in that it includes the considerable entrepôt trade in which those two economies engage.

Japan is the striking exception in Asia. Over the past decade, its exports have grown at much the same pace as in the rest of Asia, but domestic demand has grown at a sluggish 1%-odd.

Developments in Asia thus contrast markedly with those in the West. In the US and Europe, in particular, export growth has been markedly slower (averaging just below 5% per year), while domestic demand has grown by around 2%.



These developments have taken place in the context of fundamental structural change. As manufacturing production has become geographically more integrated across Asia, China has increasingly become the major export destination for other Asian economies' intra-regional exports. (See the Chapter *Trade agreements: Key to Asia's growth* for more on this). China is now a major regional centre for processing and assembling components into finished consumer goods, thereby increasingly becoming Asia's "exporting platform" to the rest of the world.

In the process, Chinese manufacturing exports, with their high Asian-import content, have increasingly penetrated major global markets. Exports from China have more than tripled in the past decade relative to world GDP (from 0.6% to more than 2%). US imports from China have risen from 0.8% of US GDP to 3%; in Europe the rise has been from 0.5% to 2.8% of EU GDP.

## The need for international rebalancing

Large current account imbalances have built up

Asia's rapid export growth has caused most of its economies to accumulate large surpluses on the current accounts of their balance of payments – recently running at around 7% of GDP, on average. China, with a surplus of more than 10% of GDP at its peak in 2007, has been the main protagonist of this in the East, while the US, with a deficit of more than 6% in 2006 of its (much larger) GDP, has been the principal counterpart (deficit) region in the West.

India and Germany have been the principal exceptions, at the two ends of the spectrum: India has been running a small deficit, as domestic demand has been the main engine of growth; Germany has been running a large surplus (7½ %-odd of GDP).

This pattern of global trade imbalances that has accompanied Asia's export-led growth is regarded by many, particularly but not exclusively in the West, as a principal cause of the recent financial and economic crisis. That said, see Box: *What is "export-led growth"?*

As the global economic slowdown has progressed, the imbalances may have been reduced somewhat. But in all likelihood, this will prove to have been only cyclical. The concern of many policymakers, particularly in the West, is that, unless fundamental changes are made, the imbalances will likely re-emerge once world growth resumes.

Policymakers wish to see a rebalancing of global demand...

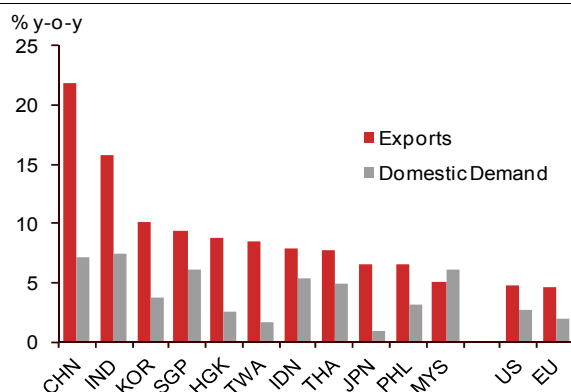
Whatever the final conclusion about the importance of global imbalances in causing the recent financial and economic crisis, many policymakers wish to see some rebalancing in the global pattern of demand. In broad terms, such rebalancing would involve:

- In the West, and particularly in the US, slower growth of domestic demand accompanied by faster growth of exports; and
- In Asia (particularly China), faster growth of domestic demand, in combination with slower export growth.

Whatever the validity or justice of this analysis, policymakers in Asia would probably be wise to plan on contributing to a global rebalancing. Trade tensions are rising. In particular, it would seem wise for China not to plan on having as rapid a growth of exports to the West as it has had in the past. This implies significant consequences for future growth.

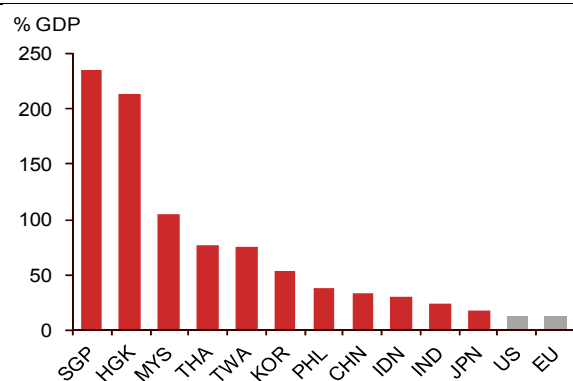
To illustrate, suppose that, over the coming decade, US import growth from China were to halve (in volume terms) from its level of 12%-odd over the past decade to a (still-vigorous) 6½%. This could slow Chinese GDP growth by around ½ a percentage point per year, on average.

Figure 17. Exports and domestic demand (average 1998-2008)



Source: National Sources and Nomura

Figure 18. Weight of exports in GDP



Data: goods and services, 2008. EU data: our estimate of exports from Europe to the rest of the World (i.e. excluding intra-trade). Source: National Sources and Nomura.

## What is “export-led growth”?

*This innocent-sounding phrase should be interpreted carefully: its short- and long-run meanings differ.*

The term “export-led growth” is frequently used to characterise the process that has “underpinned”, or “caused”, or “led”, growth in a number of economies, including Japan, Germany and, more recently, a range of Asian countries. What is to be understood by the term is, however, not always as obvious as it might seem.

Short-term forecasters frequently present tables, like the one below, that show the contribution that the change in the level of each of the main components of demand has made, or is expected to make, to the change in (real) aggregate demand year-to-year. Such a table for South Korea would look thus:

	2007	2008	2009	2010	2011
Private Consumption	2.7	0.5	0.1	2.7	2.3
Government Consumption	0.8	0.6	0.7	0.3	0.6
Construction	0.2	-0.3	0.5	-0.2	0.2
Business Investment	1.0	-0.1	-0.8	1.0	0.3
Change in Stocks	-0.3	0.8	-4.0	2.7	0.3
Exports of Goods and Services	5.2	2.6	-0.5	4.8	3.8
Imports of Goods and Services	4.5	1.5	-3.7	5.8	3.6
Net Trade	0.7	1.1	3.3	-0.9	0.3
Residual error	0.0	-0.3	0.4	0.0	0.1
<b>GDP</b>	<b>5.1</b>	<b>2.2</b>	<b>0.2</b>	<b>5.5</b>	<b>4.0</b>

Source: CEIC and Nomura Global Economics. Forecasts are in italics

The values are obtained by multiplying each component’s (year-on-year) growth rate by its previous-year weight in GDP. Thus, the figure of 2.7 for the contribution of private consumption in 2007 is obtained by multiplying the growth rate of consumption in 2007 (5.1%) by the 2006 share of consumption in GDP (0.54). Importantly, this calculation implicitly assumes that the various components of demand are essentially independent of one another. And that would be basically the case in a closed, or near-closed, economy.

Once exports are introduced, however, the meaning becomes less clear. Suppose export demand in a given year turns out 1 percentage point stronger than South Korea’s exporters had initially expected. It might seem reasonable to assume that the sole consequence would be to raise the growth rate of GDP by that 1 percentage point multiplied by the share of exports in South Korea’s GDP i.e.  $(1 * 0.45) \approx 0.5$  percentage points.

However, the effects of this export stimulus are unlikely to stop there; over the longer term there will be consequences. For example, the increase in exports is likely to require at least some increase in imported inputs. In principle, this is captured, in the “Imports” line. Other components, however, particularly investment, are less straightforward. And here it is necessary to switch from growth rates to levels.

Suppose that this unexpected increase in South Korea’s export orders is worth \$10bn. If Korea’s exporters can meet this out of existing capacity, they may well do so. If, however, they do not have the spare capacity, or if they expect further growth in export orders, they will wish to add to capacity. With the capital/output ratio typically around 3, this implies additional investment spending of the order of  $(3 * \$10bn = \$30bn)$ . And they will also hire additional labour.

Similarly, some additional rise in consumption, housing investment, and other components of aggregate demand will flow from the income growth of those newly employed in export industries – sometimes called the “multiplier effect” of exports on domestic demand. Thus, part of the reason why the figures for investment and other components of demand have the values they do, and hence part of their calculated contribution to GDP, is attributable, indirectly, to export growth. Were exports not as high as they are, expenditures on consumption, housing investment, and other components of demand, too, would not be as high as they are. Thus the export-contribution figure understates the true *causal* contribution of exports to GDP.

It is empirically difficult to separate the part of expenditure on investment and other components of aggregate demand that results from exports from that which is to the result of purely domestic components of demand. However, calculations based on Korea’s input-output table for 2007 suggest that around 34% of industrial output, and 40% of imports, are attributable to exports (Bank of Korea (2009)). The figure for China is probably lower – about 15% for industrial production. (For more, see Sun, M. (2009) and Koopman et al. (2008)).

An alternative concept posits that an economy’s growth is export-led if its exports grow faster than world trade. Care must be taken here, too, however. Even if an economy’s share of world trade has been growing, this does not necessarily mean that that economy has been growing at the expense of other economies.

Fast-growing economies tend to have fast-growing imports, which, from the standpoint of trading partners, are exports. Thus export-led growth in one economy can engender export-led growth in other economies – the fundamental insight of the Marshall Plan. (For more, see Box: *The Marshall Plan*). ■

The effects of a halving of Europe's import growth from China might be even greater, both because Europe's imports from China have been growing faster than those of the US, and because their total is slightly larger (Figure 19). If Europe's import growth from China were also to halve from its previous 20%-odd rate, China's GDP growth could on that account decline by around 1½ percentage points per year, on average.

Thus, a halving of China's export growth to both the US and to Europe could take around two percentage points per year off overall Chinese GDP growth, on average (Figure 20). This would be significant. However, offsetting this downward effect of slower export growth on China's GDP growth need not be an insuperable challenge. China has considerable scope, as it is already demonstrating, for domestic demand to take over from slower export growth.

...combined with slower export growth to the West

Asia's economies in general have considerable scope to achieve the two components of the region's contribution to global rebalancing – a deceleration of the rate of growth of exports (to the West) and an acceleration of the growth of domestic demand (for more see Subbaraman, R. (2009)). These policy adjustments generally have to be pursued jointly. (for more, see Box: *Getting the balance right*). However, economic reasoning and experience point to important differences in how this needs to be achieved across Asia's differently-sized economies.

### Large economies

Rebalancing is easier for large economies

In the larger Asian economies, it is considerably more feasible for development and growth to be based on the growth of domestic demand than in the smaller ones, for two main reasons:

1. Large economies, with their large (actual or potential) domestic consumer markets, need not look abroad for markets large enough to warrant setting up large-scale, high productivity plants. And they are likely to have relatively small imports of manufactures.
2. Large economies are usually also geographically large, and so can generally source a greater proportion of their raw material requirements domestically than smaller economies can. Hence, their import propensity is likely to be smaller (Figure 21).

Probably the most pertinent Western example of a large economy that has successfully achieved domestic-demand-led economic growth is the US. Until only relatively recently – the early 1960s – US exports accounted for less than 5% of US GDP<sup>8</sup>.

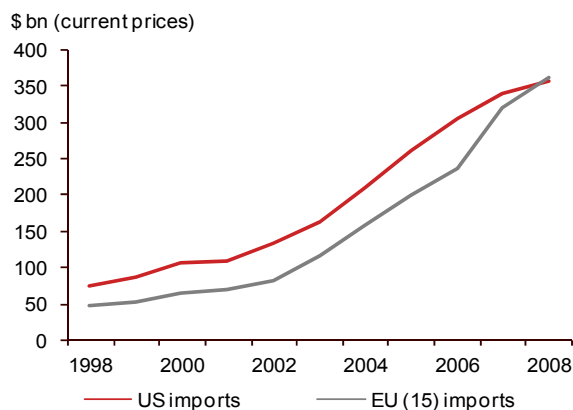
The US and India have had domestic-demand-led growth...

In the East, India is probably the most important case of successful domestic-demand-led growth. India's remarkable post-Independence growth, which has accelerated in every cycle since 1947, has been driven largely by the growth of internal, rather than external, demand. Domestic demand has grown solidly (by around 5% on average) over the past 50 years and has accelerated since the mid-1990s. Exports have grown at much the same rate as domestic demand (around 7% per year on average), thus playing a comparatively minor role and accounting for only 8% of GDP, on average. (See Llewellyn, J., Subbaraman, R., Newton, A. and Varma, S. (2007)).

Indonesia and the Philippines, too, have seen successful domestic-demand-led growth: domestic consumption currently generates around 70% or more of GDP in both countries. Moreover, Indonesia is less reliant than many Asian countries on (primarily commodity) exports.

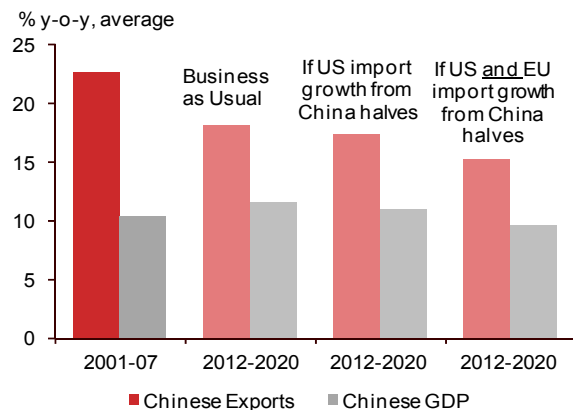
Viewed against this backdrop, China is an interesting anomaly. Given its continental dimension

Figure 19. EU and US imports from China



Source: Bureau of Economic Analysis, Eurostat, IMF DOT and Nomura

Figure 20. Importance to China of exports to the EU and US



Source: IMF Regional Economic Outlook (May 2009) and Nomura

# Getting the balance right

*The US and China need to adjust domestic expenditure and international competitiveness.*

An economy's employment and balance of payments positions are determined jointly. As a general rule, therefore, achieving a desired outcome for the two objectives simultaneously requires the use of two policy instruments. An ingenious way of depicting the issues involved in simultaneously achieving internal and external balance was advanced by the Australian economist T.W. Swan (1955), in what has come to be known as the "Swan diagram."

Figure A reflects the fact that both employment and the current account of the balance of payments depend on the level of domestic spending, and on the economy's (international) relative cost situation. "Real Expenditure", E, represents the volume of total domestic investment and consumption (private and public). The "Cost Ratio", R, represents the (international) competitive position of the economy's industries – e.g. the ratio of an index of international prices to an index of the home economy's prices. The higher is R, the more competitive is the economy.

A given level of employment can be sustained with E low if R is sufficiently high – or with E high if R is sufficiently low. This is shown by the family of A curves. Curve A<sub>2</sub> is the one that represents the full-employment combinations.

A given balance of payments position requires a combination of low E and low R, or high E and high R, shown by the family of B curves. Curve B<sub>2</sub> shows the combinations of R and E that produce the desired current account outcome.

While any combination of E and R that lies on the line A<sub>2</sub> gives internal balance, and any combination along B<sub>2</sub> gives external balance, only one combination simultaneously achieves *both* internal balance *and* external balance – the point where A<sub>2</sub> and B<sub>2</sub> intersect.

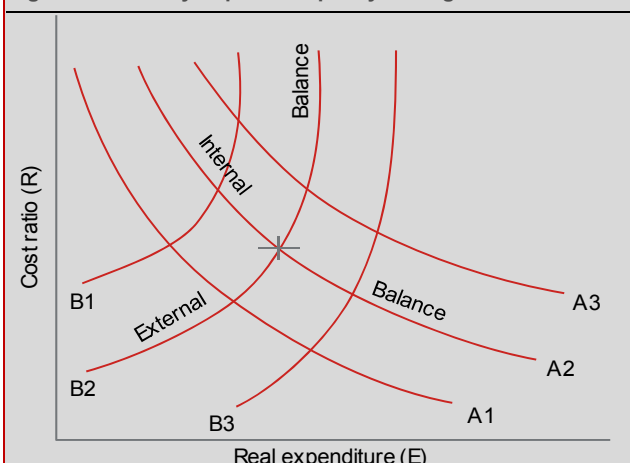
If an economy is out of balance, whether internally, externally, or both, policymakers have to decide how to set the two policy levers. This can be deduced in part by dividing the economy's state into four zones, as delineated by the dotted lines (Figure B).

In Zone II, the level of spending is unequivocally too low, while in Zone IV it is unequivocally too high. And in Zone I competitiveness is unequivocally too high, while in Zone III it is unequivocally too low. Thus in each zone the necessary direction of adjustment of one of the two instruments is apparent: but the other may be either too high or too low, depending on the economy's position in the zone.

To establish the appropriate settings for policy, it is necessary to know not only in which *zone* the economy finds itself, but also in which *quadrant*. Before the global crisis, China's economy was in quadrant A (competitiveness too high, and domestic expenditure too low), whereas the US economy has been in quadrant C (competitiveness too low, and domestic expenditure too high). The post-crisis depreciation of the (trade weighted) US dollar, and increase in the household saving rate, are taking the US economy towards a more sustainable configuration. And so is China's acceleration of domestic demand growth, although, so far, the renminbi has not moved to change China's international competitiveness very much.

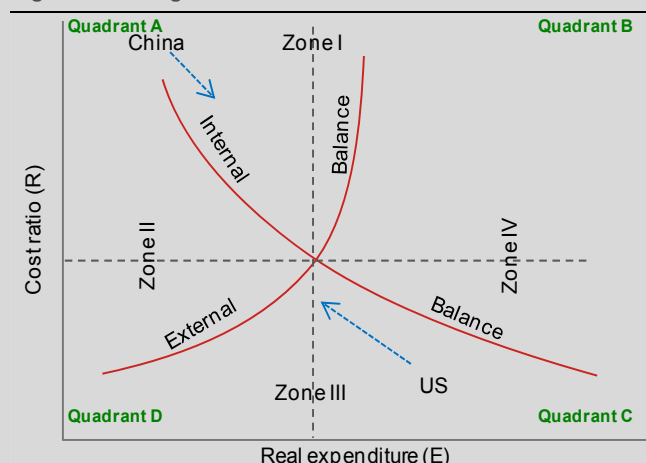
In practice, the policy challenge is more complicated because the curves in question are not static – they move over time. And in economies like that of China, the concept of internal balance is somewhat tenuous. Nevertheless, the Swan diagram does illustrate a fundamental issue for policy and offers some optimism that recent policy shifts, while not yet sufficient, have been in the right direction. ■

Figure A. An array of possible policy settings



Source: Nomura

Figure B. Settings for internal and external balance



Source: Nomura

...but China has been an interesting anomaly

(with a land area of more than 9.6mn sq km, China is geographically much the same size as the US), the economy might have been expected to have experienced a domestic-led economic development broadly similar to that of the US and India.

The reason that China's expansion has not been as domestically led as its size might suggest lies largely in its past policies. The formation of the socialist People's Republic of China in 1949 caused China's trading links to become heavily concentrated with the USSR and other communist countries. As relations with the USSR soured and the European countries, Japan, and the US imposed trade embargoes at the end of 1950, China's share of world trade fell and it was cut off from foreign investment. Resources were allocated by government fiat, with market forces playing a negligible role. Domestic demand stagnated.

With the emergence of the new political leadership in the mid-1970s, the direct role of government in financing and controlling development changed fundamentally. From the early 1970s, opportunities to participate in world trade increased rapidly. State monopoly of foreign trade and the policy of economic self-reliance were abandoned after 1978. The economy progressively opened to the benefits that many other Asian countries had already been deriving from an expanding world economy. An undervalued currency helped considerably. And in 2001 China was admitted into the World Trade Organization (WTO).

China should now be able to "pull itself up by its own bootstraps"

Whereas Chinese exports had only doubled in volume from 1952 to 1978, they rose 28-fold from 1978 to 2003 (Figure 22). In the 25 years from 1978 to 2003, GDP rose nearly seven-fold and labour productivity four-fold. Population growth decelerated sharply and per capita real income rose nearly five-fold. Yet even so, China's GDP per capita today is only around the level of Japan in the 1970s, when that economy was in "take-off" mode.

China now almost certainly has the potential to achieve sustained faster growth of domestic demand, so that the economy can "pull itself up by its own bootstraps":

- China's large, potentially enormous, domestic market offers the prospect of considerable economies of scale in production.
- This in turn implies that a relatively small proportion of domestic demand will leak abroad through expenditure on imports of manufactures.
- The country's large area means that it should be able to source a significant proportion of its raw materials domestically – China has huge reserves, from people to coal.

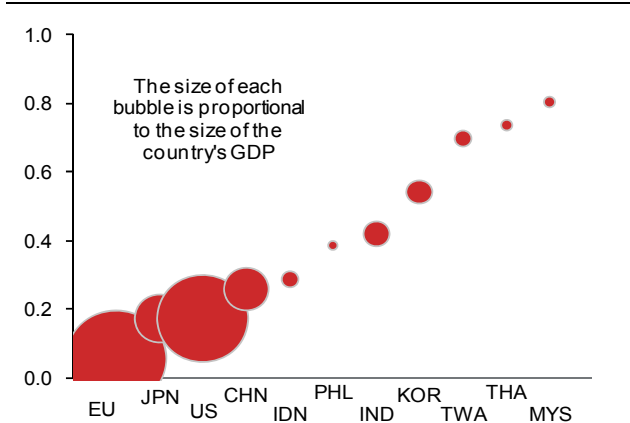
China's exchange rate policy will be crucial

Achieving sustainably faster growth of Chinese domestic demand will not, however, be straightforward. It will depend in large part on the issue that has been overshadowing international policy discussion for many years: China's policy towards its currency.

Real per capita income is rising faster in China than practically anywhere else in the world, and this increase will inevitably find its way into the economy, in one way or another – either through faster domestic inflation or through appreciation of the renminbi.

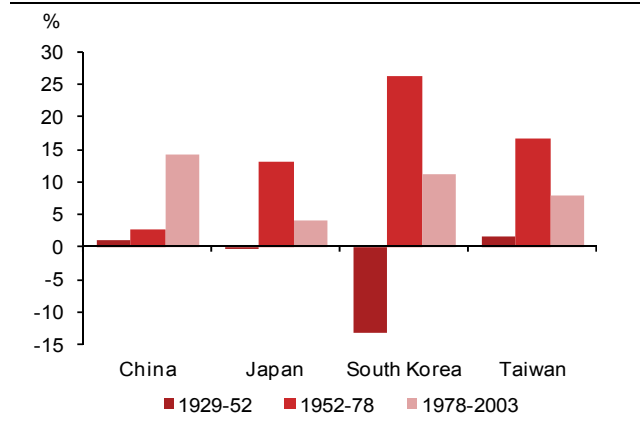
The authorities' policy to date of intervening to prevent currency appreciation is an implicit tax on China's consumers – one estimate is that it is equivalent to an import tariff of 50-60%<sup>9</sup> – and is one of a number of subsidies to the country's producers. This may be considered an appropriate

Figure 21. Marginal propensity to import



Note: Calculation relates to the period 2000 to 2008. EU imports data are our estimate of Extra EU imports (i.e. excluding intra-EU trade). Source: National Sources and Nomura

Figure 22. Export volumes (annual averages)



Source: Maddison (2007)

way to contribute to financing China's massive investment, which is approaching 50% of GDP. And China's consumers are unlikely to be aware of the hidden tax that they are paying; as it is, their real incomes are rising fast.

A more serious problem for the authorities may be that they are having to intervene considerably in the foreign exchange markets to prevent the RMB from appreciating. This is restricting their control over domestic monetary conditions.

**The need to rebalance is less pressing in India**

The need to rebalance is not as critical for India, given that its growth has been primarily domestic-demand-led. Nevertheless, to the extent that India develops elements of a social security safety net, this will lower the incentive to save and should encourage consumption, particularly in rural areas. Rupee appreciation would also strengthen domestic demand. Here, India, like most Asian countries, is likely to take its cue from the speed of renminbi appreciation.

### Smaller economies

Economic history also offers lessons – though quite different ones – for smaller economies. The situation facing the Asian economies collectively today is analytically – though not politically – similar in some respects to that faced by the economies of Europe after the Second World War.

The European experience of the late 1940s was that any single-country economic recovery tended to draw in imports, and thereby create a balance-of-payments crisis. Given the prevailing regime of fixed exchange rates, this obliged the authorities to snuff the recovery out through a tightening of policy to reduce aggregate demand. This succeeded in preventing balance of payments crises, but, it also prevented recovery from getting under way in neighbouring economies.

**Smaller economies would struggle to grow on their own...**

The situation was transformed, however, by the great economic insight that was the cornerstone of the Marshall Plan – that one country's imports are a partner-country's exports. A range of countries – in Europe especially but also further afield – progressively came to see that, by linking themselves together through international trade, economies could achieve things together that they could not achieve individually – for more, see Box: *The Marshall Plan*.

This experience could have applicability for the smaller economies of Asia. Individually, these are almost all too small to be able to base their future economic growth on the expansion of domestic demand. Their domestic markets are individually too small to offer large economies of scale in production, they have to import a large proportion of their raw materials and a large proportion of their final demand is perforce satisfied by imports rather than domestic production.

**...but together they can expand via trade links**

Collectively, however, the smaller Asian economies amount to nearly 6% of world GDP. Hence, to the extent that they can link themselves to one another, and to the larger economies, via international trade, they can thereby grow in concert much as the larger economies can grow individually (For more, see the Chapter *Trade agreements: Key to Asia's growth*.)

As in India and China, productivity in the smaller Asian economies is growing faster than in most countries in the West. This increase will find its way into the economy – implying either faster growth of domestic inflation, relative to abroad, or currency appreciation. Individually, a number of the smaller Asian economies are somewhat fearful of currency appreciation because of the presumed consequences for their international competitiveness. However, if the renminbi were to appreciate, most of the smaller Asian economies would probably be reasonably prepared to see their currencies appreciate at a broadly similar rate.

### Japan – a different case

Japan is something of a special case. With its high-per-capita-income population of more than 125mn people, Japan's huge domestic market offers producers the potential for considerable economies of scale. And Japan's import propensity is fairly low in relation to the size of its economy, notwithstanding the fact that the country is only thinly endowed with raw materials.

**Japan's economy has never been domestically driven**

Most fundamentally, however, Japan's economy has never been substantially driven by domestic demand. Japan's basic economic culture since the end of the Second World War has been that the way – and by implication the only way – to prosper materially is to export. That it is as possible to become as prosperous serving the domestic market as it is to serve foreign markets is not appreciated in Japan in the way that it is in the US and in some parts of the EU.

Shifting an economy's "culture" from export growth to consumption growth is not easy: Germany, like Japan, has never really effected that change, just as the United Kingdom has never really successfully shifted its culture from consumption growth to export growth (Figure 23).

## The Marshall Plan

*Europe's US-led post-World War II reconstruction policies laid the intellectual foundation for a wider world.\**

Europe's experience in the years immediately following World War II was that any single-country economic recovery risked creating, through higher imports, an unsustainable deficit in the current account of the balance of payments. This obliged the authorities to tighten policy to reduce the demand for imports. However, the unfortunate corollary was that the slowdown in deficit-countries' imports in turn slowed partner countries' exports, spreading the slowdown.

The risk was that Europe as a whole would fail to sustain economic recovery and that political discontent would grow – Italy, and, increasingly, France, were at risk of going communist. The spectre of Western Europe falling under the influence, if not the domination, of the Soviet Union troubled leaders on both sides of the Atlantic, who had seen, in Germany post-1918, the discontent and, ultimately, the tumult, that could flow from national economic failure.

Hence, not least to safeguard its own interests, the US conceived the Marshall Plan, officially the European Recovery Plan (1948-1952). The Marshall Plan is remembered by many primarily for its generosity: at its peak, in 1949, the US was transferring annually nearly 2½% of its GDP to Europe.

Arguably, however, the even greater contribution of the Plan was to lay the intellectual, and thereby the policy, foundations for the development of Europe and beyond.

Executed through the Organisation for European Economic Cooperation (OEEC), the Marshall Plan formulated a series of internationally compatible economic recovery plans based on two fundamental economic principles:

- One country's imports are another country's exports, so that a recovery in one, provided that it is sustained, induces recovery in others; and
- Guaranteeing free trade among partner countries is the best way to generate the confidence that is required for investment to take place on a scale sufficient to sustain economic growth in partner economies collectively.

The policy succeeded. In the words of historian Alan Milward (1984) "...there developed in the reconstruction period an institutionalized pattern of economic interdependence in Western Europe which was a better basis for western Europe's economic and political existence than the comprehensive regulation by treaty of major political issues which was attempted after 1918 and which failed."

The four years of the Marshall Plan itself saw the fastest period of growth in European history. The poverty and starvation of the immediate post-war years progressively disappeared, and the threat of communism sweeping continental Europe receded. Thereafter, Western Europe experienced an unprecedented two decades of sustained increases in living standards and social conditions, together with the sought-for political stability.

Many of Europe's policymakers came to see the benefits of economic integration through the free movement of goods, services and capital; and this encouraged them to continue to pursue such policies, through the progressive further easing of trade barriers, including, importantly, tariff reductions, and the setting-up of institutions to coordinate the development of Europe's economies. Establishing the European Commission provided further impetus in a number of directions. The most important, in the minds of many, has been its active, dogged, and basically successful policy of creating the single European market.

Not all policies have been so well regarded. The Common Agricultural Policy in particular, which for years led to over-production of many basic agricultural commodities, has been criticised by many, including by the US. However, this policy did much – as did agricultural protection in Japan – to prevent income differentials between rural and urban areas from widening to levels that could have proved socially and politically unacceptable.

In due course, the US vision that gave rise to the Marshall Plan was extended to other countries. In 1961, the US and Canada joined, and the OEEC was transformed into the Organisation for Economic Cooperation and Development (OECD). And then, most notably perhaps, in 1964 Japan was brought into the Organisation, and thereby into the "club" of economies that espoused and practiced the free international flow of goods, services and capital.

Intriguingly and largely unexpectedly, one of the greatest successes of the EU was to come later still. By the time of the collapse of the former Soviet Union, in the early 1990s, western Europe had become a rich, prosperous, market-based economy approaching the size of the US. The EU thus acted as a powerful magnet for the smaller countries of the former Soviet Union, enabling them to become democratic, materially richer and socially more stable than could have happened had there not been a modern and prosperous Europe to which to adhere.■

*\*This account is based on conversations between the author and various Marshall Plan participants – most now deceased. Two useful references include Marjolin (1986) and Milward (1984).*

For whatever reason, Japan’s policymakers have generally been reluctant to engage in the supply-side policy reforms that are needed to spur strong and sustained domestic demand. In the longer term, this experience may constitute something of a warning to the rest of Asia.

## The domestic rebalancing issue

**Domestic rebalancing is needed, too ...**

Thus, a rebalancing of export demand and domestic demand needs to take place across countries. But it may also be necessary, at some stage and in some cases, for there to be a change in the configuration of growth within the components of domestic demand – particularly between consumption and investment.

This is not a major issue in most Asian countries: consumption in many has been growing faster than investment over the past decade and, in most, the share of investment in GDP is between 15% and 20% – comparable with the US and the EU. However, the two fastest-growing economies – India and China – have been exhibiting a different pattern of growth. Over the past decade, investment in these two economies has grown twice as fast as consumption, resulting, in turn, in an investment share that is around twice that of most countries (Figure 24).

### Investment: A double-edged sword

Investment is a “double-edged sword”: it adds to supply, but it is also an important component of demand. Moreover, investment adds to demand before it adds to supply. Thus, consumption and investment need to grow at broadly appropriate relative rates. If they do not, the stability of economic growth can be put at risk.

China and India – like all particularly-fast-growing economies – are potentially vulnerable in this respect. Even before the present crisis, China’s authorities were concerned about the dependence of aggregate demand on investment expenditure. This dependence has increased as a result of recent policy action to support the growth of domestic demand in the face of the weakening of exports to the West – the share of investment expenditure in China’s GDP is approaching 50%. Admittedly, much of this investment boost was in infrastructure investment, rather than in industrial capacity expansion, but, nevertheless, Chinese growth is vulnerable to any slowdown, for whatever reason, in investment growth.

**...at least in China**

This vulnerability can be seen from the following stylised economic arithmetic, which owes to Sheard (2009). Suppose that the economy has:

- an investment share in GDP of 50%;
- investment growing at 20% per year;
- consumption growth contributing 5 percentage points to GDP growth; and
- net exports subtracting 5 percentage points from GDP growth.

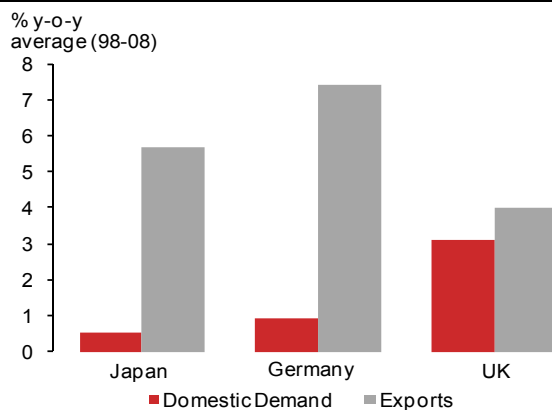
The overall growth rate of GDP is thus 10% per year.

**If investment faltered, the impact on growth would be severe**

Now suppose that, one year, investment growth slows to zero and (for the sake of argument) that the other components of GDP continue to net out to a zero contribution. The rate of growth of GDP falls to zero. If investment were to fall by, say, 10% (all else equal), GDP would decline, by around 5% – with the year-to-year swing in GDP growth being a hefty 15pp.

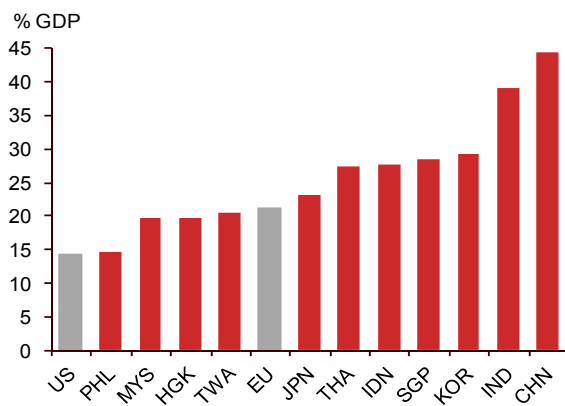
It is virtually inconceivable that China’s consumption growth could accelerate sufficiently in the short run to offset such a downturn in investment. With private consumption accounting for only

**Figure 23. Exports vs domestic demand: Two ‘cultures’**



Source: Cabinet Office, Eurostat and Nomura

**Figure 24. Weight of investment in GDP**



Note: Data are for 2008.

Source: National Sources and Nomura



around 35% of GDP, its growth rate would have to accelerate by an inconceivable near-30 percentage points to offset the impact on growth of a flat-lining investment growth (and by 43 percentage points in the investment-slump case).

Even if, as could well happen after a prolonged investment boom, investment were to fall by only 10-20%, the impact on overall growth would be severe.

China thus faces a potential policy challenge. To maintain the sort of rate of growth that it has achieved over the past several decades, investment expenditure needs to continue to grow at something like its historical rate. But that leaves it vulnerable to the risk of slowdown should growth expectations falter.

On the positive side, China is aided by the fact that a significant amount of its investment is undertaken by quasi-state enterprises. These can, to some extent at least, be “instructed” to invest, provided that, over the medium term, this investment is likely to prove viable. And it is likely to be, given that a considerable proportion of investment is now going to the underdeveloped central and western regions of China.

**Transition to a low carbon economy should benefit China**

It may also be that the challenges provided by the need to reduce domestic pollution and to move to a lower-carbon economy worldwide will be of particular benefit to China. The country's own authorities face significant internal discontent over domestic pollution. And they know from their own scientists how important it is that global warming be limited and that, given its large and growing size in the world economy, China controls, to some extent at least, its own destiny.

It would therefore be rational for China's authorities to base their strategic thinking on the reduction of pollutants and emissions and on the transition to a low-pollution, low-carbon economy. The reasons for doing so would not only be defensive, to reduce both the cost to the economy and domestic concerns about the environment: they would also be positive, in that doing so would position China's industry well to benefit from growing commercial demand worldwide. China's negotiating stance at the recent Copenhagen meeting notwithstanding, there is little doubt that China's manufacturers and authorities alike are fully aware of the longer-term commercial potential of climate change and environmental protection more generally. (For more, see the Chapter *Climate Change: Growing business opportunities*)

Longer term, it will become appropriate for China's consumption to rise as a proportion of GDP, and for the share of investment correspondingly to fall. But at what pace it is appropriate for that rebalancing to take place is in large part a matter of judgment for the authorities, and will depend importantly on the rate of growth that they wish to see for the economy as a whole.

India's investment boom, by contrast, is fairly recent. It was only between 2003 and 2009 that its investment rate increased from 25%-odd of GDP to nearly 40%. Much of this take-off stems from the substantial capacity invested in manufacturing. India's forward-looking challenge is the lack of adequate investment in infrastructure, which contributes to major supply bottlenecks. And the stretched nature of the public finances implies that the government sector might not have the firepower to counter any major slowdown in private sector investment.

### **Consumption: A growing role**

All the fast-growing Asian economies have the potential to accelerate the rate of consumption growth. China in particular has considerable scope to rebalance the structure of its demand.

**Consumption already plays an important role in China...**

Notwithstanding China's comparatively low share of household consumption in GDP (35%, compared with more than 50% in the rest of Asia and 60-70% in most OECD economies) household consumption has already been an important engine of China's growth<sup>10</sup>, even if more than matched by extremely rapid investment growth. In the past two decades, nominal household consumption in China grew by an average of 15% per year, while investment (gross fixed capital formation) grew by more than 18%. As a result, household consumption has already been making a strong contribution (3.5 percentage points per year, on average) to real GDP growth – just marginally below the 4 percentage point contribution of investment (Figure 25).

Attention is often also drawn to the declining share of consumption in Chinese GDP. However, as the figures above show, this has been the result not of weak consumption but of the exceptionally rapid growth of investment. This is common in rapidly growing economies.

When per capita income is low, most of it is spent on subsistence – food, clothing and shelter. The share of consumption in GDP is therefore high. But as income rises and households begin to earn more than is needed for subsistence, some income is typically saved. The share of household consumption in GDP thereby declines while that of investment rises. Ultimately,

however, there comes a point when the share of consumption starts to rise and the share of investment starts to fall. This U-shaped trajectory of the share of household consumption in GDP has been observed in the US and Japan. Korea may well be at or near the bottom of the U. If China follows suit, its consumption-to-GDP ratio may soon bottom out (Figure 26).

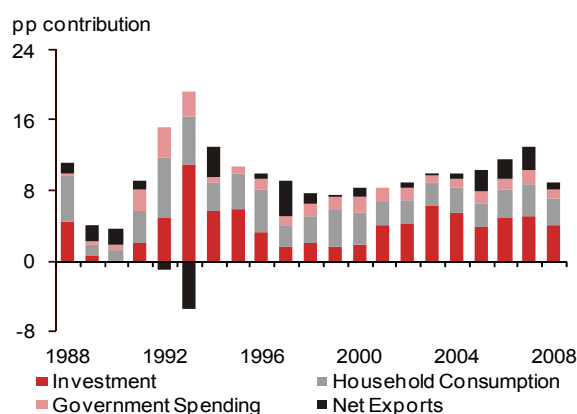
...but it should contribute even more in the future

That said, we see considerable scope for China's consumption to grow significantly faster than it has done, and in a broad-based way, over the medium term – for more see Sun, M. and Kaku, E. (2009). China is still a poor country – in 2008 GDP per capita was only \$6,000 on a PPP basis, and half that when measured at international prices. However, on both measures, household income has been growing fast (at 10% on average since the 1980s) and has accelerated even further in the past decade. The expected upward trajectory of income growth suggests significant potential for consumption demand to continue to grow rapidly.

Some of the areas with the greatest growth potential include:

- **Consumer durables.** China is at the point where, as income grows, demand for durable consumer goods surges. Demand for motor vehicles, for example, has already begun to soar. Indeed, China's auto market outgrew that of the US in 2009. Assuming that China follows the path of Korea and Japan, motor vehicle ownership, which in 2008 stood at just 30 per 1,000 people, could reach 600 per 1,000 people by 2030.
- **Stronger demand from rural areas.** More than half of the Chinese population lives in rural areas, where the penetration of consumer goods is still low. Although almost every Chinese urban family owns a washing machine, a refrigerator and an air conditioner, fewer than half of their rural counterparts enjoy such luxuries. It is likely that, as infrastructure bottlenecks are removed and income increases, demand for consumer durables from the rural areas will burgeon.
- **Stronger demand from central and western China (CWC).** The central and western regions are less industrialised and urbanised than the eastern regions. However, in recent years there has been substantial (mainly government) investment in infrastructure. This should pave the way for an industrial take-off and economic growth in CWC. Given that CWC is home to nearly 60% of China's population (1.3bn people), we see much potential for rapid growth of household demand.
- **Service sector.** China's service sector currently represents only 40% of GDP, compared with around 50% in India and 60-80% in many higher-income economies (Figure 27). However, although food is still the biggest expenditure item for Chinese consumers, as is normally the case in a developing economy, household demand for services should start to increase hand-in-hand with the increase in income.
- **Reduction in the savings rate.** China's household saving rate is around 22% of GDP – similar to that of India, but markedly higher than in the US, the UK and Korea (Figure 28). One of the main reasons is the weakness of (and in some areas the lack of) a significant social security net. There seems to be a strong political commitment to develop and expand the coverage of a social security system. This would reduce the need for precautionary savings for healthcare and retirement, thereby boosting household consumption. In the urban areas, the propensity to save has dropped steadily since the mid-1990s as a social security system has started to be established.

Figure 25. Contribution to Chinese real GDP



Source: CEIC and Nomura Global Economics

Figure 26. Household consumption to GDP ratio, indexed



Note: GDP per capita ≈ \$2,000 in 1970 in Korea, 1991 in China  
Source: The Bank of Korea, CEIC and Nomura

**Consumption seems set to take off in India, too**

In India, consumption has risen broadly in line with real GDP per capita, while investment has grown considerably faster. This has gradually lowered the share of consumption, from more than 80% of GDP during the 1960s to 55% of GDP currently, putting India's consumption share between that of China and of the US.

India's consumption patterns have undergone the basic shifts characteristic of rapidly growing economies, notably a rising share of urban consumption and higher consumer spending on services relative to subsistence items. The current share of consumer durables in the total consumption basket is about 12%, while food and other non-durable items account for 43%, and services a hefty 45%.

Rising incomes are creating a large middle class with higher disposable income in China and India, spurring consumer demand. This stands to be supported by easier availability of retail financing, a growing credit culture, rising aspirations and the youthfulness of the population. And although food currently dominates the consumption basket in rural areas (60-70%), this should change progressively, with growing expenditure on health care and communication, in particular.

## Policy challenges

**Policies will have to go beyond short-term macro management**

The extent to which Asian economies continue, over the coming decade and beyond, along the path to full realisation of their considerable economic potential will depend largely on their success in implementing appropriate policies. Good policies do not guarantee good economic performance, but bad policies almost always result in poor economic performance.

The appropriate policies are in many cases fundamentally different from those used in short-run macroeconomic management. Some of the requisite policies operate on the demand side of the economy, to change not only its rate of growth but also its very structure. Others – often called structural policies – operate on the supply-side to facilitate the flow of resources to their most productive uses.

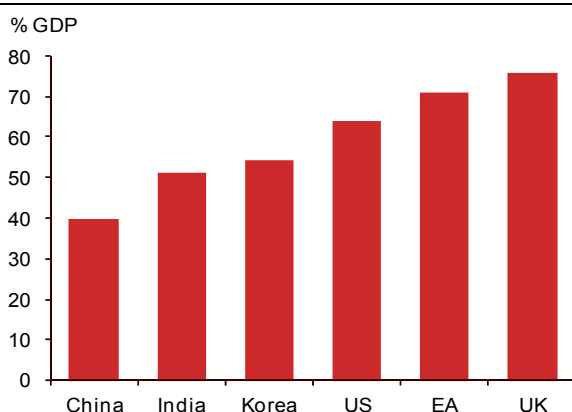
The experience of the more developed, OECD, economies is that many of these policies, particularly structural policies, are difficult to implement. Often there is a time inconsistency problem: the perceived costs are tangible and immediate, whereas the desired benefits appear uncertain and stand to be realised only at some unidentifiable point in the future. Opposition from sectors of the economy that perceive their interests as threatened can be strong and can outweigh such support as may come from those who stand to benefit.

Furthermore, in the case of rapidly-growing economies, policy challenges come fast and repeatedly. There is no period of rest, so “reform fatigue” can become a major problem.

Much of the experience with structural policy rests in the Organisation for Economic Cooperation and Development (OECD). Of the Asian economies, only Japan and South Korea are members: and China, while not a member, is an active participant at the technical level. So far, however, China has resisted any formal policy engagement, perhaps because it does not want to open itself to another avenue of potential pressure from the West.

