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AN EAST ASIAN RENAISSANCE

IDEAS FOR
ECONOMIC
GROWTH



INDERMIT GILL
HOMI KHARAS



THE WORLD BANK

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An East Asian Renaissance: Ideas for Economic Growth

Indermit Gill and Homi Kharas

Together with

Deepak Bhattasali, Milan Brahmbhatt, Gaurav Datt,
Mona Haddad, Edward Mountfield, Radu Tatu, and
Ekaterina Vostroknutova



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The International Bank for Reconstruction and Development /
The World Bank
1818 H Street NW
Washington DC 20433
Telephone: 202-473-1000
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E-mail: feedback@worldbank.org

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Overview

A Renaissance unfolds

Less than ten years ago, in 1997-98, a financial crisis brought five economies in East Asia to their knees.¹ Many predicted that the structural weaknesses that the crisis laid bare—corruption, cronyism, nepotism—would condemn the region to stagnation as had happened in Latin America after a debt crisis in the mid-1980s.² Emerging East Asia was expected to lose years of growth, just as Latin America had lost a decade. Instead, the growth record of the emerging economies of the region since 1998 has been remarkable: gross domestic product has almost doubled, growing by over 9 percent per year to reach \$4 trillion in current dollar terms by 2005.³

Other indicators of performance are equally impressive. Exports have grown to one-fifth of the world's total, or over \$2 trillion per year, making emerging East Asia one of the most open trading regions in the world. The region is the largest destination for foreign direct investment and has \$1.6 trillion worth of foreign exchange reserves. Its capital markets have grown and domestic financial sector assets amount to \$9.6 trillion. There are 300 million fewer people living in poverty (measured as per capita expenditures of at least two dollars a day) today than there were in 1998. A middle class has emerged, with a lively democratic voice in economic affairs. Business-friendly reforms are moving ahead throughout the region, and confidence in economic prospects is high.

An economic renaissance is unfolding in the region. Just as the renaissance in Europe was a period of intellectual discovery that produced new ideas and economic development, innovation is getting similar attention in East Asia (see Box). The pace of change in trade and finance, ideas and technology, urban development, household finances, and demands on the public sector is breathtaking. If current growth trends prevail, by 2030 East Asia will be as large in terms of the world economy (43 percent) as it was in 1820, around the time that it began a long decline in global importance.⁴

In a world where development seems so ephemeral, how is it that a dozen countries in East Asia (Myanmar and North Korea are the sole exceptions) have all been successful? Common economic characteristics cannot be the whole explanation, since the diversity among countries in the region is enormous. Emerging East Asia includes China, with 1.3 billion people, and Mongolia with 2.5 million. Per capita incomes range from \$24,000 in Singapore to \$400 in Laos. Hong Kong (China), China is perhaps the most *laissez-faire* economy in the world, while Vietnam remains one of the few remaining socialist economies. What is going on? Is there something special about being in East Asia that makes these economies grow?

¹ The crisis countries were: Thailand, Indonesia, Malaysia, the Philippines and South Korea.

² See *Rethinking the East Asian Miracle*, Stiglitz and Yusuf (2001).

³ East Asia refers to the ASEAN countries, plus Mongolia; China and Hong Kong (China); Taiwan (China); and the Republic of Korea, plus Japan. Emerging East Asia refers to East Asia minus Japan. Developing East Asia refers to emerging East Asia minus Hong Kong (China), Korea and Singapore.

⁴ Maddison (2003).

Box 1: Renaissance, then and now

The European Renaissance of the 15th century began in the thriving city-states in Italy and spread rapidly to Central and Western Europe. It was marked by the absorption of knowledge, especially mathematics, from Arabia and India, the importance of living well in the present, and an acceleration in the exchange of ideas due to the advent of printing. The Renaissance marked the advent of broad structural forces of urbanization, globalization, and new modes of production.

In retrospect, many historians believe that many of the undesirable social conditions associated with the pre-renaissance middle ages—poverty, strife, corruption, and persecution of minorities—may have actually worsened during the European Renaissance. While the well-off viewed the changes as a break from the middle ages, much of the rest of the population saw it as a time of intensification of social maladies.

The East Asian Renaissance which is unfolding is also marked by the accelerated absorption of knowledge (from America and Europe), a focus on living well, and quicker dissemination of ideas due to the computer, the general purpose technology that rivals the printing press. The lesson from European history is that for a renaissance to qualify as a golden age, these changes have to be accompanied by greater social cohesion.

Source: Cannistraro and Reich (2003).

There is a large literature that has attempted to answer this question. Perhaps the most widely quoted recent study is by the World Bank, which published *The East Asia Miracle* in 1993. *Miracle* sought to explain the superior economic performance of eight high-performing Asian economies (HPAEs) and concluded that “in large measure the HPAEs achieved high growth by getting the basics right.” But it went on to say that fundamental policies were only part of the story and that “in one form or another, the government intervened—systematically and through multiple channels—to foster development.” *Miracle* concluded by noting that a willingness to experiment and adapt policies to changing circumstances is a key element in economic success. This insight provides the rationale for our study. How should governments in East Asia today adapt their policies to reflect the profound changes seen in the region and the world since 1990?

A changing economic landscape

In 2006, it is clear that the economic landscape of East Asia is quite different from that of 1990. The region is much richer than it was, so the size of the regional market is larger. Individuals are also richer and consumer durables demand is growing. At the same time, the economic center of gravity—production, trade, and finance—has shifted towards China and North East Asia. Regionalism—formal economic trade agreements between two or more countries (regional trade agreements or RTAs) within East Asia—has risen sharply, with 24 new agreements concluded in the last ten years and 34 more under negotiation. In part, regionalism has its roots in the currency and financial crises of 1997-98, a determining moment when many policy makers saw for the first time the risks that come with the benefits of globalization. But perhaps more significant is a trend towards regionalization—a market-driven process that has seen trade, finance and innovation within East Asia accelerating, at the same time as globalization—integration with the world at large—has increased.

East Asian countries that successfully integrated into the global economy are now integrating regionally. Remarkably, this regional integration is happening in addition to, not at the expense of, global integration. And in many aspects, this second integration is happening at an even more rapid pace than the first. Individually, East Asian countries appear to have learned the lessons of the economic crisis well and have fortified themselves for a continued international integration.

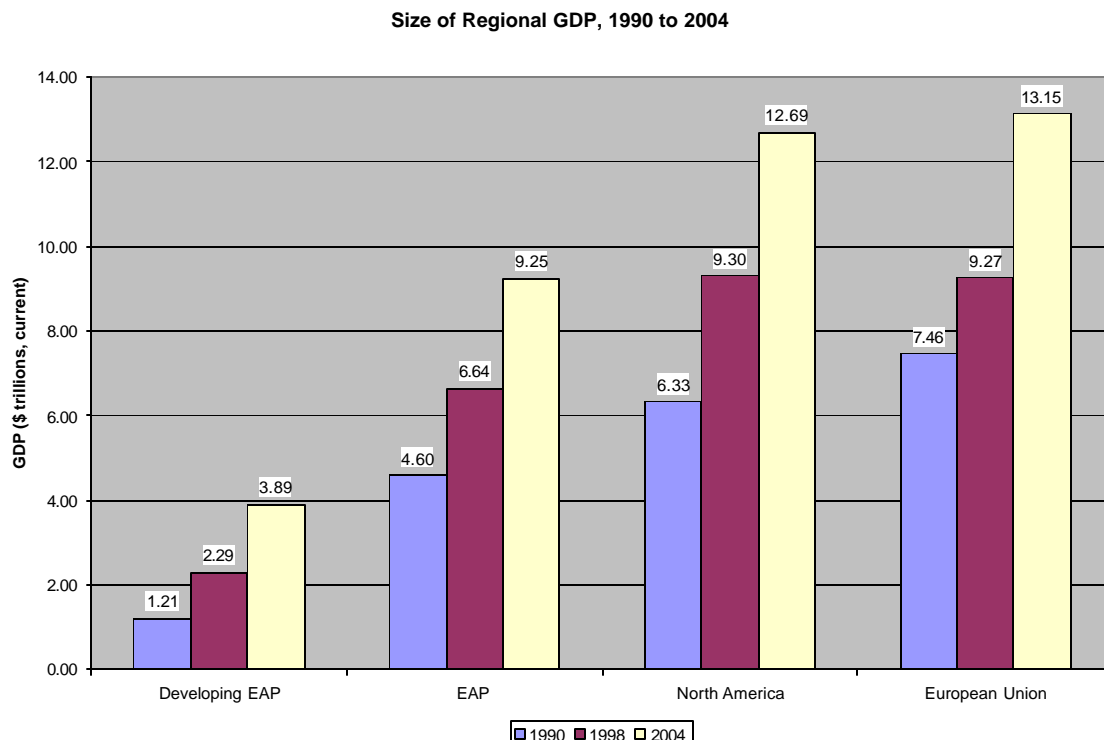
Collectively, these countries have sought regional integration to stay globally competitive. As many of the countries have reduced poverty and reached middle-income levels, however, rapid economic growth driven by this international integration has been accompanied by growing domestic friction stemming from rising inequality, environmental strains, and corruption. Just as East Asian countries have kept their economies competitive by augmenting global integration with regional integration, they must sustain this growth through a third, domestic, integration aimed at keeping their societies cohesive.

A richer region with a growing middle class

In 1990, emerging East Asia had a GDP of \$1.2 trillion. Today it is \$4 trillion. With Japan, Australia, and New Zealand added, the region has a combined GDP of \$9.5 trillion, close to one-quarter of the world's output. With this growth, the region has become more middle income. Once Vietnam reaches middle-income country levels, which could happen as early as 2010, more than ninety-five percent of East Asians will inhabit a middle-income country. Looking at it from a somewhat different perspective, more than two-thirds of East Asians live on more than two dollars a day (adjusted for purchasing power parity), compared with just one-third in 1990. This transition of spending power is changing the pattern of economic growth, with more demand for consumer durables, non-tradable services, and housing, fueled by growing consumer credit.

The fact that East Asia is increasingly a middle-income region with more countries looking for strategies to move to rich-country status is important because the pattern of growth changes as income level changes. Research suggests that two trends are at work in driving the sectoral pattern of growth. On the one hand, as countries get richer there is a demand for a greater variety

Figure 1: East Asia has kept pace despite Japan's stagnation and the 1997-98 crisis



of goods, many of which can be produced domestically, so there is a force towards sectoral diversification. On the other hand, countries only get richer if they specialize in what they do best. Which tendency dominates is an empirical question—researchers speculate that it depends on the extent of scale economies in production compared with the love of variety in consumption.

One recent study shows that countries initially diversify, meaning that value added and employment are spread out more and more through the economy.⁵ But at a turning point that differs across countries but which *systematically* happens at middle-income levels, countries start to specialize in production and employment again. Scale economies in production appear to win out. This suggests that new strategies must be adopted at some point in time by middle-income countries if they are to successfully become rich.

