

## **Rebalancing Production**

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Prepared for the ADBI/ADB Book  
*The Global Financial Crisis and Implications for Asia*  
12 February 2010

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## 1. Introduction

In the late 1950s and early 1960s, Japan, the Republic of Korea, and Taipei,China adopted export-oriented strategies to promote economic growth. The Association of Southeast Asian Nations (ASEAN) countries and the PRC later adopted similar approaches. These strategies helped to raise living standards and reduce poverty to such an extent that economists refer to the episode as the “East Asian Miracle.”

Recently exports have been produced within intricate production and distribution relationships. Japan, the Republic of Korea, Taipei,China and MNCs located in ASEAN produce sophisticated technology-intensive intermediate goods and capital goods and ship them to the PRC and ASEAN for assembly by lower-skilled workers. The finished products are then exported to the US, Japan, Europe, and other countries.

The volume of exports produced within these value-added chains has increased rapidly and led to growing trade imbalances between East Asia and the rest of the world. The region’s global current account surplus equaled US\$747 billion in 2007 and US\$710 billion in 2008. In spite of the global financial crisis, it is forecasted by the IMF to equal US\$620 billion in 2009.<sup>1</sup>

As net exports from Asia have multiplied and growth abroad has stagnated, the ability of the rest of the world to absorb Asia’s exports has decreased. Also, exports in some countries have been produced with subsidies in the form of artificially low prices for labor, land, and energy and of environmental regulations that have not been rigorously enforced (see Huang, 2009). Further, the trade composition in many countries is dominated by low value-added assembled goods produced through East Asian supply chains. Asian economies should thus rebalance away from relying too much on exports to developed economies.

Rebalancing should take place on both the supply side and the demand side. On the supply side, the best way to rebalance growth is to increase productivity (Jitsuchon and Sussangkarn, 2009). This would raise wage rates and living standards. On the demand side, producers in the region should look more to Asian consumers as an engine of growth. Asia has 930 million people who are middle class and above. There is thus huge potential for rising demand in Asia to replace shrinking demand in the West.

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<sup>1</sup> IMF World Economic Outlook database, October 2009.

To increase productivity, firms in developing Asia should leverage production networks to graduate to higher value-added, knowledge-intensive activities. They can accomplish this by maintaining FDI-friendly environments in order to nurture industrial agglomeration and facilitate technology transfer. One key way to attract foreign direct investment is to lower the service link costs between geographically separated production blocks. These can be lowered by implementing a region-wide free trade agreement (FTA), improving intra-regional infrastructure, and developing competitive service sectors and small and medium enterprises (SMEs).

Many of these steps would also help Asian firms to connect with new sources of demand. For instance, improving infrastructure and implementing a region-wide free trade agreement would give firms better access to consumers in Asia. In addition, raising worker productivity would increase labor income, raising the long run purchasing power of consumers in the region.

There is also the possibility of a virtuous cycle emerging.<sup>2</sup> Developing competitive SMEs and service sectors and investing in infrastructure would attract FDI. Once countries receive a critical mass of FDI, industrial agglomeration would start to take place. Local SMEs and service sector firms would then have lots of opportunities to develop and become more competitive and governments would have more revenue to invest in infrastructure. This would in turn attract more FDI.

The next section considers how developing Asian countries can leverage production networks to facilitate technology transfer to domestic firms. Section 3 considers a regional free trade agreement, and the role that it can play in bringing producers and consumers in Asia together. Section 4 considers how infrastructure investment can help to rebalance growth. Section 5 argues that Asian countries should use deregulation and increased competition to develop a more competitive service sector. Section 6 considers how to nurture SMEs and Section 7 takes up issues related to green growth. Section 8 concludes.

## **2. Promoting Technology Transfer and Industrial Upgrading in Developing Asia**<sup>3</sup>

As discussed above, many of Asia's exports are produced within regional production networks. One benefit that processing trade provides for developing Asia is that multinational corporations (MNCs) play a large role in the production and distribution

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<sup>2</sup> We are indebted to Prof. Shujiro Urata for this suggestion.

<sup>3</sup> This section and the next draws on Thorbecke and Yoshitomi (2006).

processes. MNCs are skilled at finding new sources of demand and at tailoring production to the needs of the marketplace. Even if demand in the US and Europe has fallen, MNCs should be able to find new markets to exploit. Thus processed exports should continue to play a role in developing Asia.

Processing trade also offers the potential to effectuate technological transfer and promote industrial upgrading. This can increase the productivity of local firms. Jitsuchon and Sussangkarn (2009) noted that the best way to rebalance growth is by increasing productivity. This would raise wage rates and labor income over time, increasing the long run purchasing power of consumers.

Jitsuchon and Sussangkarn (2009) argued that growth rebalancing should be accompanied by increasing the domestic content of the goods they produce. Developing Asian countries would benefit if more of the value-added could be produced domestically.

How can these countries increase the domestic content of exports? To do this they need to advance from simple to complex production activities, from assembling imported parts and components to participating in the engineering and design aspects of production.

As Lim and Kimura (2009) discussed, a crucial step is for local firms and entrepreneurs to obtain technology transfers and positive spillovers from the operation of multinational corporations in their countries. For this to happen, they argue, the absorptive capacity of the country must develop. They stated that:

Policymakers in LDCs must be patient until they are hosting a critical mass of FDI, rather than hastily introducing performance requirements for technology transfers. Once the seed of industrial agglomeration has been planted, local firms and entrepreneurs will have ample opportunities for penetrating into production networks, which will eventually accelerate technology transfers and spillovers.<sup>4</sup>

Because of these benefits arising from foreign direct investment it is important to know how developing Asian countries can attract FDI flows. One key step is to lower the service link costs between geographically separated production blocks. These costs can be lowered along two axes, "distance" and "controllability" (Kimura and Ando, 2005).

Costs along the distance axis include transport costs, telecommunication costs, and intra-firm coordination costs. Costs along the controllability axis include the costs of imperfect information, lack of credibility, and loss of stable contracts. To lower service

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<sup>4</sup> Lim and Kimura (2009) p. 12.

link costs Asian policymakers should focus on strengthening physical infrastructure such as 1) the network of highways, ports, and airports, 2) the information and communication technology infrastructure, 3) container yards, and also market-supportive institutional infrastructure such as 1) enforcement of the legal system, 2) information on vendors, 3) enforcement of the stability of private contracts, 4) corporate governance, and 5) legal remedies when firms violate intellectual property rights agreements. Strengthening infrastructure in the region is the theme of Section 4.

Lowering service link costs can lead to many firms locating in one area. There are then economies of scale attached to the resulting agglomeration. Service link costs are lowered because the large number of firms in close proximity makes it easier for firms to procure parts and components and to handle frequent specification changes. In addition, the many business partners and different skills and technologies in close proximity help reduce costs associated with uncontrollability.

In countries like Singapore, Malaysia, and Thailand, SMEs play an important role in production chains and as subcontractors to the big companies. Section 6 considers how to nurture SMEs so that they can become more productive and more involved in regional production networks.

For firms in developing countries to reap the full benefits of these trade-FDI-technology networks, it is necessary for their economies to move up the value chain and not remain engaged only in labor-intensive assembling activities. Technology transfer and upgrading is an essential element of this process.

The intra-firm transfer of managerial technology from foreign affiliates to indigenous workers can be expedited if workers in the host country are better educated.<sup>5</sup> Thus human capital formation is a prerequisite for technology transfer.

It is not enough to simply provide more education. It is desirable to provide education that focuses on science and engineering and enhances students' marketable skills that businesses need. Section 5 considers how the government and the private sector can cooperate in this process.

