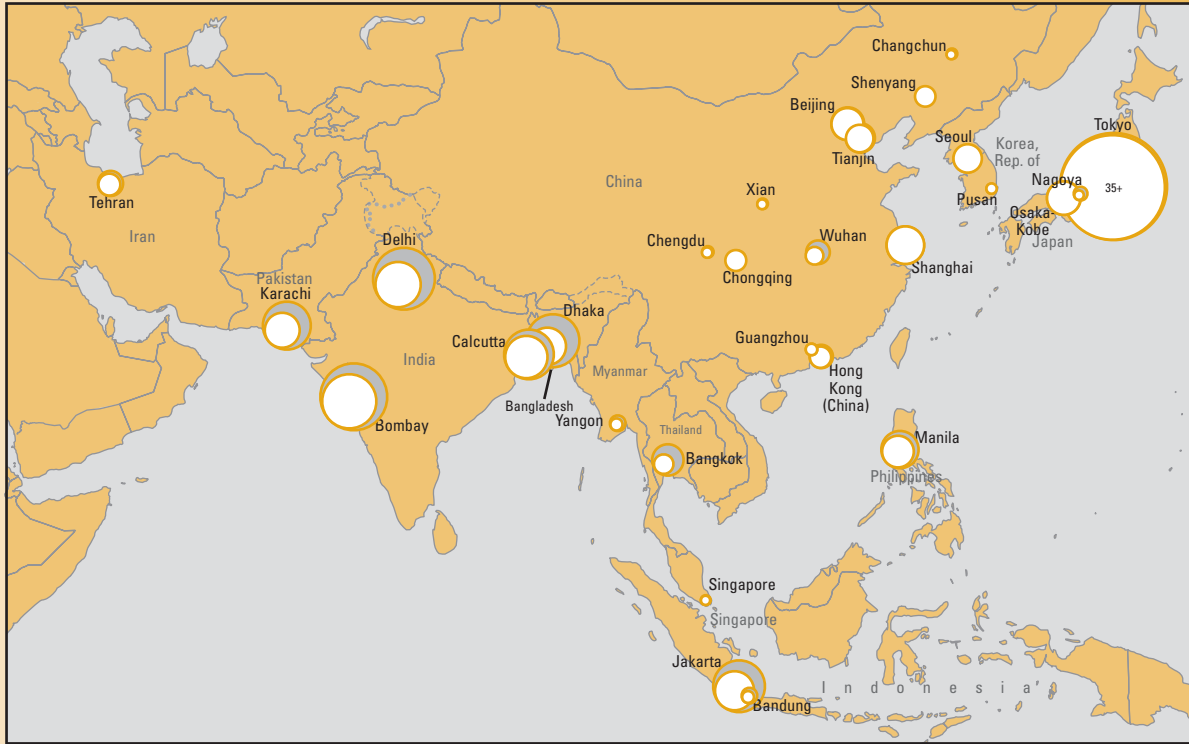


MAP 5.1 East Asian Cities of All Sizes Will Expand Rapidly during the Next Decade



The area of each circle is proportional to the estimated total population in the years 2005 and 2015 respectively.

Source: United Nations 2003.

East Asian cities have been a source of agglomeration economies, but there are big differences in economic management. A rapid urbanization is under way that will strain cities of all sizes.

CITIES

Scale Economies, Cities, and Economic Growth

In the most compelling formulations of modern growth theory, new ideas and the benefits of human capital are shared with others who are nearby and equipped to take advantage of them.¹ In aggregate, these externalities or knowledge spillovers allow economies to defy the law of diminishing returns: bigger, richer economies may continue to grow more rapidly than smaller, poorer ones. Geography is almost always important in determining who—besides those who create or possess them—benefits from these ideas and skills. Put another way, the spillovers of knowledge tend to decline with distance both within and across countries. These phenomena therefore encourage people to live in close proximity to one another to become wealthier, and the phenomena encourage firms in a single industry to locate close to each other to become more innovative and competitive. The result is the growth of towns and cities.

Cities are perhaps the most important and most visible manifestation of economies of scale, and they play a central role in economic growth. By facilitating geographical proximity, cities enable people to benefit from the ideas that others create. By bringing together pools of entrepreneurs with similar economic interests, cities facilitate both the creation of new ideas and the translation of ideas into production. Besides these knowledge spillovers, by creating thick markets

for labor, capital, and intermediate and final goods, cities enable cost savings and efficiency. Economists call all these effects agglomeration economies (see box 5.1). By enabling connections to the outside world, towns and cities allow entrepreneurs to access ideas and markets in other countries. Some cities grow ever bigger and become megacities. The most dynamic cities do all these things—generating ideas, exchanging them internationally, and growing bigger and more vibrant—and come to be known as world cities. Small, medium, large, or mega, cities are at the center of specialization, innovation, trade, and growth. Map 5.1 shows the principal Asian cities and their expected growth during the next decade.

It is difficult to understand a country's economic growth without understanding its urban centers. In Vietnam, for example, while the share of the urban population in total population is less than 30 percent, the contribution of towns and

■ BOX 5.1 Agglomeration Economies

Three reasons are usually given to explain why firms in a particular industry may locate close to each other. Spatial concentration helps in:

- *Sharing*: broadening the market for input suppliers, thereby allowing them to exploit internal economies of scale in production (average costs decline as the scale of production rises). This sharing of inputs also permits suppliers to provide highly specialized goods and services that are tailored to the needs of their buyers. The result is higher profits for all, accompanied by easier access to a broader range of inputs.
- *Matching*: expanding the availability of the range of skills required by employers to facilitate better matching to their distinctive needs. At the same time, workers find it less risky to be in locations where there are many possible employers.
- *Learning*: accelerating spillovers of (rivalrous and nonrival, explicit and tacit) knowledge, allowing workers and entrepreneurs to learn from each other.

The ability to go beyond industry-specific sharing, matching, and learning (localization economies) to citywide processes (urbanization economies) requires the recognition that additional mechanisms are active in the growth of metropolitan areas. These include, for example, the

effects of cumulative causation and the interpenetration of production and trade across industries. They also include gains from the cross-fertilization of ideas, the notion that concentrations of workers and suppliers lead to a concentration of consumer demands (possibly reflecting specific consumption patterns in the home market), and economies on the consumption side choices of individuals.

If economies of scale are large and unexhausted and if firms are able to compete not only on price, but also through product differentiation, the new framework of economic geography posits that strong centripetal forces come into play and that these may explain the formation of cities. In addition, by formally introducing the concept of distance (the cost of shipping inputs and outputs), the framework is able to provide useful insights into the centrifugal forces that explain spatial dispersion or urban agglomeration in a country. Generally speaking, the dominance (primacy) of one or a handful of metropolitan areas in a country increases if the benefits from economies of scale are great in relation to transportation costs. Many regional development policies in East Asia have been focused on attempts to assess and work with this particular trade-off.

cities to national output is 70 percent.² In China, 120 cities account for about three-quarters of the country's gross domestic product (GDP) in a year. In the Philippines, urban areas account for over 80 percent of economic growth; by themselves, the national capital region and adjoining areas account for more than 60 percent of GDP growth.³ In richer countries, this share is even higher. For example, metropolitan areas today contribute more than 85 percent of the GDP of the United States.⁴ Little wonder then that economic growth and urbanization have increased in lockstep. The transformation of economies from agricultural to industrial is generally equated with urbanization, but the key factor is that non-agricultural activities require agglomerations that farming does not. Indeed, the most parsimonious and most insightful formulations of an economy that recognize the importance of space start with a two-sector economy in which agriculture displays returns to scale that are constant and industry is characterized by returns to scale that are increasing.⁵ The central feature is the importance of scale economies and cities in economic development.

While simplifying an economy so as to make it consist of two sectors, these economic formulations explicitly recognize links between them. Urbanization in a well-functioning economy is not a one-way process; urbanites do not abandon the countryside forever and sever their connections with rural areas. Adam Smith (1776) pointed out that:

The increase and riches of commercial and manufacturing towns contributed to the improvement and cultivation of the countries to which they belonged in three different ways.

First, by affording a great and ready market for the rude produce of the country, they gave encouragement to its cultivation and further improvement. This benefit was not even confined to the countries in which they were situated, but extended more or less to all those with which they had any dealings. . . .

Secondly, the wealth acquired by the inhabitants of cities was frequently employed in purchasing such lands as were to be sold, of which a great part would frequently be uncultivated. . . .

Thirdly, and lastly, commerce and manufactures gradually introduced order and good government, and with them, the liberty and security of individuals, among the inhabitants of the country . . . (pp. 384–85).

That is, well-integrated economies have thriving cities that grow themselves, but also spur growth in the rest of the economy through product and factor market connections and through beneficial political intercourse.

The power of economic geography is seen in different ways in East Asian countries. As in other parts of the world, there is a positive correlation between per capita

income and the level of urbanization.⁶ This association is far from close because the large differences in income levels should imply heterogeneous outcomes (see table 5.1). The region contains two of the least urbanized countries in the world (Cambodia and Papua New Guinea) and one (Singapore) that is among the most urbanized. Consistent with theories of economic geography, the variations in physical features, economic performance, industrial structure, and openness of a country also generate dissimilar contexts for the evolution of the country's metropolitan areas. In East Asia, per capita incomes vary between US\$400

■ TABLE 5.1 Urban Populations Have Grown at Twice the Rate of Total Populations

| Economy or region | GNI per capita (US\$, 2005) ^a | Population | | Urban population | |
|-----------------------|---|---------------------------|-----------------------------|-----------------------|-----------------------------|
| | | Total (millions, 2004) | Growth rate (%, 2000–05) | Share of total (%) | Growth rate (%, 2000–05) |
| Cambodia | 380 | 14.5 | 2.4 | 19 | 5.5 |
| China | 1,740 | 1,313.3 | 0.7 | 39 | 3.2 |
| Indonesia | 1,270 | 222.6 | 1.3 | 46 | 3.9 |
| Lao PDR | 440 | 5.8 | 2.3 | 21 | 4.6 |
| Malaysia | 4,960 | 24.9 | 1.9 | 64 | 3.0 |
| Mongolia | 670 | 2.6 | 1.3 | 57 | 1.4 |
| Myanmar | — | 50.1 | 1.1 | 30 | 3.1 |
| Papua New Guinea | 660 | 5.8 | 2.2 | 13 | 2.3 |
| Philippines | 1,250 | 81.4 | 1.8 | 61 | 3.1 |
| Thailand | 2,750 | 63.5 | 1.0 | 32 | 1.9 |
| Vietnam | 620 | 82.5 | 1.3 | 26 | 3.2 |
| East Asia and Pacific | 1,610 | 1,869.5 | 0.8 | 41 | 3.1 |
| Hong Kong, China | 26,810 | 7.1 | 1.1 | 100 | 1.1 |
| Korea, Rep. of | 15,810 | 48.0 | 0.6 | 80 | 0.9 |
| Singapore | 24,220 | 4.3 | 1.7 | 100 | 1.7 |
| Developing East Asia | 1,680 | 5,360.8 | 1.3 | 43 | 2.5 |
| Australia | 27,100 | 19.9 | 1.0 | 92 | 1.4 |
| Japan | 37,210 | 127.8 | 0.1 | 65 | 0.3 |
| World | 6,329 | 6,365.0 | 1.2 | 49 | 2.1 |

Sources: United Nations 2003; World Bank staff calculations.