The idea that middle-income countries have to do something different if they are to prosper is consistent with the fact that middle-income countries have grown less rapidly than either rich or poor countries, and this accounts for the lack of economic convergence in the world. Middle income countries, it is argued, are squeezed between low-wage competitors in poor countries who dominate mature industries, and innovators in rich countries, who dominate industries undergoing rapid technological change.⁶

This is the challenge that confronts East Asian countries today, especially those in South East Asia. There is reason for optimism. The Newly Industrialized Economies (NIEs) in East Asia successfully made this transition from middle income to rich, showing that it can be done given the right circumstances and with the right policies. And within East Asia, experience suggests that there is not such a sharp distinction between low-income domination of manufacturing and rich country domination of the knowledge economy. The NIEs remain successful manufacturers, even in quite mature industries, while China and India show that success in the knowledge economy is not reserved just for rich countries. For middle-income countries, it seems the trick is to straddle both strategies.

China is driving regionalization and regionalism

The story of China was left out of *Miracle* because its transition experience was thought of as *sui generis*.⁷ But China is the biggest development story in the world today, and a major economic presence in the region, representing one-half of developing East Asia's GDP and one-third of its exports. Especially after its WTO accession in November 2001, China offers major opportunities as a rapidly growing market for Asian exports. It also presents a threat as a competitor.

Policymakers throughout the region are rethinking national strategies as they adjust to China's rise.

China has a special place in the story of East Asia because of its absolute size, its unusual openness for a continental economy, and its orientation towards the region. China is now the

⁵ Imbs and Wacziarg (2003).

⁶ Garrett (2004).

⁷ Throughout this book, data on China refer to mainland China and Hong Kong (China). Because these two economies are so closely linked with each other, a bias in favor of integration would result if they were to be treated as separate entities.

world's third largest trader, and the largest trader in East Asia having overtaken Japan in 2004. For East Asian countries, China has become a major trade partner—it is the second export market for Japan and its largest supplier; the largest export market for Korea and its second largest supplier. China's imports have been growing at about 18% per year for the past decade, and its import-to-GDP ratio has reached 34 percent, a figure triple that of Japan (9 percent) or the United States (12 percent), two other large economies. China sources more than half of its imports from East Asia. It is because of China that more than half of East Asian trade happens within the region, a degree of integration that now parallels the European Union.

Most analysts have concluded that intra-regional trade in East Asia has been market-driven and hence best described not as the product of regionalism but of “regionalization,” the natural by-product of the fact that East Asian economies are among the fastest growing and most open economies in the world.⁸ East Asian countries have been the strongest proponents of multilateral and unilateral trade liberalization and it is only recently that regional trade agreements (RTAs) have proliferated. It appears that this is closely linked to the changing pattern of trade and investment in the region and hence to real economic forces, not because of political considerations favoring regional approaches nor a backlash against globalization following the Asian crisis.

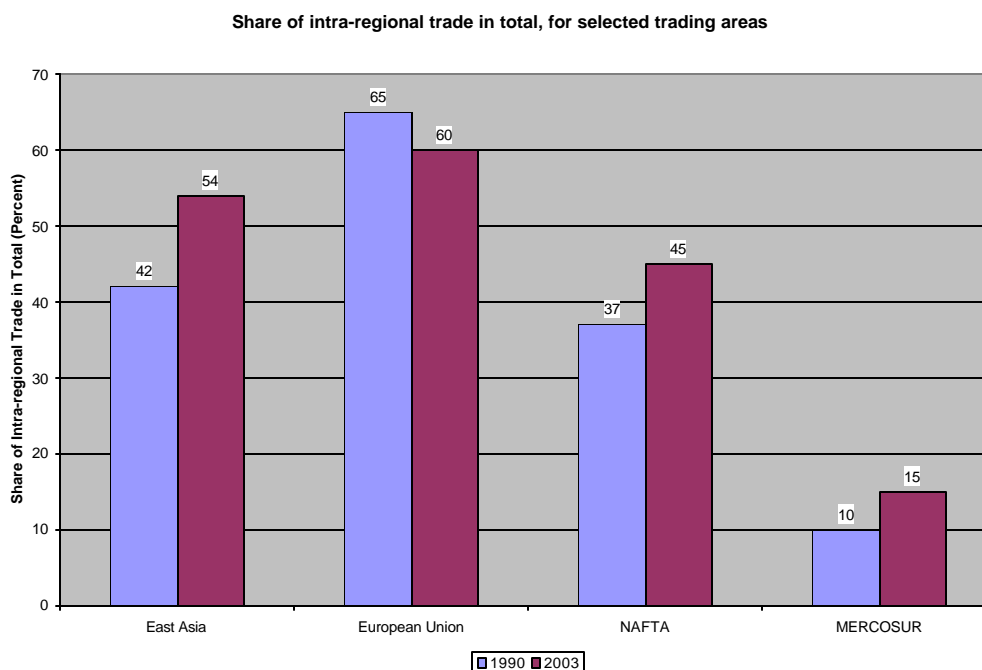
An increasing share of trade in the region is comprised of parts and components, shipped from one country to the next for further assembly in regional production networks.⁹ These production networks started in the mid-1980s after the Plaza agreement and accelerated when China and other East Asian economies started to apply much more favorable policies towards foreign investment. By 1990, foreign affiliates accounted for 30 to 90 percent of total manufactured exports from China and other middle-income countries in East Asia. Japanese multinational companies now send more than 80 percent of their exports from Asian affiliates to other Asian countries, and obtain 95 percent of their imports from Asian plants.

This nexus between trade and FDI became a powerful driver for regionalism.¹⁰ Regional agreements could ensure market access between the countries spanned by regional production networks and permitted deeper tariff cuts—essentially free trade—on components. At the same time, RTAs have sought to reduce obstacles to foreign investment, trade in services and skilled labor mobility, issues that are critical to the establishment of regional production networks, but that have been too sensitive to be tackled in multilateral trade talks. RTAs therefore have the potential to deliver benefits in the future, but in the short time period of operation, they may not yet have had significant impact.

⁸ Kawai (2004); Kharas, Aldaz-Carroll and Rahardja (2007).

⁹ Urata (2004).

¹⁰ Gaulier (2005).

Figure 2: More than half of East Asia’s trade is now within the region

The economic landscape of East Asia has changed profoundly. The region is large in absolute size and income levels have risen across the board. It is more open than ever, with intra-regional trade expanding rapidly. At the same time, East Asia’s share of exports to the rest of the world has also risen, albeit not as sharply. East Asia integrated globally first, and is now integrating regionally. (Figure 2) China is at the center of this development, but the institutional framework for regional cooperation is relatively immature and *ad hoc* arrangements can have costly side effects. Is there something more that can be learned about managing these complexities?

A changing intellectual landscape

In the real world of policy making in East Asia, there is a major debate on regional integration and cooperation, involving trade liberalization and the overly complex “spaghetti bowl” rules of origin in RTAs, tax subsidies for foreign investors, and a new regional financial architecture. At the same time, policy makers are concerned with what needs to be done domestically to manage the stresses associated with integration and rapid growth, including congestion, social cohesion and corruption. For the most part, economists have had little to add to these debates, and have learnt from East Asia’s success more than they have taught. The tried-and-true recipes for economic success that emerge from neoclassical growth models—macro-stability and saving, openness and education—seem inadequate to provide relevant insights into the policy debate. For much of East Asia—Myanmar and North Korea being the exceptions—these principles are important but obvious. Nevertheless, economic thought on development has evolved in the 1990s, and a growing body of empirical evidence suggests that this new thinking is not just a theoretical nicety but has the makings of a powerful paradigm that can help guide practical policy.

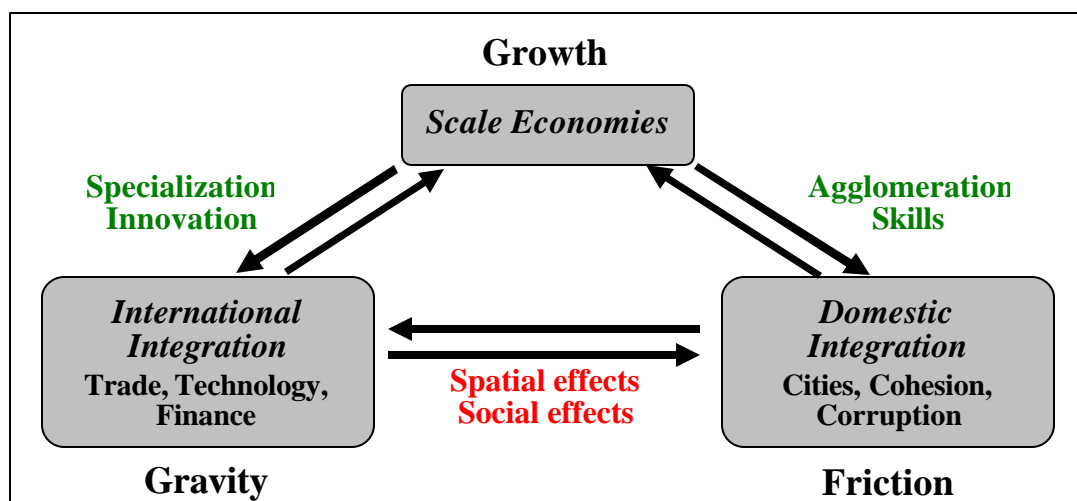
It is instructive to take a short detour to understand modern economic theories that model what gets traded (new international trade theory), what makes rich countries continue to grow rapidly, often faster than poor or middle-income countries (new growth theory) and where growth happens (new economic geography). At their heart, these theories have one element in common: by relaxing the assumption of constant returns to scale and emphasizing scale economies, they are able to handle the complexities of the marketplace in a more realistic fashion. Scale economies refer to the tendency for production costs to fall as the volume of production rises or for product development costs to fall as new varieties are introduced. The ability to model scale economies, in turn, is built on new models of imperfect competition, which allow models to be solved in the presence of increasing returns. For middle-income countries in East Asia, the insights provided can be useful in adapting growth strategies as they get better integrated and wealthier.

Figure 3 presents a summary of the principal forces analyzed in modern theories of industrial organization, international trade, economic geography, and economic growth. Growth occurs as a result of the exploitation of scale economies through specialization and innovation, and is reflected in international integration via trade in goods, money, and ideas. This integration triggers spatial and social changes that impact on domestic integration and the process of urbanization and income distribution. If well-managed, these social and spatial trends, in turn, can feed back into growth through agglomeration and incentives for more rapid skill formation. If managed badly, spatial and social problems can waste all the economic benefits of scale economies in congestion, pollution, social discord, and corruption, sharply reducing the resources available for investment and growth. This report analyzes how these forces and phenomena are playing out in East Asia and what can be done to perpetuate this virtuous circle.

New international trade

New international trade theory was developed originally to explain the empirical fact that more trade takes place between rich countries at similar income levels in goods within the same sectors than between countries with very different income levels and factor endowments. This is of growing relevance in East Asia, as most trade takes place between middle-income countries.

Figure 3: Economic growth in middle income countries



The main innovation is recognition of scale economies as an additional factor in determining what gets exported and what imported. Economists would say that the basis of trade is increasingly both differences in factor endowments, classical comparative advantage, and economies of scale in production, or modern competitive advantage.

This notion that trade is closely linked with new technology and with product diversification is an important departure from the traditional assumption that trade reflects factor endowments. It provides an explanation for intra-industry trade because products with small differences still fall under the same broad industrial classification, yet may be made in different countries and traded for each other. It also provides an explanation for trade in intermediate goods, as there are many more intermediate goods than final goods, so it is in intermediates that a lot of product diversification occurs.