Before substantial progress can be made with the majority of these various policies, however – both on the demand side and on the structural side – Asia's policymakers will have to deal with the exchange rate issue, which has been overshadowing policy discussion for many years.

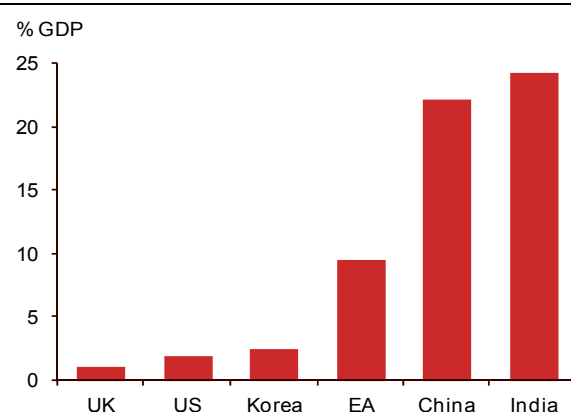
**Figure 27. Size of the service sector**



Note: Data are for 2008

Source: BEA, Eurostat, Bank of Korea, CEIC and Nomura Global Economics

**Figure 28. Household saving rate**



Note: Data are for 2008 and for 2007 for China

Source: BEA, Eurostat, Bank of Korea, CEIC and Nomura Global Economics

## Exchange rate policy

**We see three reasons for China to allow RMB appreciation**

The high international competitiveness of China and a number of other Asian economies has for many years threatened, and is now starting to provoke, a protectionist response from Western economies. Unless addressed, this stands to damage the growth and development of many economies in Asia.

This is a similar challenge to that which was faced, not altogether successfully, by Japan in the 1980s, when its exports reached levels that had major – and increasingly politically unacceptable – consequences in Western importing economies. Japan increasingly found its exports to the West being curbed, including by so-called “Voluntary Export Restraints” (VERs). Japan’s economic growth slowed as a consequence, and the economy by and large failed to achieve an offsetting acceleration of growth in domestic demand.

China’s policy to date of intervening to prevent currency appreciation not only increasingly risks trade frictions with its Western trading partners; it produces other problems, too. It represents an implicit tax on China’s consumers and a subsidy to its producers. In the longer term, an alternative financing channel for investment will likely have to be developed.

Moreover, China’s extremely fast growth of productivity and per capita incomes will eventually find its way into the economy. There are just two routes: through an acceleration of China’s inflation relative to that abroad (unlikely, given its still-vast supply of labour); or via appreciation of the renminbi.

The third problem, that continual intervention in the foreign exchange market to prevent the RMB from appreciating restricts control over domestic monetary conditions, is also a matter of concern for the authorities. (For more on this, see Box: *The Impossible Trinity*). Some Western economic commentators argue that China’s authorities would not only be well advised to acquiesce in appreciation of the renminbi but may in fact have little option but to do so.

Thus, Goldstein and Lardy (2009) argue for a three-stage approach:

1. The first stage involves allowing the RMB to appreciate by 4-5% per year, while increasing domestic expenditure on infrastructure.
2. Stage two, which would begin once the global economy begins to recover, would allow the renminbi to appreciate faster, at a pace sufficient to eliminate China’s current account surplus within 3-4 years.
3. Stage three, which would begin when China’s current account surplus has been substantially reduced, would be the curtailing of almost all intervention in the foreign exchange rate, together with a cessation of almost all sterilisation operations.

Securing appreciation of the renminbi in a manner satisfactory to all will not be straightforward, however. The experience of economies as diverse as those of Japan, Korea, and Mexico is that when a country opens itself to an initial one-way bet of currency appreciation, capital inflows can be substantial and asset prices can rise markedly, leading to the exchange rate overshooting and then a reversal, possibly massive. These cases have been well studied, however, and China’s authorities will likely move only in careful steps as part of a process of internationalisation of the currency. (For a detailed discussion of how this might evolve, and the risks, based on Japan’s experience, see the Chapter *China will lead Asia’s evolving capital markets*).

These considerations apply to a number of other economies of Asia that are keen to avoid any significant appreciation of their currencies vis-à-vis the renminbi. To the extent that the renminbi appreciates, however, these economies could be expected to acquiesce more readily in a broadly commensurate appreciation of their currencies vis-à-vis the currencies of the West.

## Demand-side policies

**Demand-side policies will need to be buttressed...**

In the largest of the developing economies, particularly China, India, and Indonesia, policies to foster the sustained growth of domestic demand stand to be particularly important. The establishment of a social safety net, to encourage a lower rate of personal precautionary saving, stands out. As the household saving rate starts to fall, the development of the banking system, allowing people to borrow from savers to finance major purchases – particularly houses and cars – will become increasingly urgent.

## The Impossible Trinity

*Policymakers in Asia are facing real economic pressure to prioritise basic economic objectives.*

It is widely recognised today (following Mundell (1963) and Oxelheim (1990)) that a country cannot simultaneously achieve all three of the following objectives:

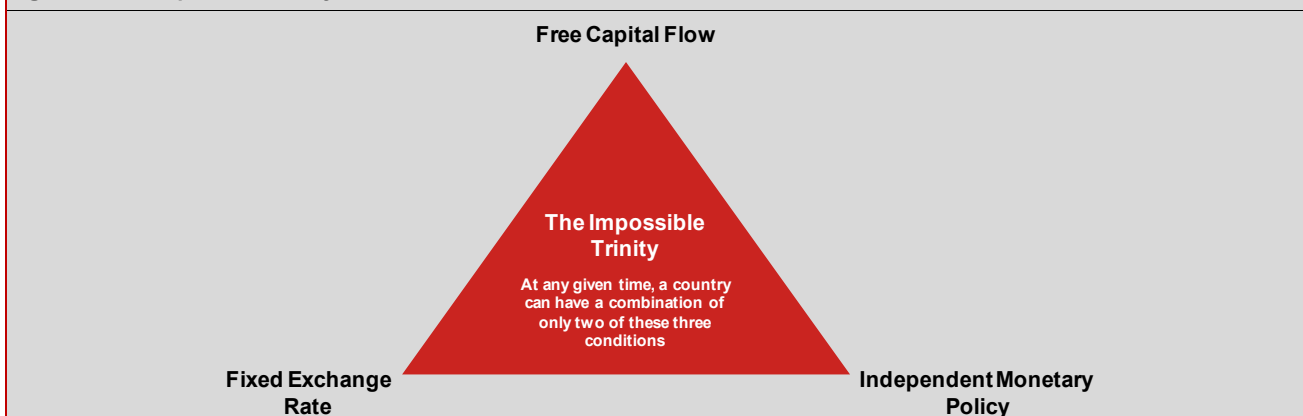
- Exchange rate stability;
- Unrestricted (cross-border) movement of capital; and
- Independent monetary policy

Often called the “Impossible Trinity”, or “Unholy Trinity”, this situation is depicted in Figure A. A country’s authorities are obliged, in principle, to decide which two objectives out of the three they wish to meet. They can:

- 1. Maintain the autonomy of monetary policy, and allow unrestricted movement of capital.** But this comes at the cost of being unable to control the country’s exchange rate.
  - Most OECD countries operate broadly within this regime, being characterised by free capital movement and an independent monetary policy, with their currencies left free to float on the foreign exchange markets.
  - This frequently results in large currency swings (for example between the Yen, the dollar, the euro, and sterling).
- 2. Fix the exchange rate, and maintain the autonomy of monetary policy.** But this comes at the cost of having to control (cross-border) flows of capital.
  - Many countries in Asia historically have operated broadly within this basic regime. They have kept their exchange rate fixed or quasi-fixed so that, in order to maintain an autonomous, independent monetary policy, they have had to impose controls on (cross-border) capital flows.
  - This means, however, that the allocation of (cross-border) capital is undertaken administratively, rather than by firms operating in a market. Moreover, the pressures on the capital controls system can become intense (For more, see the Chapter *China will lead Asia’s evolving capital markets*).
- 3. Fix the exchange rate, and liberalise (cross-border) capital follows.** But this comes at the cost of being unable to maintain the autonomy of monetary policy.
  - A number of countries in Asia are moving in the direction of liberalising their capital accounts, either because they wish to see a more market-driven allocation of capital; or because they find that the pressures on the capital account are too strong to withstand;
  - These countries are finding, however, that they are de facto importing the (easy) monetary conditions set by the Fed. These may be appropriate for the US, at a time when that economy is only just emerging from recession, but they are currently inappropriate for the booming economies of Asia.

In practice, the authorities in a number of economies, including in Asia, operate a somewhat blurred mixture – partial control of capital flows coexisting with “less-than-very-hard” exchange rate pegs and partial independence of monetary policy (see, for example, Fischer (2007)). However, the tensions highlighted by the “Impossible Trinity” are ever-present: they can be moved around, but they cannot be made to disappear. ■

Figure A: The Impossible Trinity



Source: Subbaraman, R., (2006) “The Impossible Trinity”, Lehman Brothers Global Economics; Mundell, R. (1963), “Capital Mobility and Stabilisation Policy” (*Canadian Journal of Economics and Politics*); Oxelheim, L. (1990) “International Financial Integration”

Among Asia's smaller developing economies, too, policies to sustain domestic demand growth will in many cases be quite important. But export growth is likely to continue to be the main driver of their demand. Continued access to large export markets will therefore be essential, so that trade policy, particularly with respect to the large Asian economies, will be of central importance. Significant trade agreements have been concluded in recent years; but more policy work remains to be done. (For more, see the Chapter *Trade agreements: Key to Asia's growth*.)

In Japan, export competition from its lower-wage-cost neighbours is likely to circumscribe the growth of exports, so that policies that foster the growth of domestic demand stand, as they have for many years, to be of prime importance. However, as one of the highest-productivity, higher real wage economies in the world, the policies required to spur domestic demand in Japan are quite different from those appropriate for China and other export-led Asian economies. Many are supply-side policies.

### Supply-side policies

This class of policy is likely to become increasingly important in all of the Asian economies in which real wages have started to rise sufficiently to put pressure on companies' ability to finance continuing high investment.

In China, the development of a full capital market so that investment can be financed via that route is likely to become increasingly urgent. India has a particularly pressing need for investment in infrastructure to facilitate a freer flow of labour and goods. India also needs to develop its corporate bond market to facilitate intermediation of long-term infrastructure-financing requirements. Its education and health systems also need to be broadened and deepened.

For Japan, policies to foster domestic competition have been identified by OECD analysis as particularly important.

### Environmental policies

The pollution problems that Asia's rapid growth has brought with it are starting to provoke concern about, and in some countries even a degree of opposition to, the underlying growth strategy, at least in its present form. Protests are frequent in India, China and elsewhere.

The environmental policies put in place to address these concerns will unavoidably impose a cost on polluters. This puts a premium on implementing well-designed environmental policies that achieve their ends at least cost.

Asia's burgeoning environmental movement also offers considerable commercial opportunities. These issues are considered further in the Chapter *Climate Change: Growing business opportunities*, which, in the wake of the Copenhagen conference, concludes that climate change policy will increasingly afford considerable opportunities to producers of products appropriate for tomorrow's world. Widespread opportunities exist not only in respect of (low-cost) production of environmental products, but also in the invention and production of high-tech environmental goods and services – an area in which Japan is particularly well placed, not only within the Asian region, but worldwide.

## Summary and conclusion

Asia's policymakers face many policy challenges if they are to continue to make the most of their economies' potential. In principle, we see little reason why they should not succeed. Inevitably, however, some are going to be more successful than others. We are cautiously optimistic that the majority of Asian countries will basically rise to the challenge.

Certainly, there is everything to play for. The Picture Book shows how well Asia's strong near-term economic fundamentals have served the region during the recent financial crisis. The crisis initially hit Asian demand and output severely, but the region's strong fundamentals equipped it to take offsetting policy action that has proved highly effective. Asia's challenge now is to consolidate this performance.

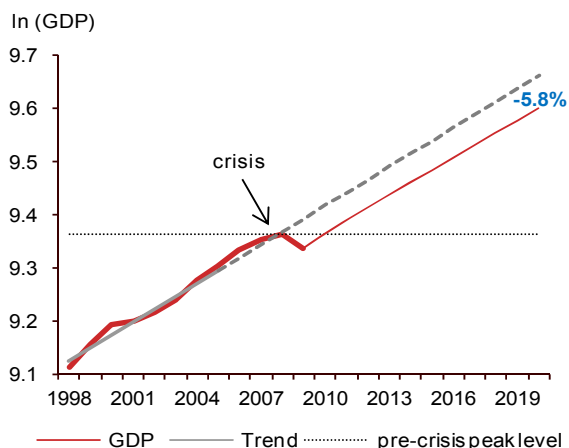
The Country Outlooks that follow consider the prospects for each of the main economies of Asia. They suggest for each economy a range of potential growth rate outcomes, together with the principal policies that will do much to determine the actual outcome. ■

...by supply-side policies in all economies

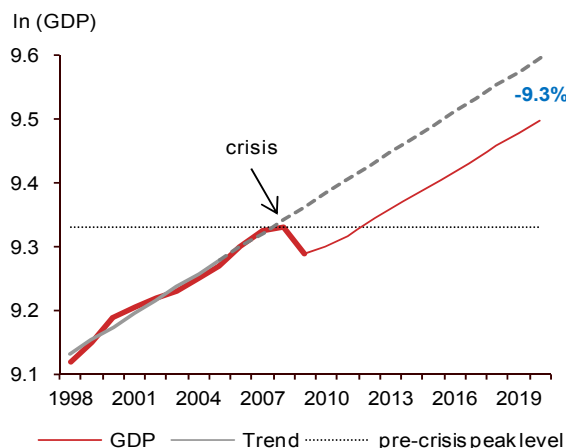
Environmental policies present opportunities for Asia

# Picture Book: The post-crisis course of GDP

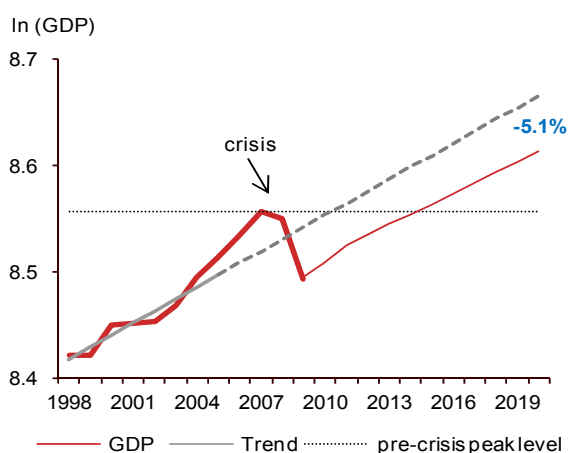
## US



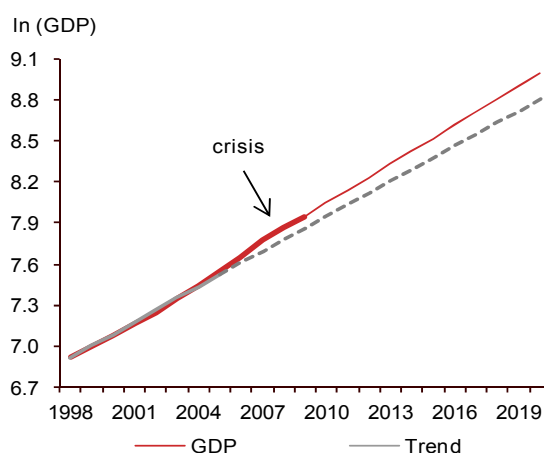
## EU



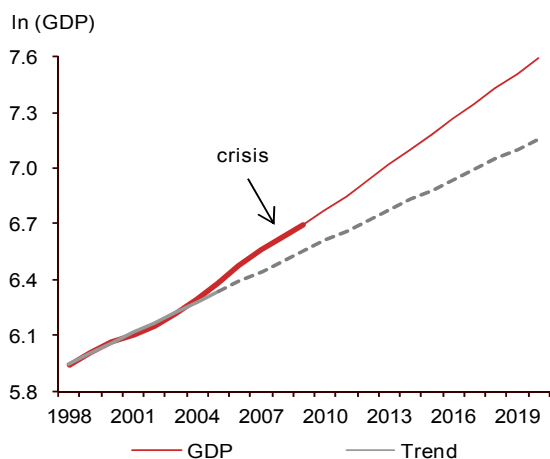
## Japan



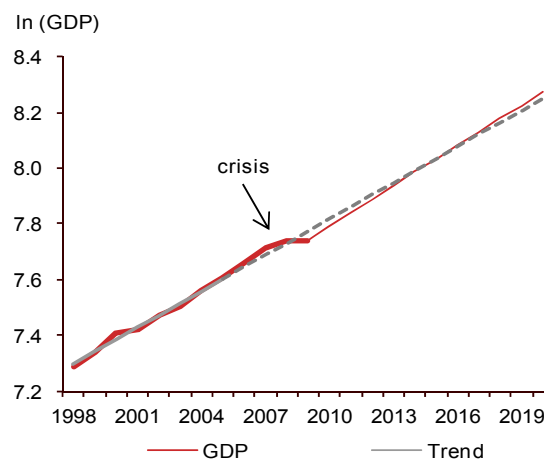
## China



## India



## Asia ex Japan, China and India



Note: The pre-crisis trend is estimated up to three years prior to the crisis (i.e. to 2005), and extrapolated thereafter. The projections for 2010-20 are the central projections in the Country Outlooks below. In 2020, the gap between expected GDP and extrapolated GDP is noted in blue.

Source: IMF and Nomura

## Australia: A major beneficiary of Asian growth

*A history of economic reform and sound macroeconomic policy management position Australia as a major beneficiary of rising Asian international trade and foreign investment flows.*

- Australia should benefit from Asia’s strong growth prospects, due to strong trade linkages.
- Policies to foster efficient resource allocation will be particularly important.
- Australia’s medium-term growth could be as high as 4%, or as low as 2½% if Asia slows.
- Principal challenges: ensuring adequate investment and avoiding policy hubris.

### Asian tailwind for Australian growth

**Exports to Asia stand to grow strongly**

Exports represent the primary transmission channel feeding strong Asian growth to Australia. Asia’s burgeoning demand for food, industrial metals and energy meshes well with Australia’s strong comparative advantage in supplying raw commodities; and it is also driving increasing direct investment flows from Asia to Australia to help secure supply.

Asia’s strong growth prospects over the coming decade should provide a strong tailwind for Australia’s growth, sufficient to drive real GDP growth of around 3% per year on average in our base case, similar to the previous two decades (Figure 1). The proportion of Australia’s exports destined for Asia has grown rapidly over the past two decades, to more than 70% of the total, with the share of exports to the two biggest industrialising economies, China and India, rising particularly strongly (Figure 2). We think exports to China, already Australia’s biggest export market, are likely to grow to more than 40% of total exports.

Meeting China’s fast-growing demand for a broadening range of mineral and soft commodities, especially coal, iron ore, and liquefied natural gas, should continue to drive rapid capital investment spending in the mining sector. This could well grow by at least 15% per year in real terms over the decade ahead.

### Policy challenges

**Rapid export growth could test resource allocation efficiency**

The Asian tailwind for Australian growth presents a number of policy challenges. A decade of rapid Asian-led growth has resulted in sustained pressure on construction and engineering resources. It is now particularly important that policy should foster efficient resource allocation in order to prevent periodic overheating.

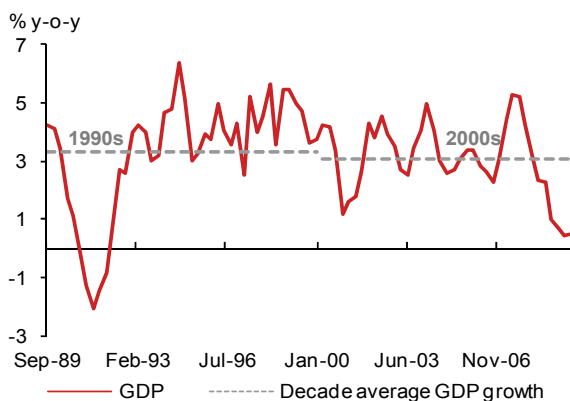
There should be other pressures on resource allocation too, deriving from an extended period of catch-up in the supply of new housing and public sector infrastructure spending, driven at least in part by the government’s multi-year fiscal stimulus programme to ameliorate the recent economic downturn. There is a risk that efficient allocation of skilled labour resources may clash with the government’s political agenda to re-regulate the labour market and constrain immigration numbers while economic growth is weak.

### Strong growth of national income

**Demand could outstrip potential growth...**

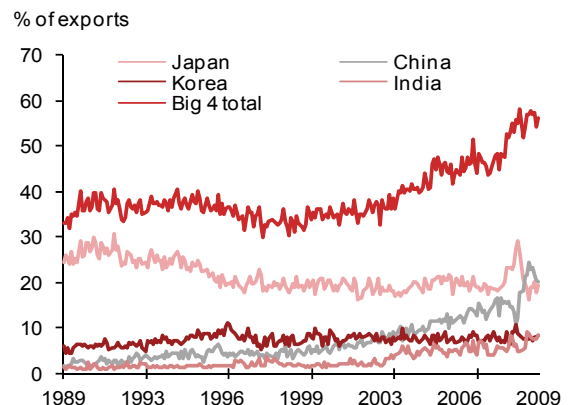
On a base-case assumption of rapid Asian growth over the coming decade, the unusually large gain in Australia’s terms of trade through the second half of the past decade (Figure 3) is likely to be sustained by renewed increases in commodity prices. This should underpin strong growth

Figure 1. Real GDP growth



Source: ABS and Nomura Global Economics.

Figure 2. Major Australian export markets in Asia



Source: ABS and Nomura Global Economics.



... causing overheating

in real national income, and thereby strong growth in aggregate demand. One risk is that aggregate demand growth outstrips potential growth in output, leading to periods of economic overheating and, perhaps, rising interest rates or current account deficits.

Apart from an increasing requirement for policies at all levels of government to ensure efficient resource allocation, including tight constraints on growth in public sector spending, we think there is also a need to raise the potential output growth rate (approximately 3.5% in mid-2009 on labour productivity growth of 1.9% y-o-y and labour force growth of 1.4%). Labour productivity has been erratic year-to-year, but over the past decade it has been on a declining trend (Figure 4), reflecting the fact that the era of greatest productivity-enhancing reforms was from the mid-1980s to the mid-1990s. More recent moves towards greater regulation of labour markets and selective government industry support programmes suggest that labour productivity may continue to slide.

Labour force growth looks more promising than productivity growth

The outlook for population and the labour force growth is brighter than for productivity growth. Population growth at 2.1% y-o-y in 1Q09 (the latest data available) was the highest in 38 years (Figure 4), and continues to rise, the result of past policy measures to encourage childbirth and immigration of skilled workers. Recently, however, the government has twice lowered immigration quotas, ostensibly to combat rising unemployment. Another policy challenge is to convert strong population growth more fully into labour force growth. Constructive policies covering workforce retraining, skill development, and encouraging an ageing population to defer retirement are currently limited by tax-free arrangements for age retirees.

### How big a beneficiary?

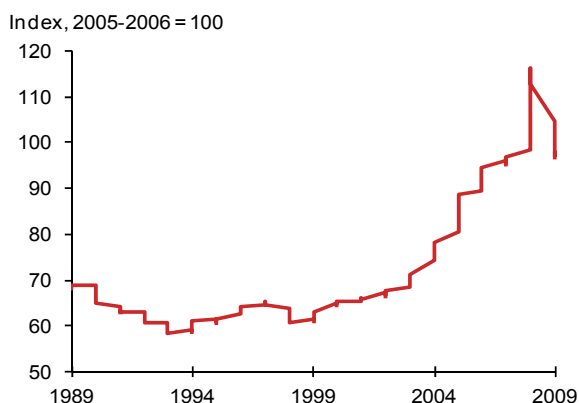
Growth should depend largely on developments in Asia

The potential flow-through from rapid Asian growth could raise average Australian GDP growth over the coming decade to 4%, from around 3% over the past two decades. However, we think it more likely that average growth will be constrained to 3%. Potential growth was briefly higher in mid-2009, but both productivity growth and labour force growth were on above-trend spikes, and seem likely to settle back to a lower longer-term trend. Recent government policies have favoured stimulus spending, rather than productivity-enhancing measures. Some earlier economic reforms, notably in the labour market, have been wound back.

If Asian growth were to run at a reduced pace over the coming decade, the impact on Australia would be substantial, and could reduce its average GDP growth nearer to 2.5%. The negative impact on growth of slower growth in exports and business investment spending would be partly offset by less Australian dollar strength and relatively lower interest rates.

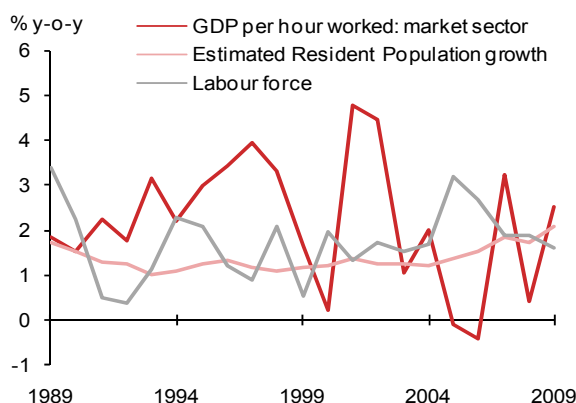
Australia is thus likely to be a major beneficiary of rapid Asian growth over the next decade, generating an average GDP growth rate 0.5 percentage points higher than if Asia were to run on a slow growth trajectory. Unlike most Asian countries, Australia can run on a relatively strong growth trajectory driven by domestic spending should the impetus from export growth weaken. ■

Figure 3. Terms of trade



Source: ABS and Nomura Global Economics.

Figure 4. Potential GDP growth factors



Source: ABS and Nomura Global Economics.

## China: Strong and better-balanced growth ahead

*Strong growth should continue in China in the medium term, provided that the authorities move ahead with policy reforms, including those aimed at improving the quality of growth.*

- Domestic demand looks set to make a greater contribution to Chinese GDP growth.
- Internationalising the renminbi and developing a social security net are key policy issues.
- We project average GDP growth of 10%, with 8% and 12% as the upper and lower bounds.
- Energy and resource constraints could derail China's long-term sustainable growth.

### Domestic demand strengthens

**Consumption growth should remain strong**

Domestic demand is poised to make a progressively greater contribution to Chinese economic growth, partially offsetting weak external demand. Robust consumption growth will likely be central to this rebalancing. Household consumption has been rising fast (averaging nearly 11% per year) over the past decade, and this should continue, supported by rising household income.

**Urbanisation looks set to continue for decades...**

Continuing urbanisation should also drive domestic demand growth. Over the past decade, more than 16mn rural people per year have migrated to cities (Figure 1). We estimate that this will continue, albeit at a slower pace, for another 2-3 decades: more than 700mn people (around 54% of the total population) still live in rural areas.

**...boosting consumption and investment...**

Urbanisation boosts consumption growth by increasing and creating new demand for goods and services. It also supports investment growth. Demand for housing in urban areas is very likely to rise rapidly, underpinning investment in housing and city infrastructure (e.g. telecommunications, transport, education, healthcare and retail). We believe, therefore, that it will be important for policymakers to focus on achieving a sustainable process of infrastructure development.

### The rise of Central and Western China

**CWC poised to become the main engine of growth**

Central and Western China (CWC) is less developed than Eastern China. In 2007, CWC accounted for 60% of the total population (1.3bn), but produced only 40% of GDP. However, CWC has started to catch up: in 2008, real GDP growth in CWC exceeded that of eastern China for the first time in 19 years (Figure 2). Moreover, there is mounting evidence that this trend will continue. Indeed, CWC could well become the main engine of growth in the coming decade.

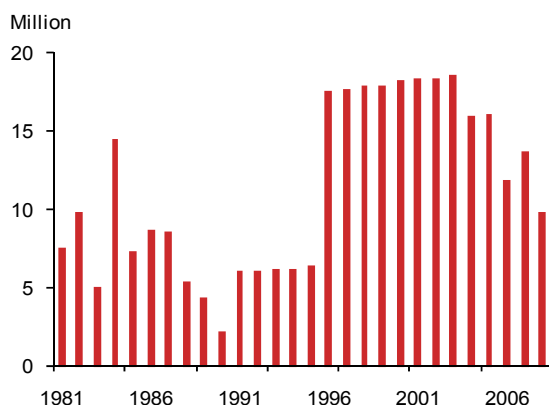
Firms have already started migrating from the eastern regions to CWC and will likely continue to do so amid government efforts to boost infrastructure investment there. The government's 2009 stimulus package of RMB4tr should speed the industrial migration process and pave the way for long-term and broad-based sustainable growth in CWC over the next 10 years.

### Developing the service sector

**Room for development in the service sector...**

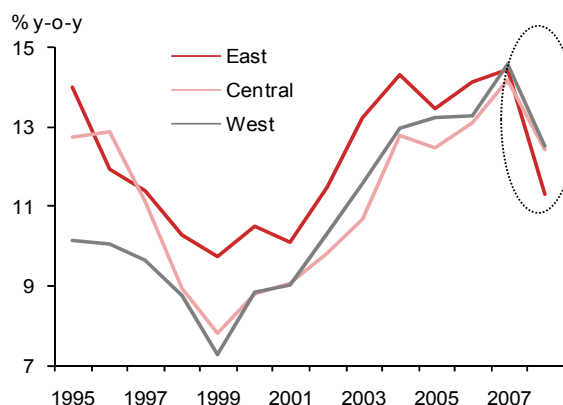
China's service sector is less developed than other sectors, mainly as a result of the government's emphasis on industrialisation over the past 50 years. Services' share of GDP in 2008 was just 40%, well below South Korea's 60%, for example. However, given that higher income generates higher household demand for services, we see ample room for the sector to develop, particularly in Eastern China, where incomes are, on average, higher than in CWC and

Figure 1. Population migration in China



Source: CEIC and Nomura Global Economics.

Figure 2. Real GDP growth by region in China



Source: CEIC and Nomura Global Economics.

likely to remain so over the coming decade.

Many services are simply not available in China at present. For example, Chinese households have yet to enjoy financial services offered by banks. Even after a decade of double-digit growth in consumer credit, China's household debt-to-disposable income ratio was just 29% in 2007, well below that of developed economies (Figure 3).

...including financial services and tourism

Tourism is another case. With incomes growing rapidly, Chinese households are spending more on tourism, not only in China but also abroad. As income climbs, demand for tourism services should surge, providing much opportunity for the industry.

**Policy challenges**

China's policy challenges are numerous and urgent, given its rapid pace of development.

The combination of internationalisation of the RMB...

The RMB is not yet convertible, preventing the exchange rate from being an effective tool for balancing the economy. However, change is afoot. In July 2009, the government allowed the RMB to be used as an invoice currency for trade between Hong Kong and pilot cities in mainland China. We judge that China will continue reforming its exchange rate regime and move gradually towards full RMB internationalisation – for more details, see the Chapter *China set to lead Asia's evolving capital markets*.

...price liberalisation...

Prices of key materials (e.g. energy) and services (e.g. interest rates) have not yet been fully liberalised; the government keeps energy and resource prices, in particular, artificially low. However, rising demand could cause these prices to surge.

...a social security system...

To improve working and living conditions and maintain social stability, the government will need to move towards establishing a more comprehensive social security system.

...and an ample supply of labour...

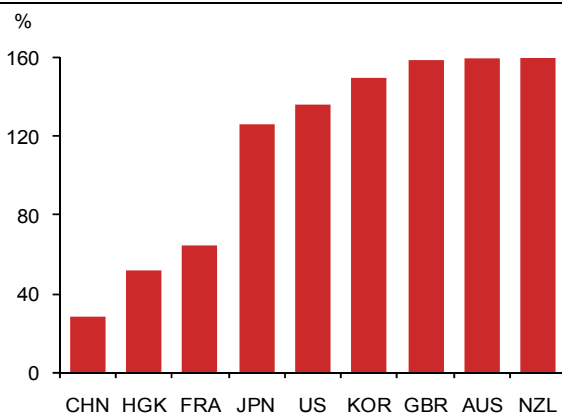
Although the population will continue to grow, the working age (15-64) population is projected to shrink gradually after around 2015. Rural labour supply, however, should remain ample. With appropriate policy reform, Chinese growth has the potential to remain strong over the medium term.

...should ensure continued strong growth

We estimate China's growth of productive potential at around 10% per year. We see an upper bound of 12%: abundant production capacity could well permit particularly rapid growth in some years, but there would probably be risks of significant inflation. We take the lower bound to be about 8% – a floor that the government would likely defend as the threshold for social stability.

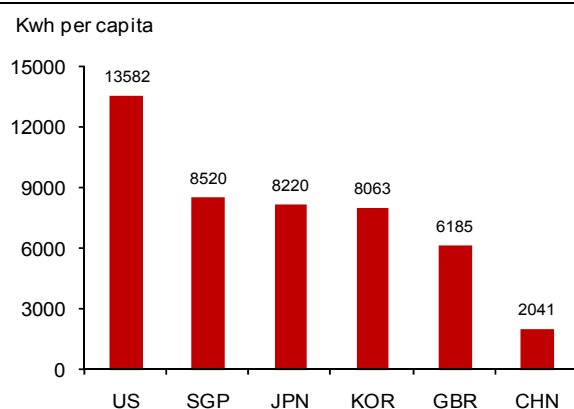
Still, despite the solid fundamentals lined up to support China's growth over the coming decade, energy and other resource constraints could act as a drag on sustainable growth, especially as per capita consumption of energy and resources rises sharply (electricity consumption per capita in China is still much lower than in the developed world and is set to double or even triple as income per capita doubles over the next decade (Figure 4)). Moreover, growing income disparities and the lack of a social security network could trigger social instability. ■

Figure 3. Ratio of household debt to disposable income



Note: Data are for 2007  
Source: CEIC and Nomura Global Economics.

Figure 4. Electricity consumption per capita



Note: Data are for 2006  
Source: CEIC and Nomura Global Economics.

## Hong Kong: Leveraging on Greater China

*Hong Kong's longer-term economic prospects should be determined primarily by whether it can strengthen its competitive edge in Greater China, and by its role in China's market liberalisation.*

- Hong Kong faces tough competition from Shanghai and other Chinese cities.
- It must also address fiscal challenges and prepare for an eventual pegging to the RMB.
- We project potential GDP growth in a range of 3.0% to 5.0%.
- The outcome should depend on intra-regional trade and Hong Kong finding a new niche.

Hong Kong's role as a key financial, trade and shipping entrepôt for China is facing strong competition. China is aiming to develop Shanghai into an international financial centre in accordance with the country's economic strength and the growing international status of the renminbi. Meanwhile, Hong Kong's role as an entrepôt for products entering and leaving China should become less significant amid China's rapid expansion of port and airport logistics facilities, as well as improvement of its trade services. Shanghai and Shenzhen in particular have made significant advances (Figure 1). Moreover, Hong Kong's "middleman" role for cross-strait economic exchanges looks set to diminish as direct Taiwan-China links develop.

However, Hong Kong has historically been a resilient economy that adapts quickly to change, and we judge that it will continue to be so, even in this rapidly evolving environment.

### Significant opportunities

We consider that Hong Kong should be able to maintain its leading edge as a value-added service platform (particularly as a key south China/international logistics centre and financial entrepôt), as a regional and global partner, and as a gateway for Chinese enterprises to international markets. Hong Kong still leads the other Chinese cities by a large margin as a result of its efficient airport and port logistics and infrastructure, freedom of capital flows, range of world-class financial and professional services, and sound and transparent legal system.

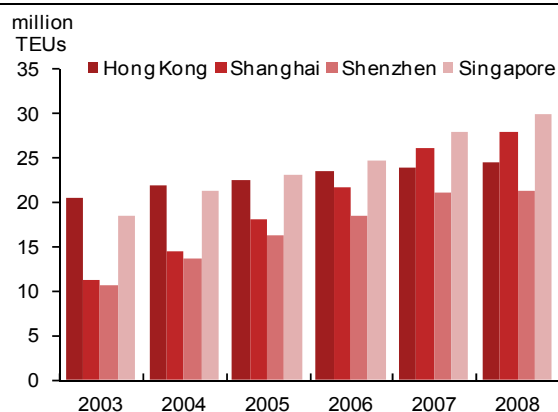
Meanwhile, new opportunities are opening up for Hong Kong enterprises in the Chinese market, including: closer economic integration with Guangdong/the Pearl River Delta (PRD), financial cooperation and capital market development; market deregulation under the Closer Economic Partnership Agreement (CEPA); and cross-border infrastructure links. The Pan-PRD Economic Zone enlarges the hinterland of Hong Kong. Hong Kong can serve as a bridge connecting the Pan-PRD with ASEAN countries.

Hong Kong's long-time role as a "middleman" facilitating flows of trade, transportation, tourism, and investment between Taiwan and China (see Figures 2 and 3) stands to be affected as direct cross-strait economic links gradually develop. However, an orderly normalisation and liberalisation of cross-strait relations also seems likely to stimulate economic activity and increase flows of goods, services, people and capital in the Greater China market and expand its links with the rest of the world.

Hong Kong should also continue to play an active role connecting Taiwan with China (particularly the PRD) in such areas as financial services (e.g. cross-listings of shares/ETFs,

**Hong Kong needs to leverage its linkages with China**

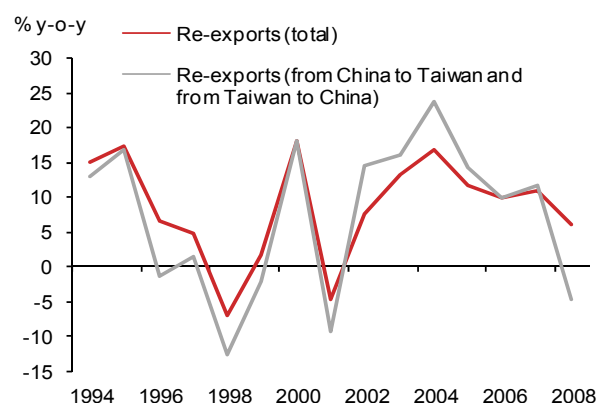
Figure 1. Container throughput by selected ports



Note: TEUs stands for Twenty-foot Equivalent Units.

Source: Census and Statistics Department and Nomura Global Economics.

Figure 2. Hong Kong: Re-exports



Source: CEIC and Nomura Global Economics.

cross-strait RMB clearing and settlement, strategic partnerships in tapping into the China market, and wealth management), port logistics, air transport, “multi-destination” tourism, and other value-added services.

### New niche for sustainable development

Policy will be crucial over the medium term

The government plans to step up its efforts to restructure the economy towards knowledge-based, high value-added activities. In addition to efforts to enhance Hong Kong’s strengths in financial services, trading, logistics and tourism, which have been the major contributors to jobs and growth (Figure 4), the government has identified six key emerging industries for development: education, medical services, testing and certification, environment, innovation and technology, and cultural and creative industries.

Policy support will be particularly important: the restructuring of the economy could lead to a greater mismatch between jobs and skills in the labour market, and to variability/inequity in income and wealth.

### Other policy issues

The minimum wage...

A statutory minimum wage (SMW) is to come into effect, perhaps by end-2010 or early 2011. It is important that the SMW be designed to protect lower-income workers without unduly damaging their employment prospects and without jeopardising labour-market flexibility, economic freedom and competitiveness.

...an ageing population...

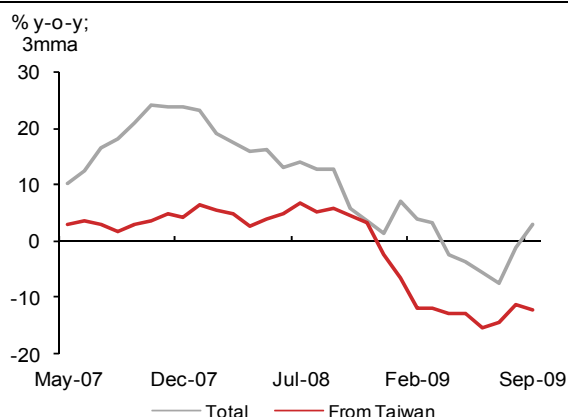
The ageing population and pressures for increased spending on health care and social welfare systems pose challenges to the public finances. Given the government’s goal of prudent fiscal policy and avoiding large increases in the tax burden that could undermine domestic demand and the territory’s competitiveness as an FDI destination, efforts to increase private financing for social security are needed.

...and the RMB will be particularly important

We expect increasing pressure for the Hong Kong dollar to re-peg to the renminbi (and de-peg from the US dollar) given that Hong Kong’s economic and financial market cycle synchronisation with China is likely to grow over time. We judge that the Hong Kong dollar may re-peg to the renminbi by 2020 as China liberalises its financial/capital markets, internationalises its currency, and moves towards making it fully convertible. (For more, see the Chapter *China will lead Asia’s evolving capital markets.*)

We project Hong Kong’s annual average real GDP growth rate for 2011-20 to be in a range of 3.0%-5.0%. The upper bound assumes that Hong Kong successfully develops new niche industries and benefits from the rapid development in the economy of southern China. The lower bound, by contrast, implies what could happen were Hong Kong to face obstacles in developing a better economic relationship with China. ■

Figure 3. Same-day tourist arrivals in Hong Kong



Source: CEIC and Nomura Global Economics.

Figure 4. GDP and employment by selected industry



Note: GDP and employment data are for 2007  
Source: Census and Statistics Department and Nomura Global Economics.

## India: Everything to play for

*India's growth potential remains considerable. If policymakers persist with structural reforms, we estimate GDP growth could be boosted to 10% per annum in the coming decade.*

- India has the basic ingredients for growth: a rapidly growing labour force and high savings.
- Investment in infrastructure and education are key policy challenges.
- We project average GDP growth of 8.5%, with 10% and 7.5% as upper and lower bounds.
- Principal risks are inadequate social investment and failure to build consensus for change.

Higher potential stands to be supported by...

India is still at an early stage in its economic take-off: it is experiencing rising GDP per capita, fast investment growth, and large capital inflow, key characteristics already exhibited by other major developing economies, notably China and Korea (Figure 1). Between FY03 and FY09 India's real GDP per capita rose by around 7% per year, increasing households' purchasing power, and creating a large and growing domestic market. However, with GDP per capita at only approximately a modest \$950, we see substantial scope for further growth.

### Growth potential

A number of supply-side factors suggest India's high potential growth.

...a growing workforce...

**Demographic shifts.** Demographic changes could be the make or break for the economy. Nearly half of India's population is under 25 years old, and about 150mn people are set to join the work force over the coming decade (Figure 2). This demographic dividend, almost unique to India, represents a sizeable pool of potentially employable labour. Provided that adequate skills are imparted to this young workforce, we think India has the potential to become a global knowledge base. Moreover, a demographic dividend of such size stands to result in substantial savings, essential to financing investment on the scale needed to maintain rapid growth and development.

...high investment...

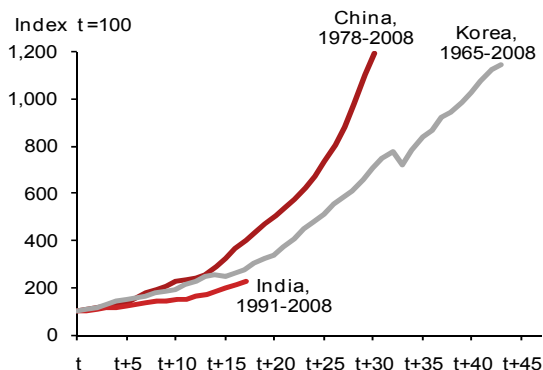
**Large investment potential.** Investment has played a key role in the recent surge of economic growth: gross capital formation rose from 25% of GDP in FY01 to nearly 40% in FY08. Other developing countries had investment-to-GDP ratios in the 30-40% range during their economic take-offs, and they remained at that rate for more than 20 years. So far, India has had just five years of an above-30% investment-to-GDP ratio. Given the economic take-off under way, this implies that there could be many more years of rapid investment growth to come.

Substantial infrastructure requirements are the main reason why we expect continued high investment. Government expenditure on infrastructure (particularly on roads and power) is planned almost to double, from around 5% of GDP currently to about 9% in the coming five years. Moreover, with gross domestic savings likely to rise further, from the current 36.2% of GDP (Figure 3), India looks set to be able to finance the bulk of its investment spending domestically.