Note: — = no data are available.

a. GNI = gross national income.

and US\$5,000, industrial production ranges from 27 to 50 percent of GDP, and external trade from 35 to 196 percent of GDP. Accordingly, urbanization rates and patterns differ across countries.

This chapter therefore examines the role cities are playing in East Asia's economic growth. It discusses the priorities for easing the stresses and strains that economic and demographic changes are exerting on cities in the region and briefly assesses how effective East Asian national and subnational governments have been in dealing with these pressures. The main conclusions are as follows:

- First, 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. A side effect is a heavy reliance on megacities both for external economies associated with agglomeration and for connections with regional and global markets. In some countries, these growth patterns have led to lopsided urbanization that is reflected in the dominance of primate cities, which, in countries such as the Philippines and Thailand, account for close to half of the total urban population and an even larger share of national economic output. As the middle-income countries of the region attempt to grow to high-income levels, megacities will play a central role in deepening international integration and fostering innovation. The livability of these cities will become even more important than it has been in the past.
- Second, over the next 25 years, more than 550 million people are expected to join the approximately 750 million currently living in East Asia's towns and cities. With many cities already straining to stay livable and business friendly, this implies a challenge for policy makers. The magnitude of this challenge has historically never been confronted in middle-income countries. It will require unprecedented efforts at the national, provincial, and municipal levels of government.
- Third, it is widely held among urban specialists that a big part of the response to this impending urbanization will lie in the growth of small (less than 500,000 residents) and midsize cities (between 500,000 and 2 million residents). These cities must be well managed to enable the exploitation of scale economies; they must be livable and, perhaps even more importantly, they must be well connected to larger cities. While their livability will depend on city governments, their connectedness to other, especially larger cities will depend mainly on national and provincial governments. Success will require good planning and economic management at the city level and good planning and sound infrastructural investments at the provincial and national levels.

Challenges Confronting East Asia's Cities

After a brief setback during the financial crisis of 1997–98, a rapid rise in incomes and the resumption of intense global activity have accompanied an acceleration in urbanization in East Asia. The metropolitan population has risen by 3.1 percent per year over the past five years, compared to an overall population increase of only 0.8 percent. In other words, while total population has risen by about 59 million people, the number of people living in urban areas has increased by 88 million.

This is to be expected. The simple correlation between (the log of) income per person and the level of urbanization is 0.61 in East Asia. But, while urbanization has quickened, the distribution of urban inhabitants among settlements of various sizes has been uneven. Metropolitan areas with fewer than 500,000 inhabitants have grown most rapidly. Although megacities continue to expand in population and size (see table 5.2), the number of settlements with between 500,000 and 5 million inhabitants has risen only slowly in parts of East Asia, while the shares of these settlements in total populations may even have fallen.⁷

Over the next 25 years, there will be three related developments in East Asia: the size of urban populations will grow rapidly; the livability of large cities will come under stress; and the connectedness of small and medium cities will become even more necessary. More than 200 million of the projected 555 million increase in urban populations will be in large- and medium-sized cities; about 300 million, or close to 60 percent, will settle in small cities of fewer than a million inhabitants. As this massive shift of population occurs, large cities will experience greater stresses. At the same time, the size, economic contribution, and global links of large cities will increase.⁸ Large cities will continue to generate more than half of all exports and more than three-quarters of economic growth.⁹ However, population projections make clear that planning for the expansion of small and medium cities will become equally, if not more essential for rapid and sustainable economic growth.

The Accelerating Urbanization in East Asia

Today, roughly 50 percent of the world's population is urban. Only Africa and Asia, each with urbanization rates of about 39 percent, may still expect the most significant urbanization in their histories to occur in the future. Among all regions, the largest rural-to-urban shift will occur in East Asia both because of the size of the shift and because of the anticipated high rate of economic transformation and growth. Projections suggest that, among the middle-income regions

■ TABLE 5.2 East Asia Has Mega, Primate, Capital, and Gateway Cities

| City type | 2003 | | | | 2015 | | |
|-----------------------|------------------------------------|------------|-----------------------|-------------------------------|------------|-----------------------|-------------------------------|
| | Primacy indicator (%) ^a | World rank | Population (millions) | National population share (%) | World rank | Population (millions) | National population share (%) |
| Megacities | | | | | | | |
| Tokyo | 42.1 | 1 | 35.0 | 27.4 | 1 | 36.2 | 28.5 |
| Shanghai | 2.5 | 9 | 12.8 | 1.0 | 15 | 12.7 | 0.9 |
| Jakarta | 12.0 | 10 | 12.3 | 5.5 | 8 | 17.5 | 7.0 |
| Seoul | 31.8 | 11 | 12.2 | 25.4 | 18 | 12.0 | 24.2 |
| Osaka | 13.5 | 14 | 11.2 | 8.8 | 19 | 11.4 | 9.0 |
| Beijing | 2.1 | 17 | 10.8 | 0.8 | 21 | 11.1 | 0.8 |
| Manila | 20.9 | 20 | 10.4 | 12.7 | 16 | 12.6 | 13.1 |
| Primate cities | | | | | | | |
| Taipei ^b | 32.0 | 43 | 6.9 | 30.1 | — | 6.8 | 29.0 |
| Bangkok | 32.0 | 46 | 6.5 | 10.2 | — | 7.5 | 10.7 |
| Yangon | 26.6 | 68 | 4.0 | 8.0 | — | 5.3 | 9.4 |
| Kuala Lumpur | 14.4 | 73 | 2.3 | 8.8 | — | 2.7 | 9.2 |
| Phnom Penh | 43.6 | 311 | 1.2 | 7.8 | — | 1.5 | 8.1 |
| Ulaanbaatar | 54.0 | — | 0.8 | 31.4 | — | 1.0 | 32.7 |
| Vientiane | 65.7 | — | 0.8 | 13.0 | — | 1.2 | 16.0 |
| Port Moresby | 39.8 | — | 0.3 | 4.8 | — | 0.4 | 5.3 |
| Capital cities | | | | | | | |
| Hanoi ^c | 19.1 | 67 | 4.1 | 4.9 | — | 5.3 | 5.6 |
| Gateway cities | | | | | | | |
| Hong Kong, China | 100.0 | 38 | 7.1 | 100.0 | — | 7.9 | 100.0 |
| Singapore | 100.0 | 65 | 4.3 | 100.0 | — | 4.7 | 100.0 |

Sources: United Nations 2003; World Gazetteer Database, <http://www.world-gazetteer.com/>; The Principal Agglomerations of the World Database, Thomas Brinkhoff, <http://www.citypopulation.de/>; World Bank staff calculations.

Note: Metropolitan areas with 10 million inhabitants or more are classified as megacities. Such agglomerations include a central city and neighboring communities linked to it by continuous built-up areas or commuters, inhabited at urban-density levels. Some metropolitan areas have more than one central city (for example, Kuala Lumpur–Petaling Jaya, Osaka–Kobe, and Tokyo–Yokohama–Kawasaki). Primate cities in this table are those that are at least twice as large as the next largest city in the country. Gateway cities function as important points of entry or exit for regional trade and investment.— = no data are available.

a. Percentage of urban population.

b. Refers to the share of the population of Taiwan Province, China.

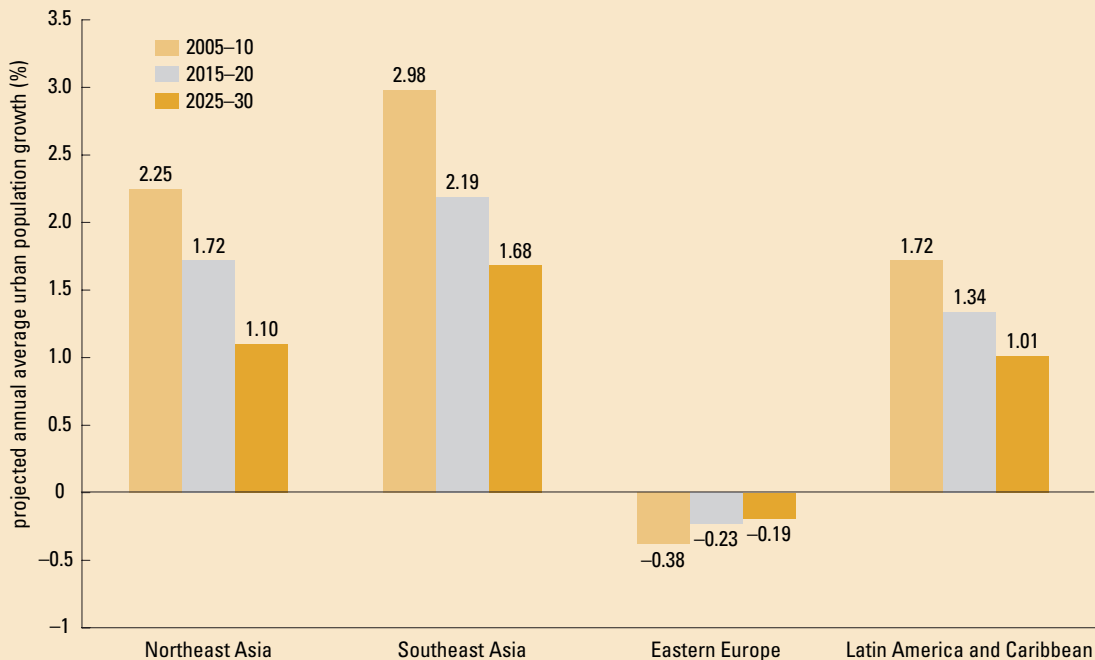
c. Does not meet the definition of a primate city. Ho Chi Minh City is larger than Hanoi.

of the world, East Asia's urban population growth rates will be the highest (see figure 5.1).

In the region's middle income countries, urbanization will be a major force. Over the next 25 years, urban populations will rise from 536 million to 878 million in China, from 108 million to 189 million in Indonesia, from 52 million to 87 million in the Philippines, from 22 million to 47 million in Vietnam, and from 21 million to 35 million in Thailand. In many of these countries, urbanization in the past has generally meant an increase in the size of the largest metropolitan areas. It is an open question whether these cities, which today house about 740 million people, can expand sufficiently to accommodate 500 million more people without seriously compromising their potential to contribute to economic growth.