It is important to note that firms in developing Asia are not passive recipients of technology. Rather their technological capabilities strongly affect their performance. Wignaraja (2008) analyzed the behavior of exporting firms in China, the Philippines, and Thailand. The results of his probit analysis reveal that the technological capabilities of firms—which cover firms' competence in (i) upgrading equipment, (ii) licensing of

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<sup>5</sup> Urata, Matsuura, and Wei (2006).

technology, (iii) ISO quality certification, (iv) process improvement, (v) minor adaptation of products, (vi) introduction of new products, (vii) research and development (R&D) activity, (viii) sub-contracting and (ix) technology linkages—strongly determine firm-level exporting behavior in China, Philippines and Thailand. These results indicate that firms' efforts to learn, assimilate and employ imported technologies affect their ability to export.

R&D policy can also play an important role. Since imported technology is expensive, a careful selection is warranted. In this case, domestic R&D supported by public research institutes can help in assessing and indicating the best technologies to import. The focus should not only be on the types of technologies to employ, but also on identifying appropriate partners. This linking up with other institutions or firms from abroad is critical, and it can be done formally or informally. Government support is needed to coordinate firms' R&D with public research institutions to produce concrete results.

Developing Asian countries receive technology spillovers when foreign affiliates increase local procurement in the host countries. As MNCs increase their tenure in developing Asia, they procure more from local firms. This leads to the formation of industrial clusters, and local engineers and skilled workers begin migrating among firms and sectors. They bring their accumulated human capital with them and disperse it across the economy, promoting technological assimilation and productivity growth.

For instance, Kraemer and Dedrick (2006) document that the lion's share of the international production of notebook PCs is produced in the Yangtze River Delta by Taiwanese Original Design Manufacturers (ODMs). These manufacturers form part of a network that includes branded firms such as HP, Apple, and Toshiba, suppliers of key parts and components, producers of basic industrial materials, and makers of operating systems and CPU. Local Chinese firms supply connectors, batteries, switches, and displays and are also active in molding, casting, forging, plating, and module-assembling. Both digital and human networks enable PC producers to react efficiently in real time to changes in consumer preferences and technology. Firms assembling the notebook PCs have also kept inventories lean by processing 98 percent of the orders within three days. Productivity growth within this value chain has been amazing.

To increase the tenure of foreign affiliates it is necessary to sustain FDI-friendly environments including consistent and coherent enforcement of laws and regulations at all governmental levels as well as stable macroeconomic fundamentals. FTAs for trade

and FDI liberalization and facilitation and high quality investment treaties are thus important. FTAs are discussed in the next section.

### **3. Implementing a Region-wide FTA**

A basic message of economics is that a country can reap the gains from trade by liberalizing unilaterally. Economies in the region can thus experience efficiency gains by reducing their MFN (Most-Favored Nation) tariff rates, even if their trading partners do not. Partly because of the influence of special interests, this basic message is often forgotten in trade negotiations. Global liberalization would produce even greater gains by leading to a more efficient allocation of resources in the international economy along the lines of comparative advantage. Free trade agreements (FTAs) between a limited number of countries, on the other hand, would be a second best solution because it would have trade diverting effects that would offset some of the trade creating effects.

FTAs represent one step towards global free trade. There are losers in particular sectors from liberalization, however. It is thus necessary to facilitate labor mobility and the movement of firms from losing to gaining sectors by providing retraining and upgrading for workers displaced through trade liberalization and by reducing entry barriers to new firms and facilitating exit through structural reform. Sector-specific protectionist policies should be abandoned as much as possible, while competition policy should be strengthened.

FTAs between developing and developed economies affect sectors differently depending on the level of development. Hertel (2000) examined the impacts of liberalization of agriculture, manufacturing and services on global trade volumes and welfare.<sup>6</sup> He found that full liberalization across these sectors would increase world trade by 20%. Three-fourths of these gains would come from liberalization in the manufacturing sector, a little less than a fourth from liberalization in the agricultural sector, and the remainder from the services liberalization. Welfare gains would be largest for agricultural liberalization, followed by manufacturing liberalization and then services liberalization. The developing countries mainly benefit from manufacturing tariff cuts; while the developed countries gain more from agriculture and service liberalization. In addition, Hertel, Ivanic and Winters (2008) simulated the impact of agricultural

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<sup>6</sup> He simulated the across-the-board abolition of estimated 2005 protection tariffs in agriculture, business and finance and construction services, extractive industries and manufacturing. He also considered liberalization of all sectors simultaneously. His model contained 22 sectors in 19 regions around the world.

liberalization and found that it would hurt poor people working in agriculture due to reduced real after-tax factor earnings. However, the revenue replacement effects can be largely offset by poverty-reducing impacts of lower prices of agricultural products if all developing and developed countries reduce their agricultural tariffs together. Thus, to enhance the benefits and the quality of agreements, it is important to reduce the scope of these sensitive items in both economies and to enlarge the coverage of countries.

The broader the coverage and the lower the tariffs on both external and internal trade, the more the “noodle bowl” effects of FTAs can be mitigated. The noodle bowl effect refers to the possibility that multiple trade agreements can cause the trading system to become chaotic. Baldwin and Kawai (2008) argued that the noodle bowl can cause problems when:

Agreements are overlapping, complex, and different—with different liberalization standards, exclusion lists, rules of origin, standards, etc. This carries the risk of becoming unwieldy and makes doing business cumbersome.<sup>7</sup>

From the perspective of big and established firms the Asian noodle bowl problem may not be that serious. Kawai and Wignaraja (2008) presented the results of the Asian Development Bank’s survey of 841 manufacturing firms based in the People’s Republic of China (PRC) Japan, Singapore, the Republic of Korea (Korea), Thailand, and the Philippines. They found that these businesses-- particularly the larger, more established firms-- view FTAs positively. The benefits of wider export market access and lower costs of imported intermediate inputs exceed the costs associated with FTA use, such as researching various provisions, adjusting business plans to FTA tariff schedules, obtaining certificates of origin, and producing necessary documents. The SMEs, however, are a bit disadvantaged in terms of FTA use. In other words, from the perspective of the big and established firms the Asian noodle bowl problem is not that serious.

To the extent that the noodle bowl is a problem, Chia (2009) noted that it can be overcome through an FTA between many countries in the region. Such an agreement would also generate economies of scale and scope and promote trade creation. According to Chia, a region-wide FTA could establish compatible rules of origin and product and technical standards. It would make it possible to harmonize procedures for issuing Certificates of Origin and for self certification and to achieve full cumulation of

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<sup>7</sup> Baldwin and Kawai (2008) p. 1.

rules of origin (ROOs). Further, it would cause transactions costs to fall if electronic customs clearance was employed.

Chia (2009) cited favorably the 2009 Joint Export Group Study Report on an East Asia Free Trade Agreement. This report advocates an agreement between the ASEAN+3 countries that would include:<sup>8</sup>

- 1) A high quality agreement in the region for market access for both goods and services;
- 2) A global standards investment agreement;
- 3) Satisfactory trade and investment facilitation measures;
- 4) Full cumulation of ROOs;
- 5) Special attention to the needs of less developed countries;
- 6) A dispute settlement mechanism.

For poorer Asian nations, a region-wide FTA would offer both possibilities and dangers. The possibilities include greater market access and greater participation in regional production networks. The dangers include increased competition from more efficient firms in other countries. Chia (2009) advocated providing safeguards for poorer countries and also capacity building assistance to improve supply side competitiveness in less developed ASEAN countries.

