ASIA 2050

Realizing the Asian Century

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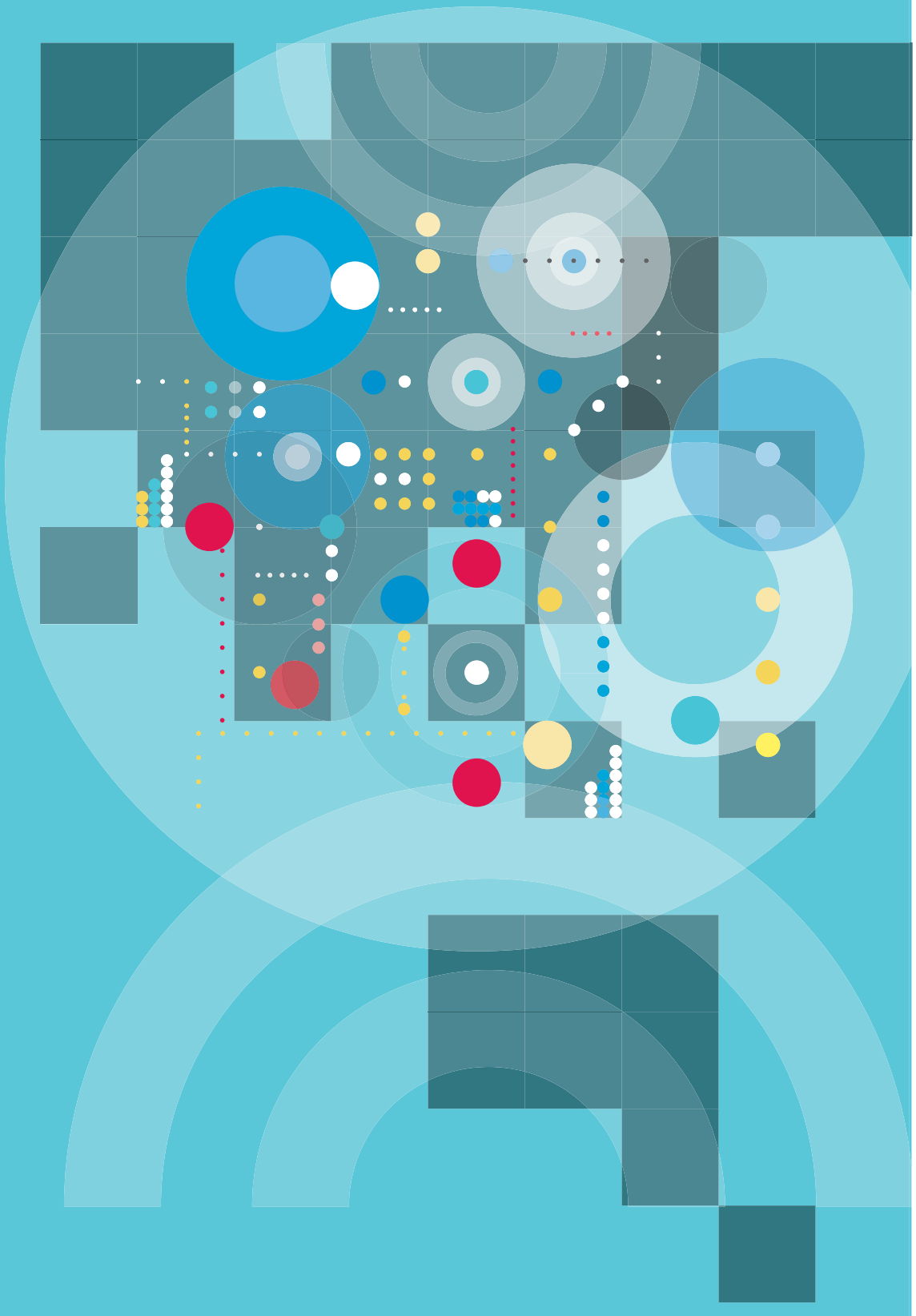

Asia 2050: Realizing the Asian Century

Note: In this publication, “$” refers to US dollars.

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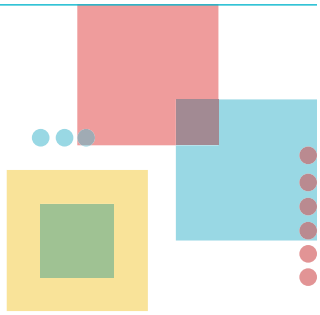

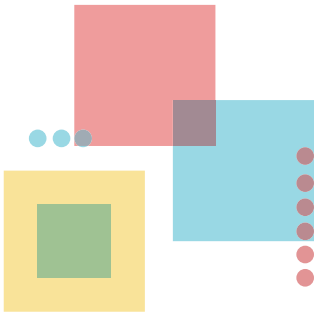

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List of Abbreviations

ADB	Asian Development Bank
AfPak	Afghanistan-Pakistan
AMF	Asian Monetary Fund
ASEAN	Association of Southeast Asian Nations
ASEM	Asia-Europe Meeting
ASX	Australian Stock Exchange
BAU	business as usual
Bcm	billion cubic meters
BCG	Boston Consulting Group
BIS	Bank for International Settlements
BIMSTEC	Bay of Bengal Initiative for Multisectoral Technical and Economic Cooperation
CAREC	Central Asia Regional Economic Cooperation
CO2	carbon dioxide
CCS	carbon capture and storage
DAC	Development Assistance Committee
EFSF	European Financial Stability Fund
EU	European Union
EMEAP	Executive Meeting of the East Asia and Pacific Central Banks
FTA	Free trade area
GDP	gross domestic product
GE	General Electric
GERD	gross expenditure on research and development
GFC	Global Financial Crisis
GMS	Greater Mekong Sub-region Program
HNWI	high net worth individual
IMF	International Monetary Fund
ICP	International Comparison Program (of the World Bank)
ICT	information and communications technology
IEA	International Energy Agency
IEO	Independent Evaluation Office
IOSCO	International Organization of Securities Commissions
MDG	Millennium Development Goals
MER	market exchange rate
Mbd	million barrels per day
Mtoe	million tonnes of oil equivalent
NIE	newly industrialized economies
NIC	newly industrializing countries
OECD	Organization for Economic Cooperation and Development
ODA	Overseas Development Assistance
OTC	over the counter
PISA	Program for International Student Assessment
PPP	purchasing power parity
PPP	public private partnerships
PRC	People's Republic of China
R&D	research and development
SAARC	South Asian Association of Regional Cooperation
SASEC	South Asia Subregional Economic Cooperation
SAGQ	South Asia Growth Quadrangle
SGX	Singapore Exchange
TFP	total factor productivity
TWh	terawatt hours
WTO	World Trade Organization

Foreword

The rapid rise of Asia over the past 4-5 decades has been one of the most successful stories of economic development in recent times. Today, as Asia leads the world out of recession, the global economy's center of gravity is once again shifting toward the region. The transformation underway has the potential to generate per capita income levels in Asia similar to those found in Europe today. By the middle of this century, Asia could account for half of global output, trade, and investment, while also enjoying widespread affluence.

While the realization of this promising outcome—referred to as the "Asian Century"—is plausible, Asia's rise is by no means pre-ordained. Given Asia's diversity and complexity, this rapid rise offers both important opportunities and significant challenges. In its march towards prosperity and a region free of poverty, Asia will need to sustain high growth rates, address widening inequities, and mitigate environmental degradation in the race for resources. In addition, Asian economies must avoid the middle income trap in order to realize the Asian Century.

To meet these challenges, Asian leaders need to devise bold and innovative national policies, while pursuing avenues for regional and global cooperation. Policies that were effective in the past when Asia was largely a low-income, capital-scarce region are less likely to be effective today or in the future. It is in this context that the Asian Development Bank (ADB) commissioned the Asia 2050 study to develop plausible scenarios of where the region could be in 40 years; identify the drivers of change and the policy choices that the region must make; and outline the corresponding national, regional, and global agendas for the region.

To develop a long-term vision for Asia, ADB requested a group of experts to set out a framework to analyze multi-dimensional and multi-generational issues. Most significantly, from the outset, we encouraged extensive consultations to share the findings and receive feedback from policymakers, think tanks, civil society, and academia. Together with the experts, ADB senior staff and my Management Team, I participated in many of these. I am thankful for these frank and intensive discussions that enriched the study.

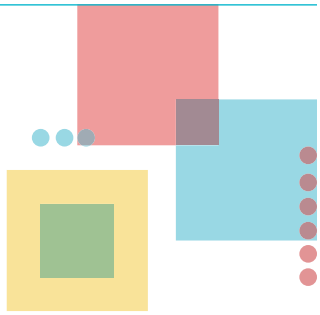
This publication, **Asia 2050: Realizing the Asian Century**, is an overview specifically prepared for the Governors' Seminar at the 44th Annual General Meeting of the ADB to be held in Hanoi on 5–6 May 2011. With inputs from the Governors' Seminar, this publication will be expanded into a comprehensive book in August 2011. Since the Asia 2050 study was commissioned to foster a debate on development challenges in Asia, ADB will continue the consultative process and my management team and I will join as many of the discussions as possible.

The changes in policies and strategies outlined in this publication that are needed to address the challenges that Asia faces will likely have long gestation periods. We must therefore act now. The failure to meet these challenges would deprive Asians of potential affluence and greater well-being for a generation or more.

I recommend this overview to all those interested in the long-term economic and social development of Asia. And, as always, we would greatly appreciate your feedback.

Haruhiko Kuroda
President
Asian Development Bank

Preface



This study is aimed at senior policy makers, top business leaders and key opinion makers within Asia to help forge a consensus on a vision of and strategy for Asia's potentially historic rise among the global community of nations between now and 2050.

The study offers a long-term perspective of the Asia region as a whole as opposed to the more common approach that delivers a short- to medium-term perspective of selected countries, subregions or issues. The study attempts to add new value and insights particularly in the following five respects:

- First, it challenges the growing perception that Asia's rapid rise in the global economy is inevitable, as if the region is on "autopilot." The report highlights significant risks that could lead to economic, social and even political instability and, in turn, derail economic development and growth. This extensive list of risks, includes, but is not limited to: continuing, or increasing, social disparities and inequities; People's Republic of China (PRC), India and many others falling into the Middle Income Trap (Chapter 5, Box 1); and steady decline in the quality and credibility of institutions (political, economic, police, judiciary). Given the economic history of other once successful regions and countries (notably Japan and Brazil before and after the 1980s), it cautions policy makers and business leaders against becoming complacent.
- Second, the study highlights new challenges that the current middle income economies—such as PRC, India, Indonesia, Thailand and Viet Nam—will have to overcome in the next 40 years and that the newly industrialized countries did not have to face during the past 40 (slower growing, less confident and more inward looking North America and Europe; likely intensive competition for finite natural resources; adverse impact of climate change; need to go beyond the current global best practice, and so on).
- Third, it outlines the prerequisites and strategy for Asia as a whole to continue its rapid development (e.g., need for a new pattern of growth; greater focus on inclusive growth and urbanization) while avoiding the Middle Income Trap.
- Fourth, it examines the prospects and options for Asian regional cooperation and integration. It argues for an unhindered flow of trade and investments throughout Asia based on a bottom-up market-based approach, as well as greater collaboration between countries permitting them to prosper together in a peaceful and harmonious manner.
- Fifth, it highlights the opportunities and obligations that would arise out of Asia's rapidly expanding global presence. Managing this unprecedented rise in a peaceful and harmonious manner will require patience and humility on the part of all major Asian players.

Executive Summary and Conclusions

Asia is in the midst of a truly historic transformation. If it continues to grow on its recent trajectory, it could, by 2050, account for more than half of global Gross Domestic Product (GDP), trade and investment, and enjoy widespread affluence. Its per capita income could rise sixfold to reach the global average and be similar to European levels today (though Europe and North America will remain much richer in per capita terms). It thus holds the promise of making some 3 billion additional Asians, hitherto commonly associated with poverty and deprivation, affluent by today's standards. By nearly doubling its share of global GDP (at market exchange rates) from 27 percent in 2010 to 51 percent by 2050, Asia would regain the dominant global economic position it held some 250 year ago, before the Industrial Revolution. Some have called this possibility the "Asian Century".

While this promising outcome, premised on the major economies sustaining the present growth trajectory, is plausible, it does not imply that the path ahead is just doing more of the same. Indeed, just maintaining the present growth momentum will require a different pattern of growth and urgent tackling of a broad array of politically difficult issues over a long and sustained period. Asia's rise is by no means preordained.

Indeed, this outcome is fraught with multiple risks and challenges, particularly:

- Large and, in some cases, increasing inequities within countries could undermine social cohesion and political stability.
- Individual countries risk falling into the Middle Income Trap due to a host of domestic economic, social and political challenges.
- Intense competition for finite natural resources (such as energy, water and fertile land) unleashed by this growth, as the newly affluent Asians aspire to higher standards of living.
- Rising disparities across countries and subregions could destabilize the region and halt its growth momentum.
- Global warming and climate change (including increased natural disasters), as well as associated water shortages, could threaten agricultural production, coastal populations and numerous major urban areas.
- In addition, almost all countries face the overarching challenge of governance and institutional capacity.

These challenges are not mutually exclusive. They can impact one another and multiply existing tensions, unrest, and conflicts, or even create new pressure points within and across Asia that threaten its growth, stability, and security.

Based on Asia's record over the past twenty-five years, it is possible to categorize Asian economies into three groups. Seven[1] have grown rapidly since the 1950s, avoiding the Middle Income Trap and becoming high-income developed economies in one generation. Another 11 economies[2], including the two giant economies of the People's Republic of China (PRC) and India, have demonstrated consistently high growth since 1990 and already reached middle income status, but they now face the greatest risk of falling into the Middle Income Trap (Box 1). Several of these economies, or the larger ones, could easily derail the enticing prospect of the Asian Century. Finally, 31 economies—including a large number of smaller countries—have achieved only modest or low long-term growth.[3] Their success in joining the ranks

1 Brunei Darussalam; Hong Kong, China; Japan; Republic of Korea; Macau, China; Singapore; and Taipei,China; these economies have per capita income over $12,196.
2 Armenia; Azerbaijan; Cambodia; PRC; Georgia; India; Indonesia; Kazakhstan; Malaysia; Thailand; and Viet Nam.
3 In this study, Asia is defined to comprise three Asian subregions; East Asia and the Pacific (including Democratic People's Republic of Korea); South Asia;

Box 1 | The Asia-7—engines of Asia's re-emergence

Asia's rise will be led by PRC, India, Indonesia, Japan, Republic of Korea, Malaysia, and Thailand. In 2010 these seven economies had a combined total population of 3.1 billion (78 percent of Asia) and a GDP of $14.2 trillion (87 percent of Asia). By 2050 their share in population is expected to fall to 73 percent of Asia, while the share of GDP rises to 90 percent. These seven economies alone will account for 45 percent of global GDP. Their average per capita income of $45,800 (PPP) would be 25 percent higher than the global average of $36,600.

of the fast-growing group would significantly facilitate the spread of affluence to all Asians.

This report postulates two scenarios of Asia's future growth trajectory: the Asian Century and Middle Income Trap scenarios (paragraphs 35 and 36). But these scenarios are by no means exhaustive—instead they are only two possible trajectories of how the future may unfold. They have a single objective: to draw attention to the longer-term implications of the broad trends and to ask what-if questions.

and Central Asia (including Iran). The 49 economies covered are: Afghanistan; Armenia; Azerbaijan; Bangladesh; Bhutan; Brunei Darussalam; Cambodia; People's Republic of China (PRC); Cook Islands; Democratic People's Republic of Korea; Fiji; Georgia; Hong Kong, China; India; Indonesia; Iran; Japan; Kazakhstan; Kiribati; Republic of Korea; Kyrgyz Republic; Lao PDR; Macau, China; Malaysia; Maldives; Marshall Islands; Federated States of Micronesia; Mongolia; Myanmar; Nauru; Nepal; Pakistan; Palau; Papua New Guinea; Philippines; Samoa; Singapore; Solomon Islands; Sri Lanka; Taipei,China; Thailand; Tajikistan; Timor-Leste; Tonga; Turkmenistan; Tuvalu; Uzbekistan; Vanuatu; and Viet Nam.

"The Asian Century scenario extends Asia's past success into the future, putting it on the cusp of a truly historic transformation

Makings of the Asian Century

The Asian Century scenario essentially extends Asia's past success into the future, putting it on the cusp of a truly historic transformation. In this scenario, Asia's GDP (market exchange rates) would increase from $16 trillion in 2010 to $148 trillion in 2050, or half of global GDP, similar to its share of the global population. With a per capita GDP of $38,600 (PPP), Asia in 2050 would have incomes similar to Europe today. It would have no poor countries (with average per capita GDP of less than $1,000), compared with seven today. All this assumes that Asian economies can maintain their momentum for another 40 years and adapt to shifting global economic and technological environment by continually recreating their comparative advantage.

Actions at three levels

But in its march towards the Asian Century, the region must tackle daunting policy, institutional and governance challenges along the way. Given widely varying country conditions, the precise actions and their timing must vary. Still, it is possible to draw the contours of the major changes necessary for the region along three dimensions: (i) national strategic and policy actions; (ii) collective regional actions to bridge the national and global agendas; and (iii) Asia's interactions with the global community (Figure 1). The ability of the diverse countries in Asia to realize the promise of the Asian Century will be determined by their success, individually and collectively, in addressing these imperatives.

National action agenda

Seven overarching inter-generational issues and strategic changes require action at the national level

"Seven overarching multigenerational issues and strategic changes require action at the national level throughout the region

Figure 1 **Strategic framework**

throughout the region:

Growth with inclusion

Growth and inclusion need not be mutually exclusive; indeed they can be mutually reinforcing. To sustain growth over the long-term, almost all Asian countries must give much higher priority to inclusion and reducing inequalities—rich/poor, rural/urban, educated/uneducated and along ethnic lines. Countries should give highest priority to education and developing human capital, with a focus on women, essential to fully realize the demographic dividend. Increasing access to quality infrastructure services will be important. Urban inequality, which has been rising in parts of Asia, will need to be addressed. Rural development—including agriculture—will remain important in all low and middle income economies to uplift millions of Asians still resident in rural areas. However, rural development is not an alternative to urban development. They complement each other.

Financial transformation

As its share of global GDP rises to 50 percent or more, Asia should also have about the same share of global financial assets, the banking sector, equity and bond markets etc. In transforming its financial systems, Asian leaders must remain mindful of the lessons of the 1997 Asian Financial Crisis and the Great Recession (sometimes also referred to as the Global Financial Crisis) of 2007–09. Above all, Asia must avoid falling prey to another bubble of excessively exuberant expectations. It will need to formulate its own financial model, avoiding both the overreliance on self-regulation by markets—that caused the Great Recession—and the current excessive central government control of banking dominated financial systems in many parts of Asia, and becoming more open to institutional innovation. There is also an urgent need to develop financial instruments and create an enabling environment for financing Asia's massive infrastructure and urbanization needs through public-private partnerships and public financial markets. In Northeast Asia (Japan, Republic of Korea and PRC), the special needs of ageing societies demand greater attention. National reforms should create conditions to facilitate regional (and global) financial integration at the right time.

Managing massive urbanization

Between now and 2050, Asia will be transformed as its urban population nearly doubles from 1.6 billion to 3.1 billion, truly staggering and truly historic (Table 1). Asia's cities, which already account for more than 80 percent of economic output, will be the centers of higher education, innovation and technological development. Urban buildings and transport would account for the bulk of energy consumption and carbon emissions. The quality and efficiency of urban areas will thus increasingly determine Asia's long-term

> **"In the future, the converging Asian economies and, particularly, PRC and India must move from catch-up to frontier entrepreneurship and innovation**

competitiveness and social and political stability. Asia must take advantage of being early on its urbanization growth curve, to manage its coming rapid urbanization by promoting compact, energy-efficient, safe and livable cities—more reliant on mass transit than on cars. It must also manage some significant risks, particularly those associated with inequality, slums and a breakdown of social cohesion. Better financing and management of cities will require long-term planning and visionary leadership, further decentralization of responsibility to local governments, more local accountability and greater market financing of urban capital investments.

Table 1 **Asia's urban population will nearly double by 2050**

Asian Urbanization	2010	2050
Total Urban Population (millions)	**1,649**	**3,247**
Northeast Asia	805	1,284
South Asia	496	1,261
Southeast Asia	252	520
Central Asia	96	182
Urbanization (%)	**41%**	**64%**
Northeast Asia	50%	74%
South Asia	30%	55%
Southeast Asia	42%	65%
Central Asia	52%	67%

Source: UN World Urbanization Prospects, 2007 Revision.

Radical reduction in the intensity of energy and natural resource use

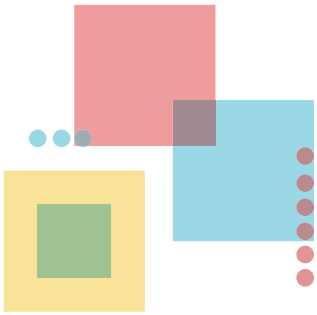
The anticipated affluence of some 3 billion additional Asians will put tremendous pressures on—and create intense competition for—Earth's finite natural resources. Long before 2050, Asia will surpass North America and Europe as the largest energy consuming block. It will be most affected by, and most responsible for, excessive reliance on energy imports. To preserve its economic interests, it will need to take the lead in radical energy efficiency and diversification programs based on eliminating energy subsidies and switching from fossil fuels to renewable energy[4]. There will be similar issues for most other natural resources, including water and fertile land for food production. The only way out is a combination of price increases, technological breakthroughs and changes in consumption patterns. Note the strong synergy between energy efficiency and total factor productivity growth, which is needed for sustained global competitiveness. The key policy implication for all Asian countries is that their future competitiveness and well-being will depend heavily on improving the efficiency of natural resource use and winning the global race to a low carbon future.

Entrepreneurship, innovation and technological development

The continuing rapid growth of Asian economies over the next 40 years will require harnessing the full potential of technology, innovation and, critically, entrepreneurship. The model in Asia so far, with few exceptions, has been "catching up" with the more advanced economies and adapting the technologies developed there to produce for western markets. That is no longer adequate. More Asian countries need to emulate Japan, Singapore and Republic of Korea and come closer to, or preferably become, the global best practice. In the future, the converging Asian economies and, particularly, PRC and India must move from catch-up to frontier entrepreneurship and innovation to create breakthroughs in science and technology, joining the ranks of Japan, Republic of Korea and other high-income economies. A particularly fruitful

4 It is still too early to assess as to how the March 2011 nuclear incident in Japan would affect the future role and prospects of nuclear energy.

“ High quality institutions will help the fast growing countries avoid the Middle Income Trap



area, where PRC and India have already demonstrated notable successes, will be frugal innovation to meet the needs of millions of people with modest incomes or the so called bottom of the pyramid. The core requirement—where many Asian economies fall short—is quality education at all levels that promotes creativity, supported by an eco-system necessary to foster innovation and entrepreneurship.

Governance and institutions

All countries must improve governance and continually transform their institutions. The recent deterioration in the quality and credibility of national political and economic institutions (illustrated by rising corruption) is a serious concern and likely to become a binding constraint to growth. High quality institutions will help the fast growing countries avoid the Middle Income Trap, and the slower growing countries establish the basic institutions for moving toward sustained economic growth. Managing the common challenges—be they rapid urbanization, building a fundamentally sound financial sector, or fostering entrepreneurship and innovation—requires effective governance, both at the central and local level. Asia must modernize governance and retool its institutions with an emphasis on transparency, accountability and enforceability

From growth to well-being

As more countries emulate the past economic success of Japan, Singapore and Republic of Korea and become high income, they will need to move toward new policies that promote broader social well-being, self-satisfaction and happiness. Just as inclusion will be important to maintain social cohesion and political stability in low and middle income countries, a greater focus on personal satisfaction and harmony with nature, rather than more wealth, will be important for the affluent countries. This requires a dialogue within Asia to understand what can be done to improve well-being and what that implies for the region's growth model. It may be time to begin defining measures of well-being and incorporating them in national surveys.

Priorities for national action

While these inter-generational issues apply to most Asian economies, their relative priority will vary over time, depending on the group a country belongs to at a given time:

Slow or modest growth, aspiring Asia

The highest priority of this group—which includes both low[5] and lower-middle[6] income economies ranging from Nepal to Tajikistan—must be to raise economic growth to approach those of their more successful Asian neighbors. They should aim at joining the group of convergers[7] by focusing on the fundamentals of development: promoting faster and more inclusive growth by reducing inequalities through better education for all, infrastructure development and major improvements in institutions, the business environment and openness to external markets.

Fast-growing converging economies

Avoiding the Middle Income Trap should be the paramount objective of the fast growing economies. They should—in addition to further reducing inequalities and consolidating the fundamentals of development—train a world-class skilled labor force and build credible and predictable institutions that protect the property (physical and intellectual) rights and allow fair dispute resolution. Constantly improving the business climate

5 Per capita income of less than US $995.
6 Per capita income between $996-$3945.
7 Economies that have successfully converged with high income economies over an extended period (25 years plus) through productivity gains.

will be key. In addition, they will need a new vision in four crucial areas: to transform their financial systems to support development of the real sector while promoting stability and minimizing volatility in the markets; to manage the challenges of rapid urbanization; to dramatically improve the efficiency of energy use and other natural resources; and to promote innovation and entrepreneurship for enhanced productivity and competitiveness.

High income, developed economies

This group—especially Japan, Republic of Korea and Singapore—should lead the rest of Asia in two particular areas. First, through scientific and technological breakthroughs in areas of special importance to Asia, such as biotechnology, medical care for the aged and mitigating climate change. And second in moving beyond achieving high economic growth toward promoting broader social well-being and happiness.

As countries develop and their institutional capacities improve, they will graduate from their current country grouping to the next—from non-convergers to convergers, and from middle income convergers to high income[8] or developed economy leaders.

Asia's high income countries and even some middle income countries such as PRC face the singular challenge of ageing—of the very generation that created the Asian miracle. These demographic realities will not only translate into new (more modest) economic realities, but also into new inter-generational expectations and relations. These in turn will affect all aspects of governance and call for wide-ranging institutional adjustments, raising issues of fiscal affordability and sustainability.

8 Per capita income of $12,196 or more.

"Regional cooperation and integration are critical for Asia's march towards prosperity

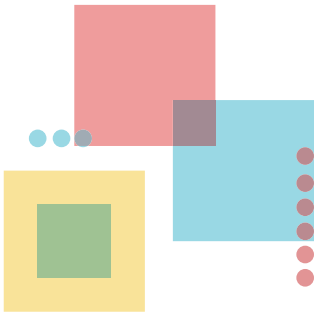
Throughout Asia, an expanding middle class—itself a desirable product of rapid socioeconomic growth—will also exert new demands for greater voice and participation, greater accountability for results, and greater personal space. The quality of communication and the mutual respect between those who govern and those who are governed will become paramount as new social media and other yet unknown tools will be available to the public, as recent events in the Middle East have amply illustrated.

Although daunting, the eradication of corruption is critical for all countries to maintain social and political stability and retain legitimacy.

Regional cooperation and collaboration

Regional cooperation and integration are critical for Asia's march towards prosperity. Greater regional cooperation and collaboration will become significantly more important for six reasons. First, cementing Asia's hard-won economic gains in the face of vulnerabilities to external shocks. Second, regional cooperation and collaboration could be an important bridge between individual Asian countries and the rest of the world, and also as leverage for policy makers to implement domestic reforms that face resistance from entrenched interest groups. To have its voice and influence commensurate with its economic weight, Asian economies will need to coordinate, even harmonize, their geopolitical positions on a range of global issues. This can be done only through genuine and regular regional dialogue and cooperation. Third, as Asian economies rebalance growth towards "internal" (domestic and regional) demand, transport and energy connectivity will pave the way for creation of a single market. To sustain regionwide economic growth, they need to fully open their markets to neighbors in the region (in the same way the US and European markets have been open to Asia since World War II). This will allow

“The region will need to take greater ownership of the global commons, including an open trading system, stable financial system, climate change, and peace and security



unhindered flow of trade and investments (and more labor mobility, particularly of skilled labor) throughout Asia. Fourth, regional cooperation and development assistance can help reduce cross-country disparities in income and opportunities, which if left unchecked, could breed instability or even spark conflicts in parts of Asia. Fifth, collaboration in technological development, energy security, and disaster preparedness can yield significant synergies and positive spillovers. And sixth, skillful and cooperative management of regional commons will become increasingly important for Asia’s long-term stability, peace and harmony.

Avoiding conflict between mega economies and nuclear states, and maintaining social and political stability in the region will be paramount. Given its diversity and heterogeneity, Asia will need to develop its own unique model of regional cooperation and integration that builds on the past positive experience: a market-driven, bottom-up and pragmatic approach that facilitates free regional trade and investment flows. This model could build on the ASEAN experience and gradually include more economies over time, eventually resulting in unhindered flow of trade and investments throughout Asia as well as some labor mobility. The aim of these spontaneous actions and government initiatives is to accomplish the creation of an Asian economic community. Such an approach will require stronger—though not necessarily new—regional institutions.

The creation of an integrated and effective Asian economic community must be based on two general principles—openness and transparency. Openness will be a continuation of Asia’s long-standing policy of open regionalism. It also encourages regional institutions to make the most of existing global institutions and conventions. Meanwhile, transparency will enhance accountability and strengthen governance.

Crucial for increased regional cooperation is strong political leadership. Given the region’s diversity, building Asia’s regionalism would require collective leadership that requires the recognition of adequate balance of power among all participants. Major existing economic powers like Japan and Republic of Korea, as well as emerging ones such as PRC, India and Indonesia will have an important role in integrating Asia and shaping its role in the global economy.

Global agenda

Asia’s growth and larger footprint in the global economy will bring with it new challenges, responsibilities and obligations. The region will need to take greater ownership of the global commons, including an open trading system, stable financial system, climate change, and peace and security. It will need to gradually transform from a passive onlooker in the debate on global rule-making and a reticent follower of the rules, to an active participant in the debate and a constructive formulator of the rules. While formulating its domestic or regional policy agenda, the region as a whole, but also the larger economies—PRC, India, Indonesia, Japan and Republic of Korea—will need to take into account the regional and global implications. The region will need to delicately “manage” its rapidly rising role as a major player in global governance in a non-assertive and constructive way. As an emerging global leader, Asia should act as—and be seen as—a responsible global citizen.

In this context, Developing Asia’s stance on climate change requires a fundamental reassessment. This study demonstrates that early and aggressive action on climate change is in Asia’s self-interest—socially, economically and politically. A change in its current stance will also be an early demonstration to the world that Asia is willing and able to play a constructive role in preserving the global commons.

"The agenda in this report—national, regional and global—is broad ranging and requires far-sighted leadership

As Asia becomes the center of the global economy, it will be in its self-interest that the rest of world is also doing well economically and politically. Peace and security throughout the world will be essential for its long-term prosperity.

Asia's efforts to enhance regional cooperation must not be at the cost of Asia's traditional openness to the rest of the world. Asia must adhere to its long standing strategy of "open regionalism."

Need for enhanced resilience

Asia's rise will almost certainly not be smooth. Economic history teaches us that there will be many ups and downs along the way. For example, in the past 40 years, financial crises have reoccurred roughly once every 10 years. It is most likely that between now and 2050, there will be major crises: financial or economic (even social and political). How countries navigate through them will decide Asia's fortunes. Fortunately, with each successive crisis, Asia has demonstrated a growing capacity to manage crises. The region's much enhanced resilience to external shocks was demonstrated vividly during the Great Recession, as it became the first region to recover, with a V-shaped recovery. But the region must not become complacent. It must continue to reinforce its resilience by following prudent macro-economic, fiscal and monetary policies and by making its financial systems more robust. Overall, the adaptability, flexibility and capacity to respond to the changing global economic landscape will carry a high premium.

Asian Century vs. Middle Income Trap scenario: dramatic difference in outcome

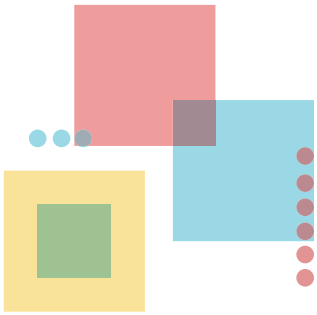
The agenda in this report—national, regional and global—is broad ranging and requires far-sighted leadership. It is daunting but also necessary that the region realizes the opportunity that lies before it. Which and how many countries will meet this challenge? The answer is far from clear. Given this reality and uncertainties about the various drivers, the report postulates two quantitative scenarios with very different outcomes. The discussion above is based on the optimistic Asian Century scenario. But this scenario is by no means preordained.

The Asian Century scenario assumes that: (i) the eleven economies with a demonstrated past record of sustained convergence to the best global practice over the past 30 plus years would continue to do so over the next forty years; and (ii) countries accounting for roughly forty percent of the GDP and population of the remaining (currently non-converging, aspiring) economies would succeed in becoming convergers by 2020. This will significantly raise their economic growth between 2020 and 2050, and bring their societies closer to affluence. Under this scenario some 3 billion additional Asians would become affluent between now and 2050. This should be considered the desired or ideal scenario for Asia as a whole.

The Middle Income Trap scenario, assumes that the current converging economies would fall into the Middle Income Trap in the next 5-10 years, without any of the current non-convergers improving upon their past record; in other words, Asia would follow the pattern of Latin America over the past 30 years. This could be treated as the pessimistic scenario and a wakeup call to Asian leaders.

Long-term projections of Asia through 2050 cannot rule out the possibility of a "perfect storm" scenario, whereby the combination of bad macro-policies, exuberance combined with lax financial sector supervision, conflicts, natural disaster/climate change risks, demographic and weak governance could lead to a major setback to Asian growth. Under this worst

“If today’s fast-growing Asian economies become mired in the Middle Income Trap, Asia would fall far short of the Asian Century



case—or Doomsday—scenario, Asia could stumble into a financial meltdown, major conflicts or region-wide chaos well before 2050. While it is not possible to quantify the scenario, clearly Asia must be aware of such a catastrophic situation and avoid it at all costs. There will be a huge difference in the outcomes under the two scenarios quantified here. The economic and social costs of missing the Asian Century are truly staggering. If today’s fast-growing Asian economies become mired in the Middle Income Trap, Asia would fall far short of the Asian Century. Total GDP in 2050 would reach only $61 trillion, not $148 trillion (at market exchange rates) (Figure 2). GDP per capita would be only $20,300, not $38,600, in PPP. Such an outcome would deprive billions of Asians of a lifetime of affluence and well-being.

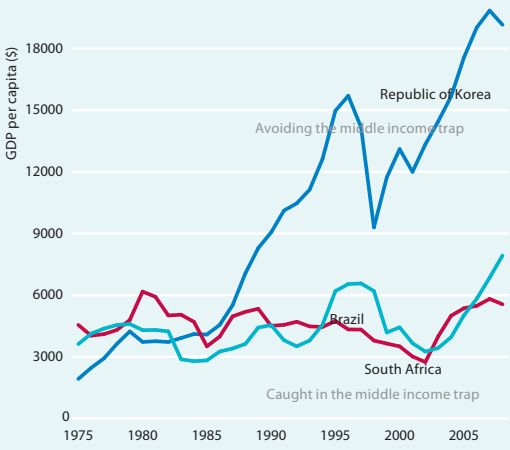
The intangibles

Four overriding non-tangibles will ultimately determine Asia’s long-term destiny. First is the ability of Asia’s leaders to persevere during the inevitable ups and downs and to focus on the long-term. Implementing the vision, strategy, policies, and institution building proposed here will place a tremendous premium on mature, far-sighted and enlightened leadership. The region’s ability to maintain the current momentum for another 40 years, which will require continual adjustments in strategy and policies to respond to changing circumstances and shifting comparative advantages. Second, will be the willingness and ability of all Asians to emulate the success of East Asia to adopt a so far pragmatic rather than ideological approach to policy

Box 2 The Middle Income Trap: unable to compete

The Middle Income Trap refers to countries stagnating and not growing to advanced country levels. This is illustrated in the figure, which plots the per capita incomes of three middle income countries between 1975 and 2005. In a steadily growing economy, the per capita GDP would rise continuously over time, towards higher incomes. That is the experience of Republic of Korea. But many middle income countries do not follow this pattern. Instead, they have short periods of growth followed by periods of stagnation or even decline, or are stuck at low growth rates.

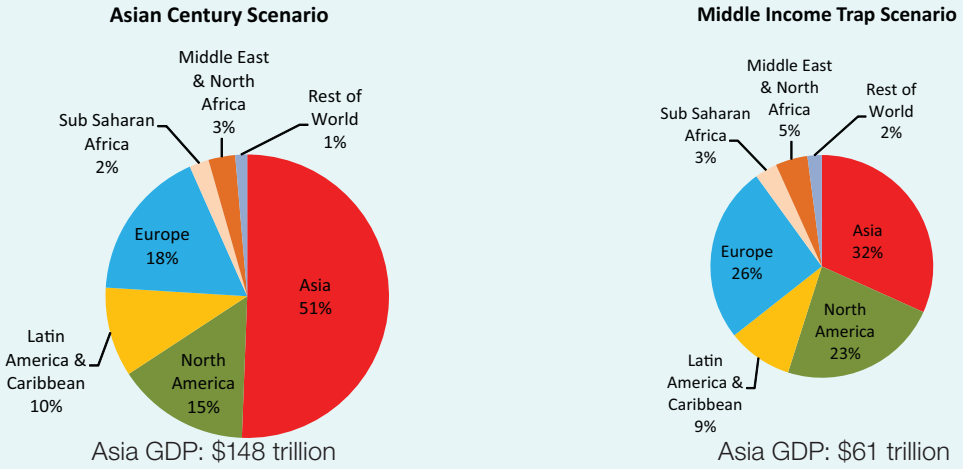
They are caught in the Middle Income Trap—unable to compete with low income, low wage economies in manufacturing exports and unable to compete with advanced economies in high skill innovations. Put another way, such countries cannot make a timely transition from resource-driven growth, with low cost labor and capital, to productivity-driven growth.



Source: IMF World Economic Outlook, October 2010.

"Implementing the vision, strategy, policies, and institution building proposed here will place a tremendous premium on mature, far-sighted and enlightened leadership

Figure 2 **Asian Century vs. Middle Income Trap**



Source: Centennial Group projections.

formulation and to keep a laser like focus on results. Third is Asia's success in building much greater mutual trust and confidence between the major economies, vital for effective regional cooperation and collaboration. And fourth is the commitment and ability of Asian leaders to modernize governance and retool institutions, while enhancing transparency and accountability.

The changes in policies and strategies proposed here, and related institutional reforms, have long gestation periods spanning many decades. The future—2050—will be here before we know it, and Asian leaders must begin to act now.

Background and Introduction

1

What is "Asia"?

Asia is an expansive and heterogeneous region—physically, socially, politically and economically. It includes some of the world's largest, most competitive and most sophisticated economies, such as Japan, Hong Kong, China, Singapore and Republic of Korea. People's Republic of China (PRC), India, Indonesia, and Viet Nam are fast emerging as important global players. They co-exist with numerous small, under-developed and, often, fragile economies such as Afghanistan, Nepal and many Pacific Islands.

There are vast differences and—until recently—only limited physical and economic links among the three subregions: East Asia and the Pacific, South Asia and Central Asia. Unlike the atmosphere of shared ancestry in Europe, Asian nations are not linked by a common history, culture, religion or heritage. Asians speak dozens of languages without a common root, such as Greek or Latin, the basis of most European languages. Often, individual Asian countries have stronger economic and social ties with nations outside Asia than with those within the region.

So, what is Asia? The notion that, given its size and diversity, it is merely an idealistic concept incorporating distinct subregions and peoples rather than a homogeneous entity is not correct. Today's Asia, even with its geographical, political, linguistic and cultural diversity, shares one overriding common trait—the pursuit of rapid economic and social development encompassing almost 60 percent of the world's current population.[1] All Asian societies also place a high premium on education, the work ethic and a sense of broader common good.

The promise of rapid economic growth and the ability to realize such aspirations was first evidenced by Japan's transformation to a rich country within the span of a generation (a feat since emulated by Republic of Korea, Taipei,China, Hong Kong, China and Singapore). Malaysia and Thailand, once among the poorest, have solidly established themselves as upper-middle income countries[2]. And two of the region's largest countries, PRC and India, are now advancing at an impressive pace to join the ranks of the rich. Indonesia and Viet Nam are growing rapidly. It is therefore no surprise that all of Asia, despite its heterogeneity, aspires to emulate these success stories.

When considering Asia's economic and social prospects and challenges, it is important to keep in mind the many paradoxes that abound in the region. While it is the world's fastest growing region, Asia is still home to nearly half of the world's absolute poor (with per capita incomes of less than US$1.25 a day). Asia has become the global hub of manufacturing and information technology services, and yet vast numbers of its people are illiterate or unemployed. The rapid ageing of societies is a particular concern in Japan, Republic of Korea and PRC, while Pakistan, the Philippines and many Central Asian republics still have high population growth rates. The region is home to the largest savings pool in the world and the largest net lender to the developed countries, but it simultaneously has massive unmet investment needs at home—particularly in infrastructure and urbanization. And in contrast to its superiority in manufacturing and information technology services, Asia's financial sector is underdeveloped; it is more

1 In this study, Asia is defined to comprise three Asian subregions; East Asia and the Pacific (including Democratic People's Republic of Korea); South Asia; and Central Asia (including Iran). The 49 developed economies covered are: Afghanistan; Armenia; Azerbaijan; Bangladesh; Bhutan; Brunei Darussalam; Cambodia; People's Republic of China (PRC); Cook Islands; Democratic People's Republic of Korea; Fiji; Georgia; Hong Kong, China; India; Indonesia; Iran; Japan; Kazakhstan; Kiribati; Republic of Korea; Kyrgyz Republic; Lao PDR; Macau, China; Malaysia; Maldives; Marshall Islands; Federated States of Micronesia; Mongolia; Myanmar; Nauru; Nepal; Pakistan; Palau; Papua New Guinea; Philippines; Samoa; Singapore; Solomon Islands; Sri Lanka; Taipei,China; Thailand; Tajikistan; Timor-Leste; Tonga; Turkmenistan; Tuvalu; Uzbekistan; Vanuatu; and Viet Nam.

2 Per capita income between $3,946-$12,196.

"Amidst the excitement about the transformations taking place in Asia, it is also important to recognize that Asia faces a number of mega challenges

efficient to intermediate its savings in European and North American financial centers than to rely on its own financial markets.

Despite these paradoxes, the speed and extent of Asia's economic and social progress during the past 40 years is undeniable. Indeed, it remains unprecedented. In many respects, the region has become an object of global envy.