The experience around the world shows that government policies are generally ineffective in changing the rate of overall migration. Furthermore, given the importance of the large East Asian cities as growth poles, it is unlikely that policy

■ FIGURE 5.1 Rapid Urbanization Lies Ahead for East Asian Countries



Source: United Nations 2003.

makers will be able to resist the future economic development of these cities. Practically speaking, therefore, the role of public policy will be to manage the distribution of settlement sizes within a country, while harnessing the dynamism and improving the livability of major metropolitan areas.¹⁰

The Growing Congestion in Large Cities

Because of the large rise in urban populations in East Asia, the problem of metropolitan congestion—the costs associated with big city grime, crime, and time—may thwart efforts to exploit agglomeration economies. While urban crime does not appear to be a pressing problem in much of East Asia, the growing pollution and congestion in the region's cities have the potential of becoming the most important factors compromising economic growth. (See table 5.3 for a comparison of China's urban pollution and congestion with the situation in developed countries.)

National governments have been active in competing for global investors and tourists through megaurban projects and developments that have been concentrated largely in capital and major cities. Driving the rate of urbanization, as well as the dynamism of urban areas, has been the capacity of the largest cities, such as Tokyo, to command a central position first in the national economy, then the regional economy, and, ultimately, the global economy. In the 1960s, Tokyo was a capital city that attracted local business investments, and it was a destination for migrants from other parts of Japan. By the 1970s, it had become the financial, telecommunications, and transnational corporate center of the country. Full integration into the world economy came in the 1980s. Such a metropolitan

■ TABLE 5.3 Chinese Cities Compare Poorly to Cities in the G-7 in Grime and Time Costs

| Indicator | China | G-7 |
|--|-------|-----|
| Congestion | | |
| Average travel time to work (minutes) | 47 | 25 |
| Transport-related injuries and deaths (per 1,000 vehicles) | 31 | 12 |
| Pollution | | |
| Particulate matter in the air (mg per m ³) | 320 | 45 |
| Sulphur dioxide (mg per m ³) | 82 | 19 |
| Nitrous oxide (mg per m ³) | 88 | 56 |

Source: Zhou 2006.

development process appears to have influenced equally the dynamics of growth in Seoul and Taipei, as well as other cities in Southeast Asia and, more recently, along coastal China and Vietnam. There is every indication that cities are powering both economic growth and human development in much of East Asia.

The contribution of metropolitan areas to national economies and the pace of urbanization (the increase in the number of people) and urban expansion (the increase in the amount of land occupied) have diverged.¹¹ For example, envelopment—metropolitan areas spreading to absorb areas previously designated as rural—is almost as important in explaining urbanization in some East Asian countries (for example, China, Indonesia, and Vietnam) as are natural increases in city populations and migration.¹² Furthermore, the conditions that will sustain East Asia's metropolitan areas—consisting mainly of good management (governance), the quality of the physical environment, and efficient and sufficient financing—differ markedly from country to country, as well as from the corresponding conditions in other regions of the world. For example, seven of the world's 21 megacities are in East Asia, compared to only two in the (outside-Asia) group of countries in the Organisation for Economic Co-operation and Development. The challenges involved in sustaining megacities—dealing with the problems of grime, crime, and time—are often of a significantly higher order than the challenges in smaller-sized metropolitan areas. Therefore, given such considerations, while some generalizations about public policies for raising employment and incomes in East Asia's urban areas are possible, policies will have to be customized to the particular circumstances in each country.

The Growing Importance of Small and Midsized Cities

East Asian policy makers and analysts in most of the countries are giving exceptional attention to the growth, contribution, and sustainability of the 15 to 20 capital, primate, and megacities. Over the next decade, half of the increase in urban populations in the countries of the region will be in cities of less than 500,000 people (see table 5.4). If these cities need to enable economic growth at the pace of the last decade, they will have to be both well managed and well connected.

Services tend to be poorer in smaller cities because capital is frequently captured by large cities. But capital-output ratios are higher in large cities, indicating lower efficiency. Nonetheless, from a settlement perspective, big cities are more efficient. The efficiencies may lead to overconcentration (see box 5.2). With new communications and transport technologies, however, it is possible to obtain the benefits of livability *and* reap productivity gains from investments in small cities.

■ TABLE 5.4 **About 60 Percent of the Urban Population Lives in Cities of Less Than a Million**
millions of people

| City population | 2005 | 2010 | 2015 | Increase, 2005–10 | 2015 (%) |
|----------------------|------|-------|-------|-------------------|----------|
| 10 million or more | 96 | 101 | 117 | 21 | 10.1 |
| 5–10 million | 64 | 69 | 90 | 26 | 7.8 |
| 1–5 million | 233 | 279 | 299 | 66 | 25.8 |
| 500,000 to 1 million | 99 | 103 | 105 | 6 | 9.1 |
| Fewer than 500,000 | 429 | 489 | 549 | 120 | 47.3 |
| Total urban | 921 | 1,041 | 1,160 | 239 | 100.1 |

Source: United Nations 2006.

Note: The table covers Brunei, Cambodia, China (including Hong Kong [China] and Macao [China]), Indonesia, Japan, the Democratic People's Republic of Korea, the Republic of Korea, the Lao People's Democratic Republic, Malaysia, Mongolia, Myanmar, the Philippines, Singapore, Thailand, Timor-Leste, and Vietnam.

■ BOX 5.2 **Optimal Urban Concentration?**

The literature on city size in developing countries has three strands, all of which point toward the tendency of these countries to overconcentrate and, hence, to pay a price in terms of reduced economic growth. The first is a theoretical strand, which argues that cities are either only efficiently sized or oversized since both types of city will pull resources from undersized cities that are not exploiting scale economies sufficiently. The second strand is empirical; it tries to estimate the costs and benefits of expanding city size and concludes that the marginal social costs of expansion in large cities exceed the marginal benefits. The third strand points to governments that favor capital cities or business center cities over other types of cities in terms of access to public services or public officials; it encourages overconcentration.

Henderson (2000) addresses these questions for a panel of between 80 to 100 countries during 1960–95 and finds that: (1) there is an optimal degree of concentration for given levels of development; the rise is up to a per capita income of US\$5,000 (in 1995 purchasing power parity dollars) before a modest decline; (2) the optimal concentration becomes lower as a country grows larger;

(3) several countries in East Asia (notably, the Republic of Korea and Thailand) are overly concentrated relative to their level of development; the region that exhibits the most systematic overconcentration is Latin America; (4) the main policy variable affecting concentration is investment in interregional transport infrastructure; and (5) the growth losses of excessive concentration rise with income, so that the growth effects of investment are higher among middle-income countries than they are among low-income countries.

Au and Henderson (2006) ask whether China's cities are too small. They develop and test a model of the scale economies and diseconomies internal to a city and the effects of intercity trade costs following the new economic geography. They conclude that migration restrictions may have caused between half and two-thirds of Chinese cities to remain too small. In contrast, less than 5 percent of the cities are too large. For the typical city, being too small implies a loss of about 17 percent in terms of net output per worker. But, for at least a quarter of the cities, these losses may range between 25 and 70 percent. Their recommendation is the liberalization of domestic migration policies.

Good economic management is required to achieve this outcome. Yet, good economic management has generally proved a challenge for the governments of small and medium cities.

There are large differences in livability among all cities, not merely among the main cities of East Asia. Within each country, we find significant variations between core and secondary urban areas. Despite such heterogeneity, there are common issues. The principal one is connectivity. Large cities have generally been successful in becoming connected. This is often an important reason why these cities grew in the first place. For small cities, connectivity is a challenge still to be met.

China is facing all these tests—large rural-to-urban shifts, rising congestion in large cities, the mushrooming of small cities, and heterogeneity in the economic and administrative performance of cities—at the same time. In this sense, it is therefore essentially a microcosm of the East Asia region. However, China seems to have realized the enormity of the task ahead and has moved farther than other middle-income countries of the region in addressing some of this complexity. The next section analyzes the forces of the economic geography of China in which cities play a central role.

Economic Geography in East Asia: Illustrations from China

The new economic geography is one of the more exciting developments in economic analysis. It permits a consideration of economic structure and behavior within a framework of interconnected markets (general equilibrium) in explaining the spatial formation of economic activity. It therefore has the potential to explain critical (though not all) underpinnings of metropolitan growth. However, there are few empirical studies supporting the main hypotheses. The gap is especially noticeable for developing countries. So, it is useful to consider insights provided by the application of several simple propositions of the new economic geography to developments in East Asia.

In the new economic geography, the primary reason for city formation and growth is external economies of scale or agglomeration economies (see box 5.1). The basic observation is that spatial concentrations of production, trading, and creative activity have a propensity to feed off themselves and to generate environments that promote the additional clustering of economic activity.¹³ This also means that there is greater path-dependence than conventionally assumed by development theorists and practitioners: the set of opportunities available to a metropolitan area is shaped powerfully by the economic activities the area has already established.¹⁴ The initial set of activities might arise from a variety of fac-

tors, including happenstance (for example, Hong Kong [China], Macau [China], and Singapore), endowments (Melaka, Malaysia), or policy (Bandung, Indonesia), but, once established, agglomeration tends to lock into specific locations. Both labor and capital (including new technologies, creative centers, and links to other countries) are heavily concentrated in metropolitan areas, regardless of the level of development of a country. This section discusses some aspects of economic geography in China, where recent work has been done.

Transport Costs, International Integration, and Specialization

The interaction of economic geography with international integration is illustrated by two examples from China. The first of these is shown in table 5.5, which uses simplified costs for containerized garment exports from China to the western coast of the United States. At the same input costs, but a different transport burden, the maximum possible value added in Lanzhou (a city in the interior of China) only reaches 60 percent of that in Shanghai. The return to labor in the interior province reaches only 43 percent of that in the coastal area and only 33 percent of the international wage. Geography has a strong impact on wages and per capita incomes and, therefore, on the size and scope of urban agglomerations. As the experience of most countries suggests, offsetting such effects is costly, takes time, and requires a multipronged strategy.

■ TABLE 5.5 **Geography Influences the Returns to Labor in China**
percent

| Cost, price component | Seattle, WA | Shanghai, China | Lanzhou, China |
|---------------------------------------|-------------|-----------------|----------------|
| Output sale price c.i.f. ^a | 100 | n.a. | n.a. |
| Output transport cost | 0 | 5 | 15 |
| Output sale price f.o.b. ^b | n.a. | 95 | 85 |
| Input cost | 40 | 40 | 40 |
| Input transport | 0 | 5 | 15 |
| Value added | 60 | 50 | 30 |
| Capital | 15 | 15 | 15 |
| Labor | 45 | 35 | 15 |

Source: Compiled by the authors.

Note: As in most garment processing for export from China, the inputs are imported; the output price is determined in the competitive U.S. market. Overland access to the port from China's interior typically accounts for two-thirds of the total transport costs. n.a. = not applicable.

a. The output sale price in Seattle includes the cost, plus insurance and freight.

b. The output sale price in Lanzhou and Shanghai is the price free on board.