...and productivity gains

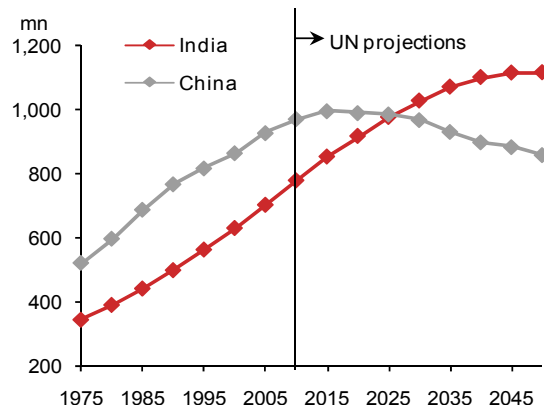
**Untapped productivity gains:** About half of India's growth has been attributable to gains in total factor productivity, with the remaining accounted for by rising factor inputs. Nonetheless, we see considerable scope to boost total factor productivity further, as the country integrates with the global economy and benefits from competition, specialisation, technology and innovation.

Figure 1. Real GDP per capita – years from take-off



Source: CEIC and Nomura Global Economics.

Figure 2. Projected working-age population (15-64)



Source: UN and Nomura Global Economics.

Moreover, migration from the rural to the urban areas is a powerful potential source of aggregate productivity growth, given that a large share of the labour force is still under-utilised in agriculture – agriculture employs 55% of the workforce but accounts for less than 20% of the output.

### Getting the priorities right

However, in our view the issue for India is not so much whether it has the potential; the issue is whether it can realise it. The pace of structural reform has been gradual so far, because of the need to achieve consensus for the social and economic changes that rapid growth and development entails. We think it needs to be accelerated. A number of major challenges remain.

To realise this potential, India needs to address...

...infrastructure...

**Infrastructure** is key to ensuring continuing cost competitiveness of the manufacturing sector as real wages rise. Project financing as well as faster regulatory clearance, easier land acquisition, and faster execution are necessary. Moreover, improving and developing urban transportation is urgently needed, particularly given that by 2020 India is likely to be home to eight of the world's 30 fastest-growing large cities.

...education...

**Education.** India's demographics, potentially a great asset, could become a liability if the young workers do not acquire the requisite skills. Underpinning this there has to be a focus on improving the quality of primary and secondary education, given the current high dropout rate from school.

...financial reform...

**Financial sector reforms.** Pension and insurance reforms are needed to create a deep corporate bond market, essential for companies' long-term project financing requirements.

**Politics.** Coalition politics are likely to remain a feature of Indian politics. Regardless of the party in power, the government will have to create an "enabling" environment for India's dynamic private sector to be able to continue carrying the growth baton. Achieving this will require the creation and maintenance of a wide-based consensus.

...and its fiscal position

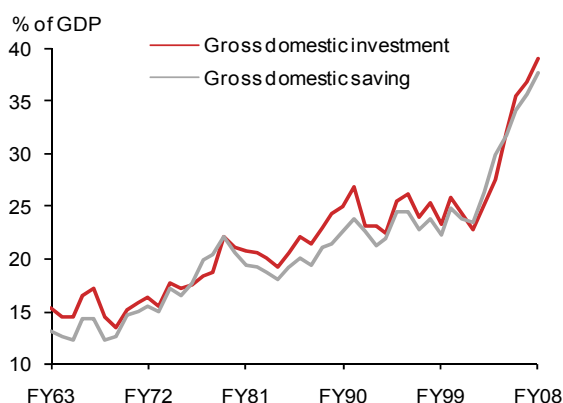
**Fiscal consolidation.** The public debt has been rising steadily since the end of the 1990s, to reach more than 75% of GDP in 2008 (Figure 4). Fiscal consolidation will be essential, lest high public borrowing crowd out private investment.

### India's potential growth in 2011-20

India should grow between 7.5% and 10% in 2011-20

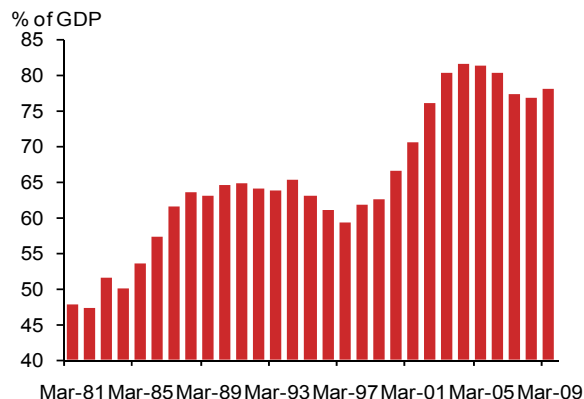
On the assumption that India progresses only gradually with structural reforms, and that global growth rebounds, we project average GDP growth at around 8.5% over the period 2011-20. However, with rapid infrastructure investment and faster structural reforms, we think real GDP growth could average as high as 10% over that period. By contrast, if global growth remains subdued, and if India were to drag its feet on education and infrastructure changes, potential growth could slow to only around 7.5% per year. ■

Figure 3. Domestic savings and investment



Source: CEIC and Nomura Global Economics.

Figure 4. Public debt-to-GDP ratio



Source: CEIC and Nomura Global Economics.

## Indonesia: Natural resources shape the economy

*Development of natural resource industries, robust consumption and strong investment are likely to support growth in Indonesia.*

- Indonesia proved to be one of the most resilient economies in the face of the global crisis.
- We expect the economy to maintain its robust pace over the coming decade.
- Key drivers: natural resource industries, robust consumption and strong investment.
- The principal risk stands to be a rising rupiah, although it should help to contain inflation.

### An increasingly robust economy

Indonesia was one of the worst-hit economies during the 1997-98 Asian financial crisis. It regained its pre-crisis (1996) GDP level only in 2003. But once the economy had fully recovered, it started to grow robustly, with economic growth averaging 5.6% during 2003-08.

Then, in the face of the current global financial crisis, Indonesia proved to be one of the most resilient economies in Asia, along with China, India and Vietnam. We judge that this robust performance is likely to continue over the coming decade, driven by three factors in particular.

### Growing importance of natural-resource industries

Demand for natural resources should rise substantially over the coming decade as a result of vigorous economic growth abroad, particularly in China and India. Indonesia is rich in a range of natural resources, including petroleum, natural gas, coal, nickel, tin, timber, bauxite, copper and gold. It is also a major producer of natural rubber and palm oil.

The share of major commodities in Indonesia's total exports has been increasing: the combined share of six commodities reached 45.9% in 2008, up from 36.1% in 2003 (Figure 1), and this seems likely to continue. We think the (relative) prices of commodities are likely to rise too. Both developments would strengthen exports, and support an inflow of foreign direct investment.

### Rising income should drive consumption

Indonesia is now at the early stage of rapid increase in its middle-income population. We estimate that the number of middle-to-upper class people, defined as those whose per-person household annual income is above US\$3,000, had reached 50.4mn in 2009, up from 1.6mn in 2004. We expect this rapid growth to continue, led by increasing real wages, the result of rising export earnings.

Rising income from natural resource industries stands to benefit rural consumers in particular. As real incomes rise, consumers tend to allocate more spending to service items. Demographic conditions too should support consumption – the United Nations projects that Indonesia's population will have increased by a further 9.3% by 2020.

Exports of raw materials are likely to grow strongly

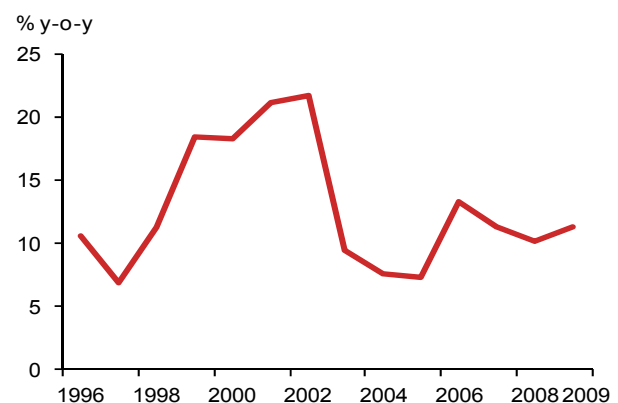
Consumption is at the point of take-off

Figure 1. Share of commodity exports in total exports

%	Total exports	Oil & gas a	Palm oil b	Coal c	Fabricated rubber Products d	Copper Ores and Concentrates e	Major commodity export items a+b+c+d+e
2000	100	23.1	1.7	2.1	2.1	2.6	31.6
2001	100	22.4	1.9	2.9	2.1	2.8	32.2
2002	100	21.2	3.7	3.1	2.7	3.1	33.7
2003	100	22.4	4.0	3.2	3.4	3.0	36.1
2004	100	21.9	4.8	3.8	4.1	2.5	37.1
2005	100	22.5	4.4	5.1	4.1	3.9	39.9
2006	100	21.0	4.8	6.0	5.4	4.6	41.9
2007	100	19.4	6.9	5.9	5.4	3.7	41.2
2008	100	21.3	9.0	7.7	5.5	2.4	45.9

Source: Nomura Global Economics.

Figure 2. National average minimum wage



Note: National nominal minimum wage is weighted by each provincial GDP.

Source: CEIC, Nomura Global Economics and various reports.



## Strong investment growth

Investment has become a key driver of domestic demand

Investment has become an important driver of domestic demand (Figure 3), growing at a little over 8% per year on average from 2003 to 2008, and particularly strongly in areas that serve Indonesia's domestic market, such as automobiles and commodities. This strong investment has been supported by the revival of the banking sector. Strong investment growth seems likely to continue for the next decade, given robust domestic consumption growth and further development of natural resource industries.

Moreover, the investment climate should benefit from the re-election of President Yudhoyono and his party (Figure 4). During the president's first term, it was difficult for the administration to pass its agenda through the House of Representatives as the ruling coalition was not powerful enough. However, the president is now supported by more than 70% of the representatives, which should strengthen the legislative power of the administration.

Investment growth may also be boosted by the development of the tourist industry. Tourism receipts amounted to only 1.4% of Indonesia's GDP in 2008, much less than in Thailand (8.2%) or Malaysia (6.9%). Indonesia's tourist industry is still underdeveloped, but rising incomes of Asian consumers should encourage the development of tourism in the long run.

Growth of between 5½% and 6½% seems likely

Overall, we project annual average real GDP growth at 5½% to 6½% for 2011-20. The upper bound assumes that Indonesia can improve its domestic investment climate, even though we assume that the growth of Indonesia's manufacturing exports may slow significantly from their recent pace. The lower bound projection, by contrast, assumes that Indonesia faces obstacles in its move towards a more investment-friendly economy.

### Risks

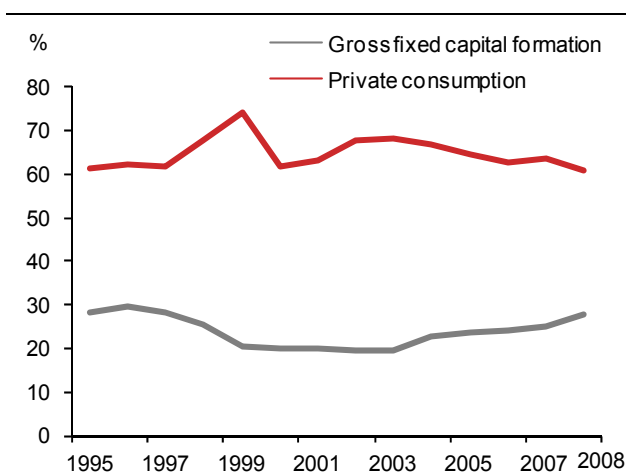
A stronger rupiah could be a risk...

A stronger rupiah, the result of higher commodity prices, could lead to "Dutch disease" – real wages becoming too high to enable manufacturing production to be competitive internationally. Indeed, Indonesian manufacturers have already struggled to compete with exporters in China or other ASEAN economies. And competition is likely to become even tougher as a result of the development of the ASEAN Economic Community and various free trade agreements, such as China-ASEAN FTA and India-ASEAN FTA.

...but not if the RMB rises, too

On the other hand, if the renminbi were to appreciate vis-à-vis the US dollar, as we expect (see the Chapter *China set to lead Asia's evolving capital markets*), that would make it easier for Indonesia to cope with the appreciation of its own currency. The expected continual increase in wages in China's coastal provinces would also support Indonesia, as it would encourage the relocation of factories from coastal China to economies such as Indonesia where the absolute level of wages is generally lower. ■

Figure 3. Share of GFCF and private consumption in GDP



Source: CEIC data and Nomura Global Economics.

Figure 4. Ruling coalition and its seats in the House of Representatives (DPR)

		2009 DPR election		
		Votes (%)	Seats	Share (%)
Democratic Party	PD	20.9	150	26.8
Golkar Party	Golkar	14.5	107	19.1
Prosperous Justice Party	PKS	7.9	57	10.2
National Mandate Party	PAN	6.0	43	7.7
United Development Party	PPP	5.3	37	6.6
National Awakening Party	PKB	4.9	27	4.8
Indonesian Democratic Party of Struggle	PDI-P	14.0	95	17.0
Great Indonesia Movement Party	Gerindra	4.5	26	4.6
People's Conscience Party	Hanura	3.8	18	3.2
<b>Total</b>		<b>100.0</b>	<b>560</b>	<b>100.0</b>

Note: Parties in shaded area are ruling parties.

Source: Various media reports.

## Japan: Not as supply-constrained as thought

*Japan faces important limitations to its medium-term growth. Its supply side stands to be constrained, but bringing its female population into the labour force could ease this constraint.*

- By 2012, Japan’s baby-boomers will begin to retire, reducing labour input and savings.
- However, Japan has a large latent, underutilised asset: its women.
- We project average GDP growth of 1%, if the female labour force realises its potential.
- Japan’s major challenge is to enact the policies needed to realise this potential.

Decades of vigorous export-led growth made Japan one of the world’s highest per capita income economies. But when export growth slowed in the mid-1980s, due in part to companies investing abroad, and in larger part to the emergence of new low-wage competitors, many of them in Asia, Japan’s GDP growth slowed. The 1990s financial crisis further inhibited investment and growth. And the current global recession has exacerbated the situation yet further: Japan’s downturn has been the most severe of all the OECD countries.

Thus, for whatever reason, domestic demand has never really proved able to take over the running from exports. The reasons are not fully clear; but certainly Japan has never pursued structural policy reform to the same extent as some other high per capita income countries in the region, notably Australia and New Zealand, in order to spur the growth of their domestic demand. Some Japanese policymakers did try, but they were unsuccessful.

Now, a further issue looms – the so-called 2012 problem, when Japan’s baby boomers will start turning 65. This is an important challenge, but we are not as pessimistic as some analysts about the implications for Japan’s economic growth over the coming decade.

### The “2012 problem”

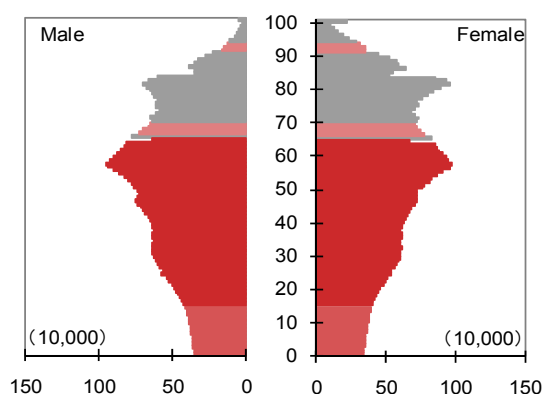
Japan’s society is aging rapidly: by 2030, approximately one-third of the population will be 65 or older (Figure 1). In 2012, the baby boom generation, born between 1947 and 1949 (about 6.8mn people), will start turning 65 and begin to exit the labour market. Government pensions are paid at age 65, lowering the incentive for 65-year-olds to continue working. As a result, from 2012, a large proportion of the baby boom generation should start living only off pensions and savings. This points to a severe labour shortage and a constraint on economic growth.

According to the Labour Force Survey, the participation rate of men in the 60-64 age category was 73.1% (Figure 2), but it declined rapidly, to 50.3%, for the 65-69 age category, and to about 30-35% for the 70-75 age group. We assume that, of the approximately 5.6mn households with a baby boomer as head, about 23% of them (the difference in the workforce participation rates between the 60-64 and 65-69 age groups) will decide to live on their pensions alone after turning 65. Accordingly, we calculate that the retirement of the baby-boomer generation will decrease national savings at a rate of around ¥1trn per year. This should impact the economy gradually during the years after 2012, with significant consequences over the medium term.

By 2012, the baby-boom generation will begin to retire...

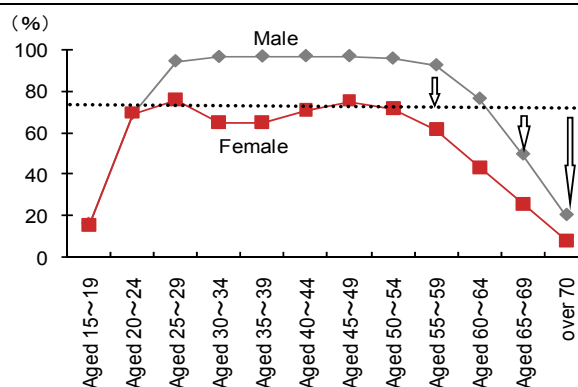
...with significant medium-term implications

Figure 1. Japan’s population pyramid (2030)



Source: United Nations.

Figure 2. Labour participation rates in Japan by age



Source: Nomura, based on Ministry of Internal Affairs and Communications “Labour Force Survey”.

## Women – Japan’s hidden asset

**Women are Japan’s underutilised asset**

Notwithstanding these supply-side limitations to growth over the coming decade caused by the retirement of baby boomers, Japan possesses a hitherto largely unrecognised asset, a latent labour force that has scarcely been utilised: women. The female participation rate, at 62.3%, is low by international standards. According to the Ministry of Health, Labour and Welfare Survey, women would join the labour market if they were “given the opportunity”. If Japan’s labour market can utilise the potential labour force (Figure 3), it should have the labour required to maintain economic activity at the current level for quite some time: we estimate that the labour force level of 2003 can be maintained until 2020. (See the Chapter *Japan’s supply side: Not particularly constrained*.) Policies to promote female labour-force participation are thus essential, in our view, if this resource is to be tapped effectively.

### Additional policy challenges

Addressing the expanding fiscal deficit amid a declining population, lower birth rate and an ageing society is paramount. The retirement of the baby boomers should not only expand the fiscal deficit (due to higher medical expenditure and pension payouts), but also decrease the supply of domestic capital. Pursuing the commitment to rebuilding the economy’s fiscal position is therefore both essential and urgent (Figure 4). To this end, we expect the government to raise the consumption tax (by 5pp by 2020) and implement tax reforms. In this event, the current account surplus would likely diminish, but should still remain positive at least until 2020.

### GDP projections

**Consumption should remain sluggish**

A declining population will likely depress private consumption. In addition, household consumption looks set to remain sluggish, on the back of small wage increases in the face of strong international competition, particularly from within Asia. Private consumption seems likely to grow by only about 1.0% per year between 2011 and 2020.

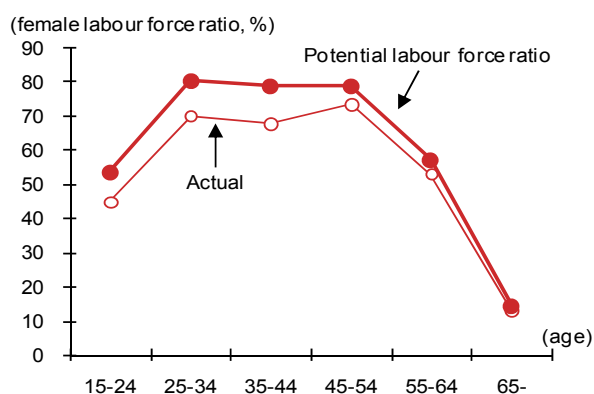
**...but investment should increase**

This weak domestic demand growth, together with a decline in companies’ rates of return caused by the difference in wage levels between Japan and other Asian countries, seems likely to continue to support direct investment abroad by Japanese companies. However, we would also expect an increase in domestic investment to compensate for labour shortages. We expect private capital spending to grow at an annual average rate of around 3.0% from 2011 to 2020. However, housing investment will likely be depressed by the decline in the population, and could perhaps turn to negative growth.

**We expect annual GDP growth of about 1% in 2011-20**

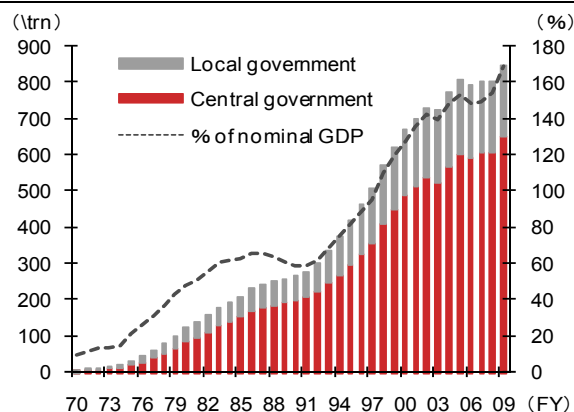
For 2011-20 we expect Japan’s average annual real GDP growth to be around 1% (between 0.5% and 1.5%). If Japan fails to make fiscal and structural reforms and activate its female labour supply, a shrinking labour force would depress real GDP growth severely, leaving Japan’s growth rate at around 0.5%. On the other hand, if Japan could solve these structural problems, stable long-term yields should support domestic private investment and the increase in female workers should support private consumption. In addition, structural reforms would promote the competitiveness of Japanese firms to capture potential demand in Asia. In that case, Japan’s growth rate could reach 1.5%, overcoming the effects of the declining population. ■

Figure 3. Potential female labour force ratio in Japan (2008)



Note: Potential labour force ratio is calculated by adding the number of people who wish to work but are not seeking jobs to the actual labour force. Source: Nomura, based on Japan Ministry of Internal Affairs and Communications and International Labour Organisation

Figure 4. Trends in government debt



Source: Ministry of Finance, Nomura

## Malaysia: Deregulation should boost services

Malaysia's economy should maintain momentum by attracting foreign money into the service industries. High commodity prices should support the economy by improving the terms of trade.

- Development of the service sector should lead the economy.
- Malaysia's potential growth is supported by natural resources.
- We project average GDP growth of 5.0%, with 6.0% and 4.0% as upper and lower bounds.
- The greatest risk is the erosion of support for the ruling Barisan Nasional (BN) coalition.

### Structural challenges

Malaysia escaped recession in 2009 and is poised to recover in 2010. However, in the medium to long term, the economy faces two challenges: 1) a slowing labour force growth; and 2) declining export competitiveness.

**1. Slowing labour force growth:** In the mid-term review of the ninth Master Plan (9MP, covering 2006-10), the government estimated the shares of total factor productivity (TFP), capital and labour in real GDP growth at 34.8%, 36.7% and 28.5%, respectively. However, the United Nations forecasts that the growth of the working-age population will decrease to 1.6% per annum in the 2010s, from 2.4% in the 2000s. Thus, to maintain current potential GDP growth, the economy will need higher TFP and/or capital growth.

**2. Declining export competitiveness:** Electrical and electronic products are Malaysia's main exports, accounting for around 30% of the total. However, many foreign electronics companies are setting up factories elsewhere in Asia, including China, Thailand and Vietnam, where labour costs are lower than in Malaysia. Malaysian per capita GDP was US\$8,008 in 2008, the highest among ASEAN economies (excluding Singapore, which has become an advanced economy) (Figure 1). If Malaysia's exports do not shift to higher value-added items, exports competitiveness will likely diminish.

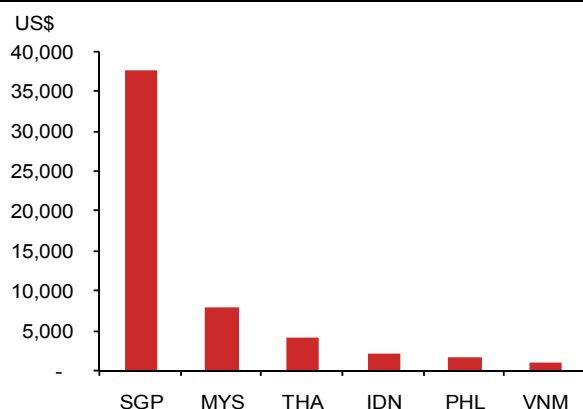
### Medium-term opportunities

We expect service-industry deregulation and privatisation to attract further capital flows into Malaysia and boost productivity. The deregulation process has started in accordance with a review of the Bumiputera policy (affirmative action for ethnic Malays): the government has removed (with some exceptions) the 30% Bumiputera ownership requirement for companies seeking to list on the Malaysian stock exchange. Deregulation has also begun in 27 service industries (which have been fully liberalised to foreign investors), including Computer & Related, Health & Social, Tourism, Transport, Sport & Recreational and Business Services. The central bank, Bank Negara Malaysia (BNM), has started further deregulation of the financial sector. The deregulation package includes: 1) issuance of new licences; 2) increases in foreign equity limits; and 3) operational flexibility. In addition, Islamic financial services are likely to expand further in Malaysia. With its status as an Islamic nation, Malaysia is also well placed to attract oil money from the Middle East. We expect other service sectors to expand, led by stable liquidity as the financial sector develops.

Export competitiveness is likely to decline

Service-industry deregulation should attract capital inflows

Figure 1. Per capita GDP in 2008



Source: CEIC and Nomura Global Economics estimates.

Figure 2. Terms of trade



Source: CEIC and Nomura Global Economics.

**Natural resources should support national income**

In addition, higher commodity markets should support the economy. Malaysia is rich in natural resources, including crude oil, gas and palm oil (and rises in commodity prices supported the improvement of the terms of trade in the 2000s, see Figure 2). Indeed, these sectors accounted for 18% of real GDP in 2008. Continued improvement in the terms of trade stands to support increases in real national income.

**Development of ICT should boost productivity**

Furthermore, we expect the development of information and communications technology (ICT) to support the economy. Companies with Multimedia Super Corridor (MSC) status can take advantage of a range of incentives. Among these is Pioneer Status, which grants income tax exemption of 100% of statutory income for a period of 10 years. There is also an Investment Tax Allowance of 100% on qualifying capital expenditure incurred within a period of five years, offset against 100% of statutory income for each year of assessment.

**Exports are likely to play a key role**

On the demand front, exports are still important for Malaysia, which is a highly open economy. Exports of goods and services accounted for 118% of real GDP in 2008. We expect Malaysian exports to benefit as the income of Asia ex-Japan continues to increase in the next decade and as trade integration strengthens. The share of exports to Asia ex-Japan increased to 53% in 2008 from 43% in 1990 (Figure 3). In addition, free-trade agreements will likely expand further.

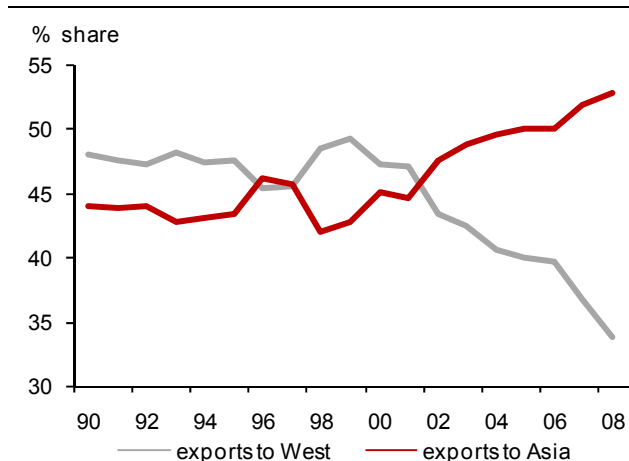
**We expect annual growth of 4.0-6.0% over the next decade**

The Malaysian economy has many things going for it, including buoyant commodity prices, rising capital inflows, increasing exports and expanding tourism. On the other hand, the government's income target under Vision 2020 would require growth to step up to around 8% over the next decade, which strikes us as challenging given demographic changes and headwinds to export competitiveness. We forecast Malaysia's annual average real GDP growth rate at 5.0% during 2011-20. Growth could rise to 6.0% if the government weathers these challenges, but could also slow to 4.0% if the government fails to liberalise the Bumiputera policy further. The strategy and reforms planned under Malaysia's new economic model and 10<sup>th</sup> Malaysia Plan (2011-2015) – to be released in June 2010 – will be critical to growth outlook in the next decade.

## Risks

In our opinion, the greatest risk to growth is ebbing support for the ruling BN coalition, because this has the potential to hinder reform momentum. BN lost 59 seats in the general election on 8 March 2008 (Figure 4), whereas the opposition Pakatan Rakyat (PR) grouping, which had originally requested reform of the Bumiputera policy, gained 62 seats. (That said, the BN did not retain two-thirds of the seats in parliament – the minimum required to amend the Constitution.) Half-hearted changes to the Bumiputera policy could cause BN to lose further support from pro- and anti-Bumiputera voters alike. If political uncertainty worsens, economic momentum could be stymied. ■

Figure 3. Destination of exports



Source: CEIC and Nomura Global Economics.

Figure 4. Seats in National Parliament after 2008 election

	Seat	Change
BN (ruling parties)	140	-59
UMNO	79	-31
MCA	15	-16
MIC	3	-6
Gerakan	2	-8
PBS	1	-1
Others	30	3
PR (opposition parties)	82	62
PAS	23	17
PKR	31	30
Others	28	15
Quorum	222	

Note: The general election was held on 8 March 2008.  
Source: Nomura Global Economics.

## The Philippines: Untapped growth potential

The Philippine economy weathered the global crisis well, but a dearth of investment has prevented it from achieving its full growth potential.

- The potential rate of GDP growth in the Philippines is being restrained by a lack of investment.
- To lift investment, reforms are needed in fiscal finances, the business climate and financing.
- OFWs remittances should grow strongly in 2011-20 and the BPO sector looks set to flourish.
- Over 2011-20, our base case is average GDP growth of 6%, but in a wide range of 4%-7%.

### Urgent need to boost investment

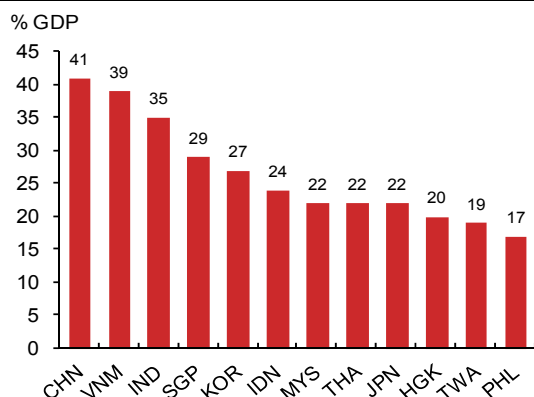
The Philippine economy weathered the global crisis well, avoiding recession with around 1% GDP growth in 2009, and we forecast growth to pick up to 5.5% in 2010. However, the economy is not tapping its full growth potential. The fundamental cause has been more than a decade of inadequate investment, and consequently a dilapidated capital stock. In 2008, the Philippine investment-to-GDP ratio was the lowest in Asia (Figure 1). An archipelago comprising over 7,000 islands has made the roll-out of public infrastructure more difficult and past political problems have not helped matters. There are many straightforward ways to improve the investment climate, in our view. We highlight three key ones:

**1. Strengthening fiscal finances:** Public debt, at about 62% of GDP in 2009, is well down from 95% of GDP in 2004 and compares favourably with that of the G20 countries. However, it is still high, and the budget deficit has widened to some 4% of GDP in 2009. A stronger fiscal position is essential to improve the investment climate. It should: free up space for greater public spending on hard and soft infrastructure; help lower the sovereign risk premium; and reduce crowding out of private investment (banks currently are large buyers of government bonds). More critically, we think progress is needed on broadening the net and the efficiency of tax collection, while the privatisation programme should be accelerated. A debt or budget target could help to anchor fiscal policy, in the same way as the inflation target (introduced in 2002) has improved monetary policy.

**2. Improving the business climate:** Lowering the corporate tax rate from 35% to 30% is not enough, in our view. According to the World Bank's 2010 Doing Business country rankings, the Philippines is 144th out of 183 economies, and the lowest ranked of the main economies in Asia (Figure 2). In terms of number of days, it takes on average 203 days to get construction permits and 842 days for contracts to be enforced, while firing workers is difficult and costly (redundancy costs the employer 91 weeks of salary). We think more reforms are needed to promote transparency, the rule of law and corporate governance. More deregulation is also needed to promote competition. A good example is the overprotection of the oligopolies in the utilities, transport and natural resource sectors, which drives up the cost of doing business. Improving the business climate is crucial to encourage more domestic and foreign investment. A useful starting point would be to enhance the approximately 200 special economic zones in the Philippines with better infrastructure and human capital, simplified investment procedures and a more transparent dispute reconciliation mechanism.

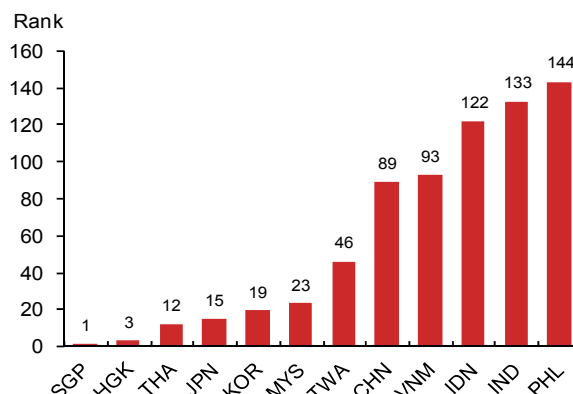
The key challenge is to improve the investment climate

Figure 1. Real gross-fixed capital formation



Source: CEIC and Nomura Global Economics

Figure 2. Global ranking of ease of doing business



Note: The ranking of 183 economies is a composite of several statistics, such as metrics on the ease of enforcing contracts, employing workers and protecting investors, to name a few. Source: World Bank and Nomura Global Economics.

**3. Greater private sources of financing:** Inadequate investment is also a consequence of insufficient sources of financing. Gross domestic saving is low, at 19% of GDP in 2008, partly because of a weak, protected labour market (the unemployment rate is 7.1%, while the underemployment rate is estimated at over 20%). This is partly a result of key industries being overly protected in our view, raising the cost of doing business and eroding the disposable incomes of households. Banks are large purchasers of government debt, restricting their lending to the private sector. FDI is lacking, and the Philippine equity market is one of the least developed in Asia, further limiting the scope for companies to raise funds. Measures are needed to encourage better intermediation of capital to the private sector.

### Medium-term opportunities

If the requisite steps are taken to improve the investment climate, we think virtuous spirals could develop, as investors reinterpret the challenges as opportunities setting off an investment boom, which in turn could lift the Philippines' long-run potential economic growth.

Besides fiscal policy, the fundamentals are in good shape

First, apart from the weak fiscal position, the fundamentals are in good shape. The bank loan-deposit ratio, at 66%, is among the lowest in Asia, while the bank capital adequacy ratio is among the highest; the current account is in surplus; external debt has fallen to 33% of GDP in 2009 from 72% in 2003; and foreign reserves are at a record high of US\$45bn, equal to nine months of import cover.

Remittances are set to grow strongly over the next decade

Second, although not a large exporter of goods or capital, the Philippines has found a niche as an exporter of cheap labour. Persistently strong population growth and limited job opportunities at home (because of the overly protected domestic labour market) have contributed to the large flow of workers migrating overseas: there are over 8mn overseas Filipino workers (OFWs), sending back remittances equal to over 10% of GDP. Of course, there is a limit to the benefits of deploying workers overseas as the *quid pro quo* is less human capital for the domestic market. However, the Philippines has been highly successful in developing cluster effects with its OFWs and establishing niches in particular industries, such as housekeepers in Hong Kong and Singapore, construction workers in United Arab Emirates (UAE) and care workers in Saudi Arabia. Given the rapidly ageing populations in the more advanced economies, including Japan, Korea and Taiwan, the demand for OFWs is likely to grow strongly over the next decade.

The budding BPO industry should blossom

Third, the Philippines has a global comparative advantage that it has yet fully to exploit. Its young, English-speaking population of 90mn, with a GDP per capita of just \$1,845 in 2008, offers significant potential for Business Process Outsourcing (BPO), a niche industry that is just beginning to flourish (BPO can be defined as the delegation of one or more IT-intensive business processes to an external provider that, in turn, owns, administrates and manages the selected process or processes). The major components of the BPO industry are call centres, software development, animation and creative services, data transcription services in the health and legal professions, and back office processing related to finance and accounting. The Philippine BPO industry, classified as "exports of miscellaneous services" in the GDP accounts, grew by 26% in 2008, and it has increased from 1.4% of GDP in 2003 to 4.3% in 2009. BPO was identified as a priority growth sector in the 2004-10 development plan and we expect it to be singled out again in the next development plan. The global recession has intensified the need for companies to review their cost structures, which will likely lead to a renewed wave of outsourcing, particularly in banking. Also, the global BPO sector is looking for a back-up to India, and we think the Philippines is well positioned to play that role in the next decade.

### Risks and ranges

We forecast growth of 6% in 2011-20, but in a wide range

Assuming little progress is made on improving the investment climate, and with the related potential for renewed bouts of political turmoil, we doubt that the Philippines will be able to exploit the aforementioned opportunities fully. In this unfavourable environment, average annual GDP growth could be as low as 4% over 2011-20. By contrast, an investment climate that allows the Philippines to capitalise fully on its global comparative advantages could push long-term potential growth perhaps as high as 7% over 2011-20. Within this wide range, we judge the most likely outcome to be in the upper half given that, over the past decade, the economic fundamentals and political situation in the Philippines have been on an improving trend, and that, geographically, the economy is well positioned to benefit from Asia's ascent. Our base case is that the Philippine economy will average GDP growth of 6% over 2011-20. ■

## Singapore: Seeking high-value industries

We expect economic growth over the medium term to be sustained by knowledge based-industries, such as the biomedical sector.

- Singapore has based its economic development on the quality of its labour force.
- Government policy is to develop this model further, and we judge that it will succeed.
- We project average GDP growth of 6.0%, with 6.5% and 5.5% as upper and lower bounds.
- The greatest risk to the outlook is problems in the global economy.

**GDP has grown considerably, despite few natural resources**

Being a small island nation of just 710 square kilometres – no bigger than Tokyo’s 23 wards – and with a population of only 5mn, Singapore has almost no natural resources on which to base its economic development. Yet the economy has grown impressively – by 5.7% per year on average over the past decade (Figure 1). Moreover, by 2008, Singapore’s per capita GDP, at \$37,595, had caught up with that of Japan (\$38,455). Evidently, the capabilities of Singapore’s labour force are its major resource.

**The labour force and population are set to peak**

However, the working-age population is set to peak within the next five years (at 3.72mn in 2015, according to UN projections) and decline thereafter (on present trends, total population should peak in 2034 at around 5.5mn). One important contributing factor is the continuing decline in the fertility rate of Singapore’s residents, which has fallen from 1.8 in 1990 to 1.3 in 2008.

**Education is an important resource**

Government policy is responding. The government is seeking to increase further the productivity of the workforce by raising the already-high education level of its population: the share of education expenditure in the overall budget now exceeds 20% (Figure 2). Moreover, it is seeking additional skilled labour from abroad, which would augment the already-significant non-resident population (Figure 3). And the government is also devising schemes that work to meet both objectives. One such example is the “Tuition Grant Scheme”, which subsidises overseas university students’ tuition in exchange for their agreeing to work in Singapore for at least three years after graduation.

**Singapore’s role as a global hub should continue**

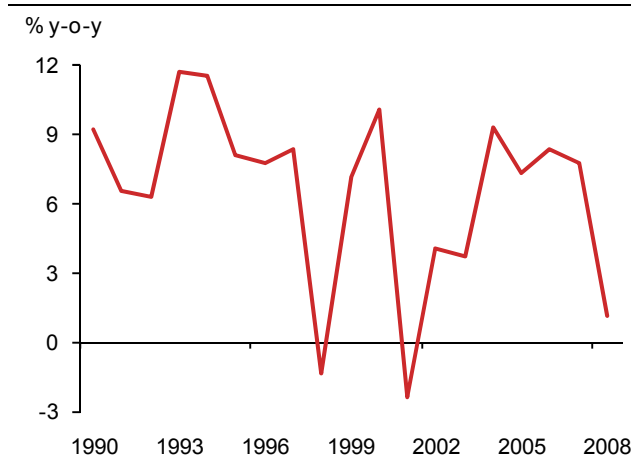
The service sector is by far the most important in Singapore, accounting for 70% of GDP. This is in part the consequence of the government having sought to establish Singapore as a global hub for a number of industries, such as finance and logistics.

Many global financial institutions have established themselves in Singapore and, although the interpretation of some ranking systems is not always clear, Singapore was recently ranked fourth among financial cities worldwide in terms of its competitiveness.

As for being a global logistics hub, Singapore is not only well located, but it performs well. Singapore was recently ranked first by the World Economic Forum in the categories of “quality of port infrastructure” and “quality of air transport infrastructure”. According to Singapore’s Economic Development Board, 21 of the top 25 third-party logistics companies (3PL) are based in Singapore. Singapore’s sea cargo container throughput in 2008 was 29.9mn twenty-foot equivalent units (TEUs), the largest in the world.

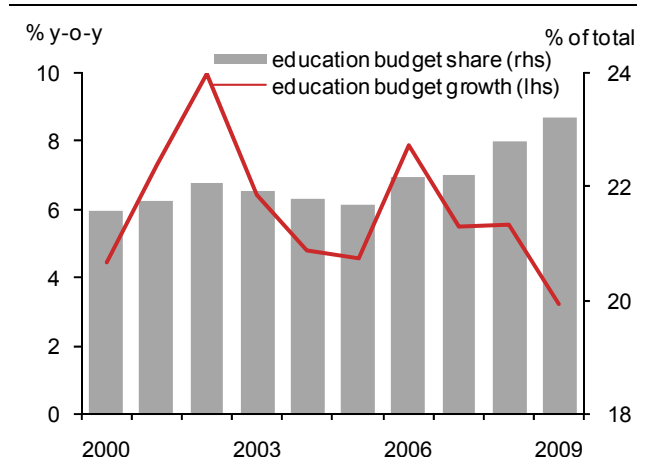
3PL companies have also invested in facilities and capabilities to meet industry needs for

Figure 1. Real GDP growth



Source: CEIC and Nomura Global Economics estimates.

Figure 2. Education budget



Source: MOF and Nomura Global Economics.



specialised handling of products such as temperature- and time-sensitive clinical and diagnostics materials, and chemical and petroleum products.

**Incentives are offered to attract foreign talent and capital**

Other policies too are aimed at attracting foreign companies. The corporation tax rate, a low 18% and the second-lowest in Asia after Hong Kong, is to be reduced to 17% in April 2010. In addition, companies can benefit from a special “Pioneer Incentive” that is applicable to high value-added industries such as the biomedical sector. If the government-run Economic Development Board (EDB) determines that a “pioneer” project either results in the creation of a new industry or that it strategically expands an existing one, companies can receive a tax exemption on qualifying profits for up to 15 years. The government offers many other kinds of incentives to attract foreign companies (Figure 4).

**The biomedical sector is set to lead the economy**

Government policy has focused particularly on developing knowledge-intensive industries, such as those in the biomedical sector. In 2001, it set up a SGD500mn R&D centre tied to a business-academia collaboration, and recruited top scientists from around the world. This so-called “Biopolis” is now home to several key government agencies, publicly-funded research institutes, pharmaceutical R&D laboratories, and biotech companies.

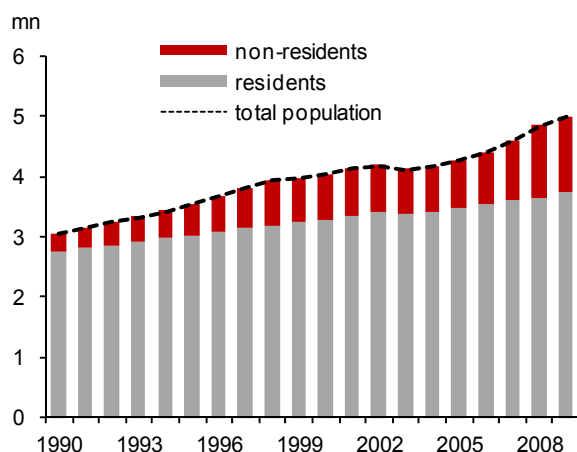
The government has also provided sophisticated infrastructure for manufacturers. The Tuas Biomedical Park, for example, is devoted to manufacturing-related activity for companies involved in pharmaceuticals, biopharmaceuticals, biologics, vaccines, and medical devices – and boasts 11 global leaders already manufacturing there. Products can be readily exported because these facilities meet international regulatory standards such as, for example, those of the US Food and Drug Administration. In value terms, manufacturing output from the biomedical sector reached SGD19bn in 2008, or 8% of total manufacturing output, up from 4% in 2000.

It is not easy for high-per-capita-income economies, which are already operating at the knowledge frontier, to continue to expand per capita productivity and income. However, our basic judgement is that this human-capital-intensive model of economic development and growth has not only succeeded for Singapore in past decades, but stands to do so in the coming one also.