Asia is booming. On many dimensions, Asia's development performance in the 21st century has been its best so far. The incomes in Developing Asia reached nearly $5,000 in purchasing power parity terms in 2010, growing 9.4 percent annually over the decade 2001-2010. Investment rates reached record highs, averaging 35 percent of GDP over the decade, suggesting enormous confidence in the region's future. The average annual growth of exports was 11.4 percent. Net inflows of private capital into the region averaged $83 billion a year. External debt fell to 14.5 percent of GDP. And foreign exchange reserves of $3.5 trillion were accumulated in Developing Asian countries alone.

By some estimates, Asian countries could have reduced poverty ($1.25 a day) by 430 million people between 2005 and 2010, 93 percent of the global poverty reduction in this time frame.[3] By all accounts, Asia is increasingly becoming a middle income region. According to the IMF, only seven Asian countries[4] had per capita incomes of less than $1,000 in 2010.

The aggregate numbers are of course heavily influenced by Asia's two population giants, PRC and India, but development performance is impressively broad-based. Eleven Developing Asian countries have grown at more than 3.5 percent per capita since 2000[5], a rate that doubles incomes in 20 years. Four of the top five performers in the most recent OECD Program for International Student Assessment (PISA) are Asian: Shanghai-PRC; Republic of Korea; Hong Kong, China; and Singapore.[6] Japan, PRC and Republic of Korea are among the top countries in terms of number of patents registered by the World International Patent Office. The region's quick V-shaped recovery from the Great Recession of 2007–09 is another indicator of Asia's economic prowess and resilience.

Is the "Asian Century" preordained?

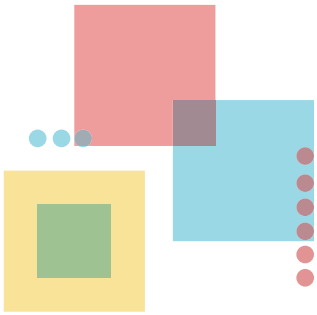
Given all this, it has become fashionable to talk about the "Asian Century." The impression has been created that the ascendency of Asia is somehow an immutable fact and the only question is merely when PRC and India will become the largest and second largest global economies, as if the countries are on autopilot, gliding smoothly to their rightful destiny.

Amidst the excitement about the transformations taking place in Asia, it is also important to recognize that Asia faces a number of mega challenges: (i) large and, in some cases, rising inequities and disparities within countries that could alter the political and social fabric of the region; (ii) the risk of falling into the Middle Income Trap due to a host of economic, social and political challenges faced by individual countries; (iii) intense competition for finite natural resources (energy, other minerals, water and fertile land) that would be unleashed in the next 40 years as some 3 billion additional Asians become much more affluent and strive to achieve even higher living standards; (iv) the potential sharp rise in disparities across countries

3 L. Chandy and G. Gertz, "Poverty by the Numbers," Washington, DC: Brookings Institution, January 2011.
4 Afghanistan, Bangladesh, Cambodia, Lao PDR, Myanmar, Nepal and Timor-Leste.

5 The 11 countries are: Afghanistan, Bangladesh, Cambodia, PRC, India, Indonesia, Lao PDR, Maldives, Myanmar, Sri Lanka, and Viet Nam. Data from IMF World Economic Outlook, October 2010.
6 *PISA 2009 Results*, OECD (2010). PISA assesses reading, mathematics and science skills for 15-year olds.

“In addition there is the overarching challenge of governance, improvements in which will be the key to overcoming all other challenges



and subregions if the past differentials in relative growth rates continue between now and 2050 that in turn would destabilize the countries and subregions concerned; and (v) global warming and climate change. The risks arising from climate change and associated water shortages extend not only to the vast populations that inhabit coastal areas but also to areas that rely heavily on agricultural production. Increased incidence of natural disasters could affect vast numbers of people throughout Asia.

In addition there is the overarching challenge of governance, improvements in which will be the key to overcoming all other challenges. If current adverse trends in the quality of institutions and in rising corruption continue unchecked, the ability to sustain the growth momentum would be severely jeopardized.

Asian countries thus face a long list of challenges that must be tackled at the national and/or regional level if individual countries are to realize the promise and sustainability of rapid economic growth.

These challenges are not mutually exclusive. They can impact one another and multiply existing tensions, unrest, and conflicts, or even create new pressure points within and across Asia that threaten its growth, stability, and security. If the inter-generational issues highlighted in this report are not addressed, many in a collaborative and collective manner, there is an increased risk of failure.

The study highlights these issues. Its central message is that while Asia is in the midst of fundamental economic and social changes, its sustained progress for another 40 years is far from preordained. Asians face formidable challenges in their quest for the promise of an Asian Century.

Its leaders must be aware that its future prosperity will need to be earned, in the same way that developed economies today earned their success over the past 40 years. Indeed, Asia controls its own destiny.

Asia in the Global Economy during 1750-2010: Setting the Scene

2

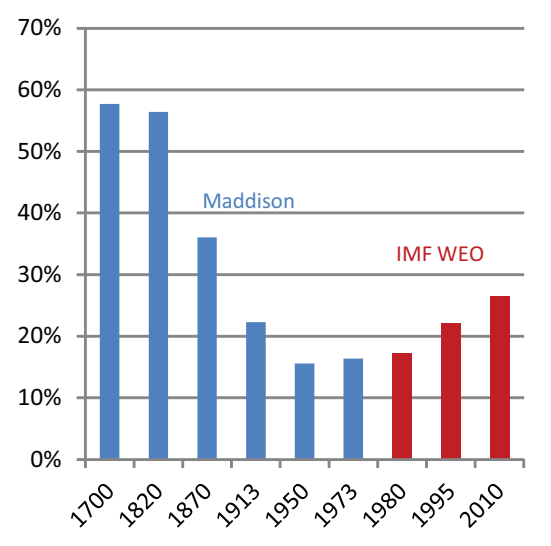
This chapter briefly traces Asia's economic footprint starting in the 18th century. The 1750-1990 period saw Asia's share of the global economy decline from about 60 percent to less than 20 percent. The two recent decades have witnessed the beginning of a re-emergence as Asia reached 27 percent of global output.

Decline and re-emergence: 1750–1990

Many outsiders call Asia's recent economic success the rise of Asia. A more accurate term to describe this success is the re-emergence of Asia.

Asia accounted for 58 percent of the world's economy before the Industrial Revolution in the middle of the 18th century. In the following two centuries, the West grew much faster and Asia's share steadily declined to a low of some 15 percent around 1952 (Figure 1).

Figure 1 **Asia's share of global GDP has bottomed**



Source: Maddison, Angus: Contours of the World Economy; IMF World Economic Outlook, October 2010. Data for 1750-1790 is in PPP and data for 1991-2010 is in market prices.

Asia started to re-emerge after 1950, spurred by Japan. This was followed by the rise of the newly industrialized economies and (NIEs)[1]—Hong Kong, China; Republic of Korea; Singapore; and Taipei,China. Starting in the 1980s first Malaysia and Thailand, then PRC, followed by India, Indonesia and Viet Nam, gave this growth a further boost. Today, Asia accounts for 27 percent of global output (at market exchange rates).

Reaping of the globalization dividend: 1990–2010

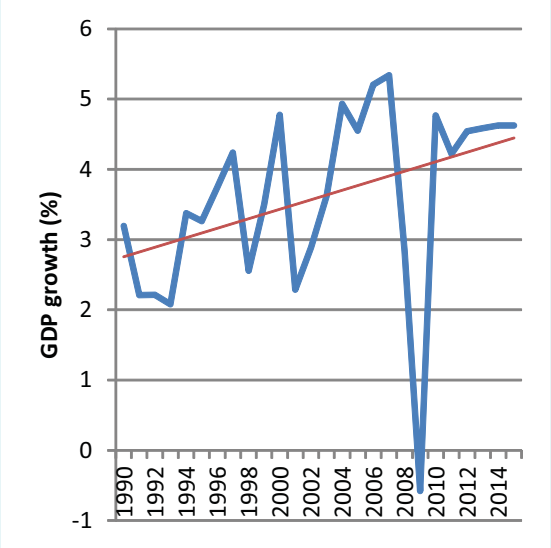
In the wake of the Great Recession, there is a tendency to forget the extraordinary global boom that had come just before. Looking at the last 10 years and at IMF projections for the next five years suggests that, even taking the recession into account, global output is on a rising trend that should continue over the medium term (Figure 2). This is not surprising. As the share of rapidly growing emerging markets in global output grows, so too does the average global rate. Trend growth in world GDP accelerated from 3 percent in 1990 to 4 percent in 2010, and based on IMF projections to 2015 is set to continue for the next five years at least.

The same pattern holds for the developing countries of Asia (Figure 3). In 1990 trend growth was around 7 percent. By 2010 it had increased to around 8.5 percent, and actual growth was above this trend line. The period covers the major crisis in developing East Asian economies in 1997–98 and the smaller Dot Com Crash of 2001 as well as the recent Great Recession. If not for these events the trend line would be even steeper, thanks largely to PRC's continued superior growth performance and India's acceleration

1 This name was coined in 1970 when Hong Kong, China; Republic of Korea; Taipei,China; and Singapore were growing fast on the basis of rapid industrialization. Today, they are not "newly industrializing" and are heavily service oriented economies, but the name has stuck.

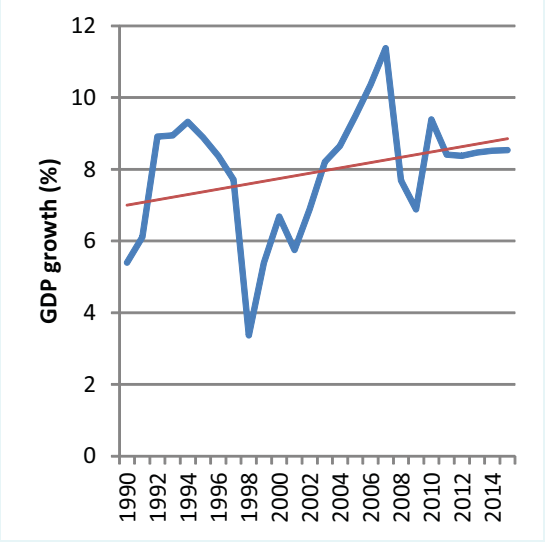
Large structural changes in the world economy—spurred by globalization—are accelerating the pace of growth

Figure 2 **World GDP growth rate is steadily increasing**



Source: IMF World Economic Outlook, October 2010.

Figure 3 **Developing Asia GDP growth, 1990-2015**



Source: IMF World Economic Outlook, October 2010.

of growth since 2004. But other dynamic emerging markets in the region—Bangladesh, Cambodia, Indonesia, Kazakhstan, Viet Nam—have also been growing strongly.

Large structural changes in the world economy—spurred by globalization—are accelerating the pace of growth. These are being led by the integration of PRC into the world economy, which is symbolized by its accession to the World Trade Organization in 2001, as well as through the opening of formerly closed economies in the former Soviet Union and Eastern Europe. But globalization has not just been about expanding the global marketplace. The rapid development and absorption of information, communication and transportation technologies have fostered faster growth, allowing an ever more granular division of labor, extending beyond goods markets into services. Indeed, service exports have been the fastest growing component of global exports by a wide margin.

Capital flows have also fueled globalization. Net private financial capital flows from rich to emerging economies between 1990 and 2010 totaled US$4.3 trillion (2010 dollars). Even though a considerable part of this was returned to rich countries through foreign exchange reserve accumulation, the gross flows are important. More recently, many emerging economies have themselves become major investors both in rich countries and in other emerging markets. They reflect the private sector's business flows and a more efficient global reallocation of capital.

One group of countries that has not seen growth accelerate despite globalization is the NIEs. Like other countries that have rapidly converged with advanced country incomes, they have seen their growth level off. In 1990 they were growing at 8 percent a year, but by 2010 this was cut in half. In 1990, their per capita income in purchasing power parity terms was $9,550, half that of advanced countries. By 2010, the Asian NIEs had income levels of

"the period of globalization since 1990 has allowed Asia's share in the world economy to grow fast

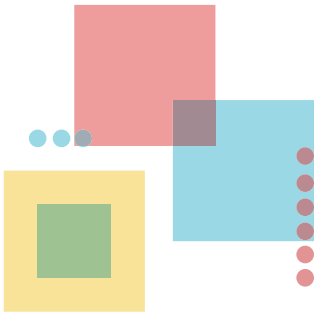
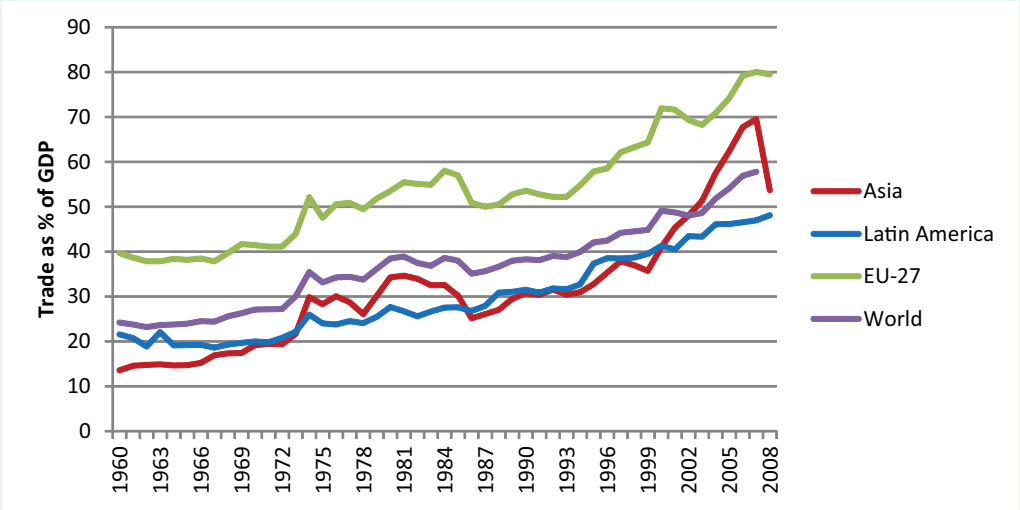


Figure 4 **Trade is increasing in relevance**



Source: IMF Direction of Trade, 2011.

PPP$34,120, or 90 percent of the level of advanced countries. Having come so close to the global best practice economies, it is no surprise that their growth has slowed.

Taking all these trends together, the period of globalization since 1990 has allowed Asia's share in the world economy to grow fast. A small number of Asian economies have converged toward advanced country incomes and the rapid growth of its developing economies have allowed Asia to account for more than a quarter of global output (about 27 percent). A sharp rebound indeed from the mid 1950s.

Much of that has been due to Asians' high saving rates and the resulting capital accumulation in Asian countries. But much is also attributable to productivity growth. Asian technology levels are catching up to those in the United States (US), and that catch-up is reflected in high Asian growth rates. But the absolute levels of total factor productivity are still far lower in Asia than in the US. This implies that most Asian countries have a long way to go before achieving convergence with the US, and it is therefore premature to believe that they have to grow more slowly in the same manner as the NIEs over the last 20 years.

3 Asia in the Global Economy 2011-2050: Main Drivers of the Asian Century

This chapter discusses the main drivers of Asia's economic and social transformation between now and 2050. It first discusses the three classic drivers of economic growth: technological change, labor and capital. It then elaborates on three new drivers of transformation particularly relevant to Asia: the emerging middle class; climate change; and the communications revolution. Finally, it draws attention to the emerging debate on growth versus social well-being and personal happiness. These drivers are not mutually exclusive. They are complementary and could be mutually reinforcing.

Classic drivers of growth

The basic dynamics of Asian growth depend on three factors—technical progress (total factor productivity growth), capital accumulation and labor force growth. These factors fundamentally drive Asian growth, as well as growth in the rest of the world.

Technological change and productivity

One way to view Asia's growth potential is to separate countries into three groups based on their past performance. One group is the seven high income developed economies. A second group of countries has already demonstrated the ability to converge with the United States (taken here as representative of what advanced countries have achieved in technological growth) and can be expected to continue to do so, albeit at a pace that slows as they approach productivity levels in the United States. Eleven Developing Asian countries fall into this converging category, with most of the largest economies included (PRC, India, Indonesia, Kazakhstan, Malaysia, Thailand and Viet Nam).

A third group of 31 aspiring countries—mostly low income but also some lower middle income—has not been converging in the past on a consistent basis. They may have been growing faster than the United States thanks to high levels of labor force growth and capital investment, but they have not shown sustained productivity growth. These countries will continue to have modest growth, especially once favorable demographic forces reverse or capital accumulation starts to slow. However, they too can join the convergers' group through sustained improvements in productivity.

Of course, the global technology frontier itself is constantly being improved, by around 1.3 percent a year (See Annex 2). So even the rapid adopters have considerable room to grow. By 2050 the global technology frontier could shift out by two-thirds. This global advance means that converging countries approach the frontier more slowly than otherwise. But by the time they have absorbed today's technology, there are new possibilities to exploit (Figure 1).

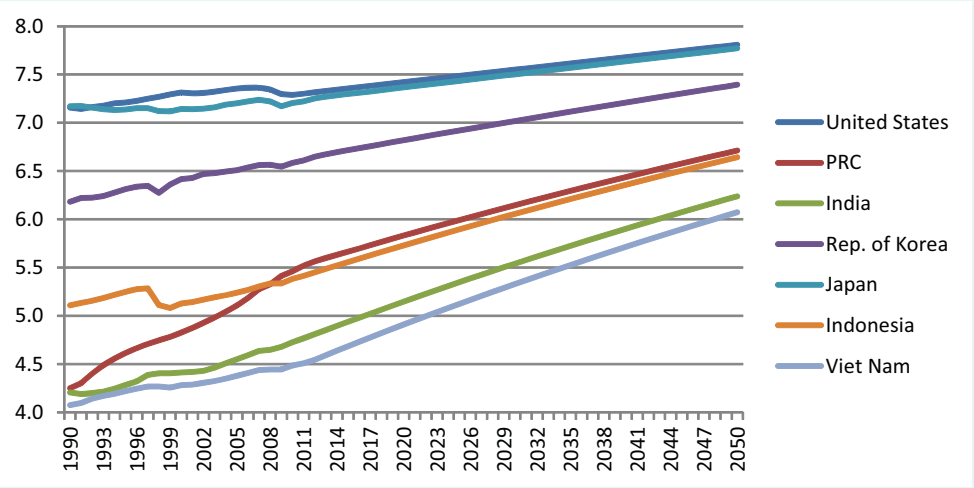
Modeling technological advancement in this way is highly stylized. The reality is that countries both adopt existing technology (adapt it to their own circumstances by changing production processes) in some areas, and leapfrog in other areas. In Asia, upgrading product lines (and discontinuing the outmoded ones) is the most common form of technological progress, followed by introducing new product lines or brand new technology.[1]

Much Asian research and development is conducted by the business sector, shortening the time between new ideas and their adoption in new commercial ventures. Many Asian economies spend a higher proportion of their GDP on research and development than countries elsewhere. This is especially pronounced in the advanced economies like Japan, Republic of Korea, Taipei,China and Singapore, but

1 I. Gill and H. Kharas,"An East Asian Renaissance," Washington, DC: World Bank, 2007.

“Much Asian research and development is conducted by the business sector, shortening the time between new ideas and their adoption in new commercial ventures

Figure 1 **Asian total factor productivity (1990-2050) is converging with best practice**



Source: Centennial Group projections, 2011.

is also increasingly true for PRC. Most other Asian countries lag behind in this area.

Asian technology has reached or is close to the global cutting edge in many areas of electronics, computers, information technology services, communications, drugs and biotech. The fact that in these areas technology is being increasingly developed in Asia promises technology's spread to other Asian countries. Patent citations suggest that knowledge spillovers are geographically concentrated. The closer to the source of the innovation, the faster its adoption. This might appear surprising in an age of freely flowing written information and access to scientific journals. But it is consistent with the notion that what is written down is only a small fraction of useful knowledge for firms. Tacit knowledge requires personal interaction to increase understanding and dissemination.

Demographics and labor force

Over the last two decades, the world has benefitted from a demographic dividend. The number of people aged 20–64, traditionally taken as the potential labor force, has been growing. In fact, about 560 million people were added to the global labor force in the 1990s, and almost 640 million more people between 2000 and 2010. That dividend is now slowing, and will lose steam by 2035.

Over the next several decades, an ever smaller absolute number of workers will enter the global labor force, largely due to lower population growth rates in advanced and (some) emerging economies. By 2050, the global labor force will be essentially flat, growing perhaps by 0.4 percent. In reality, the actual labor force will reflect three offsetting trends. In some countries, especially emerging markets, a far higher proportion of youth will go on to complete secondary school and get some tertiary education. Also, in countries such as India and Indonesia, the current

"By 2050, Japan's labor force could be smaller than today's by almost 30 million workers—a drop of one-third

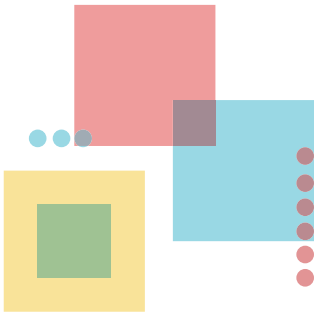
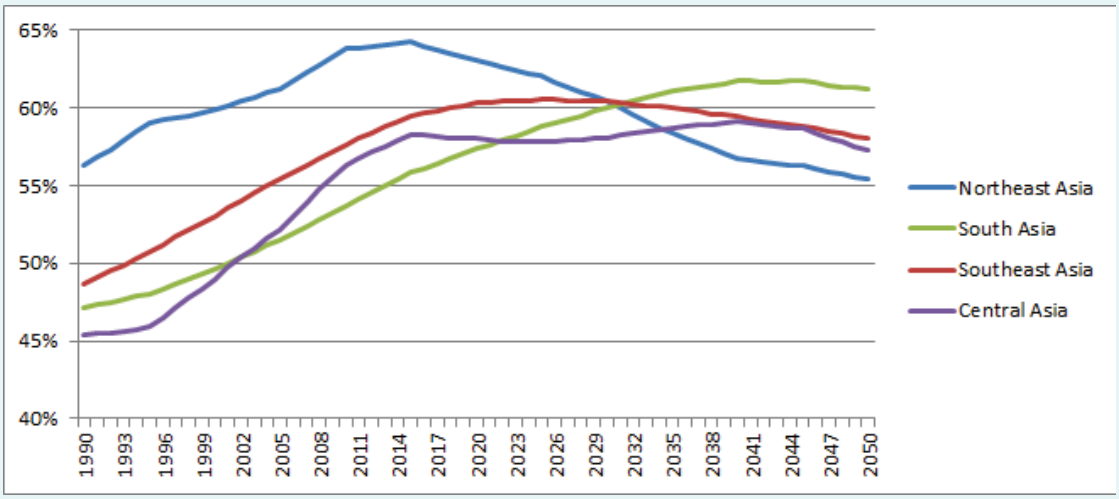


Figure 2 **Working age population (20-64) will begin to decline in all Asian subregions (1990-2050)**



Source: UN World Population Prospects 2008 Revision.

large gap in the participation rates of males and females would narrow, increasing the total number of workers. And, in advanced countries, more of the elderly could remain in the labor force. Whether the overall total labor force ends up expanding or contracting depends on the size of these three trends. It does seem clear, however, that the rate of increase that has helped power the global economy forward is set to decline.

Asia reflects these trends. Its labor force has been growing at 2.0 percent a year over the last two decades. In the next two, that will be halved to 0.9 percent a year. In the two following decades (2031-2050), Asian labor force will likely become flat.

This aggregate conceals vast differences between Northeast Asia, where the labor force is already peaking and about to decline, and other parts of Asia still seeing robust growth (Figure 2). In Japan the labor force peaked around 2000 and has been declining in absolute terms ever since, now losing about 800,000 workers a year. By 2050, Japan's labor force could be smaller than today's by almost 30 million workers—a drop of one-third. Republic of Korea and Taipei,China are going through demographic transitions similar to Japan's, but with a lag of 15-20 years. For both, the labor force is likely to peak in the next five years and then start to decline. In these countries, the pace of decline and the rate of ageing will be similar to that of Japan: -1.3 to -1.5 percent a year.

The demographics of Asia's giants—PRC and India—are very different. PRC is closer to the Northeast Asian countries. Its labor force is still growing, albeit more slowly than before, and will also probably peak around 2020. India, by contrast, still has a young population, and its labor force will continue to grow before reaching nearly one billion workers by 2050. India will then have 25 percent more workers than PRC. Today, it has 24 percent fewer workers. This is one reason for India's projected higher economic growth than PRC over the longer term.

"As PRC, India and other dynamic Asian economies with high investment rates get richer, their absolute additions to the global capital stock will rise

Capital deepening

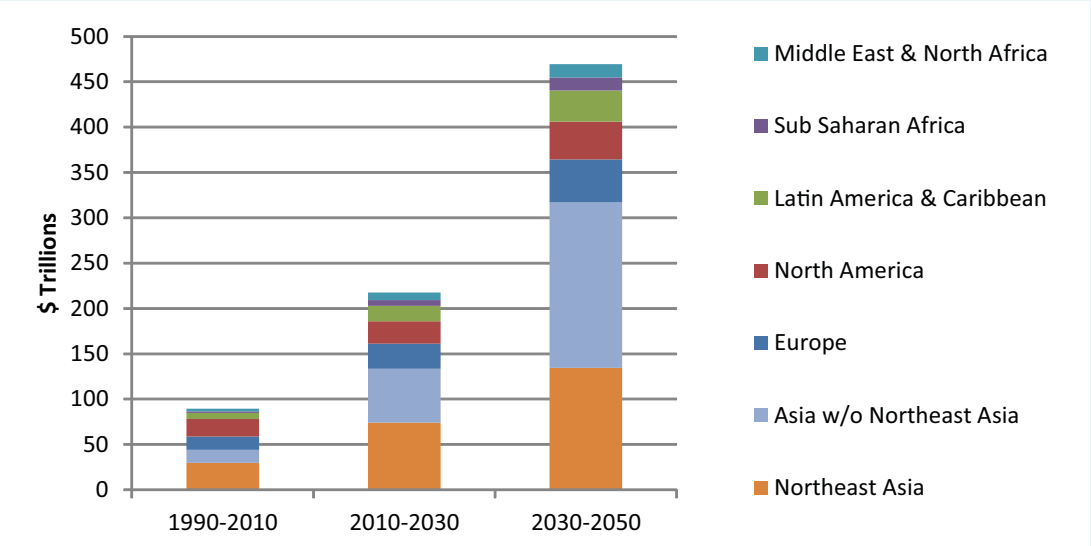
Notwithstanding the huge investment rates of countries like PRC and India in recent years, most of the world's capital stock—about 70 percent—is in advanced economies. Small European economies, like Switzerland, Norway, Denmark and Finland, have the highest capital stock per worker in the world. Japan also has a capital stock per worker above the developed country average.

But it is in the emerging Asian economies where the growth of the capital stock per worker during the past two decades has been the fastest, with PRC at 8.6 percent, India 8.3 percent, Viet Nam 9.3 percent and Cambodia 9.5 percent, among the fastest anywhere. Another tier of Asian countries—including Indonesia, Malaysia, Thailand, Turkmenistan, Singapore and Taipei,China—are deepening capital at 5-6 percent a year, while the Philippines, Pakistan, Bangladesh, Kyrgyz Republic, and Kazakhstan are showing only 2-3 percent growth in the capital-labor ratio.

As economies get richer and more capital intensive, it is harder to accumulate more capital. Simply maintaining net capital levels requires an increasing proportion of investment to be used in replacing obsolete capital, leaving less to be added in new machines. For rapidly growing economies, the rate of obsolescence is also greater.

The world is entering an investment boom. Today, $5 trillion is being added each year to the global capital stock.[2] In 20 years that could double to $10 trillion annually, and by 2050 it could double again. Most of this capital accumulation is in Asia (Figure 3). Already about 45 percent of net additions to the world's capital stock are in Asia. As PRC, India and other dynamic Asian economies with high investment rates get richer, their absolute additions to the global capital

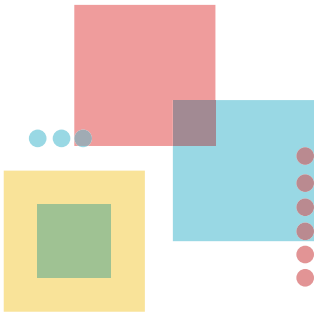
Figure 3 **Asia will account for 70 percent of the world's added capital stock between 2030 and 2050**



Source: Centennial Group projections, 2011.

2 In 2007 dollars.

“Consumption by the global middle class accounts for almost one-third of total global demand, roughly divided evenly between North America, Europe and Asia



stock will rise. In five years, Asia will be contributing half of the net increase in the global capital stock. If this trend continues, that proportion will be almost three-quarters by 2050.

The new drivers of transformation

In addition to the three classic drivers, Asia's economic and social transformation will be driven by three other significant trends: the emerging middle class, the changing climate and the communications revolution.

The emerging Asian middle class

The emerging middle class will become a key driver of Asia's economic growth because of the demand for goods and services and because the middle class is the source of savings and entrepreneurship that drives new products and processes. Growth in today's advanced economies comes mainly from new products, and most growth happens when these new products are targeted toward and adopted by the middle class.[3]

Consumption by the global middle class accounts for almost one-third of total global demand, roughly divided evenly between North America, Europe and Asia, but heavily concentrated in advanced countries, which account for two-thirds of total middle class consumption (Table 1). These are the consumers at risk of retrenching their demand. In the Asian Century scenario described in the next section, middle class consumption in advanced countries rises by only 0.6 percent a year for the next 20 years and then declines.

However, consumption by the global middle class could still expand vigorously thanks to the fast growing middle class in dynamic emerging economies, mostly in Asia (Table 2). Spending by the Asian middle class could rise 9 percent a year through 2030 (although Japanese middle class spending—one-third that of all Asia today—is forecast to rise by only 1 percent a year). This will be driven by the very strong growth in middle class spending in the large Asian countries—PRC, India and Indonesia.

This has already started with PRC. But its middle class is still small for an economy its size: no more than 12 percent of its people have living standards

Table 1 **The West currently accounts for the bulk of global middle class spending**

	Number of People (millions and global share)		Consumption (billions PPPUS$ and global share)	
North America	338	18%	5,602	26%
Europe	664	36%	8,138	38%
Central and South America	181	10%	1,534	7%
Asia Pacific	525	28%	4,952	23%
Sub-Saharan Africa	32	2%	256	1%
Middle East and North Africa	105	6%	796	4%
World	1,845	10,0%	21,278	100%

Source: The Brookings Institution, 2010.

3 The middle class is defined here in the same way as in Kharas (2010) to include those living in households spending between $10 and $100 a day in purchasing power parity terms.

"In the other dynamic Asian economies... household incomes will expand by at least the growth rate of GDP and that this process will bring more households into the middle class

Table 2 **The Asian middle class will grow sharply over the next 40 years**

	2030			2050		
	Middle Class Population	Upper Class Population	GDP per capita (PPP)	Middle Class Population	Upper Class Population	GDP per capita (PPP)
PRC	1,120	40	21,100	1,240	190	47,800
India	1,190	15	13,200	1,400	210	41,700
Indonesia	220	5	13,500	250	40	37,400
Japan	100	20	48,900	60	40	66,700
Republic of Korea	30	20	60,200	10	35	107,600
Viet Nam	80	2	11,900	100	15	33,800
World	4,990	580	19,400	5,900	1,500	36,600
US	185	190	65,500	120	290	98,600
Germany	50	30	51,300	25	50	77,800

Source: Centennial Group projections, 2011.

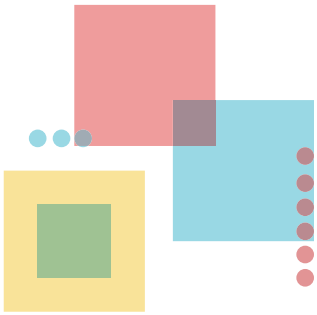
that would place them among the world's middle class. PRC has made great strides in starting to create a viable middle class. Housing ownership in urban areas is over 80 percent, one of the highest rates in the world. College enrollments climbed to 26 million in 2009. Some 26 million automobiles were registered in 2009, with sales of 13.6 million units in that year alone. By the end of 2008, 150 million credit cards were in circulation. There are an estimated 700 million cell phone subscribers. But these anecdotal data conceal the relative modest role of PRC's middle class in the economy. In 2009, household final consumption expenditure was only 35.7 percent of GDP, well below the global average (61 percent) and that of Viet Nam (66 percent), Indonesia (63 percent), India (54 percent) and Thailand (51 percent). It is also much lower than PRC's historical share. Since 2000, consumption growth has averaged 2.5 percentage points less than GDP growth.

PRC has long acknowledged the need to grow its domestic demand, but so far has been unable to do this. Some changes are long-term and structural, like improving public health and education and pensions so that households do not need to set aside as much savings. Others are more immediate. The take-home pay of a Chinese worker is only about two-thirds of total compensation. The remainder is taxed by the government through a variety of social insurance costs, government mandated labor taxes, and insurance for health, unemployment and the like.[4] PRC has the fiscal space to reduce these taxes using, perhaps, dividends and profits from state-owned enterprises. If PRC achieves the new plan target of increasing household expenditure at least as rapidly as GDP, the size of its middle class will explode. By 2030, if growth continues and if households share in that growth, 75 percent of PRC's population will enjoy middle class standards, and $2/day poverty will be substantially wiped out.

In the other dynamic Asian economies there is even more reason to believe that household incomes will expand by at least the growth rate of GDP and that this process will bring more households into the

4 Bannister, J., "Manufacturing Employment and Compensation in China," Washington, DC: US Department of Labor, Bureau of Labor Statistics, 2005.

“Climate change is arguably the single most important long-term issue of our lifetime



middle class. Combining growth with current income distribution parameters can be used to estimate the future size of the middle class and the growth of its consumption for the next 20 years; in India (19 percent), Indonesia (13 percent), Malaysia (7 percent), Thailand (8 percent) and Viet Nam (19 percent). Low income countries, like Cambodia, could also enjoy rapid increases in middle class consumption but from a very small base. Today, India has a tiny middle class by global standards. But if it continues its growth, 70 percent of the Indian population could be middle class within 15 years.

These structural shifts in the pattern of global demand mean that Asia’s growth can rely increasingly on the markets of today’s Developing Asia rather than those of Europe, Japan or North America. If Asian middle class consumers can substitute for those in advanced economies, the Asian countries will become major exporters to each other, emulating the development path of Europe. European countries are significant exporters, but largely to each other, with Eurozone exports growing 4.5 percent a year since 2000[5], notwithstanding the recent recession. Similarly, all Asian countries could benefit from rapid intra-regional growth without excessive reliance on the consumer markets of Europe or North America.

Climate change

Climate change is arguably the single most important long-term issue of our lifetime. It could affect each and every human being on our planet, irrespective of his or her country, income, or race. With over half of the world’s population residing in Asia and the Pacific, Asians have more at stake in the well- being of the planet than any other people.

While thousands of highly qualified and well-meaning experts and institutions—both public and private—have already produced many outstanding studies, there is no independent study analyzing the economic self-interest of developing countries in Asia (or worldwide).

To help bridge the wide gulf between the perspectives of the developed and developing countries, the Emerging Markets Forum commissioned an in-depth analysis of the economic impact of climate change on Asian developing countries. This analysis, based on rigorous modeling of possible outcomes under different scenarios to determine as to what is in Asia’s best self-interest, is summarized below (Figure 4).

The analysis makes clear that it is in Asia’s self-interest to move decisively on the global commons. Asia needs to do so not because the West is asking it do so, but because it is purely and simply in Asia’s own interest to do so.

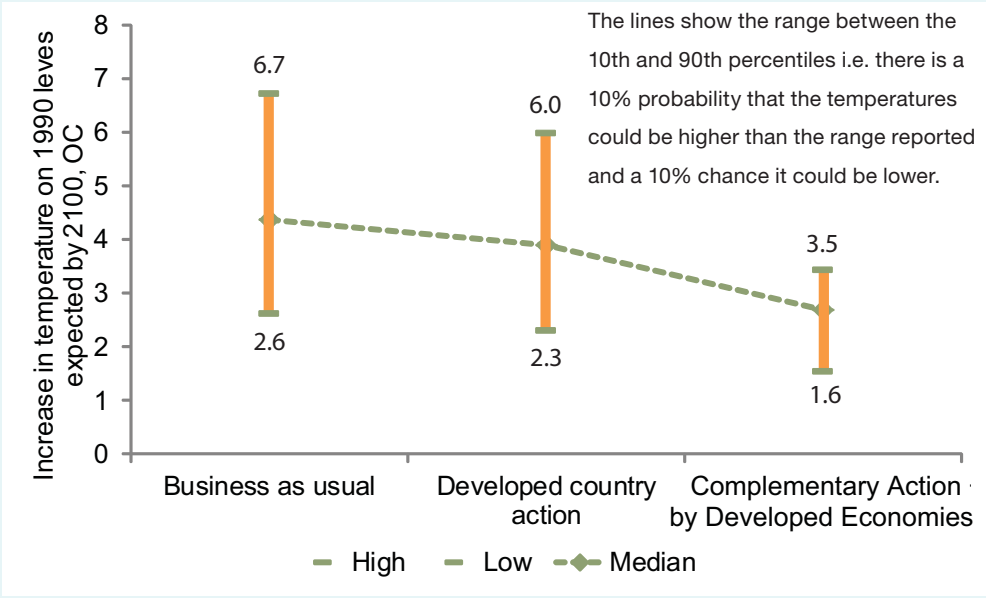
The analysis also makes clear that climate change has far reaching implications for the way Asia needs to move forward in its march toward prosperity: dramatically increasing energy efficiency and reducing reliance on fossil fuels (both coal and petroleum); adopting a new approach to urbanization by building more compact and eco-friendly cities; relying much more on mass transit (over private cars) for urban dwellers and railways for long distance transport; giving priority to the development of related technologies; and, perhaps more fundamentally, changing lifestyles to alleviate pressures on finite natural resources by making a much more efficient use of them.

These interrelated aspects are critical for Asia’s long-term growth and development because the future competitiveness and prosperity of nations will depend greatly on their efficiency in the use of natural resources and on progress in the low carbon race.

5 Leonardo Gasparini & Pablo Gluzmann, “Estimating income poverty and inequality from the Gallup World Poll: The case of Latin America and the Caribbean,” Palma de Mallorca, Spain: ECINEQ, Society for the Study of Economic Inequality, 2009.

"The recent events in Tunisia and Egypt have demonstrated most vividly the power of the ongoing communications revolution on even the more traditional societies and politics

Figure 4 **Asia should move decisively on the global commons because that is in its self-interest**



Source: Vivid Economics and MAGICC, 2010.

The communications revolution

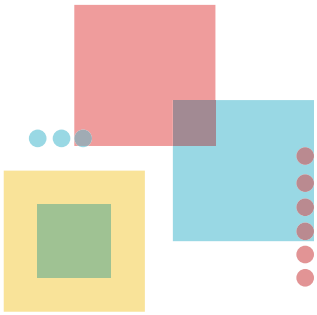
The recent events in Tunisia and Egypt have demonstrated most vividly the power of the ongoing communications revolution on even the more traditional societies and politics.

Satellites, television, mobile telephony and the internet—leveraged by the new social media—have already revolutionized the way in which information is gathered, stored, searched, shared and conveyed within and across national boundaries (Table 4). Witness the advent of Google, Facebook and Twitter.

Until a few years ago, digital or electronic communications were primarily the preserve of the developed countries. In the past ten years this revolution has also spread to the developing countries, especially in Asia (Figure 5). Just 10 years ago, only 2-3 of 1,000 Indians had access to a telephone (mainly fixed lines). By the end of 2010, India had some 700 million mobile phone connections, two-thirds of all Indians. Similarly, there is an explosion in the penetration of the internet—not only in high income Japan, Singapore and Republic of Korea—but also in middle income PRC and India. And the pace of change of this information revolution is only likely to accelerate in the next 40 years.

This has major economic implications for Asia not only by sharply reducing the cost of information processing and sharing but also in the provision of both public and private services. Even more significantly, it could fundamentally alter the relationships between the public at large, civic societies, governments at all levels and private business. It has the potential of reducing the distance between the public and government. And with a much more educated, affluent and better informed citizenry, with middle class values, in most Asian countries, there will be much greater demand for more transparent, honest and responsive governance.

"So far, Asian policymakers have emphasized social stability as the foundation of economic growth. Many have thought of social stability and economic growth as a virtuous cycle



From growth to social well-being

So far, Asian policy makers have emphasized social stability as the foundation of economic growth. Many have thought of social stability and economic growth as a virtuous cycle. One underpins the other. That has certainly been Asia's historical experience, but it may need reconsideration as Asian societies become more affluent between now and 2050.

If governments could figure out what people really valued, they could construct better, more affordable social programs to maintain social harmony. But that is a complex process. For many years, the deficiencies of GDP as a measure of social progress or development have been known. Yet GDP remains the most convenient short-cut measure of well-being and hence the principal focus of policy makers has been on GDP growth. That is now starting to change in some rich countries.

The first adjustment is to move toward the counting of non-monetary aspects of the quality of life. Amartya Sen's capabilities approach focuses on the needs that must be met for people to fulfill their potential as human beings. In addition to money, they may need education, health, a well-preserved environment and other amenities. Conditional on these, however, more money expands people's choice set, and hence expands their welfare. And if an individuals' welfare depends on the amount of money at their disposal, it follows that a nation's welfare depends on the amount of money at the nation's disposal, or GDP.[6] Thus the capabilities' approach, in its simplest form, can be reduced to adding a certain number of measurable social indicators like literacy, health, income inequality, poverty, or environmental well-being into a nation's calculus.

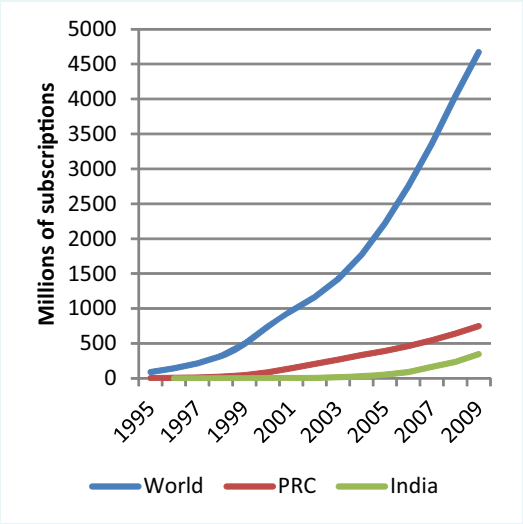
These measures, however, might still not address the basic psychology that differentiates personal satisfaction from income or material consumption—what is known as the Easterlin paradox. Easterlin was the first economist to suggest that while "happiness" within any country was clearly correlated with income levels, the same did not appear to be the case across countries. Well-off countries need to focus on issues other than GDP per capita if they are to raise their citizens' well-being. People may be more satisfied with less than with more.