This point may be seen in a more generalized manner in table 5.6, which compares returns to land and labor in interior cities with those at the access points (all seaports) through which the output of the interior cities reaches other markets. In all cases, labor costs are lower in the interior cities than in the coastal cities. Moreover, the price of real estate is generally 25 to 50 percent less in the interior cities than in the major seaports.¹⁵ The link with competitiveness may also be deduced in the survey upon which the table is based and which covered 12,400 firms in 120 Chinese cities that account for between 70 and 80 percent of China's GDP.¹⁶

Because of the interaction among the various types of lower factor costs, especially labor, and the higher transport costs, interior cities tend to be more suitable for bulk production (for example, coal, which is shipped by slower means of transport such as railways) or high-value goods (for example, computer chips, which are valuable enough to be shipped by air). High transport costs tend to affect medium-value, high-volume goods that are too valuable to ship by rail, but not worth shipping by air. By and large, this is the spatial pattern of production found in China's industrial structure.

■ TABLE 5.6 China: Representative Factor and Transport Costs for Typical City-Pairs, 2005
yuan

| Interior city | Land | Labor | Transport | Designated seaport | Land | Labor | Transport ^a |
|-----------------------|--------|--------|-----------|--------------------|--------|--------|------------------------|
| Changchun | 5,240 | 10,491 | 3,948 | Dalian | 10,556 | 14,061 | 400 |
| Harbin | 12,341 | 9,080 | 5,244 | Dalian | 10,556 | 14,061 | 400 |
| Taiyuan | 16,539 | 8,666 | 3,342 | Tianjin | 19,274 | 14,429 | 400 |
| Huhehaote | 8,014 | 7,983 | 4,176 | Tianjin | 19,274 | 14,429 | 400 |
| Xi'an ^b | 10,188 | 10,786 | 6,684 | Shanghai | 24,603 | 21,095 | 400 |
| Lanzhou ^b | 5,899 | 8,695 | 11,016 | Shanghai | 24,603 | 21,095 | 400 |
| Wulumuqi ^b | 13,930 | 9,937 | 22,710 | Shanghai | 24,603 | 21,095 | 400 |
| Chengdu | 19,049 | 10,618 | 15,048 | Shanghai | 24,603 | 21,095 | 400 |
| Changsha | 8,911 | 9,917 | 4,770 | Guangzhou | 6,760 | 20,772 | 400 |
| Guiyang ^c | 8,824 | 8,987 | 5,058 | Guangzhou | 6,760 | 20,772 | 400 |
| Kunming ^c | 11,850 | 10,967 | 6,432 | Guangzhou | 6,760 | 20,772 | 400 |

Source: World Bank 2006b.

Note: Land cost is the average monthly rent for 1,000 square meters. Labor is the monthly wages for 10 workers, assumed to include six full-time and four part-time workers. Unless otherwise indicated, transport costs are assumed to be Y6 per kilometer to truck a 20-foot container to the relevant seaport.

a. Transport costs are negligible; the analysis assumes Y400 for handling costs within each seaside city.

b. Transport costs are to Lianyungang.

c. Transport costs are to Fancheng.

The relative lack of success of the export processing model in the interior cities of China is explained by the fact that transport costs are much higher for interior cities that import low- or medium-value inputs from the coastal cities or from overseas.¹⁷ Because export-led growth, often through joint ventures with foreign investors, has played a dominant role in the early successes of the rapidly growing coastal cities of China, the combined effects of geographical distance and cumulative causation from agglomeration economies go a long way toward explaining the lagging status and smaller sizes of interior cities in China.

Economic Geography and Spatial Income Differentials

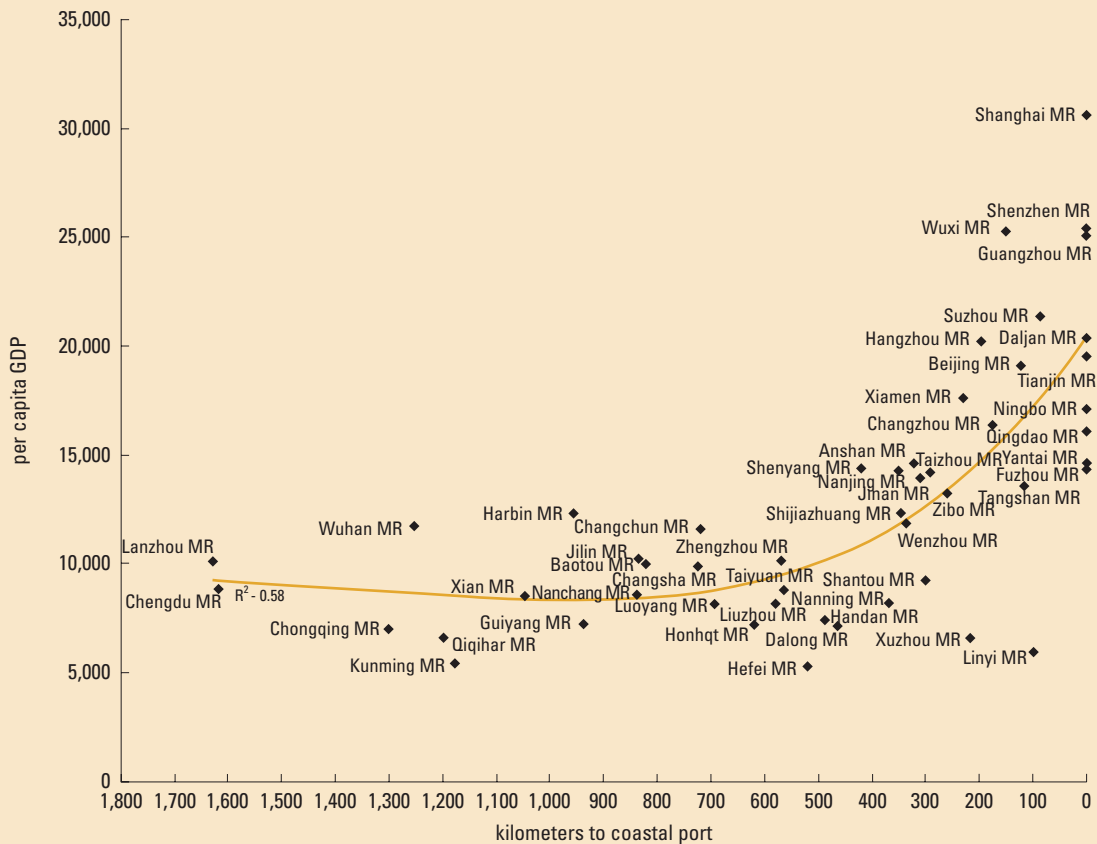
Geography has major consequences for the welfare of individuals and communities. Agglomeration effects, while powerful levers for growth, are also a source of significant spatial inequality. As seen in figure 5.2, spatial disparities in average incomes across China's metropolitan regions may be related to a single dominant factor: distance from a port. These income differences are also reflected in provincial wage disparities: cities in coastal regions gain a wage premium due to their location advantage.¹⁸

In fact, analysis of the survey results for Chinese cities shows that city characteristics (per capita income, economic growth, and transport costs) explain more than one-third of the observed differences in the productivity of firms in various locations in the country. Especially in cases where globalization is leading to more-or-less uniform worldwide prices for products and material inputs, high transport costs are unequivocally depressing returns to labor in interior cities. Enhancing competitiveness, raising incomes in interior cities, and reducing spatial inequalities through cumulative processes therefore require nationwide logistics initiatives that increase access to markets and lower the costs of this access.

Space, Industry, and Policy in China

The Chinese economy has grown rapidly since the reforms in the late 1970s. However, selective policies and the incremental extension of liberalization from the coast to the west have biased regional growth in favor of the coastal areas beyond their natural advantages. Double-digit annual growth in many coastal provinces has resulted in the appearance of wide regional disparities. A quarter century after the reforms started, all provinces in the rich cluster are coastal, while all provinces in the poor cluster are remote or western.¹⁹

■ FIGURE 5.2 Urbanites in China's Coastal Cities Are Twice as Rich as Those in the Interior



Source: Leman 2005.

Note: The figure shows the situation of 53 metropolitan regions (MRs) in China in 2000.

Agglomeration effects are self-reinforcing. Firms located in coastal provinces have benefited from a liberal investment climate and, eventually, from economies of scale. High population densities, the geographical concentration of activities, the development of export sectors, and the large inflows of foreign direct investment in coastal provinces have increased productivity and attracted more firms. The coastal regions have developed as economic centers thanks to their advantageous geographical position, but also because of favorable effects in the agglomeration process tied to the fact that they were first movers. Technology and labor-intensive industries have concentrated in different provinces. High-technology industries

have tended to locate in the most developed coastal clusters; labor-intensive industries have gradually deconcentrated and moved from these clusters to the less well developed coastal provinces, but almost entirely to those provinces with relatively easier access to domestic and international markets.

Nevertheless, the diffusion of activities has been limited. Only a few industries have relocated to inland provinces adjacent to dynamic coastal neighbors. To some extent, the industrialization of the coastal region has been fueled by the inflow of labor and capital. Slower urbanization in the inland regions, which are less advanced, has limited the potential of these regions to benefit from economies of scale. Inadequate regional integration has restricted the spillover effects from the coast to entire territories, especially to remote inland areas.²⁰ Rapid economic growth has led to a surging demand for infrastructure. The shortage of transport facilities has become a development bottleneck and has aggravated the fragmentation of regional economies. In the 1990s, investments in infrastructure became a national priority. However, a large part of these investments is still concentrated in coastal provinces. Consequently, remote inland provinces labor under a heavy economic and geographical handicap.

As China has become more market oriented, economic geography has played an increasingly important role in development. High transport costs have lowered profit margins or even eliminated the potential for trade. Remoteness is associated with slower growth. The attractiveness of a region depends on its effective distance to economic centers, which is conditioned by distance and by the availability of transport facilities.²¹ Better infrastructure would reduce not only the transport costs of the receiving province, but also those of the provinces that serve as transit points. To improve access to the markets of a province, the province's own infrastructure network and that of the transit provinces linking the province to economic centers are all important. Similar amounts of investment in infrastructure in different locations will have varying impacts in modifying the effective distances between provinces and economic centers. Investment that targets location is able to change relative regional geographical and economic attractiveness, thereby contributing to wider growth.²² In this context, the following points are worthy of note:

- Infrastructure in coastal provinces is estimated to have the largest impact on national growth, but the positive effects are likely to be limited mainly to coastal areas due to the significant cumulative effects of infrastructure investment on local development and the importance of intracoastal trade. The increased regional inequalities that might result from such a policy are inconsistent with China's long-term development goals.