Under economies of scale, trade permits technological advantages to be exploited by increasing the size of the potential market. More trading opportunities therefore encourage specialization in production. At the same time, specialized producers innovate more, and the greater the degree of innovation, the greater the extent of trade. One key insight is that trade often involves the exchange of new or different product varieties and therefore depends on the speed of introduction of new products. If the ability to develop new products depends on the variety of products already in existence, then there can be technology spillovers which drive trade and growth.

New economic growth

The new growth theory starts from the recognition that in standard neoclassical economics, there is little room for the entrepreneur. Entrepreneurs develop new ideas, technologies, markets, and business processes. In doing so, they expect to be rewarded. The key insight of new growth theory is that there must be some economic rent which can be allocated to reward entrepreneurial behavior, but this rent is ruled out under perfect competition with constant returns to scale. To escape this awkward result, neoclassical models have to assume an exogenous growth rate of technology. This means that such models have nothing to say about long-run growth of frontier economies, and exclusively emphasize new capital accumulation for developing countries to reach high-income country levels. In such formulations of the economy, “schooling and investment is all that counts for growth.”¹¹

New growth theory tries to model how innovations actually happen in a real economy. They try to explain the empirical fact that around 60 percent of export growth seems to take place through new varieties, rather than through exporting more of the same goods.¹² The models link the quantity of resources applied to innovation with an output in terms of new ideas and processes, and then in turn link the impact of these new ideas onto growth. Different models emphasize different aspects of these key relationships. The main concepts are that innovation requires effort and that ideas are different from goods and factors in that they can be used simultaneously by many people. And, even when ideas cannot be used freely to produce goods (say because of patent or copyright reasons) they can still be used freely and widely to produce other new ideas.

¹¹ Romer (1994).

¹² Hummels and Klenow (2005).

In any case, as societies accumulate knowledge—the stock of useful ideas—they can grow seemingly without limit. In contrast, there are strict limits to a pattern of growth that is based only on accumulation of people and capital.

The concept of ideas is closely tied to the notion of learning and skills, and so the first versions of endogenous growth theory put a lot of emphasis on education, as the pre-condition for absorbing new ideas.¹³ If the rate of growth of new ideas depends on the stock of human capital, then countries can avoid diminishing returns to investment and continue to grow with capital accumulation. Later versions take this further and disaggregate between primary and university education. They break down new ideas into innovations and imitations, and associate the latter with technological catch-up and basic education, while the former requires higher level university education and research institutions.

But what makes firms innovate and decide to invest in acquiring new technologies? Again the difference between frontier firms and catch-up firms is important. Frontier firms enjoy economic rent from being the best in the business. They have little incentive to innovate unless they are concerned about potential competitors encroaching on their markets. Competition, openness to trade, and deregulation to facilitate new entrants can spur innovation in these firms to ensure they remain on the frontier.

Catch-up firms on the other hand face a different set of incentives. If they can come close to frontier technology by innovating, then the extra profits that accrue make it worth their while to put a lot of resources into the endeavor. But if they are so far behind that the likelihood of earning extra profits is slim, while their existing position is threatened by new entrants, they may react to intense competition by simply giving up innovation completely. The growth effect of new entry is still positive, however, because the new entrants themselves raise productivity.

Importantly, evidence from developed and developing countries seems to support some of the predictions of these models.¹⁴ This evidence suggests that indeed structural reforms, like competition policy, delicensing, trade liberalization, entry and exit, and education attainment can have a direct impact on economic growth by influencing the degree to which firms make an effort to innovate or imitate. What is more, the theory suggests that this impact is conditional on firm circumstances and the nature of the industry. More advanced firms need competition to encourage frontier innovation. But intense competition seems to be less important for imitation. There, what is required is a set of institutions that facilitates implementation and adoption of existing technology.

New economic geography

New economic geography concerns itself with where firms choose to locate.¹⁵ In geography models, firms tend to concentrate production in one location to enjoy economies of scale, and they like to be near their customers and suppliers to reduce transport costs. But once a market reaches a certain scale, it encourages other firms to locate there too, to take advantage of market

¹³ Lucas (1988).

¹⁴ Aghion and Howitt (2005).

¹⁵ Krugman (1998) gives an excellent summary. See also Fujita (1999).

size, giving rise to agglomeration economies. Agglomeration is also associated with more intense competition and easier entry of new firms which can reduce innovation in some instances. But the problem that receives more attention is that agglomeration can also result in external diseconomies, what we term “grime, crime and time costs” in this report. Just as external economies formed a centrifugal force, rising pollution, law and order and congestion in a city result in strengthening centripetal forces that encourage the formation or growth of other cities. In general, the number of cities and their location depends heavily on specific characteristics that are hard to model. What is clear is that ports and other transport nodes have served as the base for cities and, once established, these cities have tended to grow. Transport costs continue to be important in determining the size and nature of cities.

The new economic geography emphasizes the agglomeration economies that come from co-location of firms, and the role of cities in the spread of new ideas and processes. There is particular interest in the role of economies of scale in the production of intermediate goods, which then makes it desirable to locate final goods production in the same place, enhancing the size of the market and in turn encouraging more firms to locate in the same city.

When applied across countries, new economic geography suggests that history matters. A country with a large manufacturing sector already in place would have an in-built incentive for suppliers to locate there to take advantage of market size and access, which reinforces its original advantage. But modelers have recognized that factors of production, especially labor, are not mobile between countries in the same way as they are within a country, and so cost structures may drive firms from larger, high wage centers or countries to smaller, low wage centers or countries. The lower the degree of transport costs the less likely it is that firms will all congregate in the rich country/city.

This is the core of the first attempt to model the shifting location of production in East Asia, put forward in the now famous “flying geese” analogy.¹⁶ In this model, a lead economy (Japan) develops new technologies and production capabilities, but as it develops, it would shift these techniques to economies with cheaper labor. In this way, mature industries migrate from more to less developed economies, while the lead economy specializes in more sophisticated, complex industry. This model was used to explain the evolution of the four Asian tigers—Korea, Singapore, Hong Kong (China), and Taiwan (China), who did indeed gradually take over many of the industries that Japan had specialized in through 1960.

One drawback of the “flying geese” model is that it focused on inter-industry relocation and trade but did not explain intra-industry trade. Nor did it explain why some industries, like garments and textiles, moved quickly to low-wage countries, while other industries, like automobiles did not. And the emphasis on labor cost savings implied an economic determinism, whereby economies would naturally follow a predetermined homogeneous trajectory, which allowed for catch-up but not overtaking and which had a minimal role for policy.

In the new economic geography, by contrast, there is very little determinism. One feature of these models is multiple equilibria, and small changes in initial conditions can have large effects. History and luck matter a lot in terms of which cities and countries are selected as the location

¹⁶ Akamatsu (1961).

for firms. And given the presence of unexhausted economies of scale, the selected areas will have a persistent advantage into the future and an ability to reward workers with higher wages. Small wonder, then, that policy makers are so concerned with national competitiveness.

Distributional consequences

The new theories that are built around economies of scale do not directly address questions of income distribution. These formulations tend to have a ‘representative agent’ and usually do not recognize heterogeneity of firms and workers within economies. This is the aspect that recent research has been emphasizing. In any case, there is no question that income distribution is profoundly affected by whether or not scale economies exist, and the manner in which they are exploited.

At the heart of the distributional impact is the notion that economies of scale allow for the presence of “economic rents,” the surplus above and beyond what is needed to pay the owners of labor and capital. For trade, it is this economic surplus which is required to offset transport costs, especially for intra-industry trade which does not depend on differences in factor endowments. For entrepreneurs, economic surplus allows them to be rewarded for innovation and perhaps represents a source of surplus that can be taxed without distortion for public funding. Similarly, taxes can finance investments in city infrastructure that are needed to exploit agglomeration economies. In each of these cases, the presence of economic rent is a desirable, indeed necessary, ingredient that allows for rapid growth through exploiting economies of scale.

But the distributional impacts are not always positive. Economies of scale may exist in one part of an economy but not in others: economists have argued that they are more likely present in manufacturing and in urban areas, but are largely absent in agriculture or rural areas.¹⁷ If this is true, then it provides one explanation for why urban-rural wage differences can persist.¹⁸ Economies of scale can also result in a premium for skilled workers relative to unskilled workers, especially if skilled workers are key personnel in innovation or imitation which generates temporary excess profits for firms facing imperfect competition. Spatial and social aspects of growth, driven by the exploitation of economies of scale, figure prominently in this report.

Where there is economic rent, there will be economic rent-seeking behavior. As we argued above, licensing of new entrants, exit policy, trade liberalization and competition among incumbents can affect the degree to which firms can extract economic surplus from their innovation efforts. If this is the case, then firms will try to influence government policy to favor their own interests. Economic rents attract rent-seeking behavior.

It is noteworthy that the distributional implications outlined above have little overlap with distributional outcomes in neoclassical models. In those models, international trade would be based on factor endowments. Poorer countries would export labor intensive goods and the return to unskilled labor would be bid up. This model successfully explained East Asia’s growth-with-equity experience and is still the best explanation for describing developments in the poor

¹⁷ Hayami (2006) provides some counterexamples to this proposition, showing how economies of scale can also be prevalent in rural development. But this is an exception, not the rule.

¹⁸ Krugman (1998) shows simulations for regional wage disparities in a model of locational choice.

countries in the region. But neoclassical models just do not seem to give adequate insights as to what is happening today to distribution in the middle-income economies of East Asia.

Avoiding the middle-income trap

Modern growth theory predicts that the East Asia region should witness three transformations as middle-income countries develop: First, diversification will slow down and then reverse, as countries become more specialized in production and employment; second, investment will become less important while innovation should accelerate; third, education systems will shift from equipping workers with skills that allow them to adjust to new technologies, to preparing them to shape new products and processes. These would be the observable outcomes associated with a successful shift in strategy as countries progress through middle income.

In the absence of economies of scale, East Asian middle-income countries face an uphill struggle to maintain their historically impressive growth. Strategies based on factor accumulation are likely to deliver steadily worse results, a natural occurrence as the marginal productivity of capital declines. Latin America and the Middle East are examples of middle-income regions which have been unable to escape this trap for decades.

Exploiting economies of scale offers the way out. But do such economies exist for middle-income countries, on a scale that is sizable enough to make a difference to aggregate economic growth? This section describes key economic developments in the region through the lens offered by the theories based on economies of scale. We argue that the pattern of trade, the flow of ideas and innovations, the new financial architecture and the performance of cities are all consistent with economies displaying a shift to growth based on economies of scale. But so are the distributional consequences—the change from growth-with-equity to growing income inequality within countries—and the concerns about corruption in governments that will be asked to do ever more difficult things to further the social good.

Economies of scale are not easily measured but, when measures exist, it is clear that they are playing a central role in East Asia's success. Electronics, computer and communications industries are all sectors that exhibit sizable scale economies. Economic historians have argued that most technological progress is incremental, taking the form of small improvements.¹⁹ These could hardly give East Asian economies the impetus they need. But certain technological improvements are radical: the steam engine, electricity, and now computers.²⁰ East Asia is at the center of these radical changes. In the short run, as the world's major producers, they stand to gain from the production economies of scale. In the medium term, as users close to the innovators, they stand to gain from quickly learning how to use the new technologies. It is not surprising that in addition to being the world's largest producers of high-tech goods, an East Asian country, South Korea, is also the world's most connected economy. It is also not surprising that it is the East Asian economies that have focused on these technologies that have successfully grown through middle income to become high-income economies in the past generation.