**We project GDP growth in a range of 5.5% to 6.5%**

This being uncharted territory, GDP growth projections can be offered only with caution. But we consider that real GDP growth could well lie in a range of 5.5% to 6.5% from now through 2020. With a successful shift to higher valued-added industries such as the biomedical sector, GDP growth could rise as high as 6.5%. By contrast, if exports to the West were to halve, GDP growth could slow to around 5.5%. The most serious risk to growth in our view is the medium-term downside of the global economy, as Singapore is one of the most open economies. ■

Figure 3. Resident and non-resident populations



Source: CEIC and Nomura Global Economics.

Figure 4. Incentives for FDI

Incentive	Details
Development Expansion Incentive	Tax incentive: Provides preferential corporate tax rates on all qualifying profits above a predetermined base, for a set period.
Initiatives in New Technology	Grant: Awards grants to offset the cost of developing/introducing new capacity.
Pioneer Incentive	Tax incentive: Tax exemption on qualifying profits for up to 15 years.

Source: Economic Development Board and Nomura Global Economics.

## South Korea: Playing catch-up

Over the coming decade, South Korea's long-run economic growth potential will depend heavily on domestic structural reforms and secular demand from Asia ex-Japan

- South Korea's potential growth is slowing as a result of a range of supply-side factors.
- Long-term growth will depend on domestic structural reform and secular demand from Asia.
- We project average GDP growth of 3.5%, with 4.5% and 2.5% as upper and lower bounds.
- The greatest risk, by far, is that structural reform is not pursued with sufficient vigour.

### Long-run structural challenges

#### Korea faces major structural challenges

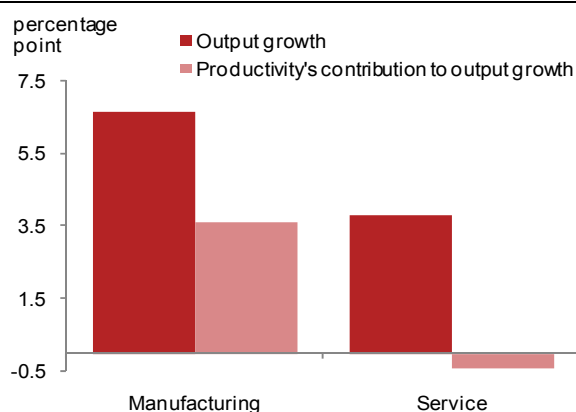
South Korea's short-term demand-side policies successfully offset the negative impact of the recent global financial crisis. However, such policies cannot boost the economy's growth in the long term; that will be determined mainly by supply-side factors. In our view, seven major issues need to be addressed:

1. **Rapid ageing and population decline:** With a fertility rate among the lowest in the world, and rising life expectancy, Korea is quickly becoming an "aged society". Total population is projected to decline in 2018. This will generate a significant fiscal burden and could become a major headwind to economic growth.
2. **Rigid labour market:** Korea's seniority-based compensation system and heavy protection for regular workers raises dismissal and hiring costs, making the labour market inefficient.
3. **Erosion of technological catch-up gains:** Because the Korean manufacturing sector is already near the technological frontier, there are now fewer opportunities for reverse engineering and imitation in research & development, especially given China's emergence.
4. **Very low energy self-sufficiency and efficiency:** Korea imports almost all its energy needs, making the economy vulnerable to oil and other energy price shocks. Energy efficiency is low.
5. **Low quality of tertiary education:** Notwithstanding its production of a large number of graduates, the overall quality of tertiary education is low, leading to "skills mismatch" – high- and low-skilled workers are in comparatively short supply, while the mid-level is oversupplied.
6. **Weak productivity in services and SMEs:** A low degree of innovation and lack of competition, both in international and domestic markets, is impeding productivity growth.
7. **Public sector inefficiency.** Over-regulation and widespread bureaucratic discretion in interpreting regulations persist. Most public enterprises remain inefficient and highly indebted.

#### Reform will not be easy to implement

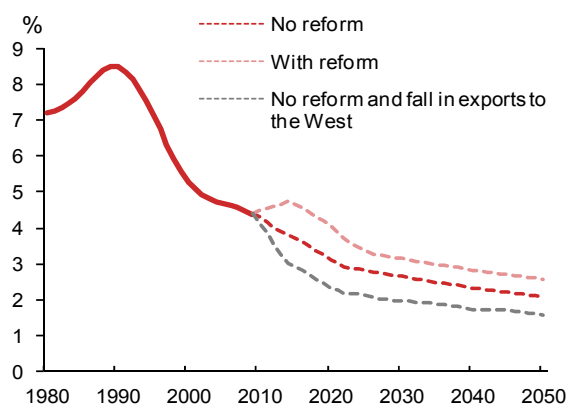
None of the requisite reforms will be easy to implement. Some – such as promoting the creation of a meritocracy – will require a considerable change in mindset. Others – such as upgrading the business environment for foreign investors – will require a willingness to adapt to new ways of conducting business and investment.

Figure 1. Productivity and output growth (2000–2005 average)



Source: Choi, Y.C. (2007), "An estimation of human capital and an analysis of factors making for its growth", The Bank of Korea Monthly Bulletin.

Figure 2. Potential GDP growth rate projection



Note: The base line assumptions for "no reform" scenario are in the end note.

Source: Nomura Global Economics estimates.

We judge that reform of the service sector is central to raising potential GDP growth (Figure 1). The regulatory framework needs improving to encourage and nurture innovation and foreign direct investment. Similarly, in the SME sector, there is a need to encourage enterprises that have a promising future, and to let those that are less viable fail.

The development of the capital markets would be helped by better transparency and corporate governance, supported by an improved regulatory framework. And a more effective, efficient legal framework is required so that corporate or industrial disputes can be resolved fairly and speedily. That would remove a major barrier to FDI, thereby increasing market openness and freedom of competition – two lynchpins of reform across the board.

## Secular demand from Asia-ex Japan

**External demand is also important for Korea's growth**

In any small open economy, such as Korea, long-run potential has to be matched by appropriate growth of external demand. The recent global economic crisis is likely to result in permanent losses in output and hence in demand from the advanced economies (see Chapter I for a discussion of this). These economies currently account for half of global GDP, making it vital that Korea find an alternative source of external demand.

**Buoyant growth in Asia is good news for Korea**

The buoyant growth that seems likely in Asia is therefore good news for Korea. Asia ex-Japan has become the destination for an increasing proportion of Korea's exports – 46% in 2009, compared with 33.4% in 1994. Even excluding parts, which appear to be largely-re-exported, Korean exports to Asia ex-Japan in 2007 accounted for 26% of total exports, the fourth highest level among major economies. This suggests that the role of Asia for the Korean economy is shifting from that of a production base (for assembly and other processes) to a market for product sales. Increasing free trade agreements should help deepen this regional economic integration. Over the coming decade, this stands to become increasingly important.

## Potential economic growth outlook

**We project potential GDP growth of 3.5% in 2011-20...**

Assuming that no progress is made on structural reform and that Asia's domestic demand grows as much as in the past, we project Korea's potential GDP growth at around 3.5% in 2011-20<sup>11</sup>. However, with successful reforms this could rise as high as 4.5% (Figure 2).

**...with upper and lower bounds of 4.5% and 2.5%**

By contrast, if Korea's exports to the advanced economies in the West were to halve, and there was little or no structural reform, potential GDP growth could slow to around 2.5%. In that case, Korea would probably not only fail to join the select group of advanced economies, but would risk falling further behind the pack.

**Higher productivity and capital deepening are key**

Can Korea continue to play catch-up with advanced economies with 4.5% annual GDP growth in 2011-20, given its rapidly ageing population? International evidence shows that the biggest inter-country differences in potential GDP growth are caused by changes in productivity and capital deepening. For example, in the United States and the United Kingdom, increased productivity and capital deepening resulted in higher potential GDP growth. By contrast, potential GDP growth in Japan, Germany and Italy is slower than in the US and the UK.

## Risks

**Reunification of the two Koreas would boost uncertainty**

Unless it accelerates economic reform, Korea risks following Japan (ageing population), Germany (reunification costs) and Italy (weak productivity) down the path of a declining potential GDP growth rate. In particular, reunification of the two Koreas, which is not our baseline assumption, would cast great uncertainty over long-run potential growth<sup>12</sup>. On the other hand, by accelerating structural reforms that boost productivity and capital deepening, Korea could follow the growth path trodden by the US and the UK.

**A consensus is emerging that reform is urgent**

With a rapidly ageing population and with global competition intensifying, a consensus is emerging in Korea that structural reform is urgent. The government seems likely to find strong support for its reform agenda. Furthermore, Korea has a stronger fiscal and monetary policy framework than before, an important pre-condition for the economy to lift its long-run potential growth rate.

**We are confident that Korea will do what needs to be done**

In the wake of the 1997 currency crisis, Korea showed an ability and willingness to implement the harsh reforms that were part and parcel of the IMF's medicine. It has proven itself able to swallow the bitter pills that necessity may prescribe. We are reasonably confident that the country will do so again. ■

## Taiwan: Race for foreign direct investment

*Progressive strengthening of economic links with China, together with industrial transformation and upgrading, should drive Taiwan's long-term economic development.*

- Taiwan intends to develop its service sector and diversify its production.
- An ageing population, energy intensity and fiscal consolidation are key policy issues.
- We project annual average growth for 2011-20 in the range 4.0%-6.0%.
- Marginalisation is a significant risk if Taiwan fails to conclude free trade agreements.

As a small, export-dependent economy, Taiwan is vulnerable to the strength of global demand, especially consumption demand in the US and Europe, albeit buffered by strong Chinese demand and growing intra-regional trade. Taiwan needs to accelerate its transformation into a service economy, and diversify and develop its product structure. Normalisation of cross-strait relations offers significant opportunities for the development of capital markets and the manufacturing sector. Economic deregulation and upgrading of infrastructure and industry should improve Taiwan's competitiveness as a destination for foreign direct investment (FDI) and the quality of its living environment. Taiwan needs to address the issues of an ageing population and environmental protection. Tax reform would enhance tax justice and fairness, restore fiscal strength and make Taiwan's tax regime friendlier to FDI.

### Industry transformation, diversification and upgrading

The government has recently unveiled a development plan, aimed at enhancing the service sector and its international competitiveness. The service sector has been an important driver of increased productivity for Taiwan over the past quarter century (Figure 1). The plan envisages that the sector will: contribute TWD11trn (72.4% of GDP) by 2012 (from TWD9trn (70.9% of GDP) in 2008); create an average of 120,000 new jobs each year to 2012; and raise the world share of Taiwan's service export value to 1.2% by 2012 (from 0.9% in 2008).

To diversify Taiwan's product structure (currently concentrated on high-tech and electronics industries), the government has identified six emerging industries with high growth potential: tourism, health care, biotechnology, green energy, cultural and creative industries, and value-added agriculture. The government will allot resources, such as help with branding, expanding market scale, and the acquisition of key technologies, to promote their development.

Furthermore, the "i-Taiwan 12 Projects" – government-initiated large-scale infrastructure projects – will be implemented during 2009-16 to upgrade Taiwan's infrastructure and industrial clusters to facilitate the accumulation of knowledge capital for an "intelligent Taiwan".

### Normalisation of cross-strait economic relations

Economic integration with China is an inevitable and powerful long-term trend. This tendency stands to be enhanced by Taiwan's WTO commitments to reduce barriers to trade and investment and open its service markets. Taiwan is set to benefit from increased two-way flows of goods, services, capital and people (Figure 2). Closer industrial cooperation should allow

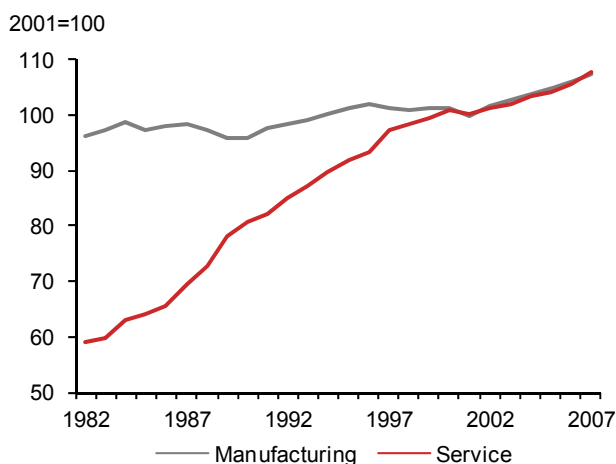
Government policy aims to develop a service economy...

...diversify Taiwan's industrial structure...

...and improve its infrastructure

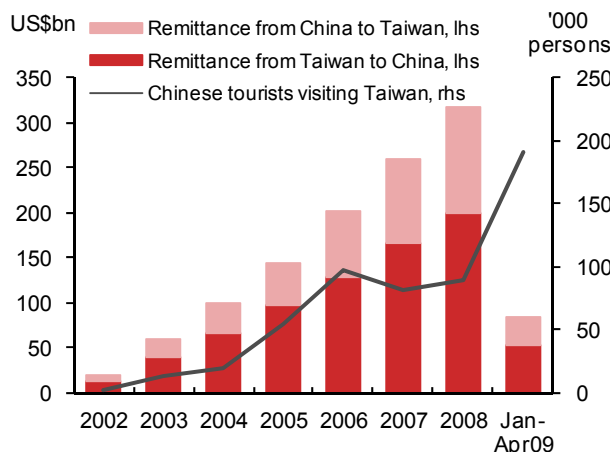
Links with China should expand Taiwan's markets...

Figure 1. Total factor productivity



Note: Total factor productivity is defined as output per combined unit of capital, labour, energy, non-energy materials and business service input. Source: DGBAS and Nomura Global Economics.

Figure 2. Cross-strait remittances and Chinese tourists



Source: Mainland Affairs Council and Nomura Global Economics

Taiwanese firms to expand into China and global markets. For its part, China has endorsed the development of an economic zone on its side of the Strait, centred on Fujian province, principally to be an experimental zone for cross-strait exchanges and cooperation.

**...and help to attract FDI**

However, Taiwan faces the risk of marginalisation amid intra-regional economic integration via free-trade agreements (FTAs) and because of the political difficulties of agreeing FTAs with the US, the EU and other major trading partners. To minimise the potential consequences, Taiwan is trying to sign an economic cooperation agreement with China in 2010. This would provide easier access to China's markets, but require Taiwan to relax restrictions further on imports from China. To reap the benefits and avoid being overtaken by Chinese counterparts, or hollowing out of domestic industries, Taiwan needs to enhance productivity and marketing, and invest in R&D, innovation and management capabilities. Economic deregulation, including liberalisation of ties with China and of the domestic regulatory environment, coupled with policy incentives, could attract capital repatriation (by overseas Taiwanese) and multinational FDI.

**Policy challenges**

**A broader social security net is needed**

Taiwan's population is ageing at more than twice the pace in the developed countries. The proportion of the population aged 65 years and above is likely to reach 16.2% by 2020 and 36% by 2050 (Figure 3). To address this issue, the government is drafting a Long-Term Care Insurance plan, which is expected to make the social security coverage more complete. However, an ageing population and a low birth rate imply a decline in labour supply and an increase of the financial burden, mainly for medical care and social security, on families and public finances. This could erode investment and harm productive potential.

**Energy saving should be promoted...**

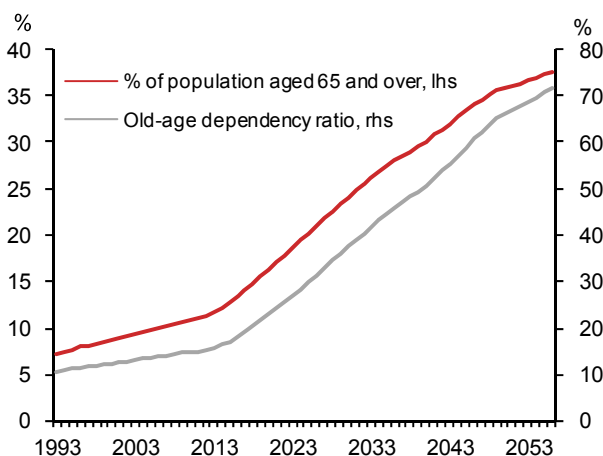
Efforts are also needed to reduce energy intensity. Taiwan is not a signatory of the Kyoto protocol, but it will likely come under pressure to reduce its level of greenhouse gas emissions. The government intends to promote energy conservation, carbon reduction, energy efficiency, and the development and use of renewable and green technologies (which would impact exports, investment and employment in the energy-intensive sectors).

**...in parallel with broad fiscal reform**

The government has planned comprehensive budget reforms that should generate an additional TWD1trn in 2009-16. Fiscal consolidation should come mainly from tax reforms to raise the tax-to-GDP ratio (as low as 14.3% in 2008; Figure 4). Meanwhile, we expect the government to maintain tax incentives and simplify the tax regime to attract FDI.

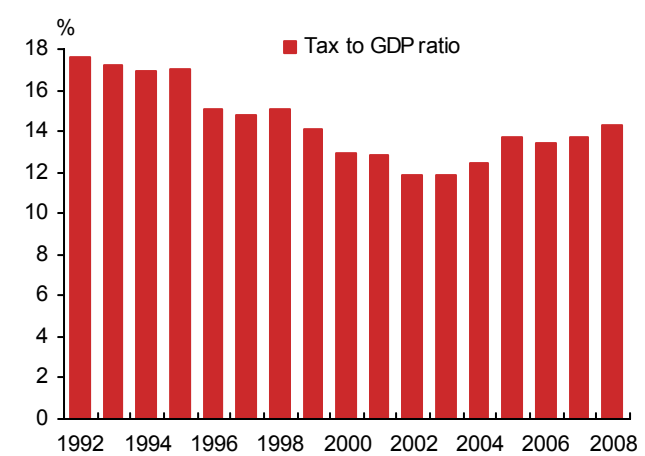
We project annual average real GDP growth in the 4.0%-6.0% range for 2011-20. The upper bound assumes successful transformation of Taiwanese industries and integration with the Chinese economy through a range of measures. The lower bound, by contrast, assumes that Taiwan faces obstacles in its move towards developing its service industries. We judge that the most serious risk to long-term economic growth is, as discussed above, marginalisation of Taiwan as a result of failing to enter into FTAs with its neighbouring economies. ■

Figure 3. Population projection



Note: The old-age dependency ratio is the ratio of the elderly (age above 65) to the working-age population.  
Source: DGBAS, CEPD and Nomura Global Economics.

Figure 4. Tax burden



Source: MOF, CEPD and Nomura Global Economics.

## Thailand: Infrastructure to develop further

Thailand is set to expand its auto industry further in addition to developing its infrastructure. We see political uncertainty as the main downside risk to growth.

- Capital stock is poised to increase through infrastructure investment.
- The auto industry is likely to develop further.
- On the demand front, exports should still play an important role.
- We project average GDP growth of 5.0%, with 6.0% and 3.0% as upper and lower bounds.

We think the medium- and long-term outlook for Thailand is very bright if the economy takes advantage of improving infrastructure. However, political uncertainty could suppress economic momentum.

**Capital stock should start to build up**

Before the crisis in July 1997, the high growth rate of capital stock drove rapid real GDP growth. The growth rates of real capital stock and real investment accelerated from 1986 to 1990 and then slowed from 1990 and 1998 (Figure 1). In 1997 and 1998, a significant capital stock adjustment occurred as a result of the Asia currency crisis. However, we think the growth of both real investment and real capital stock should start to accelerate in 2010. The real capital stock should start to pile up after the two capital stock adjustments (the Asia currency crisis and the Lehman Brothers' collapse) and in the context of the recent infrastructure-focused stimulus package. We believe that its growth trajectory should stay above the 45 degree line in the next decade.

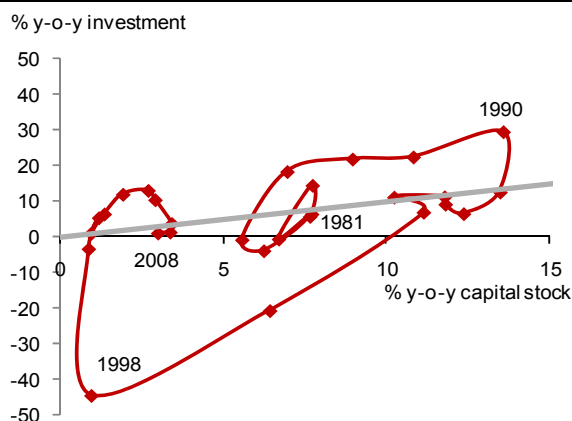
**Infrastructure investment is likely to improve**

We believe that the various planned infrastructure projects should stimulate further FDI inflows to Thailand. The Abhisit administration has already started to disburse the second fiscal stimulus package (SP2) of THB1.43trn (about 16% of 2008 GDP) from FY10 (starting October 2009) through 2012, aimed mainly at infrastructure development. The government's rough plans are to spend THB572bn on transportation, THB239bn on irrigation, THB200bn on energy, THB138bn on education and THB99bn on public health over the three years (Figure 2). Infrastructure investment should continue to increase even under different governments, because there is considerable scope for infrastructure improvement especially in north and north-eastern Thailand, where many poor constituents reside as discussed below.

**The auto sector is set to develop further**

On the production side, the auto industry (Figure 3) looks set to develop further (the Thai government has already been developing this sector). The auto sector's share of GDP increased to 4.3% from 1.5% between 1999 and 2008. Automobile production increased to 1.4mn units in 2008, more than four times the number in 1999. We expect this sector to expand further, with the government providing incentives to auto companies to manufacture eco-cars, passenger cars that must meet safety, low fuel consumption and "EURO 4" emission standards. According to an article in the *Daily News* on 22 July 2009, the Thai Board of Investment has already offered companies corporate tax exemption for at least five years provided their production of small vehicles reaches 100,000 a year within the first five years of operation. By encouraging the manufacture of eco-cars, the government is aiming to increase the total number of automobiles produced to more than 2mn units by 2012.

Figure 1. Capital stock adjustment



Source: Nomura Global Economics.

Figure 2. Second stimulus package

	(THBbn)
Logistic	572
Water Management/ Water resources for agriculture	239
Energy / Alternative Energy	206
Education	138
Public Health	99
Community Investment	92
Communication	25
Creative Economy	18
Sciences/ Technology	12
Tourism Infrastructure	10
Tourism Development	9
Public Security	8
National Resources and environment	5
<b>Total SP 2</b>	<b>1,431</b>

Source: Nomura Global Economics.

**Tourism is still important for economic growth**

In addition, we believe there is greater potential for the tourism sector to contribute to economic growth. The development of tourism should increase the services balance surplus – tourism accounted for 4% of GDP for the first three quarters of 2009. Further, an increase in tourism could create further employment.

**Exports are likely to play an important role**

On the demand side, we expect exports to continue to play an important role. In 2008, the shares of goods and services exports and imports in real GDP were 72% and 57%, respectively. Exports to Asian economies increased by 16.3% per annum from 1999 to 2008, whereas those to developed economies increased by 9.0%. The share of exports to Asian economies increased to 39.8% in 2008 from 30.5% in 1999, whereas that to developed economies decreased to 35.9% in 2008 from 53.0% in 1999. We expect exports to Asia to accelerate further given the various free trade agreements (FTAs), the latest being the ASEAN-China free trade area implemented this year. As for the FTA with India, Thailand's favourable geographical location could benefit the logistics sector. With increased demand for Thai exports, we expect investment to accelerate in the next decade.

**Growth outlook**

**We expect GDP growth of around 5% in the next decade**

Thai economic fundamentals are likely to remain healthy in our view. In addition, if the government fully implements the SP2, public debt levels should remain manageable at 60% of GDP, thanks to minimal government borrowings in the past few years. We expect GDP to grow 5.0% on average from 2011 to 2020 supported by increases in the capital stock, although labour force growth should decelerate in the next decade. We estimate potential GDP could rise to as much as 6.0% if the trend improvement in infrastructure spending solidifies and encourages more FDI inflows. In this scenario, we would expect the auto industry to lead the economy. However, if the growth rate of Thai exports to advanced economies were to halve and the political uncertainty continue, potential GDP could slow to 3.0%.

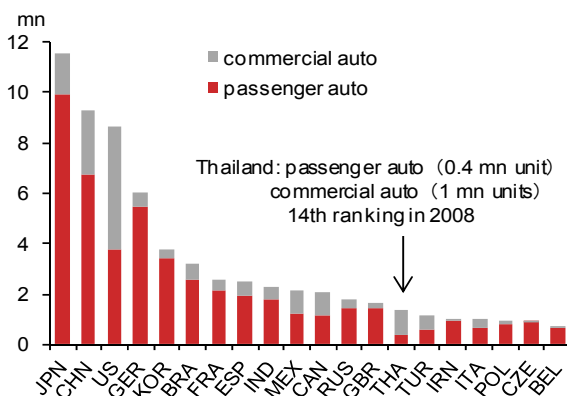
**Risks**

**Political uncertainty should be the main risk to growth**

The main risk to robust economic growth, in our opinion, is political uncertainty. In Thai politics, there are two main groups, the pro- and anti-Thaksin groups. Many Thaksin supporters are from the lower-income north and northeast of the country, which account for roughly 33mn of the 63mn population (2008). On the other hand, supporters of the ruling Democrat Party are based largely in the much wealthier metropolitan areas around Bangkok and the south (Figure 4).

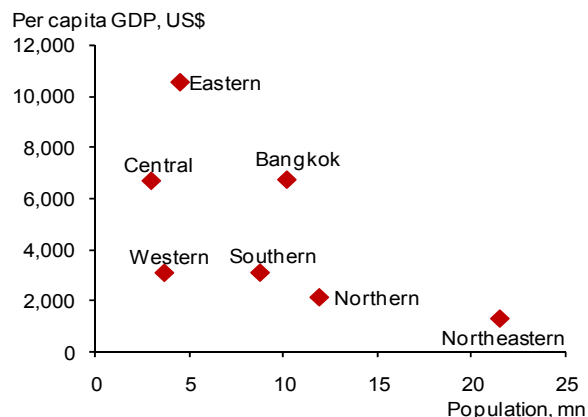
The substantial income gap between north and south has remained largely unchanged for a decade. For example, per capita GDP in the northeast was only US\$1,339 in 2008, one-fifth of that of the Bangkok metropolitan area. Such a large income disparity is politically divisive and thus we expect the conflict between pro- and anti-Thaksin groups to continue. This could threaten the economic recovery if they cannot settle their differences. There is also the added uncertainty of the role of the monarchy, with the king's health deteriorating and raising questions about succession. ■

Figure 3. Thailand's position in global auto production (2008)



Source: CEIC and Nomura Global Economics.

Figure 4. Income gap by area (2008)



Source: Nomura Global Economics.

# China set to lead Asia's evolving capital markets

*The continuing evolution of China, the integration of Asia's economies, and increasingly stable financial conditions should foster brisk development of Asia's capital and financial markets.*

- Five major catalysts are set to deepen Asia's financial and capital markets.
- This market potential should be underpinned by greater stability in regional capital flows.
- Challenges: economic integration, bond market development and regulatory harmonisation.

## Five catalysts stand to deepen financial and capital markets

**China is likely to open its markets further**

Asia's financial and capital markets have continued to deepen over the past decade (Figures 1 and 2), supported in particular by rising income and favourable international developments. Although the global financial crisis hit Asian markets in the autumn of 2008, markets are on a steady recovery path. In our judgement, Asia's financial and capital markets will continue to develop over the coming decade, influenced by the following five catalysts:

**1. Further deregulation of China's market.** China is poised to open its capital and financial markets substantially over the coming decade as it seeks to internationalise the renminbi (RMB). Internationalising the currency has been one of China's longer-term goals. Recently, it has begun to liberalise the corporate bond market and has declared its intention to liberalise interest rates and to let the RMB be used for international trade settlement on an experimental basis.

**Internationalising the RMB would require free flow of capital...**

Internationalisation of the RMB would in principle require allowing the free flow of capital and the adoption of a freely floating currency, with the market, rather than intervention by the authorities, determining the exchange rate. We judge that such a reform would boost capital flows into China in three ways:

**...and RMB appreciation**

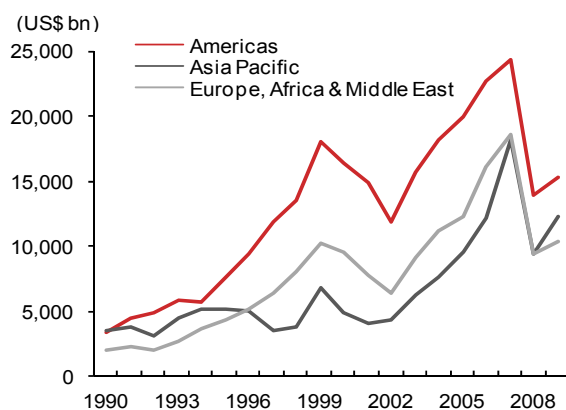
First, the lifting of capital controls would spur greater capital flows into and out of China, as the authorities would need to allow a gradual relaxation for foreign and domestic investors (Figure 3).

Second, gradual RMB appreciation would likely boost capital inflows. Once the RMB has internationalised and become a hard currency, the People's Bank of China would not be expected to intervene in the foreign exchange market as rigorously as it does now. One question is whether the authorities would let the currency appreciate substantially upon internationalisation: our judgement is that China's policymakers would prefer a gradual, managed appreciation, given that a sharp appreciation of the RMB could hit exports, slow the pace of economic growth and create unemployment.

Third, financial liberalisation is likely to lead to at least some asset-price inflation, which would encourage further capital inflows.

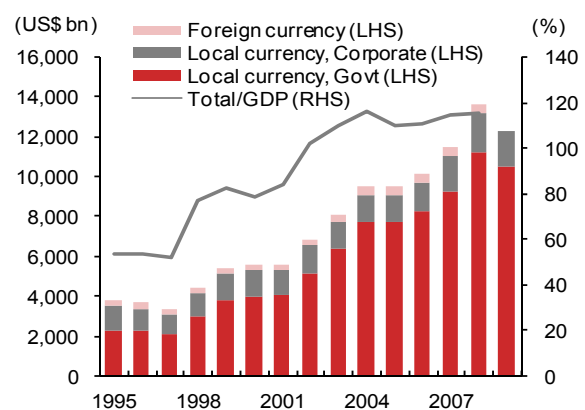
Implementing such change is never easy. On the one hand, China needs a well-developed interbank financial market and a liberalised bond market. Yet allowing the free flow of capital into and out of the economy could result in large and unpredictable movements that might shock financial markets. Thus, it is important that financial and capital markets have developed sufficiently, in terms of depth and sophistication, to absorb them. On the other hand, China

Figure 1. Market capitalisation by region



Source: World Federation of Exchanges and Nomura Global Economics.

Figure 2. Bond market size in Asia



Source: Asian Development Bank and Nomura Global Economics.



needs to deregulate interest rates amid free cross-border capital flows – in other words, allow the market-clearing function of interest rates to operate.

These are essentially the same deregulation measures implemented by Japan in the 1980s. These measures led Japan's banks into aggressive lending and, eventually, to an asset bubble. The development of a corporate bond market in Japan encouraged large banks to focus on loans to small and medium-sized companies and consumers, while large companies increasingly relied on financing through the bond market. In turn, easy credit encouraged aggressive investment in stock and property markets.

As far as China is concerned, we judge that upward pressure on asset prices created by financial liberalisation measures will prove too powerful for China's authorities to contain completely, even with a full, appropriate set of policies.

**Two-way capital flows will likely increase...**

**...causing some asset price inflation**

While liberalisation is likely to result in increased capital inflows, appreciation of the RMB could also encourage capital outflows from China: we expect both sides of the two-way flow to expand substantially over the coming decade. Looking even further ahead, into the post-internationalisation period, we expect central banks around the world to begin to hold the RMB as a reserve currency. Moreover, once internationalisation is complete, we believe that Hong Kong will be inclined to change the pegging of its currency from the US\$ to RMB, given that Hong Kong's economy should by then be much more integrated with that of China.

**FTAs should proliferate, boosting investment flows**

**2. Further integration of Asian economies.** Besides further liberalisation of Asian capital markets, the continuing integration of Asia's economies is likely to enhance intra-regional capital flows. In particular, lower trade and investment barriers can be expected to lead, through the network of free trade arrangements (FTAs), to a significant rise in intra-regional capital flows. As trade liberalisation through the World Trade Organization (WTO) has stalled, Asian governments have become increasingly energetic about expanding FTA relationships in the region.

ASEAN has long promoted the liberalisation of trade and investment among its member states. By 2003, tariffs levied on a wide range of products traded within the region had been reduced to the 0-5% range for the six original ASEAN member countries (Singapore, Malaysia, Indonesia, Philippines, Thailand, and Brunei Darussalam). Member countries have set a goal of establishing an ASEAN Economic Community (AEC) by 2015. ASEAN has also been driving regional FTA initiatives with non-ASEAN countries.

So far, Japan, China, Korea, and India have signed separate FTA agreements with ASEAN. These increasing ties within Asia stand to promote continuing outsourcing of production and to support FDI flows. They are also likely to enhance cross-border mergers. Moreover, a regional FTA involving "ASEAN plus 3" (Japan, China, and Korea) could be implemented in the longer term. At present, two possible frameworks, "ASEAN plus 3" and "ASEAN plus 6" (Japan, China, Korea, India, Australia and New Zealand), appear to be competing. In our view, Intra-regional capital flows stand to be boosted significantly, regardless of which arrangement is implemented. (For more, see the Chapter *Trade agreements: Key to Asia's growth.*)

Figure 3. Capital account liberalisation measures likely in China

Step	Measures likely to be implemented	Necessary conditions to implement these measures
<b>Ongoing</b>	<b>Measures unlikely to cause sudden, large, capital flows</b> <ul style="list-style-type: none"> <li>• Further liberalise FDI inflows (service industries etc)</li> <li>• Encourage FDI outflows</li> <li>• Expand QFII quota</li> <li>• Expand QDII quota</li> </ul>	
<b>Next step</b>	<b>Gradually expand two-way capital flows</b> <ul style="list-style-type: none"> <li>• Transform the QFII system into a system limiting the foreign shareholding ratio for equities</li> <li>• Allow residents to buy and sell foreign securities listed on Hong Kong market through a special scheme</li> </ul>	Sufficiently large FX reserves A more flexible exchange-rate mechanism
<b>Final step</b>	<b>Measures that may cause sudden, large capital flows</b> <ul style="list-style-type: none"> <li>• Allow non-residents to buy and sell RMB-denominated bonds</li> <li>• Allow non-residents to buy and sell A-shares</li> <li>• Allow residents to conduct portfolio investment abroad</li> </ul>	Deregulation of interest rates Development of short-term financial market and bond market, both large enough to absorb shocks generated by capital flows Implementation of a free-float exchange-rate system

Source: Nomura Global Economics.

**Intra-regional portfolio flows should also increase**

**Rising incomes are set to deepen capital markets**

**Islamic finance should widen investment opportunities**

As more Asian companies expand their operations beyond their national boundaries, an increasing number will spread their revenue bases more widely across Asia. In turn, these companies are likely to be owned by investors from across Asia. This, too, stands to increase intra-regional cross-border capital flows.

**3. Robust economic growth.** Robust economic growth is a potentially important catalyst for growth in capital and financial markets. Growing numbers of middle-to-high-income earners stand to accelerate the growth in assets invested in capital markets, especially equities. This should deepen capital markets throughout Asia. Institutional investment, too, should expand as consumers turn to professionals to manage their funds. Moreover, service-sector FDI within Asia is likely to be boosted as rising incomes enable more consumers, including low-income consumers, to spend more on travel, healthcare and financial services.

**4. Greater capital flows from Japan.** Given Japan's hefty US\$15trn of household financial assets, we expect capital outflows from Japan to play a greater role in driving regional economic growth. For example, whereas in 2008 fully 45% of Japan's trade flows (exports + imports) were with Asia, the share of (outward) direct investment was only 18% and the figure for portfolio investment was below 2% (Figure 4). This suggests considerable scope for investment outflows from Japan to Asia to increase. The pace, however, is uncertain.

We expect continuing efforts towards developing capital markets in the region, together with facilitation of investment channels/products, to reduce obstacles to investment flows from Japan to the rest of the region. Such efforts could include not only capital market development in host economies for investments, but also market infrastructure in the home country of investors. One such example is the effort to facilitate investment tools/vehicles, such as the use of Japan Depository Receipts (JDR) by foreign issuers, which is expected to match the financing needs of Asian issuers with investment opportunities for Japanese investors.

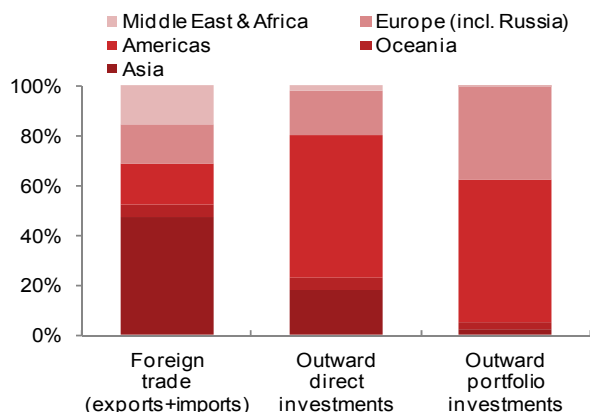
**5. Developing Islamic financial market.** Islamic finance has been playing a progressively larger role as the importance of petro-dollars has expanded (Figure 5). Malaysia is emerging as a potentially powerful Islamic financial centre, though non-Muslim countries, including Singapore and Hong Kong, are also interested in attracting such money.

It is sometimes argued that, because of its 'asset-backed' nature, Islamic finance has the potential to reduce vulnerability to financial crises. We are not convinced by this, however: the Islamic financial markets were affected in almost the same way as others during the recent crisis. Moreover, Middle Eastern money can move around the world even without such infrastructure, as it did in the 1970s. Nevertheless, the emergence of such a framework does seem likely to provide an accommodative environment and wider investment opportunities for a range of investors.

**Increased stability should improve chances of sustained growth**

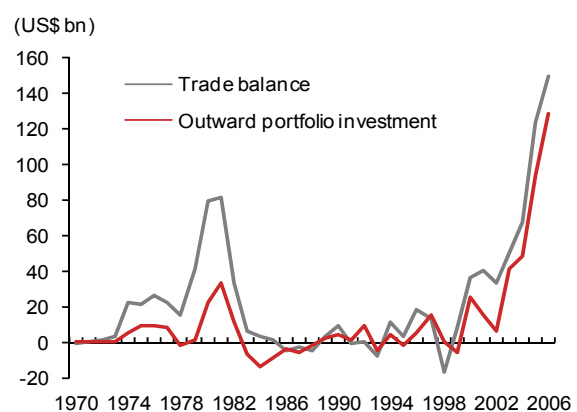
The market potential outlined above stands to be underpinned by greater stability in regional capital flows. This section considers how the Asian region has improved its strength by reducing its vulnerability to excessive capital flows, both at country and regional levels.

**Figure 4. Regional share in the flow of goods and money**



Source: Nomura Global Economics from Japanese Ministry of Finance.

**Figure 5. Expanding importance of the Middle East<sup>(\*)</sup>**



Note: (\*) Includes Bahrain, Egypt, Iran, Israel, Jordan, Kuwait, Lebanon, Oman, Saudi Arabia, Syria, Turkey, and Yemen  
Source: Nomura Global Economics.

Flexible forex rates led to CA surpluses and large reserves

**1. External vulnerability by country.** Most Asian economies have reduced their outstanding debt over the past decade, although the ratio of short-term debt to overall debt has risen (Figure 6). Furthermore, large current account surpluses and foreign exchange reserves have provided a cushion for the overall balance of payments. This can be attributed largely to the fundamental shift of exchange rate regimes during the Asian financial crisis (AFC) in 1997. Until then, most Asian economies were in current account deficit, the result of booming domestic demand and overvalued currencies. Hence, when foreign loans suddenly reversed, shifting capital accounts into deficit, a balance of payments crisis inevitably followed.

However, the subsequent shift to more flexible exchange rate regimes, particularly in Thailand, Korea, and the Philippines, together with depreciations of most local currencies, led regional current account balances to improve markedly (Figure 7). Furthermore, the region has accumulated reserves through intervention in the foreign exchange market to counteract appreciation pressure arising from current account surpluses. Some of these foreign exchange reserves seem to have been used up during the recent crisis, but the cost of defending currencies was almost certainly less than in the pre-Asian-financial-crisis.

External positions are generally healthier now

A snapshot of the latest external positions reveals regional strengths and weaknesses (Figure 8). In all the Asian economies except Hong Kong and Korea, the sum of the current account surplus/deficit and foreign exchange reserves exceeds short-term external debt plus inward security investments. This implies that any sudden reversal, even of all the loans and investment in securities, could be covered by domestic sources.

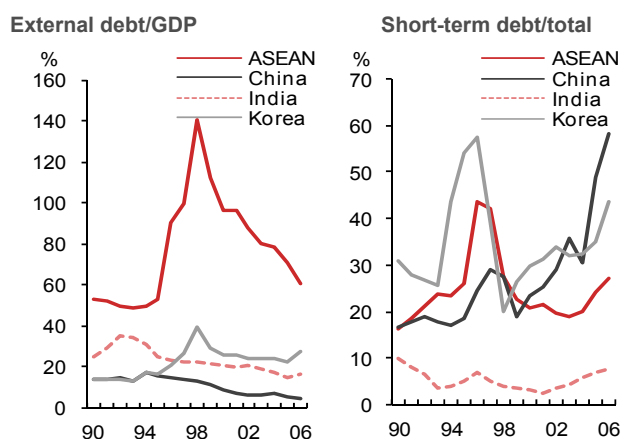
Moreover, the positive net investment indicates that an unwinding of all the positions would impose buying pressure, rather than selling pressure, on local currencies. By that metric, Indonesia, the Philippines, and India, may be somewhat vulnerable, but the position of all the other Asian economies looks healthy.

**2. Regional stability initiatives.** There have been efforts at the regional level to reduce vulnerability (Figure 9). Among the most significant has been the regional liquidity support mechanism, the 'Chiang Mai Initiative', which began in 2001. The sum total of the bilateral swap agreements has grown from \$36.5bn in May 2004 to \$90bn today, and the framework has played an essential role in stabilising regional financial markets, even though the liquidity it provides has not so far been drawn on.

Liquidity support mechanism serves as a back-stop

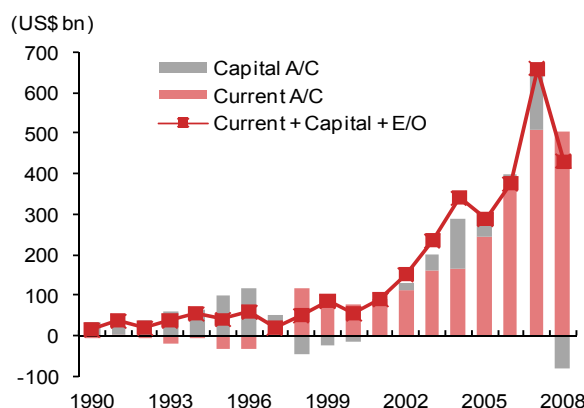
The agreement has served to back-stop exchange rates. For example, in October 2008, a free fall of the Indonesian rupiah was prevented amid heavy selling pressure on Indonesian bonds. In December 2008, Japan and China expanded the limit of the swap to deal with the sharp fall in the Korean won, which also worked well. Currently, 20% of a country's allocation may be drawn free from IMF conditionality, but there have been discussions on expanding this limit. We do not exclude the possibility that such discussions could eventually lead to a multilateral arrangement.

Figure 6. External debt



Source: Nomura Global Economics.

Figure 7. Asia's balance of payments composition



Note: \* Includes ASEAN, China, India and Taiwan.  
Source: Nomura Global Economics.

## Challenges ahead

In considering the prospects for capital flows over the coming decade, the following perspectives strike us as particularly relevant.

**1. Bond market development.** The development of bond markets, with a view to better matching long-term investment and financing needs within the region, has been a core area of regional cooperation, particularly in the wake of the Asian financial crisis. The Asian Bond Market Initiative, also promoted by ASEAN+3 and involving a wide range of stakeholders from the public and the private sectors, covers a range of issues, including: a regional guarantee mechanism; credit rating; clearing and settlement systems; the development of securitisation products; and issuance of local currency bonds by international organisations and multinationals. The markets are still tiny at present but have considerable potential.

**Bond markets are becoming a stable financing channel**

In addition to this “supply side” element of bond market development, the Executives' Meeting of East Asia-Pacific Central Banks (EMEAP) has organised a “demand side” arrangement by issuing two Asian Bond Funds totalling US\$3bn, utilising the foreign exchange reserves as seed money. Reflecting these efforts, the outstanding balance of local bonds has been rising.