Table 4 **Internet usage is skyrocketing globally, picking up in Asia**

	PRC	India	Asia
Internet Users (per 100 people)	2000	2007	Average % change (annual)
PRC	1.8	16.1	37%
India	0.5	7.2	46%

Source: International Telecommunication Union ICT Indicators, 2010.

Figure 5 **Mobile phone subscriptions still have room for growth in PRC and India**



Source: International Telecommunication Union ICT Indicators, 2010.

6 This line of argument abstracts from distributional considerations, but those can be resolved, in theory, by appropriate government policy.

“a more reasoned and scientific dialogue on what would do the most to improve Asians’ happiness might be worth exploring

This type of subjective preference measure is what is measured by “happiness” surveys. In the United Kingdom, to take one example, policy makers are considering three types of questions to ascertain happiness more broadly.[7] The first relates to the metrics of global life satisfaction or happiness as well as satisfaction within specific domains: health, crime, amount of leisure time, friendships, and family life. These evaluative measures can be particularly useful to ask about how people feel about collective issues like income inequality or quality of the environment. A second set of questions has to do with subjective, cognitive evaluations of one’s daily life experiences, including positive emotions such as joy and pride, and negative emotions like pain and worry. Yet a third set of measures relates to purpose in life and psychological well-being and includes questions on autonomy, resilience, self-esteem, confidence and optimism.

In an era where Asia is testing the world’s limits to unfettered GDP growth, a more reasoned and scientific dialogue on what would do the most to improve Asians’ happiness might be worth exploring. Asia would not be alone in moving down this path. The Stiglitz Commission has already recommended that all national statistical offices incorporate subjective measures of well-being into their national surveys. Asian countries would do well to follow suit.[8]

7 Paul Dolan, Richard Layard, and Robert Metcalfe, “Measuring Subjective Well-Being for Public Policy: Recommendations on Measures”, London: Centre for Economic Performance, London School of Economics, 2010.

8 Stiglitz, J. E., Sen, A. & Fitoussi, J. P., “Report by the Commission on the Measurement of Economic Performance and Social Progress,” Paris: OECD, 2009.

4 Asia in the Global Economy in 2050: The Asian Century

Based on the previous discussion of the main drivers—both positive factors and major risks—it is possible to draw the broad contours of Asia's potential future trajectory through 2050. Given the major uncertainties, this chapter does so by presenting two plausible scenarios. But, it must be reiterated that these scenarios are by no means exhaustive, but only two possible rough trajectories of how the future may unfold.

They have a limited objective: to draw attention to the longer-term implications of the broad trends and to ask what-if questions, rather than focus on specific numbers or country ranking.

The range of outcomes under the two scenarios is intentionally very wide and demonstrates the potential payoff of proactive actions—or costs of inaction—by policy makers and business leaders.

Basic assumptions

In developing any scenario, it is necessary to make some basic assumptions about the "givens" and to do so explicitly. The scenarios presented below are based on the following key assumptions: (i) the world in general (and Asia in particular) will continue to remain peaceful and there will be no nuclear or other major armed conflicts; (ii) current national boundaries will remain unchanged; (ii) political transitions in Asia will be peaceful and internal security will remain under control; (iv) the world will continue to have an open global trading system and a stable global financial system; and (v) there will be effective global action on climate change. If any of these assumptions were not to hold, there could be a catastrophic impact on Asia. It is not possible to quantify either the probability or cost of such events.

Three country groups

Based on Asia's economic record since 1990, it is possible to classify its 49 economies into three groups:

1. *High Income, Developed Economies (7)*[1]*:* These seven countries, led initially by Japan, triggered Asia's reemergence starting in the 1950s, first mastered the complex challenges involved in sustaining high productivity and economic growth over an extended period. They successfully avoided the Middle Income Trap, as they steadily moved from being low income to middle income and, more recently, high income economies. By now, their productivity has essentially converged with the global best practice (US). Their per capita incomes and living standards now approach those of the developed economies in North America and Europe. Asia's rich economies still account for a significant fraction of its total economic output: $7.2 trillion, or 43 percent of the region's total in 2010. For Asia, these economies are an important market, as well as the frontier locations for much of the research and innovation that occurs in the region. In fact, as the region becomes increasingly dependent on productivity growth, the relevance of the rich economies for the region will increase, not decrease, even if the rate of growth of their GDP remains well below that of the dynamic, converging Asian economies.
2. *Fast Growing, Converging Economies (11):* These countries, led by PRC and India, meet the Growth Commission's criteria of sustained long-term success. Its Growth Report, along with many academic studies, concluded that

1 Brunei Darussalam; Hong Kong, China; Japan; Republic of Korea; Macau, China; Singapore; and Taipei,China.

“Under this scenario some 3 billion additional Asians would become affluent between now and 2050

development success could not be measured by performance over a single decade, but by long-term performance—they suggested at least a twenty-five year horizon.[2] Most of the countries in this group are middle income countries and still vulnerable to the Middle Income Trap. Their success in avoiding the middle-income trap will determine whether they would join the first group of developed economies in Asia by 2050. These countries account for 77 percent of Asia's current population and 51 percent of GDP.

3. *Slow or Modest Growth, Aspiring Economies (31):* This is the largest group of economies in Asia, encompassing both large and small, low, as well as lower-middle income countries in all three subregions: East Asia and Pacific, South and Central Asia. Their average growth rate over the past thirty years has been well below that of the second group. A few countries have shown occasional bursts of growth but they were followed by periods of stagnation or decline. Some countries like the Philippines and Sri Lanka exhibit the classic signs of the Middle Income Trap. While the number of countries in this group is large, their overall share of Asia's total population and GDP is modest, 18 percent and 6 percent, respectively. Yet, improvements in their economic and social development are essential in order to reduce the cross-country inequities and thus ensure the region's long-term peace and security.

The Asian Century

Taking account of the above mentioned drivers and the past performance of the three groups of countries, an econometric model (see Annex 2 for a summary description) is used to develop two scenarios of Asia's economic trajectory between now and 2050.

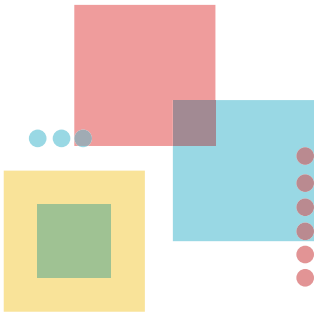
1. *Asian Century Scenario:* assumes that: (i) the eleven economies with a demonstrated past record of sustained convergence to the best global practice over the past 30 plus years would continue to do so over the next forty years; and (ii) countries accounting for roughly forty percent of the GDP and population of the currently non-converging (aspiring) economies would succeed in becoming convergers by 2020. This will significantly raise their economic growth between 2020 and 2050, and bring their societies closer to affluence. Under this scenario some 3 billion additional Asians would become affluent between now and 2050. This could be considered the desired or ideal scenario for Asia as a whole.
2. *Middle Income Trap Scenario:* assumes the current converging economies would fall into the Middle Income Trap in the next 5-10 years, without any of the current non-convergers improving upon their past record; in other words, Asia would follow the pattern of Latin America over the past 30 years. This could be treated as the pessimistic scenario and a wakeup call to Asian leaders.

Where exactly Asia ends up within the two scenarios will depend on how effectively the region is able to tackle the policy and institutional agenda outlined in the following chapters. The end result will have a tremendous impact on the well-being and lifestyles of future generations of Asians, as well as societies around the world.

The remaining sections of this chapter discuss the outcomes based on the Asian Century Scenario. The implications of moving towards the Middle Income

2 *"The Growth Report, Strategies for Sustained Growth and Inclusive Development,"* Washington, DC: Commission on Growth and Development, 2008.

“Asia’s rapid growth implies that by 2050 it could converge with average global living standards



Box 1 The engines of the Asian Century are the Asia-7 economies

Asia’s march to prosperity will be led by seven economies, two of them already developed and six fast growing middle income converging economies: PRC, India, Indonesia, Japan, Republic of Korea, Thailand and Malaysia.

These seven economies had a combined total population of 3.1 billion (78 percent of total Asia) and GDP of $14.2 trillion (87 percent of Asia) in 2010. Under the Asian Century scenario, their share of population by 2050 would be 73 percent and their GDP would be 90 percent of Asia. They alone will account for 45 percent of global GDP. Their average per capita income would be $45,800 (in PPP) compared with $36,600 for the world as a whole.

Between 2010 and 2050, these seven economies would account for as much as 87 percent of total GDP growth in Asia and of almost 55 percent of global GDP growth. They will thus be the engines of not only Asia’s economy but also the global economy.

	2010 GDP (MER trillions)	2050 GDP (MER trillions)
PRC	5.7	62.9
India	1.4	40.4
Indonesia	.7	11.4
Japan	5.4	8.2
Republic of Korea	1.0	3.7
Thailand	.3	3.2
Malaysia	.2	2.6
Total Asia-7	14.8	132.4

Source: IMF World Economic Outlook, October 2010; Centennial Group projections, 2011.

Trap Scenario are discussed in Chapter 15.

Asia’s growing global footprint

Under the Asian Century Scenario, Asia can be expected to steadily increase its global footprint. In 2010, Asia accounted for about one-quarter of global output (Table 1). It seems to have reached a rough equilibrium in its aggregate growth over the next forty years at around 5.6 percent. This growth will not be even: the advanced Asian country will slow, but the Developing Asian economies will compensate. Meanwhile, even currently poor Asian economies should be able to also achieve at least middle income levels. By 2040, it is unlikely that any Asian countries will be poor by today’s standards (per capita income of less than $995).

As Asia grows more rapidly than the rest of the world, its share in global output will inexorably rise. The magnitudes are significant: by 2050, Asia’s output footprint could be just over half that of the world.

That would represent a doubling of Asia’s share to a level last seen in the early nineteenth century and mean that Asia would account for 60 percent of the change in world output between 2010 and 2050, and 65 percent of the growth between 2040 and 2050. Small wonder then that so much business attention is focused on Asian economies.

Asia’s rapid growth implies that by 2050 it could converge with average global living standards. Asia would no longer be a “poor” region, but an average region, in income terms, with a range of advanced and middle income economies. On average, Asia could be about as prosperous as Europe today.

Table 1 **The Asian Century: Asia will account for more than half of global output in 2050**

	2010	2020	2030	2040	2050
Global output (market exchange rates, US$ trillions)	62	90	132	195	292
Asian share of global output	27.4%	33.5%	38.9%	44.5%	50.6%
Global growth (prior decade ending in column year)		4.0%	3.9%	3.8%	3.6%
Asia growth		5.8%	5.2%	4.8%	4.4%
Asian share of global growth		55.7%	59.3%	62.8%	66.0%
Global GDP per capita (PPP)	10,700	14,300	19,400	26,600	36,600
Asian GDP per capita (PPP)	6,600	10,600	16,500	25,400	38,600

Source: Centennial Group projections, 2011.

Realizing the Asian Century: Mega Challenges and Risks

5

This chapter discusses the major challenges and risks that Asia must overcome in sustaining its growth momentum and realizing the Asian Century. The region must confront five mega challenges. (i) large and, in some cases, rising inequities and disparities within countries that could alter the political and social fabric of the region; (ii) the risk of falling into the Middle Income Trap due to a host of domestic economic, social and political challenges faced by individual countries; (iii) looming competition for finite natural resources (energy, minerals, water and fertile land) that would be unleashed in the next forty years as some 3 billion additional Asians become much more affluent and aim at achieving higher living standards; (iv) potentially sharp rise in disparities across countries and subregions if the past differentials in relative growth rates continue between now and 2050 which, in turn, could destabilize the countries and subregions concerned; and (v) global warming and climate change coupled with the increased incidence of natural disasters could affect vast numbers of people living throughout Asia.

In addition, almost all countries face the overarching challenge of governance and institutional capacity, improvements in which are a prerequisite for overcoming all other challenges.

These challenges are not mutually exclusive. They can impact one another and multiply existing tensions, unrest, and conflicts, or even create new pressure points within and across Asia that threaten its growth, stability, and security.

These challenges and risks are discussed below in turn.

Inequities within countries

Minimizing income disparities and other inequities within countries will be a huge challenge that must be met. Many parts of Asia have seen significant increases in intra-country inequality as they unleashed and gained from the forces of globalization. Cities and coastal areas have benefited first, while interior regions lag behind. Skilled workers have reaped a disproportionate share of the gains from globalization. This has led to large disparities within individual countries: for example: between the coastal and western provinces in PRC; eastern, southern, and western states in India, east and west Java, north and south in Sri Lanka and so on.

Countries in East Asia (and within PRC, the eastern seaboard) are the most developed and prosperous parts of Asia. For Asia as a whole to become developed and to provide a satisfactory lifestyle to the vast majority of Asians, the region must find ways to spread prosperity from the East to the West.

Today, most Asian economies border other countries with whom they have similar income levels, so inequality is still more of an issue for social stability within countries. Politically and socially too, it is imperative to minimize the disparities of incomes and living conditions within countries. Otherwise, the large (and growing) disparities will generate rising social dissatisfaction and threaten peace and stability. This, in turn, would destroy the political support for the extraordinary discipline required to realize the vision of the Asian Century.

Middle Income Trap

Few countries sustain high growth for more than a generation, and even fewer continue to experience high growth rates once they reach middle income status (Box 1). Some features differentiating growth beyond middle income from growth from low income to middle income are clear. Growth tends to become more capital intensive and skill intensive. The domestic market expands and becomes a more important engine, especially for the growth of services. Wages start to rise, most rapidly for highly skilled workers,

> **A majority of Asian economies—including PRC, India, Indonesia, and Viet Nam—still have to demonstrate their ability to avoid the Middle Income Trap**

and shortages can emerge. The traditional low-wage manufacturing for export model does not work well for middle income countries. They seem to become trapped in a slow growth mode unless they change strategies and move up the value chain. Cost advantages in labor-intensive sectors, such as the manufactured exports that once drove growth, start to decline in comparison with lower wage, poor country producers. At the same time, middle income countries do not have the property rights, capital markets, successful venture capital, or critical mass of highly skilled people to grow through innovations as affluent countries do. Caught between these two groups, middle income countries can become trapped without a viable high-growth strategy.

A majority of Asian economies—including PRC, India, Indonesia, and Viet Nam—still have to demonstrate their ability to avoid this trap and the resulting slow growth experienced by much of Latin America.

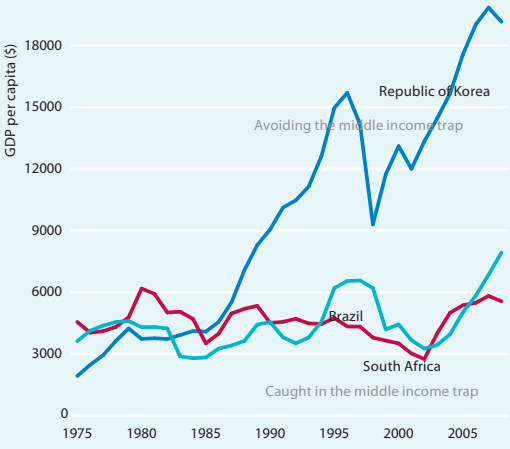
Competition for finite natural resources

Intense competition for scarce natural resources (energy, minerals, water and fertile land) that would be unleashed with growth and exacerbated as some 3 billion additional Asians become increasingly affluent, especially if they emulate current western lifestyles. Global supply cannot readily accommodate changes in demand of this size, especially for non-renewable raw materials. In that case, there is a zero-sum game: more for one economy means less for another. Can Asian cities deliver water to their residents?[1] Can the

Box 1 The Middle Income Trap: unable to compete

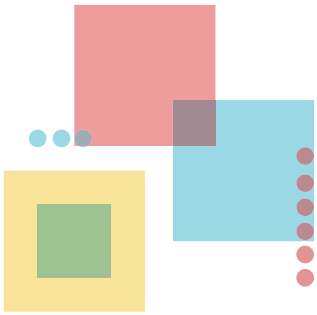
The Middle Income Trap refers to countries stagnating and not growing to advanced country levels. This is illustrated in the figure, which plots the per capita incomes of three middle income countries between 1975 and 2005. In a steadily growing economy, the per capita GDP would rise continuously over time, towards higher incomes. That is the experience of Republic of Korea. But many middle income countries do not follow this pattern. Instead, they have short periods of growth followed by periods of stagnation or even decline, or are stuck at low growth rates.

They are caught in the Middle Income Trap—unable to compete with low income, low wage economies in manufacturing exports and unable to compete with advanced economies in high skill innovations. Put another way, such countries cannot make a timely transition from resource-driven growth, with low cost labor and capital, to productivity-driven growth.



Source: IMF World Economic Outlook, October 2010.

“The new equilibrium will surely be found in a combination of adjustments: price increases to reduce demand and increase supply; new technologies to reduce unit consumption and/or substitute with more plentiful, renewable resources; and recycling to minimize waste



region feed itself and, if not, will the rest of the world provide enough food? How will Asia’s massive needs for energy and other natural resources be met? How would Asia sustain its rapid growth with limits on carbon emissions?

Such concerns about the sustainability of economic growth are not new. They date back to Malthus and re-emerge whenever growth is rapid. But there are new features to the debate today. First, there is a backdrop of rapidly rising prices for food, fuel and other raw materials. Higher prices signal scarcity in spot markets and indeed commodity stockpiles seem to be at lower levels than is comfortable for many governments. While few formal long-term growth models include commodity prices as a factor in explaining the pace of growth, conventional wisdom suggests that growth could slow if prices surge further—if for no other reason than the need to invent new technologies to optimize resource use. Inevitably, the diffusion of any such technologies would be far slower than simply adapting “off-the-shelf” technologies in a process of growth catch-up. What can Asia, as a region, do to make sure that the “adding-up” problems of today follow the first cries of the Club of Rome in 1972 into the dustbin of history?[2]

The new equilibrium will surely be found in a combination of adjustments: price increases to reduce demand and increase supply; new technologies to reduce unit consumption and/or substitute with more plentiful, renewable resources; and recycling to minimize waste.

Disparities across countries and subregions

Although most talk of Asian economics is upbeat, a number of Asian countries are falling well short of their potential, largely in South and Central Asia. As discussed earlier, Asia is a region of paradoxes. The gap between advanced economies and the least developed is the largest of any region of the world. In fact, income inequality in Asia is mostly explained by differences between countries, in sharp contrast to income inequality in Europe, North America or Latin America, where most income inequality is within countries. As yet, Asia has given little thought as to how to manage inter-country inequality.

Two Asian borders already show very high disparities between countries. First, Democratic People’s Republic of Korea has lagged significantly behind Republic of Korea and increasingly behind the Northeast region of PRC. Second, the income differential between Singapore and Indonesia reached 14:1 in 2010. In the future, as a growing number of individual Asian countries grow rapidly, the border divisions could sharply expand over time if their neighbors fall behind. If India continues to grow fast, the ratio between its real income level and that of Bangladesh and Pakistan could widen from today’s manageable 2.1 and 1.3, respectively, to as high as 2.9 (India/Bangladesh) and 5.2 (India/Pakistan) by 2050. For comparison, the income ratio between the United States and Mexico today is 3.2 (in PPP terms). Other borders with high income differentials between fast growing and slow growing Asian countries could emerge in Central Asia.

Another factor changing the shape of Asia is that borders are no longer confined by geography. Migration has spread more broadly: Uzbek workers are in many Central Asian countries; Bangladeshis in East Asia and the Gulf. The Philippines has a long tradition of exporting skilled and unskilled labor all over the world. When income differentials across borders rise to a significant degree, the chances are that migration, either legal or illegal, will also rise in response.

These trends suggest that Asia faces a considerable risk if some countries are allowed to lag behind while others enjoy the benefits of global and regional expansion. This is the argument for why Asia as a whole should strive to achieve the Asian Century

2 Club of Rome. “The Limits to Growth” New York: Macmillan,1972.

scenario.

For the same reasons, this report recommends two initiatives under Asia's regional cooperation agenda: (i) unhindered trade and investment flows across all 49 Asian economies; and (ii) the launching of a meaningful intra-regional development assistance program—on a bilateral or multilateral basis—consistent with Development Assistance Committee (DAC) guidelines.

Global warming and climate change

Global warming and climate change, as well as resultant severe water shortages, are mega challenges that have assumed global visibility relatively recently. But, it is perhaps the single most important long-term challenge facing humankind this century and beyond. It could affect each and every human being on our planet, irrespective of his or her country of residence or income level. With over half of the world's population residing in the region, Asians have more at stake in the well-being of the planet than any other people.

Mitigation of risks associated with climate change and measures to adapt to global warming would affect every aspect of the economy and way of life of all Asians: from the efficiency of energy use and weaning away from fossil fuels, to modes of transportation, to the design of buildings and indeed entire cities, to the care of forests and green areas; and, ultimately, to the need to transition to an economic growth model and much more eco-friendly and sustainable lifestyles of future generations.

In addition to meeting these mega challenges, Asia's dramatically larger global footprint will bring new obligations and opportunities. The fact that Asia's share of global GDP will not only exceed 50 percent but would also be more than twice that of the next largest geographic group (Europe) will fundamentally alter its role and mode of interactions with the global community.

"Governance and institutional capacity are the Achilles heel for most Asian economies

Governance and institutional capacity

Governance and institutional capacity are the Achilles heel for most Asian economies. If recent adverse trends in the quality of institutions and rising corruption continue unchecked, the region's ability to realize the Asian Century would be seriously jeopardized. All countries must improve governance and continually transform their institutions to realize the promise of becoming affluent societies by 2050.

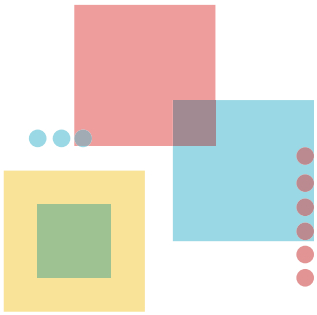
Significant improvements in the quality and credibility of national political and economic institutions (illustrated by rising corruption) are prerequisites for sustaining Asia's growth trajectory. High quality institutions will help the fast growing countries avoid the Middle Income Trap, and the slower growing countries establish the basic conditions for moving toward sustained economic growth. Managing the common challenges—be they the delivery of quality social and infrastructure services, the prevention of crony capitalism, rapid urbanization, building a fundamentally sound financial sector, fostering entrepreneurship and innovation, the protection of citizens' rights or the maintenance of the rule of law—requires effective governance, both central and local.

Asia will need to modernize governance and retool its institutions with an emphasis on transparency and accountability.

Mega risks

Amidst the excitement about the positive transformations taking place in Asia, it is often overlooked that some of the most violent conflicts since the end of World War II (e.g., Korean War and Viet Nam War) have occurred in Asia. More importantly, the world's current hotbeds of conflict are concentrated in Asia. In addition to these inter-country issues, a myriad of domestic conflicts/insurgencies are simultaneously occurring in the region's small and big countries alike.

"A major challenge that Asia faces is whether it is going to develop the necessary mechanisms to mitigate regional conflicts and manage regional stability and order



Furthermore, one must take into account the distrust and tensions that characterize the relationships between the major countries. Finally, Asia is home to five nuclear powers that have tense relations with others.

Any one or a combination of regional or national conflicts can derail Asia's growth trajectory—by far the biggest risk to the realization of the Asian Century (Box 2).

Box 2 Risks of conflict in Asia

In the 1990s, Asia experienced a downward trend in the number of conflicts—mirroring a similar global trend. Sadly, it appears that the trend is now reversing, both globally as well as in Asia.

Several internal conflicts (where one or more ethnic group seeks to break up from an existing state) have been brewing intermittently. Recently, the Prime Minister of India described the Maoist insurgency in eastern and central India as the most serious threat to India's national security.

Beyond national boundaries, there have been interstate conflicts that have flared up in the past, but could now easily develop into full-scale wars with devastating social and political costs.

Now a new type of conflict has come into the fray: climate change, a global threat, is increasingly feared to become a "threat multiplier", especially in the regions that are fragile and unstable to begin with. In turn, this could lead to widespread famine, chaos and internal struggles, and conflicts among neighbors for energy resources.

Several of Asia's major rivers—the Indus, Ganges, Mekong, Yangtze, and Yellow—originate in the Himalayas, If the massive snow/ice sheet in the Himalayas continues to melt, it will dramatically reduce the water supply of much of Asia—and could lead to conflict.

A major challenge that Asia faces is whether it is going to develop the necessary mechanisms to mitigate regional conflicts and manage regional stability and order. At the moment, Asia's regional security order is in a state of flux. Asia's unprecedented economic boom has had major—but still unresolved—implications for how political power will be distributed throughout the region; it is generally agreed that the best case scenario is a multi-polar Asia.

This leads to the question of what might sustain peace and order in a multi-polar Asia. Economic interdependence, a key driver for peace, is steadily increasing in scope and scale in Asia, and serves as a powerful force for mutual restraint in the region. Without stronger regional institutions, interdependence alone might not be a sufficient basis for peace and stability. Asia's regional institutions, such as ASEAN, have been reticent in developing a role in dispute-settlement or conflict-resolution. Going forward, the key question is whether Asia can cooperatively manage its conflicts without external help.

So far, Asia has yet to seriously institutionalize such cooperation. Some foresee and advocate an Asian NATO, which, like the Atlantic institution itself, might help the region to deal with both traditional as well as non-traditional threats. But according to some analysts the prospect for an Asian NATO is unlikely to materialize for several strong reasons, ranging from a long-standing aversion, one might even say a norm, against collective defense arrangements, to the inability to articulate who or what exactly is the shared threat to Asia.

Realizing the Asian Century: A Strategic Framework

6

This chapter presents a strategic framework and the contours of general strategies for Asia as a whole. The framework covers three dimensions: national action; regional cooperation; and collective action on the global agenda. A brief discussion of the three dimensions is followed by an elaboration of the priority actions within each of the dimensions.

Three dimensions

A distinguishing feature of Asia's economic story during the past fifty years has been the singular focus of most policy makers and political leaders on domestic economic and social development. This was appropriate as countries attempted to eradicate poverty and rapidly catch up with the developed countries. It was also possible to do so when Asia's global footprint was smaller. But as the center of gravity of the world economy moves to Asia, culminating in its share of global GDP rising to half or more, it will no longer be possible or desirable.

While the national policy agenda will always retain its paramount importance, there are five reasons for Asian policy makers—particularly in the large Asian economies—to look beyond their national borders.

- First, many of the inter-generational issues discussed here have national, regional, and global dimensions.
- Second, Asia has the most to gain or lose from the preservation of key global commons essential for future growth and prosperity: an open global trading system, a sound and stable global financial system, a mitigation of climate change, and peace and security. It must play a proactive role in any global discussions about them.
- Third, large Asian economies increasingly need to take into account the potential impact of their national policies and actions on the region and the world. Their much larger global footprint would require them to play a larger role in global governance.
- Fourth, the diversification of export markets to reduce the current heavy reliance on North American and European markets will require Asian leaders to work together to remove behind-the-borders legal, administrative and logistical barriers against the free movement of goods and finance within the region.
- Fifth, managing some of the biggest risks facing the region—particularly, cross-country disparities that could lead to conflict—will require region-wide discussion and action.
- The actions (or inactions) of the Asia-7 countries will determine whether the less well-off economies would share the benefits of the Asian Century—or be left behind.

Given Asia's diversity and widely varying country conditions, the precise actions and timing of measures on the inter-generational issues must be country or subregion specific. They need to be formulated on a case-by-case basis. Even so, it is possible to articulate an overall strategic framework and define the contours of general strategies for the region as a whole.

The strategic framework covers three dimensions (Figure 1).

The central dimension is strategic and policy actions at the *national level*. These range from getting the fundamentals of development right for the slow-growth economies to sustained improvements in productivity and shifting comparative advantage to avoid the Middle Income Trap for the converging economies, and to sustaining growth and moving from growth per se to well-being in the high income economies.

The second dimension is *regional cooperation* to pursue regional commons, maximize synergies available from collaboration, and work toward shared regional prosperity.

> **Growth and inclusion need not be mutually exclusive, but instead can be mutually reinforcing**

Figure 1 **Strategic framework**

The third dimension is the transformation in Asia's interactions with the global community in line with its expanding global footprint; this dimension will be reliant on collaboration and collective action, particularly among the large economies, to bridge the national and global agendas.

Five criteria used for narrowing the list of issues to address in this framework are: (i) the centrality to the objectives of ensuring faster and more inclusive growth; (ii) avoiding the Middle Income Trap; (iii) the inter-generational nature of the issue and related solutions; the horizontal inter-connectedness between them; (iv) the relevance to meeting the mega challenges; and (v) the importance in light of Asia's fast growing global footprint.

Many of the issues are interconnected and mutually reinforcing across the three dimensions. For example, financial transformation, the efficient use of resources, and energy security, discussed below as part of national actions, are clear examples of issues that are important at all three levels. Similarly, urbanization, finance, energy efficiency and climate change are closely interrelated at the national, regional and global levels. Each issue must be seen as part of the overall agenda. Asian policy makers must address these challenges in a coordinated manner to realize the promise of the Asian Century.

National action

The focus of the proposed national economic and social policy agenda would differ significantly across the three country groupings. But, despite the national differences, it is possible to identify overarching issues and contours of general strategies for Asia:

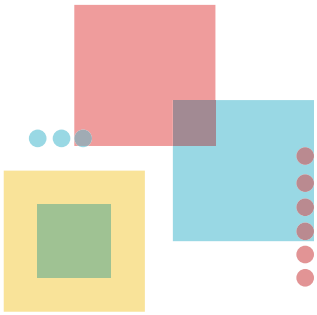
Growth plus inclusion

Growth and inclusion need not be mutually exclusive, but instead can be mutually reinforcing. To sustain growth over the long-term, almost all Asia needs a strategy to deal with inequality if it is to maintain the social stability that has been so important for growth until now.

Asian countries must give much greater priority to inclusion and the elimination of inequalities—rural/urban; educated/uneducated; along ethnic lines—throughout their societies. Asia will have to rethink its policies towards distribution. Inequalities of opportunity can no longer be disregarded, nor can islands of poverty (either in countries or groups in society) coexist easily with growing affluence. Rural development—including agriculture—will remain important in all low and middle income economies. Urban inequity, which has been rising in parts of Asia, will need to be addressed, and slums will need to be eliminated.

The range of policy instruments is limited. A sharper focus on education and developing human capital, with a particular focus on women, will be essential to fully realize the demographic dividend, and is an obvious area, followed by government redistribution policies. Governments must also give priority to increasing access to quality infrastructure services as well as promoting innovation that meets, at an

“Asia must adopt a new strategy and approach to manage its coming rapid urbanization by promoting compact, energy-efficient, green, slum free, safe and livable cities



affordable cost, the needs of those at the bottom of the pyramid. Supportive environments for domestic philanthropy can also play a significant mitigating role, as can various forms of insurance against risks, such as unemployment, disability, illness or death of a family wage earner. Minimum wage and active labor market policies, such as guaranteed employment schemes, can make a difference but can also be abused. Mobility of labor is important but that is best achieved when regulations ensuring migrant rights (domestic and international) are developed and respected.

Financial transformation

All else equal, as its share of global GDP rises to 50 percent or more, Asia should have about the same share of global financial assets and similarly-sized banking sectors, and equity and bond markets to efficiently recycle and allocate Asia’s huge savings and foreign reserves.

In growing and transforming their financial systems, Asia must remain mindful of the lessons of the 1997 Asian Financial Crisis and the Great Recession of 2007–09. Above all, Asia must avoid falling prey to another bubble of excessively exuberant expectations.

Asia will need to formulate its own financial model, avoiding both an overreliance on self-regulation by markets, as well as the current excessive central government control of banking-dominated financial systems present in many parts of Asia. It should become more open to institutional innovation. There is also an urgent need to develop instruments and create an enabling environment to finance Asia’s massive infrastructure and urban development needs through public-private partnerships and public financial markets. In Northeast Asia, the special needs of ageing societies demand greater attention.

National reforms must aim to create conditions to facilitate regional (and global) integration. Well before 2050, Asia should be home to one or more global financial centers and a number of truly global financial houses.

Managing massive urbanization

Between now and 2050, Asia will be transformed as its urban population doubles from 1.6 billion to 3.1 billion, truly staggering and truly historic.

Asia’s urban transformation can be an unparalleled opportunity to increase productivity and improve the quality of life of its citizens. Asia’s cities, expected to account for more than 80 percent of economic output, will be the centers of higher education, innovation and technological development. Urban buildings and transport will account for the bulk of energy consumption and carbon emissions. Consequently, the quality and efficiency of urban centers will increasingly determine Asia’s long-term competitiveness and social and political stability.

Asia must adopt a new strategy and approach to manage its coming rapid urbanization by promoting compact, energy-efficient, green, slum free, safe and livable cities—more reliant on mass transit than on cars. It must also manage some significant risks, particularly those associated with inequality, slums and a breakdown of social cohesion.

Better financing and management of cities will require further decentralization of responsibility to local governments, more local accountability and a move toward market financing of urban capital investments. Urban development takes many decades. Timely action will require visionary leadership.

Radical reduction in the intensity of energy and natural resource use

The anticipated rapid rise in the living standards of some 3 billion Asians will put tremendous pressures on—and create intense competition—for Earth’s finite natural resources.

"The recent deterioration in the quality and credibility of national political and economic institutions (illustrated by the rise in corruption) is a key concern

Based on current trends, Asia will surpass the OECD long before 2050 to become the largest energy consumer group. It will be most affected by, and most responsible for, risks related to energy security and climate change. To preserve its economic interest, it would need to take the lead in securing and de-carbonizing energy through radical energy efficiency and diversification programs. Action is needed in many countries to eliminate energy subsidies and to switch from fossil fuels to renewables. There will be similar issues for most other natural resources, including water and fertile land. The only way out is a combination of price increases (including the removal of any subsidies), more stringent standards (for buildings and transport), technological breakthroughs and adjustments in consumption patterns.

Remedial actions will be needed at national, regional and global levels. There is a strong synergy between energy efficiency and total factor productivity growth, which is needed for sustained convergence and global competitiveness.

The key policy implication for all Asian countries is that their future competitiveness and well-being will depend heavily on improving the efficiency of natural resource use and winning the global race to a low carbon future.

Entrepreneurship, innovation and technological development

The continuing rapid growth of Asian economies over the next 40 years will require harnessing the full potential of technology, innovation and, critically, entrepreneurship.

The model in Asia, with a few exceptions, has been that of "catching up" with the more advanced economies and adapting the technologies developed there to produce for western markets. This was appropriate when Asian countries were far from global best practice and on the lower rungs of the "convergence" ladder. As more Asian countries emulate Japan, Singapore and Republic of Korea and come closer to western best practice, this will not be adequate.

In the future, the converging Asian economies and, particularly PRC and India, must move from catch-up to frontier entrepreneurship and innovation and create breakthroughs in science and technology, joining the ranks of the high income economies. A particularly fruitful area, where India has already demonstrated notable successes, will be "frugal" innovation to meet the needs of millions of people with modest incomes.

The core requirement—where many Asian economies fall short—is quality education that promotes creativity at all levels, supported by an eco-system that fosters innovation and entrepreneurship.

The most critical element of the eco-system is an overall policy framework that promotes competition and enables private sector development.

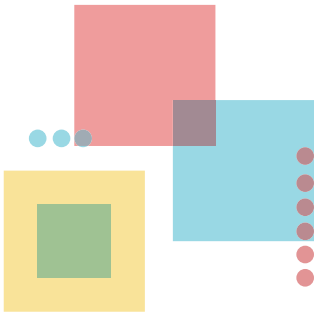
Governance and institutional development

Asian economies across the three groups must improve governance and continually transform their institutions in order to meet the challenges of the coming decades.

The recent deterioration in the quality and credibility of national political and economic institutions (illustrated by the rise in corruption) is a key concern. High quality institutions will help the fast growing countries avoid the Middle Income Trap, and the slower growing countries establish the basic conditions for moving toward sustained economic growth. Managing the common challenges—be they rapid urbanization, building a fundamentally sound financial sector or fostering entrepreneurship and innovation—requires effective governance, both central and local.

Throughout Asia, an expanding middle class—itself a desirable product of rapid socio-economic growth—will also exert new demands for increased

“Avoiding the Middle Income Trap must be the paramount objective of the fast growing middle income economies



voice and participation, transparent allocation of (budget) resources, accountability for results and enhanced personal space.

Although daunting, the eradication of corruption is critical for all countries to maintain social and political stability and retain the legitimacy of governments.

As recent events in the Middle East amply illustrate, the quality of communication between those who govern and those who are governed will be paramount as new social media and other tools not yet known—but certain to emerge—become available to the public. Asia will need to dramatically improve governance and its institutions with an emphasis on transparency and accountability.

From growth to well-being

As more Asian countries progress toward high income status, they will need to adopt policies that promote broader social well-being and better lifestyle for individuals.

Just as inclusion is critical to maintaining social cohesion and political stability in low and middle income countries, a greater focus on well-being, personal safety and happiness rather than more wealth, will be important with growing affluence. A shift in such a direction is critical in anticipation of the growing global competition for resources.

This requires a dialogue within Asia to understand what that implies for the region’s growth model and what can be done to improve well-being. And it may be time to begin to define measures of well-being and incorporate them in national surveys.

Priorities across country groups

Over time, as countries develop and increase their incomes and institutional capacities, they would graduate from their current country category to the next one—for example, from non-convergers to convergers, and from middle income convergers to high income or developed. While these overarching issues would be applicable to most Asian economies, their relative priority will vary by groups of countries and over time:

1. **Slow or modest growth in aspiring Asia.** The highest priority of this group of countries—which accounts for the largest number of countries (though a small proportion of population) in Asia and includes both low and lower-middle income economies—must be to raise economic growth rates to approach those of their more successful Asian neighbors. Accordingly, these countries must focus on the fundamentals of development: promoting faster and more inclusive growth by reducing inequalities through better education for all, infrastructure development and the development of institutions, and a business environment that promotes private sector development.
2. **Fast-growing converging economies.** Avoiding the Middle Income Trap must be the paramount objective of the fast growing middle income economies, such as Armenia, PRC, India, Indonesia, Kazakhstan and Viet Nam. In addition to consolidating the fundamentals of development addressed above, they should build credible and predictable institutions that protect the property (physical and intellectual) of investors and citizens alike and allow for fair dispute resolution. In addition, they will need a new vision in four crucial areas: (i) to manage the challenges of rapid urbanization; (ii) to dramatically improve the efficiency of energy use and other natural resources (and thus delink their use from economic growth); (iii) to transform their financial systems to support development of the real sector while promoting stability and minimizing volatility in the markets; and (iv) to promote innovation and entrepreneurship for

> **Regional cooperation and integration are critical for Asia's march towards prosperity**

enhanced productivity and competitiveness.

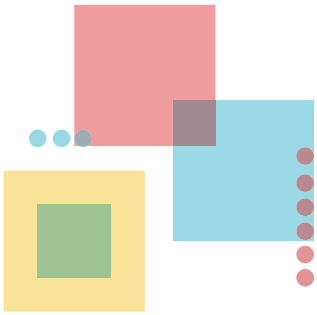
3. **High income, developed economies.** Countries in this group—such as Japan, Republic of Korea and Singapore—should lead the rest of Asia in:
    - moving from largely "catching up" with the current global best practice in the United States or Europe to leading scientific and technological breakthroughs in areas of special importance to Asia (e.g., biotechnology; medical care for the aged; mitigating climate change). In some of the green technology areas, Japan and others are already at global best practice level. This should become more the rule than the exception.
    - succeeding in sustaining high incomes with an ageing society and a demographic deficit in the high income countries in Northeast Asia. This unprecedented demographic reality will result in new inter-generational expectations and relations and, in turn, will affect all aspects of governance and require wide-ranging institutional adjustments, raising issues of fiscal affordability and sustainability. If successful in meeting this challenge, these countries could lead the way for others, not only in Asia.
    - formulating and implementing national strategies to move beyond achieving high economic growth toward broader social well–being. Japan's efforts in this direction, partly driven by demographic necessity, are relevant for the region and the world.

Regional cooperation

Regional cooperation and integration are critical for Asia's march towards prosperity. Greater regional cooperation and collaboration will become significantly more important for six reasons. First, cementing Asia's hard-won economic gains in face of vulnerabilities of external shocks. Second, regional cooperation and collaboration could be an important bridge between individual Asian countries and the rest of the world, and as a leverage for policy makers to implement domestic reforms that face strong headwinds from entrenched interest groups. To have its voice and influence commensurate with its economic weight, Asian economies will need to coordinate, even harmonize, their geopolitical positions on a range of global issues. This can be done only through genuine and regular regional dialogue and cooperation. Third, as Asian economies rebalance growth towards "internal" (domestic and regional) demand, transport and energy connectivity will pave the way for creation of a single market. To sustain regionwide economic growth, they need to fully open their markets to neighbors in the region (in the same way the US and European markets have been open to Asia since World War II). This will allow unhindered flow of trade and investments (and more labor mobility, particularly of skilled labor) throughout the 49 economies. Fourth, regional cooperation and development assistance can help reduce cross-country disparities in income and opportunities, which if left unchecked, could breed instability or even spark conflicts in parts of Asia. Fifth, collaboration in technological development, energy security, and disaster preparedness can yield significant synergies and positive spillovers. And sixth, the skillful and cooperative management of regional commons will become increasingly important for Asia's long-term stability, peace and harmony.

Avoiding conflict between mega-economies and nuclear states, and maintaining social and political stability in the region will be paramount. Given its diversity, heterogeneity and, especially the lack of political support in the major countries, Asia will need to develop its own unique model that builds on the past

> **Over time, Asia must gradually transform its role to that of an active participant and a thought leader in formulating the rules on global commons issues**



positive experience in East Asia: a market-driven, bottom-up and pragmatic approach that facilitates free regional trade and investment flows. This model could build on the ASEAN experience and gradually include more economies over time, eventually resulting in the unhindered flow of trade and investments, as well as increasing labor mobility throughout Asia. The aim of these spontaneous actions and government initiatives is to accomplish the creation of an Asian economic community. Such an approach will require stronger—though not necessarily new—regional institutions.

The creation of an integrated and effective Asian economic community must be based on two general principles—openness and transparency. Asia's embrace of open regionalism implies that it does not discriminate against non-members while encouraging regional institutions to make the most of existing global institutions and conventions. Meanwhile, transparency will enhance accountability and strengthen governance.

Crucial for increased regional cooperation is strong political leadership. Given the region's diversity, building Asia's regionalism would require collective leadership that requires recognition of adequate balance of power among all participants. Major economic powers, like PRC, Japan, Republic of Korea, India and Indonesia, will have an important role in integrating Asia and shaping its role in the global economy.

Global agenda

Asia's growth and larger footprint in the global economy will bring with it new challenges and responsibilities which have significant implications for the region, particularly for the large economies.