The Joint Experts Group Study Report advocated consolidating existing FTAs in the region rather than beginning negotiations again from scratch. Since there are currently no bilateral or plurilateral FTAs between PRC, Republic of Korea, and Japan, these countries would have to negotiate among themselves. They would also have to exercise leadership to help the region achieve a comprehensive FTA.

On the investment side, governments should aim for high quality agreements.<sup>9</sup> Ideally, investment treaties should provide three substantive clauses and one procedural component. The three substantive clauses are investment protection, investment facilitation, and investment liberalization and the procedural component is dispute settlement. Investment protection provides compensation in the case of expropriation and mandates fair and equitable treatment of foreign investment to avoid wrongful termination of government contracts. Investment facilitation requires transparency (i.e., that all relevant laws be publicly proclaimed). Investment liberalization emphasizes freer

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<sup>8</sup> Discussion of an ASEAN+3 versus and ASEAN+6 FTA are contained in Chapter 7.

<sup>9</sup> This paragraph draws on Kotera (2006).

market access of investment (i.e., no restrictions on ownership). Along this line, national treatment, that is, that foreign firms should receive the same treatment as domestic firms, should be mandated. Dispute settlement involves state parties providing a “standing” offer to arbitrate with individuals or states in the case of a disagreement. High quality investment agreements would promote the flow of FDI in the region and thus contribute to technological upgrading in developing Asia.

#### **4. Needs and Benefits of Infrastructure Investment**

Infrastructure in the region reflects the fact that most Asian countries have prioritized exports to the US and Europe. To adjust to shrinking consumption in the West, Asia needs to increase infrastructure connectivity to promote expanded regional economic integration and enhanced intraregional trade. This in turn can contribute to sustained and inclusive growth.

Asian investment in infrastructure connectivity can enhance competitiveness and productivity, speed up economic recovery, and help in achieving balanced, sustainable, and inclusive growth in the medium to long-term. Implementing counter-cyclical policies and measures, such as infrastructure financing, to compensate for lost export demand from advanced economies can also form an important part of fiscal stimulus packages, especially if the crisis is prolonged. In addition connectivity can promote environmental sustainability through the development of cross-border green energy and transport networks. Coordinated infrastructure financing by Asian countries toward regional infrastructure networks and enhanced regional connectivity will maximize the efficient use and application of resources and lead to a sustainable and inclusive, high-growth path in the long run.<sup>10</sup> This effort will require concentrated efforts on developing both “hard” and “soft” infrastructure – respectively, physical infrastructure assets such as transport, energy, water, and telecommunications networks and facilitating infrastructure such as appropriate policies, regulations, systems and procedures, trade facilitations measures and institutions necessary to make hard infrastructure work properly.

This section examines the role of national and regional infrastructure investment for (i) rebalancing Asia’s growth; (ii) creating new engines of growth; (iii) promoting balanced, sustainable, green, and inclusive growth; and (iv) improving national and regional competitiveness and productivity.

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<sup>10</sup> For a full definition of regional infrastructure, see Bhattacharyay (2008)

#### *4.1 Rebalancing for Sustainable Growth*

As discussed above, trade and foreign direct investment have been crucial ingredients of rapid growth and integration in Asia. Investments in infrastructure and logistics in the region have reduced trade costs, increased market-access and supplier-access, and improved international competitiveness. Asia, particularly East Asia, has fairly strong trade integration primarily through trade in parts and components and Asian economies have become key links in world production networks and supply chains, with many countries in the region involved at different stages in assembly processes. Countries that are able to involve themselves more deeply in global production networks and that invest in trade-supporting infrastructure stand to benefit more (Brooks and Hummels 2009). However, until now, the emphasis has been on integration of production of intermediate goods with the global production network, rather than facilitating the meeting of final demand in the region. To achieve more sustainable growth, infrastructure investment now needs to focus more on the latter. Development of economic corridors is one example of this.

Asian infrastructure has expanded at a relatively quick rate to support the region's rapid trade growth and economic integration but the needs for superior infrastructure and logistics to facilitate successful production and trade networks are still large. Trade centers such as the PRC; Hong Kong, China; Malaysia; Korea; Singapore; Taipei, China; and Thailand have developed logistics systems to facilitate intraregional and international trade. However, these systems are still evolving and will come under increasing pressure as concentrations of economic activities expand inland. Several country-specific studies suggest that inland locations would imply a large logistic burden. For example, almost 63% of the cost of transporting goods from Chongqing in the PRC to the West Coast of the US is incurred before the goods arrive at the PRC port for export (Carruthers and Bajpai 2003). The deficiencies of Central Asian transport systems – high costs coupled with the low quality of transport and logistics services – have meant that close to 20% of the value of traded goods is accounted for by transport costs. A multi-country study shows that a 20% reduction in logistics costs would increase the trade to gross domestic product (GDP) ratio by more than 10% in the PRC, Cambodia, and Lao PDR; by more than 15% in Mongolia; and by more than 20% in Papua New Guinea (Carruthers and Bajpai 2003).

Regional infrastructure can bring greater physical connectivity, helping expand markets and accelerate growth and business through greater efficiency, agglomeration economies, and economic corridors. Economic corridors demonstrate the dynamic aspect of regional infrastructure networks, generating more business and industries as a result of good transport corridors that in turn require more infrastructure investment to support increased economic activities. The development of economic corridors beyond borders and within countries has been on the rise in Asia. Economic corridors require a robust transport infrastructure network and an effective logistic system for efficiently linking economic activities within and across corridors. Such corridors are effective tools to accelerate regional and sub-regional economic integration within Asia. Physical connectivity has improved across most parts of the Asia-Pacific region through land, sea, and air-based transportation networks largely in order to support the economic development programs at both national and regional levels. However, much still needs to be done and further extensive investments in infrastructure need to be made to address and reduce poverty levels in the region.

Regional transport infrastructure is typically seen as one of the major determinants of the economic integration process (Vickerman 2002). It enhances international (and regional) connectivity through the free flow of goods and factors across borders, allowing countries to benefit from a better allocation of resources. A transportation network linking neighbouring countries enlarges market size and helps national economies to grow further through higher trade and production (Bhattacharyay and De 2009). A recent study using a gravity model by Bhattacharyay and Rahman (2009) on the PRC, India, Japan, Republic of Korea (hereafter Korea), Taipei, China, and ASEAN-7 countries<sup>11</sup> covering 2002-2006 showed that the physical infrastructure such as telecommunication and transportation infrastructures significantly improves trade performance. Increased investment in regional infrastructure connectivity through transport, and telecommunications with very large, fast-growing economies like PRC and India is expected to further boost intraregional trade and FDI.

#### *4.2 Large Infrastructure Projects as New Engines of Growth*

Large national and regional infrastructure projects involving many Asian economies have great potential to act as new engines promoting growth. Such projects inherently bring with them expanded employment opportunities and increased

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<sup>11</sup> Including Cambodia, Indonesia, Malaysia, Philippines, Singapore, Thailand, and Viet Nam

investment, not only in the project itself, but also in secondary and supporting industries and supply chains. Bringing forward and implementing high-priority national and regional pipeline projects could further boost Asia's growth and competitiveness in the global economy. ADB and ADBI (2009) provides a list major large infrastructure projects totaling \$ 133 billion for roads, rail and energy networks.

Physical infrastructure and its quality can also influence location choices for efficiency-seeking or export-oriented FDI flows (Kumar and De 2008). Ang (2007), while examining determinants of FDI inflows to Malaysia, concluded that the provision of an adequate infrastructure base is an effective tool for stimulating FDI inflows. According to the Indian Finance Minister Palaniappa Chidambaram the lack of adequate infrastructure was holding back India's economic growth by 1.5% to 2% per year (WEF 2007). Esfahani and Ramirez (2003) estimated that if Africa had East Asia's growth rate in telephones per capita (10% vs. 5%) and in electricity generation (6% vs. 2%), its GDP per capita growth rate would have been at least 0.9% higher<sup>12</sup>. The efficiency and productivity of infrastructure services as an input to other sectors can improve their productivity and enhance economic growth.