But as these initiatives run out of relatively easy tasks, the focus is shifting to more difficult goals, such as harmonising regulatory frameworks (e.g. capital account liberalisation, exchange rate regimes, taxation, etc.) and developing regional infrastructures (e.g. clearing and settlement systems, credit rating, etc.). This will take longer.

**Capital market integration continues within ASEAN**

Local stock exchanges, meanwhile, have started to examine the possibility of market integration, driven by tougher competition and the wave of global consolidation of exchanges. Those in ASEAN in particular, as a part of their goal of establishing an ASEAN Economic Community (AEC), are working to harmonise and integrate member-country market structures (e.g. mutual recognition of professionals; listing/disclosure standards; credit rating systems; inter-connection of trading/clearing/settlement systems; demutualisation of exchanges; development of pan-ASEAN products; etc.). These arrangements represent a regional response to achieve the scale necessary to overcome the vulnerability that attaches to small capital markets.

**Regional financial centres are competing for capital inflows**

**2. Competitive landscape for financial markets within the region.** In addition to boosting regional inter-dependence and integration, increased competition among financial markets chasing capital flows into the region is also likely. These centres include not only Singapore and Hong Kong, the traditional financial hubs, but also Shanghai, Seoul, Kuala Lumpur, and Middle Eastern cities such as Dubai, all jostling to attract more investors, financiers, intermediaries, and related businesses.

Typically, this process proceeds in stages. Initially, the main function of a financial market is to match the investing and financing needs within the country (area #1 in Figure 10). Once the market gains credibility, domestic entities can finance abroad (#2). Then, as wealth accumulates

Figure 8. Selected indicators of external position

	Singapore	Malaysia	Indonesia	Thailand	Philippines	Vietnam
% of GDP						
Short-term external debt	63.1	10.1	5.5	4.0	4.7	5.3
Inward equity investment	n.a.	30.3	1.2	8.5	2.7	3.5
Inward bond investment	n.a.	5.7	1.5	0.5	0.0	n.a.
Current account balance	14.8	17.5	0.1	-0.1	2.5	-10.3
Int'l reserves (end-08)	95.7	41.5	10.1	40.6	22.3	24.5
Reserves (month of import)	6.6	7.1	5.9	7.5	8.0	3.3
Short-term debt/GDP(%)	24.4	33.6	32.5	34.3	15.1	20.6
Net investment position (USD bn)						
	(end-07)	(end-07)	(end-06)	(end-07)	(end-07)	
Incl. FDI	155	-6	-140	-58	-27	n.a.
Excl. FDI	218	13	-92	29	-13	n.a.
	China	Hong Kong	Taiwan	Korea	India	
% of GDP						
Short-term external debt	1.6	4.6	6.3	12.5	6.0	
Inward equity investment	3.3	201.2	n.a.	13.5	8.5	
Inward bond investment	0.4	20.4	n.a.	13.7	1.7	
Current account balance	9.8	14.2	6.3	-0.7	-2.4	
Int'l reserves (end-08)	45.0	84.7	74.5	21.7	20.9	
Reserves (month of import)	20.6	5.6	14.6	5.5	10.5	
Short-term debt/GDP(%)	56.3	32.6	44.9	50.2	39.9	
Net investment position (USD bn)						
		(end-07)			(end-07)	
Incl. FDI	954	484	n.a.	-110	-73	
Excl. FDI	1,661	1,615	n.a.	396	-12	

Note: Numbers are as of end-2008, unless stated otherwise.

Source: CEIC and Nomura Global Economics.

in the country, the investment needs of domestic entities are matched by the financing needs of foreigners allowed into the domestic market (#3). In the final stage (#4) anyone can finance and invest in the market (this describes the functioning of the most developed financial centre).

Development histories have differed, however. Note, for example, the contrast between Tokyo, with greater #1, and Singapore or Hong Kong, with greater #4. In particular, markets are not necessarily “mutually exclusive”, and can provide different functions for the expansion of the regional market as a whole. Healthy efforts to attract money can be expected to drive each of the competing markets towards optimising the functional division within the region.

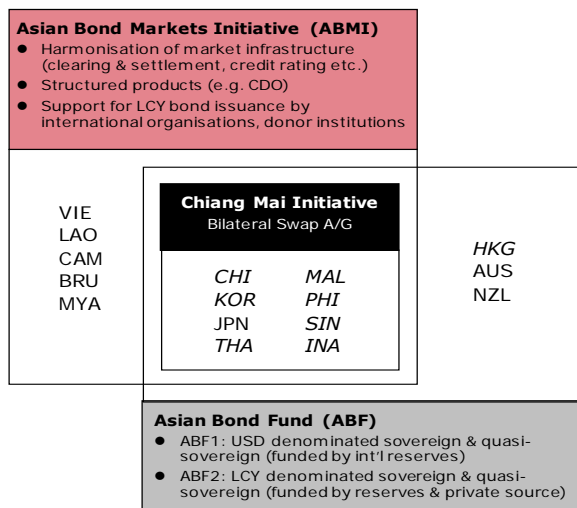
**Successful market integration requires harmonised regulation**

**3. Harmonising regulatory frameworks.** Even with the greater presence of China and healthy competition for financial centres, the Asian region still needs to take practical steps on this front. The limited depth and variety of credits in the region can be overcome only through attractive products traded on reliable infrastructure. Similarly, meaningful integration of capital markets is difficult without a reliable and predictable regulatory framework – as in the case of capital controls in Thailand in December 2006. It is not easy for a market to maintain credibility among investors as long as an option to shut down remains. This could make it difficult for the region to realise full economies of scale through market integration. Paradoxically, existing market infrastructure might be enough to take advantage of the scale, provided there are no asymmetries in regulatory frameworks. Regional cooperation itself may help create momentum, but continued efforts toward harmonisation – and tangible achievements – will be indispensable.

**Growth opportunities should last at least another few decades**

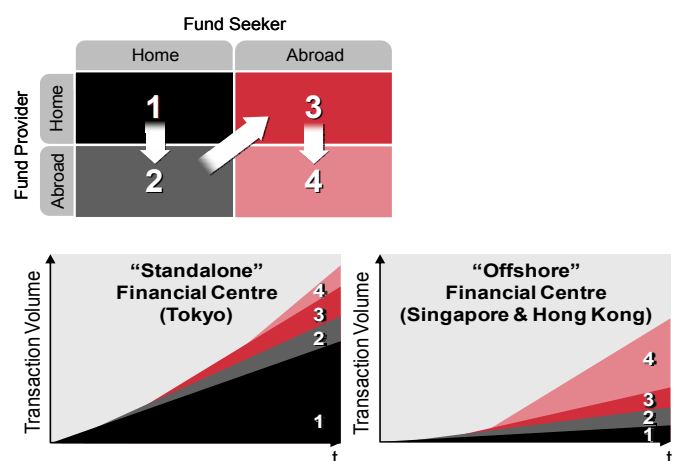
Asia’s growth opportunities will not last forever, given Asia’s aging population and changing industrial structure. However, as we note in “The changing nature of Asia’s growth potential”, Asia is likely to remain a growth centre for several decades yet. A counterweight to this potential remains the risk of excessive capital flows. It will therefore be critically important that adequate controls be available to deal with any such flows. Continuing efforts to strengthen financing channels will be fundamental. ■

Figure 9. Financial cooperation arrangements in Asia



Note: Countries included in ABF products are shown in italics.  
Source: Japan Ministry of Finance, Bank of Japan and Nomura Global Economics.

Figure 10. Classification of financial centres



Source: Nomura Global Economics.

# The changing nature of Asia's growth potential

Ageing Asia will need to generate "quality" growth in the face of a shrinking labour force, a declining savings rate and a burgeoning fiscal burden for healthcare and social security.

- China and India have grown fast, mainly because of fast growth of TFP and capital inputs.
- Ageing is likely to result in a shrinking labour force and a slowdown in capital accumulation.
- However, there are various counter-measures to the economic consequences of ageing.
- Improving total factor productivity growth will be the key to sustaining growth momentum.

## Sources of past growth

The past is seldom a perfect guide to the future. Nevertheless, it is generally useful to consider the past, even if only to consider how the future might be different. This Chapter, being concerned with Asia's potential growth, starts by looking at salient points from Asia's (modern) past, using a growth-accounting framework (Figure 1). China, Korea and the ASEAN 5 (Indonesia, Malaysia, the Philippines, Singapore, and Thailand), for which a wide range of requisite data are available, are a particular focus. A central question is whether the region can expect to enjoy the same pace of growth as before and, if so, what might be required to achieve this.

China has been the growth champion of the past several decades. Real GDP growth averaged just under 10% per year in the three decades following the "reform and opening-up" of 1978. Breaking down China's GDP growth into capital input, labour input, and total factor productivity (TFP) for this period suggests that the largest contribution was that of capital, which has been expanding particularly strongly in the 2000s (Figure 3). One of the biggest enabling factors was China's high saving ratio (Figure 2), which increased further in the 2000s. And China's remaining restrictions on outward investment almost certainly contributed to directing these savings toward domestic investments.

TFP is next. Its contribution fell significantly right after the Tiananmen Square episode in 1989, in part because of a fall in productivity, but also because TFP is calculated as a "residual" from the contributions of relatively inelastic capital and labour inputs. Overall, however, the contribution has since been high, particularly since 1992, when inward foreign direct investment (FDI) was widely deregulated. This recent expansion in TFP was also boosted by China's entry into the World Trade Organisation (WTO) in 2005, which led to a further increase in China's trade surplus. This allowed still greater investment, which further enhanced productivity through higher technology, education, and training. A corollary has been a decline in the relative contribution of labour input, which has been on a downward trend since the 1990s.

India's economic growth, too, has been impressive, gradually picking up from around 3% in the 1960s to 6% in the 1990s. The moment of takeoff can be traced to early 2003: since then, real GDP growth has averaged 8.5% per year. Unlike in other economies, the key contributor to Indian economic growth since the 1991 reforms has been TFP, accounting for an estimated half of the total. (See Llewellyn, J., Subbaraman, R., Newton, A. and Varma, S. (2007)). A combination of factors has contributed to India's increased productivity growth, including: gradual trade and financial sector liberalisation; cumulative reforms since 1991; increased

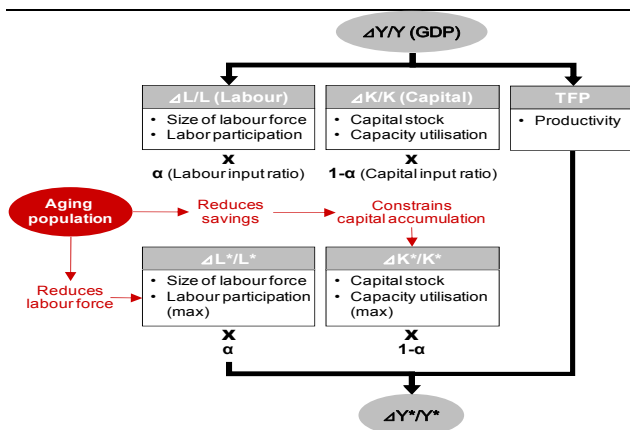
China has been the growth star of the past three decades...

... on the back of strong capital growth...

...and the rising contribution of total factor productivity

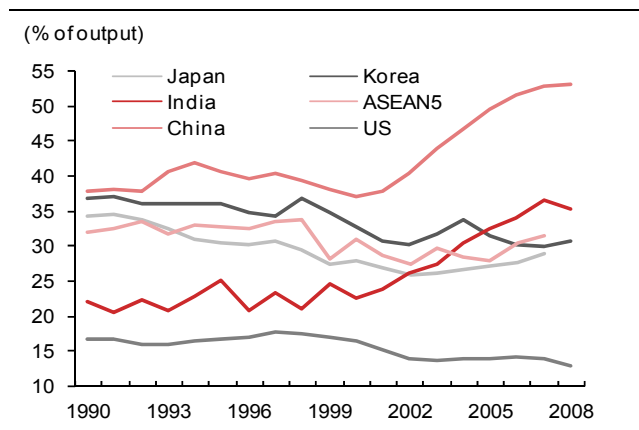
TFP has been the key contributor to India's surge

Figure 1. Sources of potential growth



Note: \* denotes the "potential" numbers.  
Source: Nomura Global Economics.

Figure 2. National saving rates



Note: Saving calculated as investment + current account balance.  
Source: Nomura Global Economics.

competition; better education; and economies of scale.

Labour and capital formation together have accounted for the other 50% of the increase in India's growth, with the larger share coming from capital. To meet rising domestic and export demand, the manufacturing sector propelled the overall investment-to-GDP ratio to nearly 40% of GDP in FY08, from 23% in the early 1990s. A synchronous rise in the domestic saving rate during this period played a key role in sustaining this higher investment rate.

In the ASEAN 5, taken as a whole, real GDP has grown by, on average, 5% per year over the past decade, while the contributions of capital and labour inputs have been declining. This deceleration is particularly visible in Singapore and Malaysia, while the contribution of TFP has been generally improving across the region. This seems to reflect a phenomenon whereby the growth of the labour force and labour income decelerate as economies develop, so that more qualitative factors (such as production efficiency, and value-added of industry) come to play an important role in accelerating economic growth.

The diminishing contribution of labour input can also be attributed, at least in part, to the reallocation of resources toward capital inputs as manufacturing production lines become more capital-intensive (e.g. Indonesia), as well as to corporate efforts to achieve higher profitability through cutting jobs in the late 1990s and thereafter (e.g. Singapore).

These trends are broadly shared by Korea. Although Korea has historically had a high labour input contribution, this turned lower in the 1990s, reflecting hefty cuts in jobs and salaries as the corporate sector was restructured. The sector's profitability improved thereafter, largely because of a rise in part-time working, while deteriorating employment remained a destabilising factor. This structural shift also changed labour policy from "quantity-oriented" to more "quality-oriented" (i.e., enhancing workers' productivity and value added). In addition, the recent improvement in TFP seemingly reflects the speedy penetration and utilisation of information technology (IT).

### Impact of ageing Asia

The region as a whole has generally enjoyed a brisk growth of productive potential over the past several decades, but this advantage is unlikely to last. One of the biggest concerns is Asia's ageing population, which stands to affect regional growth potential via three main channels:

1. A shrinking labour force, the result of lower birth rates and a greater number of senior people leaving the labour force.
2. A slowdown in capital accumulation, the result of a decline in the saving rate.
3. A rising fiscal burden for healthcare and social security.

In our estimates of future potential growth, we focus on the first two of these channels (Figure 3).

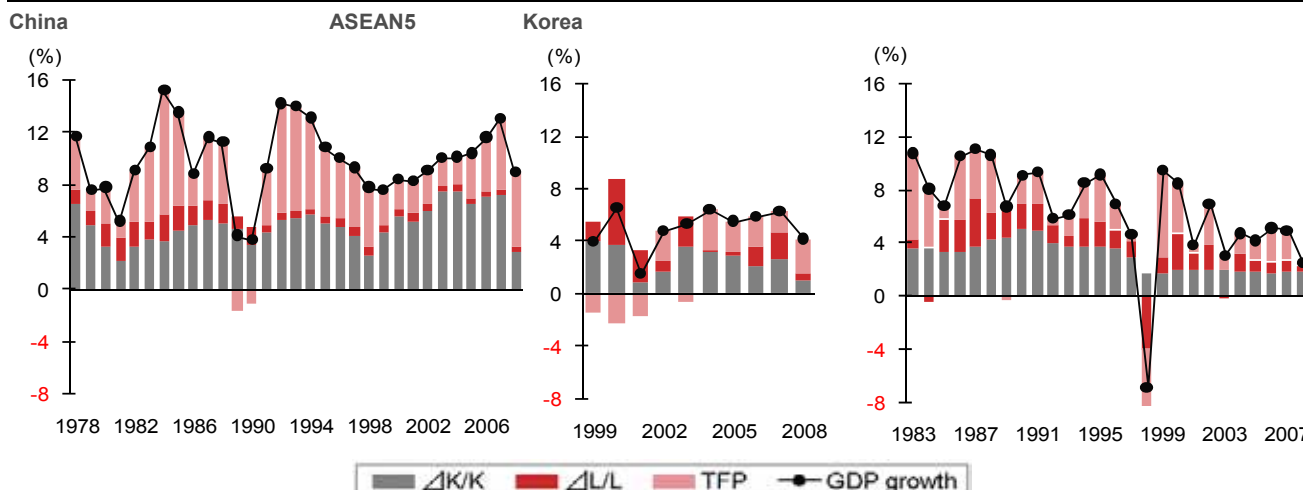
**Shrinking labour force.** Following in the footsteps of Japan, which is already in an advanced stage of ageing, other Asian economies, too, are set to post further declines in birth rates and an ageing of their populations. According to estimates by the United Nations (Figure 4), the proportion of Japan's population aged 15-64 started to shrink in 2005, with China, Korea, and Singapore set to follow in around 2020, and Thailand in 2025. In these countries, the fertility rate has already started to decline, and the impact on the population total is likely to start showing up

TFP is making a higher contribution in ASEAN 5...

...and in Korea as the labour contribution declines

The ageing population may slow potential growth ...

Figure 3. Real GDP growth rates and estimated sources of growth



Source: Nomura Global Economics.

soon. On the other hand, countries with younger populations, such as Vietnam, Indonesia and India, should continue to benefit from a rising share of their working age populations for some time yet: they will start to decline only in 2040, 2045 and 2050, respectively. And once it starts, the speed of the demographic change stands to be faster than that seen in Japan.

...through reduced labour input...

A decline in the total labour force, all else equal, could be expected to lead to a reduced labour input, which would in turn slow the growth of potential output. As regards China, however, the fact that the contribution of the labour input to overall growth has historically not been particularly large implies that the negative impact of ageing should correspondingly be somewhat limited. But if, in other economies, a significant decline in labour input is to be avoided, demographic change implies a need for timely policy responses.

...slower capital accumulation ...

**Declining saving ratio.** Japan, now the “oldest” country in Asia, used to have one of the highest saving ratios among advanced economies. But this has been declining since 1990, and is now below that of many other industrialised nations. Assuming that the “life-cycle hypothesis” (whereby people save during their working life to finance their post-retirement life) applies elsewhere, too, the rest of Asia might be expected to see a large drop in its saving ratio as an increasing proportion of the population reaches retirement age.

In turn, a declining saving ratio could be expected, all else equal, to constrain investment, thereby adversely affecting capital accumulation. In countries such as China, where growth has been more dependent on capital than on labour, the negative impact of ageing could well be greater through this channel than the via the labour force channel.

...and a rising fiscal burden

**Fiscal burdens.** On the fiscal front, one of the biggest challenges stands to be the sustainability of the social security system, including pensions and healthcare. With the arrival of the “demographic onus” phase, and with it a declining share of the population of so-called “productive age”, a pay-as-you-go pension system becomes a heavy burden. Countries in Asia need to design their social security systems for that. As regards healthcare, more attention needs to be paid to the living arrangements of the elderly, as well as to the development of a long-term care industry. These issues are already leading to a greater fiscal burden (Figure 5), which could put upward pressure on long-term interest rates in the longer term.

**Counter-measures to sustain growth momentum**

Sustaining potential has many dimensions:

Given these possibilities, what is being done to sustain the potential for economic growth? Analysing this issue within the labour input/capital input/TFP framework outlined above suggests that the key strategy should be to minimise the damage on labour and capital in the face of an ageing population, while maximising TFP.

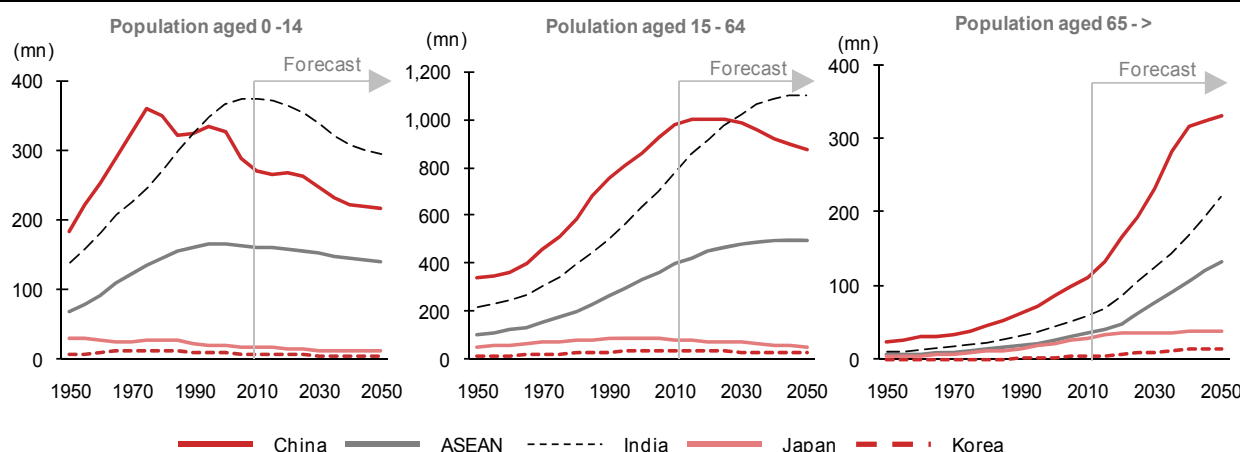
encouraging the participation of the elderly...

**Labour input.** Within the timeframe of 2011-20, and given that the existing population cannot be changed, the only way to avoid a fall in the labour force is to encourage the participation of currently underutilised segments, most notably the elderly, women, and foreigners.

For the elderly, the current retirement ages in the region generally lie in the range of 55-65, the lower end of which could be raised by 5-10 years as the population ages.

The female participation rate is already as high as 87.0% in China and 73.7% in Thailand, but considerable upside remains in other countries (55.6% in Singapore, 52.1% in Indonesia, 50.8% in the Philippines, 49.9% in Korea and 45.7% in Malaysia). Although cultural/religious factors will

Figure 4. Population forecast by age group



Source: Nomura Global Economics from United Nations.



...and of women and foreigners...

limit entry into the job market in some countries, childcare and work-life balance (e.g. flexible working hours) should nevertheless raise women's labour participation.

On the grounds of protecting domestic labour, most countries in the region used to be relatively reluctant to accept foreign workers. However, since the 1980s, most have been opening their markets gradually. Singapore and Malaysia are notable in this respect, with their share of foreign labour now exceeding 20% of the total labour force. Others may well follow suit.

...boosting capital stock and/or utilising it more intensively...

**Capital input.** The level of potential capital input, meanwhile, can be sustained by increasing the capital stock and/or by utilising it more intensively. In the case of China, where capital input has played a particularly important role, fixed asset investment has grown fast as part of the country's rapid industrialisation and urbanisation. More recently, as a result of the contraction of the global economy, there has been concern about excess investment and the possible need for some adjustment. Over a longer period, however, and judging from per capita GDP, industrial structure (both in terms of output and labour allocation) and composition of household consumption, China is still at a level similar only to that of Japan in the 1960s, implying that it will be a while yet before capital accumulation in China approaches saturation.

The problem is likely to be more immediate in some of the other Asian economies, which already face the declining contribution of capital input and may not be able to look to capital as a powerful driver. The source of the problem is twofold – a lack of:

1. further investment opportunities; and
2. domestic financial sources.

(both stemming in part from the decline in the saving ratio, as mentioned above). To deal with these issues, it may become necessary to encourage capital inflows and to make better use of domestic savings via a shift in investment from the inefficient public sector to the private sector.

...and offsetting the labour/capital decline by enhancing TFP

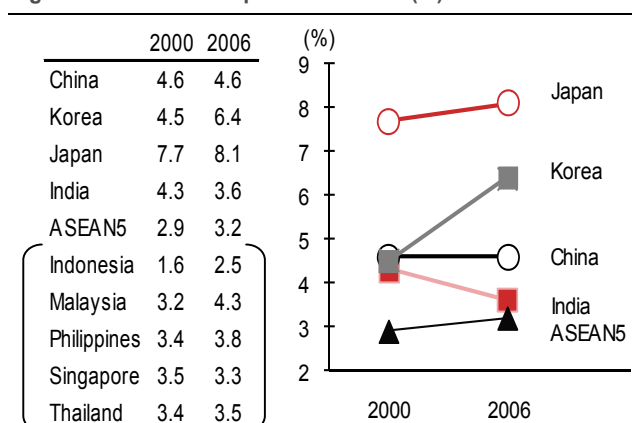
**Total Factor Productivity (TFP).** The declining contribution of capital and labour input must be offset by improving TFP. In other words, capital and labour inputs will in the future need to be targeted toward opportunities that help to enhance TFP. That can happen via improvements in productivity within industry, and/or in the economy as a whole, through a shift in resources from less productive to more productive activities.

Productivity in an industry can be boosted through such measures as developing human capital through education and training; improving management efficiency; encouraging innovation by adopting new technologies; shifting resources to higher value-added products and services; raising the role of the private sector via deregulation; and improving capital market efficiency.

Singapore provides a striking example of the allocation of fiscal resources in line with a government-set TFP growth target. Another challenge is how to strike a balance between utilising elderly labour and helping seniors adjust to the changing industrial structure – in other words, maintaining labour productivity while addressing social security issues.

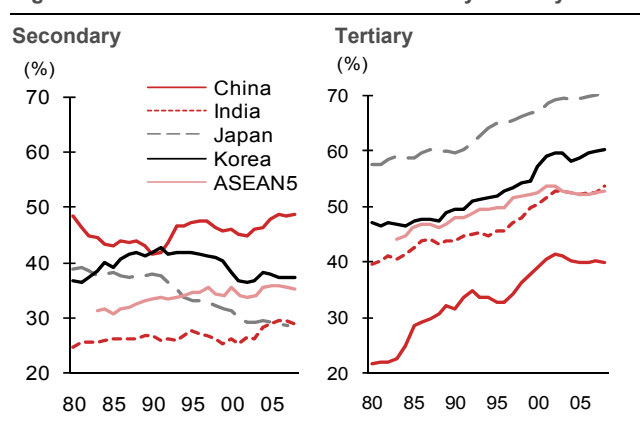
As regards productivity gains for the entire economy through changing industrial structure, most economies in the region have actually been undergoing a shift to secondary and, to a greater extent, to tertiary sectors (Figure 6). Again, taking the example of Singapore, high value-added sectors such as biomedical, IT, and finance have been identified as key sectors, and resources

Figure 5. Healthcare expenditure / GDP (%)



Source: Nomura Global Economics from World Health Organization.

Figure 6. Industrial structure: share of tertiary industry



Source: Nomura Global Economics.

are allocated to attracting top talent and major players from the rest of the world. (e.g. providing tax incentives and grants, facilitating research activities through developing infrastructures, and inviting top schools and research institutes from abroad.)

Malaysia and Thailand have a similar thrust in their current national development plans (the “9th Malaysia Plan (2006-2010)” and the “10th National Economic and Social Development Plan (2007-2011)”), with an emphasis on service sectors (e.g. Islamic finance in Malaysia) and higher value-added segments of manufacturing (e.g. from traditional home electronics to IT-related components).

There could also be a positive side-effect of the ageing of Asia, through the expansion of new activities in the medical, healthcare, and welfare-related sectors. The emergence of such industries, particularly in secondary and tertiary sectors, could also help maintain overall economic growth.

### Prospects: Estimating potential growth for 2011-2020

Within the framework outlined above, we have estimated potential growth rates for the period 2011-20 for seven Asian economies (China, South Korea, and each of the ASEAN5), based on varying assumptions about the pace of capital accumulation, retirement age and the labour participation rate for women (Figure 7). For the contribution of TFP, a five-year average was applied in the base case: in alternative cases, the rates that would have been required to maintain the pace of potential growth over the past five years were calculated.

In the base-case scenario, and assuming: the population forecast by the UN; the labour force forecasts of the International Labour Organization (ILO); a constant contribution from the capital stock; and TFP growing at its average rate between 2004-08, projected potential growth rates are lower than the average for the past five years, except for Indonesia and the Philippines. This mainly reflects the slowing growth of labour forces.

Moreover, even if an extension of the retirement age and greater female labour participation are assumed on top of faster capital accumulation (in alternative cases on the right side of the base case), Malaysia and Korea are likely to join Indonesia and the Philippines. In other words, it will be difficult for the other economies to achieve a faster growth of potential, even with these measures. Thailand is in between, in that a combination of the upside scenarios for capital and labour inputs could boost potential growth above its past average. But given Thailand’s already-high participation rate for female labour, any increase in the labour input would have to rely heavily on senior workers.

A corollary is that, in many countries, an improvement in TFP will be the key to sustaining growth momentum. The need for additional TFP growth will be greater in such countries as Singapore, Korea, and China than in others, possibly because the growth in labour and capital inputs is becoming more saturated relative to other economies. This provides a ground for such policies as shifting toward higher value-added sectors, as already sought in these countries.

**We project lower growth in China, Korea and ASEAN5...**

**...except for Indonesia and the Philippines**

**Figure 7. Estimate for potential growth rate and TFP for avoiding a decline in potential growth rate**

	2004-08		2011-20										
	Potential growth	Potential growth: base case (*1)	Impacts					Additional TFP contribution to maintain the potential					
			Capital buildup		Retirement age		Greater labour participation by women (*2)	Base case (*1)	Capital buildup		Retirement age		Greater labour participation by women (*2)
			50% faster	50% slower	5 years older	10 years older			50% faster	50% slower	5 years older	10 years older	
China	11.0	9.2	1.8	-1.7	n.a.	n.a.	n.a.	1.8	-0.1	3.5	n.a.	n.a.	n.a.
Korea	4.3	2.5	0.6	-0.6	0.6	n.a.	0.9	1.8	1.2	2.4	1.2	n.a.	0.9
Indonesia	5.9	5.9	0.9	-1.7	0.3	0.5	0.6	0.0	-0.9	1.7	-0.3	-0.5	-0.7
Malaysia	5.7	5.4	0.5	-0.9	0.3	0.4	0.8	0.2	-0.3	1.1	0.0	-0.2	-0.6
Philippines	4.7	5.1	1.2	-0.5	n.a.	n.a.	0.4	-0.5	-1.7	0.0	n.a.	n.a.	-0.9
Singapore	6.2	2.9	1.0	-1.2	0.4	n.a.	0.7	3.3	2.2	4.5	2.8	n.a.	2.6
Thailand	5.0	4.3	0.6	-1.0	0.4	0.7	0.2	0.8	0.2	1.8	0.3	0.1	0.6

(\*1) Based on the following:

- Change in population: Forecast by the United Nations
- Change in labour force: Forecast by the International Labour Organization
- Change in capital input for the base case: Average for 2004-2008
- Retirement age and labour participation ratio for women: no change from the present level for the whole period

(\*2) Assumes that the gap of participation ratio between men and women will be narrowed by halves at a constant pace during 2011-2020.  
Source: Nomura Global Economics from the United Nations and the International Labour Organization.

**India is different: its growth could average 9-10%**

The outlook for India's potential growth is a little different from that of the more developed Asian economies. We judge that India can grow at an average of 9-10% per year over the coming decade, for a number of reasons. First, the acceleration to a 9% growth rate can be traced back to the past six years, suggesting that India is still in the early stages of its economic growth acceleration and has a lot of catching up to do. Second, unlike other countries with a declining working age population, India's working age population is projected by the UN to increase by 138mn between 2010 and 2020. Female participation rates in India are low, as is participation in the rural sector, suggesting large scope for labour force growth.

Third, capital accumulation in India is nowhere near full capacity. Large infrastructure bottlenecks continue to impose supply constraints and further infrastructure investments are likely to keep capital formation strong. Domestic savings will be boosted by the rising population of working age, making it more viable to finance investments through domestic sources. Fourth, the scale of operations and scope for further use of information and technology remains under-utilised in small and medium-enterprises, and there is disguised unemployment in the agriculture sector, suggesting that TFP will continue to be an important source of economic growth.

**Asia should remain a growth centre, provided that...**

**Conclusion.** Asia's rapid growth has so far been driven largely by factor accumulation. TFP growth accounting — with the (important) exceptions of China and India — has driven only a marginal part. The main implication for the coming several years, therefore, is the likely continuing importance of sustaining high levels of savings and investment.

The region's advantage as a growth centre will likely continue for another decade or two, led particularly by China and India, which still require further factor accumulation. But this advantage will not last forever, given the likely negative impacts of demographic change in some countries. Unless these issues are addressed, capital inflows chasing growth opportunities will also be affected, eventually eroding the region's advantage over other growth areas.

**...the focus of growth shifts from 'quantity' to 'quality'**

In that sense, although there are differences among countries in terms of timing, the Asian region as a whole will ultimately need to shift the focus of growth from "quantity" to "quality" in the decades to come. ■

## Trade agreements: Key to Asia's growth

*Trade agreements will be among the most important determinants of the pace and manner of Asian economic development.*

- Stronger domestic demand growth in Asia is replacing weaker growth in exports to the West.
- For all Asian economies to participate fully requires close integration through trade.
- Recent trade agreements suggest that Asia is proceeding in the right direction.

### Growth and trade

The rapid economic growth and rising prosperity that has characterised much of Asia in recent decades has been closely associated with, and in important measure driven by, the expansion of exports to the West.

The major exception to this export-led model has been India, where economic growth over the more than 50 years since independence has been driven more by domestic demand and less by exports than has typically been the case in the rest of Asia. Even Japan, the largest economy in Asia (although set to be overtaken by China this year) is heavily dependent on exports.

In recent years, the pattern of Asia's trade has evolved in line with China's growing importance in the world economy. In the late 1990s, the average share of Asia's total exports shipped directly to the US was 23.5%, and the share to the EU was 16.3%. Dwarfing these figures was the 46.5% share shipped within the region (what is called intra-Asian trade) (Figure 1). However, the bulk of intra-Asian trade involved raw materials, parts and components, reflecting the region's elaborate cross-country production network, especially in the electronics industry. Ultimately, the end demand for these finished goods was in the West.

**Global recession has fundamentally altered Asia's trade patterns**

However, soon after China joined the World Trade Organization (WTO), in 2001, it quickly became the chief assembly point for Asian exports of parts and components. Instead of exporting directly to the West, other Asian countries have increasingly exported semi-finished goods and components to China, where they are finished and then exported to the West. In 2006-09, the average shares of Asia's total exports shipped directly to the West had declined from a decade earlier, whereas the share shipped to China has surged to 12.8%, and intra-Asian trade has risen to 51.6% of total exports. Despite this evolution in intra-Asian trade patterns, however, the region's ultimate dependence on growth in exports to the West had, until recently, remained undiminished.

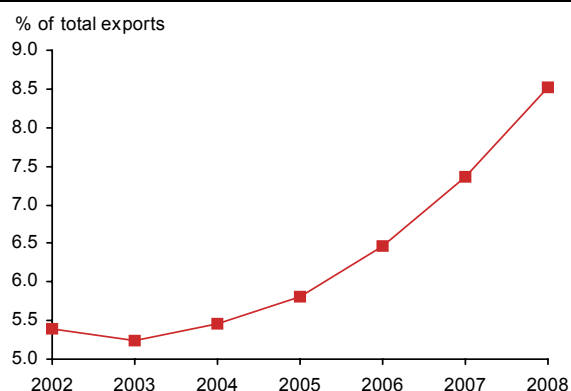
The global recession, however, has wrought a fundamental change – certainly for the next few years, and quite probably beyond that. To prevent plummeting Western demand for imports from pulling Asia into recession, policymakers took advantage of the region's strong economic fundamentals to engage in substantial macro-economic stimulus – collectively the region's loosest-ever monetary and fiscal policies – to support domestic demand. The policy worked: Asian domestic demand (and, particularly important, domestic demand in China), has indeed taken over the running from export demand. The scale of this switch can be seen in the diminution of Asian current account surpluses. China's surplus, for example, which was 9.8 % of GDP in 2008, narrowed to 5.8% in 2009, and we expect it to narrow further to 3.5% in 2011.

Figure 1. Destination of Asia's exports, share of total, %

	Average 1997-1999	Average 2006-2008
Intra-Asia	46.5	51.6
-China	7.6	12.8
-Japan	7.9	6.6
-Rest of Asia	31.1	32.2
US	23.5	16.2
EU	16.3	15.9
Middle East	2.9	3.8
Latin America	3.2	3.6
Others	7.6	8.8

Source: IMF Direction of Trade Statistics and Nomura Global Economics.

Figure 2. Asia's exports to Latin America and the Middle East



Source: IMF Direction of Trade Statistics and Nomura Global Economics.

Moreover, this pattern seems likely to continue, for at least the next several years. Asian economies thus stand to become more dependent on import growth within the region, and less dependent on imports by the United States and the European Union (for further details, please see the discussion in Chapter I).

The one source of export buoyancy outside Asia could lie in emerging economies, particularly Latin America and the Middle East – two regions that are rich in natural resources and therefore a natural complement to Asia's manufacturing hub and growing thirst for commodities. The share of Asian exports shipped to Latin America and the Middle East combined rose from 5.2% in 2003 to 8.5% in 2008 (Figure 2). (For more on the growing importance of trade between Asia and Latin America, see the Chapter *Asia and Latin America: Ready for the next step?*)

**Trade policy is a key determinant of Asian performance**

However, Asia's individual economies will not automatically share equally in the region's still buoyant, but now more domestically led, economic growth. Although the larger economies, particularly China and India, have big domestic markets, offering scope for economies of scale in production, the smaller economies do not. Hence, they stand to benefit fully from Asia's continued growth only to the extent that they are linked, via international trade, to the rapidly growing sources of demand within and outside the region.

The evolution of Asia's international trade agreements therefore stands to be a key determinant of the way that the region as a whole evolves over the coming decade.

### **Macro-economic benefits of trade liberalisation**

**Trade liberalisation improves resource allocation...**

The benefits of trade liberalisation have two dimensions. The first is improved allocation of resources: reductions in import tariffs, quotas, and other measures stimulate trade by lowering the (relative) prices of internationally-tradable goods and services. This increases the national production of exporting countries, allowing them to specialise in industries in which they have established a comparative advantage while increasing access to the markets of trade partners.

**...and increases efficiency...**

At the same time, domestic resources – land, capital, labour, and intermediate inputs – stand to be used more efficiently in importing countries, the result of a reduction in domestic distortions, including those related to trade barriers, and of an increase in foreign competition. These combined effects, first from foreign markets and then from the domestic market, should expand production and increase income and economic welfare.

**...but the greatest gains are dynamic**

However, the second, and probably even more important, benefit of trade liberalisation is dynamic: the economic benefits that flow from enhanced capital-formation mechanisms and productivity improvements.

In our view, the macro-economic impacts of trade liberalisation stand to be broadly proportional to the amount of trade protection that is removed. Hence, wide trade liberalisation in terms of coverage of both regions and sectors would be the most beneficial. Relative to the benefits of global trade liberalisation, those from regional trade liberalisation among certain economies would tend to be small. Bilateral or regional FTAs should thus be considered as steps toward global trade liberalisation rather than the final goal.

That said, the gains even from regional free trade agreements can be considerable. Moreover, a wide geographical range among trading partners may bring particular benefits. It is estimated, for example in Kawasaki (2006), *The Economic Impacts of FTAs*, APEC Official Symposium, that real GDP gains from trade liberalisation within the Association of South-East Asian Nations (ASEAN) would be much larger if Japan, China, and Korea were to join such initiatives. By contrast, it is estimated that Chinese real GDP gains would be smaller from trade liberalisation with East Asia than with gains from trade liberalisation among APEC economies as a whole, including the United States (Figures 3 and 4).

These disparities are caused by differences in the relative importance of various trading partners among the economies. For ASEAN countries, Japan and China are the most important trading partners, although India has much potential to increase its importance. For China, meanwhile, the US is still far more important than other economies. These asymmetric structures could affect the priorities of trade negotiations.

**Intra-regional trade agreements have been proliferating**

Intra-regional trade liberalisation has been under way for decades in Asia, as is evident in relatively low tariff barriers. However, a wide range of non-tariff barriers remains – including complex rules-of-origin requirements and burdensome custom procedures – that restrict Asia from fully realising the potentially large gains of free trade. The failure of the global multilateral Doha trade negotiations, the prospect of sub-par growth in the advanced economies and the risk

of rising protectionism in the West add even greater urgency to Asia’s need to increase regional cooperation and break down the remaining trade barriers in the region.

This is happening increasingly, through bilateral Free Trade Agreements (FTAs). The stream of Asian bilateral FTAs, either concluded or under negotiation, has become a flood in the past decade, rising from just six in 1991 to 166 by June 2009, according to the Asian Development Bank. A key development has been the initiative for the Asia Pacific Economic Cooperation (APEC) region contained in the 1994 “Declaration of Common Resolve (Bogor Declaration)” by the APEC economic leaders.

This declaration states that the APEC economic region will establish free and open trade and investment in the region by 2010 for industrialised economies, and by 2020 for the developing economies. The motivation is that further trade liberalisation will help to maintain dynamic economic growth in the region and promote successful development in the world economy as a whole. In the absence of a major recent breakthrough at the global level in multilateral free-trade negotiations, Asia has focused increasingly on bilateral agreements.

The consequences of trade liberalisation are not necessarily unambiguously positive. There can be negative impacts, particularly as a result of trade diversion and terms-of-trade effects. Nevertheless, empirical analyses, including model simulations using computable general equilibrium (CGE) model, generally indicate overall net macro-economic benefits from trade liberalisation, although these effects will differ across economies and sectors.

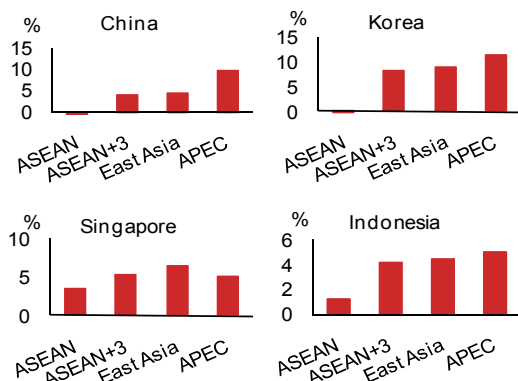
The basic conclusion is that developing economies, including those in Asia, stand to enjoy greater macro-economic benefits from global trade liberalisation than do industrialised economies – with the magnitude of the macro-economic gains dependent largely on the degree of liberalisation, i.e. on the degree of protection prior to trade liberalisation. Given their greater scope for trade liberalisation, developing economies are typically viewed as most likely to benefit from it.

These conclusions are particularly clear when account is taken of the scale of the economies concerned. In terms of real GDP gains from trade liberalisation, ASEAN countries – such as Vietnam, Thailand, and Malaysia, which have comparatively smaller economies – benefit strongly, while larger economies – such as Japan, North America, and the European Union, in which trade has already been liberalised to a large extent – are less likely to enjoy substantial macro-economic benefits (Figure 5). So, trade liberalisation should also reduce disparities in income levels among economies.

Such simulation results are not, of course, a forecast: they simply show the likely impact of trade liberalisation compared with a “no policy change” baseline. Viewed on a year-to-year basis, the estimated gains may appear small. Yet to disregard trade liberalisation because the estimated real GDP gains stand to be swamped in any given year by, for example, the fluctuations of economic growth would be a policy mistake, in our view. Most studies find the cumulative, multi-year, economic gains from trade liberalisation to be substantial (see Picture Book, below, which shows estimated cumulative gains in production over a 10-year period).

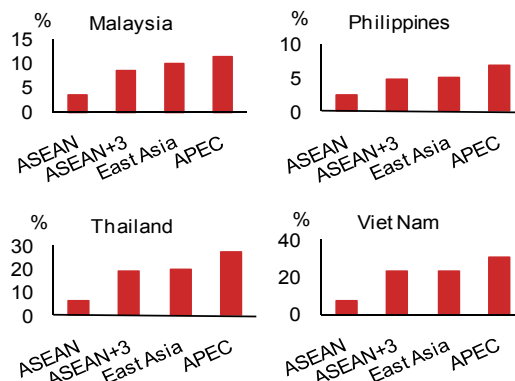
**Developing nations stand to enjoy larger economic gains**

Figure 3. Real GDP gains from regional trade liberalisation



Source: Kawasaki (2006), The Economic Impacts of FTAs, APEC Official Symposium

Figure 4. Real GDP gains from regional trade liberalisation



Source: Kawasaki (2006), The Economic Impacts of FTAs, APEC Official Symposium

## Impact of trade liberalisation on individual sectors

The cumulative benefits are significant

For the gains of trade to be realised fully requires that economies adjust reasonably flexibly and quickly to the changes in demand patterns that trade liberalisation brings. These can be considerable.

Simulations that we have conducted using a Computable General Equilibrium (CGE) model of global trade suggest that:

- low-cost developing economies would expand production of labour-intensive manufacturing products as a result of broadly-based trade liberalisation measures;
- developed economies, by contrast, would expand production in the capital- and technology-intensive manufacturing sectors; and
- geographically larger economies, with a rich endowment of natural resources, would find production niches in the agricultural and food sectors.