Asia must take greater ownership of the global commons, including an open global trading system, stable global financial system, global climate change, peace and security. For example, as the region that has long prospered through trade with the rest of the world and has been heavily dependent on import of natural resources and commodities from other regions, Asia's long-term growth and prosperity are intimately linked to an open world economy, robust international trading system, secure shipping routes and the international rule of law. Asia must sustain friendly and business-like relations with countries nearby (Gulf countries, Russian Federation, Turkey, as well as Australia and New Zealand) as well as further away in Africa and Latin America (in addition to maintaining its traditional close economic ties with North America and European Union).

In this context, Developing Asia's stance on climate change and global warming requires a fundamental reassessment. Early and aggressive action on climate change is demonstrably in Asia's self-interest—socially, economically and politically. A change in its current stance will also be a concrete and early demonstration to the world community that Asia is willing and able to play a constructive role in preserving the global commons.

As it becomes a larger player in the global economy, Asia's self-interest and long-term prosperity will lie in ensuring well-being, peace and security throughout the world.

Over time, Asia must gradually transform its role to that of an active participant and a thought leader in formulating the rules on global commons issues. The region as a whole must play a more proactive role in global governance.

Finally, the region must delicately "manage" its rapidly rising role as a major player in global governance in a peaceful and harmonious way. It will be important that as an emerging global leader, Asia act as—and be seen as—a responsible and collaborative global citizen, non-threatening to others and fully cognizant of the global implications of its policies and actions.

Realizing the Asian Century: Inclusion and Equity

7

This chapter addresses a topic that is critical if the fruits of Asia's potential prosperity are to be shared widely by all segments of its population. It starts by defining the concept of growth with inclusion and equity and then laying out the case for Asia's leaders to focus on it. Growth and equality are seen as part of a virtuous cycle. As noted in the brief review of Asia's status in this respect, while the region has made marked progress in reducing poverty, inequality and, particularly, non-income inequality, have remained high or have risen in a number of countries. This is most visible in the performance on Millennium Development Goals (MDGs) on indicators related to health and sanitation. This gives rise to the term, "The two faces of Asia" (Box 2). The chapter also outlines the priorities for Asian leaders to pursue this objective—by focusing on human development, redistribution policies and social safety nets, and good governance.

What is inclusive growth?

Inclusive growth refers to both the pace and pattern of growth, and encompasses aspects of equity, equality of opportunity, and protection in market and employment transitions. Inclusive growth is both an outcome and a process. On the one hand, it requires that everyone participate in the growth process, both in organizing the growth progression as well as in participating in the growth itself. On the other hand, it requires that everyone shares equitably in the benefits of growth. Therefore, inclusive growth implies participation and benefit-sharing. Participation without benefit-sharing will make growth unjust and sharing benefits without participation will prevent it from being a desirable welfare outcome.

In the past, discussion on the impact of growth on poverty and inequality has focused on concepts such as broad-based or pro-poor growth.[1] How does inclusive growth relate to these concepts? Inclusive growth takes these concepts further by bringing in the concept of access and opportunities, but it is more closely related to the absolute definition of pro-poor growth than the relative definition.

Under the absolute definition, growth is considered to be pro-poor as long as poor people benefit in absolute terms, as reflected in some agreed measure of poverty.[2] In contrast, in the relative definition, growth is "pro-poor" if and only if the incomes of poor people grow faster than those of the population as a whole, i.e., inequality declines. However, while absolute pro-poor growth can be the result of direct income redistribution schemes, for growth to be inclusive, productivity must be improved and new employment opportunities created. In short, inclusive growth is about raising the pace of growth and enlarging the size of the economy, while leveling the playing field for investment and increasing productive employment opportunities, as well as ensuring fair access to them. It allows every section of the society to participate in and contribute to the growth process equally irrespective of their circumstances.

Why focus on inclusion and equity?

Although it may appear self-evident as to why a focus on inclusion and equity is justified, it is useful to clarify the multi-faceted reasons for doing so, especially when there may be trade-offs involved. In addition to ethical and moral considerations that lead to a concern for equity, there are a number of pragmatic reasons for a focus on inclusion and equity. A number of studies, most recently the Growth Commission's

1 Tandon Ajay and Juzhong Zhuang, "Inclusiveness of Economic Growth in the People's Republic of China: What do population health outcomes tell us?" ADB Economic and Research Department Policy Brief, Manila: Asian Development Bank, 2007.

2 Ravallion, Martin and Shaohua Chen, "What Can New Survey Data Tell Us about Recent Changes in Distribution and Poverty?" Washington, DC: The World Bank Economic Review 11(2), pp. 357-382,1997..

> **“Asia’s recent growth has resulted in a dramatic decrease in poverty but income and, particularly non-income inequalities, have continued to rise**

report[3], have confirmed that growth strategies cannot succeed without a commitment to equality of opportunity, giving everyone a fair chance to participate in the growth process and to enjoy the fruits of growth that follow.

The persistence of inequality could trigger social and political tensions, and lead to conflict as is currently happening in parts of Asia. Rising inequalities thus pose a risk to stability and, therefore, to growth and economic progress.

In contrast to the strong correlation between growth and changes in income measures of poverty, Bourguignon et al. conclude that the correlation between growth and improvements in non-income MDGs is practically nonexistent. This interesting finding suggests that economic growth is not sufficient per se to generate progress in the non-income MDGs. Sectoral policies, including targeted interventions, and other factors or circumstances matter as much as growth.

High levels of inequality can create institutions and cultures that favor those who have significant economic and political influence, perpetuating the cycle of inequality. Equity can help give influence to a larger group of people, which can shape institutions that will help the interests of more members of the economy. “Bad” inequalities are based on an individual’s circumstances, as opposed to “good” inequalities that result from effort, and can lead to inequality traps. Chronic disparities in power, wealth, and status among different socioeconomic groups are perpetuated by economic, political, and sociocultural mechanisms and institutions.[4] The capture of political power by an elite that leads to political inequality aggravates the initial inequality in endowments and opportunities.

Finally, growth and equality should not be seen purely as tradeoffs, but as part of a virtuous cycle. More economic opportunities for the poor, when not at the expense of other groups in society, can lead to higher growth, which in turn can lead to further opportunities.

What is the status in Asia?

Asia’s recent growth has resulted in a dramatic decrease in poverty but income and, particularly non-income inequalities, have continued to rise. Many Asian countries appear to have accepted significant increases in within-country inequality as the price to be paid for unleashing the forces of globalization. It is well understood that cities and coastal areas will benefit first from globalization, while interior regions lag behind. It is also accepted that owners of capital and skilled workers will reap a disproportionate share of the gains from globalization and that that can lead to rising inequality in the short-term.

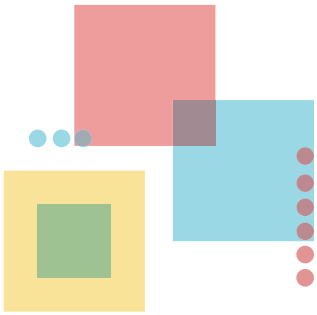
Asia’s progress in poverty reduction has accelerated in recent years. By some estimates, the number of poor in East and South Asia was reduced by 425 million between 2005-2010[5]. South Asia alone is expected to see a reduction of 430 million over 2005-2015, representing a fall in its poverty rate from 40 percent to under 9 percent.

This progress is not matched across other indicators as reflected in the review of Asia’s performance toward achieving the MDGs (see Box 1). Asia’s overall performance has been positive and has strongly influenced global progress. The region’s converging countries have been leading in terms of addressing the MDGs but all of Asia’s subregions are on track on more than half of the indicators. Nevertheless, the region is lagging behind on some crucial targets,

3 Kanbur, Ravi and Michael Spence, “Equity and Growth in a Globalizing World,“ Washington, DC: Commission on Growth and Development, 2010..
4 Bourguignon, Francois; Francisco H. G Ferreira; and Michael Walton, “Equity, Efficiency and Inequality Traps: A Research Agenda,” Boston: Harvard University, 2006.

5 Chandy and Gertz, “Poverty in Numbers: The changing state of global poverty from 2005 to 2015,” Washington, DC: Brookings Institute, 2011..

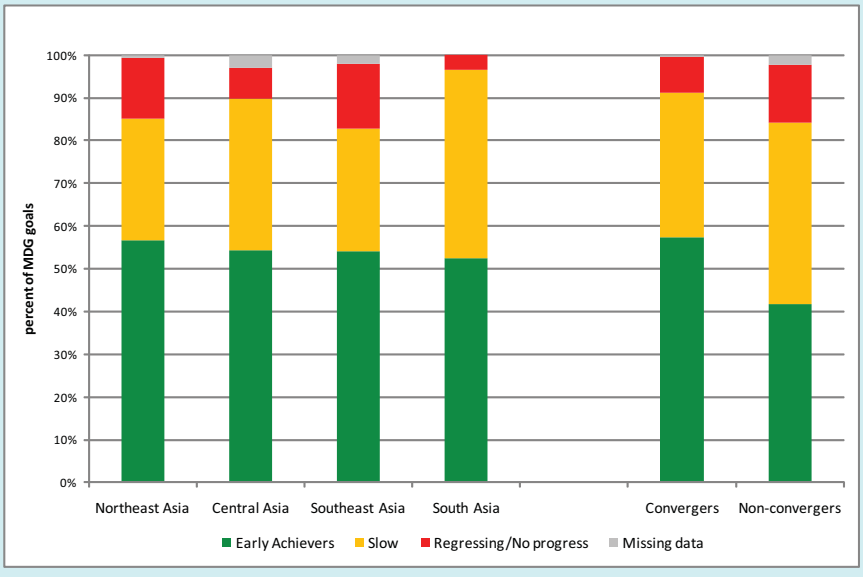
"While there has been progress in education, gender parity has not been achieved in most other areas. Women in the region experience some of the lowest rates of political representation, employment and property ownership in the world



Box 1 Asia and the Millennium Development Goals

- Between 1990 and 2008, the number of poor people living on less than $1.25/day, has been reduced from 1.5 billion to 947 million, despite an overall population increase of about 800 million people.
- Gender parity in primary education has almost been achieved in most countries, though Pakistan and Afghanistan are exceptions. Gender parity is on track at the secondary level though it is slow in many places at the tertiary level.
- Progress in basic sanitation has been particularly slow. The number of people without sanitation was 1.85 billion in 2008, almost the same level as in 1990. Asia is home to 70 percent of people worldwide who do not have access to basic sanitation.
- While there has been improvement in access to clean water, Asia is still home to 52 percent of the people worldwide who lack such access.

Converging countries lead in terms of addressing the MDGs



Source: ESCAP/ADB/UNDP, Paths to 2015, and Centennial estimates, 2011. High Income countries are excluded.

particularly those relating to childhood undernutrition, health outcomes and sanitation.

Inequality as measured by the Gini coefficient has been rising in a number of countries in Asia (Table 1). The relatively high, and in a few cases increasing, ratio of the income of the top quintile to the income of the bottom quintile, which ranges between 6 and 9 in a number of countries, is yet another indicator of inequality.

Also, while there has been progress in education,

“Asia needs a strategy to deal with inequality if it is to maintain the social stability that has been so important for growth until now

Table 1 **Inequality is increasing in a number of Asian countries**

Country	Gini Coefficient				Change (%)
	Initial Year		Final Year		
Thailand	46.2	1992	42	2002	-9%
Malaysia	41.2	1993	40.3	2004	-2%
Mongolia	33.2	1995	32.8	2002	-1%
Indonesia	34.4	1993	34.3	2002	0%
Philippines	42.9	1994	44	2003	3%
Pakistan	30.3	1992	31.2	2004	3%
Viet Nam	34.9	1993	37.1	2004	6%
India	32.9	1993	36.2	2004	10%
PRC	40.7	1993	45.5	2004	12%
Lao PDR	30.4	1992	34.7	2002	14%
Sri Lanka	34.4	1995	40.2	2002	17%
Bangladesh	28.3	1991	34.1	2005	20%
Nepal	37.7	1995	47.3	2003	25%
Cambodia	31.8	1993	40.7	2004	28%

Source: World Bank World Development Indicators, 2011.

gender parity has not been achieved in most other areas. Women in the region experience some of the lowest rates of political representation, employment and property ownership in the world. Large differences exist between countries with the Philippines earning a very high score of 0.77 out of 0.85 (rank 9 out of 134) on WEF’s Global Gender Gap Report (Figure 1), followed closely by Sri Lanka, signaling that these the countries demonstrate gender parity in most areas. On the other hand, India and Pakistan score 0.62 (rank 112 of 134) and 0.55 (rank 132) respectively in 2010 with little improvement since 2006. High Income countries also score low with Singapore at 0.69 and Japan at 0.65 (ranks 56 and 94 respectively), particularly due to low levels of female participation in the labor force and political leadership.

What is needed?

Asia needs a strategy to deal with inequality if it is to maintain the social stability that has been so important for growth until now. Inclusive growth as a development strategy is being embraced by many Asian economies, multilateral agencies and civil societies.

“Inclusive growth is the centerpiece of our development agenda. Fast economic growth provides us with the resources and the wherewithal to address the problems of poverty, ignorance and disease. Rapid growth will have little meaning, however, unless social and economic inequalities, which still afflict our society, are not eliminated quickly and effectively.” (Manmohan Singh, 2010)

“China is a strong supporter and follower of inclusive growth, a concept that is consistent with our pursuit of scientific development and social harmony. While speeding up the transformation of economic growth pattern and maintaining stable

"Asia will have to rethink its policies towards distribution. Inequalities of opportunity can no longer be disregarded. Nor can islands of poverty (either in countries or groups in society) coexist easily with growing affluence

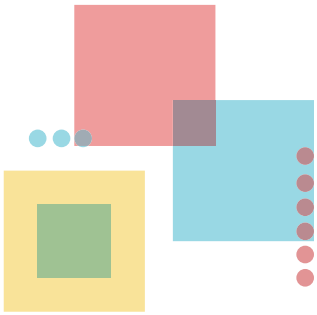
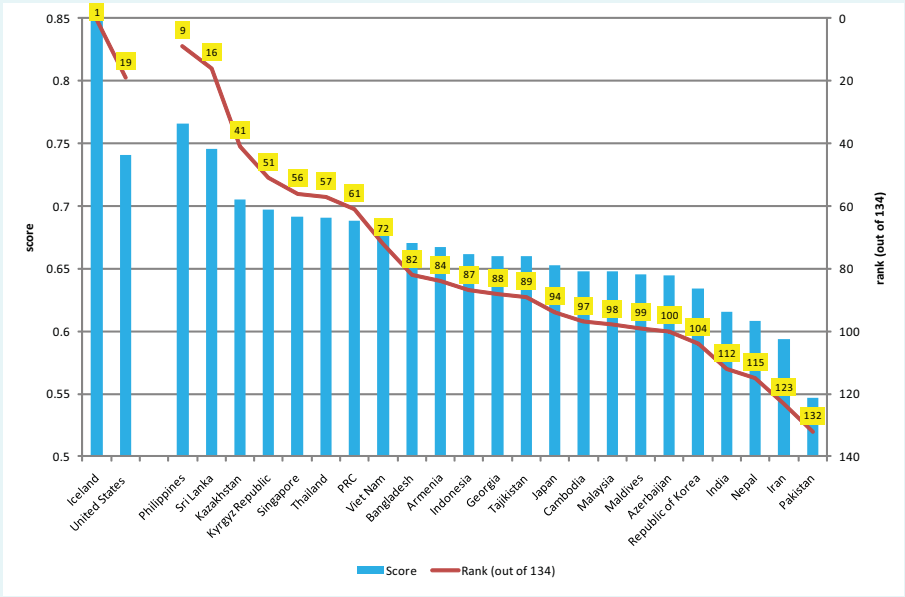


Figure 1 **Asia's economies rank low with regard to gender parity**



Source: WEF Global Gender Gap Report, 2010.

and relatively fast economic growth, China is committed to integrating economic development with improvement of people's lives." (Hu Jintao, 2010)

Growth and equality may seem like mutually exclusive goals, yet they can be complementary. Developing economies tend to have significant market failures, whether they are in credit markets, labor mobility, or land ownership. Investment can be allocated inefficiently due to these market failures, leaving potential economic growth on the table. Policies that encourage investment towards those who would not have access to it otherwise can help to combat inequity and help investment to be allocated more efficiently, thereby strengthening economic growth[6].

At one level, global trends are favorable for combating inequity. The rise in food and other commodity prices, thought to be influenced by structural demand factors as well supply shocks, will produce a sizeable terms of trade shift favoring rural areas over cities. As cities are the places that have benefited most from globalization, this helps balance the distribution of gains throughout the economy. More resources going into rural areas will ease overall domestic inequality, although it has the potential to widen both intra-urban and intra-rural inequality. The gains from higher food prices will disproportionately accrue to rich farmers at the expense of landless laborers or subsistence farmers, and the urban poor.

More generally, Asia will have to rethink its policies towards distribution. Inequalities of opportunity can no longer be disregarded. Nor can islands of poverty (either in countries or groups in society) coexist easily with growing affluence. The range of policy instruments is limited. Development of human capital is an obvious area, as are government redistribution policies

6 World Development Report 2006. Washington, DC: World Bank, 2006.

“policy makers must find an appropriate balance between targeting the poor and policies that broadly improve the well-being of the majority of people

and good governance.

A focus on human capital requires investment in education, health, and other social/infrastructure services such as water and sanitation. Merit-based, quality education that is equally accessible by all can be one of the strongest drivers lifting people out of poverty and toward greater equality. Access to clean water and sound sanitation, an area where Asia continues to lag, are not only a basic services but also vital for good health.

Government redistribution policies and social safety nets could take the form of (i) labor market policies and programs aimed to contain unemployment and reduce employment-related risks; (ii) social insurance programs such as pensions, health and disability insurance, and unemployment insurance; (iii) social assistance and welfare schemes including conditional cash or in-kind transfers, and the provision of essential services for the most vulnerable groups; and (iv) children-related programs that also have a major impact on developing human capabilities—protection to ensure the healthy and productive development of children. Worthy examples are early child development programs, school feeding programs, scholarships, free or subsidized health services for mothers and children, and family allowances or credit.

Another example is vocational education and training (VET). There is an urgent need for Asian economies to produce a workforce that can meet industry demands for skilled manpower to sustain competitiveness; and a VET system that is responsive to changing labor market conditions can play a crucial role. By

Box 2 Two faces of Asia

Developing Asia’s rapid growth disguises the rising inequalities. Rapid economic growth, rising population of rich along with the existence of millions of poor who do not have access to basic education, water, sanitation and health services have given birth to what we say are the “two faces of Asia”—one that is witnessed in the glitzy towers of Shanghai and Mumbai and the other seen in the gloom covering the slums of Jakarta, Manila, and Mumbai.

This growing economic dualism poses a threat to sustaining Asia’s dynamic growth and social cohesion.

The “two faces of Asia” need to converge to sustain growth and maintain social harmony in the region as well as within the countries. There can be only one Asia—one face of Asia, with opportunities open to all; an Asia where every individual can live with dignity—free of poverty and sharing in its prosperity.

Developing Asia has to keep its foot on the pedal to ensure not only that growth remains buoyant and helps lift millions out of their daily suffering. It has to be inclusive so that benefits are shared equally by all.

The task of meeting this challenge should not be underestimated. Even by conservative estimates, there would be millions of poor in Asia by 2015 with incomes less than $2 a day, and millions who still do not have access to safe drinking water, sanitation, basic education and health services.

If we fail to address this challenge, the glitzy towers of Mumbai and Manila will continue to be surrounded by slums and threaten both the economic progress and social cohesion of one of the most dynamic regions of the world.

"Strong institutions and good governance are fundamentally equitable and are needed to provide incentives for the vast majority of citizens to invent, be entrepreneurs, and to innovate

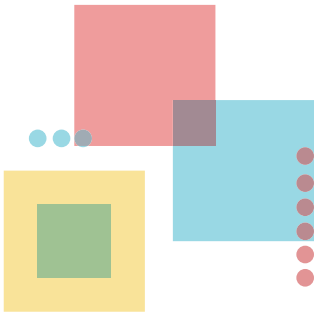
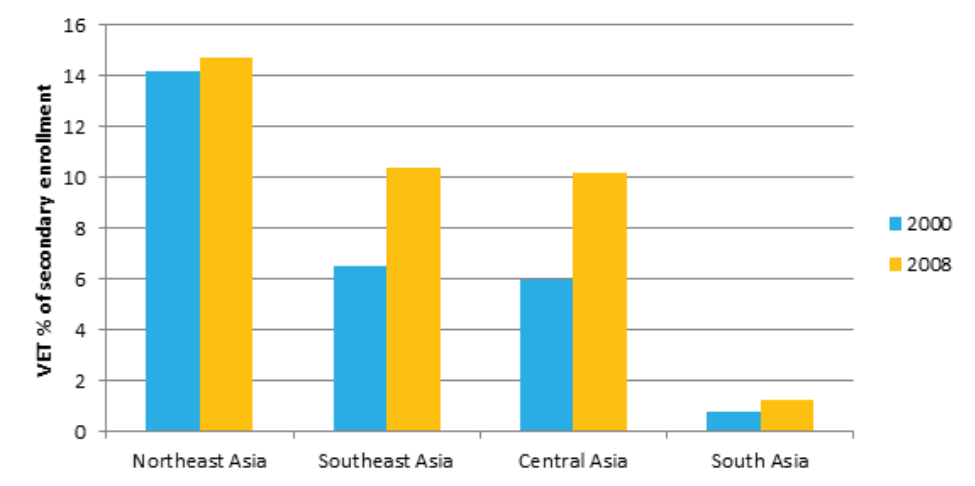


Figure 2 **Large difference exist between sub-regions with regards to vocational education and training (VET)**



Source: World Bank EdStats, 2011.

providing an opportunity to acquire skills for employment, VET can also help the poor and disadvantaged, and those who have dropped out of school and thus promote inclusion and equity The percentage of secondary students enrolled in VET programs in Asia (13 percent) is low relative to Europe (24 percent) and particularly low in South Asia (Figure 2). While some Asian countries have achieved gender parity in this area, it remains a challenge in other countries.

Considering the heterogeneity of needs, social safety net programs need to be 'multilayered' in their design. For instance, although conditional cash transfers can have an immediate impact on the poor if monitored effectively, they are at best a palliative measure; the longer-term solution lies with investments in skills development and promotion of sustainable livelihood programs.

Though many of the policies used to combat inequality target the poor, the middle class should not be neglected. The middle class is not only a driver of economic growth, but it also has substantial political influence, so that policy makers must find an appropriate balance between targeting the poor and policies that broadly improve the well-being of the majority of people.

Social and economic injustice that denies equal opportunity based on individuals' circumstances or because they do not belong to certain power groups who control political and economic decision making is often reflective of bad policies, weak governance mechanisms, faulty legal/institutional arrangements, or market failures. In Developing Asia, factor market (land and credit) failures are particularly acute. The central role of the government in promoting social and economic justice is to address all these market, institutional, and policy failures. Strong institutions and good governance are fundamentally equitable and are needed to provide incentives for the vast majority of citizens to invent, be entrepreneurs, and to innovate. They can best emerge when the distribution of power and influence is not highly unequal.

The potential of the excluded groups is untapped in large part because they lack access to a wide range of basic services—educational and health, as dis-

cussed above, but also financial services and security. Policies aimed at ensuring broad-based access to these services are likely to have a significant impact not only on equality but also on growth.

Some forms of inequality have long-gestational, multi-generational effects. These include issues of early childhood development, health, and access to quality education. They merit high priority and urgent attention.

Realizing the Asian Century: Financial Transformation

8

This chapter discusses the transformation of the Asian financial systems necessary to underpin the advent of the Asian Century. It starts by outlining the likely growth of finance under the two scenarios portrayed in the report and makes the case for Asia to move beyond the conventional financial wisdom and evolve its own financial model to better serve the needs of the real sector. It outlines the nature of financial transformation to build such a model. Next it suggests priorities for regional cooperation. Finally, the chapter discusses Asia's global role, including in the governance of global monetary and financial systems.

Asia's financial rise

In 2009, Asia accounted for 27 percent of global GDP and 23 percent in global financial assets. By 2050, under the Asian Century scenario, Asia's share of global GDP would almost double from 27 percent in 2010 to 51 percent at market exchange rates. Based upon current configurations of advanced country financial systems, Asia's share of global financial assets could rise to as much as 45 percent, with its financial deepening ratio (total financial assets excluding derivatives as a percent of GDP) rising to 539 percent, comparable with levels in the EU and US. On the other hand, under the Middle Income Trap scenario, where Asia's share of global GDP remains only 32 percent as a number of Asian economies fail to break out of the Middle Income Trap, financial deepening would be lower at 470 percent of GDP.

In the scenarios, Asia will host some of the largest global equity, debt and banking markets, with the region increasingly shaping the global financial architecture, the monetary system and global financial intermediation. Such scenarios are neither pre-ordained nor inevitable. Indeed, the Asian Financial Crisis of 1997-98 and the Great Recession of 2007-2009 (also often referred to as the Global Financial Crisis) remind us that poorly managed finance can be highly disruptive of trade, investment and growth. Long-term projections of Asia through 2050 cannot rule out the possibility of a "perfect storm" scenario, whereby the combination of bad macro-policies, exuberance combined with lax financial sector supervision, conflicts, natural disaster/climate change risks, demographic changes and weak governance could lead to a major setback to Asian growth.

At the same time, the realization of the Asian Century means that Asia should no longer be a price taker or a rule taker. Increasingly it must become a price maker and rule maker in partnership with the other major economies of the world. What is true of the real sector on a geopolitical basis should also be true of the financial sector. But to be a globally responsible citizen, Asia must also be a thought leader on all global commons.

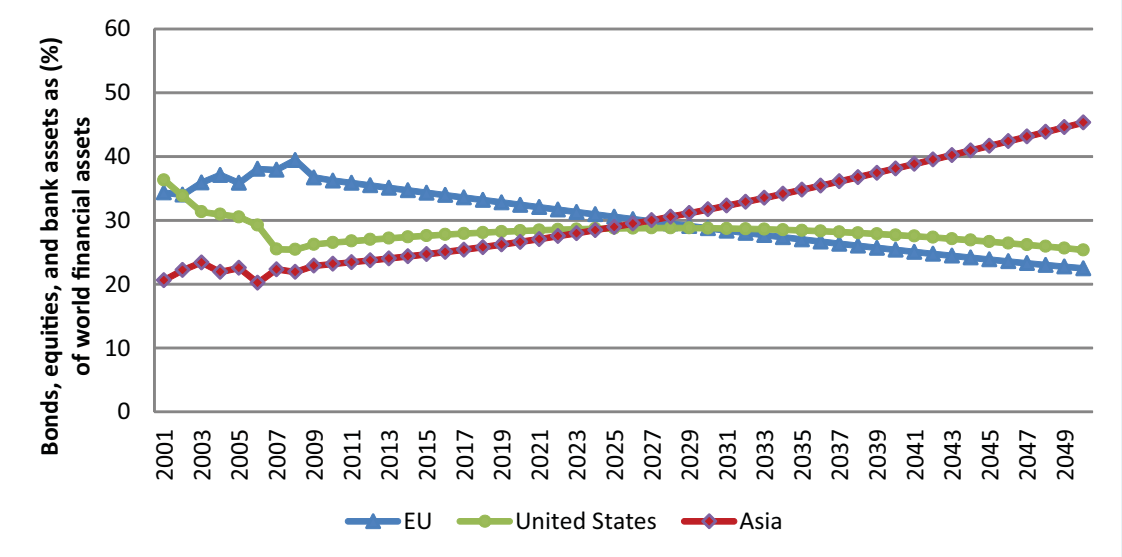
So far, Asia has been far less ideological and more pragmatic in its approach towards the role of finance in economic development. This approach has served Asia well in the past decade, as illustrated by its resilience to the Great Recession. As a rising economic power, with the highest levels of savings and holdings of financial assets, Asia can build a different finance model by learning from the past financial crisis worldwide. This requires a radical change in the current mindset.

Conventional wisdom in finance

The conventional wisdom of current economic and finance theory is based on assumptions of rational expectations and efficient markets. The belief in unfettered finance and free markets allowed global finance to expand exponentially since the 1990s. However, financial regulation and risk management of derivatives were seriously flawed, causing an unsustainable conundrum whereby finance was allowed to grow

> **"The "free market knows best" dictum caused complacency in financial oversight and surveillance**

Figure 1 **Asia's global share of bonds, equities, and bank assets will rise**



Source: Authors' projections, 2011.

without limits, with its systemic risks underwritten by the public sector. The unintended consequence was unprecedented state intervention to stem the global financial crisis.

The "free market knows best" dictum caused complacency in financial oversight and surveillance. The Independent Evaluation Office (IEO) of the IMF has, for example, concluded that the IMF and the advanced countries paid little attention to the risks of contagion and spillovers, due to "a high degree of groupthink, intellectual capture, a general mindset that a major financial crisis in large advanced economies was unlikely, and inadequate analytical approaches."

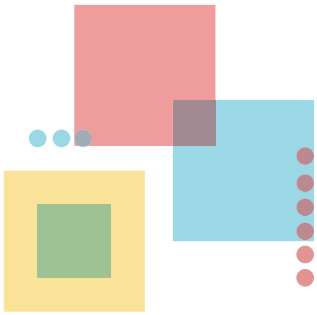
The current reform proposals already call for: greater state oversight; more stringent regulation, lower leverage and disincentives against excessive risk-taking. As the world re-examines conventional wisdom and finance theory, the Asian approach should remain pragmatic based on the premise that finance should not grow at the expense of the real sector. Instead, it must complement and support real sector activities. Asia must move beyond its bank-dominated financial system and develop its capital markets to cushion the risks of the next phase of Asian development. Asia should aim at becoming home to one or more global financial centers and a number of global financial houses.

Asia in the international financial architecture

Finance is global, and therefore national reforms are necessary, but they are not sufficient. Global financial stability cannot be discussed without a re-examination of the role of the global reserve currency and the shape of the global monetary and regulatory system.

As the world moves from a single dominant economic power to a more representative multi-polar environment, it is natural that there should be

“Finance is global, and therefore national reforms are necessary, but they are not sufficient



a more representative, multi-polar global monetary and financial architecture. As Asian finance becomes more sophisticated and larger in relative size, it will be inevitable that leading Asian economies will sit at the head table of negotiations over the future international financial architecture.

Having learnt the costly lessons in the 1990s, the reserve build-up and subsequent liquidity support arrangements (in the form of the Chiang Mai Initiative and Asian Bond Fund Initiative based on the ASEAN+3 frameworks) offered a higher level of self-insurance against volatile capital flows and balance of payment deficits in Asia. But without reform of the global financial architecture, such self-insurance has high opportunity costs and spillover effects through global imbalances.

One of the root causes of the Great Recession was the flawed international financial architecture, centered on the dominant role of a single national global reserve currency. The cumulative current account deficits arising from the Triffin Dilemma have resulted in large global imbalances, including an unsustainable US international balance sheet and large current account deficits.[1]

There are four possible paths to the future Global Reserve Currency System. The first is the status quo, if Asia remains non-convergent, fragmented and subject to economic setbacks and internal conflict. The second is a single dominant Asian currency that then contends for the dominant position in the Global Reserve Currency System. This has a low probability, because it would be quite difficult for a single Asian economy to achieve Asian dominance or global dominance on its own. The third path is an intermediate Asian Monetary System before negotiating to join the Global Reserve Currency System. This is likely to be a choice if negotiations with the current global reserve currency issuers fail. The fourth path is direct or phased migration from status quo to a new Global Reserve Currency System through re-negotiations of the status quo. This is the set of proposals put forward by the French Presidency of the G-20 in early 2011. Whatever the outcomes, the new international monetary system should allow Asian economies to play a leading role, either individually or through a platform such as the G-20.

Taming finance to serve the real sector

All financial systems have three important functions: (i) to efficiently allocate finance, (ii) to improve the payment system (by reducing transaction costs), and (iii) to manage risk (including transparency and corporate governance).

For Asia to succeed, the Asian financial system must evolve in ways that will perform the above functions well while managing the major risks identified by the Great Recession, such as shadow banking, highly toxic derivatives and the inequities and systemic externalities, and issues of moral hazard in modern finance.

Broadly speaking, the key contours of the future sustainable Asian financial system should:

- Efficiently meet the resource allocation needs of the real sector, particularly in providing credit, liquidity and payments functions, and risk capital;
- Improve the price discovery process and trading so that liquidity and transparent markets are maintained;
- Improve risk management, including insurance in the new volatile environment;
- Enforce credit and financial discipline on all financial sector stakeholders by strengthening governance, self-restraint and preventing conflicts of interest with the real sector;
- Protect long-term risk-adjusted real returns to pension and social security needs; and

1 The Triffin Dilemma states that the reserve currency issuer has to run looser monetary policy (and by definition larger current account deficits) in order to meet global liquidity needs.

“Asia has a less developed financial system with a larger role in the state in finance and economic life

- Be inclusive and responsive to all segments of society, particularly those with less access to finance.

Asia has a less developed financial system with a larger role in the state in finance and economic life. To show leadership, Asian finance must provide risk capital to serve the real sector without the state underwriting huge losses.

Transformational changes to serve the real sector

The transformation of Asian finance will be multi-faceted and extend over several decades to 2050.

Transforming business models for Asian financial institutional structure

The long-term real sector trends affected by demographic changes, urbanization, huge national and regional infrastructure needs, climate change and changing industrial structure will reorient towards internal engines of growth. This suggests that finance will need to change radically, as will the business models for different financial sub-sectors. In the period to 2050, global retail and commercial banking will become bipolar, comprising a few very large complex banks with global span and a large number of smaller banks that serve their local communities. Financial innovation will most likely come from direct customer services through phone or Internet banking, using web-based and mobile phone platforms, real-time monitoring of risks and microfinance.

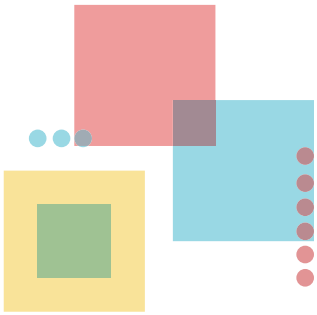
Local and foreign banks in Asia have to serve the following financial needs of a richer, urbanizing, middle-class and also provide for an ageing Asian population by:

1. Providing simple, convenient and trustworthy consumer banking, with easy-to-understand simple wealth management products that yield long-term risk-adjusted positive returns, at reasonable intermediation costs.
2. Helping Asian investors—both private and institutional—diversify their portfolios outwards. Asian outward portfolio and direct investment will be the major capital outflow that the world has not yet begun to appreciate. As PRC, India and other middle income Asian economies begin to open up their capital accounts and internationalize their currencies, global asset management portfolios will experience a quantitative and qualitative shake-up.
3. Going back to basics with respect to their long-term ethical values by maintaining their fiduciary responsibilities and trust in terms of customer service and financial inclusiveness. In particular, banks should reduce the “taxation” of depositors and investors through high net interest margins and fees.
4. Providing more finance and advice to small and medium enterprises, as well as assist Asian corporations to merge, consolidate and restructure in response to a more globalized and competitive Asia.
5. Meeting huge infrastructure and urban finance needs in Developing Asia.
6. Improving payment systems and domestic operations to international standards.
7. Increasing risk management, regulatory quality and operational efficiency to global standards.
8. Through the localization and regionalization of financial innovation to customer needs.

To do the above and absorb the risks of higher real sector volatility, the capital adequacy ratios of the banking system will be significantly higher than at present, probably in the order 10-15 percent of risk assets, compared with the current levels of 7-8 percent. Financial regulation will be tighter, specifically to address the problems of systemic risk.

Asia needs to upgrade its banking-dominated

“Asia needs to upgrade its banking-dominated financial system and significantly deepen its capital markets



financial system and significantly deepen its capital markets to absorb the higher uncertainties of the coming decades. Its commercial banks are large in quantity, but service quality and financial inclusiveness leave much to be desired. Its investment banking is still nascent and reliant on non-Asian players. The reason is obvious—Asia's financial sectors operate at the periphery of the center, because they are less open to competition and there is insufficient deepening of financial knowledge. Since financial systems in Asia are still largely government-led, with varying degrees of financial repression, there is insufficient risk management and varying compliance with global standards.

Investment banking and shadow banking

Currently, most Asian economies practice variants of the repealed US Glass-Steagal legislation, the separation of commercial banking from investment banking.

At the heart of the capital market debate is to what extent proprietary trading of financial institutions should be supported by an implicit or explicit public guarantee of their financial stability? Asset trading may be individually profitable; but in the long-run it is a zero sum game, sustainable only if the real economy generates new resources that support the rising debt burden. The point is that speculative trading initially has a social value of providing liquidity and price discovery. But beyond a certain point, the accumulation of speculative profits to the trading class changes the incentives in the real economy away from productive investments into speculation and gambling, which ultimately fuels speculative bubbles that are unsustainable by real sector productivity.

The challenge within Asia therefore is to separate the proprietary trading of investment banking and its advisory role from the funding guarantee safety net. It is to recognize that Asian governments should be more relaxed in allowing greater private sector initiative in the high-risk areas of finance, where high risks should be compensated by high rewards, without an implicit or explicit public guarantees that create moral hazard.

Asset management and capital markets

The asset management industry forms one of the core parts of the global capital market and has grown rapidly in the last thirty years during a period of unprecedented financial innovation and deregulation.

The dominant role of the advanced market's share in financial assets reflected partly their wealth and their ageing population, which require increases in their pension and retirement funds. For example, at the end of 2008, total retirement assets of US households reached $13.9 trillion, roughly 100 percent of GDP. Total global pension fund assets under management were in the order of $21.6 trillion.[2]

The rise of Asia and an emergent middle class has meant that the number of High Net Worth Individuals (HNWI) is increasing very fast.[3] The long-term prospects for the fund management industry in Asia are bright due to changing demographics and long-term economic prospects for the emerging markets.

But, Asia remains weak in its long-term wealth management. Its fund management, insurance and pension schemes lack institutional depth, they are constrained by overly inward looking portfolios constraints and some bound by capital controls. Despite the high savings accrued from the high demographic endowment, Asia has yet to fully invest in Asia. Accordingly, one of the top priorities within Asia is to develop a strong asset management and pension fund industry, by allowing greater private sector participation and liberalizing the portfolio restrictions on the pension fund industry by allowing more alternative and

2 McKinsey Global Institute estimates, New York: McKinsey, 2007.
3 Cap Gemini World Wealth Report, New York: Merrill Lynch, 2010.

"the Great Recession has revealed serious flaws in the assumption that commercial banking can solve all financial needs, particularly those of small and medium-sized enterprises (SMEs)

foreign investments.

Development finance and policy-based financial institutions

The move towards market-based financial systems in the last 30 years has meant that development finance institutions and policy-based finance have largely lost their roles at the national level.

However, the Great Recession has revealed serious flaws in the assumption that commercial banking can solve all financial needs, particularly those of small and medium-sized enterprises (SMEs). At the municipal and local government level, there is a shortage of funding for local infrastructure projects, which is not met by the commercial debt market or the commercial banks.

Given the need to develop specialist expertise in high-knowledge intensive sectors, such as climate change, emerging market governments may need to selectively revive and reform the roles of policy-based financial institutions in new directions.

Insurance

Asia is grossly underinsured.

In life and non-life products, the potential for insurance penetration in Asia is enormous. In 2008, gross insurance premiums accounted for 6 percent of GDP in Asia and 3.6 percent in Africa, compared with 7.3 percent in America and 7.5 percent in Europe. In recent years, the growth of Islamic insurance has been at the rate of 25 percent per annum.

Given the rising incidence of natural disasters from global warming, there is also considerable potential for insurance and re-insurance for climate change-related risks. For example, in 2008, the total economic loss from man-made and natural catastrophes around the world was US$ 269 billion.

The insurance market is probably the most knowledge-intensive of the financial sector, as its primary role is risk transformation. In order to cover specific risks insured, the insurance sector must invest its premium income and generate a return and provide reserves that are sufficient to cover the payouts. The knowledge-based skills for the insurance industry, particularly its risk-management and actuarial expertise, currently resides mostly in the advanced markets in the US and Europe. This needs to be changed. Radical transformation of the Asian insurance sector is required if it is to gain a larger market share.

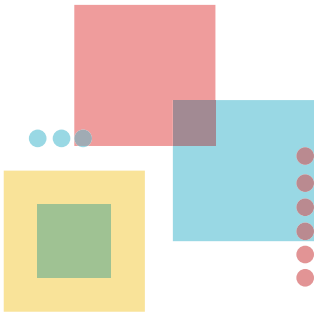
Exchange and clearing systems

Stock exchanges and clearing houses form the most important trading hub for equities trading. In recent years, demutualization and the move towards markets with higher liquidity and quality have led to more mergers or cross-holdings of stock exchanges on a global basis. Stock exchanges are also consolidating the trading of equity, warrants, financial derivatives and also commodities into single clearing platforms.

The Great Recession has prompted financial regulators to rethink allowing financial derivatives to be completely traded over-the-counter (OTC) without much transparency. There is now greater awareness that some OTC activities are subject to fraud and market manipulation. Hence, there is a movement to shift the trading of financial derivatives towards centralized clearing and on exchange to make the markets more transparent.

Competition and consolidation in Asia are creating mergers and upgrades of exchange and clearing businesses, the latest being the Singapore Exchange attempt to take over the Australian Stock Exchange. The pooling of technology, trading processes and convergence of standards will improve the liquidity and transparency of financial markets in Asia.

“Asia’s financial sector will need to be substantially reformed if Asia is to assume a leading role in the global financial system



Regional cooperation and Asia’s global financial leadership

Asia’s financial sector will need to be substantially reformed if Asia is to assume a leading role in the global financial system. Much of this will be at the national level, but quite a lot will depend upon regional cooperation and dialogue with non-Asian partners.

Individually, smaller Asian financial systems lack the critical mass of research, experience and skill levels to become leaders in finance. However, national borders no longer bind knowledge and talent. To achieve scale and leadership, Asia should confront the issue of the lack of regional financial cooperation, including currency arrangements.

Intra-regional trade in East Asia is now close to 56 percent yet intra-regional financial service trade is still constrained by regulatory and institutional barriers. It is understandable that each Asian economy is wary of allowing premature financial liberalization to weaken its financial stability, but individually, many of the smaller markets lack the critical mass and scale to attain global competitiveness.

From a macro perspective, the key initiatives for regional financial reform should include the following:

- Reduce global imbalances to sustainable levels to allow market forces to work, more flexible exchange rate regimes and phased liberalization of the capital account;
- Improve domestic financial sector efficiency through greater market competition and meet global regulatory standards;
- Ensure that interest rates, exchange rates, tax rates and regulatory costs/policies do not distort long-term sustainable returns to depositors/investors, consistent with risks;
- Deepening capital markets and managing “Too Big to Fail” issues in banking and financial sector for long-term financial stability, including failed institution resolution mechanisms;
- Liberalize and deepen risk management mechanisms and venture/hedge funds structures to improve long-term returns to investors;
- Deepen long-term social security/pension fund institutional capacity to deliver positive risk-adjusted returns to investors over the long-term demographic cycle (as Asians begin to live longer, and retire earlier).