¹⁹ Helpman (2004).

²⁰ These have been termed “general purpose technologies” or GPTs by Bresnahan and Trajtenberg (1995).

Box 2 illustrates this framework with the actual experience of Dongguan, a city in southern China, which is perhaps an extraordinary example of these forces in action. The city has grown by 22 percent per year for the last 25 years; cumulatively, the city's real production is 144 times as big as it was in 1980.

Box 2: Growth, gravity, and friction in the Pearl River Delta: The story of Dongguan, China

In 1978, what is today the city of Dongguan in China's Guangdong province was a collection of villages and small towns spread over 2,500 sq.km. on the Pearl River, midway between Guangzhou to the north and Shenzhen and Hong Kong (China) to the south. The area's population of 400,000 relied primarily on fishing and farming and, while they were far from being amongst the poorest in China, neither were they prosperous. Dongguan today has a population of nearly 7 million. More than 5 million are migrants who work in the thousands of factories that dot the city, churning out a dizzying range of products in such huge volumes that media accounts in recent years have labeled Dongguan the world's factory.

Dongguan's economy has grown at an average annual rate of over 20% in the last two decades. GDP in 2004 was US\$14 billion. If one only includes registered urban residents (as is done in official statistics), Dongguan's per-capita GDP of US\$9,000 in 2004 made it the wealthiest city in China. Even if the city's floating population of migrant workers is included, per-capita GDP in 2004 was still over US\$2,000. The development of Dongguan since the 1970s and, in particular, the last decade, exemplifies, perhaps in exaggerated fashion, the economic forces that have been shaping East Asia's middle-income economies.

Growth: scale economies and agglomeration effects

Location and favorable factor prices undoubtedly played a role in the early growth of Dongguan. For the first decade and a half after China's reforms began, small and medium enterprises from Hong Kong (China) and Taiwan (China) set up manufacturing operations in Dongguan, attracted by its proximity, the availability of cheap land, and a plentiful supply of low-cost labor. But Dongguan's sustained and rapid growth through the 1990s can best be understood in terms of the economies of scale—whether in the production of intermediate goods or differentiated products—and agglomeration effects—within industries, spanning upstream and downstream firms, and across industries—that, because of advances in technology, reduction in transport costs, and improvements in logistics, have come to characterize global production processes.

Internal scale economies are many: a single plant in Dongguan manufactures over 30 percent of the magnetic recording heads used in hard disk drives worldwide. Another produces 60 percent of the electronic learning devices sold in the U.S. market. Yet another produces nearly 30 million mobile phones.

Agglomeration or external scale effects are equally visible. The benefits in the form of knowledge spillovers, lower logistics costs that result from locating close to input providers, as well as export traders have resulted in the development of a number of globally important industry clusters for knitted woolens, footwear, furniture, and toys. But the cluster that has dominated the industrial landscape of Dongguan since the mid-1990s is the telecommunications, electronics and computer components cluster: 95 percent of the parts and components needed for the manufacture and processing of personal computers can be sourced within Dongguan city limits, and in several specific products, Dongguan's factories account for over 40 percent of global production.

Gravity: foreign investment and trade

Dongguan's growth has come from its links with the regional and global economy. The development of electronics and furniture clusters would not have occurred without the involvement of and investment by Taiwanese firms. Similarly, firms from Hong Kong (China) were instrumental in the growth of apparel and toys clusters. More important than the financial investment made by foreign firms—a total of over US\$15 billion in the last two decades—was the technical know-how, knowledge of the market, and relations with customers that these firms provided. The result is that in 2004, Dongguan's exports totaled over US\$35 billion. Imports, mostly parts and components from other countries in East Asia were nearly US\$30 billion.

Friction: income disparities, urban congestion, and corruption

Growth and structural transformation of the magnitude and at the pace that Dongguan has experienced generate frictions that need to be managed. Manufacturing growth is infrastructure and resource-intensive. Dongguan's annual consumption of electricity and water in 2004, 35.2 billion kwh and 1.5 billion cubic meters respectively, exceeded that of many countries. The conversion of land to industrial use puts stresses on the environment. In 2004, Dongguan discharged 225 million tons of industrial waste water, nearly 200,000 tons of sulfur dioxide emissions, and nearly 30,000 tons of industrial solid wastes. Agglomeration can lead eventually to congestion. Land is no longer as cheap in Dongguan as it once was, and labor is no longer as compliant nor as easily available. Shortages of labor, especially skilled labor, are being reported with increasing frequency.

(Continued on next page)

Box 2 (concluded)

It is not only the physical landscape that is transformed. Growth can also fundamentally alter the social fabric and institutional bases of governance. The drive to capture the profits and economic rents associated with scale economies, while central in bringing in investment, ideas and contacts, can also engender corruption and crime. Dongguan, in the 1990s, was often described as having the atmosphere of a “frontier” gold-rush city. No direct statistics are available, but media accounts and case-based research suggest that corruption was part and parcel of doing business, whether in acquiring land for the construction of factories or in facilitating evasion of taxes, labor, and environmental standards. Crime rates were higher than in other parts of China. And the uneven distribution of the economic surplus generated by the growth—attributable in part to market-based incentives that reward individual effort but also in part to uneven influence—has meant large disparities in income, itself a possible source of social tension. Household surveys indicate that mean per-capita income among Dongguan’s 1.6 million registered urban residents was 20,564 yuan in 2004. Successful local entrepreneurs, whose incomes were unlikely to have been captured in the households surveys, undoubtedly earned much more. A typical migrant worker in Dongguan’s factories, on the other hand, earned less than 10,000 yuan, working much longer hours with fewer protections and much less access to public services.

What makes the Dongguan story particularly compelling, however, is the extent to which the city has been striving to address these challenges. Environmental and labor standards are being increasingly enforced: in 2004, 90 percent of the industrial waste water in Dongguan met discharge standards, as did 86 percent of the solid wastes; 93 percent of sulfur dioxide emissions met emissions standards. Through its Labor Bureau, the city is trying to ensure protection of worker rights and to facilitate worker-firm matches. And the city is investing its sizable revenues from land rents and local taxes—over US\$1 billion in 2004—in relieving congestion and improving infrastructure such as roads, port facilities, and industrial parks.

The story of Dongguan in numbers

Average annual GDP growth, 1980-2005 (%)	22	GDP (billion US\$)	14.4
Population: registered residents (million)	1.6	Population: total, estimated (million)	7.0
GDP per-registered resident (US\$)	8999	GDP per-capita (US\$)	2070
Exports (billion US\$)	35.2	Imports (billion US\$)	29.3
Government revenues (billion US\$)	1.0	Government expenditures (billion US\$)	1.2
Electricity consumption (billion kwh)	35.2	Water consumption (billion cubic)	1.5
Sulfur dioxide emissions (‘000 tons)	199.4	Industrial waste water (million tons)	225.0
% of sulfur dioxide emissions meeting emissions standards	92.9	% of industrial waste water meeting discharge standards	90.1
Industrial solid wastes (‘000 tons)	28.6	% of industrial solid wastes meeting discharge standards	86.5
% of days with good air quality	97.8		

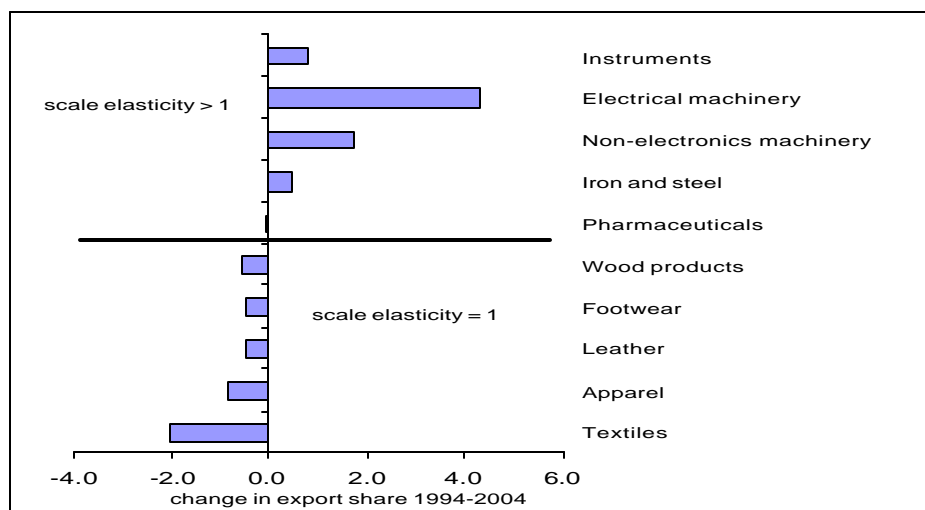
Global market share (%) in 2002 of computer and electronics components manufactured in Dongguan

Magnetic heads, computer cases	40	Scanners and mini-motors	20
Copper-clad boards and disc drives	30	Keyboards	16
AC capacitors and fly-back transformers	25	Motherboards	15

Sources: 2005 Guangdong Statistical Yearbook; Dongguan Government

The result is that in a 2005 World Bank investment-climate survey of over 12000 firms in 120 Chinese cities, Dongguan ranked seventh in terms of a broad measure of the investment climate. Even more telling is the fact that Dongguan ranked second in terms of a narrower measure of government efficiency based on estimates of the effective tax burden and the costs of corruption and bureaucratic delays faced by firms.

Box contributed by Shubham Chaudhuri.

Figure 4: East Asian exports are growing in sectors with increasing returns to scale

Sources: Antweiler and Trefler (2003), and World Bank.

Trade and technology

Dramatic changes are taking place in the composition of East Asian trade, at the same time that the value of trade is expanding. Low-skill, labor intensive products, such as garments and textiles, toys and sports equipment, and wood and paper products are becoming less important, even for China, and now account for only 15 percent of total exports. Instead, higher skill and technology products, like computers, office equipment and communications equipment are growing most rapidly. These goods, falling under the broad category of machinery in international trade statistics, account for over half of East Asian exports.

This pattern of growing machinery trade can best be explained by two related technological developments that have profoundly affected the way in which goods are produced and sold worldwide: scale economies and vertical specialization. Scale economies in machinery exist at the plant level (determined by engineering), the firm level (for example, the ability to have internal research and development facilities), and the economy-wide level (agglomeration economies in cities). Industrial engineers have concluded that scale economies exist in products like scientific instruments, electrical machinery, non-electrical machinery, iron and steel and pharmaceuticals (Figure 4).²¹ These are exactly the products in which the share of East Asian exports has increased. On the other hand, products like wood, footwear, leather, apparel and textiles show no tendency towards scale economies—these industries have seen their export shares fall.

Vertical specialization describes the potential for breaking down production into different components which can later be combined into a final good. If each component is produced in a specialized plant located where cost is lowest, and variety and innovation are highest, then the final good can be produced at lower cost and higher quality. If vertical specialization results in component production being undertaken outside the firm, it is called “outsourcing.” If the

²¹ See Antweiler and Trefler (2003) for a description of sectors with scale economies.

production takes place in another country, it is called “off-shoring.” To be cost effective, off-shoring requires very low transport costs, in terms of logistics and trade tariffs. In addition, a buyer must be assured that the selected component manufacturer is indeed the lowest cost producer and so must incur information and search costs that need to be efficiently provided.

