



Chapter 2

Managing Cities as Drivers of the Economy

Structural weaknesses and poor infrastructure endanger growth in economies that are vulnerable to shocks.

Cities need to better manage the risks that threaten economic growth and lead to poverty traps for many citizens.

City regions: drivers of Asia's global economy

Major cities are key elements in today's global economy, which is very different from previous "world economies." We have now possibly embarked on the third era of globalization (see box). It represents a radical departure from the past. Highly productive individuals living in areas with high-quality environments can participate in productive processes anywhere in the world. More economic processes and elements—production, consumption, management, information, capital, markets, and labor—operate worldwide than ever before. This abundance of opportunity applies not only to multinational companies but to micro-, small- and medium-sized businesses and even individuals linked with larger enterprises through production and supply networks. National governments could dominate markets once but now they need to operate within the international economy.

Smart money seeks global cities

The third era of globalization is changing the relative competitiveness and opportunities for the growth of cities. Investment tends to concentrate where integration into the global economy is easiest, responding not only to national incentives and locational advantages, but also to better access to communications technology, international capital markets, globally integrated value chains of production and distribution, and information-based industries, including research and development.¹⁹

Decisions based on location decisions now depend less on particular countries and more on the comparative advantages

¹⁹ Friedman, Thomas L. 2005. *The World is Flat: A Brief History of the Twenty-First Century*. New York: Farrar, Straus and Giroux.

Three eras of globalization

Globalization 1: 1492–1800. Countries globalize. It began with the colonization of "new worlds." Countries and governments led the way, embarking on conquest around the world, depending how much horse, wind, and, later, steam power a nation had and how creatively it used it.

Globalization 2: 1800–2000. Companies globalize. It was driven by multinational companies going global for markets and labor. Falling transport costs drove the early stage, and falling telecommunication costs the second. Other forces were hardware innovations, from steamships and railways to telephones and on to computers.

Globalization 3: 2000–? Individuals globalize. This has resulted from the convergence of the personal computer and fiber-optic cable with the rise of work flow software.

Source: Friedman, Thomas. 2005. *The World is Flat: A Brief History of the 21st Century*. New York: Farrar, Straus and Giroux.

of different cities. Less well-off cities have tended to compete on the basis of cheap labor and low costs of such items as environmental regulation. These are important for attracting manufacturing and resource-based industries. Once cities become more affluent, the availability and quality of environmental goods become increasingly important in attracting urban professionals.

Why cities drive economies

Rapid urbanization has been the key driver of Asia's dynamic growth—and of the poverty reduction that has resulted. The region's success is dependent on high levels of capital investment to create world-class factories, rising productivity, and openness to foreign trade. Asia's workforce is increasingly being drawn into the world economy and this is driving urbanization.²⁰

In 2004, urban areas contributed about 80% of the gross domestic product (GDP) in Asia but represented only 40% of the total population. The graph on the next page shows that the city state of Singapore and Hong Kong, China produce almost all of their national GDP in urban

²⁰ Merrill Lynch. 2006. *Urban Asia*. *The Asian Market Economist*. New York.

areas. At the other extreme, the urban populations of Myanmar and the Lao People's Democratic Republic (Lao PDR) produce much less, at 45% and 51% of total GDP, respectively. Overall, East Asia's urban populations produce 92% of their countries' wealth, with Southeast Asia at 77% and South Asia at 75%. Per capita GDP in urban areas is much greater than overall national averages.

Workers who live in the region's cities have higher wages than those in rural areas. This encourages workers to move from less productive rural locations to more productive urban areas, thereby increasing national income and wealth. Large cities are more productive than smaller ones and labor productivity increases with city size.

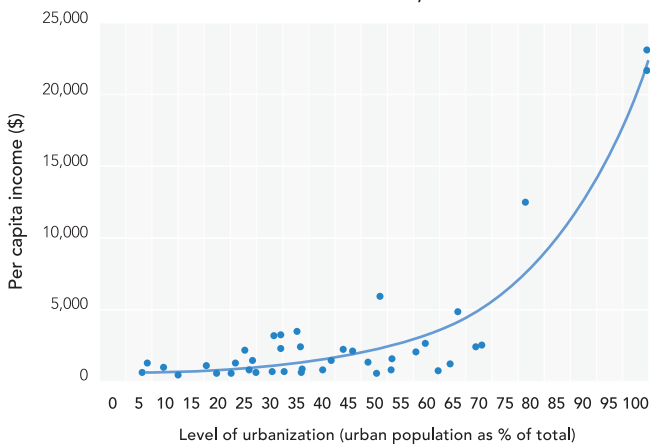
Bigger city, greater prosperity

The economic rationale for urban growth is that cities have productivity advantages that result from locational factors and the economies of agglomeration, which represent the efficiency advantages from the clustering of firms and economies of scale within an urban area. Urbanization enhances productivity, and those countries with a higher proportion of their population in urban areas generally have a higher GDP per capita.

The proportion of GDP from urban areas is growing and the strength of Asian economies will be determined more and more by the economic conditions in their major urban areas. Urban economies either are already or will become the key drivers of a country's economic performance.