- The uncoordinated construction of infrastructure in remote and western provinces will produce unsatisfactory growth results not only for China generally, but also for the western provinces. In the absence of better interregional transport facilities, it is likely that only the receiving provinces will benefit. If western provinces are not appropriately linked to markets, improvements in the intraprovincial transport network may lead merely to an inward-looking production structure. In some cases, the limited size of the local market may not be able to trigger or support economies of scale.
- Building infrastructure in central transport hubs such as Henan, Hubei, and Hunan will most effectively encourage the growth of inland provinces by modifying the economic geography of the entire territory in favor of the inland region. On the one hand, improvement in transport facilities in central hubs reduces transport costs from the west to economic centers; on the other, the large multiplier effects of investment in infrastructure on local development favor the emergence of central hubs as future growth centers.

Access to neighboring markets also plays an important role in regional development thanks to nonnegligible growth spillover effects through backward and forward links. In China, although regional inequality has widened, positive regional growth spillover effects are dominating over the negative shadow effects: the growth of one province encourages rather than eclipses the growth of others.²³ The rapid take-off of the coastal region following the reforms maximized aggregate growth at the national level. In this sense, the regional development pattern has been effective. Some second-tier coastal provinces such as Fujian, Guangdong, Hebei, Jiangsu, Shandong, and Zhejiang have emerged as growth locomotives. On one side, their rapid acceleration provided a growth push in the most developed poles, such as Shanghai. On the other, it propelled a growth pull so that less well developed inland neighbors, such as Henan, Hubei, and Hunan, might catch up.

Thus, as in the case of choice of location of infrastructure, if the objective is to maximize national growth, this analysis would suggest that investment in these second-tier coastal provinces would be most effective in optimizing regional growth spillovers. However, the distribution of this additional investment and its spillover effects would disproportionately favor coastal regions, and this would result in a widening in regional inequality. If the objective is to achieve balanced growth without compromising spillovers at the national level, targeting investments in *central regional hubs* that facilitate interregional exchanges between the coast and inland areas might be the most effective strategy.

Reducing domestic transport costs is important, but reducing differences in the quality of city management also represents a sound way to offset some of the disadvantages of unfavorable location. Box 5.3 shows that differences in city management appear to reinforce the power of economic geography in China.

Meeting the Urban Challenge

International links, the fragmentation of production and service processes, and the mobility of workers are compelling policy makers to reappraise conventional policies. Natural forces and public policy instruments are powerful tools for restructuring urban hierarchies so as to offset the current biases against secondary and small metropolitan areas. Nationwide and regional economic policies (including those needed to eliminate biases), together with accelerated programs for the provision of interurban connective infrastructure, have the potential to generate relatively more well balanced urban outcomes.

■ BOX 5.3 Differentials in City Performance in China

A 2005 World Bank survey of 120 cities in China documents that the quality of the investment climate varies widely. Since basic business laws and many regulations are essentially the same across provinces, the differences must often reflect variations in the implementation of the laws and regulations and, more broadly, variations in city management. Taxes and fees range from 3 percent of sales revenue to almost 7 percent; firm interactions with the bureaucracy vary from 36 days annually to 87 days, and times for customs clearances may range from about 5 days to 20 days across cities. There appears to be regional differences in ratings. The best is the southeast (well connected to foreign and domestic markets), and the worst is the most remote northwest. The survey report estimates that cities at the bottom of the investment quality ladder might expect 30 percentage point increases in firm productivity and foreign ownership if they are able to improve government efficiency and labor flex-

ibility to the levels of the top-performing cities in the southeast.

The share of university-educated workers also varies widely across cities, from about 11 percent at the lower end to almost 29 percent at the upper end. The survey finds that firms in more populated cities are more productive, indicating the presence of agglomeration economies. But the report also suggests that infrastructure investments are able to improve the attractiveness of smaller, remote cities. The data indicate, for example, that a 30 percent reduction in overland transport costs might raise foreign ownership in firms by 5 to 10 percent. The report's recommendations include improvement in the management of China Rail, the development of national trucking companies, more regular air cargo services, and regulatory reforms to encourage domestic and international integrated logistics providers to expand services to the interior.

Source: World Bank 2006b.

As emphasized in the previous section, it is important to conceive of the development of cities in parallel with the development of regions and subregions, rather than as isolated nodes in economic space. For example, the Singapore-Johore-Riau growth triangle and the Hong Kong–Zhujiang Delta are experiencing the kind of urban expansion and interconnections that reflect the emerging links between city growth and new patterns of economic activity. It is difficult in these areas to conceive of city development without embedding plans on settlements, business districts, and infrastructure links within broader plans for regional development.²⁴ Coordination, especially in the provision of infrastructure such as access roads and common spaces for nodal activity such as tourism and logistics, will help exploit synergies within a broader set of economic activities. At the same time, the application of effective incentives and monitoring mechanisms, together with performance-oriented measures of success and governance, will allow countries to harness decentralized local government efforts more effectively so as to address income and employment needs.

The management of cities *within* discrete regions presents a special set of problems for East Asian policy makers. Nodal cities within regional development belts have economic importance far beyond their individual contribution to national output and growth. So, it is vital that metropolitan, regional, and sometimes even national planners work together. Several elements of such coordinated planning need attention. Vertical functional mandates within large cities need to be clear to enhance the productivity of metropolitan investment, as well as the efficiency with which firms operate in a city. At the same time, jurisdictional boundaries and functional responsibilities between the nodal city and the local governments in an associated region need to be sufficiently flexible to accommodate urban expansion and promote an efficient trunk infrastructure and regional spatial structure. In China, especially, but also in Indonesia, the Philippines, and Thailand, horizontal fiscal disparities between nodal cities and adjoining local governments have emerged from the pattern of existing economic specializations (for example, manufacturing) or government policy. Better regional spatial planning often requires dispersing specific urban functions (such as solid waste treatment, airports, and skills and training centers) within a contiguous region, rather than crowding them in a large city. Mechanisms to transfer fiscal resources among urban governments in a region are essential to achieve such efficiencies.

Governments should also continue efforts to develop the potential of the megacities and larger metropolitan areas of East Asia and enhance their competitiveness so they serve as growth drivers for national economies. Typically, this involves careful attention to labor costs and the quality and availability of human

capital (see box 5.4). More broadly, there is a need to focus on the provision of a world-class business environment, taking guidance from the numerous city rankings that provide benchmarks and assistance to investors in their location decisions. However, market potential, infrastructure (especially power, telecommunications, and transport), transparency in the real estate market, and certainty and predictability in transactions will play an equal, if not more important part in enhancing competitiveness.²⁵

Keeping Large Cities Livable

A mixture of mainstream national, regional, and urban economic policies discussed extensively by urban planners in recent years is likely to generate high levels of income growth in most East Asian cities.²⁶ A major issue confronting the larger metropolitan areas of East Asia, especially the megacities, is whether this growth is sustainable. Limits to agglomeration operate through the costs of grime, time, and crime mentioned above, which operate not only by raising the costs of production and service links, but also by reducing the livability of cities.

Figure 5.3 plots measures of livability of large cities in East Asia, Eastern Europe, and Latin America against per capita incomes. The scatter plot indicates that East Asian cities do not do any better or worse than expected for their levels of national per capita income. The potential problem, of course, is that urban populations are expected to grow much more rapidly in the countries of the region than they are in Latin America (where they are expected to rise mainly due to population growth in cities) or Eastern Europe (where urban populations are likely to shrink).

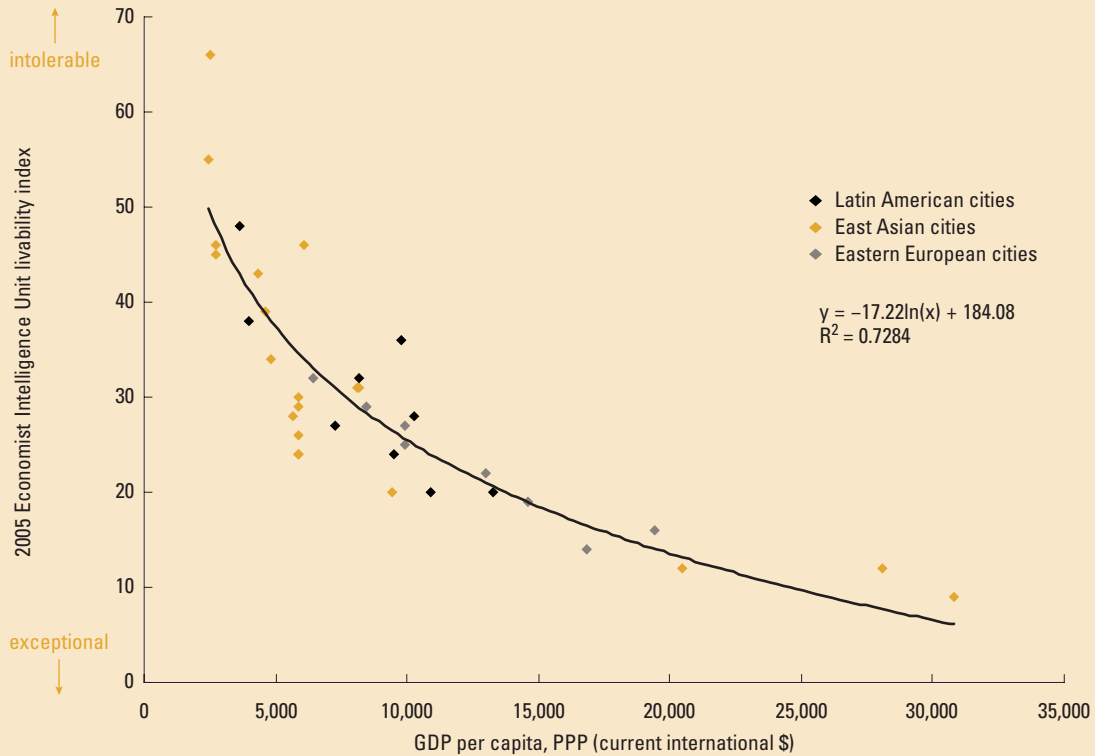
■ BOX 5.4 Human Capital Externalities in Cities

Cities may help societies obtain more out of their stock of educated workers because human capital spillovers might increase aggregate productivity beyond the direct effect of human capital on individual productivity.²⁷ Increases in the concentration of educated workers may also improve governance and reduce crime.

Moretti (2003) examines these effects for the United States. Virtually all cities experienced an increase in the

ratio of educated workers between 1980 and 2000. But cities that initially showed high ratios of educated workers experienced larger increases than cities with low ratios. Other studies report that per capita incomes have grown more rapidly in cities with initially high levels of education. Still others estimate that rising average levels of education in a city raise average wages over and above the private return to education.

■ FIGURE 5.3 East Asia's Large Cities Are as Livable as Those in Other Middle-Income Regions



Source: EIU 2005.