Looking ahead, we highlight six key themes

Thus, for example, production of grains (GRA) would expand in Australia, the United States and Canada, while textile production (TEX) would decrease over a 10-year period. Production of transport equipment (TRN) would increase in Japan, but grain production would decline significantly. In Asia, there would be a substantial expansion in textiles production, particularly in China, while production of transport equipment would also increase in Korea and several ASEAN countries.

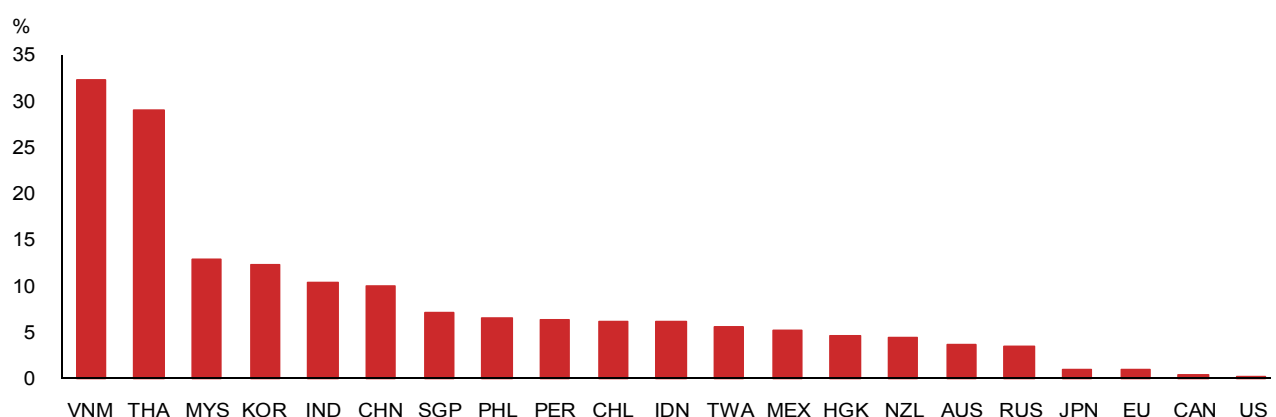
Below, we suggest what could be the new drivers of Asian trade, on the assumption that trade liberalisation in the region continues broadly as we expect. We highlight six key themes:

**1. Rising allure of outsourcing low-cost services.** The advanced western economies are leading the way in outsourcing low-cost services, which, given the benefit of different time zones, can be available 24/7. Examples include call centres, back-office accounting and financial analysis, and interpreting medical x-rays. Japan, Hong Kong, Singapore, Korea, Taiwan, and Australia all seem likely to follow this trend, outsourcing low-cost services to China, India and South-east Asia. And foreign language barriers are diminishing rapidly as more and more of the younger generation speak two or more languages.

**2. Growing importance of high-value-added services.** With rapidly-rising Asian incomes and advances in technology and transport, we expect a boom in the trade of tourism, education and medical services. China and India are reaching income levels allowing millions of consumers to take their first vacations abroad. The World Tourism Organisation forecasts that Asia's global market share of foreign tourist arrivals will jump from 18.9% in 2008 to 25.4% in 2020, a larger gain than any other region and largely attributable to surging intra-Asia tourism (Figure 6).

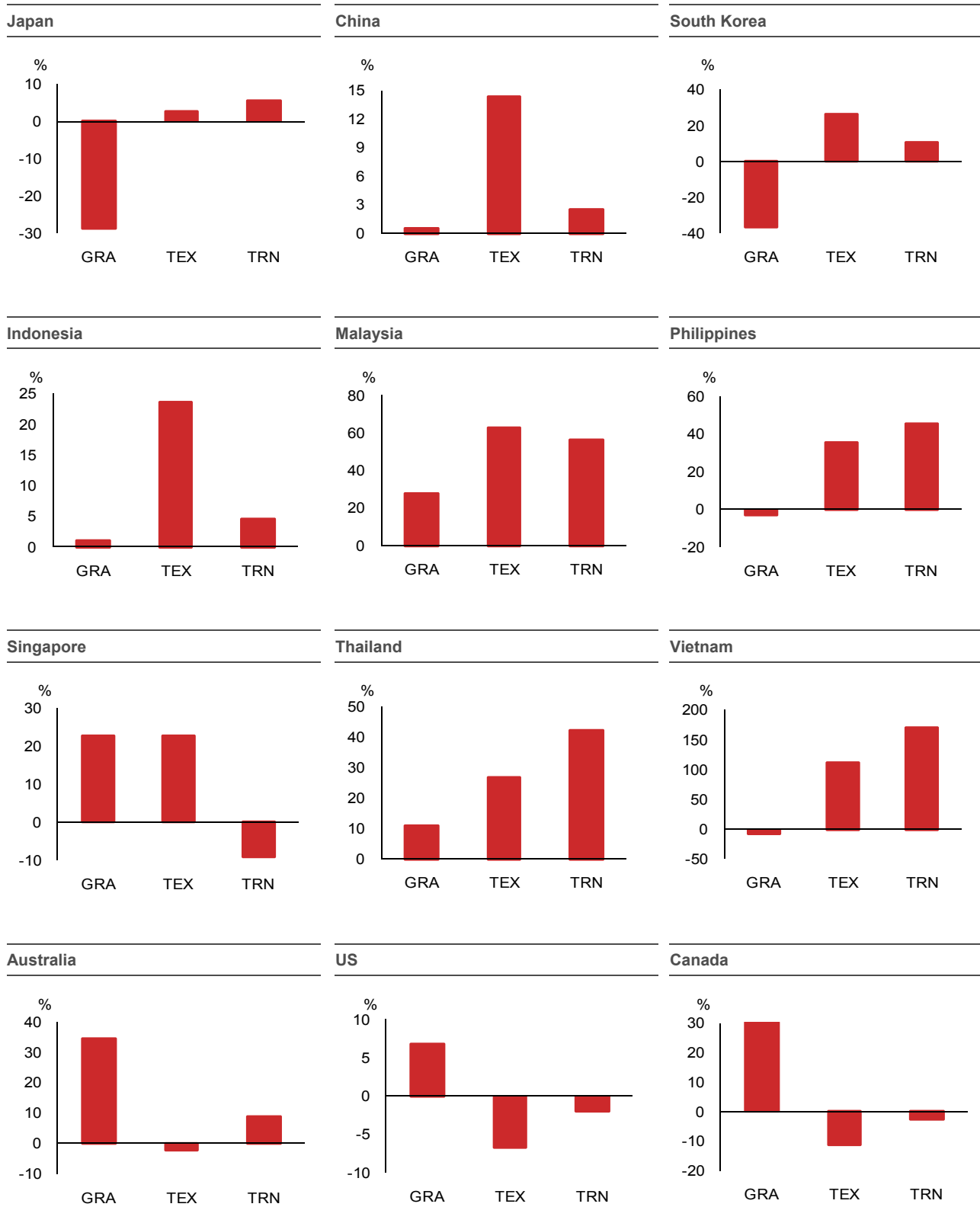
**3. Demographics.** Trade liberalisation measures that facilitate migration and overseas worker remittances will benefit both young labour-abundant countries (e.g. India and the Philippine and ageing, labour-scarce countries (e.g. Japan, Taiwan and Korea).

Figure 5. Real GDP gains from trade liberalisation



Source: Kawasaki (2006), The Economic Impacts of FTAs, APEC Official Symposium.

# Picture Book: Impact of trade liberalisation by sector



Source: Kawasaki (2006), The Economic Impacts of FTAs, APEC Official Symposium  
 Notes: GRA; grains, TEX; textile, TRN; transport equipment



**4. Environment/global warming.** China and, soon probably India, are becoming manufacturing powerhouses at a time when there is rising concern about global warming and the deteriorating environment. We see sizeable scope for the advanced economies in the region, most notably Japan, which is a world leader in green technologies, to expand exports of pollution-minimising technologies (see the Chapter *Climate Change: Growing business opportunities.*)

**5. Rising food demand.** Asia's 3bn people comprise more than half of the world's population and, as incomes rise, so will their demand for higher-calorie food. A surge in demand for meat, in particular, could have large effects on demand for grain and water (it takes, on average, 3kg of grain and 16,000 litres of water to produce 1kg of meat). This, plus improving technologies in cold storage and transport, points to rising agricultural trade, especially if there is progress in breaking still-high protectionist barriers in agriculture. Areas richly endowed in agriculture – Australasia, India, and those in Southeast Asia – stand to benefit most from this.

**6. The next stage in Asia's "flying geese" pattern.** In the late 1960s, 70s, and early 80s, companies in Japan (the "lead goose") would outsource the assembly of motor vehicles and consumer electronics to the so-called Newly Industrialised Economies (NIEs) of Korea, Taiwan, Hong Kong, Singapore and to some extent, Malaysia (the "flying geese").

In the 1990s, faced with rising real wages, companies in Japan and the NIEs began outsourcing the more labour-intensive segments of production to lower-cost South-east Asian economies. This elaborate cross-country vertical production network has been given much of the credit for Asia's high productivity growth.

The latest development is China's rapid emergence as a key outsourcing centre. There are political and institutional considerations to take into account, but the flying geese pattern is showing evidence of extending to Vietnam, and may soon spread to the next layer of low-cost countries, including Cambodia, Bangladesh, Laos, Myanmar, Sri-Lanka, and Pakistan – a combined population of about 400m (Figure 7).

**Conclusions**

The driver of economic growth in Asia is set to shift away from exports to the West towards internal demand. To benefit from this, all Asian economies, particularly smaller ones, will need to be linked closely through trade in goods and services. The likelihood of this is strong, in our view. Asia's trade structure is already quite liberalised, the region is a world leader in specialising production across countries, and the past decade has brought a flurry of Asian bilateral FTAs.

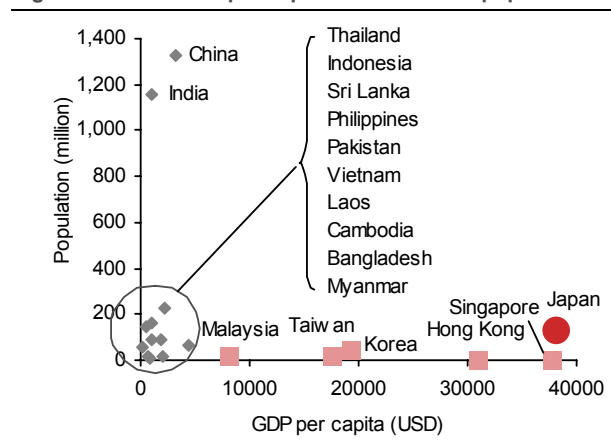
We also expect new drivers of intra-Asian trade to emerge over the next decade: growing demand for and specialisation in services; powerful environmental and demographic forces; rising food demand; and the next stage of the "flying geese" pattern. The success of individual economies will depend not only on the trade agreements they conclude, but also on the responsiveness of their producers to the opportunities these bring. ■

Figure 6. Projections of worldwide number of tourist arrivals

	Base year	Forecast	Market share	
	(million)	(million)	(%)	(%)
	2008	2020	2008	2020
Africa	47	77	5.1	4.9
Americas	147	282	16	18.1
East Asia and the Pacific	174	397	18.9	25.4
Europe	489	717	53	45.9
Middle East	55	69	6	4.4
South Asia	10	19	1.1	1.2
<b>World</b>	<b>922</b>	<b>1561</b>	<b>100</b>	<b>100</b>

Source: World Tourism Organisation and Nomura Global Economics.

Figure 7. Asia's GDP per capita versus size of populations



Source: CEIC and Nomura Global Economics.

## Japan's supply side: Not particularly constrained

*Unlike other populous Asian economies, Japan's future growth might seem likely to be constrained by the availability of labour. However, we think this is unlikely.*

- There is considerable scope for the female participation rate to rise.
- Provided that the fiscal situation is controlled, investment funds should be plentiful.
- There is significant scope for total factor productivity to accelerate.
- Demographic changes may release huge financial and real assets held by households.

### Introduction

Many of Asia's economies, particularly the three most populous – China, India, and Indonesia – have abundant under-employed labour. Moreover, even with the rapid growth of output and employment that seems likely over the coming decade and beyond, we think this abundance is unlikely to be fully taken up.

However, the situation in Japan is different – at least on the face of it. A mature, high-per-capita-income economy, Japan has undergone the basic developmental transition from peasant agriculture to rural industrialisation. Moreover, Japan's population is now declining. Hence it might be inferred that Japan's future economic performance will be fundamentally constrained by the supply of labour.

However, this is not necessarily the case. This conclusion flows from a consideration of three basic arguments.

**The labour-shortage issue.** While it might be natural to assume that a declining population will lead to a shortage of labour, Japan has a substantial latent unutilised labour force: women. If Japan were to utilise this latent labour force, we think it would be able to avoid any significant labour shortage until at least 2020. Moreover, even if Japan does not utilise this latent labour force, it should be able to maintain its current potential GDP by improving total factor productivity (TFP) and increasing private or public capital formation. In fact, the contribution of these elements has dominated real GDP growth since the 1970s.

**The savings-investment balance.** A declining population, accompanied by a low birth rate and an increasing proportion of older people, can be expected to affect the balance between savings and investment – by lowering the saving rate and expanding the budget deficit. To avoid long-term interest rates rising significantly, potentially damaging overall economic performance, the budget deficit will need to be contained.

**The potential effects of demographic change on Japan's social environment.** A declining population means "many empty houses", potentially affecting household financial asset allocation. If more households were willing to live in rented accommodation, this would release at least some of the substantial bank deposits that are currently being saved for down-payments and mortgages.

### Declining total population, but many non-employed women

Japan is approaching what, for it, is uncharted territory, namely that of a society with a declining population. According to the medium variant estimate of the National Institute of Population and Social Security Research, Japan's population peaked in November 2007 at 127.775mn people, and then started to decline. It is forecast to fall to 111.5mn in 2030, and 82.1mn in 2050.

Those who consider that a population decline will inevitably result in economic contraction base that view largely on the expectation that the labour force is set to shrink. They assume that population decline and a larger number of elderly people will mean that the number of working people (people capable of working) will fall. They also assume that a reduced number of workers will prevent the economy from expanding. However, this view does not seem to hold water, in our judgement. This is because we do not expect, under present conditions, a lower population inevitably to result in a smaller labour force.

Japan has a latent labour force that has scarcely been utilised, namely women. According to the Labour Force Survey conducted by the Ministry of Internal Affairs and Communications, Japan's female labour force participation ratio in 2008 (i.e. the proportion of the labour population (employed + wholly unemployed) within the overall population aged from 15 to 64 = ((labour force population ÷ population aged from 15 and 64) x 100) averaged 62.3%.

The population peaked in 2007...

...but the labour force will not inevitably shrink

Women constitute a huge potential

**Many women would join the labour force...**

This female participation rate is low by international standards, and we doubt that it is correct to explain it away as being the result of many females not wanting to work. According to the Ministry of Health, Labour and Welfare survey, there are more females than generally thought who are not in the labour force but who would work if they had the opportunity. If all the females who say they wish to work, "given the opportunity", actually were to join the labour force, Japan's female labour participation ratio would rise significantly (Figure 1). (We define the latent participation ratio as the number of labour force participants based on the Comprehensive Survey of Living Conditions, plus the number of females who wish to work "given the opportunity", divided by the overall female population.)

If Japan could utilise its potential female workers, then it would have the labour force required to maintain Japan's economic activity at the current level for a longer period. We estimate that the labour force population level of 2003 could be maintained until 2020 if the latent female labour force were to enter the workforce.

**...but social factors discourage this**

The problem, as we see it, is that there are still many social factors in Japan that discourage women from participating in the labour force. However, the government has for several years pursued a strategy of slashing waiting lists for day-care centres. We thus detect a growing recognition of the importance of improving the employment environment for women in present-day Japan, which is characterised by a low birth rate and an ageing society.

**More day-care centres are essential**

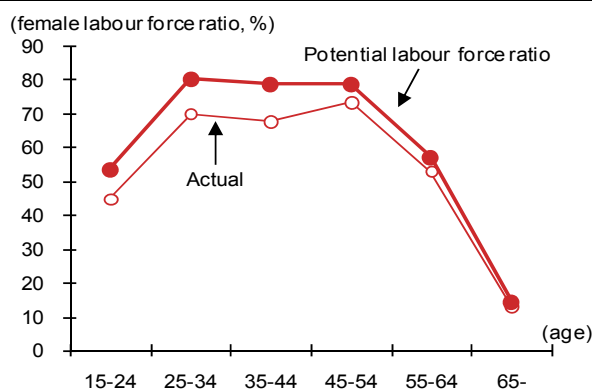
Given that a higher female labour participation rate is required to counter the decline in the Japanese population, it is important to ensure that that higher female labour participation does not result in an even lower birth rate. We estimate that, in order to maintain the current labour force, around 20,000 additional day-care centres would be required between 2010 and 2020. Establishing this number of day-care centres would create 400,000 to 500,000 jobs in the form of day-care staff. We further estimate that the economic effect of building all these new day-care centres would create employment for another 660,000 people. Indeed, the number of day-care centres started to increase in 2002, which may affect the current upward momentum of the birth rate. (17 November 2009: presented at the Tokyo Club Foundation for Global Studies: A Search for Potential Female Labour Forces in Japan's Ageing Society)

Even if Japan's female participation rate does not rise by as much as it could, the consequence need not necessarily be a slowing of potential growth. A country's supply capability (potential growth rate) is determined by three basic factors – capital, labour and technological innovation. Total factor productivity equates to economic growth that cannot be attributed to labour force or capital accumulation and thus largely reflects technological innovation. It should in principle be possible to compensate for a decline in one of these factors by means of growth in the other factors. As illustrated in Figure 2, Japan's economic growth since the 1970s has been driven largely by technological innovation and capital accumulation, while the contribution from labour has been slight. This suggests that it may be possible to overcome a labour shortage by means of capital expansion and technological advances, at least to some degree.

**Japan's savings-investment balance at a crossroads**

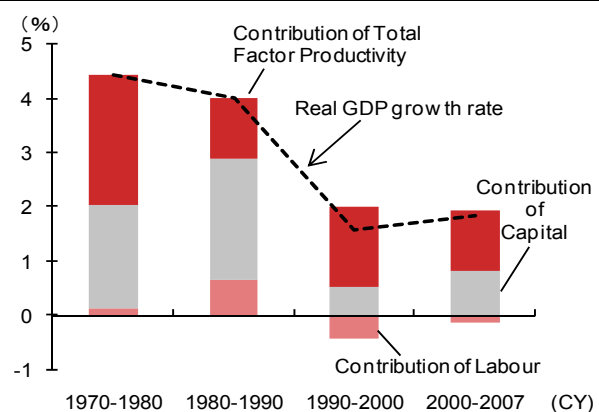
Japan should also be able to limit the impact of such shortage of labour as may occur by

**Figure 1. Female labour market participation**



Note: Potential labour force ratio is calculated by adding the number of people who wish to work but are not seeking jobs to actual labour force.  
Source: Nomura, Japan Ministry of Internal Affairs and Communications and International Labour Organization

**Figure 2. Factor analysis of Japanese real GDP growth rate**



Note: Shows factor analysis of real GDP growth rate based on the Cobb-Douglas production function.  
Source: Nomura, Cabinet Office's Annual Report on National Accounts, Ministry of Internal Affairs and Communications' Labour Force Survey, etc.

increasing capital expenditure (especially in labour-saving technology) and fostering technological innovation by increasing R&D, provided that increased labour mobility and the productivity-based pay schemes introduced in the mid-1990s continue to generate the necessary cash flow. However, these corporate reforms have already begun to have a major impact on Japan's savings-investment balance and long-term interest rates.

**The structure of the savings-investment balance has changed**

As Figure 3 shows, household savings remained in surplus, and corporate savings in deficit, until 2000. However, the savings-investment balance is now undergoing a major structural change. Japanese companies are now obliged to invest in labour-saving technology and R&D. Importantly, they are funding this from cash flow (e.g., by slashing their fixed employment costs) rather than by incurring debt (e.g., bank loans). In terms of the savings-investment balance, the corporate sector is in the process of going from deficit to surplus. Indeed, it has been in surplus since 2002.

**Private-sector savings have funded the fiscal deficit**

We consider that it is this structure, more than anything else, that is responsible for the current extremely low level of long-term interest rates (around 1.2%). Since FY92, the public sector has been running a fiscal deficit equivalent to about 7% of GDP on a savings-investment balance basis. The savings of the household and corporate sectors have made it possible to fund this deficit without having to borrow from overseas. The implication is that, provided the household and corporate sectors can maintain a sufficient savings surplus, government bond prices are unlikely to decline sharply (in other words, long-term yields are unlikely to rise sharply).

**A potential risk: the household sector going into deficit**

Seen from a medium-term perspective, the structure of the savings-investment balance can take a rather different form. While companies that are able to reduce their fixed employment costs as a result of increased labour mobility should still be able to generate a savings surplus, households are likely to see a major structural change in their savings-investment balance as the birth rate continues to decline and the population continues to age.

**Ageing is set to shrink household and government savings**

As Japan's average age rises, the number of elderly households will rise, and this will tend to depress the household saving rate. As a result the gap between savings and investment should narrow. At the same time, the rapid ageing of the population will tend to depress income tax revenue and increase the demand for social security. The net result should be expansion of the fiscal deficit (in other words, there will be a shortage of general government savings).

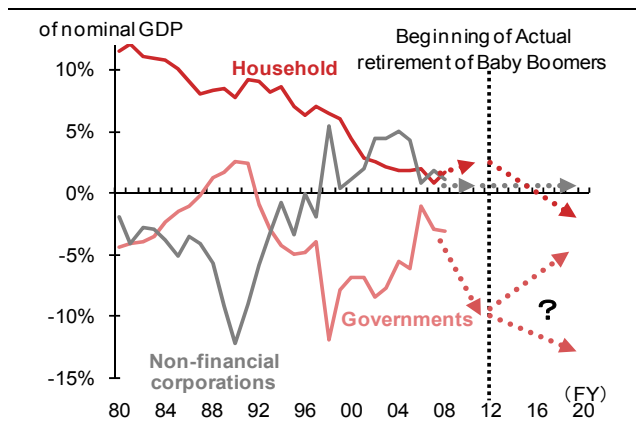
**The current account should swing into deficit**

By definition, an economy's savings-investment balance equals its current account balance. As long as the corporate sector remains in surplus and the public sector in deficit, a decline in (and, eventually, the disappearance of) the household sector savings surplus means that the current account will swing into deficit.

**A permanent current account deficit is avoidable**

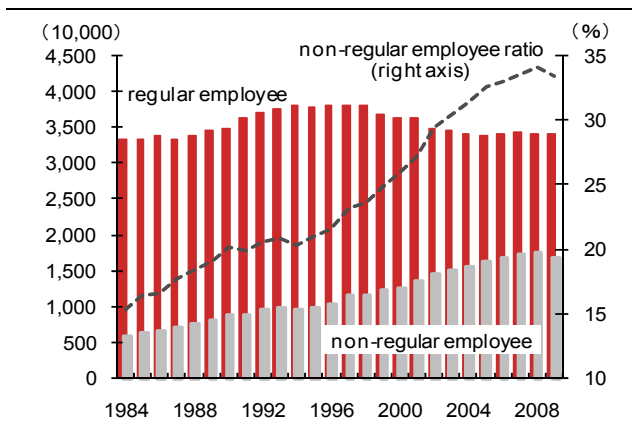
As the Japanese economy becomes more service-oriented, and the international division of labour proceeds apace, Japan's current account surplus should decline and possibly even disappear in the medium term. If markets function properly, however, it should be possible to avoid a situation whereby a current account deficit continues to expand. In terms of Japan's savings-investment balance, domestic interest rates will need to rise in order to attract inflows of capital to offset the current account deficit. While this would depress investment in capital and housing, it would support the household savings rate.

Figure 3. Structural changes in I-S balance



Note: Cabinet office National Accounts basis  
Dotted lines are based on Nomura's forecasts.  
Source: Nomura, Cabinet office

Figure 4. Trends of regular and non-regular employee



Note: Non-regular employee ratio = non regular employees / total employees (excl. executives)  
Source: Nomura, Ministry of Internal Affairs and Communication.

The net result would be that the savings deficit would gradually disappear and the current account deficit gradually decline. In terms of the trade balance, exports would be boosted as the currency weakened in response to the current account deficit, while imports would decline as domestic demand weakened in response to rising interest rates. The net effect would be that the current account deficit would be held in check.

**But a large fiscal deficit would create problems**

However, if the fiscal deficit continued to expand and the national debt continued to accumulate, markets would be prevented from working properly. A large public debt would start a vicious circle in which the current account deficit led to a rise in interest rates that increased the cost of servicing the public debt, and thereby a further increase in the fiscal deficit. Investors would be unable to ignore this "fiscal premium" if the twin current account and fiscal deficits continued. If that happened, the risk of a vicious cycle (rise in interest rates → fiscal deficit → rise in current account deficit → further rise in interest rates) would increase.

**Fiscal sustainability the key**

**Current account and fiscal deficits could reinforce one another**

We judge that the greatest risk for Japan as its population declines and its society ages is that the nation develops a chronic current account deficit as well as a fiscal deficit. This could prompt scepticism among investors regarding the sustainability of the government's finances, which in turn could trigger a sharp rise in long-term interest rates. In order to prevent such an event, we think Japan must, at a minimum, halt the expansion of the budget deficit and thereby prevent investors from attaching a fiscal premium to Japanese debt. On that argument, budget deficit control to maintain fiscal sustainability should be the most important policy among several political reform plans, even though the government has pledged that it will not hike the consumption tax rate another four years.

There are many ways to trim the budget deficit. Essentially, however, all options involve increasing revenues, decreasing expenses, or some combination of the two.

**Fiscal sustainability will be key**

First, structural changes in the labour market are resulting in lower income tax receipts. Concern has been voiced that the growing diversity of working arrangements, exemplified by the rising number of non-regular workers, will depress income tax revenues. According to the Ministry of Health, Labour and Welfare, the number of "non-regular workers" was 17.6mn in 2008, representing about 34% of all employees (Figure 4). As Japan's economy becomes increasingly service-oriented, we judge that such working arrangements are likely to become more common. The shift from permanent to temporary employment is helping to facilitate more flexible management in Japanese companies by transforming labour costs into a variable expense and reining-in labour's relative share.

**More non-regular workers would reduce tax receipts**

We think that the emergence of non-regular workers against the backdrop of a shrinking work force will hamper growth in income tax revenues even with an expanding economy. The problem with non-regular workers in this regard is that they tend to have lower incomes than do regular employees, and their income grows little with age. Consequently, a non-regular worker tends to generate far less income tax revenue than does a regular employee. Under the current income tax system, one person earning ¥6mn a year pays much more tax than six people earning ¥2mn a year.

**Increasing corporate tax would be difficult**

Some argue that, if more diverse working arrangements and a more flexible labour market have a negative impact on income tax revenues, then taxes should be raised on the companies that benefit from such changes. But this would be difficult to achieve. There are still strong downward pressures on corporate tax rates in Japan. Japan's effective corporate tax rate has been gradually lowered over time. Since FY02, the rate has fallen to 40.69%, which would appear to put Japan on a par with the US, at 40.75%. However, Japanese corporate taxes are still high compared with taxes in other Asian economies, which are Japan's main competitors. Effective corporate tax rates are 25.0% in China and 24.2% in Korea, for example.

**Raising consumption tax is probably not an option**

In view of the inability of the income tax system to generate new revenues and the difficulty of hiking corporate tax rates, the next option is to increase the consumption tax rate. We consider that the key issue here is the balance between the increased revenue that a higher consumption tax would generate versus the economic drag that it would produce.

**A 5pp consumption tax hike...**

Given the FY08 consumption tax rate of 5% and consumption tax revenues of ¥9.9trn, a simple calculation suggests that a 1pp increase in the tax rate would produce an additional ¥2trn in revenues. Given that Japan's primary deficit has been around ¥10trn on average over the past

five years, a 5pp consumption tax hike should be sufficient to eliminate the average primary balance deficit.

If a higher rate were to weigh on economic activity, however, this estimate might be over-optimistic. In the following section, we estimate the economic impact of a 5pp rise in the consumption tax rate, assuming no expansion of tax-free items or opportunistic price hikes.

...would harm GDP growth ...

Figure 5 compares the economic impact of a 5pp increase in the consumption tax rate with the base case, in which the tax is left at the current 5% rate. We estimate that, compared with the base case, real GDP would fall by 1.3% in the first year and 1.8% in the second year, mainly because of a sharp decline in consumer spending caused by the higher tax rate.

...and would not bring the primary balance into surplus

Given that a domestic economic slump would crimp the revenue gains from a higher tax rate, we estimate that the effective improvement in the primary balance (as a percentage of nominal GDP) would only be about one percentage point. We also forecast that the yield on 10-year government bonds would fall by about 30bp as the budget deficit shrank and the domestic economy cooled. Based on these estimates, we therefore think it would be impossible to bring the primary balance into surplus simply by raising the consumption tax by 5pp.

### Demographic shift and home-purchasing patterns

The impact of demographic shifts is not limited to the economic environment; they also affect the social environment. A declining population also means fewer and smaller households, a key unit of demand for housing. One issue is therefore how demographic shifts may affect patterns of house purchases among households.

Population decline means smaller and fewer households...

Data produced by the National Institute of Population and Social Security Research suggest that the number of households in Japan is likely to peak slightly above 50mn between 2010 and 2020, and gradually decline thereafter. Small households, i.e. single- or two-person households (couples), are expected to make up the majority of households between 2010 and 2015 (Figure 6). It is thus evident that population decline means fewer and smaller households.

...implying a more liquid market for existing homes

Japanese people have traditionally saved for a long period in order to purchase new-build homes. However, a decline in the number of households and a reduction in their size are likely to result in considerable changes in this behaviour. A decline in the number of households would likely increase the existing surplus stock of homes, and hence lead to greater liquidity in the market for existing homes.

Indeed, even though the number of households in Japan has not yet started to decline, the proportion of vacant homes has been higher in Japan than in the US since 1998. The market for existing homes in the US is liquid, as is well known. Given that the proportion of vacant homes in the US has been around 10% over the past 40 years, we surmise that the proportion of vacant homes would have to be at least 10% for liquidity in the existing-home market to increase.

The percentage in Japan reached this threshold in 1998 for the first time since the Second World War, and is likely to bolster the liquidity of the existing-home market. Given that existing homes generally cost less than new ones, the period of saving for home purchases would likely shorten. We think that growing demand for existing homes will mean that two of the three major factors associated with home purchases in Japan – a long period of saving, and new construction (the third is owner-occupied homes) – will soon be irrelevant.

Figure 5. Economic impact of 5pp hike in consumption tax

		Year 1	Year 2	Year 3	Year 4	Year 5
Real GDP	%	-1.32	-1.79	-1.22	-0.63	-0.66
Real private consumption	%	-2.50	-2.68	-2.56	-2.32	-2.25
Real private residential investment	%	0.04	-1.57	-1.21	-0.35	-0.17
Real private capex	%	0.03	-1.44	0.58	2.57	2.22
Savings-investment balance (savings - investment) (as % of GDP)						
Households	% pt	0.32	0.47	0.41	0.31	0.27
General government	% pt	1.28	1.04	1.12	1.26	1.27
Primary balance of central and local governments (as % of GDP)	% pt	1.05	0.89	0.94	1.01	1.00
Yield on 10-year JGBs	% pt	-0.31	-0.44	-0.49	-0.42	-0.36

Note: The simulation measured divergence from base case, assuming the consumption tax was raised and then left unchanged. Simulation data based on Nomura medium-term econometric model "JMAP2004" Source: Nomura.

**Smaller households imply rising demand for rental housing**

In addition, a reduction in the size of households could mean growth in the number of households that do not need large homes. Rented houses in Japan have traditionally been small (Figure 7), but this should be less of an issue if household size diminishes. Rented housing could thus become an increasingly important segment of housing services demand.

**Fixed-term tenant rights should boost rental housing supply**

As regards supply, we consider fixed-term tenant rights, established in March 2000, to be important. Previously, owners of rented homes could not, in principle, refuse to renew their rental contracts. With these new rights, however, owners do not have to renew if this is agreed beforehand. Previously, older couples with homes that were bigger than they needed might have been reluctant to sell. Yet, if they rented out their homes, the tenants might have stayed too long. The fixed-term tenant rights legislation could give homeowners an incentive to rent out their homes for a set period.

Thus, the shrinkage in household size coupled with the legislation of fixed-term tenant rights is likely to increase both the supply and demand for rented housing. The third keyword for home purchases, owner-occupied homes, is therefore also likely to become less and less relevant. We thus envisage that population decline will lead to fewer and smaller households and, in turn, to a shift in housing demand to used homes and rented housing.

**Changes in home-purchasing patterns may affect household financial asset allocation<sup>13</sup>**

Such major changes in the housing market environment are likely to bring about changes in households' home-buying plans. We expect that buying relatively inexpensive existing homes will start to become more common, even among younger age groups, as in the United States. We also expect the need to save diligently to buy a new home to diminish. Additionally, the trend toward smaller households should increase the viability of renting (because even rental housing is sufficiently spacious for small households). The number of households with no intention of buying a home may consequently increase.

**We estimate semi-compulsory housing-related savings...**

If it becomes easier for empty-nesters to move into relatively small existing housing units, this trend should facilitate sales of owner-occupied homes – i.e., monetisation of real assets. With respect to home-buying behaviour, we think the impact of changes in demographic trends on household financial assets will take the forms in our assessment. The first is liberation from semi-compulsory saving to accumulate a down-payment to buy a home and then maintain adequate liquidity to repay the home loan. The second is monetisation of real assets (increase in financial assets) resulting from empty-nest households moving to smaller homes.

**... at ¥436trn at end-FY07**

In order to quantify the extent of Japanese households' semi-compulsory savings earmarked for home acquisition, we have assumed that the down-payment required to purchase a home in the future will be funded by annual savings instalments plus the return earned on a household's contemporaneous financial assets. We estimate that ¥436trn of Japanese households' ¥1503.6trn of financial assets as of end-FY07 were semi-compulsory savings earmarked for home acquisition (Figure 8).

**Demographic changes...**

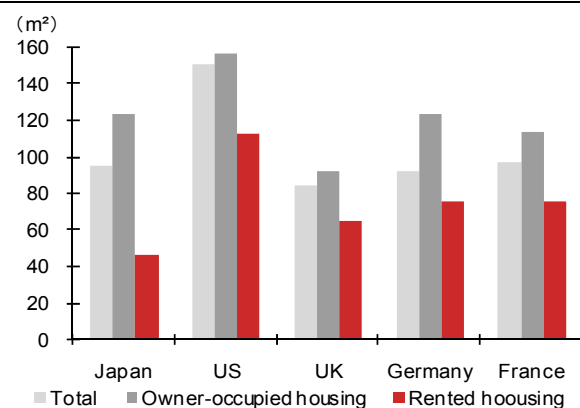
Next, we attempt to gauge the impact of monetisation of real assets, in which the elderly will likely play a leading role. Because much of recurring income of elderly persons is limited to social security and other such benefits, a large proportion of elderly households draw upon their

**Figure 6. Number of households (10,000)**

	Number of households by type			Number of households of their head's age 65 and over		
		Couple only & Single	As a % of total		Couple only & Single	As a % of total
2010	5,029	2,579	( 51% )	1,568	999	( 64% )
2015	5,060	2,675	( 53% )	1,803	1,161	( 64% )
2020	5,044	2,738	( 54% )	1,899	1,245	( 66% )

Source: Nomura, based on National institute of Population and Social Security Research.

**Figure 7. International comparison of floor area**



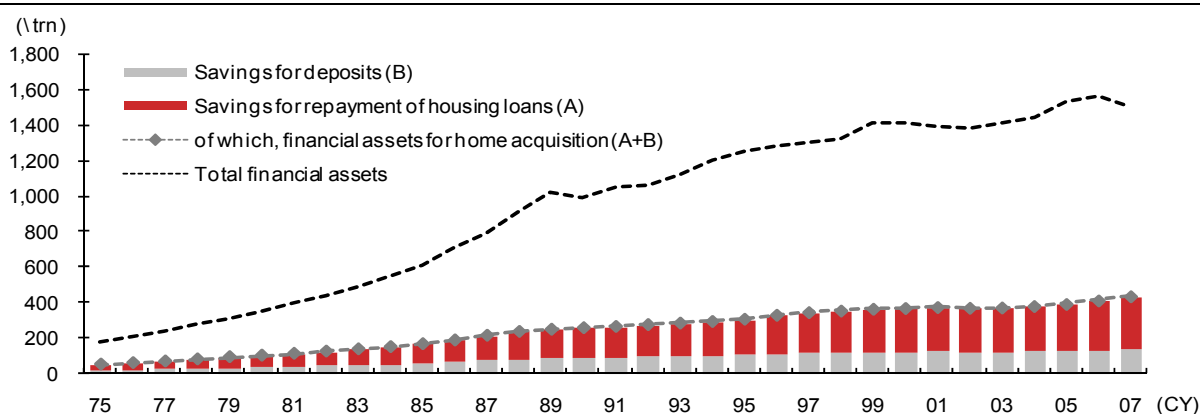
Source: Ministry of Internal Affairs and Communications "Housing and Land Survey", US Census Bureau "American Housing Survey", and UK Office of the Deputy Prime Minister "English House Survey".

**...should accelerate monetisation of households' real assets**

savings. The key issue is how they do so. Whereas US elderly households have a strong propensity to monetise real assets, Japanese elderly households tend to tap their financial assets. Many Japanese elderly households continue to reside in the same (relatively large) house in which they raised their children.

However, if a liquid market were to develop for existing housing, we think the trend toward empty-nest households moving into smaller homes would likely accelerate. If this trend enabled Japanese elderly households to extract equity from real assets (i.e., sell their homes) to the same extent that their US counterparts do, we estimate that the financial assets bequeathed to their heirs would increase by ¥110.2trn, on the basis of FY2007 data. ■

**Figure 8. Balance of households' financial assets earmarked for home acquisition**



Note: See Medium-term Outlook for the Japanese Economy for calculation methods.  
Source: Nomura, Cabinet Office, BOJ.



## Asia and Latin America: Ready for the next step?

*The past decade has brought a mutually beneficial, but narrow, trade relationship between Asia and Latin America. The challenge now is to widen it.*

- Latin America's industrial base could become integrated into Asia's production chain.
- Asia's vast pool of savings offers great potential for financing this.
- However, ensuring genuine development will likely remain a challenge

### A deepening, but narrow, relationship

Asia's remarkable growth has changed Latin America's economic landscape. Demand for commodity exports has led to strong growth and social development across the region. However, not all the news is good. The existing pattern of trade reveals increasing asymmetries that are deepening Latin America's historical reliance on the export of low-value-added commodities.

China's growth surge since the start of its market-oriented reforms had little discernible impact on Latin America until around 2003, when Chinese demand began having a direct effect on global commodities prices. China's demand for commodities rose by approximately 50% between 2000 and 2003.<sup>14</sup>

This has transformed Latin American economies, which had been posting mediocre growth despite a series of economic reforms dating back to the 1980s. Higher volumes of commodity exports at higher prices have allowed these economies to accumulate reserves, close hitherto chronic current account and fiscal deficits and simultaneously expand consumption and investment. For example, in Brazil, higher prices for its commodity exports and cheap imports of manufactured goods improved its term of trade with China by 52% between 2001 and 2007.<sup>15</sup>

The trade relationship with Asia has become the primary driver of growth for many countries in Latin America. The relative success of Asian countries, including China, in avoiding recession (at a time when international trade was hit hard) has been instrumental in accelerating this process. China, for example, is now Brazil's number one export destination, displacing the US (Figure 1). A comparison with Mexico, which continues to send most of its exports to the US, (Figure 2) sheds light on Brazil's outperformance of Mexico in recent years.

The deepening relationship between Latin America and Asia has also led to increased synchronisation of the regions' economic cycles. Although the direct trade link has grown in importance, recent estimates are that about two-thirds of this increasing correlation stems from demand spillover related to Asia's influence on commodity prices.<sup>16</sup>

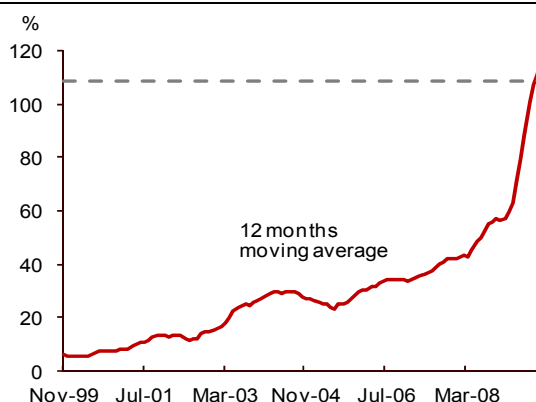
The correlation of industrial output between Latin America and China was very strong during the recent boom, though fell during the crisis (Figure 3). It is especially strong with Brazil (Figure 4). The fact that much of the FDI and portfolio investment going to the region is directed to the commodity sector is another powerful link between Latin America and Asia.

But the pattern of trade is extremely narrow, as a list of the top export goods to China makes clear. For Chile, 76% of exports to China consist of copper and its derivatives. For Colombia, 90% of exports are pig iron and other metals. For Peru, 47% are copper and other metals, and

Chinese growth has been the main driver of LatAm's revival

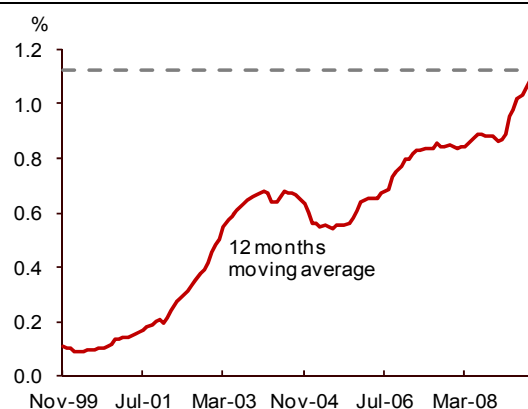
The business cycles of LatAm and Asia are now interrelated

Figure 1. Brazil exports to China as % of exports to US



Source: Nomura Global Economics.

Figure 2. Mexico exports to China as % of exports to US



Source: Nomura Global Economics.

31% is animal feed.<sup>17</sup> For Brazil, soya and its derivatives, iron ore and crude petroleum account for 74% of its exports.<sup>18</sup>

**The pattern of trade is very narrow**

Asian exports to the region, on the other hand, show great diversity and technological intensity. For example, in the case of Brazil, 54% of imports from China are capital goods. Industrial supplies account for 24%, with consumption goods accounting for just 15%.<sup>19</sup> Such imports have helped meet the region's growing consumption needs, with "parts for assembly" such as computer and mobile telephone parts, making up a big part of the import basket.<sup>20</sup>

Thus, the pattern of trade has so far followed a classical Ricardian line based on the comparative advantages of various factor endowments. Although much of this trade is now driven by China, a middle-income country, the relationship has taken on a "North-South" tone that is both limiting and reinforcing of some of the region's historical economic vulnerabilities.

**A new form of dependence?**

Much of Latin America's post-WWII policy debate, especially in the larger economies (Brazil, Mexico and Argentina) revolved around how to create and sustain an indigenous industrial base, which was viewed as crucial to economic development. Towards that end, various industrial policies were developed and, to a greater or lesser extent, all three countries were able to foster industrial development and thereby limit their dependence on commodity exports.

However, the recent rise of China as the assembly end-point in an Asia-wide, regionally integrated production network poses a direct threat to Latin America's industrial and manufacturing base.