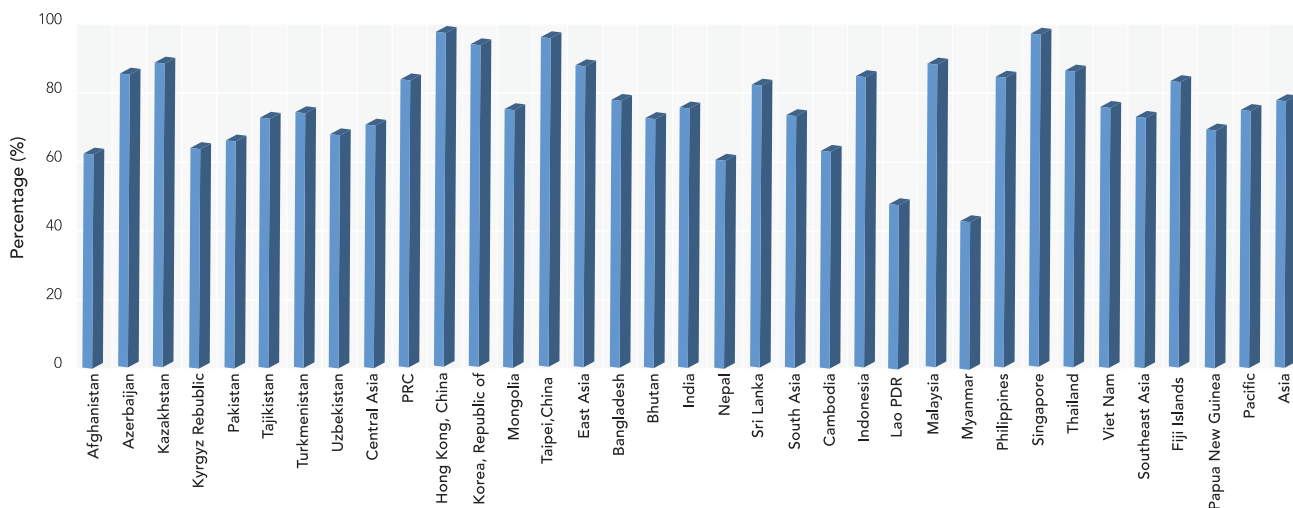
Since the early 1980s, city and regional economies have overshadowed nations and have been recognized as more dominant than countries in shaping the development of national economies. Authors like Kenichi Ohmae²¹ argue that the nation-state is no longer the primary driver of economic development. This is because the multinational control of world trade, finance, communications, and information dissemination has resulted in greater regional specialization and integration of global production systems. Deregulation of national economies, capitalism, open markets and free trade, along with greater cultural, educational, knowledge, and visitor exchanges, and sharing between nations and their regions have also contributed. In response to these changes, there has

Level of Urbanization and Per Capita Income by Country, Asia and Pacific, 2003



\$ = US dollar.
Source: Computations based on figures from United Nations, 2005, Human Development Report, New York.

Urban Share of GDP, 2004



GDP = gross domestic product, Lao PDR = Lao People's Democratic Republic, PRC = People's Republic of China.
Source: Compilations based on figures from the United Nations Human Settlements Programme database.

²¹ Ohmae, Kenichi. 1996. *The End of the Nation State: The Rise of Regional Economies*. New York: McKinner.

been a progressive concentration, specialization, and integration of production and capital in regions that offer competitive advantages to investors, buyers, transnational corporations, and other producers of wealth.²² In Asia, this is demonstrated by Hong Kong, China; Shanghai; Singapore; and Tokyo; which dominate regional finance and transport logistics. Other cities, including Bangkok, dominate the gem and jewelry industry, while Bangalore and Kuala Lumpur are global centers of information technology research and development. The growing specialization of regions is leading to the emergence of powerful industry clusters, which often comprise very large agglomerations of interdependent industries and supplier networks.²³

Why cities grow and thrive . . .


Cities grow through the agglomeration or clustering of economic activity. Agglomeration is seen in large commercial or central business districts of cities, and in districts with specialized manufacturing or knowledge industries. Restaurants, cinemas, shops, or businesses



selling similar products or services often cluster in the same neighborhood. The large shopping malls in many Asian cities, which represent a clustering of retail activities, are modern examples.

. . . and the many forces that shape them

The uneven distribution of economic activities across a nation reflects differences in such natural features as climate, landscape, and water courses, as well as in accessibility and in the presence of productive natural resources like mineral deposits. In economics, these are commonly known as first nature, and they determine a settlement's economic history and subsequent development.²⁴ As that is less related to natural advantage emerges. This is the concept of second nature, factors stemming from actions to improve upon first nature (see box). While the impact of first nature on the spatial distribution of economic activities can be explained within traditional economic theory, economists now are exploring the endogenous—i.e., internal or second-nature—mechanisms that lead to agglomeration and are developing economic models accordingly. These models provide a general equilibrium picture of cities, where centripetal forces pull economic activities together and the centrifugal forces push them apart. They rely on the trade-off between increasing returns and mobility costs relative to prices of factors of production that vary across regions. This new economic geography²⁵ attempts to develop an analytical framework to explain the formation of economic agglomerations spatially. Understanding the linkages between spatial and economic factors is an important but often insufficiently considered element in comprehending and managing the growth of urban areas.