Such indicators by themselves do not provide a good basis for assessing the efficiency of East Asian cities as population settlements. The proof would have to be in the physical living conditions of the populations in these cities. To take one example, urban transport is an essential aspect of infrastructure provision to ensure mobility in East Asian cities by supplying connectivity for urban residents between their homes, places of work, and social or business engagements. Not all the cities in developing East Asia are opting for sustainable modes of urban transport and mobility, at least in terms of the indicators shown in table 5.7 (for example, passenger car ownership compared to total public transport vehicles per million people in the population). Not surprisingly, indicators such as road safety measured through total transport deaths per million people are worse in cities

■ TABLE 5.7 Urban Transport and Road Safety Indicators

| City | Roads (per 1,000 persons) | Public transport lines (miles per 1,000 persons) | Passenger cars (per 1,000 persons) | Public transport investment (% of city GDP) | Average road network speed (km/hour) | Public transport vehicles (per million persons) | Transport deaths (per million persons) |
|------------------|---------------------------------|--|--|---|--|---|--|
| Bangkok | 584.1 | 642.3 | 249.1 | 1.59 | 15.0 | 1,890.4 | 192.1 |
| Beijing | 323.6 | 556.0 | 42.9 | 0.63 | 18.0 | 657.4 | 38.2 |
| Ho Chi Minh City | 266.9 | 347.5 | 7.9 | 0.00 | 25.2 | 671.8 | 114.5 |
| Hong Kong, China | 276.2 | 2,139.9 | 46.5 | 0.37 | 28.3 | 1,807.6 | 38.4 |
| Jakarta | 664.5 | 1,104.8 | 90.9 | 0.83 | 18.6 | 2,044.6 | 227.1 |
| Kuala Lumpur | 1,518.3 | 1,196.1 | 208.7 | 1.08 | 28.1 | 428.5 | 282.7 |
| Manila | 519.7 | 745.1 | 82.4 | 0.38 | 18.0 | 13,375.4 | 80.5 |
| Osaka | 3,901.2 | 498.0 | 264.5 | 0.37 | 33.0 | 951.1 | 67.6 |
| Seoul | 945.8 | 2,724.2 | 160.1 | 0.90 | 23.8 | 1,122.3 | 170.3 |
| Shanghai | 314.3 | 2,852.8 | 15.2 | 0.55 | 20.0 | 738.0 | 82.3 |
| Singapore | 979.1 | 1,200.1 | 116.3 | 0.44 | 35.2 | 1,304.2 | 78.7 |
| Taipei | 848.6 | 2,435.8 | 175.2 | 1.32 | 16.6 | 1,113.1 | 184.0 |
| Tokyo | 4,013.9 | 417.0 | 306.8 | 0.30 | 26.1 | 976.1 | 53.1 |

Source: Ooi 2006.

where passenger car ownership in relation to the total availability of roads is relatively higher.

Other indicators of livability may also be assessed to determine whether the rapid growth rate of major metropolitan areas has necessarily improved the sustainability of cities as settlements. Table 5.3 elsewhere above presents a comparison of transport-related indicators of livability in metropolitan areas in China and the leading developed countries. It suggests that, on average, city residents in China have a significantly lower quality of life compared to residents in developed countries. Moreover, the high motor vehicle emissions, which are high not only in Chinese cities, but also in other East Asian cities, degrade the environment more generally within countries and across borders.

The results of a potentially useful attempt at constructing an urban sustainability index are presented in table 5.8. The table shows an equally weighted index that encompasses several variables at the city level. The variables include economy (for example, metropolitan GDP per person), urban transport and road safety (for instance, road network speed), air quality (carbon emissions, for example), health (such as infant mortality), crime (homicides, rapes, thefts, and so

■ TABLE 5.8 **Hong Kong (China) Leads the Region in Sustainable City Development**

| City | Composite score | Index |
|------------------|-----------------|-------|
| Ho Chi Minh City | 976 | 33.5 |
| Bangkok | 874 | 40.7 |
| Jakarta | 822 | 44.4 |
| Manila | 806 | 45.5 |
| Kuala Lumpur | 805 | 45.6 |
| Beijing | 724 | 51.3 |
| Taipei | 702 | 52.9 |
| Seoul | 640 | 57.2 |
| Shanghai | 619 | 58.7 |
| Singapore | 616 | 58.9 |
| Osaka | 534 | 64.7 |
| Tokyo | 515 | 66.0 |
| Hong Kong, China | 442 | 71.2 |

Source: Ooi 2006.

Note: Data are for 2000–01.

on), housing and environmental infrastructure (water and electricity connections, for instance), and waste management (such as solid waste disposal through landfills, incineration, and recycling).

An index of this sort is indicative of some of the parameters that might determine the sustainability of a metropolitan area. Decisions regarding the location of economic activity are tied closely to judgments about how easy or difficult it is to live in specific metropolitan areas. Urban planners and national authorities in places such as Bangkok, Ho Chi Minh City, and Jakarta, among others, therefore need to pay attention to basic social, economic, and physical infrastructure that would enhance sustainability.

Traffic congestion is a major problem in many megacities in East Asia. In order to ameliorate this problem, policy makers have attempted various solutions, ranging from building additional road capacity and promoting public transportation to introducing various taxes and quotas on the number of cars allowed on a certain road. Seoul provides an example of how local authorities are attempting to solve traffic congestion, while trying to make the city more livable. A major motorway carrying over 160,000 cars per day was perpetually jammed. Local authorities decided to tear it down, restore the Cheonggyecheon River, which had once flowed underneath the motorway, and create a five-mile long, 800-yard wide, 1,000-acre park where the river previously flowed in the middle of the city. Surprisingly, traffic congestion has fallen despite the demolition of the motorway. This paradox has been observed in cities such as New York and Stuttgart as well.²⁸ Megacities such as Shanghai have also shown an interest in implementing similar projects to improve livability and reduce congestion.

Managing Development on the Urban Fringe

In China, Indonesia, Thailand, and Vietnam, because of the high rural densities around cities, rural settlements are being transformed into urban areas. In Indonesia, for example, about a third of the urbanization in the cities in Java is due to urban expansion into formerly rural areas; about a third is due to rural-urban migration; and the remaining third is the result of the natural increase in urban populations.

High population densities are a feature of most East Asian cities, and city planners have highlighted the smaller territorial footprint of these cities relative to cities in developed countries (see table 5.9). Typically twice as dense as their developed-country comparators, cities in East Asia are potentially efficient nodes of economic activity and settlement. Often, however, there is great divergence

■ TABLE 5.9 **Kuala Lumpur Has the Lowest Density Indicators among Metropolises, 2000–01**

| Metropolitan area | Urban density (persons/ha) | Job density (jobs/ha) | Jobs in central business districts (% of total) | Metropolitan GNI per capita (US\$) ^a |
|-------------------|----------------------------|-----------------------|---|---|
| Ho Chi Minh City | 355.7 | 139.1 | 10.3 | 1,029 |
| Beijing | 123.1 | 95.9 | 25.3 | 1,829 |
| Jakarta | 173.4 | 66.6 | 22.8 | 1,861 |
| Manila | 206.4 | 91.8 | 18.4 | 2,217 |
| Shanghai | 196.3 | 114.9 | 75.2 | 2,474 |
| Bangkok | 138.7 | 73.5 | 10.5 | 6,317 |
| Kuala Lumpur | 57.9 | 24.4 | 20.0 | 6,991 |
| Seoul | 230.4 | 109.4 | 7.5 | 10,305 |
| Taipei | 230.1 | 96.4 | 14.3 | 13,036 |
| Hong Kong, China | 320.4 | 151.3 | 6.4 | 22,969 |
| Singapore | 93.5 | 53.3 | 16.4 | 28,578 |
| Osaka | 98.1 | 40.0 | 15.9 | 39,937 |
| Tokyo | 87.7 | 47.5 | 14.3 | 45,425 |

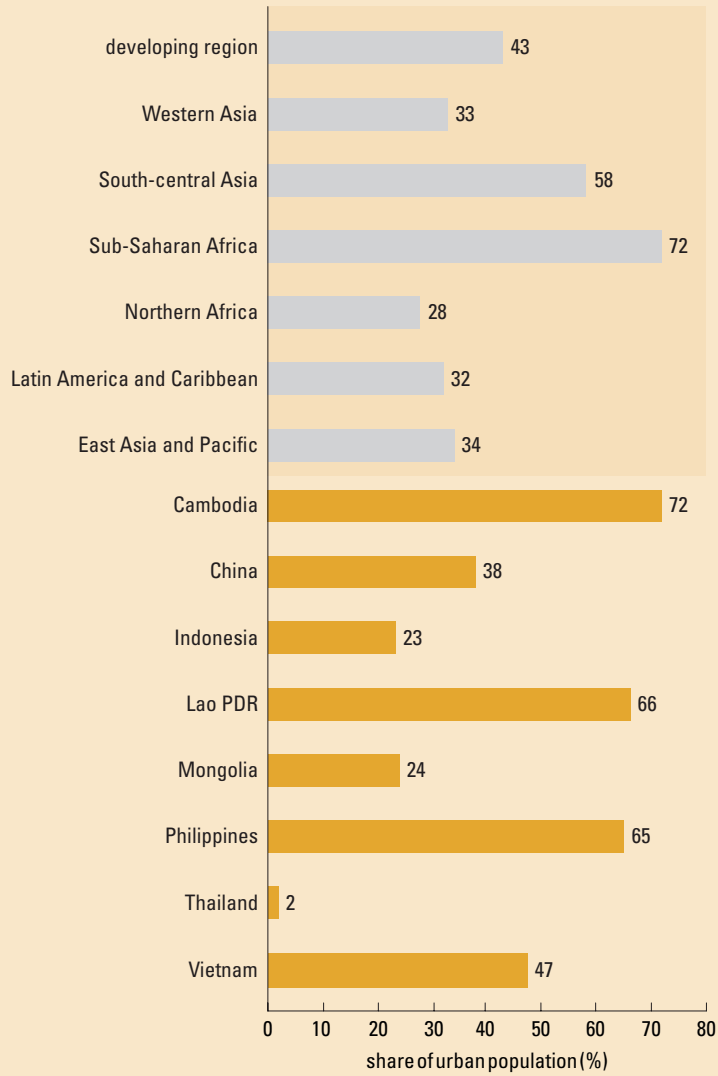
Source: Ooi 2006.

a. GNI = gross national income.

between the employment and population densities of urban areas. With the exception of Shanghai, central business districts account for only a small share of urban employment. In the absence of adequate data, we may only speculate that there are large efficiency gains—for example, through a reduction in service link costs—that would accrue to East Asia’s largest metropolitan areas through improved urban planning.

A visible effect of inadequate planning is the growth of slums. A third of East Asia’s urban population lives in slums, a ratio that is already higher than the ratio in other middle-income regions such as the Middle East and Latin America (see figure 5.4). Given that urban populations are expected to grow at a more rapid rate over the next two decades, city managers in East Asia face a stiff challenge. There is perhaps nothing more important for keeping the growth prospects of countries in the region bright than proper urban management as cities expand. The way to ensure this is through better city and land use planning; the improved exploitation of green spaces; the optimization of utility assets, energy conservation, enhanced urban water and sanitation management; and solid waste management.