Ensuring that policies are consistent with open regionalization and global standards of openness, transparency and fairness will entail the following specific measures:

- Open capital markets to greater private sector competition and participation, especially to regional and international competition. This will deepen financial innovation, and concurrently raise institutional capacity.
- Foster greater regional cooperation in finance in terms of financial market infrastructure, especially among the leading Asian markets in the region beyond PRC and Japan.
- Improve risk management standards. With more standardization of operations across the board—involving banks, financial institutions, insurance agencies, even central banks—the problem posed by financial repression would abate.
- Create open regional networks in stock markets, debt markets and commodity and derivative markets that meet global standards in terms of scale, transparency, efficiency and robustness. This implies accelerating the process of allowing greater integration of regional stock markets, clearing infrastructure and upgrading to international standards.
- Adopt a multi-track approach to liberalize and to complete structural, institutional and governance reforms.
- Open up the wealth management capacity to more private sector pension and social security

"The time has come for the institutionalization of Asian regional cooperation efforts, particularly in the area of financial safety nets

fund management. Allow pension, insurance and long-term funds to invest in higher risk financial products that yield long-term adjusted returns to long-term savers.

- Push insurance companies to improve their risk management products in agriculture and climate change/cyclical areas.
- Increase its voice in the international arena through regional subsets of the Financial Stability Board, central bank grouping within the Bank for International Settlements and the International Organization of Securities Commissions to ensure regional inputs into global policy decisions as well as implementation and enforcement of global standards in Asia.

The time has come for the institutionalization of Asian regional cooperation efforts, particularly in the area of financial safety nets. During the Asian Financial Crisis, the advanced countries objected strongly to the creation of an Asian Monetary Fund (AMF). With the creation of the European Financial Stability Fund, global objections to creating regional financial safety nets (which can co-exist with the global financial safety net, IMF, at its apex) have been removed.[4] In other words, it may be timely to consider expanding the multi-lateralized Chiang Mai Initiative as a financial safety net that can co-exist with EFSF and the IMF. The secretariat for the Initiative, ASEAN+3 Macroeconomic Research Office, can then act as the cluster of research into policy options for Asian financial cooperation, complementing the regional surveillance and cooperation roles of other fora, such as the Executive Meeting of the East Asia and Pacific Central Banks, and other bodies.

There is also considerable scope for the institutionalization of regional cooperation efforts in building long-term infrastructure funding frameworks, working closely with the ADB to tackle sectoral issues of demographic change, urbanization, municipal finance, infrastructure needs, industrial restructuring and climate change.

In summary, if the Asian Century scenario is to be realized, Asia would also need to become a global financial sector leader. Asia has the unique opportunity to radically build a more focused, leaner and responsible financial sector that serves its real sector objectives. This means that the financial sector must first and foremost discipline itself.

None of these preconditions are inevitable or pre-ordained. They can only be achieved with strong political will and self-discipline. Above all, they require Asians to work closely with each other and with the rest of the world.

4 Daniel Gros, "'EMF in IMF' instead of 'EMF versus the IMF'" Brussels: Centre for European Policy Studies, 2010.

Realizing the Asian Century: A New Approach to Urbanization

9

This chapter suggests the need for a dramatically different approach to urbanization for Asia not only to cope with, but also to use the coming urbanization avalanche, as Asia's urban population rises by 1.6 billion in the next 40 years. It highlights the vital role of mega and secondary cities for Asia's economic competitiveness as well as its social stability. It highlights the major risks most countries face. Finally, it points out the massive management and leadership challenges, and suggests the priority agenda.

Asia's urbanization avalanche

Asia is going through a historic demographic transformation from a rural society to an urban society that is far larger than any transformation seen in the past, in any other part of the globe (Figure 1).

Approximately 44 million people are being added to Asia's urban population every year.[1] By 2025, the majority of Asia's population will be urban. By 2050 there will be some 3.2 billion urban inhabitants. This represents an approximate doubling of the current urban population of 1.6 billion people (Table 1). This rapid growth poses both enormous management challenges and opportunities for city leaders.

By 2050 even small, poor Asian countries will experience major changes. Cambodia's urban population will grow from 20 percent to 44 percent, an increase of 7.5 million people. The Lao People's Democratic Republic will grow from 33 percent to 68 percent, and add 5.2 million people to its urban population.

Cities of the future

Asia's urban transformation could be an unparalleled opportunity for increased productivity and an improved quality of life for all of Asia's citizens. Cities and urban areas are where the majority of Asia's people will live, and where most of the GDP will be generated (it is approximately 84 percent of GDP today). They will be the centers of higher education, innovation and technological development. Finally, urban buildings and transport will account for the bulk of energy consumption and carbon emissions. As a result, the quality and efficiency of urban areas will increasingly determine Asia's long-term competitiveness, as well as its social and political stability.

Table 1 **Asia's urban population will nearly double by 2050**

Asian Urbanization	2010	2050
Total Urban Population (millions)	**1,649**	**3,247**
Northeast Asia	805	1,284
South Asia	496	1,261
Southeast Asia	252	520
Central Asia	96	182
Urbanization (%)	**41%**	**64%**
Northeast Asia	50%	74%
South Asia	30%	55%
Southeast Asia	42%	65%
Central Asia	52%	67%

Source: UN World Urbanization Prospects, 2007 Revision.

Asia must adopt a new strategy and approach to manage the coming rapid urbanization by promoting more compact, energy efficient, safer and livable cities. City and town planning, professional urban management and self-financing will be important elements that will require much more attention.

Some countries have already achieved levels of urbanization that the rest of Asia will achieve by 2050. The economic prosperity and high living standards of Japan (67 percent urban), Republic of Korea (83 percent urban) and Malaysia (72 percent urban), along with the economies of Hong Kong, China and Singapore, demonstrate the potential benefits of Asia's

1 Asian Development Bank, "Managing Asian Cities," Manila: ADB, 2008.

“As Asia’s wealth and technological prowess increases, it is possible to envision a few Asian cities that lead the world in technology, efficiency and quality of life

future urbanization.

Large urban mega regions will be the drivers of Asian economies in 2050. Already, cities are growing together to form contiguous urban networks. The mega region that runs from Seoul to Busan, for example, has around 46 million people and has been estimated to produce about $500 billion in local regional product. Some urban mega regions will be cross border regions where city-to-city ties are equal in importance to nation-to-nation ties. The economic relationships among the cities and towns that form Asia’s urban mega regions will continue to expand and deepen, fostering scale economies and economic specialization. This will provide large economic gains to jurisdictions that are able to manage the necessary cooperative planning and operations of energy, transportation, logistics and water systems, as well as to successful business promotion, licensing, and marketing.

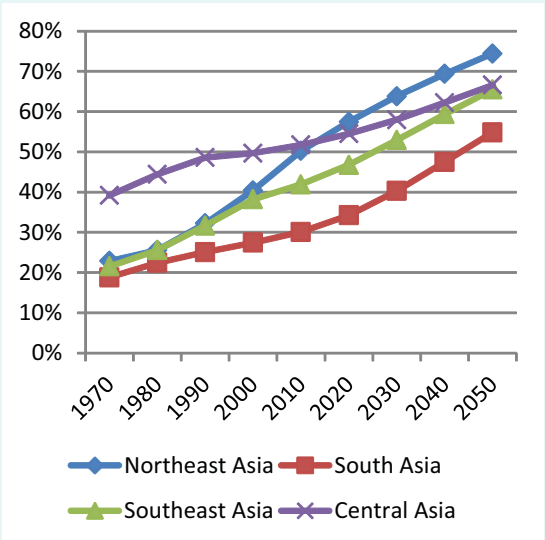
As Asia’s wealth and technological prowess increases, it is possible to envision a few Asian cities that lead the world in technology, efficiency and quality of life. It is intriguing to consider what such an optimistic vision might entail; it is also certain that this optimistic vision does not result from business-as-usual (Box 1).

Poor services and squalor are sadly all too common in Asian urban areas today. More than half the world’s slum population currently resides in Asia—some 490 million people in 2005, according to UN Habitat. This number is increasing despite the region’s rapid economic growth. Many cities have unreliable power supplies, intermittent water availability, insufficient treatment of wastewater before it is discharged into local waterways, flooding due to poor drainage, and uncollected garbage. Poor sanitation in low-income areas leads to poor health conditions. Poor systems of land registration and the lack of tradable titles for large swaths of urban slum land create disincentives to investment and renewal. Disputed land titles, the lack of a functioning land market in slum areas and unrealistic zoning are perhaps the greatest obstacles to improving slums in Asia.

The OECD estimates that cities and towns currently account for between 60 to 80 percent of energy consumption and global CO_2 emissions. The pressure to reduce carbon use will only increase over time. Aggressive efforts are needed to improve the energy efficiency of buildings and appliances, to create utility systems that are based on reuse and recycling, and to manage land use and transportation systems that reduce costs and energy use.

Compact, higher density cities like Singapore, London, Seoul, and Tokyo encourage a high percentage of walking and public transport trips, and have lower per capita CO_2 emissions than lower density cities. However, urban densities in Asia are decreasing while middle class demand for automobiles is increasing rapidly. The growth in car ownership is increasing so

Figure 1 **Northeast Asia will be the most urbanized region of Asia**



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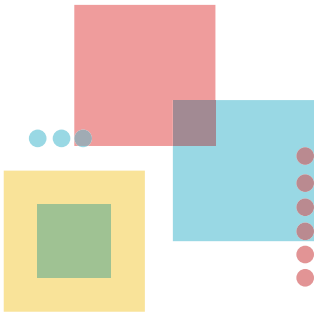


Box 1 Vision for a successful Asian city of 2050

The successful Asian mega-city of 2050 has a density similar to Tokyo in 2010. Urban sprawl is limited because prices, incentives and infrastructure are designed to favor infill development and compact patterns of city expansion. Mass public transport is ubiquitous, clean and efficient. Rail mass transit systems predominate in the densest, richest countries; bus rapid transit systems are the norm in others. Many trips will be by walking in pleasant unpolluted surroundings. Energy efficiency is integrated into building design, appliances and systems for lighting, heating, and cooling. Utilities for water, wastewater and solid waste rely heavily on reuse and recycling. Robots inside dwellings perform the household functions of laundry, cleaning, waste disposal and basic cooking; other household systems monitor the health status of residents, relieving the burden of care of the elderly in ageing societies. New private cars entering the fleet are zero emission vehicles, running on electricity or hydrogen fuels. While great strides have been made in reducing the carbon intensity of electricity generation, urban transport still accounts for 7 percent of carbon emission because of construction, maintenance and fuel production. Cars communicate with each other and intelligent traffic management systems anticipate traffic flow and automatically route cars to the most efficient routes. Technology embedded in highways and some streets take control of vehicles to reduce congestion and accidents. However, most people prefer the convenience and comfort of mass transit.

Education, culture, the preservation of local heritage sites, parks, nearby eco-environments and recreation opportunities are world class and seen as part of the city’s unique brand and competitive advantage.

The urban poor, defined as those below 60 percent of the city’s median income, have access to quality health care and children’s education. Unserviced slums disappeared after a twenty-year campaign of upgrading—involving land titling, regularization, replanning, and the extension of basic infrastructure services. Some of these areas still have housing units that do not conform to building codes but they are safe and affordable.

City management is autonomous under a well-defined fiscal and administrative decentralization framework that balances local responsibilities with local authority to raise resources. The local administration is business friendly, striving to ensure that schools, universities and especially research universities continuously nurture creativity and innovation to sustain high levels of productivity as technology and business needs change rapidly. Close cooperation exists with other cities and towns that form the local urban mega region, including those across the national border. Infrastructure and services are planned, implemented and managed on a regional basis to ensure energy efficiency, productivity and a minimum ecological footprint.

“Disparities in living conditions and disparities in access to basic services are severe in many Asian cities. Social cohesion can break down when disparities get too high

fast that carbon emissions are expected to increase by 2.5 times over current levels in PRC and by 4 times in India by 2035, despite increased fuel efficiency. Public transport is experiencing a significant loss of transport mode share. Lower densities are leading to sprawl, which is leading to higher rates of motorization, leading to more sprawl in a vicious cycle. In other parts of the developing world, a doubling of the urban population is expected to result in a tripling of urbanized land area. In Asia, the built up area is 6 times larger.[2] Lower densities and sprawl will also mean much higher costs to provide utilities and transport networks over a larger area.

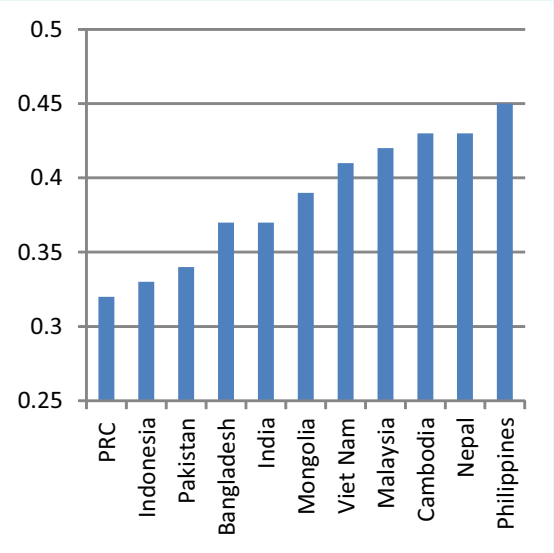
Major risks to be managed

With 84 percent of GDP currently eminating from towns and cities, the successful management of a national economy is intimately linked to the successful management of urbanization. The wave of demographic change that Asia faces will require an aggressive focus on city development by national and local authorities. Four risks stand out: (i) the growing inequality in cities; (ii) unmet expectations of the rapidly emerging middle class; (iii) the possibility of poorly planned infrastructure and land use spiraling into high cost; and (iv) high carbon environments and consequences of climate change and other natural risks.

Inequality, growth of slums and breakdown of social cohesion

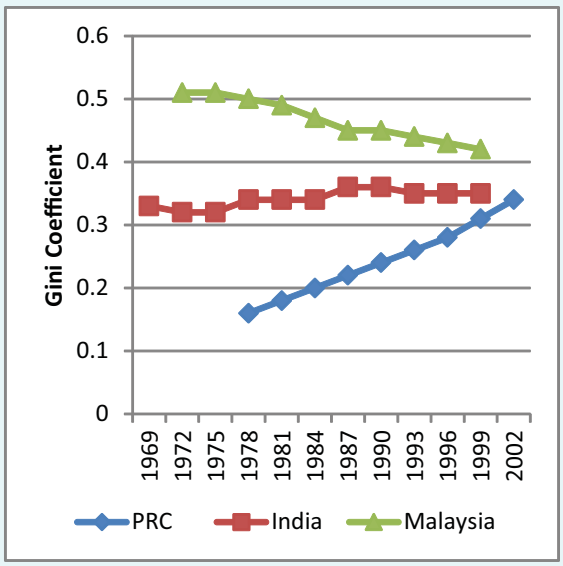
Disparities in living conditions and disparities in access to basic services are severe in many Asian cities (Figure 2). Social cohesion can break down when disparities get too high. In PRC and India, urban inequality has been trending upwards over the past

Figure 2 **Urban Gini coefficient (by country)**



Source: UN-HABITAT State of World Cities 2010/2011.

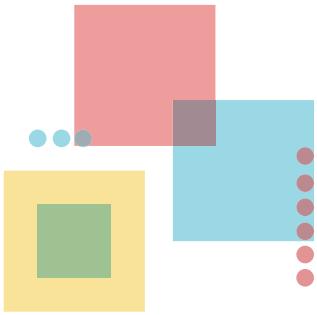
Figure 3 **Urban Gini coefficients over time**



Source: UN-HABITAT State of World Cities 2010/2011.

2 Angel, S., S. C. Sheppard, and D. L. Civco, “The Dynamics of Global Urban Expansion,” Washington, DC: World Bank, 2005.

“Talented people, the so-called knowledge workers, are attracted by places where they can enjoy life. Cultural activities and amenities are increasingly central determinants of urban competitiveness



three decades (Figure 3).

Most Asian cities have not yet faced severe problems of crime, drugs and violence. However, the combination of rapidly growing cities, growing slum populations, disputed land tenure, corrupt officials, and high unemployment levels can lead to an explosive situation. Latin America presents a cautionary tale. Latin America’s wave of urbanization is roughly 65 years ahead of Asia’s urbanization. Argentina, Brazil, Mexico and Venezuela were unable to manage rapid growth of illegal, unserviced settlements, and failed to provide adequate services. Slums and low-income urban peripheries are hotbeds of assault, aggression, drug trafficking and violence of all kinds. In many cases urban gangs filled a gap left by underperforming local governments. Delayed action to improve living conditions for the poor in Asian cities could lead to Latin American style development—with zones of modernity co-existing with zones of misery and violence.

Unmet expectations of expanding middle class

The rapidly growing middle class in Asia is largely urban based. This group is better educated and more in touch with global standards for services than cohorts in the past. They are seeking improved infrastructure, services, modern shopping, cultural and recreational facilities and more green areas. Responding to this demand can be part of a virtuous circle leading to further growth. Most innovation, which is the heart of a competitive global economy, occurs in urban centers. Talented people, the so-called knowledge workers, are attracted by places where they can enjoy life. Cultural activities and amenities are increasingly central determinants of urban competitiveness. Urban areas that accommodate these new aspirations will have a better chance of succeeding and innovating over the longer term. For Asia’s larger and medium sized cities this will be an important element to successfully shift from manufacturing to services. For towns and cities that are unable to manage the increased expectations for better services and better governance, the potential for instability will increase.

Poorly planned infrastructure and land use

Asia’s rapid urban growth is leading to lower density, unplanned sprawl as towns and cities react both to the middle class’ demand for more space and cars and to growing settlements of migrant workers. A small group of national and local governments in Asia are already seeking ways to improve energy efficiency and reduce greenhouse gases. The Japanese government has introduced the concept of “Eco-Compact City” as a top priority for urban policy. Shanghai plans to double the length of metro lines by 2020 in an attempt to avoid automobile-driven commutes as its population becomes wealthier. Singapore has long been an innovator in automobile demand management. Higher-density, more compact cities are less expensive on a per capita basis than are low-density cities. Higher density cities can also be exciting, enjoyable places to live, as exemplified by Tokyo, Hong Kong, China, Singapore, Berlin, Paris, London, San Francisco, New York and others.

While a few cities have adopted a formal vision for a sustainable future, most cities in Asia are moving in the wrong direction. They face the danger of being locked into an irreversible, high cost, high energy land use and infrastructure pattern.

Environmental risks

Many Asian cities face unpredictable risks from volcanoes, earthquakes, tornadoes, and the effects of climate change.

The risks to cities from climate change are particularly profound. These include severe water shortages from a drier climate and reduced fresh water flows from Himalayan glaciers, seawater intrusions

> **Many Asian cities still have a long way to go in improving the functioning of their city administrations**

into aquifers, more severe weather patterns leading to possibly more intense typhoons, amplified storm surges, increased flooding of coastal mega-cities and increases in vector borne and diarrheal disease. Among the more vulnerable larger cities are Kolkata, Mumbai, Dhaka, Guangzhou, Ho Chi Minh City, Shanghai, Manila, Bangkok, Yangon, and Hai Phong. Flooding risks are exacerbated by the subsidence from groundwater extraction: subsidence in Bangkok has been measured at 4 cm per year and in parts of Jakarta at 6 cm per year. It is estimated that a 30-year storm event in Ho Chi Minh City by 2050, could affect 12.5 million people and create 2 million refugees.[3]

Planning and investing to mitigate these risks and improving collaboration and cooperation across countries in research, standards and approaches will yield large payoffs.

Priority agenda

Effective decentralization

Past experience indicates that local knowledge, autonomy and accountability are needed to manage complex urban economies. Decentralization away from central governments to local governments is always difficult to implement, and can take decades until the details of the legal and regulatory measures that guide local governments are fully implemented and the skills and management systems needed for effective local governance are improved. Asia has experienced significant decentralization over the past twenty years. This—so far uneven—process needs to be accelerated and refined.

Among the elements required for successful decentralization are local government access to own-source revenues, clear prudential national rules to prevent excessive borrowing, transparency processes applicable to budgeting, accounting and procurement systems and local government accountability via the political process.

New approaches to the finance of urban infrastructure

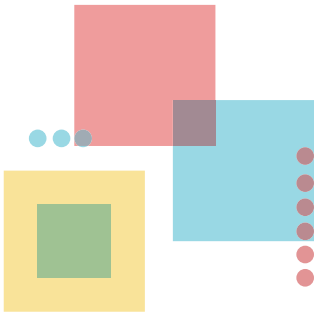
Given the large capital investments that are required for urban infrastructure over the next 40 years, recurrent revenues from local governments, national subsidies and ODA will not be sufficient. Much greater use should be made of land and property taxes to raise local revenues. It is imperative that national officials engage in a serious partnership with local officials to strengthen local financial capabilities and to provide a responsible framework for local government borrowing from private domestic banks and domestic capital markets. For revenue earning projects like toll ways and bridges, a formal system to establish public private partnerships, PPPs, would be helpful.

Competent city management

Many Asian cities still have a long way to go in improving the functioning of their city administrations. Developing active working relationships with local private sector groups and civic bodies could make a start. A well-functioning city administration needs professional staff that is given clear incentives to perform at a high level. It needs institutions and policies to improve property rights, land registration and titling, land use regulations, business registration and permitting procedures, taxation and resource mobilization policies, etc. The professionalization of financial management is another key priority for cities and towns throughout Asia.

3 Risks identified in this paragraph are largely from Roland Fuchs, "Cities at Risk: Asia's Coastal Cities in an Age of Climate Change," Honolulu, Hawaii: East-West Center, 2010.

“Asia needs city and national leaders that are visionary…and who utilize the current wave of urban growth to implement that vision



Visionary leadership

Action needs to start at the very beginning of the urbanization growth curve. Delays mean that today’s investments only contribute to further distortions that will have to be undone later on. Asia needs city and national leaders that are visionary, leaders who can create new ideas for what modern cities should be and who utilize the current wave of urban growth to implement that vision.

Realizing the Asian Century: Reducing Energy Intensity and Ensuring Energy Security

10

Asia's rapid growth has been accompanied by fast rising energy consumption and carbon emissions. This chapter addresses the need for many Asian economies to reduce energy intensity and manage energy security concerns through programs to improve energy efficiency and diversification of energy sources. It concludes with a discussion of opportunities to gain synergy through regional cooperation.

Rising energy consumption

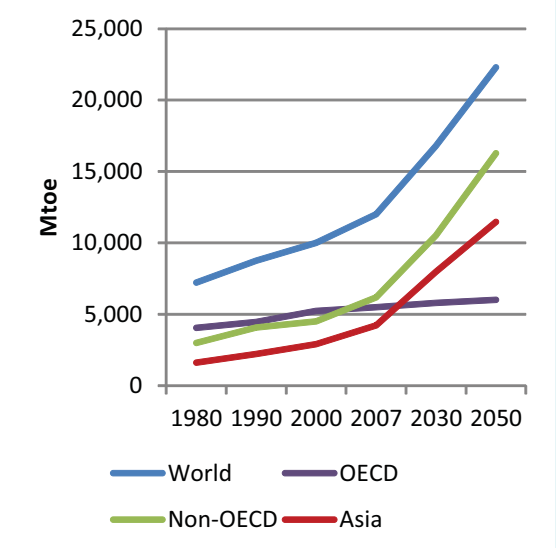
Asia accounted for about 20 percent of the world's energy consumption in 2000. This share jumped to 27 percent in 2007, and is expected to rise above 40 percent by 2050. PRC surpassed the US in 2010 to become the largest energy consuming country, and Asia will surpass the OECD before 2030 to become the largest energy consuming block (Figure 1).

The rapid growth in Asia's energy use has created two major concerns for the region and within the international community. First, the growth in energy consumption implies an increasingly larger claim on global energy resources and higher dependence on imported energy triggering a concern about the security of energy supplies, particularly of oil and gas. Second, the growth in energy consumption is accompanied by a rapid increase in carbon emissions; the International Energy Agency (IEA) has projected that by 2030, PRC alone will have higher carbon emissions than the OECD countries combined (Figure 2).

Energy import dependency

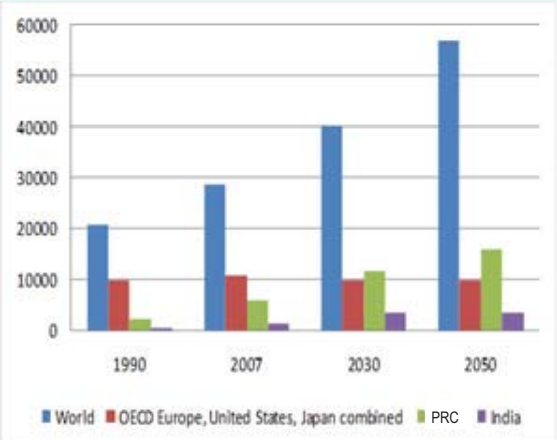
Concerns about energy, particularly oil, security in the Asia region are expected to heighten over the forthcoming decades. This is because of (i) further concentration of oil consumption in the transport sector where the possibilities for fuel switching are limited; (ii) an increase in import dependency, where Asia will become 90 percent dependent on imported oil by

Figure 1 **Asia will lead world energy demand**



Source: Author's calculations, 2011.

Figure 2 **PRC and India will experience a significant increase in energy-related carbon emissions**



Source: Author's calculations, 2011.

"Concerns about energy, particularly oil, security in the Asia region are expected to heighten over the forthcoming decades

Table 1 **Projection of energy demand and supply in Asia**

	1980	1990	2000	2007	2030	2050
Asia Energy Demand (Mtoe)	1,625	2,220	2,910	4,242	7,980	11,480
PRC	603	872	1,105	1,970	3,637	5,011
India	207	318	457	622	1,341	2,389
ASEAN	149	243	389	513	903	1,177
Central Asia	95	198	128	159	256	385
Iran		46	120	185	373	565
High Income Asia	557	629	746	896	995	1,112
Asia Energy Supply Mix (%)						
Coal		40	42	47	48	50
Oil		16	17	20	21	20
Gas		9	10	11	12	11
Hydro		3	2	2	2	1
Biomass		26	24	15	10	7
Other (including nuclear)		6	5	5	7	11
Asia electricity consumption (TWh)		2,249	3,057	6,113	17,267	26,181
PRC	259	586	1,081	2,717	7,513	10,630
India	90	197	369	544	1,966	3,440
ASEAN	55	167	321	497	1,383	1,956
Central Asia	63	162	124	152	443	715
Iran	38	58	86	145	332	544
High Income Asia	831	976	1,012	1,128	1,411	1,746
Reference Energy Consumption (Mtoe)						
World	7,228	8,761	10,018	12,013	16,790	22,288
OECD	4,050	4,476	5,249	5,496	5,811	6,011
US	1,802	1,913	2,280	2,337	2,396	2,412
Non-OECD	3,003	4,087	4,507	6,187	10,529	16,277

Source: EIA (2010), IEA (2008), IEA (2009), IEA (2010a), IEA (2010 b), World Bank (2010) and Author's estimates, 2011.

2050; and (iii) a concentration of import sources.

PRC, a net exporter of energy until the early 1990s, has now become a large importer of oil; the oil import volume of 4 million barrels per day (mb/d) in 2009 is projected to reach 20 mb/d by 2050. Rapid growth in gas demand resulted in initiating LNG imports in 2006; gas imports are projected to reach 174 billion cubic meters (bcm) by 2050. India's oil import volumes increased from 1.6 mb/d in 2000 to 2.5 mb/d in 2009 and are expected to reach 14 mb/d by 2050. India would also need to increase its gas imports at a rather rapid pace, particularly after 2020, to reach 140

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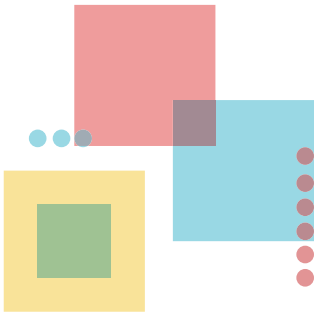

bcm by 2050.

The ASEAN countries, once major exporters of oil and gas, have now become net importers of oil, and are likely to become net importers of gas in the next three decades. The oil import requirement is expected to reach 2.8 mb/d by 2030 and 5.4 mb/d by 2050 while oil import dependency increases from 25 percent in 2008 to 88 percent in 2050. Energy production in Central Asia amounted to about 320 million tonnes of oil equivalent (Mtoe) in 2007, half of which was exported. The total oil production in the subregion was 2.5 mb/d and is expected to reach 5.4 mb/d in 2030, driven by an increase in Kazakhstan’s oil production. Turkmenistan also has substantial gas resources, estimated at 7.9 trillion cubic feet (tcf), to sustain exports in the long-term.

Globally, oil production is projected to increase from 83 mb/d in 2008 to 105 mb/d in 2030 and 122 mb/d in 2050. Most of the projected increase comes from the Organization of the Petroleum Exporting Countries (OPEC). Their total output rises from 36.3 mb/d in 2008 to 54 mb/d in 2030 and 73 mb/d in 2050. Oil production in non-OPEC countries is expected to decline over the next two decades with only Kazakhstan and Brazil likely to experience an increase in output. Similarly, global gas supplies will become more concentrated in a small number of countries. The Russian Federation’s gas supply is expected to expand from 646 bcm in 2007 to 920 bcm in 2050, and that from the Middle East, from 357 bcm to about 1,250 bcm.

Priorities for domestic action

Energy efficiency and diversification

Climate change concerns are changing the policy mindset in most Asian countries with greater recognition of the significant synergy between that agenda and energy security. The shift is particularly noticeable in: (i) the adoption of the advanced methods of energy efficiency; (ii) the push towards the development of renewable energy; and (iii) the openness to other sources[1] with the recognition that the objectives of energy security and the climate change agenda cannot be achieved through energy efficiency.

Achieving energy security would also require a fresh set of policy measures that provide clear incentives for unprecedented energy efficiency improvements, private investments and the adoption of advanced technologies.

For most Asian countries energy pricing is a sensitive but important issue. This is partly due to the prevailing energy subsidies and partly due to the need to move to more advanced pricing regimes. For example, improving energy efficiency would require an aggressive time-of-day tariff design. At the same time encouraging renewable energy development would require various types of subsidies. It is important to keep these subsidies transparent, well targeted and confined to a limited timeframe. Desirable subsidies include R&D support, feed-in tariffs, tax incentives and access to soft sources of finance. The predominant instrument is the feed-in tariff, i.e., the price at which the utilities are obligated to buy the electricity generated by renewable energy. This type of tariff should be tailored to the type of renewable energy that is available in each country.

Emerging energy technologies

Technology transfer has always been an embedded characteristic of energy sector development. However, the present circumstances are different in the sense that technology is being developed on a fast track and is intended for rapid diffusion. There is a strong momentum behind the “energy technology

1 It is still too early to assess as to how the March 2011 nuclear incident in Japan would affect the future role and prospects of nuclear energy.

“There is a strong momentum behind the “energy technology revolution”

revolution” that stems from strict targets set by the EU and other industrial countries to drastically cut their carbon emissions. The new targeted technologies are mostly proven but not fully commercialized. The most notable of these technologies are: (i) renewable energy including wind and solar technologies; and (ii) carbon capture and storage; and (iii) transport technologies including electric and plug-in hybrids vehicles, and advanced bio-fuels.

Wind power technology is an example of a technology which has been successfully improved, and widely spread around the world. The cost of wind power depends on site characteristics, but the average cost has declined from more than 20 cents a kilowatt hour in the early 1990s to 6–7 cents a kilowatt hour today. Advances in wind power technology were initiated in Denmark when the country decided to develop a comparative advantage in this industry. Since then it has spread to many other industrial countries like Germany, Spain, and the United States. Also very impressive progress has taken place in PRC, India and Republic of Korea, where local firms have progressed in a span of less than 10 years from no wind turbine manufacturing to state-of-the-art wind systems. In 2009 PRC overtook the US in having the largest wind power capacity.

Solar technology is at a much earlier stage with several new technologies under development. Most solar energy produced today is based on photovoltaic technology, which is expected to shift to thin-film technology and further developments resulting in the electricity generation cost of solar photovoltaic systems declining to around 5–7 cents a kilowatt hour by 2050. A major promising technology is concentrated solar power (CSP), which uses direct sunlight, concentrating it several times to reach higher energy densities and thus higher temperatures. It is expected to play a major role in the decarbonization of the power sector, and account for over 10 percent of worldwide electricity supply by 2050. Asian countries, such as India, are expected to be significant producers in the future; large scale development is expected to require substantial financial support for at least another 20 years.

Carbon Capture and Storage will have a critical role in decarbonization as the fallback technology to reduce carbon emissions to an acceptable level. On average, CCS is expected to add 3 to 4 cents/kWh to the cost of electricity generation in a new coal plant. World-wide, CCS capabilities are expected to emerge after 2030, and reach a total capacity of 5 GT/year by 2050.

The expansion of nuclear capacity faces serious challenges. Though the technology is proven there is a need to demonstrate the industry’s ability to build the latest nuclear plant designs to the most stringent safety standards on time and within budget. The earthquake-tsunami triggered nuclear incident of March 2011 in Japan is likely to require re-examination of the nuclear energy development plans in various countries of Asia and the world.

The transport sector is currently an area of focus for new technologies due to its importance in climate change and energy security. The most promising option for switching out of oil is the use of electric cars where electricity could be generated with alternative energy sources. Improving transport technologies requires an effective partnership between the public and private sectors. The IEA estimates that under such an effective partnership electric vehicle sales could reach 100 million/year by 2050, accounting for about half of new light vehicle market. Within Asia, Japan and PRC are likely to play a pioneering role.

In addition to helping with decarbonization and thus mitigating climate change concerns, these new technologies offer a major market opportunity for Asia. The global market for low-carbon technologies in 2050 is estimated at over $3 trillion. A number of Asian countries, including PRC and India, are well positioned to gain a substantial share of this market.

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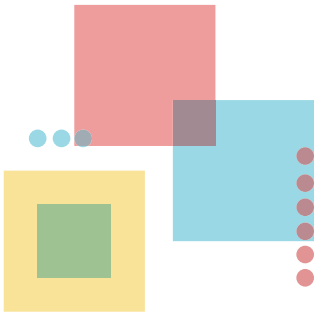

Public and private sector roles

A sustainable energy sector should rely on private investors to build new supply capacities and to manage the operation of various facilities, with the government taking charge of developing the energy diversification strategy and devising an incentive system that encourages all relevant players to serve the overall objective of improving the country's energy security. There is a strong synergy between energy security and adoption of low-carbon energy options. Some new technologies such as wind and nuclear power are already economically viable based on a reasonable price for carbon. Others require government support to move to large scale production which would result in a decline in the average cost of supply.

In either case, widespread diffusion of new technologies would require a government push and a market pull, and close cooperation between the public and private sectors. Such cooperation would enable a more efficient transfer of technologies while utilizing the available sources of international support.

Finally, regulatory bodies have an important role in the proper functioning of the energy sector. Independent and specialized regulators are needed to encourage competitive market behavior. Regulators need financial autonomy and clear authority to set tariffs. At the same time, regulation has limits and should be confined to segments of the energy industry with significant economies of scale (natural monopolies).

Priorities for regional cooperation

Asia's energy security agenda can be also substantially enhanced through regional cooperation and collaboration. There are at least three areas where regional cooperation promises a win-win outcome for all the countries in Asia:

- Asia's regional cooperation agenda should address the transfer and sharing of several important energy technologies including: (i) renewable energy such as wind and solar technologies; (ii) carbon capture and storage; and (iii) transport technologies particularly electric and plug-in hybrid vehicles. Countries in the region can benefit from the experience of Japan, a world leader in developing new energy technologies, the advances in Republic of Korea, and experiences of PRC and India in indigenous R&D and adaptation of technologies.
- Joint petroleum stockpiles have been considered among some Asian countries but workable agreements have not been achieved. Today, almost every Asian country is in the process of reviewing its own emergency response mechanism, and ASEAN+3 (Japan, PRC and Republic of Korea) has already started to discuss the matter. It is recommended to launch an initiative to support and expand the ongoing deliberations to develop an Asia-wide energy emergency response system based on: (i) a long-term vision of the system; (ii) a transitional path to move from the present status to the ultimate model; (iii) mechanisms which are presently viable for a coordinated response; and (iv) an institutional setup that could serve as a vehicle to implement short-term mechanisms and move towards the long-term vision.
- The integration of electricity and gas networks is the objective of numerous initiatives in Asia, and a regional energy market will be increasingly appealing as Asia becomes the largest energy consuming region of the world. The ASEAN approach of stepwise integration may provide a good start for the region as a whole. While the full integration of energy markets can only be considered as a long-term goal, it is feasible to design an interim plan for the creation of sub-regional energy pools that are also harmonized at the regional level. The process could include

“Asia’s regional cooperation agenda should address the transfer and sharing of several important energy technologies

three distinct phases: Phase 1: expanding the bilateral trade (additional volumes, additional numbers of countries); Phase 2: moving to a multi-lateral trade arrangement; and Phase 3: moving to a power-pool organization.

Regional cooperation in these areas would address Asia’s two distinct energy security risks: the sudden interruption of energy flows and the risks in the long-term availability of energy resources. Building strategic petroleum reserves and integrating gas and electricity networks are an effective means of addressing the first risk. The recommendations outlined above for lowering energy intensity of the economy, and diversification away from fossil fuels address the second.

Realizing the Asian Century: Action on Climate Change in Asia's Self Interest

11

This chapter looks at climate change primarily from the economic and social perspective of the emerging markets economies. It is intended to provide a fresh perspective to Asian policy makers.

Specifically, the analysis looks at the economic self-interest of the emerging markets under three scenarios: (i) a do nothing scenario—also called the business as usual approach—under which the current trends in climate change go unchecked for the next 40 years; (ii) a scenario under which the developed countries listed in Annex 1 of the Kyoto Protocol take steps to reduce their emissions by 80 percent over 1995 levels by the end of 2050; and (iii) a third scenario under which the major Asian emerging market economies (plus Brazil and Mexico) take parallel actions to restrain their emissions by 2050 to the same levels as their 2005 emissions (as proposed by PRC in Copenhagen).

The chapter provides an overview of the likely temperature rises by 2100[1] under each scenario. It goes on to estimate the economic implications of each scenario on the emerging market economies (including impact on agriculture production) in Asia, with specific references to the impact on the two largest developing countries, PRC and India.

Business as usual

The business as usual scenario is based on the historic relationship between GDP and emissions for each country between 1990 and 2005, taking into account improvements in this relationship over this period. The model uses forecasts for economic growth to 2050 under the Asian Century scenario.

In this scenario, the world in 2100 will be substantially hotter with an average temperature increase of 4.4°C above 1990 levels and 4.8°C above pre-industrial levels. These temperature increases are associated with CO_2 atmospheric concentration levels of more than 900 parts per million (ppm).

Physical impact

Temperature increases of 5°C represent dangerous climate change. Although the exact nature of the physical and social impacts in a world that is 5°C warmer is not known, it is commonly believed that the last time temperatures were this high—the Eocene period, 35-55 million years ago—swampy forests covered much of the world and there were alligators near the North Pole.[2]

In such a world, the global water cycle would be significantly altered, with billions of people experiencing either very much reduced or very much increased water supply.[3] The flow of rivers from the Himalayas, which serve a number of Asian countries that currently account for around half the world's population, would likely be disrupted. Ocean acidity would significantly disrupt marine eco-systems and commercial fisheries worldwide.[4]

Economic impact

Developing Asian economies will suffer significantly in this world. In this scenario, annual economic damage in the Asia region would range between 3.1 and 10.6 percent of GDP in 2100. Agriculture is one of the most sensitive economic sectors affected by climate change, and is an important sector in most Asian countries. It currently accounts for about 10

1 The report uses the year 2100 to be consistent with UN sponsored negotiations on a new global treaty on climate change that uses year 2100 as the benchmark year to estimate changes in average global temperature.

2 Stern, N. "The Economics of Climate Change", Cambridge, UK: Cambridge University Press, 2007.
3 Warren R.et al, "Spotlighting the Impacts Functions in Integrated Assessment Models," Norwich, UK: Tyndall Centre for Climate Change Research, 2006.
4 Royal Society, "Ocean acidification due to increasing atmospheric carbon dioxide," London, UK: Royal Society, 2005.

"Agriculture is one of the most sensitive economic sectors affected by climate change, and is an important sector in most Asian countries

percent of their economy. Significant reductions in crop yields are expected in most countries in the business as usual scenario. Analysis from the World Bank and Muller et al[5], shows that dangerous climate change would lead to declining agricultural yields in the vast majority of developing countries and that, in the case of India, Indonesia and Republic of Korea the decline in yields would range between 14 percent and 20 percent. PRC is, on the other hand, expected to experience higher yields because of more favorable climatic conditions.

Sea-level rise

A global temperature increase of 4.4°C in turn would lead to sea-level rises as high as 46 cm by 2100. This sea-level rise will threaten a large number of Asian cities. Measured by future populations that will be exposed to such sea-level rises, fifteen of the twenty most exposed cities (and nine out of the top 10) are in Asia (Table 1). The exposed population in 2070 is expected to be almost 95 million people. In terms of asset exposure, thirteen of the twenty (and eight out of the top ten) most exposed cities will be in Asia with a combined expected asset exposure of $17.4 trillion. Climate change (and subsidence) will increase the number of people exposed to coastal flooding in Bangladesh, India and PRC by 30 million.

Health impact

The health of Asia's populations will suffer from such high temperature increases. Studies that estimate the future health impacts specific to Developing Asian countries are rare, but an example of the impact on developing countries in Africa is provided by Tanser et al.[6], which estimates changes in malaria exposure in Africa by 2100. Results suggest that under a no-mitigation business as usual scenario, by 2100 parts of Africa would see a near five-fold increase in person-months of malaria exposure.

Developed country action alone

If only Annex 1 countries take action, global warming will still be substantial. Even if Annex 1 countries reduce their emissions by 80 percent by 2050, the average global temperature in 2100 would still increase by 3.9°C above 1990 levels (4.3°C above pre-industrial levels). This would be associated with CO_2 atmospheric concentrations of 780 ppm.

A world that is 3.9°C warmer still implies a radical disruption to the physical and economic geography of the earth. It is estimated there would be a 40-45 percent decrease in annual water runoff in South Africa and South America, and a 20 percent increase in South Asia.[7] The most affected regions of the world would become too hot and dry to grow crops. It is estimated that 1.5 billion more people would be exposed to dengue fever than a world with no climate change.[8]

Unsurprisingly, therefore, Asia would still experience hefty material economic losses. Aggregate losses for all of Asia would range between 2.6 and 8.1 percent of GDP in 2100. These losses are, of course, lower than in the business as usual scenario but—strikingly—only by a small amount. Relying exclusively on action by the Annex 1 countries only reduces

5 Müller, C., A. Bondeau, A. Popp, K. Waha, and M. Fader, "Climate Change Impacts on Agricultural Yields", Washington, DC: World Bank, 2009.