First and second nature

Chicago's growth in the 19th century was impressive in the absence of any real natural advantages. The city was located on a flat plain, its river was barely navigable, and its lakeside harbor was inadequate. Even its role as a canal terminus linking the Mississippi watershed with the Great Lakes was short lived once canals were replaced by railways. Nevertheless, once established as a central market, and a focal point for transport and commerce, Chicago's growth accelerated. The advantages of "first nature" had failed the city but were compensated by self-sustaining advantages of "second nature"—the concentration of population and production in the city, its role as a transport hub provided for more activity to locate there.

Source: Coon, William. 1991. *Nature's Metropolis: Chicago and the Great West*. New York: Norton.

²² Korten, David C. 1996. *When Corporations Rule the World*. San Francisco: Connecticut Kumarian Press and Berrett-Kochler Publishers; and Enright, Michael J. 2002. The Globalization of Competition and the Localization of Competition: Policies Toward Regional Clustering. In *The Globalization of Multinational Enterprise Activity and Economic Development*, edited by N. Hood and S. Young. London: Macmillan.

²³ Busser, Roger and Uyi Gadoi, eds. 2003. *Production Networks in Asia and Europe: Skill Formation and Technology Transfer in the Automobile Industry*. Oxford, UK: Routledge; and Fan, Cindy, and Allen Scott. 2003. *Industrial Agglomeration and Development: A Survey of Spatial Economic*

Issues in East Asia and a Statistical Analysis of Chinese Regions. *Economic Geography* 79 (3). Massachusetts: Clark University.

²⁴ Fujita, Masahisa, and Tomoya Mori. 2005. *Frontiers of the New Economic Geography*. Japan: Institute of Developing Economies.

²⁵ This branch of spatial economics was initiated by Paul Krugman in the 1980s.

Sector Contribution to Regional Product for Selected Asian Cities

City	Percentage of Gross Domestic Product (%)				Year
	Country	Primary	Industry	Services	
Seoul	Korea, Republic of	3.3	40.3	56.3	2004
Singapore	Singapore	0.0	35.0	65.0	2004
Hong Kong, China	PRC	0.0	10.0	90.0	2004
Shanghai	PRC	1.5	50.1	48.4	2003
Beijing	PRC	2.6	35.8	61.6	2003
Shandong	PRC	11.9	53.5	34.6	2003
Osaka	Japan	1.3	25.3	73.5	2005
Jakarta (DKI)	Indonesia	1.3	22.1	76.6	1990
Ho Chi Minh City	Viet Nam	2.7	32.7	64.6	1997

PRC = People's Republic of China.

Source: Various websites and statistical database sources.

Adding investor appeal to regional, city strength

The agglomeration and specialization of industries has given some regions in Asian countries a significant competitive advantage in attracting investment, especially in the People's Republic of China (PRC). Public policy has also played a key role in fostering patterns of investment, while ease of foreign direct investment, access to capital, and strategic infrastructure have been important in creating an enabling environment for investment and development.

Industrialization has had a major impact on the economic structure of many Asian cities. There is very little data providing reliable estimates of the structure of GDP for Asian cities over time. The table above shows estimates from various sources of GDP by primary, secondary, and tertiary sectors. In the more advanced economies of North Asia, Hong Kong, China and Singapore, the service

sectors contribute more than 65% of regional product. In many of these cities, export growth has been replaced by endogenous growth, as the cities develop a wide range of internationally marketable producer services.

In the PRC, the swing is to services

The table below shows the change in the structure of the economies for Beijing and Shanghai since 1978 by three industry sectors, clearly indicating the shift from manufacturing to services. It was at this time that internationalization of industries in the larger PRC cities began, particularly in the south. For Shanghai, the growth in services was rapid between 1995 and 2000 as the city took greater control of financial services previously dominated by Hong Kong, China. However, locally based, or endogenous, growth has not been as strong in either city as it has been in North Asian cities.²⁶ The growth in services has flattened out in Shanghai and other PRC cities,

Sector Product of Beijing and Shanghai, 1978–2004 Percent of Total Product (%)

City	1978	1990	1995	2000	2003
Beijing					
Primary	5.2	8.7	5.8	3.6	2.6
Manufacturing	71.1	52.4	44.0	38.0	35.8
Services	23.7	38.9	50.2	58.3	61.6
Shanghai					
Primary	4.0	4.3	2.5	1.8	1.5
Manufacturing	77.4	63.8	57.3	47.6	50.1
Services	18.6	31.9	40.2	50.6	48.4

Sources: Beijing and Shanghai Statistical Year Books. 2004.

²⁶ Lee, Jong Wong, and Byoung Gyu Yu. 1998. *An Endogenous Growth Model Approach to Korean Economy Growth Factors*. Available:

<http://faculty.Washington.edu/karyiu/confer/sea05/papers/lee-yu.pdf>

suggesting that opportunities for endogenous growth remained untapped. The growth of services has been driven by the demand for utilities, retail, and real estate, suggesting in future there will be a big rise in the demand for health, creative industries and the arts, education, and personal services as per capita income rise in these cities. As PRC manufacturing production also switches from labor-to-technology-based production, the growth in services can be expected to rise sharply. This is already happening in some areas as labor costs in the PRC rise.