#### *4.3 Connectivity for Environmentally Sustainable Development and Poverty Reduction*

Enhanced energy and transport connectivity could also help Asia to address environmental degradation, energy security, and input supply problems. Properly designed infrastructure projects, such as greener transport connectivity (urban metro systems and regional railways) and sustainable energy grids (renewable energy generative capacities and smart, cross-boarder electrical grids) across the region would help to efficiently facilitate the flow of goods and also energy from areas where renewable sources are abundant to those where increased supply is needed. This promotes the development of green economies, environmental sustainability, greater technological innovation and application, and more efficient use of scarce regional resources.

Most developing countries in the region face barriers to reaching non-income Millennium Development Goals (MDG) targets in health, agriculture, and education. These targets are closely associated with infrastructure needs. Lack of adequate infrastructure limits competition, which can lead to monopolistic pricing, particularly in

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<sup>12</sup> See also Calderon and Servén (2004) and Rickards (2008) for other examples.

rural areas. It can also affect market participation and educational opportunities of the poor and can create barriers to adequate health care, reinforcing the poverty cycle.

Appropriate infrastructure investment can lead to poverty reduction, service provision, and growth in a reinforcing cycle. It supports the process of growth on which poverty reduction depends and helps the poor access basic services that improve lives and provide income opportunities. There is substantial evidence on the impact of national infrastructure on poverty reduction as road transport, electricity, gas, water supply, and communications facilities have significant, positive effects on economic growth (ADB/ADBI 2009). An examination of sub-regional transport and energy infrastructure projects in Central Asia, the Greater Mekong Region area, and South Asia has shown that there were significant welfare impacts on poor households as a result of such projects (ADB/ADBI 2009). Regional infrastructure investment for economic corridors can accelerate regional and sub-regional economic integration within Asia, redistributing goods and services and more effectively reducing poverty across the region.

Achieving inclusive growth through connectivity is also a primary challenge for landlocked, small, or less developed countries. Their rural or remote populations are often left behind. There may often be special demands in these areas that other regions do not face – port and communications facilities for islands, for example. Appropriate regional infrastructure can benefit such special groups by connecting them to the centers of business activities, making physical connectivity crucial for landlocked, island, and small countries. Such investment can help reduce regional development gaps.

In total, there are 12 landlocked developing countries (LLDCs) in Asia<sup>13</sup>, which are among the most disadvantaged countries in the region. They face severe challenges to growth and development due to a wide range of factors, including poor physical infrastructure; small domestic markets, remoteness from world markets, and a high vulnerability to external shocks. The transit of overseas goods through the territory of at least one neighboring state, and the frequent change of transport modes, results in higher transaction costs. Inefficiencies in areas such as customs and transport can also be a stumbling block to their integration into the global economy and may impair export competitiveness or the inflow of FDI. In responding to the transit problems of LLDCs, a multidimensional approach is needed (UNCTAD 2008), most notably in developing

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<sup>13</sup> Afghanistan, Bhutan, Laos, Nepal, Armenia, Azerbaijan, Kazakhstan, Kyrgyzstan, Mongolia, Tajikistan, Turkmenistan, and Uzbekistan.

adequate national transport networks and efficient transit systems, promoting regional or sub-regional economic integration, and encouraging foreign direct investment in economic activities that are not distance-sensitive. For example, in 1995, the “Global Framework for Transit Transport Cooperation between Land-locked and Transit Developing Countries and the Donor Community” was endorsed by the UN General Assembly with a view to enhancing transit systems and enabling LLDCs to reduce their marginalization from world markets. On the other hand, many archipelagic Southeast Asian and Pacific countries face transport connectivity problems for low volume shipping and low value-added trade.

#### *4.4 Infrastructure, Competitiveness, and Productivity*

The global competitiveness of Asian economies depends on their infrastructure quality, as can be seen in Table 1. Increased infrastructure investment can promote competitiveness and productivity through reduced transport and logistics cost, thus reduced trade cost. Additionally, infrastructure services like transport, electricity, and telecommunications are essential inputs for any production activity. Thus, quality and cost-effective infrastructure services can contribute to the improvement of productivity in any sector of an economy. National and regional infrastructure, both physical and institutional components, is playing an evident role in facilitating the creation and expansion of economic corridors. Enhanced transport and information technologies have caused cities in the region to specialize based on their comparative advantages, thereby creating a broad range of new activities.

The ADB/ADB I 2009 flagship study on infrastructure and regional integration showed that the total connective infrastructure (including electricity, transport, and telecommunications) needs of the Asia-Pacific region over 2010-2020 are estimated at US\$7.6 trillion for replacing aging national infrastructure and building new infrastructure to match the fast economic growth. In addition, Asia also needs US\$ 380 billion for water and sanitation projects during this period and around US\$ 300 billion for more than 1000 regional pipeline infrastructure projects for pan-Asian Asian connectivity<sup>14</sup>. On average, Asia’s total infrastructure investment needed over 2010-2020 is around US\$750 billion per year.

The big challenge lies in finding ways to finance these huge infrastructure investment needs. Although private flows of credit for infrastructure are likely to drop,

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<sup>14</sup> See Bhattacharyay (2009) for further details.

governments and Multilateral Development Banks (MDBs) as well as bilateral financial institutions of major Asian economies should accelerate infrastructure investments to provide stable, long-term, and counter-cyclical expenditure flows. In many developed, newly industrialized, and developing countries around the world, infrastructure investments were a key component of national fiscal responses to the recent global financial crisis. In Asia this was particularly true, as can be seen in Table 2, where an average of 50% of stimulus packages were for infrastructure investments<sup>15</sup>. PRC by far invested the greatest total amount in infrastructure through its stimulus package at US\$275 billion (6.36% of 2008 GDP), accounting for 45.8% of PRC's total fiscal stimulus package. Of the countries sampled for Table 2, 5 out of 11 invested greater than 50% of their fiscal stimulus packages in infrastructure, with Taipei, China and the Korea topping the list at 81.4% and 70.9%, respectively.

Infrastructure components of the region's fiscal stimulus measures were applied to key sectors including transportation, energy, IT and communications, and water, in both rural and urban projects. PRC in particular sought to support both rural and urban development by investing in such things as railways, airports, electrical transmission technology, expressways, and telecommunications technologies nationally (with a particular focus on railways), as well as rural roads, electricity, gas, water, and irrigation projects. Taipei, China and Korea focused their infrastructure financing on advanced technological upgrades and systems. Taipei, China continued its work on projects advancing the transportation network, industrial development, urban and rural development, and environmental protection. Korea invested heavily in transportations improvements (port upgrades, high-speed railways, and expressways) and in green technology, including projects for solar, wind, and hydrogen fuel cell energy, as well as carbon capture and storage (FAITC 2009; Kang 2010).

In Southeast Asia, both Thailand and Indonesia announced significant investments in both rural and urban infrastructure as well. Indonesia planned to devote its US\$1.3 billion infrastructure component for infrastructure acceleration and development programs across the board by distributing funds to all of the rural and urban infrastructure-related ministries (Patunru and Zetha 2010). Thailand planned for water resource development and road construction in villages and rural areas, along with transport and logistics, energy, and telecom improvements nationally through its two stimulus packages (Jitsuchon 2010).

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<sup>15</sup> See Bhattacharyay (2010) for further details.