**Mexico has taken the brunt of the impact of Asian competition**

This is most evident in Mexico, which has lost much of its competitiveness in a variety of sectors. Its *maquiladoras*, or assembly plants, have, by one estimate, shed 250,000 jobs since 2000 as a result of relocation of production to Asia.<sup>21</sup> The electrical machinery, electronics, furniture, textiles and transport equipment industries have been hit hard. Although Mexico has taken the brunt of the impact so far, China's rapidly growing industrial prowess now threatens export industries across Latin America. One study concluded that the expansion of China's export-supply capacity since 1995, controlling for such factors as the slowdown in the US economy, decreased Latin American industrial exports by 0.5-1.2% per year in 1995-2000 and by 1.1-3.1% in 2000-04.<sup>22</sup>

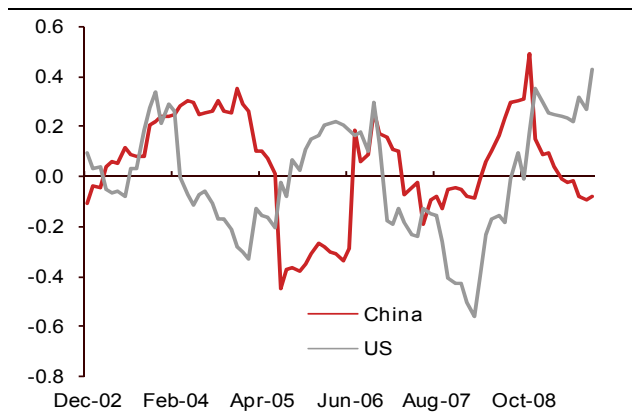
**FDI flows have been diverted to Asia**

Not only have jobs been lost in industry, but industrial FDI flows have switched from Latin America to Asia. Overall FDI flows to Latin America have recently grown, but most have been aimed at the booming commodity sector and non-exporting manufacturing and service sectors. This is troubling, as large FDI flows have been a key driver of Asia's remarkable growth, pointing to a strong complementary relationship between FDI, export performance and productivity.<sup>23</sup>

Most evidence shows that China's rise is displacing Latin American jobs in higher-wage industries and export sectors. Thus, present patterns of trade and investment may be pushing Latin America manufacturing towards lower-wage, unskilled, labour-intensive activities.<sup>24</sup>

These developments could prove problematic for the future of Asia's relationship with Latin America. Latin America's recent strong performance has been driven largely by spending stemming from what we view as the "one-off" dividend from the recent commodity boom. The direct wealth effect created by the commodity boom is being compounded by a widening and deepening of credit markets, also a "one-off" process likely to slow as banks reach prudential

Figure 3. Regional IP correlation to China vs US



Source: Haver Analytics, Nomura Global Economics.

Figure 4. Industrial production correlation 2008-present (%)

	China	US
Brazil	18.69	-22.04
Mexico	9.43	45.55
Colombia	-27.54	-13.68
Chile	-15.83	4.49

Source: Haver Analytics, Nomura Global Economics.

credit limits. Countries with large industrial bases, like Brazil, risk growing specialisation in low-value-added commodity exports complemented by a large service sector. This is not a long-run recipe for strong, sustainable growth.

### Ready for the next step?

On the whole, Latin America has benefited greatly from Asia's strong growth. But this relationship has been built on a narrow, classical complementarity. The question is whether both regions can widen this increasingly important relationship to their mutual benefit.

#### Latin America must adopt new policies

One of the keys of Asia's economic performance has been production fragmentation, which has allowed various stages of production to be located where they can be carried out most efficiently. This can work only in an environment of open trade, strong FDI flows and efficient public infrastructure to allow the creation of production networks specialising in exploiting resource endowments and technological capabilities. The challenge for Latin America is to adopt policies that allow the region to become more fully integrated into Asia's production network beyond the provision of commodity goods.

For this to occur, much groundwork needs to be laid. The region's transport infrastructure, for example, is still notoriously inefficient and expensive. Though some countries, e.g., Chile and Peru, have moved to negotiate free-trade agreements with China, the need to establish a network of production across the continent to gain scale and exploit varying capabilities suggests that a Latin America-Asia free trade agreement should be a top policy priority.

#### Opportunities exist for more investment from Asia

Finally, FDI flows are an important way to foster the kind of intra-industry trade seen in Asia. Asia is a high-savings region, but Latin America is historically savings-poor. FDI flows from Asia to Latin America could be an important mechanism for greater economic integration between the two regions. Despite much media attention, FDI flows from China into Brazil accounted for only 0.1% of all the FDI received by Brazil in 2008.<sup>25</sup> Thus, exploring mechanisms and policies to foster greater FDI investment from Asia into Latin America should also be a policy priority.

Latin America has much to gain from such policy, but so does Asia. FDI flows into Latin America could diversify and raise the return of Asia's savings. The integration of new manufacturing sites into the region's production network would generate new opportunities to exploit both scale and specific competitive advantages. An economic model for Latin America that was not dependent solely on a hypertrophied commodity sector would raise the region's growth prospects on a more sustainable basis and open new markets for Asia. ■

## Climate Change: Growing business opportunities

*Climate change policy is being driven by the science, the evolving evidence and projections of the consequences. How companies respond will do much to determine their success or failure.*

- The direct and indirect consequences of earth's continued warming stand to be substantial.
- Transition to a low-carbon world will bring fundamental change at the macro and micro levels.
- New technologies should become major drivers of world growth over the coming decades.
- Businesses that recognise this and develop strategies accordingly will likely be successful.

### Introduction and overview

**Climate change policy is driven by the science**

Climate change is driven by the science, so any proper discussion must start there. Inevitably, however, the science is not completely certain and never will be. Indeed, it is in the very nature of science that matters cannot be shown to be true, they can only be shown not to be true. But our reading is that the great bulk of the scientific evidence points, with a high degree of probability, to the conclusions that earth is warming in large part because of man's actions, and that this stands to do extensive damage.

Policymakers are therefore confronted by a slow-moving but powerful force that, unless checked and reversed, will very likely impose increasingly large costs on society and economies.

**The science is not uncertain enough to warrant inaction**

The matter is clearly urgent. Waiting until the science is virtually certain before acting – as many sceptics advocate – would, on the balance of probabilities, ensure it was too late to avoid climate catastrophe. Given the estimated probabilities and magnitude of the risks involved, it seems rational to spend some money to reduce the risks, despite the uncertainty. In our view, the science is not uncertain enough to warrant inaction.

**Copenhagen was just a step. There will be many more**

Last year's climate change conference in Copenhagen was not enough to put the world on a path to limit warming to 2°C. It was probably never going to be the "make or break" event that many commentators had billed it as. The reality of forging complex international agreements is that policymakers meet one another continually, in a variety of settings, sometimes advancing matters only slightly, sometimes taking larger steps. Sometimes they advance in unison; sometimes small groups of countries make the initial policy breakthrough.

Unless the scientific evidence goes into reverse, policymakers will find themselves under continuing (and probably increasing) pressure to provide the framework within which appropriate technological responses can take place, at appropriate speed. This framework needs, ultimately, to be international. However the route to an international agreement may involve a limited number of countries reaching agreement first. We see two natural small groupings:

- China, the United States, and the European Union – the world's three largest CO<sub>2</sub> emitters from fossil fuels – responsible for more than 55% of the total; and
- Brazil and Indonesia – the world's biggest CO<sub>2</sub> emitters from land use change and forestry (LUCF) – responsible for more than 50% of the total

**Policymakers will come under increasing pressure...**

If these countries were to reach agreement they would be in a position to put strong pressure on the rest. If US President Barack Obama continues to find his actions constrained on this front, it will be interesting to see whether China and the EU, working in concert, will be able to pressure the US into joining sooner.

Individual companies do not, of course, have to respond to the climate change issue. Any CEO is free to tell his/her board that although more than 10 major national academies of science say that climate change is a man-made disaster waiting to happen, he/she has decided that they are misguided. More likely, however, is that most CEOs will decide to proceed on the presumptions that, on the balance of probabilities: (1) climate change science is broadly correct; (2) there is increasing acceptance of this by the public and by policymakers; and (3) although the effects of climate change are relatively slow, policy made in the name of climate change brings the implications for companies forward to the present.

Our judgement is similar: that climate change and, more immediately, policy made in the name of climate change, is going to be one of the forces that stands to:

- transform the world economy – changing fundamentally what is produced, how it is produced and, importantly, *where* it is produced; and, in turn,

- determine which companies succeed, and which fail – both nationally and internationally.

Climate change is of course not unique in this respect. Other forces, too, will shape the future and determine which economies do well and which badly; and, in turn, which companies do well and do badly. Technological change has always done this, and will continue to do so. Changing tastes, including those that come with rising per capita income, are another. But the net result is marked. Already, with relatively little impact yet felt from climate change, about 20% of all companies operating in a given year are new ones, and only 60-70% of companies survive their first two years of activity. Although failure rates decline with longevity, only 40-50% of firms entering in a given year are still in business seven years later.

...and so will  
companies

Today, it seems, the pace of change that national policymakers and individual company managers have to deal with has accelerated as a result of the IT revolution. Innovations waiting to be implemented have never been so many and global competition has never been so intense. Moreover, the innovations affect not only the goods-producing sector, but the service sector, too. And now the changes wrought by climate change policy increasingly must be taken into account. To the extent that this is so, it follows, more strongly than ever, that:

- there is no guarantee that the **economies** that have done best in the past will do best in the future; some will manage an environment of accelerated change, including that which comes from climate change, better than others; and
- there is also no guarantee that **companies** that have done well will do well in the future – making the right strategic decisions and implementing change are likely to be even more critical in the future than they have been in the past.

In this Chapter we detail the reasoning that has led us to this conclusion. We start with a summary of the science, which we present because our experience is that senior corporate decision-makers tend to want to go right back to the beginning (in this case, to the science) before making strategic decisions.

After summarising the science we summarise the main known implications for climate and weather; the best estimates of the economic costs (though these are divergent and not particularly soundly based); and then our assessment of the likely implications for future policy.

The Chapter then presents a summary examination of the ways in which policymakers and business people are starting to react to the emerging realisation of the ways that climate change policy is likely to change the structure of economies.

The Chapter concludes with a number of key energy-related elements for some of the Asian countries and sectors, highlighted by Ivan Lee, Elaine Wu and team (Nomura equity analysts covering Asia Power, Utilities and Renewable Energy). Particularly important is China, which, like only the United States and the European Union, is large enough to affect its own destiny. However, *unlike* the US, and to some extent, also unlike many individual governments within the EU, China has the demonstrated ability to plan and take decisions over a longer period.

There is evidence not only that China's scientists have spoken clearly on the risks to China of global warming in general and the melting of Himalayan snow and ice in particular; but also that China's authorities are fully aware that reducing emissions is in the country's self interest and that they are thinking in detail about the structure of industrial production that will best serve their interests in a low-carbon world.

To the extent that China, or any other economy, gets the investment and production decisions broadly right, it stands to emerge all the faster as a major economic player in the decades ahead.

## Science summary

**Those who do not accept the science...**

At the start of the industrial revolution, the overall concentration of the six principal greenhouse gases (GHGs) addressed by the Kyoto protocol – CO<sub>2</sub>, CH<sub>4</sub>, N<sub>2</sub>O, HFC, PFC, SF<sub>6</sub> – was about 280 parts per million by volume, CO<sub>2</sub> equivalent (ppmv CO<sub>2</sub>e). Today, largely, though not wholly, because of the developed world's emissions, this has risen to around 430 ppmv CO<sub>2</sub>e, so far raising earth's average surface temperature by just over 0.7°C.

**...have the balance of probabilities against them**

Earth's absorptive capacity, meanwhile, has been reduced, in large part because of deforestation related mainly to demand for agricultural land. The world's forests, along with its oceans, figure prominently in protecting the environment and thereby regulating earth's temperature. Trees, like all plant matter, absorb CO<sub>2</sub> from the atmosphere through photosynthesis<sup>26</sup>, converting it into wood, vegetation and oxygen. Young trees, in the growing phase, absorb more CO<sub>2</sub> than mature trees. The world's forests and soils thus act as vast 'carbon sinks', storing about 1trn tonnes of carbon – about 50% more than is in the atmosphere<sup>27</sup>.

Because rising GHG concentrations raise earth's temperature only with a long lag, earth would continue to warm even if global emissions were "magically" to reduce to zero.

Earth's warming however is not uniform. Long-term studies in the Himalayas and Tibetan plateau indicate that temperatures there have risen considerably faster than the global average, and that many of the glaciers are melting faster than previously thought. Carbon deposits, in the form of soot, are believed to be a significant factor. Although estimates of the timescales for, and the area of, glacial decrease are divergent, increasing loss of melt-water will likely cause growing problems for dependent downstream populations.

**The direct and indirect effects will likely be substantial**

As earth continues to warm, water, food, and disease management will become increasingly important, regionally and globally. Asia, southern Europe, the Americas, Africa and the Middle East are set to experience greater inland and coastal flooding, drought and extreme weather conditions.

**Asia looks particularly vulnerable**

Approximately 60mn people worldwide live within 1 metre of mean sea level; a number that is expected to rise to about 130mn by 2100. Much of this population is poor, relies on climate-sensitive sectors, such as agriculture, and lives in the major river deltas in South and South East Asia. Losses from sea level rises stand to be substantial.

The Indian economy and its societal infrastructure are finely tuned to the stability of the monsoon<sup>28</sup>. Projections suggest that global warming will progressively decrease this stability and increase the frequency of intense (heavier) precipitation.

In 2009, India experienced its "worst" summer monsoon in years. The summer rains, which constitute about 80% of India's annual rainfall, were nearly 30% lower than average, came later, and were more intense<sup>29</sup>. In a country where the agricultural sector employs around 60% of the population and accounts for around 18% of GDP, this reduced crop yields and caused many summer crops to fail – rice, sugar cane, and oilseeds were worst hit. Crop output fell by 15-20%. Bad monsoons also reduce hydropower production, which provides about 25% of India's electricity. Thus, changes to the monsoon stand to have substantial effects on Indian GDP<sup>30</sup>.

**Cuts in emissions need to be large**

"Business as usual" (BAU) projections by the International Energy Agency (IEA) and others put GHG concentration by 2050 at 580-650 ppmv CO<sub>2</sub>e and by 2100 at 800-900 ppmv CO<sub>2</sub>e. At such levels, much of the world, including most of Asia, stands to be devastated, variously by desertification, rising sea levels, and extreme weather conditions. Forced mass migrations would further intensify conflict over resources.

**Delays will increase costs**

The consensus of most scientists is that to keep risk at "acceptable levels", the global average temperature increase needs to be limited to 2°C. To limit to 50% the probability of an increase being greater, global GHG concentrations need to be stabilised below 500 ppmv CO<sub>2</sub>e by 2050, and at below 450 ppmv CO<sub>2</sub>e thereafter. All credible paths require global emissions to peak by 2020 – at between 40 and 48<sup>31</sup> Gt CO<sub>2</sub>e – and to reduce thereafter by at least 50% by 2050 (from 1990 levels) and a further 50% reduction by 2100 (from 2050 levels). The later emissions peak, and/or the higher the level, the more pronounced the subsequent cuts need to be.

Allowing for projected world population growth – to approximately 9bn by 2050 – a 500 ppmv CO<sub>2</sub>e target translates into a world average emission target of around two tonnes per person per annum (pppa). Current global average pppa emissions are close to eight tonnes; but with large variations among countries (Figure 1).

## Economics summary

Pollution occurs because those who emit pollutants do not have to pay the cost of the damage they cause – a “market externality”. Market-based mechanisms are widely considered the most cost-efficient way of “internalising” externalities. The higher price of carbon encourages consumers to economise, inventors to come up with new ways to reduce emissions, and emitters to implement the most cost-efficient options.

**A single global carbon market is many years away**

Effective use of complementary instruments (e.g., regulations and standards, R&D funding programmes and reforming policies, such as fuel subsidies, which encourage emissions and raise the cost of mitigation) can enhance the cost-effectiveness of implementation<sup>32</sup>. Strong price signals can have powerful effects; the OECD estimates that setting a world carbon price path to stabilise GHG concentrations at 550ppm CO<sub>2e</sub> in 2050, would quadruple energy R&D expenditure and investment in renewables. Recent IEA calculations suggest that to spur adequate investment and bring about the necessary change, the price to emit one tonne of carbon dioxide will, in the developed countries, need to reach at least \$50 by 2020 and \$110 by 2030.

Market-based mechanisms are implemented via emissions trading schemes (ETS), a carbon tax, or a hybrid scheme. To date, regionally-based ETSs have generally been favoured, partly because of perceived political acceptability (they are largely “invisible” to the public) and partly because they enable the quantity (emissions) to be set – arguably the most important variable. The trade-off, however, is greater price uncertainty. More recently, taxes may be finding greater favour.

**Necessary investment could total 2% of GDP per year**

There is a range of estimates<sup>33</sup> on the investment needed to combat climate change. These vary by region and the assumptions made. An emerging consensus seems to be that, for a 50% chance of keeping earth’s average temperature rise below 2°C and to provide adequate adaptation will require annual expenditure of 1-2% of global GDP. Some of that investment can be achieved with existing technologies and, interestingly, at negative overall cost. Indeed, these investments are profitable even without a policy-induced price for carbon, simply by virtue of the reduction in operating costs that they bring – principally fuel costs. Surveys and calculations by McKinsey & Co. suggest that perhaps one third of the needed investments fall into this category.

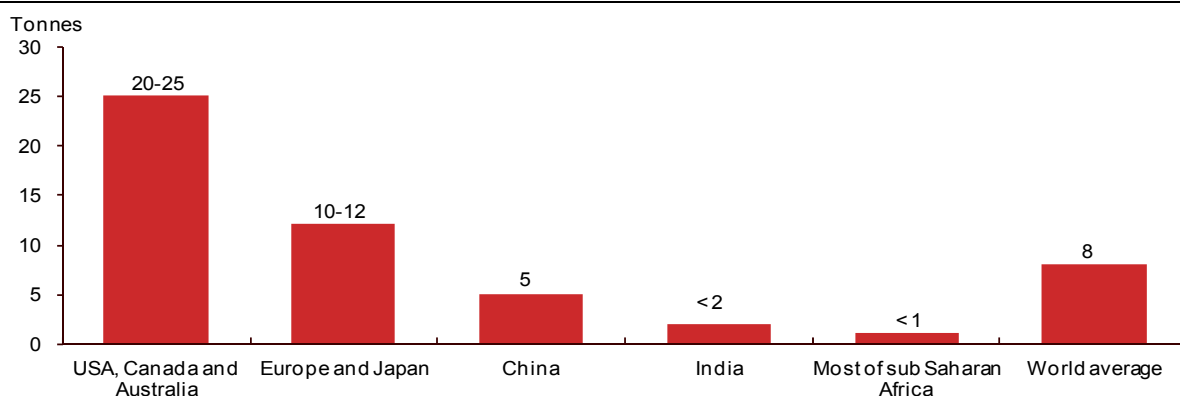
**More than 1/3 of this investment is profitable today**

The remainder of the required investment needs policy input to make it viable at today’s energy prices. As a broad estimate, perhaps a further third of the requisite global total is reasonably profitable on the basis of policies already in place, or likely to be in place fairly soon, in Europe, the US, and China. Most of the final third, however, would come about only as a result of further regulation e.g. automobile fuel economy standards and technology progression.

**Raising the price of carbon could bring substantial change**

Never before has the relative price of such a fundamental input as carbon been raised, by policy, on such a scale<sup>34</sup>. Transition to a new, low-carbon, economy will have significant macro and microeconomic implications. The move stands to bring about a fundamental process of structural change in what is produced, how it is produced; and, to an extent, *where* it is produced. The transformation will likely be considerably greater than that being experienced by the so-called “transition economies” of Central and Eastern Europe as they move from centrally-planned to market-based economies and comparable in magnitude to that experienced by industrial countries following the Industrial Revolution, albeit significantly faster.

Figure 1. CO2 emissions per person



Source: Stern (2008) p.10

### Policy summary

**A few countries account for the bulk of emissions**

A few countries account for the bulk of emissions. As regards CO<sub>2</sub> emissions from fossil fuels, China, the US, and OECD Europe are the world's biggest emitters, accounting for more than 55% of the world total. China recently overtook the US as the largest emitter from fossil fuels. When land use change and forestry (LUCF) are included, however, the picture is different. The biggest total emitter is non-OECD Asia<sup>35</sup>, closely followed by China and the US. (Figure 2)

Globally, emissions from LUCF account for more than 21% of total global CO<sub>2</sub> emissions and, of this, non-OECD Asia accounts for more than 55% and Latin America<sup>36</sup> nearly 30%. Together with the LUCF emissions from Africa, these countries account for virtually all positive net global emissions from LUCF (Figure 3); far more than China's total CO<sub>2</sub> emissions.

**A few countries can make a big difference**

Around 75% of South East Asia's total GHG emissions<sup>37</sup> come from land use change and forestry. It is therefore one of the regions of the world with the greatest potential for mitigating and abating GHG emissions by reducing deforestation and improving land management practices. China, with one of the most rigorous tree-planting programmes in the world, now has around 54mn hectares of "man-made" forests. China, the US, India, and OECD Europe are, as a result of reforestation-type programmes, now all *negative* LUCF emitters.

**Developing countries will drive growth in energy demand**

In 2005, non-OECD countries overtook OECD countries as the biggest consumers of energy. The IEA Reference Scenario<sup>38</sup> projects that, over the coming decades (2007-30), global primary energy demand will increase substantially – by more than 40%. More than 90% of this increase stands to come from non-OECD countries – with China and India likely to account for well over half of that increase. Over this period, fossil fuels (mainly coal) are projected to remain the dominant source of global energy<sup>39</sup>, accounting for more than 77% of the increase.

**Global participation is needed**

Many countries and regions are making intensive efforts to reduce emissions and are trying hard to forge global agreements. For the 2°C target to have any chance of being met, global participation is needed. This is simply arithmetic.

**Negotiations will continue to be complex**

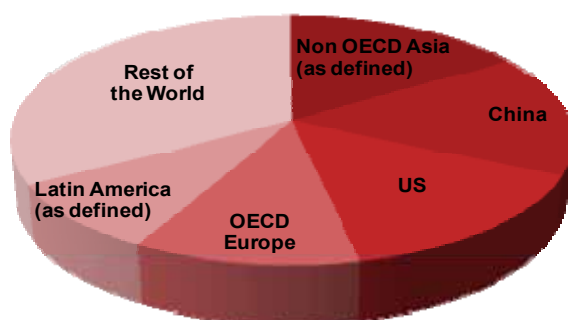
However, the significant differences between countries in their capacity and ability to afford to abate and mitigate raises the complex issue of equitable division of responsibility. Unsurprisingly, therefore, Copenhagen did not go as far as the science says is needed.

The process will likely continue in a manner akin to international negotiations to address the depletion of fish stocks. The scientists calculate the needed target and the negotiators "compromise" on a less demanding figure. Because not enough has been done, and the target has not been met, stocks continue to deplete, albeit less rapidly than before. Another round of negotiations is therefore needed – and the target is now tougher. Negotiators again "compromise", so that achievement again falls short of the new target. And so on.<sup>40</sup>

Still, Copenhagen did move the world a little further along the transition path to a low-carbon economy. Governments are increasingly implementing measures to oblige society – companies and individuals alike – to lessen emissions. Much regulatory uncertainty remains, however, and pressure on individual governments to reinforce the momentum of engagement remains high.

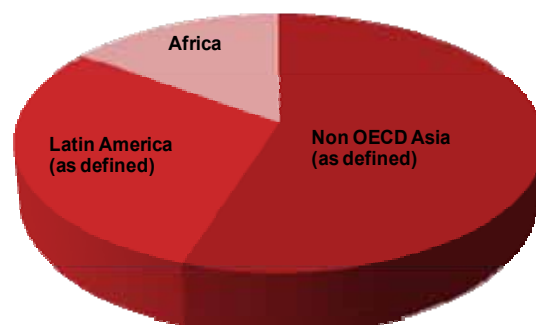
Policy will do much to determine the extent to which the potential of an economy is realised. Progressive, well designed and timely policies will be needed to provide an effective basis for future growth in the low-carbon world and to smooth macro-economic adjustment during

Figure 2. CO<sub>2</sub> emissions from fossil fuels & LUCF, by region



Source: IEA (2008) for fossil fuel emissions & World Resource Institute CAIT database (2000) for emissions from LUCF.

Figure 3. CO<sub>2</sub> emissions from LUCF, by region



Source: World Resource Institute CAIT database (2000) for emissions from LUCF.



transition.

Achieving ambitious mitigation objectives at reasonable cost will require a broad policy mix; various instruments will be needed to overcome market and political obstacles and/or differing emissions sources. And enforcement will be key. Poorly designed policy and policy mixes risk reducing cost-effectiveness, environmental integrity and, ultimately, economic growth.

**Progressive reforms will be needed to smooth adjustment**

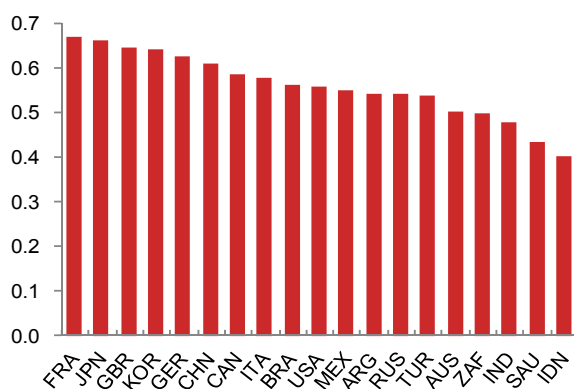
In countries where the expected damage from climate change is relatively low and the costs of action are perceived as relatively high, incentives are likely to be lower, and vice versa. A recent study<sup>41</sup> produced a number of indexes that rank the 19 G20 countries according to their global low-carbon competitiveness<sup>42</sup>. European and East Asian Countries show up well on the 'low carbon competitiveness index' (Figure 4). However, on a second index, the "low carbon improvement index", Asian countries show up less well than most European countries. This is perhaps not surprising, given the scale, rapidity, and relatively carbon-intensive growth of the East's industrialisation phase.

The third, "low carbon gap index", shows the difference between the rate of improvement and the rate required if that country, given its projected economic growth, is to succeed in meeting its (differing) share of the required carbon reductions for GHG emissions to stabilise at 450 ppmv CO<sub>2</sub>e. Economies with the largest gap are likely to find transition to a low-carbon world more difficult and more costly. Here, only two countries, Mexico and Argentina, are currently improving their carbon productivity at a rate high enough to meet the reductions; China, however, is close to being on track, with South Korea and India not far behind (Figure 5).

**Asia is well placed to exploit new opportunities**

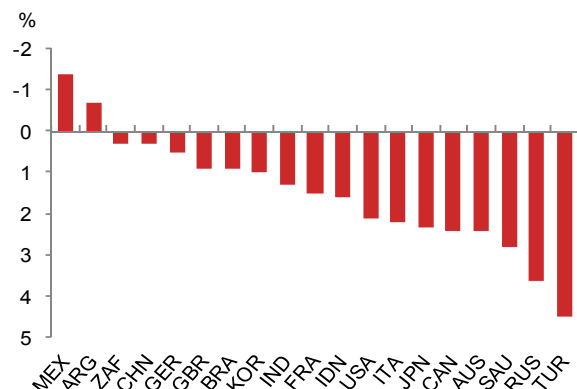
On the whole, Asia looks reasonably positioned to proceed with emission reduction policies. Moreover, Asia is economically comparatively well placed. In contrast to the US and the EU, Asia has lost little, if any, output as a result of the global financial crisis. The region also has a strong manufacturing base, underpinned by a considerable pool of low-cost labour, which should enable it to become a major centre of manufacturing for the world's new, and considerable, low-carbon needs. Thus, we judge that a more than proportionate number of opportunities lie in Asia, particularly in China and India – where we expect progressive and vast growth in investment, particularly in the energy and energy-related sectors.

Figure 4. Low carbon "competitiveness" index



Source: Vivid Economics

Figure 5. The "low carbon gap" index



Source: Vivid Economics

Climate Change: Country notes (Asia Power, Utilities and Renewable Energy Team\*)

China

China continues to set ambitious targets

China has set itself some bold targets for the end of 2010, pledging most notably to improve energy efficiency by 20% per unit of GDP. During the financial crisis, about 1/3 of the economic stimulus was pledged to green ends. China is rapidly becoming a world leader in solar and wind power, electric vehicles and other clean-energy technologies.

Pledges for end-2020 are even bolder: to generate 15%+ of energy from renewable sources, plant millions more hectares of forest and, most recently, to cut carbon intensity per unit of GDP by 40-45% relative to 2005 levels.

China's authorities have judged it to be in the country's interest to continue taking strong action to decrease emissions and propagate low carbon growth – for the following reasons:

- China is particularly vulnerable to climate change and is the world's biggest emitter from fossil fuels. Environmental degradation is palpable and China already suffers significant GDP losses from climate extremes. This degradation is becoming a significant source of civil unrest. Environment-related riots, protests and disputes in China reportedly reached 50,000 in 2005<sup>43</sup>. Growing emissions from "dirty" industrialisation only worsen degradation and increase such tensions.
- Sustaining China's rapid GDP growth depends crucially on sustaining fast investment growth. Investment, as seen in Chapter I, accounts for around half of China's GDP. Should investment falter, growth would fall sharply; and that would risk inducing a further fall in investment. The increases in consumption that would be needed to compensate, would, given the size of consumption, be implausibly large. Policy-driven, low-carbon investment stands to make a major contribution to maintaining rapid GDP growth.

Resource, environmental, and social constraints make reducing emissions an increasing necessity for China, which is big enough to affect its own destiny. Notwithstanding global agreements and actions by others, therefore, targets set by the 12th five-year plan (2011-15) stand to be even more ambitious.

Considerable emphasis will likely be placed on nuclear, wind, and hydro power. The state media have quoted industry experts and researchers as saying that the National Development Reform Commission (NDRC) is likely to raise its 2020 target for wind power by 400% to 150GW; solar PV power by 1,011% to 20GW; and nuclear power by 115% to 86GW (Figure 6).

China's energy sector should continue to benefit

Even with no significant change in government policies, hydro, nuclear, and wind power should remain dominant among China's alternative energy sources and in the country's overall energy supply. We estimate that hydro, nuclear, and wind power will account for 9.4%, 4.9% and 1.5-2.3% of the total energy supply in 2020, in contrast to the 0.1-0.2% for solar PV (Figure 7).

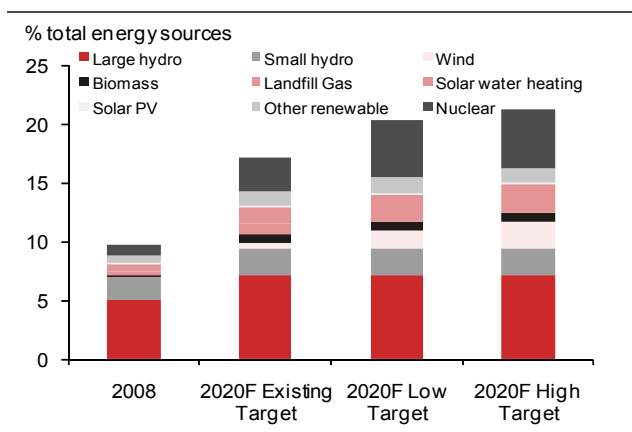
Wind power is likely to benefit most from China's ongoing policies, as it is perceived as being the cheapest and most scalable of the renewables and therefore as the most effective tool for meeting renewable targets in 2010 and 2020. Between 2003 and 2008, cumulative capacity of wind power grew at an annual rate of 84%. Based on state media reports, we expect the authorities to raise the cumulative wind capacity target from the current 30GW to 100-150GW by

Figure 6. NDRC's potential plan for cumulative alternative energy capacity

(GW)	Current 2020 targets			Potential 2020 targets			
	2008	2020F	08-20F CAGR (%)	Low version	08-20F CAGR (%)	High version	08-20F CAGR (%)
Hydro	172	300	5	300	5	300	5
Small hydro	51	75	3	75	3	75	3
Nuclear	9	40	13	70	19	86	21
Wind	12	30	8	100	19	150	24
Solar	0.1	1.8	27	10	47	20	56
Biomass	1	30	40	30	40	30	40

Source: CBN, China Energy News, Nomura estimates.

Figure 7. China: alternative energy



Source: NDRC, China Electricity Council, Nomura estimates.

2020, implying a steady 19-24% growth rate over the coming decade or so.

China's nuclear power sector also stands to benefit substantially. This technology, too, is scalable, reliable, cheap, and emits almost no greenhouse gases. GHG emissions are also minimal in the mining and transport of uranium. The Chinese government's current cumulative nuclear capacity target for 2020 is 40GWs.

In the past, the government has paid little attention to the photo-voltaic (PV) sector, primarily because of high relative electricity generation costs. Since becoming the world's largest producer of solar PV cells in 2008, however, the government has increased support to this sector, particularly to develop the domestic market. Although it is unclear how much actual extra demand this will create, the sector's outlook has clearly improved markedly.

China is the largest hydropower country in the world, and hydro is China's second-largest source of power, accounting for 16% of power generation in 2008. The industry, particularly small scale plants, also stands to benefit from government policy – albeit to a lesser degree. On current plans, China's hydropower capacity is scheduled to grow at around 4% per year, on average, through to 2020 – significantly slower than other alternative energy sectors. As the planned capacity for 2020 represents 70% of the country's technically exploitable hydro resources, the growth potential of hydropower will presumably expand over the long-term.

Thus, China's efficiency targets are bold, emissions growth is being reduced, at least relative to "business as usual", and targets stand to become even more ambitious. Nevertheless, emissions are set to continue rising in absolute terms until at least 2020.

## India

**India is poised to follow China's lead**

India recently shifted its position, and is now set to follow China's lead by increasing its own energy efficiency further, also through standards and regulations and by launching its own emissions trading scheme (ETS). However, these, too, will likely be tied to GDP growth, so absolute emissions in India also stand to increase to 2020.

The government has pledged to invest 2% of GDP in "green growth" during the coming five years and recently stated that its plans, such as mandatory fuel efficiency standards in the transport sector, would go ahead irrespective of international funds. India has already implemented numerous policies aimed at reducing GHG emissions, encouraging investment in alternative energy and increasing efficiency.

The Electricity Act 2003, for example, required the 12 State Electricity Regulatory Commissions (SERCs) to specify a proportion of electricity that the electricity distribution companies must procure from renewable sources<sup>44</sup>. Some states levy surcharges if targets are missed and put the monies towards new infrastructure needed by the renewable energy projects.

In 2006, India enacted a renewable energy policy aimed at avoiding further depletion of its natural resources, and at making electricity available to remote, previously non-supplied areas. The policy aims to increase the energy produced from renewable sources, and focuses primarily on small-scale hydro, wind, solar, and bio-gas plants, each with an installed capacity of less than 25MW. In January 2010, energy ratings on appliances, such as refrigerators, air conditioners, tube lights and transformers, will become compulsory.

**In India, wind and nuclear in particular should benefit**

The (relatively) short development and installation times associated with wind power, carefully targeted policies, and favourable incentives have resulted in significant growth in wind power capacity since the 1990s. Wind now dominates renewable energy generation. The country's current<sup>45</sup> installed wind power capacity of about 10,000MW is the fifth largest in the world. The Ministry's Eleventh Five-Year plan intends to increase this target by 10,500MW. Still, much of the potential 45,000MW total capacity remains to be exploited.

Despite being a "nuclear power", nuclear energy accounts for little of India's overall energy production. India's current capacity is around 4,100MW, less than 3% of the country's total capacity. The move towards cleaner energy, however, stands to increase India's reliance on nuclear energy. The government wants to add around 20,000MW of nuclear power by 2020, and then accelerate investment. In its recent report, the International Atomic Energy Agency (IAEA) stated that India would increase its nuclear power production eight-fold by 2030 – to account for around 26% of electricity production.

## South Korea

The Korean government aims to reduce energy and resource use significantly, minimise GHG emissions put “green development” at the core of its growth strategy and become a leader in low-carbon technology.

**Korea has made one of the strongest commitments**

In November 2009, the Korean government made one of the strongest commitments yet, for a country still classed as developing. Korea pledged to cut GHG emissions by 4% relative to 2005 levels and to enforce the target, even if international agreements at Copenhagen failed and irrespective of any foreign support.

The government hopes that these bold targets, along with a pointed commitment to invest 2% of GDP per year in green technologies, will spur the country towards these aims.

## The Philippines

**The Philippines views energy sustainability as a key to success**

The Philippine government sees energy efficiency and sustainability as an important underpinning of a successful market-based environment, conducive to attracting private-sector investment, encouraging R&D and promoting technology transfer. Renewable energy is being placed at the heart of the government’s energy strategy, supported by strong fiscal incentives.

Significant progress has been made on lessening the country’s energy import dependence on fossil fuels. This is particularly evident in the power sector where, according to the Department of Energy (DoE), geothermal and hydro combined account for 34% of the country’s power generation mix (Figure 8). Similarly, rural electrification efforts are seeing wide scale use of solar, micro-hydro, wind and biomass.

The government aims to double its renewable-energy-based capacity by 2013 and, over the next 10 years, to increase the non-power contribution of renewable energy to the energy mix by 10mn barrels of fuel oil equivalent (MMBFOE). To help to achieve this, it aims to double hydro capacity and increase significantly the use of biomass, solar and ocean-produced energy by around 131 MW. In the longer term, the government aims to become the number one wind energy producer in Southeast Asia and the number one geothermal energy producer in the world.

Current projections from the DoE suggest that renewable energy will account for 40% of the country’s primary energy requirements by the end of 2013.

## Thailand

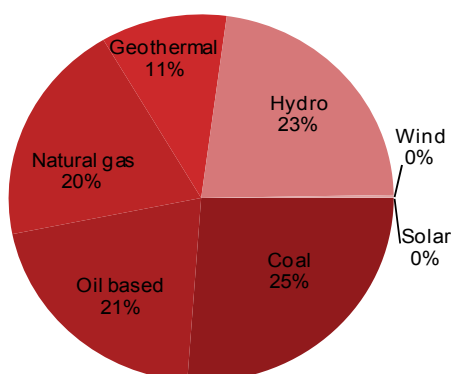
**Thailand is emphasising renewable energy**

Thailand is also placing great emphasis on renewable energy and alternative fuel sources. Thailand’s Power Development Plan (PDP) aims to have renewable energy contributing about 10% of installed capacity by 2022. In May 2009, Thailand’s Energy Minister announced intentions to increase the share of renewable energy from 6% to 20% of total energy consumption over the next 15 years.

To encourage increased use of renewables, the government has introduced a number of standards and subsidies, notably the Renewable Portfolio Standard (RPS) and the “adder tariffs” scheme. Special tax incentives and a Revolving Fund have also been put in place to ensure that projects have access to affordable funding.

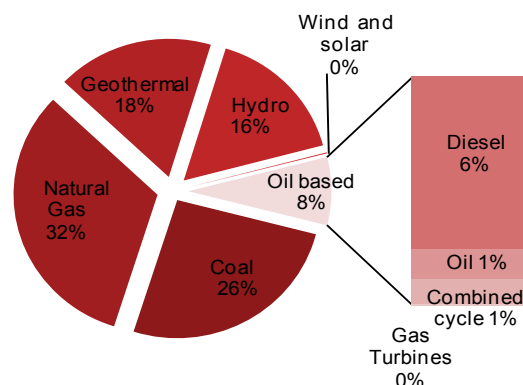
The Small Power Producers (SPP) and Very Small Power Producers (VSPP) programmes are

Figure 8. Philippines: Generation by fuel source in 2008



Source: DOE, Nomura research

Figure 9. Philippines: Capacity by fuel source in 2008



Source: DOE, Nomura research

at the heart of this, and the PDP aims to increase SPP capacity from 1,193MW to 1,986MW by 2015. At this point, SPPs will account for more than 15% of Thailand's aggregate installed capacity, up from 7.4% (as at Jan 2009). Similarly, Thailand's VSPP programme is expected to add 264MW by the end of 2015 and a further 300MW in 2015-21.

The incentives have been so successful that they have led to oversubscription. In response, the director-general of the Energy Planning and Policy Office (EPPO) has significantly raised the amount of electricity it guarantees to buy from the higher number of renewable energy projects. Further details on the targets and plan are set out in Figures 10 and 11.

## Indonesia

Renewables form the core of Indonesia's next big project

Indonesia's director-general of electricity and energy conservation sees significant potential for renewable energy growth in Indonesia. The development of renewables in Indonesia is regulated by the national energy policy and presidential Decree No.5/2006 states that by 2025, new and renewable energy should account for 17% of the national primary energy mix and consist of a broad mix of renewables.

More specifically, there are targets to increase the capacity of micro-hydro power plants to 2,846MW by 2025, biomass to 180MW by 2020, wind power to 0.97GW by 2025, solar to 0.87GW by 2024, and nuclear power to 4.2GW by 2024.

Indonesia suffers from an acute shortage of power; demand for electricity has been growing in excess of 7% per year. To help address the shortfall, the government, in 2006, launched the first 10,000MW "crash power project". A second such project is planned and is scheduled to be implemented between 2010 and 2014.

Local media report that 48% of the power in the second "crash power project" will be generated from geothermal plants, 26% from coal fired plants, 14% from gas and 12% from hydro. The proposed plants in the first project were reported as all being coal-fired.

To 2025, government estimates put the total investment needed in new and renewable power at US\$13.2bn.

## Malaysia

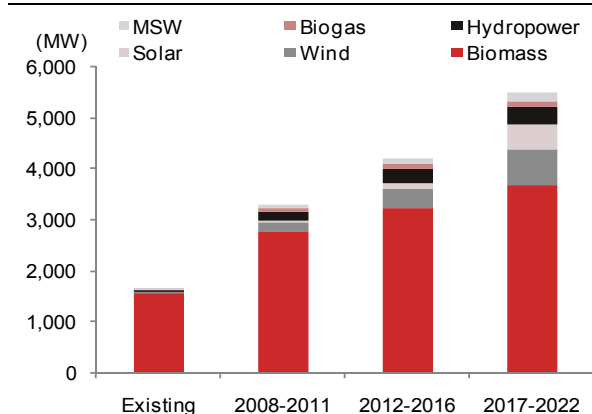
Malaysia is focusing on solar energy

An announcement by Malaysia's minister of energy, green technology and water in November 2009 suggested that Malaysia plans to focus heavily on solar energy, leveraging its abundant, all-year-round sunshine.

According to the minister, Malaysia will soon implement a feed-in tariff similar to that of Germany, with users able to sell excess power back to the power grid. Other measures to promote photovoltaics (PV) are also being considered. Meanwhile, a comprehensive Renewable Energy Plan is expected to be made public early in 2010. Hydropower, which now accounts for about 8% of the electricity generated, is projected to rise to 17% by 2020.

In recent months, nuclear energy has received considerable press as the country increasingly considers ways to diversify its fuel mix away from a heavy dependence on natural gas and oil.

Figure 10. Thailand: 15-year alternative energy target



Source: EGAT, Nomura research

Figure 11. Thailand: Alternative Energy Master Plan targets

(MW)	Existing	2008-2011	2012-2016	2017-2022	Shortfall relative to potential
Solar	32	55	95	500	49,500
Wind	1	150	400	700	900
Hydropower	5	165	281	324	376
Biomass	1,597	2,800	3,235	3,700	700
Biogas	29	60	90	120	70
MSW	5	100	130	160	160
<b>Total</b>	<b>1,669</b>	<b>3,330</b>	<b>4,231</b>	<b>5,504</b>	<b>51,706</b>

Source: Department of Alternative Energy Development and Efficiency

## Japan

The ruling Democratic Party of Japan (DPJ) plans to cut GHG emissions by 25% relative to 1990 levels by 2020. The government's manifesto includes various policies designed to achieve this target, including a cap-and-trade scheme for domestic emissions, the introduction of global-warming taxes and a fixed price feed-in tariff scheme for all renewable energy.

**Japan is emphasising solar energy**

Emphasis is being placed on solar energy. The former Liberal Democratic Party (LDP) government aimed to increase the installed capacity base 20-fold relative to 2005 levels by 2020 (around 28,000MW), and 40-fold by 2040 (around 53,000MW).

Our estimates suggest that a 20-fold increase would reduce CO<sub>2</sub> emissions by around 17mn tonnes, equivalent to around 1.2% of Japan's GHG emissions (of which around 95% is CO<sub>2</sub>). We believe, therefore, that for Japan to meet its emission reduction targets, the electricity industry, which accounts for around 30% of the country's GHG emissions, will need to make significant improvements in the capacity factor of its existing nuclear power facilities.

**Nuclear capacity factor may need to be improved**

We calculate that a one-percentage-point rise in the capacity factor (the ratio of the actual output of a power plant over a certain period, and its output if it had operated at full capacity for the whole time) of all existing nuclear power plants in Japan (an increase in output of around 48,000MW), would reduce CO<sub>2</sub> emissions by between 1.91mn (based on average CO<sub>2</sub> emissions per unit of energy for all types of energy) and 3.18mn tonnes (per unit of thermal power).

Increasing the capacity factors of existing nuclear power plants by 6-7pp could achieve emission reductions similar to those that would be achieved by increasing the installed base of solar power 20-fold.

According to the Nuclear Power Subcommittee, the average operating period of a nuclear power facility between regular inspections is 13.0 months in Japan, while in the US it is 18.9 months. Similarly, in Japan the average duration of a regular inspection is 143.5 days, compared with 42.3 days in the US.