The FDI factor: only some are favored

Foreign direct investment (FDI) has been a major factor driving the development of many Asian cities. The historical pattern of urban economic development within Asia corresponds to five waves of FDI (see box). They have



Five Waves of Foreign Direct Investment in Asia

The first wave of foreign direct investment (FDI) began with the reconstruction of Japan in the 1950s when a substantial injection of Marshall Plan aid investment was used to rebuild the country's industrial and economic base. Much of this was for specialized regional manufacturing industry development, particularly in the Tokyo and Yokohama regions. Over 20 years, Japan rebuilt and established a strong manufacturing export economy but, by the early 1970s, Japanese firms experienced escalating labor and material production costs and began to relocate manufacturing industries.

This led to a second wave of Japanese-led investment to offshore sites in the Republic of Korea; Taipei, China; Singapore; and Hong Kong, China. These countries welcomed the capital infusion, employment, and technological uplift that accompanied the investments.

The third wave occurred in the 1970s and 1980s, when Southeast Asian countries began to attract Japanese investment. This led to higher levels of industrialization in Indonesia, Malaysia, Philippines, Thailand. The location of industrial investment was strongly related to the factor endowments and the comparative advantages of specific localities. Bangkok, Bintan, Jakarta, and Manila became targets for Japanese investment. The fourth wave began in

the late 1980s and early 1990s and centered on the People's Republic of China (PRC) and, to a lesser extent, Viet Nam. Four economic development zones (EDZs) in Guangdong and Fujian in southern PRC were given special privileges to encourage foreign investment. This EDZ policy was subsequently expanded to another 14 cities along the coast in 1984 and later to the Pudong area near Shanghai. These coastal cities areas grew to produce more than 53% of the PRC's total gross domestic product (GDP).

The fifth wave of FDI began in the late 1990s with the opening of India to overseas investment, especially in the information technology and communications sectors, much of it financed by expatriate Indian groups. Countries with new-found wealth such as Malaysia; Republic of Korea; Singapore; and Taipei, China; also began to invest in Bangladesh, Pakistan, PRC, and Viet Nam taking advantage of favorable labor costs, lower regulatory costs, and, in some cases, lower standards. A new wave of investment is emerging, with PRC businesses facing higher production costs and competitions seeking to integrate with global business investing in other cities in Asia and elsewhere that offer competitive advantages.

Sources: Lo, Fu-Chen, and Peter Marcotullio. 2001. *Globalization and the Sustainability of Cities in the Asia Pacific Region*. New York: United Nations University; Yamazawa, Ippei. 1990. Gearing the Japanese Economy to International Harmony. *The Developing Economics*, Vol. 28 (1).



targeted selected and appropriate areas. The effect has been the concentration of FDI and national investment, and specialization of industry development in national capital regions,²⁷ major cities with good transportation and communications systems, and resource-rich regions that supply raw materials, mainly to North Asian countries. This directed investment from abroad has distorted spatial patterns of investment and development, especially in

the PRC, with rapid growth in some parts of the country powered by exports while other areas lag behind. The PRC currently receives the greatest volume of FDI inflows in Asia. Its share of global net inflows increased steadily from 2.5% in 2000 to nearly 9.0% in 2004.²⁸ The PRC share is less than 1.0% and Japan's is 1.2%.

Nations have also felt the FDI factor

The following table shows the changes in FDI for South and East Asian nations. The structural trend away from Malaysia, Republic of Korea, and Singapore is clear. These countries are no longer as dependent on FDI to support their development and have themselves become significant sources of FDI in the PRC and other Asian countries. Indonesia had a net loss of FDI, but this has improved. India and the PRC have used different FDI development paths. The PRC attracts capital-intensive industries through an export-manufacturing framework adopting special economic zones. India favors an import-substitution model to attract more technology-oriented investments.²⁹

FDI can help Asian countries

Potential benefits according to Brooks and Hill include:³⁰

Changes in Foreign Direct Investment in South and East Asian Countries							
	1990	1995	2000	2003	Share, 1990 (%)	Share, 2003 (%)	Change (%)
Bangladesh	3	2	280	102	0.0	0.1	0.11
China, People's Republic of	3,487	35,849	38,399	53,505	20.6	69.1	48.42
Hong Kong, China	300	...	2,572	8,133	1.8	10.5	8.72
India	162	2,144	2,496	4,269	1.0	5.5	4.55
Indonesia	1,093	4,346	(4,550)	(597)	6.5	(0.8)	(7.24)
Korea, Republic of	788	(1,776)	4,284	100	4.7	0.1	(4.53)
Lao People's Democratic Republic	6	95	34	20	0.0	0.0	(0.01)
Malaysia	2,333	4,178	3,788	2,473	13.8	3.2	(10.61)
Myanmar	161	280	258	134	1.0	0.2	(0.78)
Philippines	530	1,478	1,345	319	3.1	0.4	(2.72)
Singapore	5,575	7,124	11,400	5,626	33.0	7.3	(25.73)
Thailand	2,444	2,068	3,366	1,949	14.5	2.5	(11.95)
Viet Nam	16	1,780	1,298	1,450	0.1	1.9	1.78
Total	16,898	57,568	64,970	77,483	100.0	100.0	

... = not applicable, () = negative value.
Source: World Bank. 2006.