More than 50% of India's US\$60 billion fiscal stimulus package has been designated toward an infrastructure focus, though India is expected to use those funds primarily to support PPP programs in progress and in the pipeline and has also authorized its India Infrastructure Financing Company Limited (IIFCL) and non-bank infrastructure finance companies to raise increased funds through bond issuances and from multilateral and regional institutions (FAITC 2009; Kumar and Soumya 2010). As many Asian countries have accelerated domestic infrastructure investment for enhancing national connectivity, also coordinating this spending toward regional infrastructure development such as airports, seaports, and roads is essential for realizing regional connectivity.

In spite of large investment in infrastructure under fiscal stimulus packages, there is a huge gap in infrastructure investment. The shrinking of international and regional financial markets means a corresponding decline in infrastructure and trade financing. It is essential that Asia finds ways and means to mobilize its huge savings to fund its infrastructure development. It is clear that the public sector alone cannot meet this huge infrastructure investment demand of US\$750 billion per year. The private sector needs to play an important role in filling the financing gap. However, a business environment conducive to investment needs to be created to attract private sector participation in regional projects. Commercially attractive and bankable projects need to be prepared by mitigating, guaranteeing, and removing additional risk and uncertainties involved in regional projects where possible. This calls for establishing effective institutional mechanisms, both nationally and regionally.

#### *4.5 Conclusions*

Increased infrastructure investment for Asian connectivity is crucial for promoting balanced, sustainable, green, and inclusive growth. It can improve national and regional competitiveness and productivity as well as act as a new engine of growth and is a key poverty reduction measure. Looking to infrastructure as a counter-cyclical investment strategy has proven successful to fiscal packages working to stimulate the region's economies back to higher growth paths and make up for temporary declines in private sector investment. Coordinating this national infrastructure spending toward regional infrastructure development such as airports, seaports, border roads and cross-border electricity grids can promote regional connectivity leading to sustainable growth.

In view of Asia's enormous untapped economic potential and the ongoing global financial crisis and economic recession, now is the time to build efficient and seamless, environmentally-sustainable connectivity across Asia through regional infrastructure investment in transport, energy, water, and telecommunications for a more competitive, prosperous, inclusive, and integrated region. It is essential for Asia's future that it rebalances its economic growth, focusing the region's economies to capitalize on its high savings rates by re-directing funds to productive, long-term investments in infrastructure and strengthening and feeding the demand of its rapidly growing middle class consumers through connectivity-induced increases in intraregional trade.

## **5. Promoting Service Sector Production in Asia**

This section considers how Asian countries can change their supply side structure to reduce regulatory distortions that are overly favorable to exports and rebalance regulations to promote greater development of the nontradable sector. Park (2009) has argued that export-led growth may be good for Asia but an export-led growth strategy is not. An export-led growth strategy implies that the incentive structure is biased in favor of exports, for instance through subsidies to exporters or an undervalued exchange rate. Export-led growth, on the other hand, occurs when a country's exports grow despite a neutral incentive scheme. An export-led growth strategy implies a misallocation of resources to the tradable goods sector.

Park (2009) observed that, apart from China, most East Asian economies have now adopted neutral incentive schemes. In the case of China there are numerous subsidies that favor production and exports.

As Huang (2009) noted, these subsidies include an underdeveloped social welfare system that lowers employers' labor costs, a Chinese yuan that is undervalued, artificially low land prices and real interest rates, administered prices for fuel and electricity, and environmental laws that are not rigorously enforced. Huang (2009) estimated that these factor market distortions provided a subsidy to producers of almost 2 trillion renminbi (7 percent of GDP) in 2008. These subsidies transferred resources to the corporate sector and increased their profitability.

If these subsidies were removed and Chinese enterprises faced higher prices for resources, land, electricity, and other items then their global competitiveness would decline. This would lead naturally to a reduction in China's production of tradables.

To rebalance growth, it is thus necessary to remove policy distortions that had favored the tradables sector relative to the nontradables sector or manufacturing over services. Removing regulatory distortions in services in Asia would also create a more open, efficient, and competitive environment for services provision. This would lower the cost of consuming these services and thereby increase domestic demand. Moreover, because services like transportation or telecommunications are inputs into industrial production, productivity growth in services will attract FDI, enhance productivity growth in other sectors of the economy, and thus contribute to long-term economic growth.

Services have long been considered non-tradable because unlike goods that can be packaged and shipped anywhere, services used to be supplied and consumed only via face-to-face transactions. For example, haircuts or massages or obtaining bank loans require proximity between consumers and suppliers. Advances in information and communications technology (ICT), however, have made many previously nontradable services tradable across borders.

Today, many so-called *modern impersonal progressive services* which include communication, banking, insurance, and business related services are conducted online. In addition, many other services are being transformed into this category. Some parts of legal services are now offshored. Medical check-ups may still be done face to face but x-ray results may now be read by a radiologist located in a different country. Accounting services can, likewise, be done by accountants located in another economy. Indeed, the globalization and digitization of many processes have expanded: from completing tax returns to more sophisticated financial research and analysis; from answering and making calls to remote management and maintenance of IT networks.<sup>16</sup> Nevertheless, though there is a trend towards more 'impersonal' services, as yet, the service sector as a whole remains dominated by 'traditional personal services' including wholesale/retail trade, hotels and restaurants, beauty shops, transport, and even utility services (electricity, water, energy). Though in theory these services can also be traded, in practice significant barriers exist that prevent them from being freely exchanged. Thus, to the extent that these sectors constitute a huge part of the service sector, it is correct to regard services as still largely non-tradable.

Interestingly, for the service sector as a whole and especially for traditional personal services, trade means that service providers have to either move to where demand is located (e.g. barbers going to another country to provide haircut services, or

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<sup>16</sup> See World Bank (2009) for an in-depth discussion of the services revolution.

foreign company establish a subsidiary in another country) or the demanders of the services have to move to the suppliers of services (customers go to another country to get a haircut). In GATS parlance, these are the so-called modes of service supply. The movement of natural persons to supply a service is mode 4, the establishment of commercial presence to supply a service is mode 3, the movement of consumers to another country to buy a service is mode 2, and the cross border trade in services that usually take place via telecommunications networks is mode 1.

For each of these modes of supply, there are many regulatory issues that act as barriers to services trade.<sup>17</sup> For example, mode 4 is saddled by a myriad of migration issues that prevent, say, an IT engineer from physically servicing foreign clients. Mode 3 is hindered by equity restrictions on foreign investments. Even mode 1 or cross border trade can be restricted by, say, consumer protection rules. This is not to say that these regulations are necessarily bad. Some are clearly necessary, such as regulations to protect consumers or to monitor bank risks. However, many regulations tend to protect incumbents in the sector, prevent new entrants, particularly foreign entrants, create monopoly rents for the incumbents, and deprive consumers the choice of more efficient services.

For instance, the maritime industry is still characterized by imperfect competition manifested in exemptions from antitrust law for liner conferences, cargo reservation schemes, restrictions on foreign ownership of ports, and bans on foreign participation in cabotage. This limits the gains from trade liberalization in goods as shippers take advantage of their market power through higher prices (François and Wooton 2006). Similar effects have been found in OECD countries for the distribution sector where policies regulating operating conditions (employment, operating size, etc.) have generated increased business cost and inefficiencies (Kalirajan 2000).

If service sector development is important for growth rebalancing, what are the broad policy suggestions that can help towards this end?

#### *a. Increased Attention to Education*

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<sup>17</sup> In general, barriers to services trade are classified in terms of whether they restrict market access (e.g. policy that limits the number of service providers) or whether they specifically discriminate against foreign service suppliers by not offering 'national treatment' to all providers (e.g. policy that limits foreign equity ownership). Many regulatory restrictions can reduce competition and efficiency in services sector.