6 Tanser, F.C., Sharp, B. and le Sueur, D., "Potential effect of climate change on malaria transmission in Africa," The Lancet 362(9398), pp.1792-1798, 2003.

7 Arnell, N.W., "Climate change and water resources in Avoiding dangerous climate change," in Schellnhuber, H.J. (ed.), Cambridge, UK: Cambridge University Press, 2006.

8 Hales, S., de Wet, N., Maindonald, J., Woodward A., "Potential effect of population and climate changes on global distribution of dengue fever: an empirical model," The Lancet, 360(9336), pp. 830:834, 2002.

Table 1 **Asian cities feature prominently in the list of cities most exposed to half metre sea-level rises**

City	Exposed Population (2070) (000s)	City	Exposed assets (2070) ($bn, 2001)
Kolkata	14,014	Miami	3,513
Mumbai	11,418	Guangzhou	3,357
Dhaka	11,135	New York-Newark	2,147
Guangzhou	10,333	Kolkata	1,961
Ho Chi Minh City	9,216	Shanghai	1,771
Shanghai	5,451	Mumbai	1,698
Bangkok	5,138	Tianjin	1,231
Rangoon	4,965	Tokyo	1,207
Miami, USA	4,795	Hong Kong, China	1,163
Hai Phong	4,711	Bangkok	1,117
Alexandria, Egypt	4,375	Ningbo	1,073
Tianjin	3,790	New Orleans	1,013
Khulna	3,641	Osaka-Kobe	968
Ningbo	3,305	Amsterdam	843
Lagos, Nigeria	3,229	Rotterdam	825
Abidjan	3,110	Ho Chi Minh City	652
New York-Newark	2,931	Nagoya	623
Chittagong	2,866	Qingdao	602
Tokyo	2,521	Virginia Beach	582
Jakarta	2,248	Alexandria, Egypt	562

Source: Nicholls, R.J., Hanson, S., Herweijer, C., Patmore, N., Hallegatte, S., Jan Corfee-Morlot, Jean Chateau and Muir-Wood, R. 'Ranking of the World's Cities most Exposed to Coastal Flooding Now and in the Future, OECD Environment Working Paper No. 1, 2007.

Asian economic losses by 20 percent.

With global temperature rises still substantial, potential losses from agricultural yields remain, and in the case of many Asian countries, the losses are striking. India would still face a yield decline of over 10 percent, and Indonesia and Republic of Korea of more than 15 percent.

Sea-levels would still rise substantially, continuing to threaten many coastal cities in Asia. Action by Annex 1 countries is estimated to reduce sea-level rises in 2100 by only 5 centimeters (from 46 cm to 41 cm).

Complementary action by developing economies

Only when the large Asian economies (plus Brazil and Mexico) act together with the Kyoto Protocol Annex 1 (developed) countries do they have the ability to have a meaningful impact on the outcome of the global climate. Asian economies have a much greater incentive to act, since the damages they will suffer without action are notably the highest (see Figure 1).

Consistent with their projected future high and growing emissions, Asia can make a marked difference to global temperature increases. In a situation

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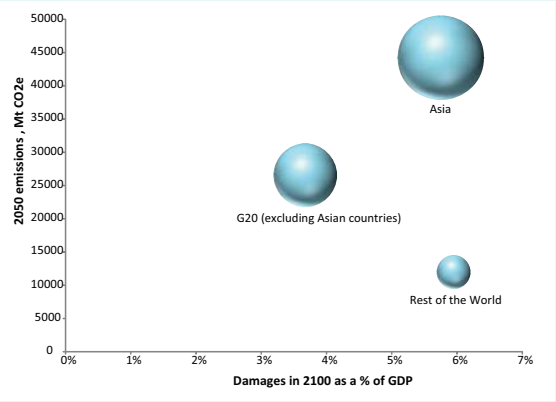
Figure 1 | Asia has both the ability and incentives to address climate change



Note: Sphere size proportional to current population.
Source: EMF Study by Vivid Economics based on RICE, 2010.

in which action by Annex 1 countries to reduce emissions by 80 percent on 1990 levels is matched by a commitment by the Asian developing countries to ensure that emissions in 2050 are no higher than they were in 2005 (and emissions from land use change are 50 per cent lower in 2050 than in 2005), then temperature increases are much reduced.

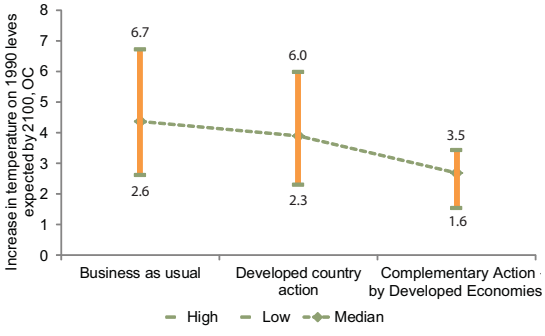
Compared to the business as usual increase of 4.4°C—and an increase of 3.9°C when Annex 1 countries alone take action—the rise of global temperature falls to 2.7°C (all on 1990 levels).

The economic damages associated with these temperature increases in Developing Asia are significantly smaller, although they are still not negligible. Economic losses in 2100 fall to between 1.7 and 3.6 percent of GDP; at the high end, this is a reduction of more than 50 percent compared to the scenario where only Annex 1 countries take action. Figure 2 compares the losses faced by Developing Asia depending on the action taken. It clearly illustrates the importance of Asian action in diminishing the economic damage they might face.

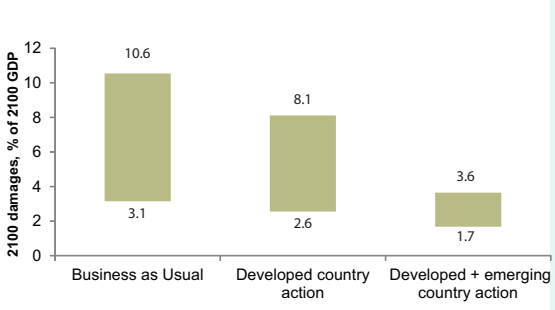
The lower temperature increases that are an outcome of Asian action are, for most Asian economies, expected to have a beneficial impact on agricultural yields. In the case of India, Indonesia and Republic of Korea, the potential decline in agricultural yields is

Figure 2 | Action by Asian countries can significantly mitigate damage from climate change

Without action by Asian countries, global temperatures are expected to increase by 4°C, with a 10% probability that temperatures could be higher by 6°C or more and…

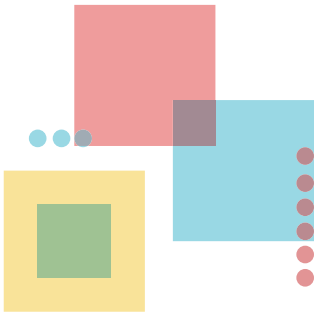


…Asia is expected to suffer annual damages of around 5% of GDP with a 10% chance they could higher than 8%



Source: Author's calculations, 2011.

"the larger Asian economies—Japan, Republic of Korea and, more recently, PRC and India—have already moved ahead in technological development and innovations necessary to promote green economies



expected to be cut back significantly—by more than 5 percentage points in the latter two countries.

Sea-level rises are much lower in this scenario. Compared to the sea-level rises of 46cm in the business as usual scenario—and which remain at 41cm in the developed country case—increases are only 32 cm when Asian countries also take concerted action. In other words, while action by developed countries only generates a reduction in sea-level rises of less than 10 percent, if coupled with action by Developing Asia, a reduction of more than 30 percent is possible.

Accelerating the transition to low carbon economies

By making the low carbon transition, Asian countries will transform their economies towards a new technological paradigm. This will bring greater energy security, healthier and more productive citizens, cleaner cities, more productive agricultural sectors, and more efficient and competitive industrial sectors.

Fortunately, the larger Asian economies—Japan, Republic of Korea and, more recently, PRC and India—have already moved ahead in technological development and innovations necessary to promote green economies (Box 1).

During the Great Recession, a few Asian developing countries led the world in the percentage of economic stimulus devoted to green measures. The economic stimulus plans of Republic of Korea and PRC were judged to be 38 percent and 80 percent green, respectively, (HSBC, 2009), significantly greater than the US or the EU. In November 2009, Republic of Korea pledged to reduce its emissions by four percent below 2005 levels by 2020. In July 2010, it was reported that PRC will begin domestic carbon trading programs during its twelfth Five-Year Plan (2011-2015) to help it meet its target of reducing carbon intensity by 40-45 percent by 2020. Furthermore, in the same month, India imposed a "domestic carbon tax", in the form of a levy on coal producers, which is expected to raise approximately $535 million annually.[9] Overall, despite their reservations on a binding treaty at global negotiations in Copenhagen and Cancun, the major Asian economies—particularly Japan, Republic of Korea, PRC and India—are moving ahead with improvements on their own.

Asia has a strong incentive to accelerate the race to a low carbon global economy: it has the most to lose from a slow transition, and the most to gain from a fast transition. As discussed above, Asian countries face very serious consequences if action to mitigate climate change is not quickly accelerated. Historically, countries' economic rankings have changed substantially in response to technological progress in core industries such as energy generation. Large Asian economies already have a strong base from which to seize the clean energy opportunities.

Waiting to take action will only increase the costs especially if current investments are inconsistent with the requirements of a low carbon world and have to be scrapped prematurely. Delays now will necessitate steeper annual reductions later in order to reach the

Box 1 | Progress in green technology

Over the last 2-3 years, many Asian countries have accelerated their action on climate change and clean energy. PRC, for instance, is now one of the leading countries in the world in solar and wind energy, electric cars, and even high-speed rail technologies. It is the leading producer of solar photovoltaic cells, having dramatically gained market share from the United States.

In parallel, India has become a global player in wind energy and is developing an all electric car.

9 Bloomberg Business Week, "India to raise $535 million from carbon tax on coal," July 1st, 2010.

“ it is in the self-interest of Asia to act decisively to mitigate climate change, and to do so urgently

same goal. For instance, if Developing Asian economies start taking action in 2012 to bring emissions back to 2005 levels by 2050, then they would have to achieve annual reductions in emissions of 0.4 percent per annum. If they wait until 2030 before taking action, with the intention of reaching the same target by 2070, then average reductions of 1.5 percent per annum might be required.

It is clear that it is in the self-interest of Asia to act decisively to mitigate climate change, and to do so urgently.

Global burden sharing

By taking proactive and aggressive actions to mitigate climate change along the above lines, major Asian countries would also demonstrate concretely that they are willing and able to play a constructive role in tackling this common global challenge. They will be doing so even though some emerging markets' opinion makers believe that their economic growth may suffer somewhat over the short-term. It is therefore important that the developed economies participate in an equitable global burden sharing in both addressing the current stock of carbon emissions contributed mainly by them, and in reducing future emissions at home as well as contributing technological and financial assistance to the less well off nations.

12 Realizing the Asian Century: Entrepreneurship, Innovation and Technological Development

Asia's rapid growth has been based on, and must be sustained through, continued improvements in total factor productivity (TFP). This chapter makes the case for Asian economies to promote entrepreneurship, innovation and technology development to ensure such improvements and their translation into growth and well-being. The discussion is built around the distinction between catch-up and frontier entrepreneurship. The chapter maps the Asian economies on this spectrum. Asia's high income economies are at the frontier end while most other economies are at the catch-up end of the spectrum. PRC and India are in a special class with pockets of frontier innovation and entrepreneurship and the advantage of massive scale co-existing with vast areas of catch-up entrepreneurship. The chapter draws on the experience within Asia and globally to derive lessons for the converging and non-converging economies of Asia. Specifically, the chapter outlines the elements of the eco-system that is required to enable and promote innovation and entrepreneurship.

Why focus on entrepreneurship and innovation?

Robust entrepreneurial development based on innovation and technological development will be central for all groups of economies in Asia in the next 40 years: (i) for the high income developed economies, it is the key mechanism to leverage their accumulated knowledge base; (ii) for the converging economies, fostering entrepreneurial development is the most effective strategy to avoid the "middle-income trap;" and (iii) for the non-converging economies, entrepreneurship is the most efficient catch-up strategy to help them join the ranks of the converging economies.

Entrepreneurship contributes to economic growth through several mechanisms. First, entrepreneurs create jobs. This point is brought to a sharp focus by the recent experience of socialist economies transitioning to market economies. In Viet Nam, during the first seven years of reforms, net job creation in the new private sector was 10 million, whereas job creation in the state sector was negative[1]. Second, entrepreneurs challenge the status quo by competing down the rents that accrue to the established incumbents—the famous claim of "creative destruction" made by Joseph Schumpeter. This Schumpeterian view of economic growth is relevant in any economic context but particularly so in developing countries where government protection and politically-sanctioned monopolies have a dominant market position. The third mechanism is via innovations and technological progress. One economic analysis of important innovations in the 20th century shows that 50 percent of innovations were generated by new and small firms.[2]

We make a distinction between two types of entrepreneurship—catch-up entrepreneurship and frontier entrepreneurship. Catch-up entrepreneurship engages in replicative activities—activities invented by others and replicated at competitive costs; its main economic contribution is job creation. Frontier entrepreneurship is innovative and inventive, and creates breakthroughs in science and technology. Frontier entrepreneurship is an important mechanism to convert knowledge production into improvements for human welfare. This distinction is useful as a way to disaggregate the entrepreneurial landscape of emerging Asia.

1 Johnson, Simon H., McMillan, John and Woodruff, Christopher M., "Property Rights and Finance," Cambridge, Mass: NBER, 2002.
2 Acs, Z. J.- Audretsch, D. B., "Innovation in Large Firms: An Empirical Analysis", American Economic Review, 78(4), pp. 678-690, 1988.

“The sustained growth of Asian economies must be anchored in improvements in total factor productivity (TFP)

Entrepreneurship and innovation in Asia

The sustained growth of Asian economies must be anchored in improvements in total factor productivity (TFP). A mapping across the dimensions of TFP levels (2007) and TFP growth (1985-2007) highlights the position of the different Asian economies (Figure 1) on the productivity landscape. The high income developed economies such as Japan, Republic of Korea, Taipei,China, Hong Kong, China and Singapore are leaders with regards to TFP levels. These are the frontier economies where entrepreneurship and innovation are concerned.

Japan has slowed moderately in terms of TFP growth. Most innovations in Japan are aimed at saving energy, raw materials, time and space to enhance global competitiveness. Thus, the central feature of innovation in Japan is continuous improvement. Innovation happens mainly in larger “corporate groups” rather than in small companies in a corporate culture that encourages incremental innovation; radical innovation is less common.

Singapore looks the most impressive when considering both TFP levels and growth rates. This reflects an impressive commitment to scientific research, especially in life sciences. The Singaporean government has funded and promoted scientific research with the goal of becoming “the Boston of the East”. It pays great attention to developing its educational system with a specific focus on attracting world class education institutions to Singapore.

Since the early 1980s, Republic of Korea has gradually transformed itself from being an imitator to becoming an innovator, based on rapid growth in R&D expenditures, and greatly supported by its top universities, (Seoul National University and the Republic of Korea Advanced Institute of Science and Technology), as well as its science towns.[3] Republic of Korea faces constraints similar to Japan arising from hierarchical limitations and seniority control in large Korean companies.

The continental economies, PRC and India, are in a class by themselves not just because of their size but because of the heterogeneity of their economic structures and the depth of their scientific and technological know-how. They have vast areas where catch-up entrepreneurship holds the key for growth and employment but also deep pockets of innovation clusters that contribute toward global scientific and technological leadership. The scale effect is an important source of demand and a source of supply of talent and capabilities that enable innovation. Milton Friedman famously asserted, “The conquest of the technological frontier, like the conquest of the geographical frontier, requires millions of individuals.” The scale effect may explain why capital flocks to PRC and India. In the rankings by the Boston Consulting Group of “100 BCG New Global Challengers,” 38 of the challengers operate in PRC and 19 in India compared to the Russian Federation (6 firms) and Brazil (14 firms) . Fortune 500 companies have 98 R&D facilities in PRC and 63 in India.

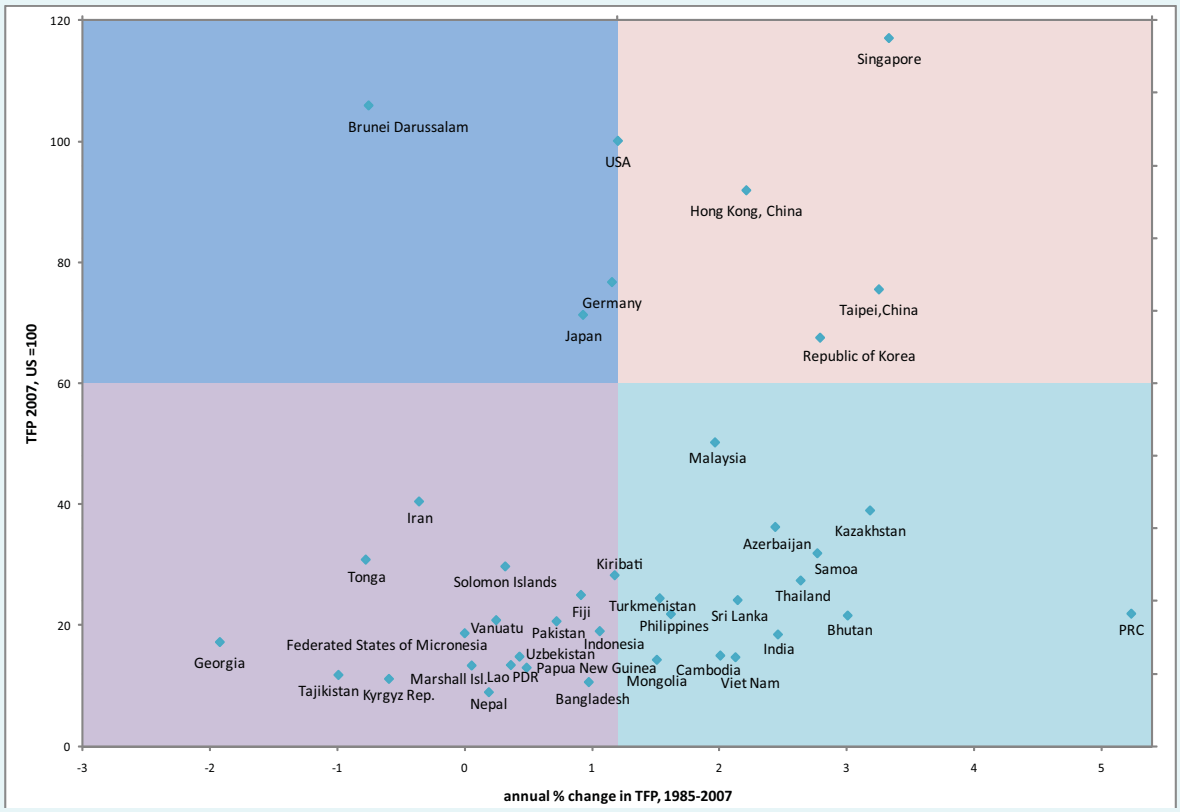
Other converging economies such as Indonesia, Malaysia, Thailand and Viet Nam are closer to the catch-up end of the entrepreneurship and technological innovation spectrum. These countries have experienced moderate TFP growth but have been constrained by a number of factors. Malaysia’s entrepreneurship and technological innovation is constrained by two major obstacles: education and training, and government regulation.[4] Malaysia, like many others, lacks an effective financial system to support entrepreneurship. Thailand, Indonesia, and

3 Alif Farhoomand, “Innovation in Asia with Patent Data,” Hong Kong, China: Asian Case Research Center, 2005.

4 “Malaysia Firm Competitiveness, Investment Climate, and Growth,” Washington, DC: World Bank, 2005

"The converging economies in Asia, and even more so the slow growing economies, generally do not have the systems, institutions and policy practices that promote and nurture frontier entrepreneurship

Figure 1 **Total factor productivity: levels and growth rate, 1985-2007**



Source: Centennial calculations, 2011.

Viet Nam share similar problems, such as inadequate infrastructure and access to finance, an inadequately educated workforce, a relatively poor work ethic in the national labor force, an ineffective government bureaucracy, and policy instability.

Particularly interesting are the impressive TFP growth rates of a significant number of countries in Central Asia (Figure 1). Azerbaijan and Kazakhstan stand out, possibly making up for the significant losses in GDP and productivity following the collapse of the Soviet Union, and benefitting from increases in energy production and transit. Most disappointing is the low TFP growth performance of the non-converging countries.

The converging economies in Asia, and even more so the slow growing economies, generally do not have the systems, institutions and policy practices that promote and nurture frontier entrepreneurship. This problem has not deterred Asia from rapid growth with a largely replicative model so far. It may, however, very well turn out to be the stumbling block for the converging economies in their efforts to maintain their growth momentum and avoid the Middle Income Trap.

Major lessons

There are four major lessons that emerge from our

"countries need to think of the enabling environment for entrepreneurship—particularly as they move towards frontier entrepreneurship—in terms of a complex multi-faceted eco-system

analysis of entrepreneurship in Asia and globally.

First, entrepreneurship and technological development are heavily sequential: countries move from catch-up entrepreneurship to frontier entrepreneurship, rather than directly leapfrog into the latter phase. Knowledge production is a cumulative process rather than, as often portrayed in the media and policy discussions, one of leapfrogging. PRC and India first succeeded in catch-up entrepreneurship and subsequently added frontier entrepreneurship to their development toolkits. In Asia, the country that has been most successful—in terms of both the outcome and speed of this transition—is probably Republic of Korea (Box 1).

Second, successes in frontier entrepreneurship have an extraordinarily long gestation period. Governments must think ahead and commit themselves to a long-term, well-planned policy course. The seeds for several innovation success stories out of PRC and India were in fact planted decades before their economic and commercial successes manifested themselves—in the early 1970s, for the Indian pharmaceutical industry, and in the mid-1980s, in the case of the Chinese green technology sector (Box 2).

Third, there is a role for second-best interventions in the short-run. PRC and India, while quite successful in nurturing entrepreneurship and achieving some breakthroughs in innovation, still suffer from gaps in the policy and institutional environment for entrepreneurship and innovation. In the short run, it is probably only realistic to take institutional conditions as given and devise policy interventions that substitute for shortfalls. One example of such a policy intervention is targeted financing and administrative intervention by the Chinese government to expand the research capabilities of its universities and to foster linkages between universities and industry.

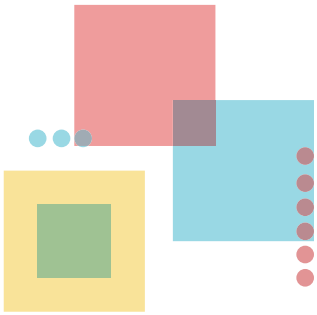
The final lesson is that countries need to think of the enabling environment for entrepreneurship—particularly as they move towards frontier entrepreneurship—in terms of a complex multi-faceted eco-system. The following section draws on examples in Asia—particularly PRC and India —to outline the key elements of such an eco-system. These include: human capital development through quality education at all levels; a commitment to science, technology and R&D; the rule of law with an effective regime for intellectual property rights as well as for exit/bankruptcy; the availability of financing for entry and the subsequent phases of entrepreneurial activity; and, critically, an overall policy framework that is based on competition and rewards innovation.

Key elements of the entrepreneurship and innovation eco-system

Not surprisingly, education lies at the core of the entrepreneurship and innovation eco-system. Many countries in Asia fare poorly on this front; this is ironic given the high value that many Asia societies place on education. It is also disturbing because education shows the strongest correlation with entrepreneurship and TFP. While the coverage of basic education has improved and is reasonable throughout the region, enrollment at the secondary level falls off sharply. Enrollment at the tertiary level, with a few exceptions, is remarkably low. Unfortunately, the quality of education remains a major concern at all levels. Higher quality must accompany higher enrollment rates if Asian economies are to competitive in the future.

Asia's high income, converging, and non-converging economies have very different enrollment rates that are very much in line with their positions with regards to TFP growth. High income countries have high levels of secondary and moderate levels (above 60 percent) of tertiary education. There is a sharp fall-off in the enrollment rates in converging economies, particularly at the tertiary level as highlighted by PRC (21 percent) and India (only 12 percent).

“Not surprisingly, education lies at the core of the entrepreneurship and innovation eco-system



Box 1 Republic of Korea’s transformation into a center of science and technology

Republic of Korea is a prime example of a country that has made the transition from catch-up to frontier entrepreneurship and has exemplified a significant leadership commitment to technology and innovation-based economic development. In 1960, the country was among the poorest in the world, with a GDP of $24 billion and with unemployment rates at 22.3 percent. Today, Republic of Korea is one of the world’s most modern industrial economies with a GDP of $986 billion and an unemployment rate of just 4 percent.

The country has few natural resources and is heavily dependent on imports for energy and raw materials. This reality, together, with a longstanding sociocultural eagerness for education, has pushed it to invest in human capital and in science and technology development.

Republic of Korea’s government catalyzed technology development in the country by initiating significant R&D spending, in some instances at government institutes set up for this purpose. In 1980, the government had a share of 64 percent of R&D expenditures and government institutes performed 62 percent of R&D. Over time, the private sector has taken on the lion’s share of R&D spending, and now accounts for 75 percent of expenditure and about 90 percent of R&D performance.

Beginning in the 1960s and 70s, with a focus on technology transfers as a means of technology acquisition and the development of domestic capacity to improve on it, the country shifted to the development of indigenous R&D in the 1980s. The government’s outward looking development strategy has encouraged investments in long-term risky projects, many of which have turned into impressive success stories. Gross R&D expenditures (GERD) are among the highest in the world at 3.21 percent of GDP in 2007, an impressive increase from 0.77 percent in 1980.

In response to the Asian Financial Crisis of the late 1990s, Republic of Korea increased public R&D budgets and, through an overhaul of existing regulations and tax credits, created an environment that would promote the development of a technology-based SME sector and encourages venture start ups. As a result, TFP levels have risen exponentially and, in PPP terms, Republic of Korea this year will bridge the gap with Japan which stood at 30 percent in 1990.

Republic of Korea: Selected indicators	1990	Latest
GDP (MER)	$414 billion	$986 billion
GERD (% of GDP)	2.42 (1996)	3.21
Tertiary enrolment (% gross)	37	98
US-registered patents	290	12,508
Number of researchers (millions)	100.5 (1995)	221.9

Source: IMF WEO, October 2010; UNESCO Institute for Statistics, 2011; World Bank Edstats database, 2011; National Science Foundation Science and Engineering Indicators, 2010.

Non-converging economies lag even further behind (Figure 2).

Universities are probably the most important producer of the kind of knowledge that leads to transformative product innovations. One study of startup businesses established by the Massachusetts Institute of Technology (MIT) graduates, faculty and MIT itself shows that as of 2006 the sales value of these businesses came to $11 trillion, roughly equal to the size of Republic of Korea’s GDP.

"Higher quality must accompany higher enrollment rates if Asian economies are to competitive in the future

Box 2 | From catch-up to frontier innovation

By one objective measure, India today has one of the most competitive pharmaceutical industries in the world. On the most recent WHO pre-qualification list there are 137 drugs manufactured in India, compared with only five manufactured in PRC. Indian firms, such as Ranbaxy and Biocon, have increasingly moved to acquire an R&D profile, and are no longer limited to manufacturing existing drugs. These achievements did not happen overnight. The turning point for India's pharmaceutical manufacturing came with the 1970 Patent Act which shortened patent protection under the Patents and Design Act of 1911 from 16 years down to 3-5 years. The Act, together with a foreign exchange control act and price controls, is generally credited with the birth of India's indigenous pharmaceutical industry. India's transition from catch-up entrepreneurship to frontier entrepreneurship in the pharmaceutical industry was marked by a milestone 35 years later—the 2005 Patent Act that lengthened patent protection to 20 years.

A comparable example from PRC is in the area of green technology. PRC's substantial progress in the field of green technology is often portrayed as "leapfrogging." In fact, PRC's substantial gains result from a long process of accumulating and absorbing knowledge from prior practices. The plan to invest heavily in green-tech was approved very early, in 1986, by Deng Xiaoping himself, according to one account. PRC's success in this field also heavily leverages its manufacturing prowess. For example, one of the most successful Chinese firms in solar panels, Wuxi Suntech, relies on core technology from Australia but was able to rapidly scale up production because PRC has a well-developed supply chain. Similarly PRC's gains in wind turbine technology, gasification equipment and grid construction can be attributed to its scale and experience in equipment manufacturing. In other words the strength of PRC's catch-up entrepreneurship provided the foundation for the transition to frontier entrepreneurship.

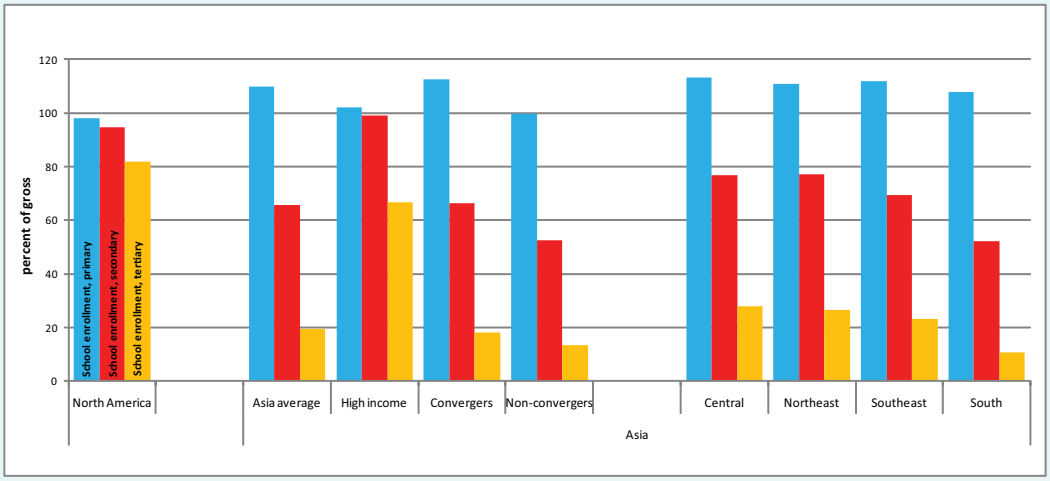
Asia's high income economies are home to a number of world class institutions. Of the converging economies, PRC has made dramatic progress in recent years. University facilities have also been upgraded; teaching and experimental equipment has doubled in the past five years.[5] Moreover, post-graduate enrollment in PRC has now surpassed levels in India, growing more than five-fold, from 70,000 in 1998 to 365,000 in 2006, of which doctoral enrollment is 208,000.[6] India has a small number of world-class institutes. The close collaboration between universities and industry that is required for successful innovation and entrepreneurship is rare in most economies in Asia, as compared to the experience in the US.

The nature of education is also significant. Entrepreneurship and innovation can only flourish in an eco-system that fosters creativity, and tolerates risks, failures and out-of-the-box thinking and behavior—broad capabilities that are best addressed through a country's educational system. The systems in many Asian countries (including India and PRC), however, have come under severe criticism for their emphasis on rote memorization and

5 Ministry of Education. "Education and Training Industry Report 2006" Beijing; Ministry of Education, 2006.
6 "PRC's colleges to enroll 5 percent more students in 2007," Beijing, PRC: Xinhua News Agency, January 24, 2007.

"Entrepreneurship and innovation can only flourish in an eco-system that fosters creativity, and tolerates risks, failures and out-of-the-box thinking and behavior—broad capabilities that are best addressed through a country's educational system

Figure 2 **Much of Asia lags in secondary and tertiary enrollment**



Source: World Bank Edstats database, 2011.

test-taking—leading to what is increasingly recognized also by Asian leaders as a creativity deficit.

Frontier entrepreneurship and innovation are science-based, and R&D is a useful metric of a country's commitment to science and technology. Asia now accounts for about one-third of the world's spending on R&D. It has recently surpassed Europe, and is soon expected to surpass the US. As a percent of GDP, Japan and Republic of Korea rank particularly high with expenditures of 3.4 percent and 3 percent of GDP, respectively. PRC's R&D spending rose from 0.6 percent in 1996 to a likely 2 percent in 2010 (a level more common among developed countries), and is planned to reach 2.5 percent of GDP in 2020.

Absolutes and scale—and not just the percent of GDP—matter with R&D spending. In 2006, PRC spent $136 billion on R&D, overtaking the $130 billion spent by Japan and reaching about 40 percent of the United State's spending levels ($330 billion in 2006). India invests a relatively low 0.8 percent of GDP in R&D.

An intangible, far harder-to-quantify element of the eco-system is the level of the political commitment to science and technology. One measure of this commitment is the level of officials in charge of science programs in PRC. In 1986, for example, PRC plans to invest in alternative energy projects was approved personally by Deng Xiaoping; the "National Basic Research Program" (initiated in the 1980s) which focuses on basic research in "strategic" industries was said to have been personally endorsed by Zhu Rongji, PRC's vice premier in charge of the economy (later the premier from 1991 to 2002), who also chaired the National Steering Group for Science, Technology and Education. Asia also offers a number of other examples of significant leadership and sustained policy commitment such as Republic of Korea and Singapore.

Another critical element of the eco-system is the availability of financing for the different phases of the entrepreneurial cycle, particularly early stage financing in order to get past the current excessive

“Foreign direct investment has a spillover effect that has provided the seed financial and human capital as well as technology to domestic entrepreneurial ventures

dependency on public sector financing. India started its financial reforms in the early 1990s, simultaneously with its broad economic reforms, with an emphasis on the market-based pricing of IPO issuances, the gradual privatization of Indian banks, and improvements in the corporate governance of listed firms on Indian stock markets, etc. The net result is that India’s financial system, though not yet fully adequate to finance innovation, is more broadly supportive of private sector development as compared with the PRC financial system. Linked to financing is the need for well-regulated bankruptcy/exit mechanisms.

Foreign direct investment has a spillover effect that has provided the seed financial and human capital as well as technology to domestic entrepreneurial ventures, particularly in PRC and India, creating conditions for innovation. For example, GE-India (with 3,500 researchers) has focused on developing India-specific technologies and applications. Microsoft’s R&D center in Beijing now files the second largest number of patents within the Microsoft system (second only to its headquarters in Seattle).

Not surprisingly, the overall policy framework is of great importance. PRC and India have followed different paths in this respect. Many of the innovations in India have come from the corporate private sector and are market-based, as opposed to being driven by government-funded programs to increase the supply base of knowledge. The demand-side dynamics have been crucial to India’s innovation successes. Indian firms have led the rest of the world in developing the cheapest cars (Tata’s Nano is priced at $2,500), cheapest mobile phones (at $20), cheapest phone call rates, cheapest cataract surgery (at $30), and the cheapest laptop (at $35). These pioneering achievements have so far not been matched by PRC firms, which, paradoxically, appear not to have internalized the powerful logic to cater to the bottom of pyramid. A general eco-system that is conducive to innovations has certain generic features, such as the depoliticization of the research funding process, an arms-length relationship between government and research institutions, and the spirit of free inquiry. Many Asian countries currently put too much of a premium on government controls and planning, and less on individual actions and initiative. A challenge, unique to PRC, is whether truly transformative innovations can occur under institutional and political conditions that put a high premium on controls rather than on discussion and debate.

Finally, the business environment is a vital element of such an eco-system. The rule of law is relevant not just for entrepreneurship but for economic activity more broadly. The intellectual property rights regime gains much greater importance as economies move from catch-up entrepreneurship towards frontier entrepreneurship. There are also the commonly cited elements of doing business: ease of starting a business, of registering property, getting credit and enforcing a contract. With the marked exception of the high income economies, Asia has a long way to go in this regard (see Figure 3).

The situation with respect to physical and technological infrastructure, another important element of the eco-system, is similar. The most critical elements have to do with competition and the enabling environment for broad-based private sector development. Entrepreneurship and innovation on a large scale in Asia can best be promoted by the “consolidation of competitive capitalism with the dynamism of large and small businesses depending on innovation rather than influence”.[7] In many Asian economies, there are tendencies toward oligarchic capitalism based on state capture (as also witnessed in Latin America) which must be checked through appropriate competition policies, effective regulatory structures, procedures to check corruption and influence, a

7 Walton, Michael, “Tackling Structural Inequities,” in India 2039: An Affluent Society in One Generation, Kohli and Sood (eds), Washington, DC: Sage, 2010.

“Another essential element to promote entrepreneurship is an openness to competition and a business environment which facilitates entry and entrepreneurship on a large scale

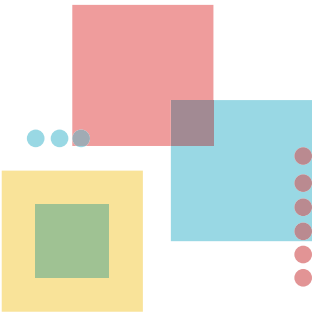
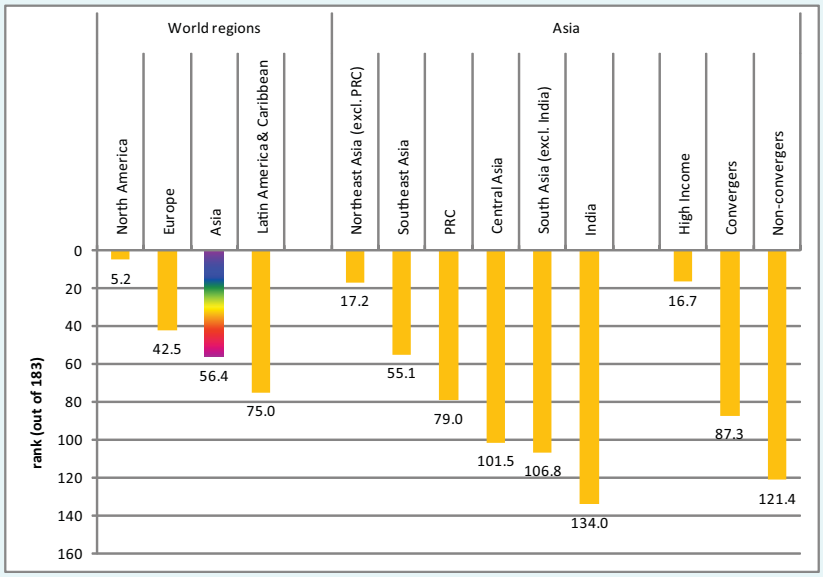


Figure 3 **Asian countries’ rankings in ease of doing business vary by region and income/convergence level**



Source: World Bank Doing Business, 2011.

broad-based and inclusive financial system, transparency and accountability, and an independent judiciary.

Priorities

Entrepreneurship and innovation are vital to economic growth and that they have to be explicitly fostered, cultivated and given ample space for development rather than being taken for granted. For the non-converging Asian economies, catch-up entrepreneurship and innovation is vitally important and likely to remain the most relevant strategy for some years. For these countries, the policy priority is not high-tech development but to get the economic and business environment fundamentals right. The mistake that policy makers in Asia must avoid is to create a policy and regulatory environment to favor frontier entrepreneurship at the expense of catch-up entrepreneurship.

Some of the elements of the innovation and entrepreneurship eco-system illustrated above are more relevant for the converging economies since they are requirements for frontier entrepreneurship, which is much more demanding of the eco-system than catch-up entrepreneurship. At the same time, many of the underlying measures have long gestation periods and would thus benefit from early attention.

Most Asian economies need to make significant investments in human capital development by ensuring both, higher enrollment rates and higher quality at all levels of education. Improved learning with an emphasis on creativity can help foster higher productivity, innovation and entrepreneurship. Another essential element to promote entrepreneurship is an openness to competition and a business environment which facilitates entry and entrepreneurship on a large scale.

Realizing the Asian Century: Transforming Governance and Institutions

13

This chapter discusses the greatest challenge Asia faces in its endeavours to realize the Asian Century: transforming governance and institutions.[1] The chapter presents an analytic framework to assess the current state of governance and institutions and the changes therein over time. It compares various governance indicators of Asian economies with other emerging countries and outlines the key drivers for change (demographics, urbanization, expanding middle class, and the communications revolution). Finally, it identifies key actions of institutional change and discusses principles and priorities for transforming governance throughout Asia.

Analytic framework

It is essential for all Asian countries—across the three groups—to focus on improving governance and transforming institutions in order to meet the challenges of the coming decades.

The recent deterioration in the quality and credibility of national political and economic institutions in a large number of Asian countries is a key concern and a reason why Asia's rise should not be seen as preordained.

Transparency, predictability and accountability are key elements to establish long-term domestic legitimacy of authorities. These make governance and institutional dimensions, even over a 40 year time horizon, a good basis to discuss the broad direction of Asia. The broad range of issues covered and their multi-faceted dimensions require that one should look for a broad number of indicators in measuring governance. A solid basis to discuss Asia's direction starts with an analysis of the multi-faceted dimensions of governance and institutions—even if there are obvious uncertainties associated with a 40 year time horizon. The conceptual complexities require that we use different indicators to measure the transformation of institutions.

Table 1 provides a framework to identify entry points to stimulate governance and institutional changes, together with related principles. The framework combined with the drivers for governance changes (see further below) point to the likely directions for Asia over the next decades. However, Asian policy makers cannot rely on "international best practice" but rather have to look for the "best fit" for their specific country circumstances. They must ultimately decide on a model, or combination of models, for institutional changes that are most likely to lead to improved performance in their specific country context.

The governance challenge in Asia

There is no shortage of published indicators that track the governance and institutional evolution of countries over time. While survey methodologies, sources and scope differ, the overall picture points in the same direction. The 2009 Worldwide Governance Indicators published by the World Bank Institute are formed by a composite of six core dimensions: voice (of people) and accountability (of government), political stability/no violence, government effectiveness, regulatory quality, rule of law, and control of corruption. A simple average of the scores of Asian economies does not indicate any major changes between

1 For the purpose of this report, governance is defined as the exercise of power/authority in the management of a country's economic and social resources. This exercise of authority is reflected in incentive structures, legal and regulatory frameworks, policy, political and institutional frameworks, institutional capacity, and transparency and accountability dimensions. Governance is imbedded in the political culture and collective perceptions of the citizenry. Institutions are defined as sets of "rules of the game" (laws, formal processes, systems), including the locus of exercising those rules. Regulations in turn are defined as expressions of formal processes ("rules") meant to guide the implementation of authorities' intent. Whereas regulations can be changed in a short span (e.g. 1 to 3 years), institutional changes and development need to be assessed at a minimum over a 10 to 15 year span. Governance evolves incrementally over a long time horizon (decades) unless exposed to sudden and fundamental disruptions such as revolutions and armed conflict.