²⁷ Laquian, Aprodicio. 2005. *Beyond Metropolis: The Planning and Governance of Asia's Mega-Urban Regions*. New York: John Hopkins Press.

²⁸ World Bank Foreign Direct Investment (FDI) database.

²⁹ A.T. Kearny. 2005. Global Business Policy Council. Member/Client Brief. Washington, DC.

³⁰ Brooks, D.H., and H. Hill 2004. Divergent Asian Views on Foreign Direct Investment and Its Governance. *Asian Development Review*, Vol. 21(1). Manila: ADB.

- Foreign firms bring superior technology, but the extent of benefits to host countries depends on whether the technology spills over to domestic and other foreign-invested firms.
- Foreign investment increases competition in the host economy, where the entry of a new firm in a non-tradable sector may increase industry output and reduce the domestic price, leading to a net improvement in welfare.
- Foreign investment typically results in increased domestic investment. When the capital inflows take the form of FDI, there is a near one-for-one relationship between the FDI and domestic investment.
- Foreign investment gives advantages in terms of export market access arising from economies of scale in marketing of foreign firms or from their ability to gain market access abroad. Besides their contributions through joint ventures, foreign firms can serve as catalysts for other domestic exporters.
- Foreign investment can help in bridging a host country's foreign exchange gap.

The extent to which a city will benefit from FDI depends crucially on the quality of its own institutions and entrepreneurs as they support and spread the benefits of FDI.

The informal sector and its hidden income source

Asian countries and their cities, in particular, have large informal economies. The growth of the informal sector is a rational response to economic opportunities, given the factors limiting entry into the formal sector. Informal housing investment and the use of the home to generate income reflect market realities. Furthermore, the distinction between the formal and informal sectors is often blurred where, for example, householders can work in one sector but live in another. In economic terms, the informal sector is a competitively remunerated population that has decided to live outside of the regulations of the formal sector because of its high transaction costs.³¹ The informal sector is the lifeblood of many Asians.

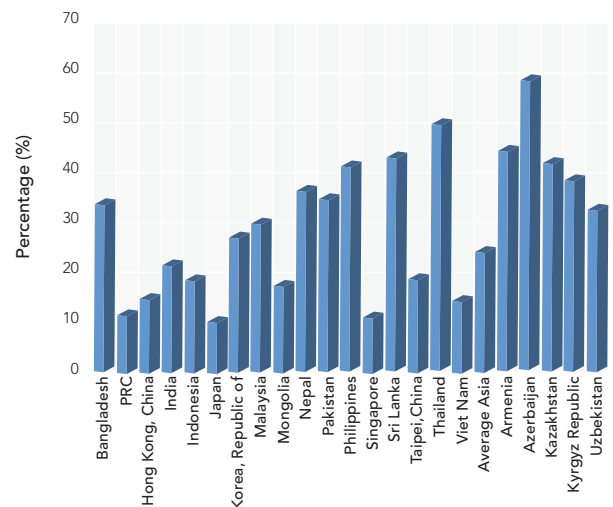
Statistics on the informal economy are difficult to obtain and often unreliable. Nevertheless, a recent report³² shows that in 26 Asian countries, the informal economy contributed an average of about 26% of gross national product (GNP)

³¹ Chen, Martha Alter. 2005. Rethinking the Informal Economy: Linkages with the Formal Economy and the Formal Regulatory Environment. *Research Paper No. 10*. World Institute for Development Economic Research.



nationally. The study estimates that the Central Asian republics have the highest proportion of GNP generated by the informal sector, while Bangladesh, Nepal, Pakistan, Philippines, Sri Lanka, and Thailand have more than one third of their GNP produced by the informal sector.

Relative Size of Informal Economy, 1999/2000



PRC = People's Republic of China.
Source: Schneider, Friedrich. 2002. Size and Measurement of the Informal Economy in 110 Countries Around the World. *Policy Research Working Paper*. Washington, DC: World Bank.

Time to reassess the informal sector

Many governments see the informal sector as one of low wages, poor working conditions and little job protection, and tax evasion. Often they discriminate against the sector, closing businesses and making it difficult to start new enterprises. Governments should change this approach

³² Schneider, Friedrich. 2002. Size and Measurement of the Informal Economy in 100 Countries Around the World. *Policy Research Working Paper*. Washington, DC: World Bank.

and design regulations to encourage rather than hinder development. They need to make it easier to establish new businesses and to encourage the expansion of existing ones. Skills training and improved availability of business finance are also necessary to improve efficiency. Where possible, the potential to link informal and formal sector activities should be exploited.

Country and city life: an archaic concept?