The services sector is, generally, more skill-intensive than manufacturing or agriculture. It thus has higher educational requirements than other sectors. On average, service workers have gone to school for many more years than workers in other activities (Bosworth and Maertens 2009). Particularly in 'modern service' industries, workers need high levels of education. Undoubtedly, India's success in ICT-enabled services would not have occurred without the presence of well-educated engineers who can speak English well.

Other Asian countries can replicate India's success in graduating trained engineers from its Indian Institutes of Technology. The skilled Indian professionals were able to establish connections with foreign companies and convince them to locate operations in India. The presence of a critical mass of trained engineers was, undoubtedly an important factor in foreign companies' decision to invest in India, and from there to export ICT services to their headquarters in the home countries and elsewhere.

Since education, training, and human capital formation are long-gestation projects, it is important for Asian governments to assign high priority to these tasks in order to be competitive in the global market. Government investments are necessary to improve access, especially in elementary and secondary education. In China, for instance, many families are so poor that they cannot afford to send their children to school. Providing educational opportunities for rural children and for the children of migrants would pay high returns over time. Government investments to enhance the quality of tertiary education would also yield large dividends. The private sector can also play an important role by partnering with government in curriculum design and establishment of standards, especially in IT and engineering fields.

India again provides a model for other countries in the region. The ICT industry and the government cooperated in designing the curriculum and establishing standards for university and post-graduate training and education in order to increase the supply of skilled IT professionals.

Governments should review regulations in educational services that bar the entry of education service providers, particularly from the private sector. To the extent that entry of foreign education service providers can also improve standards and introduce competition in the sector, the government should consider more openings in education services either through FDI or through distance education. While the movement of Asian students abroad to obtain higher education has allowed them to bring human capital

back to their countries, one can still ask whether more postgraduate studies may now be offered in the home country to increase the number of those with specialized skills instead of relying on the few who have the luck, resources, and talent to go to Europe or North America to obtain higher degrees. More Asian universities should aim to provide world class postgraduate education. Removing restrictions on FDI in educational services and becoming more open to collaborative or jointly delivered programs with good universities abroad would help Asian universities produce more professionals who can compete in the global economy.

*b. Modernizing Infrastructure Services*

Another lesson from India is that it is crucial to lower communication costs in order to succeed in ICT industries. To this end, Asian countries should review telecommunication regulations. In particular, competition policy reforms should be enacted to make this and other markets more contestable and efficient and better able to deliver low-cost services. This, in turn, would increase ICT penetration and raise productivity not only in the services sector but also in the manufacturing and agriculture sectors.

As discussed in the previous section, a government program of infrastructure investment on constrained areas such as power, ports, roads, and mass transit should be formulated to help boost private sector investment and strengthen the foundation of long-term productivity. These logistics services industries have high linkage effects on other economic sectors so the economic and social returns to infrastructure investment will undoubtedly be high.

*c. Upgrading of Health Services*

Improving the quality of health services can also increase productivity. In addition, providing the population as a whole with good, reliable, and affordable healthcare promotes social equity. Further, by improving hospital facilities and healthcare services, Asia can attract foreign patients to undertake specific medical procedure at much lower prices though at comparable levels of quality as in advanced economies. Health services, then, can be an export industry of Asian countries (through mode 2 service supply whereby foreign customers would come to the host country for some medical treatment).

Many Asian countries have already tapped into medical tourism as a way to attract foreign patients. Because treatments can be five or ten times more expensive in the patients' home countries, medical tourism has developed. However, hospital services in many Asian countries need to improve. Encouraging both domestic and foreign investments in this important sector will not only help countries in the region to attract more foreign patients but also improve the quality of services available to domestic patients. This may also cause some of the richer citizens of Asian countries to seek treatment in their home countries instead of seeking treatment abroad.

In sum, domestic regulation and discriminatory policies can create unnecessary costs to the supply of services. Given the extent of restrictiveness of services policies and regulations, there are substantial potential gains from services deregulation and liberalization. Liberalization policy in the services sector (from wholesale/retail trade to power to telecommunications and transport) would precisely take the form of improved regulation, removal of unnecessary discriminatory and non-discriminatory restrictions to market access in various services sector, as well as better governance (i.e., correct regulatory framework and institutional capacity). The improved business environment that this will generate will attract more foreign investments and increase productivity in the services sector, as well as in industrial sectors that use these services inputs.

## **6. Nurturing SMEs as a Strategy to Rebalance Growth in Asia**

### *6.1 The Importance of SMEs in the Economy*

Promoting small and medium enterprises (SMEs) in Asia is important. The rationales for supporting them include: 1) SMEs are more labor-intensive than large enterprises (LEs), and hence their expansion creates more jobs; 2) SMEs often make up the bulk of employment in the economy; 3) SMEs can raise competition and entrepreneurship, and hence boost the economy; and 4) SMEs, if assisted to overcome credit constraints, can be as productive as larger firms (Beck, Demirguc-Kunt, and Levine 2005). Moreover, SMEs play an important role in production clusters, production chains, and as subcontractors to the big companies. Developing competitive SMEs could help attract FDI in a virtuous circle. Once countries receive a critical mass of FDI, industrial agglomeration starts taking place, and local SMEs receive further opportunities

to develop and become more competitive. This in turn would attract more FDI. Because of the important role that SMEs can play in rebalancing growth, this section considers issues related to the SME sector.

## *6.2 Potential contribution of SMEs to domestic demand and economic resilience*

SMEs can stimulate domestic consumption through at least two channels. First, many argue that SME expansion would boost employment more than large firm expansion would because SMEs are more labor-intensive. This would theoretically raise disposable income and consequently consumption. A recent ADB report (2009) showed that over a five year period, SMEs accounted for a higher proportion of employment growth in the Republic of Korea as compared to large enterprises, but conversely in Philippines, SMEs recorded negative employment growth while large enterprises recorded positive growth. Nevertheless, given that SMEs account for a large proportion of employment in Asia, it can be argued that strengthening SMEs is likely to have a significant impact on employment and hence consumption.

Second, entrepreneurs and SMEs are sometimes thought of as one of the main channels through which new technologies develop. This is because of their ability to exploit new technologies, and to respond quickly to changing market needs. There hence exists considerable scope for governments to intervene to help SMEs adopt new technologies and to innovate as part of efforts to diversify industrial structure. While lowering production costs and raising product competitiveness may be important motivators, regulations can also play a critical role in influencing the incentives to adopt new technologies. For example, SPRING Singapore, the government enterprise development agency, has introduced a range of measures to boost SME innovation, such as funding support for capacity building, and one-stop centers offering technology consultancy and practical, downstream technology platforms.

Countries with stronger small and medium enterprise sectors have been generally hypothesized to be better at coping with business cycle swings or external shocks, as the sector is regarded as being quick at adapting to changing circumstances.

Much evidence has been found supporting this view of SMEs as shock absorbers. In Indonesia, the data seem to suggest that SMEs weathered the 1997 Asian financial crisis better than large enterprises (Berry, Rodriguez, and Sandee 2002; The Asia

Foundation, 2001). A study by Wengel and Rodriguez (2006) found that over the period of 1996 to 2000, exports by small firms (those with fewer than 100 workers) grew by 83 per cent, while those of the largest enterprises fell by 10 per cent. Illustrating SMEs' contribution to the Indonesian economy, the sector's share of total industrial exports increased from 28.4 per cent in 1996 to 34.4 per cent in 2000.