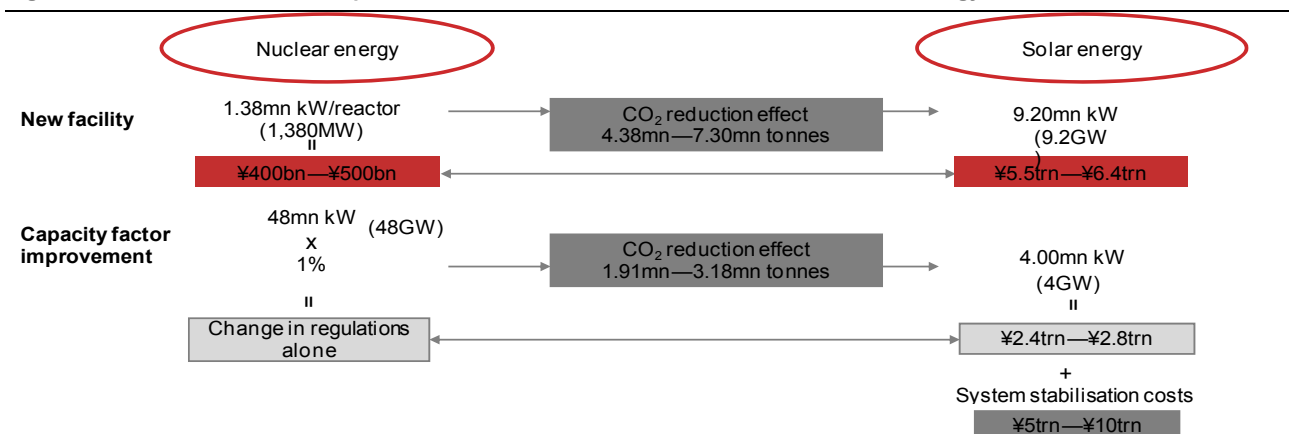
Although the average number of shutdowns per reactor per year is lower in Japan than in the US (0.56 compared with 1.5), the average length of a shutdown (both scheduled and unscheduled) is significantly longer in Japan (37.2 days vs 5.1 days in the US).

**Meeting targets through nuclear power is cost-effective**

Raising the nuclear capacity factor by the amounts required would be cost-effective; the government would need only to relax existing regulations. By contrast, achieving similar emission reductions with solar would require around 4,000MW of solar power generation capacity, costing ¥2.4-2.8trn.

In the longer term, new nuclear power plants could be built. We estimate that one new power plant (with an output of 1,380MW; 80% capacity factor) would reduce CO<sub>2</sub> emissions by 4.38mn tonnes (using the same average CO<sub>2</sub> emissions per unit of energy as above) to 7.30mn tonnes (per unit of thermal power) and cost ¥400-500bn to build. Achieving a similar level of reduction would require around 9,200MW of solar generation capacity, which would cost ¥5.5-6.4trn

Figure 12. Cost-effectiveness comparison for CO<sub>2</sub> emissions reduction: Nuclear vs solar energy



Note: (1) Plant capacity factor: 80% for nuclear energy, 12% for solar energy. (2) Solar energy construction cost = ¥600,000-700,000/kW. (3) CO<sub>2</sub> emissions reduction effect based on two calculations: per-unit of all energy 0.453kg-CO<sub>2</sub>/kWh, thermal power unit 0.755kg-CO<sub>2</sub>/kWh (08/3). (4) System stabilisation costs based on scenario for increasing installed solar capacity by 53.21GW by 2030 (40x the FY05 level). (5) Aggregate nuclear energy capacity of 48mn kW as of March 2009.

Source: Nomura, based on Ministry of Economy, Trade & Industry data

(Figure 12).

### Solar requires costly grid-stabilisation measures

Furthermore, once the installed base of solar power exceeds 10,000MW, costly grid stabilisation measures are needed. According to calculations by the Agency for Natural Resources and Energy, 53,000MW of solar power generation in FY30 will likely require ¥4.6-4.7trn in grid stabilisation costs (primarily for batteries in which to store the power). These costs could even exceed ¥10trn if demand for electric power falls by more than our calculations allow for. It is also unclear who would be required to bear this cost.

At present, the DPJ lacks specific policies on nuclear energy; however, a number of measures to promote and increase nuclear power capacity are being considered. These include the following.

1. Shortening lead times between the planning, construction and operations phases.
2. Operating at less than the rated output (load-following operations).
3. Broadening regional co-operation between power companies.
4. Increasing research on reactor decommissioning, reserve provisioning systems and next-generation light water reactors; ahead of the wave of replacement reactors scheduled in the 2030s.
5. Building trust with local communities in areas where nuclear facilities are located.
6. Adapting new inspection systems and introducing maintenance during operation.
7. Ensuring smoother resumption of operations following unscheduled shutdowns.

We expect the Japanese government increasingly to promote the growth of nuclear power. Current regulations including operational, inspection and maintenance regimes stand to change to allow capacity factors, and therefore output per unit, to increase. If these changes are made, power companies with high reliance on nuclear power are likely to benefit significantly.

## Roundup

The survey above of policy across Asian economies suggests two principal “takeaways”:

- There are differences across countries in respect of the actions being taken; but
- While details differ, most countries are taking or proposing significant action.

Thus, the EU, the US, and Asia are today, each in their own way, engaged in a range of climate change policies (Figure 13).

**\*Special contributors to this section:** Shigeki Matsumoto on Japan and Daniel Raats on Southeast Asia

Figure 13. Emission policies, selected countries

	Applicable		Reduction target	Target date for reduction	Primary Instrument/method
<b>Binding (national) constraints on emission levels</b>					
EU	●	Kyoto GHGs	20% from 1990 levels	2020	ETS*
<b>Binding (national) constraints on emission levels likely</b>					
US	○	Kyoto GHGs	17% from 2005 levels	2020	ETS
Japan	○	Kyoto GHGs	25% from 1990 levels	2020	ETS
Australia	○	Kyoto GHGs	10-20% from 2000 levels	2020	ETS
South Korea	○	Kyoto GHGs	4% from 2005 levels	2020	ETS
New Zealand	○	Kyoto GHGs	10-20% from 1990 levels	2020	ETS
<b>No binding constraints on emissions levels</b>					
China	●	Carbon Intensity	40-45% per unit of GDP, from 2005 levels	2020	Standards and regulations (ETS planned)
India	○	Carbon Intensity	20-25% per unit of GDP from 2005 levels	2020	Standards and regulations (ETS planned)
Indonesia	○	Kyoto GHGs	26-41% below BAU	2020	Reduction in deforestation
Brazil	○	Kyoto GHGs	36-39% below BAU	2020	Reduction in deforestation

Source: Government pledges, as reported by various media.

Key: ● = Current Policy; ○ = Likely Policy

\*Carbon taxes have also been introduced in Finland, the Netherlands and Sweden (as well as in Norway and Switzerland). They are in discussion in France. The carbon tax is seen as a complement to the ETS, rather than a substitute for it.

## Business Summary

**Policy brings the economic aspect into the here and now**

Policy, whether aimed directly at mitigating climate change, increasing energy security or ensuring that development is sustainable, stands to accentuate an already rigorous pace of change and bring the economic consequences of climate change right up to the present.

The implications for business are far-reaching:

- It will become increasingly expensive to emit carbon.
- Demand stands to move progressively against environmentally unfriendly products.
- Increased efficiency in carbon use will be induced.
- New low-carbon technologies stand to be major drivers of world growth.

Ultimately, the consequences of such changes will manifest at the level of the firm. Industrial sectors will not disappear; there will always be a need for agriculture, manufacturing and services, including transport, logistics, utilities, finance etc. Within sectors, however, individual firms, both small and large, can – and do – disappear.

There are significant differences in carbon liability among competing firms. The effects on firms' relative valuations from having to pay for their emissions stand to be substantial; some illustrations are provided by Trucost:

- In a sample of European airlines, emissions in relation to revenue ranged from one company being 64% above the average, to another being 10% below.
- Of 25 Japanese companies in the construction and resources sector, emissions payments as a percentage of revenue (based on \$25 per ton of CO<sub>2</sub>) ranged from significantly under 1% to more than 17%.
- Of 33 US electricity companies whose returns on capital ranged from 8.6% to 1%, their returns, when adjusted for emissions (based on only \$14 per ton of CO<sub>2</sub>), ranged from nearly 7% to just over -14%.

**Firms that use more carbon will struggle**

Thus, firms that use more carbon per unit of output than their competitors will struggle.

The implications for financial investing are also likely to be substantial. Carbon footprints of individual portfolios vary greatly as a result of sector allocation and stock-selection decisions; typically ranging from just over 200 tons to nearly 1,500 tons CO<sub>2</sub>e/£mn. As yet, however, few risk models incorporate the price of carbon.

Where fund management is concerned, it would be impractical to invest solely in firms light on carbon emissions — that would imply investing only in the service sector, which would be too narrow and volatile.

**Carbon efficiency will play a key role in investment decisions**

Investors will want to invest broadly across the economy as a whole – and in some cases with much the same sectoral weights as the major indexes. Successful multi-sector approaches will increasingly incorporate relative carbon efficiency into the decision-making process. Indexes that offer the same sectoral weights as the main “non-green” indices (e.g. S&P 500), but that weight firms according to their carbon footprint i.e. over-weighting the low carbon companies and under-weighting the higher emitters, are already available. Such indices track the main benchmark indices satisfactorily; yet the component companies emit only 40-50% of the carbon emitted by the benchmark companies. The ready supply of worldwide savings continues to build.

Accentuation of an already rigorous pace of change increases the crucial need for organisations to adapt. Generally, however, firms are poor adapters; management of change is complex, and many CEOs, embroiled in “day to day” management tasks, lack time for strategic thinking.

Notwithstanding, organisations would be wise to deepen their understanding of the direct and indirect implications of climate change and policy on their individual businesses, know their exposure and understand the strategic implications along their value chains. Organisations whose managements understand that the rules of the game are changing and who take appropriate action will prosper in the new economy. Those that do not will die out. ■



## Economics, Tectonics and Geopolitics

*Since the end of the Cold War the tectonic plates of the global economy have shifted decisively from west to east with as yet uncertain long-term geopolitical implications.*

- The economic dominance of the rich countries of the “Western” world may be over.
- This shift is driving major geopolitical challenges for the international system.
- Global institutions’ failure to reflect economic and political realities risks increasing frictions.
- Responsibility for accommodating these new realities rests primarily with the EU and US.

### Seismic shifts in the world economy

*“Since the industrial revolution in the 19<sup>th</sup> century, the rich countries of the ‘first world’ have dominated the global economy.... That era may be over.”<sup>46</sup>*

The global economic is shifting fundamentally...

In our view, world history has been dominated not by singular events but by processes which have gradually wrought fundamental paradigm shifts. In other words, human history, like geology and geomorphology, tends to be evolutionary rather than revolutionary. However, occasionally the earth’s crust presents us with an apparently sudden seismic event – an earthquake, say, or a volcanic eruption – though this may be the result of tectonic tensions which have built up over a protracted period. We think historians are likely to identify 11 December 2001 – the date on which China joined the World Trade Organization (WTO) – as the geopolitical equivalent of just such a seismic event, perhaps even more so than the terrorist attacks of 11 September of that year.

This perspective – appropriately broadened to include Asia’s other emerging major power, India – has been neatly summed up by Ronald Findlay and Kevin O’Rourke (2008) as follows:

*“At the time of writing, a major short-run security threat seemed to be...relations between the West and the Muslim World. Preventing the violence in...[the Middle East] as well as isolated terrorist attacks in the West, from degenerating into something more widespread and dangerous was the major immediate problem facing the world’s leaders.... In the longer run, the gradual rise of India and China to their natural roles as major economic and political superpowers [is] not only the best news for global human welfare in a generation, but [promises] to raise a variety of geopolitical challenges which as yet remain unpredictable. Indeed, history suggests that this could turn out to be the greatest geopolitical challenge facing the international system in the 21<sup>st</sup> century.”<sup>47</sup>*

...driving China and India’s quest for superpower status

We agree. We judge that China has been aiming for comprehensive national power – i.e., economic, scientific, military, cultural, etc – for more than 30 years, with economic growth the principal motor of these ambitions, at least since the late Deng Xiaoping’s reform-promoting “great southern journey” (*nanxun*) of 1992, arguably the previous seismic moment in contemporary China’s evolution.<sup>48</sup> And although India’s evolution since its own *fin de siècle* seismic moment (the balance of payments crisis of 1991), has differed from China’s, we think India, too, is pursuing a path towards comprehensive national power, also with the economy as the principal motor.<sup>49</sup>

The financial crisis has accelerated this process

The consequent shift in the global economic centre of gravity was already well under way before the beginning of the financial crisis from which the world is only now emerging – a crisis which, if anything, has accelerated the shift. Consequently, it is increasingly clear that global institutions and decision-making – economic and political – are lagging real-world developments and that more must be done to accommodate China and India in particular (see Figure 1). As *Financial Times* columnist Gideon Rachman commented on the 2010 World Economic Forum:

*“A year ago at Davos the election of [Barack] Obama was widely hailed as the one big ray of hope in a dark period in international affairs. Twelve months on, things look different...And if the US cannot lead, what other combination of powers can sort out the most difficult global problems?”<sup>50</sup>*

### China to the fore

*“China is no longer emerging. It has emerged – sooner and more assertively than had been expected before the wrenching global financial crisis....”<sup>51</sup>*

We agree with the now-prevailing view that China today is much more self-confident and assertive than the pre-crisis model. Indeed, it comes as no surprise. After all, as a recent article on contemporary China noted: "Like many Western countries, China will only act when it is in its own interests", suggesting why the Sinologist Professor David Shambaugh has reportedly remarked: "[China] is not proving to be the global partner the United States and EU seek".<sup>52</sup>

**China is increasingly assertive of its interests...**

Indeed, as the so-called "Washington Consensus" has been called into question by the financial crisis, what may become known as the "Beijing Consensus" (i.e., an economic model similar to the one which has driven China's growth since 1992) has attracted a good deal of interest (even if it remains, in our view, somewhat ill-defined). Furthermore, admiration for the way China has ridden out the crisis has been augmented by Beijing's uncritical economic engagement with other emerging economies, especially in Africa. In other words, China's increasing relative and absolute economic "muscle" is affording it greater clout on the world stage.

This was most recently apparent at the December 2009 Copenhagen climate change summit, where – by Western accounts at least – Beijing proved to be the main obstacle to a comprehensive political agreement (a failure which was portrayed in China as a victory against the imposition of Western terms on developing countries). We expect plenty of similar examples in the future.

However, such assertiveness is not without its risks. Since the Copenhagen summit, China's relations with the West, particularly the US, have been at a low ebb. Although this situation may prove short-lived, it nevertheless risks fuelling mounting protectionist pressures in the US and the EU.

**...which carries risks including mounting protectionism**

In sum, as Charles Grant noted in a recent paper: "China's attitude to international relations is ultra-realist. It will take what it can get, while respecting power and facts. But China's leaders may have miscalculated by underestimating the impact of their harder line on Washington and European capitals."<sup>53</sup>

**Commodities and the "heartland"**

*"The power of China...is palpable in Central Asia."*<sup>54</sup>

**Commodity and energy security are key policy concerns**

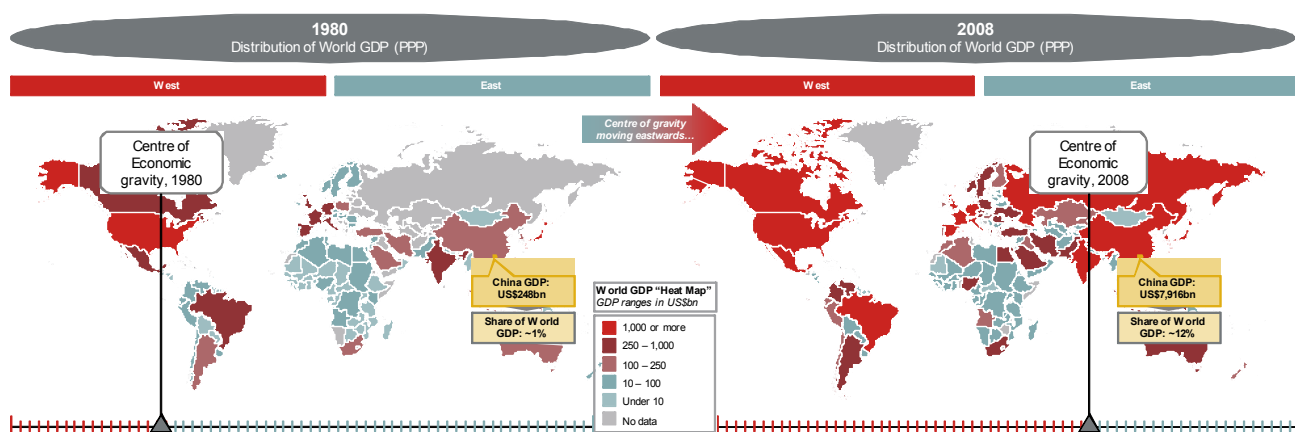
The realisation of comprehensive national power requires continued economic growth. Commodity security in general (which increasingly includes food security) and energy security in particular are therefore key foreign policy issues for both China and India, and are set to remain so for the foreseeable future.

Just over 100 years ago, the geopolitical theorist Halford Mackinder advanced his "Heartland Theory", predicting the imminent demise of "the Columbian epoch" as railways came to dominate global transport at the expense of merchant shipping. Mackinder postulated that this would result in the relative decline of the seaboard economies of Eurasia (forming, with Africa, his "World-Island") and the relative rise of the "Heartland", which he defined as the area stretching from the Volga to the Yangtze and from the Arctic to the Himalayas. He went on to summarise his theory as follows:

*"Who rules East Europe commands the Heartland;*

*Who rules the Heartland commands the World-Island;*

**Figure 1. Global economic centre of gravity**



Source: IMF and Nomura.

*Who rules the World-Island controls the World.*<sup>55</sup>

**Central Asia is increasingly pivotal to energy security**

A century later, it is clear that Mackinder greatly overestimated the potential of the railways. But it is also the case that still-predominant coastal economies are increasingly reliant on oil and gas pipelines running across the “Heartland” and on energy sourced from there and its immediate environs. Thus, effectively updating Mackinder’s thinking, Zbigniew Brzezinski (1997/2004) has argued that the power politics of the 21<sup>st</sup> century are being played out on the “grand chessboard” of the Eurasian landmass. He has designated Afghanistan, the three Caucasus states (Azerbaijan, Armenia, Georgia) and the five Central Asian Republics (CARs) as the “Global Balkans” – with Azerbaijan as “the vitally important ‘cork’ controlling the access to the ‘bottle’ which contains the riches of the Caspian Sea basin and Central Asia”.<sup>56</sup>

Findlay and O’Rourke (2008) add:

*“It is no longer the luxuries of the East that the West has to purchase, but the very lifeblood of manufacturing industry and transportation itself. In turn, this vital overland trade is raising familiar problems of control over bottlenecks and monopoly power.”*<sup>57</sup>

We believe this logic applies equally to the East in the sense that China, too, is looking increasingly to Brzezinski’s “Global Balkans” in its quest for continued energy security.<sup>58</sup> Indeed, China’s 2001 establishment of the Shanghai Cooperation Organisation (SCO) seems entirely consistent with both Mackinder and Brzezinski.<sup>59</sup> Its members and observers collectively form the world’s biggest producer and consumer of energy *and* the world’s biggest economic and military power. They also comprise 25% of the world’s land area. Thus, although the SCO claims that it “is not an alliance directed against other states and regions”, it is not hard to see why some experts view it as a potential (if not actual) counterbalance to NATO and the US.

### **BRICs without straw?**

For all that, we think China’s increasing influence in Central Asia could bring it into conflict with another SCO member, Russia. And mention of Russia inevitably raises the issue of the so-called BRICs group (Brazil, Russia, India and China), which has recently been holding frequent high-level meetings in what some commentators see as an attempt to form “a political club to convert their growing economic power into greater geopolitical clout”.<sup>60</sup>

**Intra-BRICs frictions are likely to emerge**

However, we see three reasons to doubt that a strong and coherent political alliance will emerge from these efforts. First, the BRICs group does not seem to us to share the sort of strong foundations which underpinned the formation of the G7 (which brought together seven free-market democracies facing similar economic challenges in the wake of the 1973 oil shock – see below). Second, we think that common ground among the BRICs is significantly outweighed by strong differences, with the result that they may be more united by what they stand against than by what they stand for. Third, some BRICs could find themselves in serious competition with one another over specific issues, with the potential to harm relations across the board.

### **India: Profiting from the crisis**

Although we have already noted the potential for Sino-Russian friction in the context of the CARs, Sino-Indian relations appear to us to be of more immediate concern, possibly betraying the sort of long-term rivalry between Asia’s two emerging powers which Bill Emmott considered in depth in his 2008 book “Rivals”.<sup>61</sup>

**Economic success is enhancing India’s leadership role**

The consensus among commentators is that India has had a “good” economic crisis, emerging relatively unscathed. As James Lamont put it in a recent article: “...confidence in the growing economy has permeated other areas, too. Over the past year, India has sought to play a greater leadership role in multilateral forums debating trade, climate change and reforming the global financial architecture.”<sup>62</sup> What is less clear, in our view, is how India is likely to project and build on its growing economic power.

In a 2009 paper, Rahul Sagar identified four different (if not mutually exclusive) “visions” relevant to the underpinning philosophy of Indian foreign policy:

1. “Moralist”, which, based in part on the Nehruvian view of the world, sees India as “an exemplar of principled action”.
2. “Hindu nationalist”, which favours the robust promotion and defence of Hindu culture and civilisation by the Indian state.
3. “Strategic”, which wishes to develop India’s strategic (including military) capabilities to project power.

4. “Liberal”, which aims to generate economic growth through trade and interdependence.<sup>63</sup>

India's growing strength may bring conflict with the West

India's economic transition owes much, in our view, to the influence of the last of these visions, rooted in the – by the 1980s, increasingly apparent – failure of policy based on principles rather than pragmatism to achieve successive governments' domestic objectives in particular.

However, the choices India makes from hereon are likely to be far from entirely domestically determined. When it comes to external drivers, Sagar (2009) suggests that: “...much depends on whether the existing great powers – America and China in particular – are willing to countenance India's rise”.<sup>64</sup>

Citing the US as a potential barrier to India's rise may seem odd in the light of the Bush administration's decision to aid India's emergence as a comprehensive national power.<sup>65</sup> But the oft-repeated (by US officials) rationale that India is America's “natural ally” may yet prove somewhat simplistic and/or short-sighted. In particular, we note that the most enthusiastic statements about India/US relations emanated largely from Washington's security and intelligence establishment in 2005, a period when the US National Intelligence Council (NIC) claimed that America would “retain enormous advantages...that no state will match by 2020”.<sup>66</sup> While that claim may, overall, still be valid, it is clear from its 2008 report that even the NIC's view of the world is now much more nuanced than it was four years ago.<sup>67</sup> At the heart of that shift lie the economic events of the intervening period, putting question marks over US willingness to continue to promote a pro-liberalisation global agenda and, possibly, the rise of potentially competing powers.

For now, Washington's focus remains largely on Beijing. But this could change if India succeeds in building the low-cost manufacturing base it needs to drive inclusive growth and provide employment for the additional 150mn people set to join the workforce over the next decade. In these circumstances, we think India stands increasingly to be America's – and Europe's – *bête noire* on the trade front.

## G20 to the rescue?

G20 has assumed G7's former mantle...

As recently as the 1998 global economic crisis which followed the collapse of the Russian rouble, the world looked to the G7 countries for solutions.<sup>68</sup> And it was mainly the G7 which provided the ballast which stabilised markets in the wake of Russia's default.<sup>69</sup> However, despite efforts to reinvent itself and to reach out to major emerging markets (without actually bringing them formally into the Group), it seems that 1998 may have marked the G7's last hurrah.<sup>70</sup>

Indeed, in what we judge to be in part a consequence of the seriousness of the crisis and in part an act of simple *realpolitik* reflecting shifts in the balance of economic power since 1998, it was the Group of 20 (G20), not the G7, which was called upon to respond to the 2008 financial crisis.

The G20 assembled for the first time ever at the heads of government/state level when it met in Washington on 15 November 2008; and it was the G20 declaration emanating from its next summit, held in London on 2 April 2009, which arguably marked a turning point in the crisis, at least in terms of market sentiment.<sup>71</sup> Furthermore, by the time they met for a third time in September 2009, G20 leaders had agreed that that Group should effectively take on the G7's former mantle.

...but international institutions still need to be reformed

How this will work in practice remains to be seen (not least because the G7 shows no signs of winding up its meetings, including annual summits). But, even though the G20 is a considerably better reflection of today's economic realities than the G7, it is no panacea. Notably, a seat at what is often referred to as “the top table” by the world's press may carry significant kudos; but the G20's quasi-official status and lack of an executive arm mean, in our view, that it is no substitute for institutions with real power (at least in principle), notably the IMF and the UN Security Council. And, so far, there is little sign of the historically dominant countries in those organisations making room for emerging economic or political powers.

## The post-crisis world – military muscle

*“The next phase of globalisation...will confront established powers with the reality of relative decline. We have reached a dangerous moment.”<sup>72</sup>*

The US is set to remain the dominant military power

Failure to rebalance international organisations to reflect the economic and political realities of the 21<sup>st</sup> century risks, in our view, an escalation of frictions into disputes, or worse. Having explored at length the risk of trade wars in these circumstances, Findlay and O'Rourke note that: “...it is perhaps not surprising that some influential voices have called for the United States to use its military power more forcefully to sustain its geopolitical dominance.”<sup>73</sup>

Despite the much-discussed rise in China's military capabilities, even a cursory glance at defence expenditure data underlines that the US is set to remain the world's dominant military power for years to come. As Figure 2 shows, US defence spending amounts to more than 40% of the global total and around seven times that of China (and 20 times that of India).<sup>74</sup>

In this context, we note that, although it spends only around 1% of its GDP on defence, Asia's long-established power, Japan, ranks seventh in the league of global defence spending. Constrained as Japan is by Article 9 of its constitution, which prohibits acts of war by the state, we are nevertheless mindful of the perspective put forward by Robert Kagan in 2008:

*"It is easy to forget, as everyone concentrates on China's rise as a great power, that Japan is a great power, too. Its economy remains the second largest in the world, a remarkable fact given its relatively small population, smaller territory, and lack of natural resources. Meanwhile, the Japanese military is one of the world's most modern."*<sup>75</sup>

### "The coming age of discontinuities"

Old and new challenges lie ahead...

Some of the challenges – economic and geopolitical – facing the world today are familiar (e.g. terrorism, protectionism, nuclear proliferation), albeit manifesting themselves in new ways. Others are entirely new, notably climate change. Niall Ferguson (2005) highlighted how geopolitical factors – imperial overstretch, international terrorism and nuclear proliferation – stand to have a negative impact on globalisation and, therefore, the global economy.<sup>76</sup> And Findlay and O'Rourke (2008) make clear that, historically, the reverse is equally true; that is, setbacks in the global economy can provoke conflict. Thus, although the collapse of globalisation is *not* imminent in our view, based on historical evidence we doubt that its smooth progress can be taken for granted.

...and demand US and EU leadership...

We think the burden of preventing any future crisis from evolving into conflict rests primarily on the EU and US, which together account for more than 50% of global GDP but comprise just 12% of the world's population. At a minimum, Western political leadership is needed to resist protectionist pressures and to reform the international system to reflect the eastward shift of the global economic centre of gravity. As Findlay and O'Rourke (2008) observe, such institutional reform "is essential if the world is to maintain a multilateral and relatively open political and trading system".

...if geopolitical uncertainty and risk are to be minimised

Whether, in the wake of the financial crisis, the West can rise to the related challenges quickly enough to satisfy the aspirations of the emerging Asian powerhouses remains to be seen. And even if it does, geopolitical uncertainty is likely to persist – and, indeed, escalate – in the years ahead. As Philip Stephens of *The Financial Times* puts it:

*"What can be said with moderate certainty is that a global system designed in 1945 will not survive the coming age of discontinuities. An order centred around the political, cultural and economic hegemony of the West can scarcely outlive the redistribution of global power."*<sup>77</sup> ■

Figure 2. Defence spending (2008)

Rank	Country	Spending (\$bn)	World Share (%)
1	United States of America	607	41.5
2	People's Republic of China*	84.9	5.8
3	France	65.7	4.5
4	United Kingdom	65.3	4.5
5	Russia*	58.6	4
6	Germany	46.8	3.2
7	Japan	46.3	3.2
8	Italy	40.6	2.8
9	Saudi Arabia	38.2	2.6
10	India	30	2.1

Note: \* denotes SIPRI estimates

Source: Stockholm International Peace Research Institute (SIPRI)

## LIST OF ABBREVIATIONS

bn	billion
BAU	business as usual
CEO	Chief Executive Officer
CH <sub>4</sub>	methane
CO <sub>2</sub>	carbon dioxide
CO <sub>2</sub> e	carbon dioxide equivalent
DOE	Department of Energy
DPJ	Democratic Party of Japan
EPPO	Energy Planning and Policy Office (The Philippines)
ETS	Emissions Trading Scheme
EU	European Union
G20	19 countries plus the European Union
GDP	Gross Domestic Product
GHG	Greenhouse Gas
GW	giga watt
HFC23	Hydrofluorocarbon 23
IAEA	International Atomic Energy Agency
IEA	International Energy Agency
LDP	Liberal Democratic Party of Japan
LUCF	land use change and forestry
mn	million
MMBFO	mn barrels of fuel oil equivalent
MW	mega watt
N <sub>2</sub> O	nitrous oxide
NDRC	National Development Reform Commission
NPS	Nuclear Power Sub-committee
OECD	Organisation for Economic Cooperation and Development
PDP	Power Development Plan
PFC	per fluorinated compounds
ppma	parts per mn per annum
ppmv	parts per mn per volume
PV	photo-voltaic
R & D	research & development
SERC	State Electricity Regulatory Commission
SPP	small power producer
SF <sub>6</sub>	sulfur hexafluoride
trn	trillion
VSPP	very small power producer

Three-letter codes based on those established by the International Organization for Standardization (ISO) From UN website : <http://www.un.org/Depts/Cartographic/english/geoinfo/geoname.pdf>

AUS	Australia
BEL	Belgium
BRA	Brazil
CAN	Canada
CHL	Chile
CHN	China

CZE	Czech Republic
ESP	Spain
FRA	France
GBR	United Kingdom
GER	Germany
HKG	Hong Kong
IDN	Indonesia
IND	India
IRN	Iran
ITA	Italy
JPN	Japan
KOR	Republic of Korea
MEX	Mexico
MYS	Malaysia
NZL	New Zealand
PER	Peru
PHL	Philippines
POL	Poland
RUS	Russian Federation
SGP	Singapore
THA	Thailand
TUR	Turkey
TWA	Taiwan
US	United States
VNM	Vietnam

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## Endnotes

<sup>1</sup> Schneider(2002).

<sup>2</sup> Asian Development Bank (2007).

<sup>3</sup> International Monetary Fund (2009), "Crisis and Recovery", World Economic Outlook (April).

<sup>4</sup> Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Japan, Netherlands, New Zealand, Norway, Portugal, Spain, Sweden, Switzerland, United Kingdom, and US.

<sup>5</sup> Highly synchronised recessions are defined as those during which 10 or more of the 21 advanced economies in the sample were in recession at the same time.

<sup>6</sup> International Monetary Fund (2009), Regional Economic Outlook Asia and Pacific "Global Crisis: The Asian Context" (May).

<sup>7</sup> International Monetary Fund (2009), World Economic Outlook "Crisis and Recovery" (April).

<sup>8</sup> Bureau of Economic Analysis <http://www.bea.gov/National/index.htm>.

<sup>9</sup> Aliber, R., Tariffs can persuade Beijing to free the renminbi (*Financial Times*, 8 December 2009).

<sup>10</sup> An interesting statistic is that since 2007, China's value of retail sales in US\$ has easily more than offset the drop of that in the US.

Some argue that China's nominal household consumption of goods and services (US\$1.6trn in 2008) remains dwarfed by US consumption (US\$10.1trn). But others highlight that two thirds of US consumption is services, much of which is not imported. Looking at the value of retail sales, the comparisons are closer: in China, US\$1.5trn over Jan-Oct 2009 versus US\$3.0trn in the US. And in the past two years to October 2009, the value of retail sales has decreased by US\$28bn in the US, but increased by US\$61bn in China. Yet a counter to this is that a large share of Chinese retail sales is of domestically produced goods, notably food and clothing.

<sup>11</sup> Our base line assumptions are: (1) Labour force growth slows in line with population growth projections from the National Statistical Office. Assuming a constant labour participation rate (62%), the absolute size of the labour force is projected to start falling from 2018. Labour is expected to continue to shift from manufacturing to services until Korea's share of employment in services reaches the OECD average (69%) over the projection period. (2) The capital stock grows at an average of 5.7% for the next five years (the same rate as in 2001-06). It then grows at an average of 4.7% for the rest of the projection period as the service share in the economy converges to levels seen in other advanced economies; inward FDI remains stable at 0.8% of GDP (the same as 2000-05). (3) Total factor productivity in services remains close to zero. We assume that Korea is close to its technological frontier in manufacturing, so that manufacturing productivity growth converges to levels of advanced economies. As such, high productivity growth in manufacturing declines over time.

<sup>12</sup> There are profound and pervasive uncertainties surrounding the establishment of reunification costs and benefits. In some studies of Korean reunification, the implicit assumption is that the burden of meeting reunification costs could fall entirely on the South Korean economy rather than being shared among it and sources of support from other countries, or international financial institutions. If the goal of reunification is to close the income gap between North and South (like the 1990 German reunification), it is fair to expect a heavy, burdensome cost. By contrast, if reunification adopts a less ambitious and more realistic goal (like the "one country, two systems" model used by China and Hong Kong), the costs could be smaller. In terms of benefits, South Korea's technological frontier combined with a Chinese-style, low-cost manufacturing base in the North could make a unified Korea an even stronger powerhouse than South Korea is poised to become on its own. For this, a number of conditions would be required in the North: a positive business environment, wage adjustment consistent with productivity, and the creation of employment opportunities, which could prevent destabilising migration.

<sup>13</sup> Calculation methods are based on Medium-term outlook for the Japanese economy 2005-2015, Nomura (16 December 2004).

<sup>14</sup> Calderon, Cesar; "Trade, Specialization, and Cycle Synchronization: Explaining output comovement between Latin America, India and China", in China's and India's Challenge to Latin America-Opportunity or Threat?, Edited Lederman, Daniel; Learreaga, Marcelo; Perry, Guillermo, The World Bank, 2009 (henceforth WB), page 54.

<sup>15</sup> Saslavsky, Daniel; Rozember, Ricardo; The impact of China's global economic expansion on Latin America; World Economy and Finance Research Program WP 8, University of East Anglia, February 2009 (henceforth China-Brazil), page 17.

<sup>16</sup> See WB, page 83.

<sup>17</sup> Devlin, Robert. "What does China mean for Latin America?" in Enter the Dragon? China's presence in Latin America. Woodrow Wilson International Center for Scholars, 2007.

<sup>18</sup> China-Brazil, page 9.

<sup>19</sup> China-Brazil, page 13.

<sup>20</sup> Alexandre; Kilpatrick, James. "Distinctive patterns & prospects in China-Latin America trade, 1999-2005", *Journal of International Commerce and Economics*, 2006. page 17.

<sup>21</sup> Lederman, Daniel; Olarrega, Marcelo; Soloaga, Isidro. "The growth of China and India in world trade: Opportunity or threat for Latin America and the Caribbean?", in WB, page 103.

<sup>22</sup> Hanson, Gordon; Robertson, Raymond. "China and the recent evolution of Latin America's manufacturing exports", in WB page 146.

<sup>23</sup> Kawai, Masahiro; Zhai, Fan. PRC-Latin America economic cooperation: Going beyond resource and manufacturing complementary. Asian Development Bank Institute WP 137, April 2009, page 7.

<sup>24</sup> WB, page 7.

<sup>25</sup> China-Brazil, page 32.

<sup>26</sup> The photosynthesis process: carbon dioxide + water + light energy → carbohydrate + oxygen.

<sup>27</sup> Of which about 283 Gts of carbon are stored in the biomass alone: According to the Food and Agriculture Organisation of the United Nations' (FAO) Global Forest Resources Assessment, 2005.

<sup>28</sup> Over the past 100 years, the standard deviation of the seasonal mean monsoon rains (between June and September) has been about +/- 10%.

<sup>29</sup> One of the worst affected regions, the Utter Pradesh, experienced rains 60% lower than average (Source: *The Economist* 20 Aug, 2009).

<sup>30</sup> In 2002 when monsoon rains fell by 19%, GDP growth slowed by 2 percentage points. The impact will however be reduced as the agriculture sector continues to shrink as a proportion of GDP.

<sup>31</sup> This assumes lower global aerosol emissions (Bowen A. and Ranger N. (2009)). The "climate responsible level" is judged to be 44 Gt CO<sub>2e</sub>.

<sup>32</sup> Irrespective of the primary market instrument used.

<sup>33</sup> Notably from Stern, R.Garnaut, McKinsey & Company and the OECD.

<sup>34</sup> There have however been smaller precedents, notably the policy-induced reduction of NOX emissions in the United States.

<sup>35</sup> Includes Indonesia, excludes China and India.

<sup>36</sup> Includes Brazil.

<sup>37</sup> The energy sector accounts for around 15% and the agricultural sector 8% of GDP (ADB (2009)).

<sup>38</sup> Scenario as per the IEA World Energy Outlook 2009.

- <sup>39</sup> Reliance on fossil fuels is projected to fall only marginally (81% to 80%).
- <sup>40</sup> Gratitude is owed to Lord Turnbull for this parallel.
- <sup>41</sup> G20 low carbon competitiveness' by Vivid Economics for The Climate Institute and E3G – September 2009.
- <sup>42</sup> Defined as: "the extent to which it [the country] is able to provide rising prosperity to its citizens".
- <sup>43</sup> Up 30% from 2004.
- <sup>44</sup> These are known as "Renewable Purchase Obligations" (RPO).
- <sup>45</sup> As of end-March 2009.
- <sup>46</sup> *The Economist*, 21 January 2006.
- <sup>47</sup> "Power and Plenty: Trade, War, and the World Economy in the Second Millennium" by Ronald Findlay and Kevin H O'Rourke (Princeton, 2008).
- <sup>48</sup> China's – and India's – drive to "comprehensive national power" is markedly different from the path chosen by Japan (economic) and the Soviet Union (military) and, arguably, modern Russia (economic).
- <sup>49</sup> One of the key differences in the case of India is that since 1991 it has been aided and abetted in its aspirations by the US which under President George W Bush determined to facilitate India's emergence as a superpower.
- <sup>50</sup> "Leadership on world's big issues up for grabs" by Gideon Rachman, *Financial Times*, 29 January 2010.
- <sup>51</sup> "West is wary as Beijing gains clout" by Katrin Bennhold, *International Herald Tribune*, 27 January 2010.
- <sup>52</sup> Ibid.
- <sup>53</sup> "China's peaceful rise turns prickly", by Charles Grant, Centre for European Reform "Insight" paper, 22 January 2010.
- <sup>54</sup> "Crying for freedom", *The Economist*, 16 January 2010.
- <sup>55</sup> "The Geographical Pivot of History" by H J Mackinder, *The Geographical Journal*, vol 23, no 4 (April 1904).
- <sup>56</sup> See also "Energy Security and 'The Global Balkans'" by Alastair Newton, Nomura International plc, 8 September 2009.
- <sup>57</sup> "Power and Plenty: Trade, War, and the World Economy in the Second Millennium" by Ronald Findlay and Kevin H O'Rourke (Princeton, 2008).
- <sup>58</sup> Geographically at least Xinjiang province can similarly be seen as the 'cork' at the eastern end of the 'bottle', albeit one which is, of course, part of China.
- <sup>59</sup> The SCO comprises China, Kazakhstan, Kyrgyzstan, Russia, Tajikistan and Uzbekistan, with India, Mongolia, Iran and Pakistan as observers. Iran and Pakistan have applied for full membership. A 2005 application by the US for observer status was rejected.
- <sup>60</sup> "BRICs helped by Western finance crisis" by Guy Faulconbridge, Reuters, 8 June 2008.
- <sup>61</sup> "Rivals: How the power struggle between China, India and Japan will shape our next decade" by Bill Emmott (Allen Lane, 2008). In fact, as the title of his book suggests, Mr Emmott considers the triangular relationship among China, India and Asia's long-established economic power, Japan, concluding that its future evolution – which is likely to be "a bumpy ride" – is of enormous importance to the world as a whole.
- <sup>62</sup> "A good crisis brings greater influence" by James Lamont, *Financial Times*, 29 January 2010.
- <sup>63</sup> "State of mind: what kind of power will India become?" by Rahul Sagar, *International Affairs*, Volume 85, Number 4, July 2009 (Chatham House), pp801-816.
- <sup>64</sup> Ibid.
- <sup>65</sup> See, eg, "In Spite of the Gods": The Strange Rise of Modern India" by Edward Luce (Little, Brown, 2006) pp281-294.
- <sup>66</sup> "Mapping the Global Future" (National Intelligence Council, 2005).
- <sup>67</sup> In "Global Trends 2025: A Transformed World" published towards the end of 2008, the NIC opined that: "A global multipolar system is emerging with the rise of China, India, and others.... The unprecedented shift in relative wealth and economic power roughly from West to East... will continue. The United States will remain the single most powerful country but will be less dominant."
- <sup>68</sup> Rooted in the first oil shock in 1973, the G7 comprises Canada, France, Germany, Italy, Japan, the UK and the USA and is widely seen as a driving force in globalisation from its creation through to the end of the 20<sup>th</sup> century.
- <sup>69</sup> In our view the turning point in addressing that crisis was the "Declaration of G7 Finance Ministers and Central Bank Governors" which was issued on 30 October 1998 and which set out a wide-ranging menu of reforms to the international financial system – available at <http://www.g8.utoronto.ca/finance/fm103098.htm>. The resultant positive up-tick was such that momentum with that agenda quickly dissipated and, in practice, few of its recommendations and commitments were ever actually implemented, as is underlined by the fact that the current G20 agenda bears a remarkable similarity to the G7's 1998 one.
- <sup>70</sup> Formally, the G7 had semi-evolved into the G8 with the addition of Russia at summit level; but Russia's participation in the G7/8 finance/economic agenda (as opposed to its foreign affairs agenda) remained and remains at best peripheral. On "outreach", G8 latterly initiated G8+5 meetings tacked onto the annual summit, engaging Brazil, China, India, Mexico and South Africa; but these events lacked real substance and any sense of being a meeting of equals.
- <sup>71</sup> The G20 officially comprises: Argentina, Australia, Brazil, Canada, China, France, Germany, India, Indonesia, Italy, Japan, Mexico, Russia, Saudi Arabia, South Africa, South Korea, Turkey, UK and USA plus the rotating EU presidency (currently Spain, which is a member in any case – see below) and the ECB. But, in practice, the European Commission also participates (in addition to a number of international bodies, eg the IMF, World Bank and WTO); and since November 2008 the Netherlands and Spain are also at the table. So "G20" is more than one-third European (yet the EU is hoping to expand its representation still further, demanding a seat for the chair of the Euro-area Group). Nevertheless, it is certainly more globally representative than G7/8 or, indeed, the G8+5 formula, which has been meeting on the margins of G8 for the past few years.
- The G20 was, in fact, born out of the 1998 crisis. But its highest-level meetings prior to the 2008 crisis were of finance ministers and central bank governors, not heads of government/state; and its status in the firmament of global economic governance remained less clear than that of the quasi-official G7.
- The London declaration, which is the principal basis for ongoing work being carried out under the G20 umbrella, can be found at <http://www.londonsummit.gov.uk/en/summit-aims/summit-communique/>.
- <sup>72</sup> "A perilous collision of ideas" by Philip Stephens, *Financial Times*, 2 March 2006.
- <sup>73</sup> *Power and Plenty: Trade, War, and the World Economy in the Second Millennium* by Ronald Findlay and Kevin H O'Rourke (Princeton, 2008).
- <sup>74</sup> The data quoted were compiled by the Stockholm International Peace Research Institute (SIPRI) and were calculated using market exchange rates.
- <sup>75</sup> *The Return of History and the End of Dreams* by Robert Kagan (Alfred A Knopf, 2008).
- Article 9 of the Japanese Constitution is a clause in which the state formally renounces war as a sovereign right and bans settlement of international disputes through the use of force. However, it has been subject to a number of reinterpretations since its coming into force in 1947, including rulings by the Japanese supreme court which have legitimised the principle of armed self-defence.
- <sup>76</sup> *Colossus: The Rise and Fall of the American Empire* by Niall Ferguson (Penguin, 2005).
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