Off-shoring has also been helped by changes in business models. Factory production lines lent themselves to vertically integrated firms to ensure a constant inventory of supplies. Lean production techniques, pioneered by Toyota, emphasize instead innovation and quality from parts suppliers, with sophisticated logistics enabling inventory costs to be kept to a minimum. These developments lend themselves to exploiting scale economies and agglomeration economies. Similar manufacturers congregate in one location, each helping the other to develop a local talent pool of skilled labor, and each innovating and building on others’ innovations.

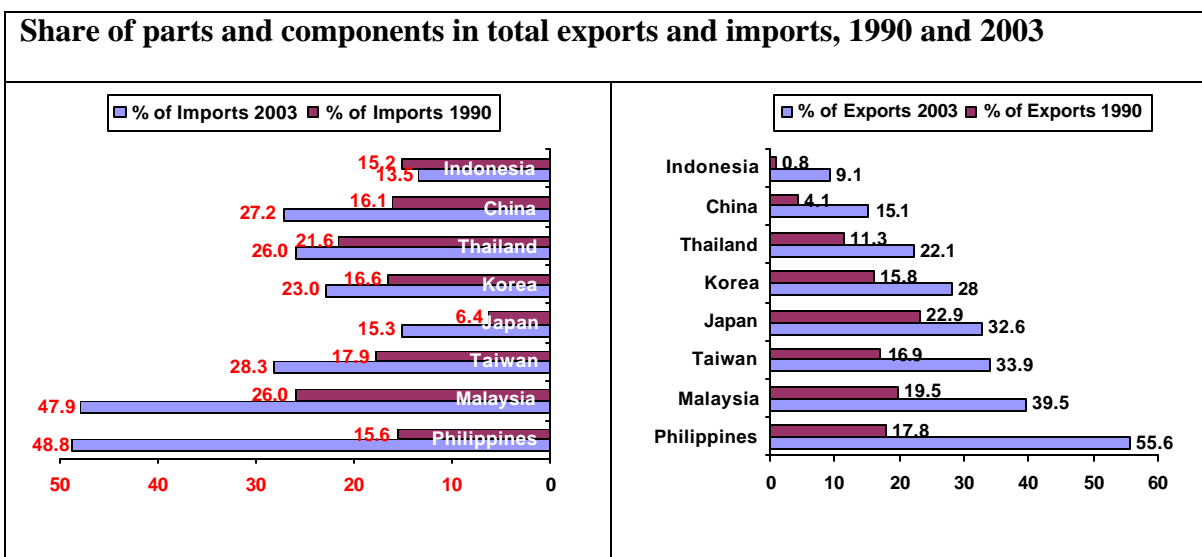
In East Asia, countries are competing vigorously to be part of the off-shoring trend. Partly, cost advantages, such as low wages, continue to play a role. But other factors are also critical—a friendly environment for foreign investment affiliates; excellent logistics; predictable economic policies with low tariffs and good duty-drawback schemes in cases where local inputs are taxed; a well-developed service sector to link component deliveries. With such a wide range of factors at play, no single country within East Asia dominates the production chain. Each country has found a niche and is participating and sharing in regional growth opportunities.

In the presence of significant off-shoring, trade in intermediate goods rises more rapidly than total output. Trade is measured in terms of the gross value of output. If a product is shipped to another country, worked into the next stage of production and then shipped to yet another country for final assembly, it might be counted several times in international trade statistics. This is indeed what is happening globally. World trade in parts and components increased from \$400 billion in 1992 to over \$1 trillion in 2003. Taking a somewhat broader definition Yeats (2001) concludes that intermediate goods account for 30% of world trade in manufactures. In East Asia, the same phenomenon is at work. Trade in parts and components has grown more rapidly than trade in final goods. In industries with the highest scale economies, like electrical machinery, trade in parts and components accounts for 80% of total exports of this sector. Firm-level surveys in a sample of five low and middle-income countries in East Asia suggest that outsourcing is almost forty percent more prevalent than in the rest of the world.²²

One major implication of trade driven by economies of scale is that relatively small changes in trade costs can have quite significant changes in the volume of trade flows. Some studies of multinationals put the elasticity at 2-4. That is to say, a 1 percent decrease in trade costs can increase trade volumes by up to 4 percent. This puts a premium on countries consistently striving to reduce trade costs. East Asian countries have done this. Even after the 1997-98 crisis, trade costs have been systematically brought down. In fact, tariffs in East Asia fell on average by more than 50% since 1994, and now account for a little over 5% of import value. By contrast, in Latin America, tariffs actually increased slightly over this period in a backlash against globalization.

²² Hallward Dreimeier et al. (2003).

Figure 5: Intra-industry trade has boomed in East Asia



Source: Okamoto (2005).

Source: Okamoto (2005).

Because most of East Asia has efficient ports and infrastructure, freight costs are on average lower than in any other region, expressed as a percent of import value. But freight costs do increase with distance and this is why production networks tend to be regionally concentrated and not involve countries that are too far away. The exception to this is when a service component, like design or research, is involved. Services can be transported through a global telecommunications network that no longer prices according to distance. But for the flow of goods, proximity remains a benefit.

One result of all these forces is that trade within East Asia is far higher than can reasonably be explained by normal economics. Statistically, China and Hong Kong (China), South Korea, and Japan import 8-10 times more than many economic models would predict from within the region. The tendency to import more from neighboring countries is more pronounced for parts and components trade than for total trade, but the key tendencies remain the same—there is a regional dimension to trade that cannot be explained by traditional economic models, and, in the case of China, this regional dimension has increased radically in the decade 1994-2004, the period when China's imports took off²³.

Ideas and innovation

Firms in East Asia rely extensively on knowledge from abroad, especially from the developed world where 80 percent of the money on global research and development is spent. Countries (and firms) have used different mechanisms for acquiring technology, depending on the sector in question and the stage of development. One important mechanism in East Asia has been through trade, both exporting and importing. It is well known that export firms tend to be more efficient than their domestic counterparts, sometimes by significant margins. But the causality of this relationship is hard to disentangle. It could be the case that more efficient firms naturally become exporters in order to exploit economies of scale, in which case the technological innovation

²³ Kharas, Aldaz-Carroll and Rahardja (2007).

precedes, and indeed causes, exports. Or it could be the case that exporting firms have to constantly innovate in order to meet the intense competition that comes with operating in the global marketplace. Both tendencies appear to be at work in East Asia.

Many exporting firms, especially in Korea and Taiwan (China), have operated under contract to a foreign buyer who specifies precise designs. This kind of original equipment manufacturing (OEM) could have accounted for 70-80 percent of Korea's electronics exports around 1990 and for 40 percent of computer hardware exports of Taiwan (China). By undertaking OEM production, firms achieved economies of scale, and built their technological capabilities with assistance from their foreign buyer. Once established, OEM firms have developed the ability to do their own design (original design manufacturing), and increasingly to brand their own products (Original brand manufacturing), thereby moving up the value chain. This path of OEM-ODM-OBM has been labeled "supplier-oriented industrial upgrading."

The mechanism of vertical technology transfers operates domestically as well as internationally. When there is an efficient domestic producer, such as a foreign multinational, there is strong evidence that vertical technology transfers to domestic suppliers takes place²⁴. Higher standards for product quality, precision and on-time delivery, coupled with constant pressures for cost efficiencies provide strong incentives for local suppliers to upgrade production management and technology.

East Asian firms themselves report that the most important source of new technology is from importing new machinery—according to the replies from 43 percent of a broad sample of firms in the region²⁵. Some of this happens when firms are bought by foreign partners through FDI. The evidence from case studies is that such acquisitions lead to higher output, employment, wages, and productivity, along with higher investment levels—in one study on Indonesia, the gains in productivity from foreign acquisition were estimated at an average of 46 percent.²⁶ The total benefits to an economy could be even higher if a foreign acquisition has a positive effect on higher productivity for domestic competitors, via imitation or the hiring away of workers with experience in the new technologies. But these gains can be offset by instances in which foreign investment reduces the market available to local firms and causes them to forego economies of scale. On balance, the evidence for so-called horizontal technology transfer is quite mixed.

Finally, research and development, or purchasing of new technologies from abroad, usually from parent companies, provides an important source of innovation. Spending on R&D has almost doubled in East Asia over the last decade to average 1.2 percent of GDP. But this conceals large differences between countries. As is expected, richer economies such as the NIEs spend a significantly higher share of GDP on R&D (2.2%) and, in an encouraging sign, the rate of increase of their R&D spending has been quite rapid by international comparison. But only China (1.4 percent of GDP) and Malaysia (0.7 percent) among the middle-income countries show signs of significant R&D spending. Southeast Asian countries generally spend much less.

²⁴ Blalock and Gertler (2004) find strong support for vertical technology transfers from multinational corporations to local suppliers in Indonesia.

²⁵ World Bank Investment climate surveys for Indonesia, the Philippines, Malaysia, Thailand, Cambodia, China, Mongolia.

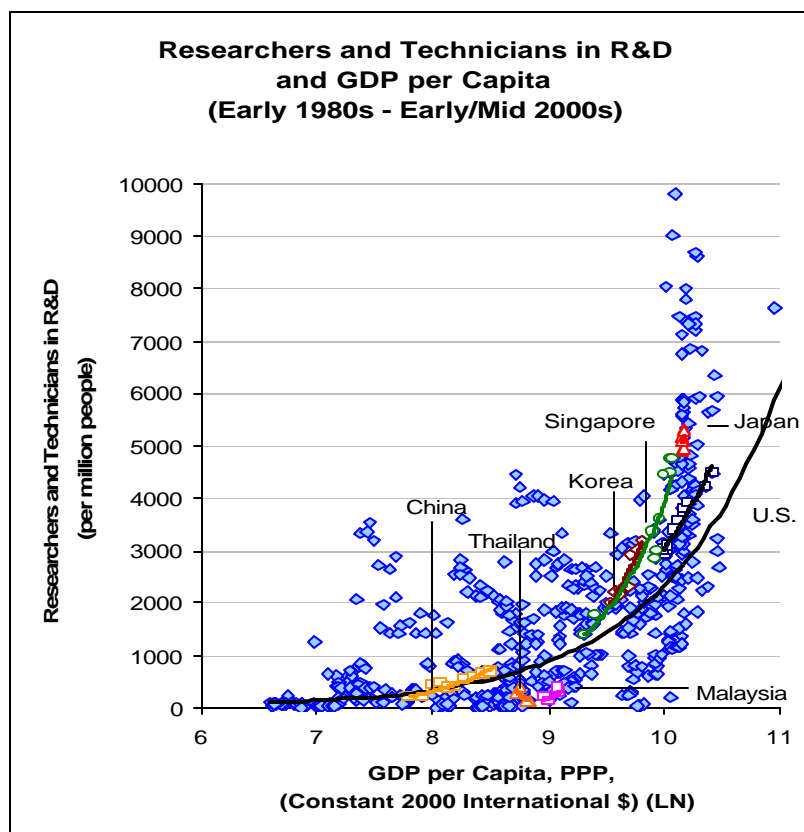
²⁶ Arnold and Javorcik (2005).