"It is essential for all Asian countries—across the three groups—to focus on improving governance and transforming institutions in order to meet the challenges of the coming decades

Table 1 **Analytic framework for governance and institutions**

The Issue	Actors and instruments	Good principles	Bad principles
Who leads the Public sector?	Government through economic and social policies	• Growth-oriented • Inclusive • Sustainable development-oriented • Accountable	• Lack of clarity of direction • Exclusive • Rent-seeking oriented • Not accountable
How are policies applied?	Through a clear legal, institutional and regulatory framework and related agencies	• Rule-based • Equitable (law applies equally to everybody) • Accountable	• Ad-hoc • Selective, captured • Not accountable
How are policies implemented?	Through/by the civil service and other service providers	• Competent • Merit-based, Competitive • Efficient • Accountable	• Incompetent • Nepotism-based and/or captured • Inefficient • Not accountable
How are resources allocated?	Through the budget process	• Transparent • Competitive • Accountable	• Non-transparent • Arbitrary and/or interest-group oriented • Captured
How are public oversight functions carried out	Through multiple actors: • Parliament • Media • Civil society • NGOs	• Accountable • Demand for public accountability • Access to information	• Non-effective • Laden with conflict of interest • Captured
Are there redress mechanisms?	Through sundry appeals and conflict resolution systems (e.g. ombudsmen)	• Yes	• No

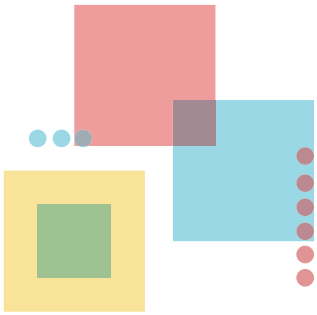
1998 and 2009; there was a slight deterioration in the voice and accountability component, but a slight improvement in political stability. Adjusting the scores by GDP shows quite a different picture: the overall scores improve dramatically, reflecting the share of the Asia-7, especially in areas of government effectiveness, regulatory quality, and rule of law; however they are also accompanied by a drop in the scores for voice and accountability and political stability (Figures 1 and 2).

Comparing the 2009 results between Asia-7 and the rest of Asia, weighted by GDP, Asia-7 outscores the rest of Asia consistently, with again, the best scores for government effectiveness, followed by regulatory quality and rule of law. It is noteworthy that the scores themselves are also strong in absolute terms, especially when compared with the indicators weighted by population (Figures 3 and 4).

Looking at the same Asia-7 over time, however, shows a mixed picture: while government effectiveness and regulatory quality have improved substantially, little progress is observed in the other dimensions. Disappointingly, even the Asia-7 do not fare too well viz. the rest of the world in any of the dimensions (Figures 5 and 6).

The remaining—mainly non-converging low and lower-middle income—economies are worse than both Asia-7 and developing countries in other regions. In other words, countries' performance on governance parallels the three tiers of countries used in this report in discussing economic performance: high income or developed Asian economies do the best

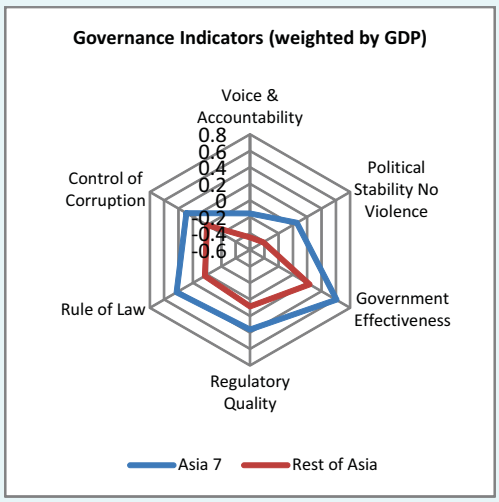
"In Asia as a whole, progress in governance indicators from 1998 to 2009 has been disappointing with the exception of government effectiveness

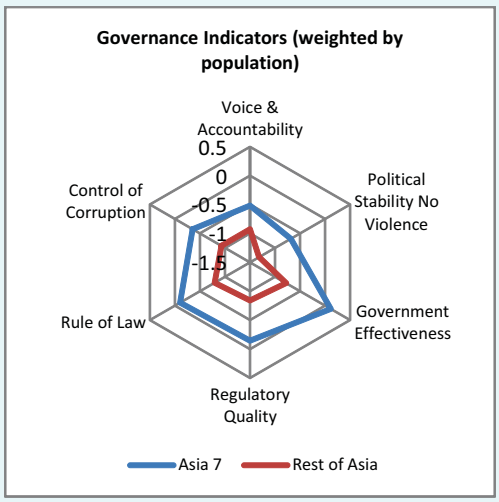


in governance; the Asia-7 (or converging) economies are the next best; and the non-converging economies score the lowest for most indicators (but not all) of governance.

Turning specifically to the dimension of controlling corruption the regional differences within Asia are revealing, particularly when weighted by GDP. The correlation between economic development and

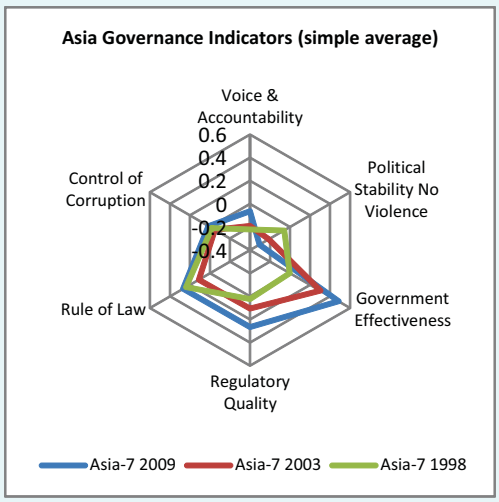
Figures 1 & 2 Asia-7 has outperformed the rest of Asia in governance

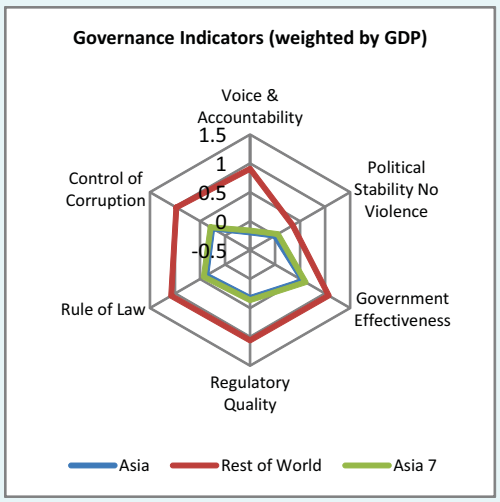




Source: World Bank Worldwide Governance Indicators, 2010.

Figures 3 & 4 Asia-7 has still underperformed the rest of the world in governance

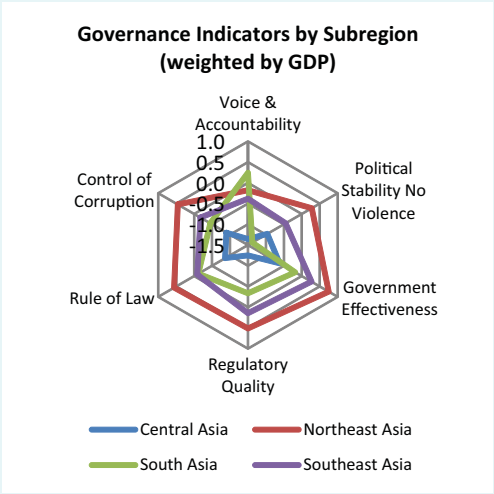


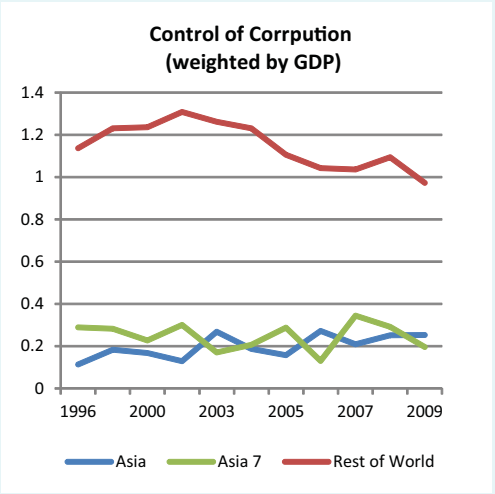


Source: World Bank Worldwide Governance Indicators, 2010.

“Managing the challenges common to Asia, be they rapid urbanization, building a fundamentally sound financial sector or fostering entrepreneurship and innovation requires effective governance

Figures 5 & 6 **Governance indicators by subregion (weighted by GDP)**





Source: World Bank Worldwide Governance Indicators, 2010.

control over corruption clearly emerges. Yet again, when compared with the rest of the world, even weighted by GDP, Asia and the Asia-7 lag behind by a significant margin, although the gap is slowly closing.

The results point to the following observations:

- In Asia as a whole, progress in governance indicators from 1998 to 2009 has been disappointing with the exception of government effectiveness, and more modestly, regulatory quality and rule of law, but with a clear retreat in voice, accountability and political stability;
- The Asia-7 fare better, but even so, they perform worse than the rest of the world in all dimensions. Unless these shortcomings are addressed Asia can hardly call itself the leading region of the world.
- In particular with respect to controlling corruption, the “governance deficit” with the rest of the world is worrisome. Together with the deficits in rule of law, voice and accountability, this key institutional deficit may hinder a large number of Asian countries from successfully overcoming the Middle Income Trap.

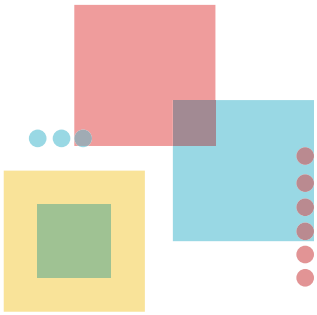
The quality of institutions will be decisive in helping the fast growing countries avoid the Middle Income Trap, and the slower growing countries establish the basic conditions to move towards sustained faster economic growth, social inclusion, attain the Millennium Development Goals, and political maturity.

Managing the challenges common to Asia, be they rapid urbanization, building a fundamentally sound financial sector or fostering entrepreneurship and innovation requires effective governance at both central and local government levels, reflecting principles of accountability and subsidiarity.

Drivers for change in governance and institutions

Like elsewhere, pressure to change governance and institutions in Asia comes from the domestic front rather than the external. Three drivers—demographics, urbanization, and the demands stemming from an

“These unprecedented demographic trends will not only translate into new, more modest economic realities, but also into different inter-generational expectations and relations



expanding middle class combined with a communications revolution—will become game changers over the next 40 years.

Demographics

The first driver for change derives from the demographic outlook for the region (see Annex for more detail). Broadly speaking, Asia can be divided into three groups

- Countries with rapidly ageing societies, mainly in Northeast Asia where the demographic window has already closed or is about to close: Japan, Republic of Korea, PRC (with a slight lag), and Taipei,China, Singapore, and Thailand. By 2050, more than 40 percent of Japanese and Koreans will be over 65—today already 20 percent of Japanese are over 60, as are some 12 to 15 percent of the PRC’s and Republic of Korea’s population. By 2050, Japan’s population will have shrunk by 30 percent. The PRC’s working age population will start to decline starting 2015, tailing Japan’s demographic decline by roughly years;
- Countries (many in ASEAN) with a robust demographic balance between working-age populations, elders and minors. These can still benefit from their demographic window for another decade or two.
- Countries with a very large proportion of young people, whose demographic windows will remain wide open for several decades. This group includes some of the poorest and most fragile countries, many of them in South Asia and Central Asia.

Table 2 provides an overview of these demographic trends, using subregions’ working age population as an important indicator of demographic windows and potential dividends. The crucial question is how these demographic contrasts will play out in the decades to come.

Ageing societies

Countries with ageing societies will carry a growing constituency which is inherently conservative on substantive economic and political reform issues and feels strongly about having earned the right to be looked after in terms of health care and pensions.[2]

These unprecedented demographic trends will not only translate into new, more modest economic realities, but also into different inter-generational expectations and relations. Older people are more conservative and more resistant to change. They prefer stability and certainty over change. These in turn will impact on all aspects of governance and call for wide-ranging institutional adjustments.

Ageing societies will have to adjust economic structures, institutions and policies to take account of the increasing number of elderly. Labor-intensive industries will disappear as the labor force shrinks.

Increasingly, technology and innovation will have to be relied upon to replace labor (in manufacturing as well as in services). Health care (including long-term care) and related regulations will have to be adjusted to the special needs of the elderly, and the looming shortfall in health care workers will have to be covered by opening up labor markets (Japan is an important example). Pension and social security payments will increasingly crowd out whatever fiscal space exists. Local administrations will have to develop “elderly” oriented service windows, and the adoption of more active population policies is likely.

2 The current and prospective ageing generation in Japan prides itself of having rebuilt the country from the ashes of WW II. The same age cohorts in Republic of Korea, Taipei,China and Singapore designed, implemented or oversaw the transformation into the Asian tigers, and the similar age groups in PRC have been at the center of the most massive transformation in mankind from a backward centrally planned, largely rural economy to the largest industrialized economy of the world.

"On the governance front, the pressure will be on the authorities to deliver economic growth, to raise living standards, to create jobs, and to ensure the public's consent for legitimacy

Table 2 **Working age population as a % of total population will begin to decline for all subregions**

	2010	2020	2030	2040	2050
Northeast Asia	64	63	60	57	55
South Asia	54	57	60	62	61
Southeast Asia	58	60	60	59	58
Central Asia	56	58	58	59	57

Source: UN Statistics Division, 2010.

A particular challenge for the ageing countries in Northeast Asia (Japan, Republic of Korea and PRC) is that there are no historic precedents. These shared challenges may yet open opportunities for cooperation such as peer learning from each other and from ageing societies in Europe.

"Young and robust" societies

"Young" countries, under a positive scenario, will grow the size of their economic pie, and over time improve public services, in a manner similar to today's OECD and other advanced Asian economies. On the governance front, the pressure will be on the authorities to deliver economic growth, to raise living standards, to create jobs, and to ensure the public's consent for legitimacy. These pressures take on contrasting dimensions across different groups of countries:

- For the converging economies (e.g., India, many ASEAN countries), it means ensuring the smooth expansion of the middle class, remaining competitive and moving up the innovation and technology ladder, and focusing on productivity gains in order to avoid the Middle Income Trap. Investments in people through quality education at all levels will play a big role.
- For the fragile states (notably Afghanistan, but also some Pacific Island states), it means rebuilding the authority of the state, coping with the threat of religious extremism and radicalization of the young, and managing the risk of social unrest. Furthermore, these countries are also rapidly urbanizing—at low income levels—which represents additional challenges for urban management.

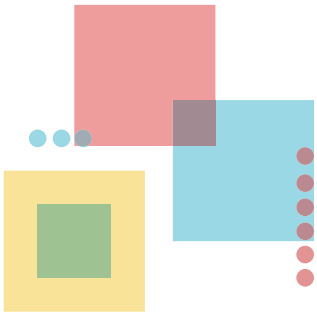
The implications for economic structures, institutions, and policies to foster economic development are well known. They represent more traditional development challenges and relate inter alia to improving the investment climate, competition policies, and job creation; education and skills development; innovation and moving up the value chain; infrastructure and urban redesign; water, energy, agriculture, and environment; and citizens' demands for voice and participation. It is worthwhile to note that young countries are likely to sustain a greater appetite for reforms than the ageing countries.

Urbanization

The second driver for change derives from the inescapable trend towards urbanization. Where today about 40 percent of the PRC's population is urban, by 2050 the urbanites will account for over 70 percent; the shift in India will be from some 30 percent to over 50 percent.

Well-run cities with quality amenities (education, health, finance, infrastructure, sanitation, air quality, recreational facilities, etc.) will have a decisive edge

“Although a daunting challenge, the eradication of corruption is critical for all countries in order to ensure necessary social and political stability and retain the legitimacy of governments



over other, less well-run urban agglomerations. Cities will house the knowledge workers, serve as the locus of innovation, and forge enabling institutions. Citizens will demand competent mayors and city managers, and increasingly turn to their local government leaders to get results. In turn, powerful mayors will increasingly influence national politics, with significant changes in center—local fiscal relations and decision-making authority. The citizenry will demand more predictable, transparent and accountable governance, possibly via scorecards and similar instruments.

The push for decentralization under increasingly federated structures is inevitable. Mayors of principal cities will have increasing sway over national politics, but this will also contribute to tensions between national and local governments. Well designed and effectively implemented decentralization will make a huge difference. The global experience has actually been quite sobering, pointing to the difficulty of achieving the right balance in center—local relations and the importance of institution-building.

The challenge lies in identifying the form of governance and institutions best suited to the Asian context. This has large implications for the relationship and distance between the state and its citizens, including the forms of competitive politics at the local level. It points to the need for safeguards against capture and corruption.[3]

Asia’s expanding middle class and the communications revolution

Throughout Asia, an expanding middle class—a desirable product of rapid socio-economic growth in and of itself—will also exert new demands for a stronger voice and increased participation, a transparent allocation of (budget) resources, accountability for results, and for enhanced personal space.

Although a daunting challenge, the eradication of corruption is critical for all countries in order to ensure necessary social and political stability and retain the legitimacy of governments. Here, the quality of communication between those who govern and those who are governed will be of paramount importance as new social media and other as yet unknown—but guaranteed to emerge—new tools will not be denied, as recent events in the Middle East and North Africa have amply illustrated.

As discussed, with increasing incomes and an expanding middle class in Asia, demands for better services and quality of life will become a powerful driver for institutional change. The accumulation of assets by the middle class will create demands for more efficient financial intermediation, institutions, and instruments. Over time a substantial transfer of wealth from the state to citizens / individuals will occur. This shift will spur further innovation (e.g. in the financial sector), but also impact center-local fiscal relations, public finance management (including debt management—now increasingly needed), and give further rise to concerns about income differentials.

More money in the pockets of citizens, combined with the demographic profile of major Asian countries, will facilitate the shift from an export-oriented model of economic growth to a domestic demand-led model, with an impact on investments, consumption, and savings. Asia overall is fortunate to be in a position to address this new challenge in a gradual, cautious manner—a luxury that most other regions did not have.

Yet, the emergence of a newly emboldened citizenry should not be equated with a transition into a Western democratic model. Fundamental determinants of governance will not change so soon. The relationship, distance and social contract between

3 Emerging Asia’s “behind the border” responses will not be fundamentally different from those societies that have gone through those transformations historically; thus overall, the evolutionary path will broadly resemble those of the OECD countries also in terms of institutional development, and regulations, including center-local fiscal relations and decentralization.

"While politics will increasingly be contested, civil society and media outside of the formal political system will demand accountability, monitor government performance, and thus exercise public oversight

Table 3 **Northeast Asia will be the most urbanized subregion in Asia**

	Urbanization Rate
Northeast Asia	74%
South Asia	55%
Southeast Asia	65%
Central Asia	67%

Source: UN Statistics Division, 2010.

the state and its citizen, and forms of citizens' participation in the state's decision making process will for the most part continue to differ from Western parliamentary democracies. This is not to buy into the overly simplistic view of "Asian values", but rather a recognition that governance will have some "Asian characteristics". Traditional hierarchal relationships embedded in Asian societies will not be set aside over such a short period.

However, a wild card here is the future of communications. This is not the place to speculate about future technological scenarios, but what seems rather certain is that we will experience hitherto unimagined new communication technologies and tools that may either dramatically accelerate the push for more participation and voice by citizen, or conversely, allow for even tighter surveillance by authorities. Events in the Middle East have illustrated the power of communications technologies.

The pressures arising from these domestic drivers, needed actions and related risks are summarized in Table 4. The priorities and related principles are elaborated further below.

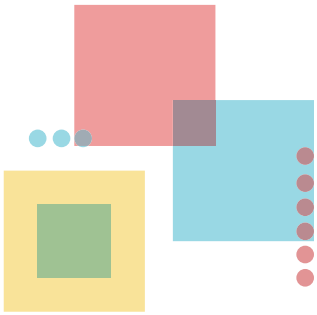
Key actors of institutional change

Asian governments will have to be the key actors to realize the Asian Century, but they cannot do it alone. Governments have to design and implement the sound growth-oriented and inclusive economic and social policies that have been discussed throughout this report. To do so they must devise enabling institutional and regulatory frameworks that are rule-based, thus predictable, equitable and accountable to the citizen. Governments must keep an eye on corruption and cronyism. Governments also have to be able to rely on a capable civil service and honest judicial institutions to ensure the sustained

Table 4 **Pressures for governance and institutional transformation—domestic**

	Developments	Priorities	Risks
Demographics	Northeast Asia is ageing, South and Southeast Asia are young	• Ageing countries should adjust institutions • Young countries should improve public services	• No precedent in Asia for adjusting institutions in response to ageing • Poor delivery of public services can lead to unrest
Urbanization	Urban population growth will be significant through 2050	• Governance and institutional reforms should account for the urban population growth • Decentralization policies	• Urban growth could lead to tensions between national and local governments • Urban-rural income gaps will likely grow further
Expanding Middle Class	Expanding middle class will lead to demands for higher quality of life	• Government must keep up with growing expectations and demands for governance and institutional reforms	• Could lead to demands for more voice • The distance between state and citizen will be affected

“Corruption cannot be left unchecked; else, eventually it will suffocate the foundations of rule-of-law institutions



implementation of intended policy directions and the exercise of state authority. But developing such capacity is a time-consuming undertaking; smart governments will use the key drivers cited in this report to their advantage, especially the three featured in this chapter (demographics, urbanization, and the expanding middle class) to accelerate institutional change.

Reflecting Asia's growth performance, as economies and contractual relations grow more complex, governments will gradually respond to these pressures by accepting the evolution of a civil society and the private sector. Securing the authorities' legitimacy will translate into their acceptance as rule of law institutions that reduce the state's discretion and create more space for individuals and social groups alike. While politics will increasingly be contested, civil society and media outside of the formal political system will demand accountability, monitor government performance (both at national and local level), and thus exercise public oversight. The ultimate challenge for Asia will be to maintain this positive momentum for institutional change over a generation. Failing to do so will stunt the dream of the Asian Century.

Principles and priorities

Reflecting on the drivers of change, the entry points for governance and institutional change, and the results of surveys such as the Worldwide Governance Indicators give the direction that governments in Asia should consider, and how they should attain their goals of stability and prosperity. This chapter concludes with the following eight principles and priorities:

1. **Focus on building strong transparent institutions—they are what matters.** The single most important factor that will determine whether Asian countries will either (i) escape the Middle Income Trap, (ii) make a successful transition from post-conflict, poor countries to converging economies, or (iii) allow the developed economies to successfully address the pressing challenge of ageing is the quality of institutions.
2. **Corruption cannot be left unchecked; else, eventually it will suffocate the foundations of rule-of-law institutions.** The 2010 Global Corruption Barometer reports that—mirroring a global trend—citizens in almost all Asian countries, regardless of income level, middle income or low income, feel that corruption has worsened over the last three years, with one notable exception, Georgia. Success or failure in dealing with corruption and other governance issues will go a long way in determining where Asian countries will find themselves on the path towards prosperity in 2050.
3. **Devise participatory approaches to policy making and build accountability mechanisms.** Demands for new forms of accountability will rise. Managing the expectations of an increasingly vocal citizenry will pose complex challenges to governments.
4. **Designing policies is only half the game, enforcing the rules, i.e. implementation is what matters.** Policy reforms all too often remain on paper only and are not implemented or enforced. Where the gap between progress on paper and observed lack of implementation is too great, the ensuing disconnect threatens to compromise the credibility of governments.
5. **Ensure that rule of law applies equally to everybody.** If the events in North Africa and the Middle East and the various popular uprisings in recent years are to serve as a guide, the selective application of rule of law—evident in the arbitrariness of the state and the lack of personal security—is the fulcrum of citizen

“ Countries must select institutional models that are likely to yield an improved performance within their specific country context

anger. A particular premium must be put on building a judiciary and police that is seen as honest, fair and acting with integrity.

6. **Build a civil service based on merit. The civil service is relied on to implement government policies.** It follows that the quality of the civil service has a major impact on the outcomes of government actions. A common feature of the economies that have joined the ranks of the developed countries is that their civil service is seen as honest and highly competent. They have been able to attract the best and the brightest, and successfully institutionalized a meritocracy.
7. **Realize that a healthy relationship between authorities and citizens is a function of trust.** Trust is built through consistent, transparent, accountable and verifiable results, and built-in mechanisms of recourse. Mechanisms need to be established to replace governments through contestable elections anchored in constitutional rights.
8. **Realize that best practice approaches will not do the trick. Countries have to adapt for ‘best fit’.** Countries must select institutional models that are likely to yield an improved performance within their specific country context, i.e. the best fit to their circumstances.

Realizing the Asian Century: Regional Cooperation and Integration

14

This chapter discusses the five reasons for the growing importance of regional cooperation for Asia's future growth and prosperity; presents a framework for understanding relations between countries (from conflict to cooperation); assesses progress to date with regional cooperation efforts in Asia; identifies priority areas to facilitate future regional cooperation; and finally, discusses institutions for regional cooperation.

Regional cooperation matters for Asia's future

Greater regional cooperation within Asia as a whole will become significantly more important over time for five reasons:

- First, regional cooperation has the potential to be an important bridge between the interactions of individual Asian countries and the rest of the world. In order to have the voice and influence in the global agenda that is commensurate with its economic weight, Asia will need to formulate a unified geopolitical position on a range of global issues. This can be only achieved through genuine regional dialogue and cooperation.
- Second, Asia will need to increasingly rely on "internal" (domestic and regional) demand and open its markets to neighboring countries in the region, in the same way that US and European markets have been open to Asia since World War II, in order to sustain region-wide economic growth. This will require the creation of a single market—at least for goods, services and finance, to permit the Asia-wide free flow of trade and investments.
- Third, regional cooperation and development assistance will be crucial ingredients in reducing cross-country disparities in income and opportunities which, if left unchecked, could lead to instability or spark conflicts in parts of Asia. In this context, the European experience is encouraging and provides useful lessons.
- Fourth, there are many areas that can yield significant synergies and positive spillovers, such as technological development, energy security, disaster preparedness, etc. that will benefit from increased collaboration.
- Fifth, the skillful and joint management of several regional commons will become increasingly important for Asia's long-term stability and prosperity. The management of the regional commons will involve:
    - Diffusing and mitigating internal political and social risks associated with drugs, religious fundamentalism and terrorism.
    - Avoiding conflicts between the mega economies or nuclear states.
    - Maintaining social and political stability in the region, especially to support the economic and security concerns of fragile states.

Cooperation instead of conflict

Of course, institutional cooperation is not the only mode of interaction among neighbors. They may also compete or be in conflict. In fact, regional cooperation, regional competition and regional conflict are part of a continuum of relations among neighboring states. Conflict involves the attempt to resolve differences of interest among neighbors through hostile and mutually damaging means; competition engages countries in the pursuit of resources or benefits to each other's exclusion, but through peaceful means and in ways regulated by international law, intergovernmental agreements, or accepted norms; and cooperation means working together as partners in

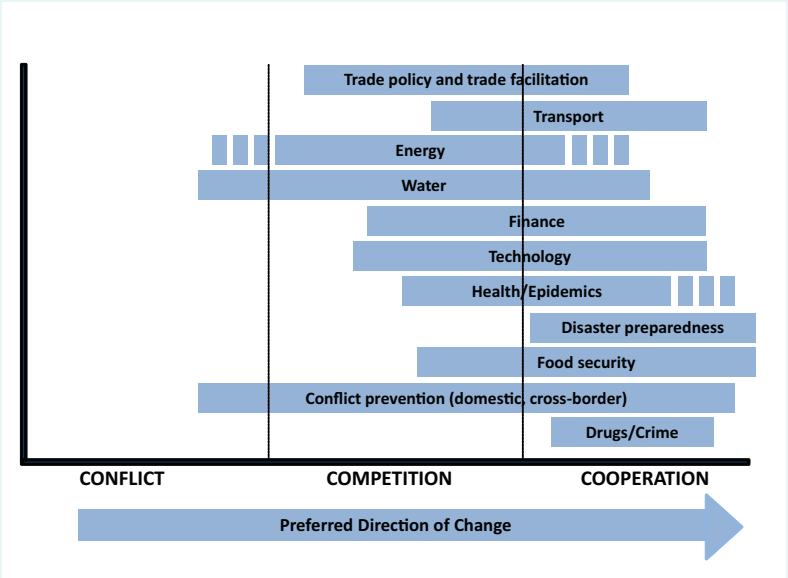
“regional cooperation, regional competition and regional conflict are part of a continuum of relations among neighboring states

maximizing common or shared benefits. In general, neighboring countries should aim to reduce or eliminate conflict, because of the great human and economic damage that it causes.

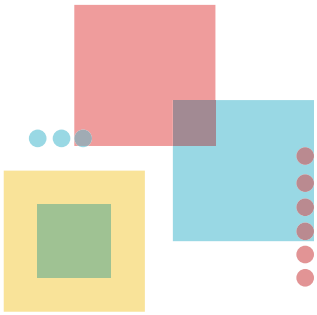
Depending on the specifics of the situation, competition may provide incentives for improved performance, i.e., “race to the top” (e.g., competing for foreign direct investment through reform in the business climate); or it may involve costly duplication of investments or loss of resources, i.e., “race to the bottom” (e.g., competing tax incentives for direct foreign investors). Cooperation usually will be the most desirable approach, provided it is not at the expense of or threatening third parties.

Figure 1 shows the typical range of relations between countries in specific areas of regional significance along the spectrum from conflict through competition to cooperation. For example, trade policy traditionally can involve measures to gain national benefits from protection in a competitive mode, but also can be pursued through cooperative solutions based on coordinated reductions in protection and improvements in border and transit management. Transport involves regional cooperation where national transport links connect across borders (especially when part of agreed regional transport corridors). However, nations can also compete through transport investments, e.g., by developing competing port or airport capacity or by building competing regional road or railroad lines. In the case of water (as well as maritime resources), interstate relations can run the gamut from conflict to competition to cooperation. For disaster preparedness, there is no obvious room for conflict and competition, but plenty of opportunity for cooperation. Conflict prevention is in principle a cooperative activity, but in practice it gets wrapped up in interstate and geopolitical conflict and competition, as the current situation on the Korean Peninsula demonstrates. Of course, sometimes a history of painful and bloody conflict

Figure 1 **From conflict to cooperation**



“Although there remain constraints to economic integration, the Asia region as a whole has been increasingly open to trade



Box 1 Moving towards cooperation without conflict: learning the lessons of history

Looking ahead the big opportunity for Asian regional relations is to build on the successes of past integration and cooperation. Without a minimum of trust, little can be achieved in regional cooperation, institution building and conflict prevention. Asia can learn from history. Perhaps the most important lesson is to avoid the mistake that Europe made during the first half of the 20th Century. After a golden era of rapid industrialization, growth and integration during the second half of the 19th Century, Europe entered the 20th Century with great expectations for continued growth and prosperity. In fact, however, Europe repeated its errors of previous centuries and fell into 30 years of intense conflict and two world wars, which caused unfathomable human losses and economic dislocation. Born out of this experience, Europe managed to create during the second half of the 20th Century the regional cooperative institutions that have allowed it to overcome a history of harmful conflict and unproductive competition and to attain shared prosperity and peace. Asians can learn both from European history as well as from their own experience of moving successfully from conflict to cooperation (as in the case of ASEAN and the Greater Mekong Subregion Program). They now have an opportunity to enhance mutual trust and strengthen the regional institutions that will allow Asia to avoid the ravages of conflict and continue its growth performance to achieve lasting prosperity and stability.

may be a driver for cooperation, as was the case with the creation of the European Union (Box 1).

A key element in moving from regional conflict to constructive competition and cooperation is the establishment of trust among the neighbors. One of the benefits of looking at the full range of regional integration and cooperation areas across the spectrum of cooperation-competition-conflict is that it allows priorities, tradeoffs, and risks to be better identified. For example, by focusing regional relationship-building on those areas where there is little room for conflict and competition, trust can be established among neighbors; on the other hand, neglecting areas that are prone to conflict may interfere with cooperation in other areas, if and when conflict breaks out.

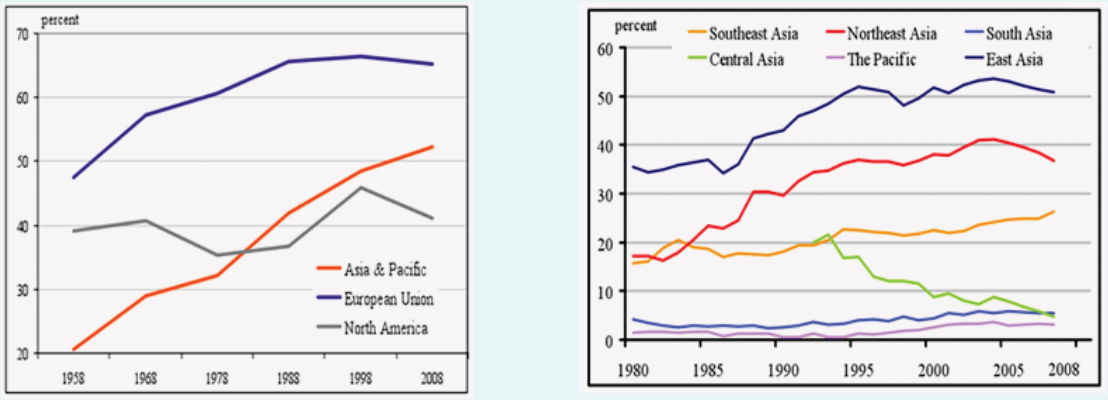
Progress to date with regional economic integration

Although there remain constraints to economic integration, the Asia region as a whole has been increasingly open to trade. Its trade to GDP ratio reached roughly 62 percent in 2008, only 3 percentage points lower than the EU, and much ahead of Latin America or Africa. While historically relying especially on trans-Pacific trade, Asia’s trade and non-trade economic links with Europe have been expanding rapidly since the dissolution of the Soviet Union, offering new opportunities for cross-continental integration of Eurasia.

As regards intra-regional trade, Figure 2 shows how the Asia region has been integrating rapidly since 1960: its intra-regional trade share rose from about 20 percent to over 50 percent in 2008. Largely driven by market forces and complemented by national policies, economic interdependence in East and

“The key drivers of regional economic integration relate to the costs of trading, infrastructure, the competitiveness and quality of institutions, and conflict

Figure 2 **Asia has experienced an increase in share of intra-regional trade**



Source: World Bank World Development Indicators, 2011.
Note: Figures refer to total trade (exports plus imports). The intra-regional trade share of region i is defined as IT sharei = (Xii+Mii)/(Xi+Mi), where Xii = exports of region i to region i; Mii = imports of region i from region i; Xi=total exports of region i; and Mi = total imports of region i

Southeast Asia has grown rapidly in recent decades. Intricate regional production networks and supply chains have been established in industries such as electronics and cars. This process has resulted in fragmentation of production—the scattering of parts of the production process across different economies—and led the process of regional and global integration. This has stimulated foreign direct investment, deepened trade in intermediate goods, and boosted growth in the region.

Intra-regional trade in parts and components has increased as the pattern of regjional production has become more specialized. FDI flows have gravitated to PRC, especially after the 1997-8 Asian crisis. PRC has become the main assemblly plant for “Factory Asia” and emerged as a significant export for other East and Southeast Asian economies, as well as a base for final goods to the rest of the world.

This level of trade integration exceeds that of North America (about 40 percent), but falls short of that of the EU (about 75 percent). Across different subregions within Asia, East Asia is the most integrated subregion, although labor and monetary/financial integration remain low. For all other subregions, the degree of integration remains low in terms of labor and financial integration.[1]

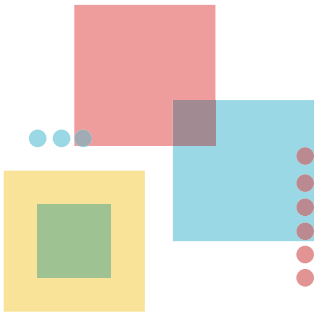
Drivers of economic integration

The key drivers of regional economic integration relate to the costs of trading, infrastructure, the competitiveness and quality of institutions, and conflict. An analysis of these determinants leads to the following conclusions:

- There have been many improvements in the Asian drivers of integration and economic growth in recent years, especially in East Asia. These have contributed substantially to the region’s superior growth performance.

1 Central Asia’s labor markets are a notable exception. They are moderately integrated due to intra-regional migration, especially migration from Central Asia to The Russian Federation.

“Continued integration will be the result of continued high growth, savings and investment, and in turn will be a driver of continued high growth



- However, Asia generally still falls behind the performance of the EU and North America in key areas that relate to trading costs, transport and logistics, the quantity and quality of infrastructure, competitiveness and institutional quality.
- Trade tariffs are generally not a significant barrier anymore, but other border barriers (e.g. quantitative restrictions, border administration and even closures, etc.) and behind-the-border constraints (related to logistics, transport, infrastructure problems, weak institutions, etc.) remain significant barriers to integration.
- East Asia does substantially better than South Asia and Central Asia on most drivers. ASEAN performs especially well where overall trading costs are concerned.
- South Asian countries have generally improved their economic performance in recent years, with India the best performer and rapidly improving on many dimensions.
- There are great differences in country performance within the subregions.

Looking ahead, therefore, the challenges for continued, rapid Asian integration and growth between now and 2050 include the following:

- Improve the effectiveness of integration drivers to levels that are either as good or better than those of the EU and North America.
- Ensure that the subregions, and countries within subregions that lag behind, catch up with the rest of Asia.
- Go beyond reducing and harmonizing tariff barriers and focus instead on non-tariff trade facilitation measures, both at and behind borders.
- As regards the behind-the-border measures, improve the quantity and quality of infrastructure, the quality of logistics, the quality of institutions and the competitiveness of all economies.
- Reduce or eliminate the distrust and conflicts within and among countries that have created the barriers to integration.

Prospects for further economic integration

The scope for further Asian economic integration is large. Continued integration will be the result of continued high growth, savings and investment, and in turn will be a driver of continued high growth.

A number of factors argue for this prognosis:

- Under all likely growth scenarios Asia’s economy will continue to grow relative to the rest of the world. By 2050 Asia will likely represent more than 50 percent of the world market.
- The need for some Asian countries to rebalance their economies away from exports to the rest of the world, and especially from the US, and re-orient them towards domestic and intra-regional consumption provides a strong impetus for further economic integration of Asia.
- Recent trends in Asia’s integration drivers show that the barriers to integration have been reduced not only in East Asia but also in South Asia (see Box 2). India has been successful in fostering bilateral trade with its smaller neighbors and with PRC. Central Asia has so far made the least progress. Given Asia’s pragmatic approach to economic policy making, there is every reason to believe that the trend towards increased integration will continue.
- One of the drivers of integration within Asia (in particular of Central Asia’s links with East and South Asia) will be the trans-Eurasian continental integration process. This process places the land-locked countries and regions of Central Asia (including Afghanistan and Western PRC) at the hub of growing economic links between

“South Asia is a relative late-comer to regional cooperation and integration

Box 2 | Regional cooperation and integration in South Asia

South Asia is a relative late-comer to regional cooperation and integration. The South Asian Association of Regional Cooperation (SAARC), established in 1985, is the first regional cooperation initiative in South Asia. Heads of States of Bangladesh; Bhutan; India; the Maldives; Nepal; Pakistan; and Sri Lanka participated at the first SAARC Summit in Dhaka in 1985. SAARC had been once described as “act of faith” given the absence of shared security threat and low level of formal intra-regional trade and investment.

The need to accelerate and complement the SAARC progress spurred four countries in SAARC, namely Bangladesh, Bhutan, India, and Nepal, to form the South Asia Growth Quadrangle (SAGQ). At the request of SAGQ, ADB initiated the South Asia Subregional Economic Cooperation (SASEC) program in 2001 as the first formal and comprehensive subregional cooperation initiative in South Asia. The SASEC program provided a forum for the four countries to discuss, identify and prioritize cooperation projects in transport, energy, environment, trade, investment, private sector development, tourism, and information and communication technology. The project based approach of SASEC complements the policy and dialogue driven mechanism of SAARC.

SASEC has resulted in two important regional projects that were developed and supported by ADB —***SASEC Information Highway Project*** and the ***South Asia Tourism Infrastructure Development Project***. The latter aims at improving connectivity, providing better quality environment and visitor services; and enhancing natural and cultural heritage. Discussions are ongoing to expedite the service connection agreements for the regional information highway network, formation of community e-centers, and conduct of ICT research and training.

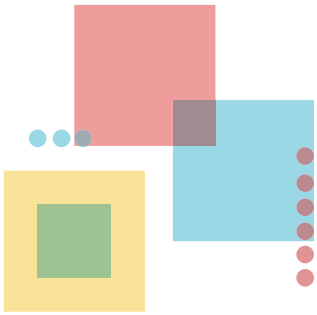
In January 2010, Bangladesh and India signed a wide-ranging economic cooperation agreement that provides a comprehensive framework for cooperation in water resources, power, transportation, tourism and education. The agreement also allows the use of Mongla and Chittagong sea ports for movement of goods to and from India through road and rail. Bangladesh also conveyed the intention to give Nepal and Bhutan access to Mongla and Chittagong ports. The agreement envisages energy trade between the two countries. To support this initiative, ADB developed and financed the Bangladesh–India Electrical Grid Interconnection Project in August 2010.

South Asia’s interest to develop closer collaboration with other regional groupings has also grown. Countries in South and Southeast Asia have started inter-regional cooperation initiatives such as the Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation (BIMSTEC) to pursue inter-regional cooperation. The BIMSTEC is an important vehicle to facilitate integration between South Asia and South-East Asia, the realization of which is critical for the achievement of Pan-Asian regional cooperation and integration.

the growth centers of East and South Asia, and the economies of Europe and the Russian Federation (Box 3).

There are two significant risks that could derail this continued integration process:

"One of the drivers of integration within Asia (in particular of Central Asia's links with East and South Asia) will be the trans-Eurasian continental integration process



Box 3 Central Asia's triple integration opportunity

Central Asian countries have traditionally seen themselves—and have been seen from the outside—as isolated economies, land-locked and distant from world markets. While this has been true in the past, Central Asia now has huge opportunities due to its proximity to the buoyant markets of Asia and its location at the hub of a rapidly integrating Eurasian super-continental economic space. On top of this, Central Asian economies can benefit from greater integration among themselves.

To take advantage of this triple opportunity, Central Asian countries can build on a relatively well developed infrastructure and still strong human capital, and on the fact that they have relatively open trade regimes. However, they also need to overcome some severe handicaps, imposed mostly by their own weak policy regimes and failure to effectively cooperate with each other to date. Their infrastructure is deteriorating rapidly in the absence of effective management and maintenance, their borders with each other and many of their neighbors have become serious obstacles to cross-border and transit trade, their behind-the-border business conditions are stifling private investment and trade, and failure to cooperate in the management of regional water and energy resources creates severe economic, social and environmental losses as well as risks of serious inter-state conflicts. These obstacles need to be overcome by much more aggressive improvements in the domestic business climate, in regional infrastructure investments and in border management. Central Asian integration would also get a strong boost, if all countries were to promptly join the WTO. Estimates show that the cost of trade could be halved through appropriate trade facilitation measures. With cooperation across a wide range of potentially beneficial areas, Central Asian GDP could double.