All in all, SMEs possess inherent advantages that allow them to be more adaptable than LEs. Crises present short-term opportunities for structural adjustments by tearing down barriers. SMEs would be better able to seize these opportunities if there are incentives to exit from low-opportunity areas without incurring significant costs. Hence, the key is to focus on building productive and entrepreneurial capacities and a conducive environment rather than on expanding the SME sector *per se*.

### 6.3 *The Current Situation Regarding Government Policy Toward SMEs*

Almost all Asian countries have explicit policies aimed at creating a conducive business environment for SMEs to develop. However, while a discussion of the effectiveness of crisis response measures for SMEs is beyond the scope of this paper, what is important to point out here is how virtually none of the countries have conceptualized the measures to assist SMEs in terms of longer-term aims such as building a viable post-crisis economic model. A more qualified assessment, however, must not view the measures on their own, but as part of the countries' broader, longer-term SME promotion policies. The main policy areas have been: 1) access to and cost of finance; 2) training and consultancy; 3) access to information such as market research, government policies, and technical information; and 4) assistance in technology adoption. Issues related to finance are discussed in Chapter 6.

Although these policies are envisioned with both short and long term goals in mind, some sort of goal displacement seems to have occurred. While short-term goals such as raising employment have generally been constantly emphasized, longer-term goals such as creating a more competitive and entrepreneurial economy have often been forgotten as nurturing the SME sector increasingly comes to be seen as an end in itself, instead of a means of building a stronger economy. This can at least partially explain the lack of cohesiveness between policies. A 2007 study on SME policies in East Asia (ERIA, 2007) found that in many cases, SME policies had contradictory objectives, such as protecting and promoting SMEs at the same time. Another recent work pointed

out conflicts between social and economic objectives, which have resulted in many programs suffering from lack of focus in identifying key sectors along with financing constraints (ADB, 2009). Further, many of these policies were crafted within an export-led growth framework, which will be less relevant in the post-crisis world. In the future, Asian economies need to rebalance growth toward other demand sources. This will inevitably require a shift in SME policies. Thus, there is much scope for SME policies in the region to be re-conceptualized with new long-term goals.

A comparison of the SME sectors in Taipei, China and Republic of Korea after the 1997 Asian crisis demonstrates the importance of government policies. Although Korean firms were subject to more external impacts and turbulence than their Taiwanese counterparts, they seem to have performed better in the period immediately after 1997 (Hall and Harvie 2003). This can be partly attributed to the Korean government's heightened commitment to SMEs in mid-1998, and the creation of a framework of SME policies aimed at helping SMEs overcome barriers and supporting structural reforms and technology development (Gregory, Harvie, and Lee 2002).

Another key factor in explaining the ability of Republic of Korea's SME sector to cope with the crisis is the government's efforts to restructure the financial system in the 1990s (Hall & Harvie, 2003). Examples of SME-friendly reforms that were made include easing regulations on entry barriers and business activities; allowing foreigners to purchase long-term non-guaranteed bonds issued by SMEs; and introducing measures to increase the availability of credit (Oh & Park, 2008).

#### *6.4 Proposals for Re-conceptualizing SME Policies*

Asian governments can harness the SME sector's potential by reforming their SME policies. Specifically, policies should be conceptualized within a strategic, broad vision to increase productivity and entrepreneurship and to diversify industrial structure. Such a re-conceptualization would have significant implications on policy from planning to implementation to evaluation.

Governments should consider enacting a holistic and long-term plan to nurture SMEs. Such a plan would set a clear direction for the promotion of SMEs, and hence help maintain coherence between policies. The plan should state goals and guiding principles, define of the role of the SME sector in society, and include a blueprint identifying implementation mechanisms such as oversight, monitoring and coordinating bodies. The plan should also be supported by a commitment of resources over a

substantial period of time. Governments should set up over-arching high-level planning and coordinating bureaus or agencies such as SPRING SINGAPORE with a view to drawing up long-term plans and balancing short and long-term measures.

To improve their effectiveness, SME policies should be planned with other complementary policies in mind. Also, to achieve substantial progress in rebalancing growth, SME policies should go hand in hand with other policies. Institutional support has already been mentioned. For instance, to create a more innovative and entrepreneurial SME sector and to attract investment, steps should be taken to reduce barriers to investment and to improve the investment climate. Investment would not only bring in new technology and resources to SMEs, but also raise aggregate demand.

## **7. Green Growth**

### *7.1 Need For and Benefits of Green Growth*

Asia's exports have benefited from artificially low energy prices and from environmental regulations that have not been rigorously enforced (Huang, 2009). As a result, environmental degradation and ecological dangers have multiplied. Since the economy and the environment are closely interlinked, inaction on key environmental challenges such as climate change and unsustainable consumption and production patterns could lead to severe economic consequences for Asia in the future. Economic growth has been the overreaching goal of most Asian countries for past several decades. The emergency of climate change as a global concern has added to and revitalized the urgency of striving to find a sustainable growth strategy, especially in relation to the way fossil fuels underpin and are closely coupled with economic growth. Environmental sustainability can be seen as another dimension of balanced growth, and low carbon green growth offers the promise of providing a mutually reinforcing synergy for reaching a balanced growth path.

A low carbon green growth path offers three main benefits. First, such a move can strengthen national economies. Decarbonising economic growth can help to create jobs, raise skills and boost Asia's competitiveness. A decarbonised Asia could be a world leader in green technology, innovation and growth.

Second, low carbon green growth can help to guarantee energy security. If emerging Asian economies such as the PRC, India and ASEAN countries continue to rely on imported fossil fuels from the Middle East, Africa and Russia, then SMEs and

households will be increasingly at risk of losing their energy supply or paying widely fluctuating prices. Future economic development requires energy from a wider range of more dependable sources, and a green growth path provides the potential for developing technology for such sources and disseminating it. And third, green growth will help us to protect our natural resources for future generations. The reckless exhaustion of resources and accumulation of pollution can impose enormous social costs on future generations.

## *7.2 Policies to Support Green Growth*

These concerns justify government action to support investment in low carbon green growth measures. Many countries recognize this: a small but significant share of the additional public spending in short-term economic stimulus packages announced to date is directed at energy efficiency and clean environment either direct investment or fiscal incentives for the uptake of low-carbon technologies and adapting green services (Thampapillai, 2008). These moves are a step in the right direction.

However much more needs to be done. The investment needed to put the economies in low carbon green growth pathways far exceeds the additional investments that are expected to occur as a result of these stimulus packages (Barbier, 2009). For example, elements of a green recovery program proposed for the Republic of Korea are incorporated into the \$86 billion fiscal stimulus plan. But the full green economic recovery program calls for a \$100 billion initiative over the next several years. Relative to their recent announcements, governments should be looking to increase the level of new funds that have to be sustained each and every year for decades to commit actions that exploit the opportunity the financial and economic crisis presents to improve social conditions (Pollin et al, 2008). The expenditures could be paid for with proceeds from carbon pricing, the elimination of fossil fuel subsidies and tax breaks for investment in cleaner production. This will also produce a permanent shift to a development trajectory that is greener. Hence a long-term commitment that extends well beyond the limited time horizon of the economic stimulus packages is needed. Strong coherent policies promoting more radical innovation and the widespread application of existing green technologies and services that support eco-restructuring of high impact sectors are needed.

To achieve this transformation, Asian governments should:

### *1) Scale up fiscal support for investment in renewable energy technologies*

According to UNEP (2009), renewable energy generates more jobs than employment in fossil fuels. Globally, projected investments of US\$630 billion by 2030 would translate into at least 20 million additional jobs<sup>18</sup> in the renewable energy sector: 2.1 million in wind energy, 6.3 million in solar photovoltaic, and 12 million in bio-fuels related agriculture and industry. In comparison, total employment of the oil and gas, and oil refining industries in 1999 was just over 2 million jobs (Anbumozhi, 2009).