■ FIGURE 5.4 A Third of East Asia's City Dwellers Live in Slums, 2001



Source: World Bank 2006c.

A recent report of the World Bank (2006c) discusses sustainable development in the urban fringe in East Asia.²⁹ The report classifies city governments in East Asia according to three generic institutional models: fragmented, mixed metropolitan, and comprehensive. The most notable example of the first is the Philippines, Vietnam is a good example of the second, and China represents the third:

- In the Philippines, the potential for improving urban planning is constrained by limited municipal revenues, weak institutions, and dominant private sector interests. The country must also deal with a large number of low-income residents in informal settlements. The capacity of the government to influence and intervene in the land development process is limited, and a solution might lie in the greater involvement of the private sector and communities.
- In Vietnam, land ownership patterns are a central aspect of the urbanization process. The state owns the land, but most households have permanent land use rights. The state may requisition land for urban development, compensate households, and lease the land to firms at a profitable margin that permits the financing of infrastructure investments. The main issue appears to be the need to establish and enforce mechanisms to protect the poor and the environment.
- In China, village collectives own much of the rural land in the rapidly changing urban fringe, while urban land is owned by the state. The incentives offered to urban authorities tend to foster overrequisitioning of land since land is purchased at rates based on current agricultural uses, but leased at much higher market rates for use in manufacturing or services. In its favor, China has a national policy of promoting urbanization as a part of its overall growth strategy, an enhanced financial capacity to improve infrastructure because of rapid economic growth, and a well-established urban planning system that delivers (generally well-serviced) land for urban expansion.

Table 5.10, which is adapted from the report, lists likely problems and the potential policy responses to ensure the economic, social, and environmental sustainability of urban expansion.

Connecting Smaller Cities

The results presented in the section on economic geography in East Asia provide some guidance for a country such as China because of its vast distances. But they are valid as well for other, more compact East Asian metropolitan systems.

■ TABLE 5.10 **Urbanization Problems and Policy Responses**

| Problems | Policy responses |
|---|---|
| Economic | |
| Economic enterprises are inappropriately located | Land use planning and financial incentives |
| Agricultural land is lost to less valuable urban uses or is retained despite more valuable urban uses | Regulatory land use or land conversion policies |
| Excessive service and transportation costs due to inadequate infrastructure | Regulatory land use policies to increase densities and concentrate development Imposition of development impact fees to obtain developer contributions for offsite infrastructure |
| Social | |
| Development leaves existing residents less well off | Improvements in the compensation rates, employment measures, and financial stake in ensuing development |
| Unserviced informal settlements | Tenure regularization, upgrading, relocation Low-cost housing construction, land management, land pooling, appropriate planning and construction standards, direct and indirect subsidies Improved municipal finances for infrastructure in low-income areas Requirements that developers provide quotas of affordable housing |
| Environmental | |
| Excessive pollution | Regulatory measures, including standards for pollution discharges and market-based instruments Conditions regarding antipollution measures are included as part of the development approval process |
| Encroachment on land that is better left undeveloped | Regulatory land use and environmental controls Community-based projects to reduce the adverse impact of encroachment |

Source: Adapted from World Bank 2006c.

Differences in factor returns and a negative correlation of those with access to larger markets and transport costs are also found in Cambodia, Indonesia, Malaysia, the Philippines, Thailand, and Vietnam.³⁰ It is evident to policy makers in East Asia that metropolitan areas account for the high, often spectacular national growth rates, but also that this performance is unevenly distributed

within each country. The cumulative effect of such variations is to exacerbate income inequality, a major source of friction across East Asia today.

A balanced pattern of growth is therefore desirable. However, the achievement of this balance is checked by the strong imperative to build on the success of existing metropolitan areas. Given the restricted development budgets, weak financial markets, and limited opportunities available in each country, the solution will require a careful weighing of the trade-offs involved in a strategy that attempts to disperse the spatial locus of new growth.

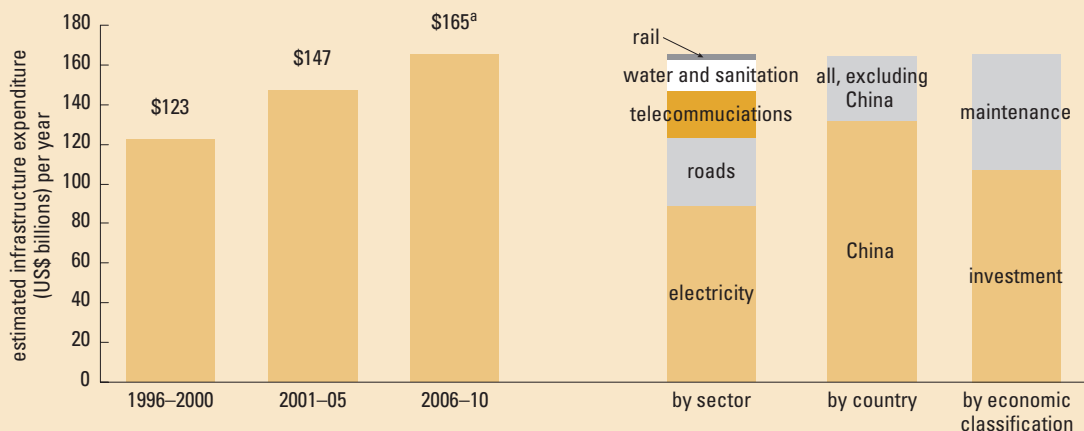
At the center of this trade-off is the debate over large *versus* small cities. Initially, development efforts focused on the largest metropolitan areas, while financially strapped East Asian governments adopted incremental approaches to resolving the perceived binding constraints on economic growth.³¹ Subsequently, however, most countries have tried actively to affect the pattern of settlement size to promote regional development through the creation of new growth poles or to deconcentrate overgrown metropolitan areas.

Typically, governments have employed a range of instruments toward these ends. The instruments have included, for example, the promotion of out-migration from Java and restrictions on migration into the larger metropolitan areas of China. Governments have provided investment incentives or relocated social and educational facilities to lagging areas, such as Thailand's northeastern cities. They have financed urban infrastructure investment in Davao (the Philippines), built satellite towns for Shanghai and Tokyo, and even attempted to relocate capital cities in Korea (Yeongi-Kongju), Malaysia (Putrajaya), and Myanmar (Pyinmana). The record is mixed.³² Regional development efforts of this kind have been very costly. Where government intervention has made a difference, it has usually depended on market forces and natural geographical advantages, that is, on a reactive mode.³³

What is clear is that infrastructure plays the most critical role in ensuring that small, medium, and large cities are both livable and well linked domestically. A recent report has estimated East Asia's infrastructure needs (including urban-, rural-, connectivity-, and energy-related needs) at about US\$150 billion a year, more than three-quarters of which is represented by China (see figure 5.5). Electricity and roads account for more than two-thirds of the required outlays.

Imi (2005) points out that, in East Asia today, public service infrastructure in small and medium-sized cities is weak compared to that in large cities, and this infrastructure is needed to prevent overconcentration in large cities. To this, one should perhaps add that better connections between large and small cities will also help to prevent congestion in East Asia's metropolitan areas.

■ FIGURE 5.5 East Asia's Infrastructure Needs Are Increasing, 1996–2010



Source: ADB, JBIC, and World Bank 2005.

a. Based on econometric simulations consistent with projected regional growth and efficiency prices. Because of data limitations, the simulation excludes a number of key infrastructure services, notably, ports and airports and all but major roads.

Financing Livable and Connected Cities

While there is adequate global knowledge and experience to improve urban policies and institutions, the financial constraints on doing so are severe. In the transition to better cities, both remedial—giving attention to distressed areas, filling housing and other infrastructure gaps, dealing with social problems—and proactive approaches to improving competitiveness and livability require much greater amounts of financing than are currently being allocated. Because urbanization is arguably the most important dynamic factor in East Asia today, identifying the magnitude of the financing problem in building urban infrastructure and fixing the problem are urgent issues. Urbanization and urban expansion are ubiquitous, and, in most of developing East Asia, the rural-urban transition is still under way. Even if economic growth slows or stalls in the region, this is sufficient reason to expect that large demands will continue to be placed on urban infrastructure. If, as described in the first part of this chapter, there will be 555 million new city residents over the next 25 years and if each one will need between 100 and 200 square meters of urban space, the demand for serviced land will rise by 56 billion to 111 billion square meters.³⁴ Anticipating this need is vital; yet, steps to do so have generally been inadequate (see box 5.5).

BOX 5.5 The Costs of Failure

"Few governments in the developing countries are actively preparing for urban population growth, even though it is now generally accepted that slowing it down or reversing the tide of urbanization—through rural development or population dispersion policies—is unrealistic and unworkable. . . .

"As a result, the large majority of urban authorities in developing countries do not engage in realistic minimal preparations for growth: securing the necessary public lands and public rights-of-way necessary to serve future urban growth, protecting sensitive lands from building, or investing in the minimal infrastructure—transport grids, water supply, or sewerage and drainage networks—necessary to accommodate growth. Instead, they sometimes focus on ambitious utopian master-plans that are never meant to guide development on the ground, take

many years to complete, and are usually shelved shortly after their publication. At other times, they simply refuse even minimal planning and investment, hoping against hope that their overcrowded cities will stop growing. . . .

"Needless to say, it is more expensive to provide trunk urban infrastructure in built-up areas—especially in areas developed by the informal sector—than to provide such services, or at least to protect the right-of-way needed for such services—before building takes place. While there are many reasons for neglecting to prepare for the inevitable future growth of cities, the absence of even minimal preparation for urban expansion—on both the activist and regulatory fronts—is, no doubt, an inefficient, inequitable and unsustainable practice, imposing great economic and environmental costs on societies that can ill afford them."

Source: Angel, Sheppard, and Civco 2005: 101–02.

A detailed investigation of urban financing issues is beyond the scope of this chapter. However, a few basic points may be highlighted with respect to the problems in financing city development in East Asia.

Currently, public sector expenditures on infrastructure range from about 2 percent of GDP in the Philippines to about 9 percent of GDP in Thailand; China is an outlier at the high end. Taxes and user fees constitute the two major sources of urban infrastructure funding under the control of different levels of government. As a result of the decentralization wave witnessed in East Asia over the past decade, revenue and expenditure assignments for urban infrastructure have been pushed downward toward local governments, without a comprehensive alignment of other fiscal responsibilities, spending accountabilities, or supportive transfer mechanisms. Consequently, given the peculiar nature of the cash flows associated with infrastructure projects (costs are frontloaded, while returns come later), most municipalities underinvest because they face chronic public funding shortfalls in the wake of burgeoning demand for urban infrastructure. Lately, the rise in property values across cities in the region has offered a brief respite since revenues have increased from standard property taxes and land transactions taxes

(geared toward sharing in the capital gains that would otherwise accrue only to sellers). User fees have proven to be less buoyant sources of revenue, and there are both practical and distributional concerns that constrain the potential take from this source. In a decentralized framework, cross-subsidization between urban spaces and projects offers a highly restricted solution to meeting financing needs.