Given the interdependence of urban and rural areas, especially for housing, food production, and recreation, it may no longer be appropriate to distinguish between urban and rural activities. The terms urban and rural invoke visions of congested cities and towns and idyllic, isolated villages. The distinction suggests different economies and ways of life and ignores the many ways in which urban and rural areas and their economies overlap and interlink. In reality, a development continuum links all settlements and their economies—from isolated farms, through villages, to market towns and regional centers that are surrounded by farmland, on to large urban centers and even megacities, and beyond to their ever-growing suburbs and sprawling periurban areas, which act as transitional rural-urban regions. Policies based on the traditional clear separation of rural and urban areas and economies can reduce opportunities to maximize economic growth and inhibit effective spatial planning. Today, many are recognizing that the most effective approaches take account of the diverse activities and needs along the continuum and the linkages between them.³³

Where city and country meet: problems and opportunities

The linkages between city and country can occur when major public infrastructure investments, particularly regional roads and mass transport systems, link rural areas to the city economy and at the same time open up new rural areas for urban development. Existing rural settlement areas are incorporated into the fabric of the city. Rural residents benefit from employment and markets for their goods. But there can also be negative impacts. Unserviced residential development begins along the roads on the urban periphery and remains without services until government and utility entities catch up and provide the necessary trunk and local infrastructure. This is a problem common to many of Asia's rapidly expanding cities and leads to increased costs, less efficient networks, and delays in providing

³³ Department for International Development (DFID). 2003. Urban and Rural Change. Presentation by Urban and Rural Change Unit. London.

Regional Policy: Kazakhstan

The aim of regional policy is to reduce the differences in socioeconomic development between regions, through investments to improve infrastructure, strengthen economic activities, and improve living standards within an overall policy of providing support to problem regions. The basic principles are to make the best use of natural resources taking into account competitive advantages; creating mechanisms to stimulate business in problem regional economies; and the development of strategically important regions. To support this, investment priorities are given to those programs that encourage economic restructuring of regions, create new jobs, improve physical, social and recreational infrastructure, provide ecological security, and reduce poverty and unemployment.

Source: Regional Policy Concept of the Republic of Kazakhstan for 2002–2006, Resolution Number 1598, 7 December 2001.

services because of difficulties in acquiring rights of way and shortages of funds.

A major study focusing on rural-urban linkages and regional development was carried out in eight villages in Java, Indonesia, over a 25-year period from the early 1970s. This research produced a wealth of information about rural transformations during a period of intensive urbanization and massive expansion of rural-urban transportation networks and rural-urban interaction.³⁴ In one of its most recent reports, Collier et al³⁵ found that significant differences between villages were determined not only by natural resource endowments and other aspects of village potential, but also by relative distance from major metropolitan centers.

In some countries such linkages develop relatively unaided. In others, for example the PRC, their development is impeded by institutional factors. To spread the benefits of urban economic growth such impediments should be minimized.

Redressing inequalities and disparities between regions

Agglomeration occurs at all geographical levels. It can be seen at the global level where three regions, the North American Free Trade Area (NAFTA), the European Union

³⁴ Philipson, Rachel. 2004. *Rural-Urban Change and the Role of Regional Policy, Lessons from European Experience*. London: DFID.

³⁵ Collier, William, Seontoro Kabul Santoso, and Ridu Wibowo. 1993. *A New Approach to Rural Development in Java: Twenty-five Years of Village Studies*. Jakarta: PT Intersys Kelola Maju for International Labour Organization (ILO).

(EU), and East Asia, are increasing their dominance of the world economy. High-income nations are clustered in relatively small cores throughout the world and productivity per capita steadily declines with distance from them. Strong regional disparities also exist within countries, an indication of agglomerations.

Encouraging “winners” or supporting “losers”

Some Asian regions have considerable secondary³⁶ and tertiary³⁷ economic activities; others have very little. More profitable businesses tend to locate in densely populated core regions, which suggests that the economic geography³⁸ is linked to regional differences in productivity and income. But other officials have argued that if a region’s economy is lagging, it lacks “competitiveness,” and they say this can be improved by channeling public funds to projects intended to attract business from the core, or toward infrastructure intended to provide businesses in the poorer region with better access to markets. This approach has not met with universal success, however, and such funding has generally failed to reduce regional disparities. As a result of experience—the regional policy of the EU, for example—there is now a shift in thinking away from a general focus on poorly performing peripheries to a concentrated focus on investments in local agglomerations that have real potential agglomeration economies and competitive advantages. This supports investments in areas to maximize benefits to the overall economy rather than simply providing charity to a region that has not done well.

In summary, regional transfers will be required for poorly performing areas, but they should be structured to maximize incentives for sustainable economic growth. These issues will be discussed further in other chapters.

Lack of skills, knowledge: a burden on growth

Structural problems in an uncertain world

Many successful Asian cities have bifurcated economies. A formal export-driven sector is the mainstay of national economic growth and operates largely separately of a large, often informal, service sector. This structure leaves many cities

³⁶ Includes “industrial” categories of mining, manufacturing, construction, electricity, gas, and water of the Standard Industrial Classification.

³⁷ Includes the “service industry” categories of trade, transport and communications, finance, public administration, and other services of the Standard Industrial Classification.

³⁸ The distribution of economic activity over physical space.



vulnerable to change in developed economies, especially reductions in consumption in the US and Europe. But problems in the informal service sector also demand attention, including credit availability, capacity, and working conditions.

One key challenge in managing Asian cities is the lack of appropriate tools and relevant statistics for the economic analysis of city regions. We also lack a full understanding of linkages and synergies between exogenous (external) and endogenous (internal) growth; the importance of local and natural resources; and the interactions among industry clusters, including linkages with rural hinterlands. There also is a tendency to underestimate the importance of the informal economy, which often makes life very difficult for its participants. A complete understanding is also lacking on the subjects of the transition of economic structure according to size and level of development or per capita product within a city region; the place of the urban poor within and among formal industry clusters; and the interaction of the informal and formal sectors.