Overall, the key to benefitting from the triple opportunity will be to build stronger economic links to East and South Asia, complementing Central Asia's existing strong ties with the former Soviet Union economies.

Central Asia has a regional economic forum, CAREC, which over the first ten years of its existence has contributed to improved trust, investments in regional transport and energy infrastructure and the facilitation of regional trade. With a membership of ten countries, including Afghanistan, Mongolia, Pakistan and PRC, and with support from six multilateral institutions, led by ADB, the capacity of CAREC to intensify its efforts to support regional integration within the region and beyond is very significant. However, it does require the active engagement of all member countries at the highest level and a willingness of all participants to overcome what are still high barriers to integration and risks of conflict.

- Asian economies do not further reduce barriers to integration, fail to build the necessary cross-border infrastructure and improve the behind-the-border conditions that support domestic growth and cross-border integration.
- International conflicts, failing states and internal unrest get in the way of continued integration (see Chapter 5 Box 2).

These risks call for strong regional dialogue and collaboration among the countries of Asia and with

“Asia will need to develop its own unique model that builds on the past positive experience in East Asia: a market-driven, bottom-up and pragmatic approach

the international community to assure that the necessary conditions for continued economic integration within Asia and with the rest of the world are realized. It will be important to avoid conflicts that disrupt the integration process from proceeding smoothly and that support the continued rapid growth of the Asian economies.

Contours of future cooperation and integration

Regional cooperation and integration are critical for Asia’s march towards prosperity. Asia will need to develop its own unique model that builds on the past positive experience in East Asia: a market-driven, bottom-up and pragmatic approach that facilitates unhindered regional trade, services and investment flows, with a degree of labor mobility throughout the region. As the European and East Asian experiences have amply demonstrated, production networks facilitated by the free flow of goods and services help both the lower wage economies by bringing new investments and technical know-how and the higher income economies by allowing them to preserve their core manufacturing capacity by “outsourcing” lower value-added activities to lower wage areas.

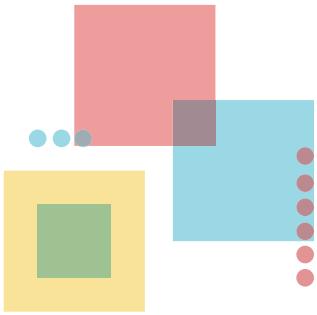
This bottom up, market driven model could use ASEAN + 3 as the initial building block and gradually include more economies over time, preferably a common market that would also permit more labor mobility, including of skilled workers. In the process, Asian countries will develop stronger mutual trust that is necessary for any subsequent, more ambitious initiatives (like the creation of a genuine single market that will require supra-national institutions). The sooner such a Pan Asian free trade is created, the sooner would a larger number of Asian economies gain concrete benefits from the growth of the Asia-7 countries. Such an approach will require stronger—though not necessarily new—regional institutions.

Priority areas to facilitate regional cooperation

The key areas where cooperation can assure shared interests include trade and transport policy, macroeconomic coordination, cooperation on financial integration and stability, and access to natural resources. Cooperation is also needed to counter common regional threats (e.g., natural disasters, epidemics and drug trade) and prevent conflict. With this long list of cooperative opportunities and challenges the question is which priorities regional leaders should focus on in the coming decades for the long-term stability and growth of Asia. We recommend the following priorities:

- Reduce barriers to integration at and behind the borders.
- Invest in regional transport and communications infrastructure.
- Assure regional energy security.
- Address the regional challenges of climate change adaptation and disaster preparedness.
- Provide bilateral and multilateral assistance to countries that lag behind, to facilitate their integration.
- Foster people-to-people exchanges, such as professional networks, cross-country volunteer programs, etc. to foster personal contacts and to build mutual understanding, goodwill and trust.
- Create a high-level political forum to help resolve, when possible within the region, actual and latent conflicts, including river basin issues, before seeking help and intervention of extra-regional parties (whether national or multilateral).

"Open regionalism" (i.e., the creation of institutions that are open to extra-regional participation and do not discriminate against non-regional economies in the long-term), is the most successful strategy



Institutions for regional cooperation

Asia has a multitude of regional organizations, forums and programs. Asia's regional institutional system currently has few explicit rules. It is informal, flexible and consensus-based, with either weak or non-existing secretariats. Arbitration and enforcement either do not exist or are non-binding; there is either no or limited monitoring and evaluation of country or institutional performance. This weak institutional regional system is the logical outcome of the strong sense of national identity and sovereignty of Asian governments and people.

A review of the structure of regional cooperation initiatives worldwide and Asia's regional opportunities and challenges concludes with these ten lessons:

1. Regional cooperation is not easy and implementation of stated intentions is frequently weak. The experience of the EU with its strong supra-national regional institutions (the European Commission, President, Parliament, Court, etc.) is the exception and difficult to emulate.
2. Effective regional cooperation and integration take time to develop, and require incremental, gradual and flexible implementation with visible payoffs.
3. It helps to keep the number of members in the regional organization manageable. Membership is best based on shared geography and common regional interests.
4. Adequate funding mechanisms for regional investments are essential.
5. Successful cooperation requires leadership at the country, institutional and individual level.
6. External assistance can be helpful in setting up and sustaining subregional institutions, as in the case of the Greater Mekong Subregion Program (GMS) and the Central Asia Regional Economic Cooperation Program (CAREC).
7. "Open regionalism" (i.e., the creation of institutions that are open to extra-regional participation and do not discriminate against non-regional economies in the long-term), is the most successful strategy.
8. Regional economic cooperation organizations that involve ministries of finance or economy tend to be more effective than those that rely on the leadership of ministries of foreign affairs.
9. The engagement of the business community and civil society strengthens the mechanisms for regional cooperation.
10. Monitoring and evaluating the performance of countries under regional agreements is important, as are incentives for better compliance.

Among the existing subregional programs and institutions in Asia, ASEAN, CAREC and GMS have internalized many of these lessons. In fact they were identified as the more successful of the non-EU regional institutions worldwide. In the rest of the world there are few initiatives—outside the EU—that can match their performance.

Nonetheless, Asia cannot be complacent. There are many more opportunities to be reaped from further integration and cooperation, especially in those subregions that lag behind. But there also exist significant threats that require regional interventions for maximum effect.

Prospects and institutional options

In recent years, key Asian leaders have called for an Asian community with shared interests and cooperation. Such support would open the door for a more cohesive, cooperative and integrated Asia than has been the case in the past. Consistent with these statements, the ADB in 2008 set out an ambitious

"a crucial prerequisite to achieve increased regional cooperation is strong political support and leadership. Collaboration between the three mega economies—PRC, Japan and India—remains especially crucial

Box 4 | ADB proposals for new regional institutions

Key proposals put forward by ADB in its recent study on Asian regional institutions include:

- Establishing an Asian Financial Stability Dialogue.
- Setting up an Asian Monetary Fund (AMF) to conduct regional macroeconomic surveillance and provide financial support during crisis.
- Creating an Asian Infrastructure Fund.
- Broadening the Asia Bond Markets Initiative to an Asian Capital Markets Initiative.
- Setting a cooperative framework for dealing with capital flows and regional exchange rates.
- Working toward a region-wide FTA and multilateralizing regionalism in the WTO context.
- Setting up an Pan-Asian Infrastructure Forum

Source: Institutions for Regionalism, ADB, 2011.

vision for Asian regional integration and cooperation by 2020[2].

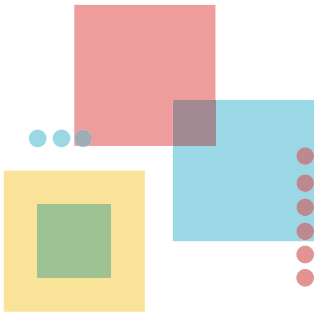
This vision remains appropriate—provided expectations are kept realistic. An Asian community, based on shared interests and increased cooperation, is not likely to be achieved in the next ten years, but could be achieved over the next forty years.

It will be necessary to show more institutional innovation to ensure that existing institutions are more cohesive and effective. This could take place at four levels: subregional, Asia-wide, inter-regional (with Europe and the Americas especially) and globally:

- At the subregional level, the examples of GMS and CAREC can serve as models for other subregions.
- At the Asia-wide level, a gradual expansion and deepening of the ASEAN+ approach provides the best institutional prospects.
- At the inter-regional level APEC and ASEM are good starting points for greater engagement with the neighboring regions, with a focus on improvements in physical connectivity, in trade facilitation and in behind-the-border policy reforms for greater integration.
- At the global level, Asia could pursue a stronger regional stance within global international institutions and fora. The ADB in its recent flagship publication proposed a number of specific institutional innovations that deserve careful consideration (Box 4).

Third, a crucial prerequisite to achieve increased regional cooperation is strong political support and leadership. Collaboration between the three mega economies—PRC, Japan and India—remains especially crucial. These three economic giants will have to assume clear and cooperative leadership in the region by supporting the creation of open, well-connected markets among each other and for their smaller neighbors. They could shoulder the responsibility for fostering stable political conditions and the convergence of economic conditions in the Asian economic neighborhood. It will be particularly important that the three powers settle their distrust and work together (if necessary with partners outside the region, e.g. the US and the EU), to assure that other conflicts in the region are prevented or terminated

2 Long-Term Strategic Framework, Manila: Asian Development Bank, 2008.



promptly. In this context, one or more medium sized economies, such as Republic of Korea and Indonesia, may play a useful role in facilitating regional cooperation and collaboration.

Realizing the Asian Century: Asia's Role in the World

15

Asia's growth and much larger footprint in the global economy will bring with it new challenges, responsibilities and obligations.

This has far reaching implications for the region's role in the world, how it sees its long-term self-interest and how it interacts with other parts of the world.

Asia will need to rethink its role on a very wide range of issues and institutions: from its stake in the global commons—global trade and financial systems—to its relation to other regions, to the implications of domestic and regional policies for others, to Asia's role in international development assistance in Africa and so on. It is also obvious that global peace and security are a prerequisite for Asia's economic and social well-being. The region will need to fundamentally transform its role in global governance. These related implications are discussed below.

A rising stake in the global commons

The central implication of Asia possibly accounting for half or more of global GDP and population by 2050 is that the center of gravity of the global economy will shift gradually from the Atlantic Ocean to the Pacific Ocean, and ultimately to mainland Asia.

As Asia becomes the heart of the global economy, it will be absolutely important for Asia's own well-being that the global commons on which the global economy depends and prospers continue to function effectively and efficiently. As a result, Asia will become the biggest stakeholder in the global commons, including an open trading system, a stable financial system, international rule of law, and, of course, in peace and security throughout the world. Without these global commons, Asia will not be able to grow and prosper.

Accordingly, Asia must take greater ownership of the global commons. Indeed, in its own self-interest, the region should become a forceful advocate and defender of the global commons. Its efforts to enhance regional cooperation must not be at the cost of Asia's traditional openness to the rest of the world. Asia must adhere to its long-standing strategy of "open regionalism".

Global trading system

East Asia's growth since the 1950s was greatly facilitated by an increasingly open global trading system. As discussed in Chapter 2, Asia has profited handsomely from such globalization. Today, Asia's trade to GDP ratio is the highest amongst the major regions. In the future, even as domestic and intra-regional markets account for a larger share of Asian economies, the region will need to continue to trade heavily with the rest of world to supply the ultimate consumers in North America and Europe, acquire the latest technologies and the know-how wherever they exist in the world, and import natural resources (energy; other minerals, food) needed by the domestic economies. In short, it is of vital interest to Asia that the world continues to have an open and free trading system.

Global financial system

Finance is global, and therefore while national reforms are necessary and regional cooperation desirable, they are not sufficient. Therefore, Asia must also pay much more attention to the health and robustness of the global financial system.

With its enormous savings and investment rates Asia should host some of the largest global equity, debt and banking markets well before 2050. It is already the biggest holder of global reserves. As a region heavily reliant on trade, Asia would therefore have huge stakes in a well-functioning and fair international monetary system and related institutions. It

"Asia will become the biggest stakeholder in the global commons, including an open trading system, a stable financial system, international rule of law, and, of course, in peace and security throughout the world

will be in Asia's vital interest that the global financial systems are sound and efficient (in addition to its own domestic and regional financial institutions and markets). This is necessary for the region's savers to have acceptable risk adjusted returns and for its economies to have access to investment funds at rates that are competitive with investors elsewhere.

Given its rising weight in global reserves, savings and investments, the region will have an opportunity to increasingly shape the global financial architecture, the monetary system and global financial intermediation. As discussed below, Asia needs to play an active and constructive role in the governance of the global monetary and financial system.

Stance on climate change

As discussed in detail in Chapter 11, Developing Asia's stance on climate change requires a fundamental reassessment. Analysis carried out for this study demonstrates that early and aggressive action on climate change is in Asia's own self-interest—socially, economically and politically. A change in its current stance will also be an early demonstration to the world community that Asia is willing and able to play a constructive role in the global commons.

Stake in global peace and prosperity

As Asia becomes the center of the global economy, it will be in its own self-interest that the rest of the world is also doing well economically and politically. Peace and security throughout the world will be essential for its own long-term prosperity.

Since the end of World War II and until now, Asian countries have not felt the need to play a proactive role in sustaining global peace and security. The western powers were keen and able to play that role. But, it may no longer be adequate for Asia to play a secondary role. In line with the rise in its share of the global economy and thus its rising stake in the well being of the rest of the world, Asia needs to devote greater intellectual and material resources—jointly with Europe and North America—to the economic, social and political stability of the world as whole. The change in Asia's role is neither necessary nor will it come immediately, but it will happen gradually. But Asia needs to start preparing for it soon.

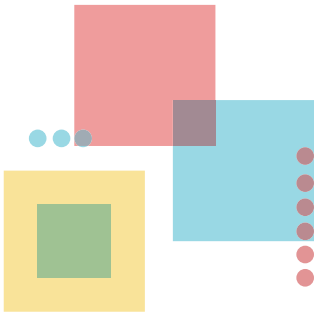
Relations with other parts of world

This report has used a pragmatic definition of Asia (Central Asia, East Asia and South Asia); this definition has proven useful in considering Asia's long-term economic prospects. But at the same time, it is important to recognize that Asia already has and will continue to have close economic political and security relations with countries and regions both near and far.

For example, different Asian economies have strong economic relations and ties with countries near by: with the Gulf countries and the Russian Federation for petroleum supplies; with Australia and New Zealand for food, coal and other minerals; and with Turkey as a conduit for trade with the Middle East and Europe. More recently, Asia's giant economies, PRC and India, have followed the footsteps of Japan to seek closer economic ties with Africa and Latin America to secure access to both mineral resources and export markets. Many countries (e.g., ASEAN countries) have close political and security relations with the US as well as Australia.

Such economic and political relations with other parts of the world will become even more important in the future. They must not be allowed to suffer even as Asian economies redouble their efforts at regional cooperation and integration.

“To play a proactive role in global rulemaking and enforcement, Asia must pursue a stronger regional stance in global international institutions



Impact of national and regional policies on others

As was vividly demonstrated during the 2007-9 Great Recession, in today's globalized economy major developments or crises in the largest economies can lead to contagion in other parts of the world. Such transmissions are not limited to crises alone. Indeed, changes in major—monetary, exchange rate, fiscal, immigration—policies of large economies can have significant effects on others, both near and far.

Accordingly, as the relative size of individual Asian economies and the region's global footprint expands, the region will need to pay greater attention to the impact of its actions on others. While formulating their domestic or regional policy agenda, the region as a whole but also the larger economies—PRC, India, Indonesia, Japan and Republic of Korea—would also need to take into account the regional and global implications

Global governance

If it realizes the Asian Century, the region will need to significantly change its role in global governance and rulemaking.

It will have to gradually transform its role as essentially a passive onlooker in the debate on global rulemaking and a reticent follower of the rules to being an active participant in the debate and a constructive formulator of the rules. How these global rules are formulated, supervised and implemented—WTO protocols, BIS rules, IMF guidelines and so on—can have an enormous impact on the costs and the competiveness of individual economies and economic entities.

To play a proactive role in global rulemaking and enforcement, Asia must pursue a stronger regional stance in global international institutions (Financial Stability Forum, BIS, WTO, etc.) and political forums, such as the G-20, APEC and the UN Security Council.

To perform a leading role in the above global apex decision making bodies, Asian leaders, in addition to responding to the proposals put forth by the traditional global powers (G-7/8), must be capable of proactively tabling their own constructive ideas and proposals.

Given the complexity of the issues discussed in such bodies, Asian leaders will need to be supported by cadres of world class institutions and professional experts—in related government bodies as well as local think tanks and academic institutions.

Clearly, not every country in the region can develop such capacities. Asia will therefore need to develop regional institutions and thinktanks for this purpose.

Managing Asia's rise

Finally, Asia must delicately “manage” its rapidly rising role as a major player in global governance in a non-assertive and constructive way. As an emerging global leader, Asia should act and be seen as a responsible global citizen.

16 The Asian Century vs. the Middle Income Trap: Dramatic Difference in Outcomes

This chapter compares the outcomes for Asia under the Asian Century and Middle Income Trap scenarios. This comparison is followed by a discussion of four overriding intangibles that will prove decisive in determining whether Asia realizes the Asian Century or not. Finally, it emphasizes the human dimension of the two outcomes.

Cost of missing the Asian Century

Achieving a potentially historic transformation throughout a region that encompasses half of humanity will depend primarily—though not exclusively—upon the Region's effectiveness in managing the aforementioned mega challenges and risks and tackling the inter-generational issues discussed in this report.

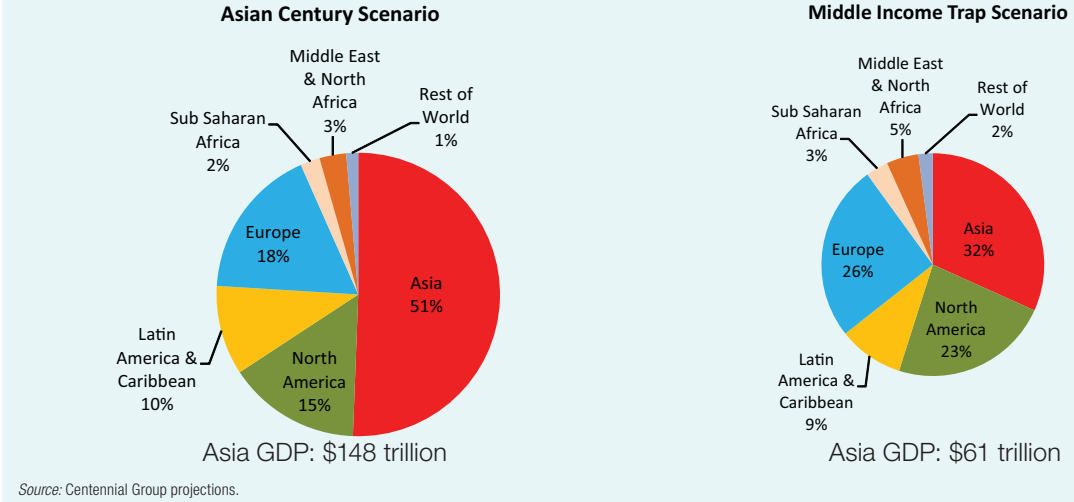
Admittedly, the agenda—national, regional and global—is truly wideranging and demanding. But, the promise of an Asian Century is the prize. It more than justifies the extraordinary effort, discipline, patience and enlightened leadership required to address the agenda.

The basic idea behind constructing the two scenarios with such different outcomes was to vividly demonstrate what is at stake today, and what are the potential costs and benefits of the countries' efforts, both individually and collectively. Where Asia ends up in 2050 within this range will have a tremendous impact on the well-being, lifestyles and happiness of future generations of Asians, as well as societies around the world.

The pie charts in Figure 1 illustrate the differences in the basic economic parameters— the percent shares of the global economy, absolute GDP, and GDP per capita (in PPP terms)—under two scenarios. The differences are dramatic indeed (Table 1).

Asia's GDP per-capita (in PPP terms) under the Middle Income Trap scenario would be about half ($20,300) compared to that under the Asian Century scenario ($38,600). Similarly, Asia's GDP (at market exchange rates) in 2050 would reach only $61 trillion, or 32 percent of global GDP as compared to $148 trillion, or 51 percent of global GDP.

Figure 1 **Asian Century vs. Middle Income Trap**



Source: Centennial Group projections.

"four overriding non-tangibles will ultimately determine the region's ability to resolve them and thereby shape Asia's long-term destiny

Table 1 **Economic 2050 outcomes under two scenarios—Asian Century and the Middle Income Trap**

Share of Global GDP (MER)	Asian Century	Middle Income Trap
Asia	51%	32%
PRC	22%	11%
India	14%	6%
United States	14%	21%
GDP (trillions $ MER)		
Asia	148	61
PRC	63	21
India	40	12
United States	40	40
World	292	191
GDP per capita ($ PPP)		
Asia	38,600	20,300
PRC	47,800	23,700
India	41,700	17,800
United States	98,600	98,600
World	36,600	25,900

Source: Centennial Group projections, 2011.

The intangibles

As important as the inter-generational issues highlighted above are for individual countries, four overriding non-tangibles will ultimately determine the region's ability to resolve them and thereby shape Asia's long-term destiny:

- First, the ability of its leaders to persevere during the inevitable ups and downs and to maintain a sharp focus on the long-term—despite the relentless pressures of day-to-day concerns and problems. This is critical to sustain the current momentum for another forty years and to make continuous adjustments in strategy and policies to respond to changing circumstances and shifting comparative advantage.
- Second, the willingness and ability of all Asians to adopt and pursue pragmatic—rather than ideological—approaches to policy making and maintain a laser-like focus on results adopted by many Asian economies in the past.
- Third, building much greater mutual trust and confidence between the major economies will be vital for effective regional cooperation and collaboration.
- Fourth, the commitment of Asia's leadership to modernize governance and institutions on a continuous basis, while enhancing transparency and accountability throughout.

The human dimension

The changes in policies and strategies proposed above, as well as the related institutional reforms have long gestation periods that extend over many decades. Yet, their impact must be seen well before 2050 to allow the region to continue on its path to prosperity.

Actions of Asia's political, policy and business leaders today—and their successors in the future—will determine whether the Asian Century will become a reality, or remain a tantalizing promise.

The difference in the outcomes under the two scenarios and thus the opportunity cost of not realizing the Asian Century scenario is huge, especially in human terms.

Under the Asian Century scenario, almost 3 billion additional Asians will be able to enjoy the fruits of an affluent society at least one generation earlier than under the Middle Income Trap scenario. It will be the making of a true Asian Century where over 90 percent of Asians will share in the fruits of the region's affluence.

Asia's future is fundamentally in its own hands.

Annex 1
Demographic Changes in Asia's Regions by 2050

By 2050, Asia will constitute about 53 percent of the global population, a little smaller than its 57 percent share in 2010, but with nearly 1 billion more people than today.

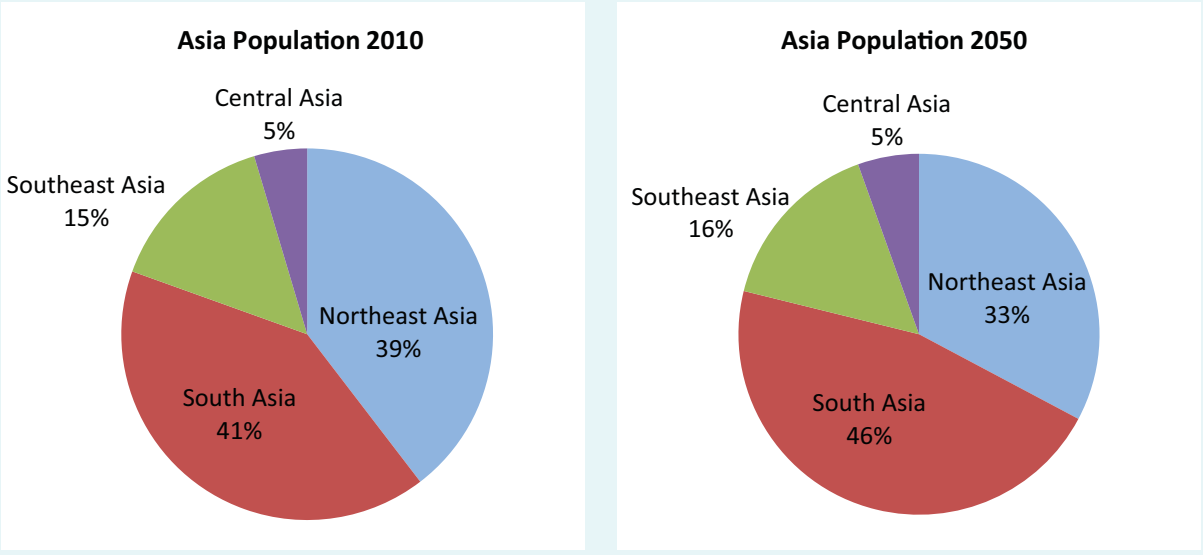
Northeast Asia's share in all of Asia's population will have fallen from nearly 40 percent in 2010 to roughly 30 percent in 2050. What is concealed in this general number is the fact that Japan and Republic of Korea's populations will continue to fall, and by 2050, will have fallen dramatically by 20 percent and 9 percent, respectively. Any population growth in Northeast Asia stems predominantly from PRC—but in percentage terms PRC's population will have only grown by 4.6 percent in the 40 year period between now and 2050.

Southeast Asia is expected to grow faster than the Asia average and to add about 174 million people by 2050. In the period 2010 to 2050, Indonesia will have grown by nearly 24 percent, adding 55 million people to its total, and Viet Nam by over 25 percent with 23 million more.

Central Asia will add around 85 million people by 2050. It will be growing from relatively smaller absolute numbers—but in percentage terms this subregion, especially Afghanistan and Iran, will be growing dramatically. It is estimated that Afghanistan's population will skyrocket from its current 29 million to 74 million; Iran will add about 22 million to its total population.

In 2050, Asia will be heavily influenced by the relative demographic weight of South Asia. Already by 2023—roughly a decade from now—South Asia (with India) will be more populous than Northeast Asia (which includes PRC). By 2050, Pakistan will have added more than twice the amount of people than PRC to the total Asian tally. The balance of Asia's population will have shifted from Northeast Asia to South and Southeast Asia.

Figure A1 **Population changes in Asia's subregions, 2010 versus 2050**



Source: United Nations Statistics Division, 2010.

Table A1 **Population changes in Asia, 2010-2050**

Population (millions)	2010	Projected 2050	Change in Population (millions)	% Change
Asia	3958	4888	930	23.5
Japan	127	102	-25	-20.0
Republic of Korea	49	44	-4	-9.1
PRC	1354	1417	63	4.6
Indonesia	233	288	56	23.9
Viet Nam	89	112	23	25.4
India	1215	1614	399	32.9
Pakistan	185	335	150	81.4
Afghanistan	29	74	45	155.1

Source: UN Statistics Division, 2010.

The Asian population giants, PRC and India will see very different demographic trends. By 2050, PRC's population is estimated to have already peaked around 2032, and be at 1.4 billion, which is only 63 million more than in 2010. By 2050, PRC will thereby represent a smaller share of the total global population than before. India, on the other hand, will have grown by 400 million people to a total population of over 1.6 billion people in 2050; its share of the total global population will have grown to nearly 20 percent.

The demographic dominance of PRC and India notwithstanding, in the next decades the list of the largest countries in the world will continue to be dominated by Asia. Between now and 2050, there will be three additional Asian countries with the distinction of belonging to the ten most populous countries in the world: besides PRC and India, there will be Pakistan (335 million), Indonesia (288 million) and Bangladesh (222 million) in the "top ten".

Asia's ageing trends

The demographic figures for Asia in 2050 impress by the sheer numbers of its growing population: 40 years from now, Asia will have a population of nearly 5 billion. Projections on how many of these people will be officially classified as 'elderly' are just as impressive: in 2050, nearly 860 million Asians will be 65 years and older.

What is especially striking about this phenomenon is the relative speed of the process of ageing in Asia,

Table A2 **Projected growth of Asia's elderly population (number of people, age 65 and above, in millions)**

	2010	2020	2030	2040	2050	% increase 2010-2050
Central Asia	9	12	19	25	36	309
Northeast Asia	149	214	286	377	392	163
South Asia	77	111	161	221	299	290
Southeast Asia	34	49	76	106	132	283
TOTAL	269	385	541	729	859	

Source: UN Statistics Division, 2010.

and the fact that the 'greying' of Asia is occurring at all levels of the economic spectrum, i.e. even in low-income countries.

Asia's 3-speed ageing world

In the context of demographics, it is tempting to borrow the analogy to the differential-speed economic growth framework that is used in the economic model that underlies the report.

The three-speed demographic taxonomy in Asia occurs around distinct groups: one, the ageing countries in Northeast Asia (notably, PRC and Republic of Korea; from now on referred to as Speed 1 or Old Asia); two, the countries in Southeast and South Asia that are approaching the demographic transition (called Speed 2 or Young Asia). This group covers a wide spectrum of countries such as Thailand and Indonesia that are relatively older, and other countries that are roughly 10 years further behind, such as India and Viet Nam, and three, the youngest countries in Asia that are still growing, much further away in their demographic transitions, such as Pakistan and Afghanistan, for instance—referred to as Speed 3 or Very Young Asia.

By tracing the population figures for some of the major (already large) Asian countries, it becomes evident that PRC's population begins to decline around 2032, Republic of Korea as early as in 2024, and Thailand will begin shrinking in 2040. Japan's demographic descent has already begun; its population reached its peak in 2005; India's demographic inflection point occurs only after 2050; the same applies to Indonesia, Viet Nam, Bangladesh, Pakistan and Afghanistan.

Tracing the percentage of the total population that is of a working age (defined as 20-64 years of age) also reveals different and differently timed inflection points: for Speed 1 countries, the old countries of Asia, the working age population has already peaked

Table A3 **Asia's differential-speed demographic inflection years**

Inflection years	Total population		Working Age Population
Speed 1: Old Asia		**Speed 1: Old Asia**	
Japan	2005	Japan	1995
Republic of Korea	2024	Republic of Korea	2015
PRC	2032	PRC	2020
Speed 2: Young Asia		**Speed 2: Young Asia**	
Thailand	2039	Indonesia	2030
Indonesia	Post 2050	Thailand	2040
Viet Nam	Post 2050	India	2040
Bangladesh	Post 2050	Viet Nam	2040
India	Post 2050	Bangladesh	2045
Speed 3: Very Young Asia		**Speed 3: Very Young Asia**	
Pakistan	Post 2050	Pakistan	Post 2050
Afghanistan	Post 2050	Afghanistan	Post 2050

Source: Authors' calculations based on data from United Nations Statistics Division, 2011.

Table A4 **Ageing versus economic growth in Asia, 2050**

	pc GDP (PPP) 2050	% 65+ 2050		pc GDP (PPP) 2050	% 65+ 2050
Nepal	3,400	10.6%	Iran	22,800	19.7%
Afghanistan	2,800	3.6%	Cambodia	22,700	10.4%
Bangladesh	14,200	14.9%	Viet Nam	33,800	20.0%
Myanmar	4,900	17.5%	Armenia	35,900	21.5%
Tajikistan	15,900	10.0%	India	41,700	13.7%
Lao PDR	7,800	9.5%	Bhutan	48,600	15.0%
Pakistan	7,900	10.0%	Indonesia	37,400	18.6%
Philippines	22,900	12.7%	PRC	47,800	23.3%
Sri Lanka	34,700	21.4%	Azerbaijan	60,300	17.9%
Mongolia	26,900	16.8%	Kazakhstan	64,700	15.6%

Source: Centennial Group International Growth Model, 2011.

and is now declining (as in Japan) or is about to do so (as in Republic of Korea). Working age populations in the Speed 2 countries ("Young Asia") trail the Speed 1 countries by about 20-25 years (e.g. Indonesia, Thailand, India). These inflection points are an important indicator of demographic windows of opportunity and potential demographic dividends that countries could exploit to their advantage.

An important, valid concern is that a rapidly ageing population is antithetical to achieving high-income status. The fear that a country might become too old before it becomes rich enough has two elements: (i) with high old age-dependency ratios, investments to achieve higher factor productivity are difficult to realize, and (ii) meeting the needs of an elderly population will entail costly economic and social institutions that are needed to achieve income security, adequate health care, and other needs[1].

1 Ronald Lee, Andrew Mason, and Daniel Cotlear, "Some economic consequences of global ageing," Washington, DC: World Bank, 2010.

Annex 2
Model for Developing Global Growth Scenarios

This study estimates GDP as a function of labor force, capital stock, and total factor productivity for 183 countries between 2010–2050 under two different growth scenarios that we call the "Asian Century" and "Middle Income Trap". As seen in equation (1), a Cobb-Douglas function with constant returns to scale is assumed.

$$GDP = TFP \times L^{\alpha} \times K^{1-\alpha} \qquad (1)$$

GDP figures are generated for three different measures: (i) real GDP (constant 2010 prices), (ii) GDP PPP (constant 2010 PPP prices), and (iii) GDP at expected market exchange rates, which incorporates exchange rate movements and serves as this study's best proxy for nominal GDP.

This model first estimates a full time series of yearly real GDP growth for each country for every year between 2010 and 2050. These estimates are applied to the previous values of real GDP, GDP PPP, and nominal GDP deflated by US inflation (on which GDP at market exchange rates is based) to derive the full series. Finally, to derive GDP at market exchange rates, real exchange rate appreciation is calculated and multiplied by nominal GDP (deflated by inflation) to obtain GDP at market exchange rates.

Labor force growth stems from population growth and from changes in labor force participation rates, which are calculated separately, by gender, for six age cohorts (15-19, 20-24, 25-49, 50-59, 60-64, and 65+) to better capture cohort-specific trends. Male rates are projected directly; female rates are derived by projecting the difference between male and female rates for each age group. Labor force participation rates from 1980 through 2020 are from the International Labor Organization.

The country-specific and cohort-specific equations to forecast male rates are simple autoregressions:

$$M_{age,country,t} = m_{age,country} \times M_{age,country,t-1} \qquad (2)$$

where M is the percent of males in age group age who are active in the labor force and m_{age} is a constant that varies for each country and age group.

The cross-country, cohort-specific equations to forecast the differentials between male and female participations rates are the autoregressions:

$$\ln(D_{age,t}) = d_{age} \times \ln(D_{age,t-1}) \qquad (3)$$

where D equals the difference between the percentage of males in age group age in the labor force and the percentage of females in age group age in the labor force and d_{age} is a constant that varies by age group.

Capital stock growth is based on an initial capital stock, calculated by using the Caselli method[1], and yearly investment rates and depreciation. The Caselli equation used is:

$$K_0 = \frac{I_0}{g + 0.06} \qquad (4)$$

where K_0 is the initial capital stock, g is the average GDP growth over the subsequent ten years, 0.06 is the depreciation rate, and I_0 is a representative yearly capital investment.

The model is calibrated by calculating Total Factor Productivity (TFP) for an initial year (2011) based on labor force, capital stock, and historical GDP. For subsequent years, TFP is projected.

For the TFP projections, we differentiate four tiers of countries: (i) rich or developed; (ii) converging; (iii) non-converging; and (iv) fragile.

1 Kharas, Homi, "India's Promise: An affluent society in one generation," in India 2039, An Affluent Society in One Generation, Kohli and Sood (eds.) Washington, DC: Sage, 2010

All countries begin with a default TFP growth rate of 1.3 percent per annum derived from past studies[2]. This parameter is close to the 100-year TFP growth rate of the United States, and is treated as the global standard. In our model, this is the fixed rate of productivity growth for non-converging, non-fragile countries.

Research shows that some growth differences between developing countries can be successfully modeled by separating them into two groups: converging (Tier 2) and non-converging (Tier 3) countries.

A country is deemed to be converging if its per capita income has rapidly converged over a 20-year period to that of best practice economies; the lower its productivity relative to the global best practice the more quickly it converges. This convergence reflects technology transfers from richer innovative countries, technology leapfrogging, the diffusion of management and operational research from more developed countries, and other ways that a country can shortcut productivity-improvement processes by learning from economies that are already at the productivity frontier.

In the model, the lower the country's productivity relative to that of the US, the larger the boost, and the quicker the catch-up[3]. The productivity growth of rich (Tier 1) countries is treated the same as that of Tier 2 countries. On the other hand, non-converging (Tier 3) countries have only 1.3 percent productivity growth and no boost. The general equation for TFP growth encompassing all countries is

$$\text{TFPGrowth} = 1.3\% + \text{CB} - \text{FP} \qquad (5)$$

where CB is the convergence boost benefiting "converging" countries and FP is the productivity growth penalty suffered by failing or fragile states.

The convergence boost is defined as follows:

$$\text{CB} = c \times 1.26\% \times \ln\left(\frac{TFP_{USA,t-1}}{TFP_{i,t-1}}\right) \qquad (6)$$

where i is the country, 1.26 percent (rounded) is the convergence coefficient (derived from historical data), TFP is the total factor productivity based on real GDP (as opposed to PPP), and c takes a value between 0 and 1 and identifies whether a country is treated as a converger (c=1) or as a non-converger or fragile state (c=0), or in an intermediate state of transition between being a converger and non-converger ($0 < c < 1$).

The failed-state penalty FP is defined as

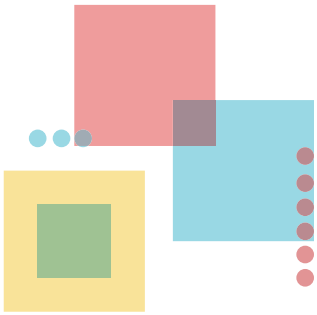
$$F = a \times 1.8\% \qquad (7)$$

where a plays a role analogous to that of c in equation (6) above. For fragile (Tier 4) nations, α is set equal to 1, corresponding to a penalty in productivity growth of 1.8 percent, so that their yearly productivity is assumed to fall by 0.5 percent a year. The coefficient of 1.8 percent and the list of such fragile states is derived by identifying state failures and debilitating wars in 53 nations since 1980 (totaling 646 country-year observations).

The projections of GDP growth are concluded by applying the labor growth, capital deepening, and productivity changes to each country over the period 2010-2050.

The measure of GDP at expected market exchange rates adjusts the GDP estimate by expected changes in the real exchange rate. First, an equation is derived to establish a theoretical relationship between a country's real exchange rate

2 Kharas, Homi, "Latin America: Is average good enough?" in Latin America 2040, Kohli, Loser and Sood, (eds.) Washington, DC: Sage, 2010.
3 TFP is used in the convergence term instead of the per-capita income used by others for three reasons: first, if the equation were to use GDP per capita, over time the TFP of a converging country will not converge to that of the USA but instead to other values. Also, since the convergence equation represents convergence of TFP, we use TFP in order to make the equation consistent with its purpose. Third, using the convergence coefficient from past research in tandem with an income-based convergence term yields large discrepancies with the recent historical data for TFP growth.



and its PPP income relative to that of the US. Then, the country's modeled exchange rate converges towards the value that corresponds to its income in this theoretical equation. Since these relationships are not linear, the countries for which an increase in GDP PPP most appreciates their real exchange rates are the countries whose incomes are between a third and two-thirds that of the United States, and not the poorest or richest countries.

The model also projects the sizes of the lower, middle, and upper classes, again following Kharas (2010), by measuring the number of people in each country with living standards—in PPP terms—within a certain absolute range. An income distribution for each country is derived from the World Bank International Comparison Program. As a country's total income increases, more people with small shares of the country's total income will attain higher living standards.[4]

The study makes separate projections for the Asian Century and Middle Income Trap scenarios. The difference between the scenarios is how countries are classified, either as converging, non-converging, or failed, and how countries gradually move between classifications.

For the first scenario ("the Asian Century"), the starting point is the countries' status in 2010: 38 countries (7 Asian) are rich, 32 (11 Asian) converging, 111 (29 Asian) non-converging, and 14 (2 Asian) failed.[5] For 137 countries, the classification is taken from the "Four-Speed World" classification used by Kharas. The remaining 51 countries were classified using a similar analysis of recent historical data[6]. The model assumes that in the future: (i) all eleven currently converging economies in Asia will continue to converge; (ii) eleven Asian (and six non-Asian economies) will gradually also become convergers; and (iii) all failed states will gradually stop failing and graduate to the third group in 2025. The convergence of the six non-Asian non-convergers and the fact that all failing states eventually stop failing in this scenario results from the "Shared Prosperity" that benefits the entire world.

The second scenario is the "Middle Income Trap Scenario". Here, all currently converging Asian countries with a GDP PPP per capita in 2010 below $20,000 are assumed to fall into the Middle Income Trap. They gradually stop converging at varying income-dependent points between 2015 and 2020, and remain non-convergers for the rest of the time-frame.

In both scenarios, the transition of individual countries between converging and non-converging, or from failed to non-converging is gradual. That is, countries are made to adopt an intermediate state between failed and not failed, or between converging and not-converging, by varying the values of f and c in equations (6) and (7)

4 The model also projects requirements for ten infrastructure sectors: Airports, Electricity, Fixed Broadband, Landlines, Mobile Telephony, Ports, Rail, Paved Roads, Sanitation, and Water (although not all sectors are covered for each country).They identify needs in both physical capacity and investment costs, which are broken down into new investment and maintenance. The models used for these projections are structural equation models based on instrumental variables, and their methodology and specifications are given in Kohli and Basil (2011), with a brief overview provided in Kohli and Basil (2010).
5 Projections could not be made for 13 of these 196 countries because the required data is not available.

6 However, unlike the Kharas classification, this study does not distinguish between middle income non-convergers and poor non-convergers. We argue that during the next forty years many poor or lower-middle income countries will graduate to middle income status.

Asia is in the midst of a truly historic transformation. If it continues to grow on its recent trajectory, it could, by 2050, account for more than half of global GDP, trade and investment, and enjoy widespread affluence. Its per capita income could rise sixfold. It thus holds the promise of making some 4 billion Asians, hitherto commonly associated with poverty and deprivation, affluent by today's standards. By nearly doubling its share of global GDP (from 27 percent in 2010 to 51 percent by 2050, Asia would regain the dominant global economic position it held some 250 years ago, before the Industrial Revolution. Some have called this possibility the "Asian Century".

While this promising outcome, premised on the major economies sustaining the present growth trajectory, is plausible, it does not imply that the path ahead is just doing more of the same. Indeed, just maintaining the present growth rates will require urgently tackling a broad array of politically difficult issues over a long and sustained period, even though benefits may not be obvious in the near term. Asia's rise is by no means preordained.