The financial challenge is therefore to create adequate fiscal space for an expansion of urban and associated catalytic infrastructure to support a metropolitan hierarchy that addresses growth and spatial inequality concerns. Obviously, there are macroeconomic constraints on the expansion of overall public spending. The question that arises is whether private financing is capable of filling the gap in urban infrastructure funding in the region. There are two main issues:

- First, if nonurban investment funded through private sources is excluded, the total funding for regional projects during 1994–2004 is estimated at US\$90 billion, an average of only US\$9 billion per year. By contrast, Indonesia alone is estimated to require an additional 2 percent of GDP per year in urban financing (US\$5 billion per year).
- Second, the returns necessary to attract private capital into urban infrastructure even in middle-income developing countries are much higher than those required in developed countries.³⁵ Moreover, with few exceptions, private finance requires additional government guarantees, which add to the high level of contingent fiscal liabilities at various levels of government. Therefore, while partnerships with the private sector are necessary, they should not be viewed as sufficient.

In developing East Asia, it appears that China, Lao PDR, Thailand, and Vietnam have begun to act aggressively to meet these challenges. Table 5.11 lists the expenditure on infrastructure in 1998 and 2003. These four countries have ratcheted up their infrastructure spending threefold as a share of GDP, while Vietnam has maintained a high level of investment. Conversely, infrastructure spending as a share of output fell between 1998 and 2003 in Cambodia, Indonesia, and the Philippines.

Conclusions

Perhaps the most important test facing policy makers in cities in East Asia involves responding simultaneously to two challenges: first, keeping cities livable since this is central to the role of cities as conduits for international trade, investment,

■ TABLE 5.11 **China, Thailand, and Vietnam Have Raised Infrastructure Spending**
share of GDP, percent

| Country | Expenditure on infrastructure | | Investment |
|-------------|-------------------------------|------|------------|
| | 1998 | 2003 | 2003 |
| Cambodia | 2.9 | 2.3 | 22 |
| Indonesia | 3.1 | 2.7 | 16 |
| Philippines | 5.6 | 3.6 | 19 |
| Lao PDR | 1.7 | 4.7 | 20 |
| China | 2.6 | 7.3 | 44 |
| Vietnam | 9.8 | 9.9 | 35 |
| Thailand | 5.3 | 15.4 | 25 |

Sources: ADB, JBIC, and World Bank 2005; World Bank 2005, 2006a.

and technology flows and, indeed, as centers of innovation; second, at the same time, absorbing the massive influx of populations from rural areas as rapid structural transformation occurs. The East Asian economies are unique in that they combine an advanced stage of openness today with a potential for future urbanization on an unprecedented scale.

This combination of global imperatives and local pressures puts East Asian cities at the center of development and ensures that sustained growth in living standards in these countries will require commensurately bold measures by policy makers. The main conclusions of this chapter are as follows:

- *Pent-up urbanization.* Because of rapid economic growth, the East Asian countries have reached levels of industrialization and per capita income that are generally associated with higher levels of urbanization. Over the next 25 years, East Asian cities will be filling this urbanization gap through the largest rural-to-urban population shift in human history. This extraordinary shift will require an equally extraordinary response from policy makers in national, provincial, and municipal governments.
- *A threat to the livability of large cities.* As elsewhere, East Asia's growth is based on exploiting unexhausted scale economies in industry and services, which relies on large cities. Because many megacities are already straining to stay livable, this represents a challenge for policy makers, the magnitude of which has never before been confronted in middle-income countries. For these high-performing economies to become high-income countries, East Asia's large cities will have to continue to serve as the conduits for global commerce in goods,

finance, and ideas and become centers of innovation. The challenge has to be met in large part by city governments.

- *A need for well-managed and well-connected small and midsized cities.* A big part of the solution lies in the growth of small and midsized cities of less than 2 million residents. To enable the exploitation of scale economies, these cities will have to be well managed and well connected to larger cities. The connectedness will depend mainly on national and provincial governments. The fate of small, medium, and large cities and national economies is therefore interlinked. Evidence on China's cities shows that improved city management and infrastructural links produce large payoffs for smaller, more remote, and generally less well managed cities.

From the available data, we know that substantial and often widening rural-urban household inequality is a characteristic of both low- and middle-income countries in East Asia. In some places, rural-to-urban migration and improved terms of trade for rural households have slowed or reversed the trends in overall inequality. Migration has been the more significant factor by far, as households have shifted from lower-valued rural occupations to higher-valued urban jobs. Adam Smith (1776) pointed out long ago the inevitability and, indeed, the desirability of rural-to-urban population movements:

That the industry which is carried on in towns is, everywhere in Europe, more advantageous than that which is carried on in the country, without entering into any very nice computations, we may satisfy ourselves by one very simple and obvious observation. In every country of Europe we find, at least, a hundred people who have acquired great fortunes from small beginnings by trade and manufactures, the industry which properly belongs to towns, for one who has done so by that which properly belongs to the country . . . Industry, therefore, must be better rewarded, the wages of labour and the profits of stock [capital] must evidently be greater in the one situation than in the other. But stock and labour naturally seek the most advantageous employment. They naturally, therefore, resort as much as they can to the town, and desert the country (pp. 125–26).

Clearly, if a sufficient number of households were to do this, overall inequality will decline at some point. Therefore, one key question is: what is needed to continue or even accelerate the creation of productive employment in the metropolitan areas of East Asia? Furthermore, because most East Asian governments have introduced a range of measures to decentralize decision making on local economic development, a related question is: what is the role of government in establishing dynamic metropolitan areas that will help these countries arrive at a

stage at which national spatial inequalities begin to narrow? This chapter provided a general assessment of these issues. Chapter 6 takes up issues of inequality in more detail.

Notes

1. For example, see Lucas (1988) and Romer (1990).
2. See World Bank (2006a).
3. See World Bank (2004).
4. See Global Insight (2006).
5. For example, see Krugman (1991) and Fujita, Krugman, and Venables (1999).
6. Definitions of urban vary among the countries of East Asia, but are usually based on administrative boundaries or on the size and density of populations living in a contiguous physical area connected by roads, frequent transport, commuters, and common production, trade, and cultural facilities (called metropolitan areas in this chapter). *World Urbanization Prospects* (United Nations 2006) collects comprehensive data on such areas, but these data must be interpreted with care as they rely on statistics supplied by national governments based on different definitions.
7. These are preliminary estimates based on comparisons of the data available in United Nations (2006) and information contained in national gazetteers and other compilations.
8. Already, East Asia (excluding Japan) contains 16 of the largest seaports in the world, 14 of the largest container ports, 7 of the largest cargo airports, and 4 of the largest passenger airports.
9. The World Bank recently estimated the contribution of large cities at about 70 percent of annual economic growth (in 2004) and between 50 and 60 percent of exports.
10. The role of alternative policy regimes is discussed in David and Henderson (2003).
11. Urbanization refers to the share of a national population living in urban areas (cities and towns), while urban expansion refers to the physical size (spatial dimension) of urban areas.
12. This is also different from the early experience of cities in the developed countries. In China, the issue of rural land acquisition and compensation have become socially explosive. The government has acted this year to improve processes and increase surveillance.
13. The core principles can be traced back to Marshall (1920), although a more recent nontechnical exposition of the processes that foster the growth of specialization and interdependence within and among cities is contained in Jacobs (1970). Useful technical surveys are found in Henderson and Thisse (2004). This section draws on the concepts and terminology presented in that volume, especially chapters 48, 49, and 58.
14. This goes beyond the more common, though still important observation that urban infrastructure investment—given its lumpiness and long life—is an example of the reasons why sunk costs matter, because they determine, to some extent, the pace and growth of future metropolitan development.
15. Land rents are sometimes fixed at low administrative rates by local governments so as to promote investment. This is evident for Guangzhou in the table. There, artificially low rents in development zones affect the city average.
16. See World Bank (2006b).
17. The econometric analysis of these survey results shows that transport costs, in particular, affect foreign investment and also have an effect on the productivity of firms in different cities.
18. See Lin (2005).
19. This section summarizes recent work at the World Bank on regional development and infrastructure policy in China. The main papers are Luo (2004, 2005), Catin, Luo, and Van Huffel (2005), and other studies referenced in those papers.
20. See Catin, Luo, and van Huffel (2005).
21. See Luo (2001a).
22. See Luo (2001b, 2004).

23. See Luo (2005).
24. The policy content of this observation is that specific points of entry for this sort of coordination have proved successful in parts of East Asia. These points include building on existing technology and industrial strengths, facilitating innovation and cluster development, promoting institutions of higher education, improving social and fiscal cohesion, and increasing the attractiveness and sustainability of cities and subregions.
25. See Jones Lang LaSalle (2004) for a concise description of location factors that matter to global investors.
26. There is a vast amount of literature on such policies. Three useful references are: National Research Council (2003), UN-Habitat (2004), and World Bank (2004).
27. See Moretti (2003).
28. The Braess paradox states that taking away space in an urban area may actually improve the flow of traffic. Conversely, adding capacity to a road network may reduce overall performance. The paradox is named after Dietrich Braess, who, in 1968, noted that, in a network the utilization of which is optimized by users, not administrators, the change in equilibrium flows may result in a higher cost when a new link is added, implying that the users were more well served without the link. See Vidal (2006).
29. The report defines the urban fringe as areas subject to urban expansion on the edge of cities, as well as environmentally fragile urban areas that are unstable and unfit for occupation. It is estimated that about half of the projected urban population growth in East Asia will occur on the urban fringe, and the rest will take place through increased population densities in areas that are already built up.
30. There are theoretical reasons for the correlation of these differences with the degree of openness of a metropolitan area. The Balassa-Samuelson hypothesis suggests that the relative price of nontradable goods and services (for example, land rents) is positively correlated with openness, given their relatively inelastic supply and the effect of higher productivity growth in the traded goods sector.
31. Some examples are the development of enclaves in China, Korea, Malaysia, and Singapore to promote exports and foreign investment. More recently, encouragement for specialized (for example, electronics, biotechnology) and general industrial clusters has relied on compromises among various perspectives on agglomeration economics and the spread and demonstration effects of growth poles.
32. There has been some success in changing the global connectivity of cities, such as the rise of Kuala Lumpur as opposed to Penang and the rise of Beijing as opposed to Shanghai.
33. Conversely, as described in Pernia, Paderanga, and Hermoso (1983), policies adopted during the post-1948 import-substitution phase in the Philippines led to a heavy concentration of manufacturing and urban population growth in metropolitan Manila and its periphery. The introduction of export promotion and regional development policies (for example, export processing zones and industrial estates at other locations) failed to prevent or significantly reduce the heavy concentration of manufacturing in this large metropolitan area.
34. See Angel, Sheppard, and Civco (2005), chap. 6.
35. See Estache and Pinglo (2005) and Sirtaine et al. (2005).

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