This is of concern as an increasing number of studies suggest that R&D can yield strong benefits (some studies yield social returns upwards of 78 percent) even for middle-income countries, especially when this facilitates absorption of knowledge from abroad.

The pattern of R&D is as important as the volume in determining effectiveness. Many East Asian economies follow the same pattern as developed countries in that over 60 percent of R&D is done by the business sector, while only 20 percent is done by government, with the rest in higher education institutes.²⁷ Businesses, rather than governments, also bear the brunt of R&D costs. What is interesting is that East Asian economies have developed this pattern at a lower income level than is typically the case. Other middle-income country regions such as Latin America or Eastern Europe have one-half to two-thirds of the share of business participation. The presumption is that the commercial returns to R&D are likely to be higher when business' share of spending is higher. This augurs well for East Asia.

Innovation is more rapid when domestic capacity for knowledge absorption is high. This requires an educated labor force, good quality academic institutions, protection of intellectual property rights and good collaboration between research institutions and the private sector. Under these conditions, R&D spending gets translated into more patents and, as a matter of fact, patents in

Figure 6: East Asia's R&D efforts have outpaced the rest of the world



²⁷ Indonesia is a notable exception to this trend, with 80% of R&D undertaken by the government.

East Asia have exploded recently and are mostly higher, relative to population size and per capita income, than global norms. In East Asia, these patents are concentrated in electronics and computer and communications sectors, although in countries like China, drugs and medical goods are also important. These patents are not just window-dressing, but have real economic value. In one measure of patent quality—linked to citations by others—patents in Japan, Korea and Taiwan (China) are 70-90 percent as “productive,” globally, as U.S. patents. But this might underestimate the impact of East Asian patents because, in common with patents elsewhere, patents tend to be used or cited more often when they are in adjacent locations than when they are registered in a far-off country. This localization of patent knowledge spillovers means that East Asian economies stand to gain much more from the fact that patents are recently rising rapidly in North East Asia. The regional transmission of knowledge is accelerating.

Finance and risk

When economies are linked by trade in final goods, a problem in one country does not necessarily have a big impact on its trading partners. It is easy to find an alternative supplier in the global marketplace. The cost is simply one of slightly higher prices or slightly lower quality. But when economies are linked by trade in intermediate goods, the spillovers between countries are more real. Intermediate parts and components in a regional production network have to meet precise, often customized, technical specifications. They are part of a supply chain with coordinated delivery times. Any breakdown in the production chain can cause the whole production network to slow or stop. There is economic contagion from one country to another along the supply chain.

This is the vulnerability to which East Asian economies are exposed today. The financial system, if well structured, can help allocate these risks and reduce the likelihood of contagion. At the same time, financial structures in the region need to support growth in regional production networks and the supporting trade flows as well as funding innovation.

In the early stages of production networks, finance followed trade. Cross-border lending, denominated in U.S. dollars, was made available to local banks and directly to multinational affiliates. Credit risk to these large entities seemed small. But soon, these funding channels started to grow. More credit was allocated to non-tradables, like real estate, as asset prices rose along with broader economic growth. The financial system in the region was masking two growing concentrations of risk. There was currency risk, from increasing levels of foreign exchange denominated debt, incurred by the private sector, often through short-term inter-bank credit lines. And there was credit risk, associated with a build-up of debt/equity in corporate balance sheets as companies became more leveraged in their efforts to take advantage of growth opportunities. Credit risk was worsened when companies also had exchange risk—revenues denominated in local currency, and liabilities denominated in foreign exchange.

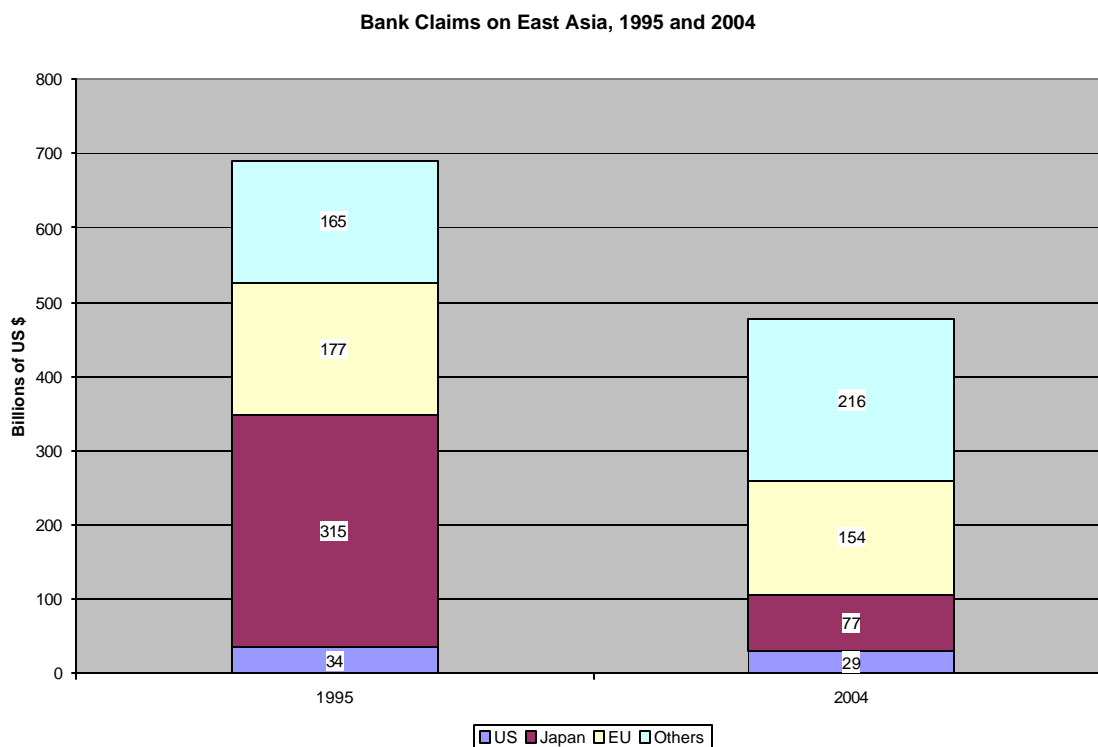
When the currency and financial crisis of 1997-98 hit the region, economic damage quickly spread across countries. The financial system was unable to isolate and spread out the shocks. As Alan Greenspan famously remarked in 1999, “East Asia had no spare tire.” Since then, policy makers have been determined to build up defenses against economic volatility. Currency risk has been reduced by moving towards more flexible exchange rates and building massive international reserves to permit monetary authorities to manage the exchange rate and avoid

excessive volatility. In this way, Asian currencies have changed in value over time, but have avoided sharp swings in short periods of time, giving companies plenty of time to adjust to market forces. Foreign exchange reserves in emerging East Asia now total \$1.6 trillion, and most of the middle-income economies have more than enough reserves to cover all their debt liabilities for at least one year.

Credit risk has not been addressed as successfully. Banks are healthier and have plenty of liquidity. Across the region, indicators of financial sector performance have vastly improved, such as measures of asset quality, capital adequacy, and bank profitability. Average capital-loan ratios in banks in five East Asian crisis countries rose to 15 percent in 2005. Interest margins, a key determinant of profitability rose almost to 4 percent. Non-performing loans have fallen to moderate levels. Corporations too have improved their balance sheets, with reduced leverage and higher operating margins. Debt-equity ratios in East Asia, which had reached 90 percent in the years before the financial crisis, had fallen to about 50 percent by 2005. But banks have been reluctant to lend to many borrowers and almost 20 percent of firms, more for exporters, report limited access and high cost of finance are major obstacles to their business expansion.

Today, financial structures in Asian economies are somewhat more up to the task for addressing the key vulnerabilities associated with integration. With reserves and diversified sources of finance, the region is much less susceptible to capital flow reversals and less affected by fluctuations in the dollar-yen exchange rate. But without a well-developed corporate bond market, the majority of firms that are not investment grade now face problems in accessing finance for expansion and innovation. East Asia finally has a spare tire, but it is still not a full-sized spare.

Figure 7: East Asia is less exposed to bank credit since the crisis and has a more diversified supply



Cities and livability

Most economic activity happens in cities. In East Asia, cities are estimated to generate about three-quarters of annual output, and between one-half and two-thirds of exports. Often, much of this is concentrated in a single primate city: Bangkok has 40 percent of the country's GDP, Manila has 30 percent, Ho Chi Minh City 20 percent; and Shanghai 11 percent. Four East Asian cities have one-quarter or more of the total population of the country: Ulaanbaatar, Taipei, Tokyo, and Seoul. Seven of the world's 21 mega-cities (population in excess of 10 million) are in East Asia. Per capita incomes in cities are a multiple of the economy-wide average, and the average city-dweller consumes almost twice as much as the average rural inhabitant.

East Asian cities have been able to deliver the agglomeration economies that are required for rapid growth. A study of 120 cities in China that together account for three-quarters of economy-wide output shows that productivity of firms rises significantly when they are located in large cities.²⁸ Another study shows that distance to a port is a powerful determinant of income levels in Chinese cities: on average, cities that are more than 400 miles away from the coast have half the per capita GDP of coastal port cities.²⁹ Such cities also attract much less foreign investment: 80 percent of China's FDI has gone into coastal provinces and 60 percent of Vietnam's FDI has gone to just 3 cities—Ho Chi Minh City, Hanoi, and Dong Nai. The function of providing a gateway for commerce is critical for a region dependent on exports to drive growth. East Asia, excluding Japan, is home to 16 of the largest 25 seaports in the world; 14 of the largest 25 container ports; and 7 of the largest 25 cargo airports.

More generally, there is a strong empirical relationship globally between indices of city livability and a country's GDP per capita, suggesting that long-term growth is only feasible if city attributes, in terms of congestion, pollution and safety, improve as well as their economic management. East Asian cities tend to be around the global average for their current income level and so need to improve substantially to sustain higher living standards. Cities like Bangkok or Manila have only half the average road network speed of rich, efficient cities like Singapore and Hong Kong (China). And the problems are worse in smaller cities. Even within countries, cities vary in their management and livability. What does seem to be becoming clearer is that what is good for people is what is good for business: Shanghai, a popular destination for businesses, was just voted the most livable city in China.

So East Asian cities have been able to accommodate, or even lead, rapid growth in the past. Can they continue to do so? The challenge is immense. Because of rapid economic growth, East Asian countries have reached levels of industrialization and per capita income that are generally associated with higher levels of urbanization. East Asian cities are witnessing an urbanization "catch-up," reflected in the largest rural-to-urban shift in population in human history. In the next two decades, cities in East Asia will swell by two million people *every month*. The strains are already apparent in terms of slums, poor services, and large informal labor markets. This extraordinary urbanization will require an extraordinary response from policy makers at all levels of government—national, provincial, and municipal.

²⁸ World Bank (2006a).

²⁹ Leman (2005).

The issue confronting the region is that most urban growth is not happening in the major metropolitan areas, which have been relatively well-managed. These are reaching natural limits. Instead, forecasters estimate that about half of new urbanites will settle in cities of less than 500,000. While this will give better spatial balance to East Asian growth, it poses questions about how well these smaller cities will deliver scale economies, or conversely whether they will waste agglomeration gains by tolerating congestion, crime, and poor city government. What does appear to be the case is that the performance of smaller cities is highly diverse in regulation, entry, and competition among firms, and their provision of basic services and overall governance. Unless these smaller cities can raise their game, and connect up with existing trade networks, it will be difficult for East Asia to continue its strong growth performance for the next twenty-five years.