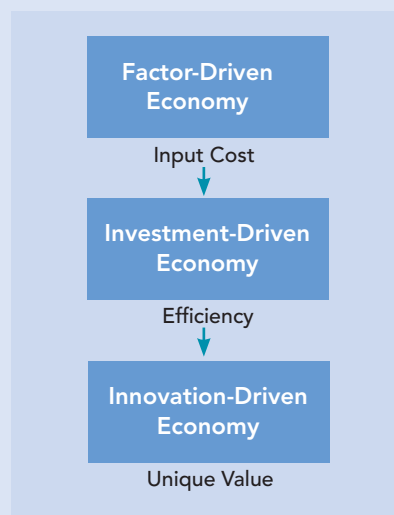
A needs list for city success

Local economic development requires more and better infrastructure, both hard and soft. Not only is strategic infrastructure important, but city economic development policies also need to promote a business-friendly environment and be pro-poor in their focus. Promoting a city’s attractions to new and global business is important. So is the need to support micro-, small- and medium-sized industry and commerce. Consistently applied business rules and regulations help, as does low taxation. But the basic

Getting the Priorities Right for Developing Economies

Low-, middle-, and high-income countries should pursue different priorities when seeking to improve competitiveness, according to Michael Porter. He identifies three stages, as shown in the figure. First, the factor-driven economy applies to low-income countries, which compete on the basis of cheap labor and natural resources. These countries focus on products that are designed in more advanced economies. They are sensitive to world economic cycles, prices of commodities, and exchange rate fluctuations. To develop, these economies need to improve the environment for business. This requires upgrading the quality of infrastructure, particularly electricity, communications, and transport networks, and improving education, especially elementary and secondary schooling. Also important are creating financial markets to enable better access to risk capital and loans, strengthening emerging business clusters, improving the quality of local supplies, making machinery and components locally available, and opening up the economy to competition. The latter requires the reduction of trade barriers and the elimination of favoritism by government officials. Together, this creates a basis for efficiency and transparency and encourages competition. To reach middle-income status, countries must have made significant investment in physical infrastructure and human resources. Continued improvement of both is important, particularly upgrading public schools, electricity, and telecommunications, including the Internet. These achievements define the second-stage, investment-driven economy based on manufacturing and outsourced service exports. Such an economy is susceptible to financial crises and external demand shocks. It brings new challenges for business and a need to improve university-industry research collaboration and quality. Reform of the judicial system is essential. To encourage improvements in producer quality, local demand conditions must be strengthened—through environmental and consumer protection legislation, for example. Cluster development becomes significant, with its widening supplier bases and more specialized research and training institutions. Moves to higher levels of competition are also needed, including liberalization of tariff and non-tariff barrier, improved antitrust policies, and opening the market for corporate control.

Source: Porter, Michael E. 2004. *Building the Microeconomic Foundation of Prosperity: Findings From the Business Competitiveness Index*; and Porter, Michael E. 1990. *The Competitive Advantage of Nations*. New York: The Free Press.



In the third or innovation-driven stage, the ability to produce innovative products and services that are at the cutting edge of global technology is the main competitive advantage. The national business environment is characterized by strengths in all areas, together with the presence of deep clusters. Institutions and incentives supporting innovation are well developed. Companies compete in the global market. The economy has a large proportion of services and is resilient to external shocks.

Porter continues: “Seeking economic development as a sequential process of building interdependent microeconomic capabilities, shifting company strategies, improving incentives, and increasing rivalry exposes important pitfalls in economic policy. The influence of one part of the microeconomic business environment depends on the state of others. Lack of improvement in any important area can lead to a plateau in productivity growth and stalled development. Worse still, it can undermine the whole economic reform process. When well-trained college graduates cannot find appropriate jobs because companies are still competing based on cheap labor, for example, a backlash against business is created.” This can explain why countries and, by implication their cities, find the transition to a new stage of development difficult. Understanding the stages of competitive development is critical to comprehending city development processes in different economies and what approaches should be taken to improve the management of our cities.

foundation is always a well-educated and skilled workforce. Improvement in the quality of public education at all levels is a must in most developing countries. The need to speak English is ever growing and vocational skills must be adapted to those of an urban economy.

In summary, the lack of appropriate management structures to assess the city economy and the lack of skills in local economic development strategy formulation and investment prioritization, particularly, problem identification, problem solving and thinking into the future, means that local economic growth is not as fast as it could be. This is a failing that endangers not only local but also national economies.

Keys to a strong economy

The achievement of a sustainable economy requires a new and different approach and involves greater integration and coordination of policy making and implementation across the public and private sectors, and across social, economic, and environmental policy issues. It involves partnerships between central government, local government, private business, financing agencies, and civil society, and must recognize the bifurcated economy of formal export-driven growth and the large informal sector.

Access to cultural, physical, environmental, human, and financial assets determines the quality of life of people in a city, where utility is generated from consumption which, in turn, is dependent on a stock of assets that are accessible for use by families. These can be private family assets and public assets, such as theaters, museums, clean air, rivers, and beaches. In theory, urban management should aim to maximize the net present value of utility for citizens. How is this done in practice?