Governments should ensure the green energy business and energy service companies and the wider environmental sectors such as pollution control and waste management will have secured access to finance. In addition, governments should provide fiscal incentives for the renewable energy sector, including direct spending on R&D, on order to accelerate rapid growth in coming years. To correct the long standing bias against the development of renewable energy, governments should reform the massive subsidies provided for the production and consumption of fossil fuels, which amount to a considerable part of GDP.

### *2) Promote investment in energy efficiency improvements for innovations and job creations*

In Asia, nearly half of the population is directly employed in the manufacturing and construction sectors. In times of economic crises, economic stimulus measures are frequently focused on construction investment – which is constantly in demand due to population growth and increased standard of living enjoyed by the middle income group (Tourk, 2004). At the same time, buildings and factories are responsible for about one-third of green house gas emissions (Shrestha et al, 2008; IEA, 2008) globally, 40% of resource use, 30% of solid waste generation and 20% of water consumption. (WWI, 2009).

Technologies and material to improve the energy efficiency are commercially available at competitive prices. To achieve a wider use of these technologies and green services, there is a need for investments in skill development and local capacity building to increase the supply of and access to such technologies, materials and new business

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<sup>18</sup> There are several studies quantifying, estimating and projecting potential employments around the world. Inevitably, there are substantial data gaps at regional level. Governments should commission in-depth modeling and econometric efforts to analyze not only direct employment related to renewable energy generation but also related to indirect employment in related service sectors. Attention also needs to be given to disaggregating data on the basis of sub-regional level to reflect the varying potentials.

models (Stoughton and Anbumozhi, 2009). In addition there is a need for appropriate institutions to support the implementation of appropriate building and standards and skill development.

### *3) Promote a shift towards green transport*

One way to promote green growth in the transport sector is to foster a drastic reduction in automobile fuel consumption and a shift from fossil fuels to green sources of energy. Public policies can facilitate this shift by scaling up fiscal incentives such as tax credits for consumers to switch to fuel efficient and non-polluting two wheelers and cars (WEF, 2009). They can also apply regulatory measures to encourage the industry to speed up the shift. In Japan, US and Europe over one? million jobs are found in green auto-related sectors (Iino and Alva, 2009).

Apart from investing in green vehicles, there are large scale opportunities in improving public transportation in large cities. Policies should foster alliances amongst vehicle manufacturers, urban commuters, and energy service companies, railway operators to assess current public transportation systems, determine the cost of system changes or improvements, and identify alternate management options.

### *4) Launch eco-efficiency revolution in production networks.*

Global production networks have expanded rapidly in Asia, but in many cases they comprise SMEs whose main strength is low labor costs. Assisting them to move towards improved eco-effectiveness depends on provision of technical assistance to suppliers by large customer firms at national or international level. This assistance shall focus on identifying process or product improvement opportunities with both environmental and economic benefits. The new assistance for supply chain eco-efficiency can differ from a typical pollution prevention or cleaner production audit, in which the former seeks to identify opportunities of benefit to both the supplier and customer as both parties commit to evaluate changes in supplier specifications and customer to provide assistance in implementing changes. Poor access to credit, support and technology are cited as problems with the growth and development of green production networks (Sturgeon, 2002)

Policy initiatives towards flexible or mandatory credit subsidies by lending institutions and guarantee for technology transfer by international buyers, performance based general permits or licensing scheme and social commitments, shall facilitate such

production networks to become environment friendly (Anbumozhi and Kanda, 2005) . The role of enabling pro-active policy framework is of paramount importance to any such green efforts to get institutionalized and incorporated into routine industrial operations. A pro-active policy framework does not refer to simply making a few provisions such as tax rebates and market access in the existing system. Nor does it mean enacting a brand new, stand alone market based acts – that acts incentives for particular approach and/or regulatory acts – that mandates specific corporate behavior. It requires interweaving both to make them uniformly supportive and favorable to eco-restructuring of high impact sectors.

PETER MORGAN  
コメント: So what does it mean?

*5) Implement environmental fiscal reform to discourage polluting, inefficient industries and wasteful use of scarce resources.*

Environmental regulation can encompass a wide range of taxation or pricing instruments, such as charges on air & water pollution, taxes on overexploitation of natural resources, unsustainable material consumption, and the reform of perverse subsidies. The basic idea is to internalize the externalities associated with pollution and resource waste, so producers face the full social cost of their activities. The funds raised from such pollution taxes can be channeled to fund other environment friendly social development projects, such as incentives for sustainable use of natural resources and materials, pollution reduction, and investment in clean technologies and practices, as well as expanding safety nets for the poor.

The potential benefits of these reforms have not been exploited, partly due to a concern about the loss of competitiveness. Recent studies (Shrestha et al 2008, Bustamante et al, 2009; Aghion et al, 2009) however indicates that losses of competitiveness have been relatively small and in fact, competitiveness can be improved through cost internalization and the consequent increases in efficient and reduction of emissions and pollutions.

**8. Conclusion**

This chapter considered real sector issues related to economic rebalancing in Asia. It argued that Asian economies should move away from growth driven by excessive exports to developed economies.

Rebalancing should take place on both the supply side and on the demand side. On the supply side, the best way to rebalance growth is to increase productivity. On the demand side, producers in the region should allow the 930 million middle class consumers in Asia to function as an engine of growth.

To increase productivity, developing Asian countries should leverage production networks to graduate to higher value-added, knowledge-intensive activities. They can accomplish this by investing in human capital to provide workers with marketable skills, implementing appropriate R&D policies to enhance the technological capabilities of firms, and maintaining FDI-friendly environments to nurture industrial agglomeration and facilitate technology transfer. An FDI-friendly environment would include consistent and coherent enforcement of laws and regulations at all governmental levels and the maintenance of stable macroeconomic fundamentals. In addition, a key way to attract FDI is to lower the service link costs between geographically separated production blocks. These can be lowered by implementing a region-wide free trade agreement, improving intra-regional infrastructure, and developing competitive service sectors and SMEs.

A region-wide FTA should include full cumulation of ROOs to overcome noodle bowl effects. Infrastructure investment can be facilitated if governments, multilateral development banks, and bilateral financial institutions work together. A more open and competitive service sector would be promoted if policymakers removed distortions that favor manufacturing over services. SMEs could be strengthened if Asian governments establish high-level coordinating agencies such as SPRING SINGAPORE and develop long-term holistic plans to nurture SMEs.

Many of these steps would also help Asian firms to connect to new sources of demand. For instance, improving infrastructure and implementing a region-wide FTA would give firms better access to consumers in Asia. In addition, raising worker productivity would increase labor income, raising the long run purchasing power of consumers in the region.

There is also the possibility of a virtuous cycle developing. Nurturing competitive SMEs and service sectors and investing in infrastructure would attract FDI. Once countries receive a critical mass of FDI, industrial agglomeration could start taking place. This would give local SMEs and service sector firms lots of opportunities to develop and become more competitive and provide governments with more revenue to invest in

infrastructure. This would in turn lead to more FDI inflows and more technology transfer to local firms.

To ensure that the resulting growth is sustainable, it is necessary to make it greener. This could be done by providing fiscal support for investment in renewable energy technologies and by promoting eco-friendly industries.

This chapter has thus considered how Asia can rebalance by increasing productivity on the supply side and by targeting regional consumers on the demand side. Although these changes would be difficult in the short run, in the long run they would allow workers in Asia to earn more and consumers in the region to enjoy more of the fruits of their labor.

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