Cohesion and inequality

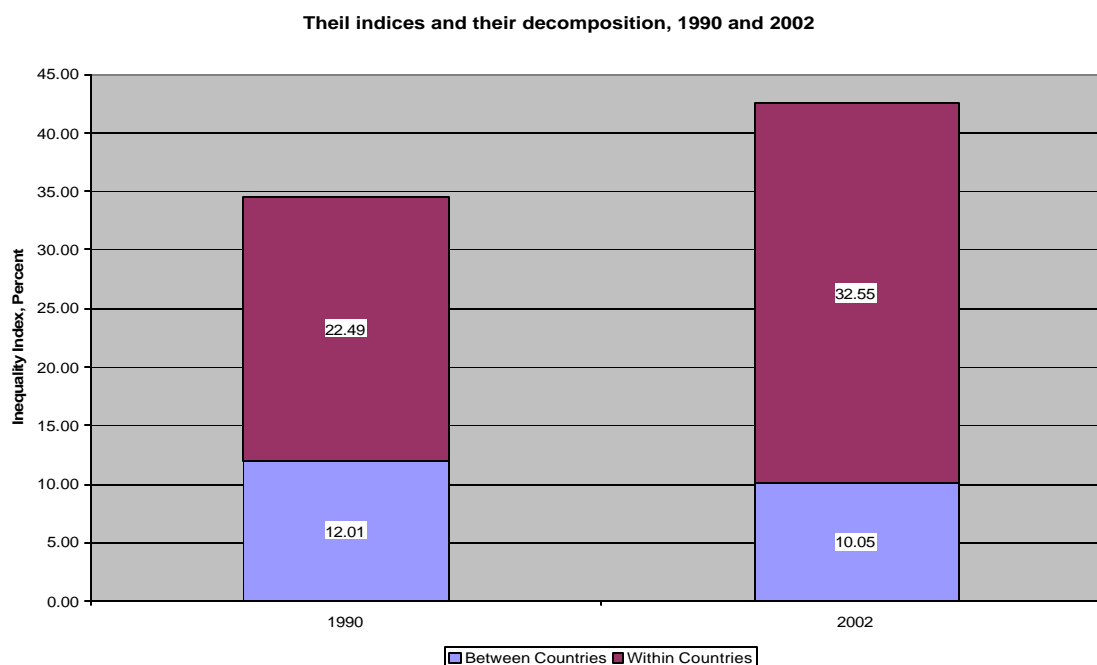
For many years, East Asian growth was associated with rapid poverty reduction and growing equity. In 2005, some 150 million East Asians (8 percent of the population) lived in absolute poverty (below \$1 per day) while 585 million lived on less than \$2 per day. If present trends continue, East Asia could almost eliminate absolute poverty within a decade, and eliminate the broader measure of poverty within a generation.

Yet the concerns with social cohesion in the region are growing not falling. Inequality in the region has risen, not just in terms of income levels, but also in terms of schooling attainment and access to basic services. Poorer regions and rural areas are falling further behind their urban counterparts. Ethnic minorities are not participating in growth. Despite the huge differences in income per head between East Asian countries, more than three-quarters of the inequality of living standards of East Asian citizens comes from within-country inequality. In short, despite successful global integration and increasing regional integration, many East Asian countries are failing with domestic integration. Why is this happening?

Inequality in the region is consistent with growth processes driven by economies of scale. We have already referred to the strong links between trade opportunities, as measured by distance to a seaport, and income levels within countries. There is some direct econometric evidence on these relationships. In a study of five East Asian economies—Hong Kong (China), South Korea, the Philippines, Singapore and Thailand—during 1985-98, Te Verde and Morrissey (2004) found that trade increased wage inequality.³⁰ But for Indonesia, Bourguignon and Goh (2002) found higher wages and greater stability in earnings for those employed in more traded sectors.

What is clear is that much of the within-country inequality is coming from growing inequality of incomes in urban areas. Part of this comes from higher wage premia for skilled workers. In China and Vietnam, the returns to university education have risen steeply over the last decade. But this may be a transitory phenomenon, created by rigidities in the supply of college education. Neither Indonesia nor Thailand, where the number of graduates has soared, display any trend towards growing skill premia.

³⁰ The positive effect of trade ratio was significant in their pooled regression; the effect of FDI was insignificant in the pooled regression, but significant for Thailand (Te Verde and Morrissey, 2004).

Figure 8: Inequality is rising in East Asia despite regional convergence

Source: World Bank staff estimates.

Another source of inequality in urban areas comes from labor market restructuring. Countries that are more successful with trade and integration also have a greater degree of turnover and labor force restructuring. This is typical of highly innovative systems. But what happens to workers when this happens? In a study of five cities in China, where enormous labor market restructuring has occurred with the reform of state-owned enterprises, researchers found that workers under 40 who were re-employed were able to increase their average earnings, while those over 40 got lower wages. But two-thirds of workers were not able to find new jobs within a twelve-month period, suffering considerable income losses. This pattern is quite different in Vietnam, where workers laid off from state enterprises have been able to improve their incomes, along with wage and productivity gains for workers remaining with the enterprise.

A major source of urban inequality comes from extensive informality. One study of the informal labor market in China puts it at almost 40%³¹. Women, migrants, less educated, very young and very old workers seem to be disproportionately informal. If this is indicative of fragmentation in urban labor markets, then the extent of informality is one indication of poor performance of cities.

In more advanced economies, inequalities can be partly offset by fiscal transfers directed disproportionately to poor areas. But in East Asia, transfers have not been designed to achieve redistribution, despite being quite large. Richer localities spend more on their citizens, on basic services and other amenities, reinforcing their position as choice locations and perpetuating inequalities over time. Choice locations in turn attract more capital investment, from home and from abroad. Concentration of production leads to inequality between cities. This pattern can be risky to longer term growth. If the losers in society can block decision-making, or if they

³¹ Park, Cai and Zhao (2006).

generate unrest and challenge social stability, the beneficial effects of economies of scale can be eroded.

Corruption

Excluding Singapore and Hong Kong (China), corruption in emerging East Asia is high, comparable to Latin America, and has perhaps been increasing in recent times. Measures of corruption are, of course, fraught with problems, but an increasing body of evidence seems to point to corruption as a serious issue in the region³². Can East Asian growth prevail under these circumstances?

Some have argued that there is an Asian paradox: how could high levels of corruption coexist with rapid economic growth? Part of the answer seems to lie with the organized nature of corruption. Political scientists hypothesize that if corruption is organized and centralized, then economic rent can be extracted from firms while also ensuring that not so much is extracted that firms move elsewhere or go bankrupt. In essence, a centralized corrupt organization has an incentive to promote economic growth, even while extorting benefits from firms.

This model appears to fit East Asia quite well. Firm-level surveys show that a high proportion of firms in Cambodia (56 percent), Indonesia (41 percent), Philippines (35 percent) and China (27 percent) report that corruption is a major or severe constraint to doing business. But these same firms report that government effectiveness and regulatory quality is better than what would be expected given the degree of corruption. The impression is still one of widespread but orderly corruption.

This picture was associated with strong central governments in the region. Presidents Suharto and Marcos are estimated to have embezzled billions of dollars through an organized system of corruption in which all bribes flowed to the top and were then divided between relevant government bureaucrats. The demise of industrial planning in 1993 weakened the information linking bureaucrats and businesses in South Korea.³³ In the new democratic political system of Korea, corruption became more disorganized. Some pin the dramatic collapse of Hanbo Steel in early 1997 on the demise of government protection. In China, too, there are reports that large-scale corruption rings account for 30-60 percent of all the cases of graft uncovered by the authorities.³⁴

The notion that organized, predictable corruption is less damaging to economic growth than disorganized corruption presents some challenges to middle-income East Asian countries. Centralized corruption presented a target for public attack. By some measures, East Asians are even less tolerant of corruption than citizens of western democracies. They have demanded, and obtained, broad improvements in political rights and civil liberties over the past twenty years. Along with this, they have also pushed aggressively to reduce the power of the center through decentralized government.

³² See, for example, Transparency International's Corruption Perception index, or the World Bank's Control of Corruption index.

³³ Kang (2002) and Chang (2001).

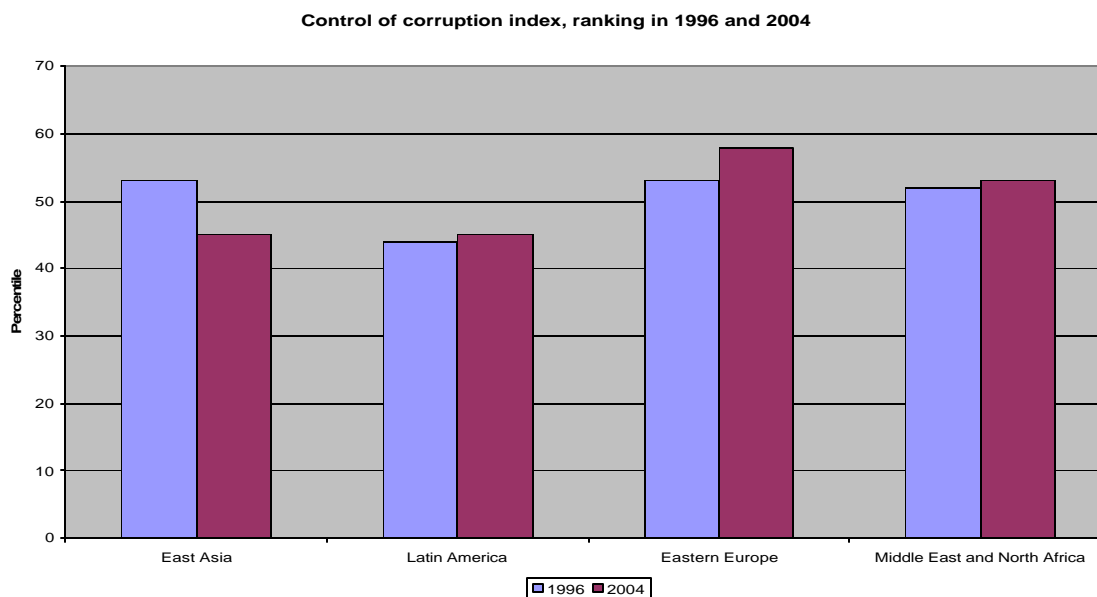
³⁴ Pei (2006).

Decentralization brings its own challenges to the control of corruption, at least in the short term. Subnational authorities in most East Asian countries now control a large share of total public spending and have significant rights to tax, regulate and affect the business climate. Firm surveys show that the dispersion in productivity between localities in China and Indonesia is significant. In Indonesia and the Philippines, two countries which have implemented the most extensive decentralization programs in the region, firm surveys suggest that decentralization might be associated with worse corruption.

In the longer term, democracy and press freedom can have significant impact on controlling corruption. The presence of press freedom brings public corruption to light, while democracy allows the public to punish corrupt politicians by removing them from office. When institutions like the judiciary are also strengthened, civil servants can no longer act with impunity. Singapore and Hong Kong (China) have long histories of prosecution of public servants, and, more recently, South Korea and Indonesia have shown a willingness to prosecute even the highest officials. China and Vietnam have also moved aggressively against corrupt officials.

But democracy and the institutions needed to find and root out corruption take time to mature. In the shorter term, the risk facing East Asia is that the “rule of man” has been largely swept away, while the “rule of law” has yet to become firmly established. The transition from centralized, corrupt governments to decentralized and uncorrupt governments may not be symmetric, and countries in the region risk being mired in this state of inefficiency, where governments are decentralized but corrupt. Especially strong anti-corruption efforts may be needed to ensure that this transition is short, or the price in terms of growth may be high.

Figure 9: East Asia is falling behind in the control of corruption



Source: World Bank Institute Governance Indicators.

Growth, gravity, and friction in action

Growing successfully through middle-income requires harnessing economies of scale. For most countries, this implies reliance on the force of gravity to connect countries, globally and regionally. Strong regional gravitational forces are found in East Asia in trade, innovation, and financial links. But countries must also reinvest the economic rents efficiently to overcome domestic friction associated with social and spatial effects of rapid growth. In the region, frictional constraints are manifested in clogged cities, fraying cohesion and growing corruption. Table 1 summarizes the key facts and implications of the discussion above.

Table 1: Facts and implications

<i>Chapter</i>	<i>Facts</i>	<i>Implications</i>
GRAVITY		
Trade	<ol style="list-style-type: none"> 1. East Asia is the most open region for trade in goods 2. Parts and components and intra-industry trade has grown rapidly 3. China and Japan are the region's twin engines 	<ol style="list-style-type: none"> 1. Liberalize trade in business services 2. Make logistics more efficient 3. Enhance market access through regional integration; keep rules of origin simple
Innovation	<ol style="list-style-type: none"> 4. Internationally competitive firms (exporters) are driving industrial growth 5. R&D and skills are driving innovation 6. Northeast Asia is producing more patents 	<ol style="list-style-type: none"> 4. Knowledge is now more easily accessible for all East Asians 5. Keep outward orientation and competitiveness 6. Upgrade tertiary education
Finance	<ol style="list-style-type: none"> 7. Bank claims on the corporate sector have fallen since the 1997-98 financial crisis 8. Foreign exchange reserves have soared since the financial crisis 9. Bank-dominated financial systems do not support innovative enterprises 	<ol style="list-style-type: none"> 7. Local credit risks need to be better identified and managed. 8. Regional cooperation may be a more efficient way to address the fear of floating 9. Develop better securities markets, including corporate bond markets
FRICION		
Cities	<ol style="list-style-type: none"> 10. Cities have three times the productivity of rural areas, reflecting agglomeration economies 11. Large cities are coming under stress 12. Secondary cities are growing faster 	<ol style="list-style-type: none"> 10. Urban growth will drive regional differences 11. Make large cities more livable 12. Improve domestic connectedness and economic management of small cities
Cohesion	<ol style="list-style-type: none"> 13. Within-country inequality is high because of urban-rural and coastal-interior gaps 14. Within-country inequality is rising because of rising within-urban (and within-rural) inequality 15. Poverty rates have been falling rapidly in cities 	<ol style="list-style-type: none"> 13. Access to services, especially education, should not depend on location as much as it does 14. Segmentation in labor markets by space and social groups has to be reduced 15. Rapid skill formation can offset high postsecondary wage premium
Corruption	<ol style="list-style-type: none"> 16. Tolerance for corruption is low in East Asia 17. East Asia's decentralization is progressing faster than institutionalization of checks and balances 18. Contestability of political power has grown in East Asia 	<ol style="list-style-type: none"> 16. Corruption is seen as a significant threat to growth and perceptions of corruption are worsening 17. Corruption could become a more serious obstacle to growth unless transparency and accountability at local levels develop 18. Speed up the transition from rule of man to rule of law

Source: Chapters 2 through 7.

Towards a “third integration”

The notion that economies of scale might be an important driver of economic growth in East Asia has major implications for public policy. For a start, there are winners and losers in the industrialization process.³⁵ Economies of scale can persist over time, and provide the basis for future growth, so the possible gains from public policy that attracts more capital and investment to a country are accentuated. Where economies of scale are important, small shifts in policies can have large pay-offs. The temptation for policy makers to act to gain an advantage is huge. But the converse is also true. Bad policies can have large negative consequences that persist over time. Policy choices need to be grounded in a thorough understanding of what works and what does not.

For East Asia’s low-income economies, the basic principles of openness, macroeconomic stability, and high saving and investment in physical and human capital continues to offer a promising path to progress. These economies will benefit for some time from the cost advantages they offer in global and regional trade. As regional production networks permit more fragmentation of production across different countries, giving rise to an ever finer division of labor globally, low-income countries will have ever more opportunities. Their prospects in a fast growing region are bright. But the current benevolent integration into production networks cannot be taken for granted by these countries. Suppliers can start relocating to be closer to final producers like China if low-income countries do not buttress their cost advantages from low wages with efficient logistics and better business climates.

For the region’s middle-income economies, there has to be an evolution in the application of these strategies. Table 2 lists the implications of moving from a phase of exploiting comparative advantage to one where countries also exploit economies of scale. This involves recognizing the sensitivity of intra-industry trade to transport costs, of the growing importance of investments in research and development and an emphasis on aspects of science and technology education, and the need for diversified capital markets to assure appropriately priced finance.

Table 2: The growing complexity of development: Economies of scale

<i>Force</i>	<i>Growing Complexity</i>		<i>Strategic Imperatives</i>		
	<i>From: Exploiting comparative advantage</i>	<i>To: Also exploiting scale economies</i>	<i>New opportunities</i>	<i>Policy priorities</i>	
<i>Specialization</i>	Labor intensive exports	+	Parts and components trade	Regional production networks	Logistics
<i>Ideas and human capital</i>	Basic and secondary	+	Post-secondary education	Regional knowledge spillovers	Scientists and engineers
<i>Managing economies</i>	High savings and low deficits	+	Risk management	Regional financial stability	Corporate bond markets

³⁵ Rodrik (2004).

Specialization. Low tariffs and efficient infrastructure to reduce transport costs have been the pillars of integration and regional production networks in the region. In fact, given the emphasis on intermediate goods trade and the benefits from agglomeration, openness takes on added importance for middle-income countries. But scale economies put more emphasis on the importance of market size. Access to foreign markets becomes more important than static efficiency gains that unilateral liberalization can bring. In the absence of any likelihood of global free trade, it is not therefore surprising that countries in the region are turning to regional agreements to enlarge markets. It also explains why ASEAN is committed to a single free trade area to offset the advantages that China, with its large domestic market, appears to offer investors. Regional agreements can provide strategic advantages.

Ideas and human capital. Human capital accumulation is always desirable, whatever form it takes. But in economies where new ideas and innovations are important, higher education takes on a special dimension. The quantity and quality of knowledge workers—principally but not only scientists and engineers—will help countries absorb new ideas more rapidly and grow more quickly. Given the likely externalities that exist, and the benefits of early entry into growth industries, countries with scarce supplies of skilled labor would also be well-advised to open their doors to immigration. Singapore has already taken this decision with its commitment to attracting global talent.

Economic management. The ideal macroeconomic environment to support regional production networks would have three features: stable exchange rates would eliminate currency risk and build the foundation of a single market, capital convertibility would allow saving to be efficiently allocated across the region, and an independent monetary policy would minimize recessions and give firms the confidence that investments in innovation activities would pay off. But it is a well-known axiom of economics that this ‘trinity’ is impossible to achieve. The region seems to be moving in a sensible direction towards greater long-term flexibility in exchange rates, while minimizing short term volatility through foreign exchange reserve accumulation, managed interventions, and broader regional surveillance and financial cooperation.

In many ways, these suggestions are not new and East Asia’s middle-income countries have already started to implement them. There are areas where less progress has been made and some warning flags are waving. In Southeast Asia, there are indications that spending on R&D is inadequate. Countries such as Indonesia are not participating vigorously in regional production networks and are weak in intermediate good exports, perhaps because customs processes and logistics are still cumbersome. In Northeast Asia, there are many opportunities for extending regional networks. China, for example, has efficient trade for coastal cities but not for interior cities. Regional agreements are under discussion but there is concern that things are slowing down, and regional approaches have not yielded the expected gains in regulatory harmonization. The regional institutional framework is weak.

Despite these caveats, and notwithstanding the considerable agenda that remains to bring trade, innovation and finance into structures that support regional production networks, there is reason to be optimistic. East Asian countries are moving towards appropriate solutions in these areas. There is less reason to be optimistic about the domestic challenges that remain. It is fashionable these days to equate the growth challenge to the problem of “development of institutions.” But institutional development is an abstract notion. Table 3 lists the three specific aspects of friction

Table 3: The growing complexity of development: Distribution of economic rents

<i>Force</i>	<i>Growing Complexity</i>		<i>Strategic Imperatives</i>		
	<i>From: Letting markets work</i>	+	<i>To: Also addressing coordination failures</i>	<i>Pressing challenges</i>	<i>Policy priorities</i>
<i>Agglomeration</i>	Mega-cities	+	Midsized and small cities	Congestion	Connected small & mid-sized cities
<i>Social and spatial effects</i>	Unskilled wage growth	+	Urban skilled wage growth	Inequality	Access to social services
<i>Managing societies</i>	Small centralized governments	+	Decentralized governments	Corruption	Transparency & accountability

that arise in middle-income countries that are aggressively pursuing economic growth: congestion, inequality, and corruption. Modern growth theory gives good reasons to expect these to arise even if governments are doing things right, but governments would be wrong to assume that such friction is inevitable. The cost of being wrong is slower growth.

Agglomeration. Large cities in the region must improve their livability, and smaller cities have to be well-managed and well-connected, to productively absorb the large numbers expected to relocate there. Small cities have a wide dispersion in performance which presents an unexploited opportunity for faster growth. Cities need to deliver basic services, and provide the infrastructure and regulations necessary for firms to do business unmolested and without paying high costs due to grime, crime and time inefficiencies. While crime is not a pressing problem, pollution and congestion cannot be left unaddressed in major East Asian cities if they are to support higher living standards. China appears to have recognized the importance of livable and connected cities.

Social and spatial effects. A second institutional priority is to improve social cohesion. Rising within-country inequality is producing a concentration of production and regional inequalities that could become long-lasting and detrimental to overall growth. Existing patterns of fiscal decentralization do not effectively address these imbalances and could be improved. More broadly, the institutional environment for delivering basic social services in an equal way is important for ensuring equality of opportunity, an outcome that would enhance growth prospects. Thailand has instituted national programs that merit the attention of others.³⁶

Better government. The third institutional priority is the control of corruption. There is little doubt that the solutions will take time to take effect and that progress in a number of areas is required. Countries will need to find their own paths forward, but examples of success in Hong Kong (China), Singapore, and South Korea are encouraging. The need for progress is greater in Southeast Asian middle-income countries, where the process of decentralization could create short-term reversals unless new institutional mechanisms are found to increase public accountability and reduce impunity.

The economic rents that are generated by economies of scale will not lead to sustained growth if they are dissipated in inefficient cities, unstable societies, or corrupt governments. If, on the other hand, these rents are reinvested wisely to build vibrant economies and cohesive societies, East Asia's Renaissance can become its Golden Age.

³⁶ See World Development Report (2006), World Bank.

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