Correct planning for economic growth should enable a city to achieve the principles of sustainable development, which include:

- A competitive and environmentally efficient business,
- A skilled and adaptable workforce,
- An inclusive society characterized by vibrant communities,
- Sustainable physical and social infrastructure that supports and enables economic growth,
- Creative and innovative cultural environment, and
- Appropriately priced communal and municipal services.



National economic stability and control of inflation are implicit in sustainable development. Hence, sustainable economic development is about setting a vision for a city, establishing objectives, and devising strategies and actions to implement these strategies. It is about cost recovery and is concerned with the economic pricing of communal services. It covers small businesses and the informal sector.

Cities have to do more than simply improve overall economic performance. Economic success can only be sustainable if its growth reinforces energy efficiency, reducing the consumption of utilities, and supports other aspects of sustainable development.

Seeking policies to maximize potential

Economic growth promotion policies have moved toward less interventionist more free market approaches in the US and some parts of Europe, with an emphasis on decentralization and community-based planning. There has been a revival in regional and urban planning and analysis, and with it a new attitude on economic policy. Particularly in Europe and North America, policies have shifted markedly away from seeking to redress the imbalances and differential growth between cities toward seeking to maximize the potential of each area, exploiting the comparative advantages of each. This tends to be referred to as the endogenous growth model.

Competitiveness remains important

Globalization and reform policies designed to enhance national competition have forced Asian cities to become more competitive. For a city economy, competitiveness is to have the lowest transaction costs for the optimal structure

Promotion of Endogenous Growth: What it means

A range of approaches to describing endogenous growth have been documented. Most describe the impact of an endogenous variable, such as health, education, or fall in population has on growth (although there must be some debate on how endogenous the latter is). This book uses a theoretical presentation to attempt a more rigorous presentation of the options available.

Growth (G) is defined as increase in per capita product of a given region.

Therefore:

$$G = \prod_{i=1}^x f(K_i, p_i, c_i) \quad (1)$$

where,

$i, 1$ to x are the firms present in the region, K_i is the stock of capital in firm i , p_i is the multifactor productivity in firm i , being the key determinates of value added (or net wealth addition of firms in the region), and c_i is the propensity of firm i to purchase inputs to production from the region.

In the given economy, there are y firms dependent on exports of products outside the region for demand (exogenous growth), leaving $x-y$ firms dependent on the local economy for demand for their products, including inputs to exporting firms in the region.

Thus restating (1)

$$G = \prod_{i=1}^y f(K_{ix}, p_{ix}, c_{ix}) + \prod_{i=y+1}^x f(K_{il}, p_{il}, c_{il}) \quad (2)$$

Equation (2) clearly establishes the options for promoting endogenous growth—being growth that benefits the region from intra-region sales. They are:

Increase K_{ii} —increase the stock of capital available to locally oriented industry. Interestingly, under this is a reduction in population as the capital stock per capita would increase. Ensuring the availability of venture capital and other finance for entrepreneurs is the more conventional approach.

Increase p_{ii} —increase the productivity of locally oriented industry. Under this are the benefits of education and health investments.

Increase c_{ii} —increase the use of local inputs in locally oriented industry. Under this are business development assistance and networking.

Also,

Increase c_{ix} —increase the use of local inputs to exporting industries. But this strategy is vulnerable to the same weaknesses in the external environment as the export-driven industries. However, if this factor can be increased when exports fall, it will buffer the local economy.

Although most of these prescriptions are not fundamentally different from what would be undertaken to promote export-oriented industry, the important thing is to identify the locally based industries and ensure that they are fully integrated into business development and other programs. Their needs will likely be quite different. And they are easily overlooked because they often are not as glamorous as export industry.

Source: ADB. 2007. Economic Background Paper, *Managing Asian Cities Study*. Manila.

of the economy, given locational and other advantages. The efficiency of government systems, strategic infrastructure, capital stock, development and quality of human capital, community attitudes and culture, and amenities all contribute to the economic competitiveness of cities. These factors are neither constant nor the same for all Asian cities. An economic development plan needs to identify the key competitive advantages of the city and foster their development.

City regions also need to look inward: endogenous growth

The last decade has seen a resurgence of interest in the geographical and environment influences of the economy. This arose from the need:

- to explain what was driving the decline of US manufacturing activity in the “rust belt” northern states

Regional Policy: The United Kingdom

The United Kingdom's framework for regional policy now follows a similar approach and is based on two principles:

- Enabling leadership so that national, regional, and local institutions can exploit indigenous strengths and tackle the particular challenges of each area; and
- Providing the environment for businesses and communities to maximize their potential by tackling failures in national, regional, and local markets through targeted reforms to strengthen the key drivers of productivity, growth, and employment.

Source: British Government. 2006. *Devolving Decision Making—Meeting the Regional Economic Challenge: The Importance of Cities to Regional Growth*. London.

and its replacement by new knowledge-based, high technology investment in the formerly agriculturally dominated, "sun belt" states of the south and west; and

- to explain institutional change in the EU states with the process of economic integration across transnational boundaries, including the incorporation of the transitional economies, and the delivery of policy support at the regional, rather than the national, level.

This has led to a new approach to regional policy as discussed above. The general implication of this change

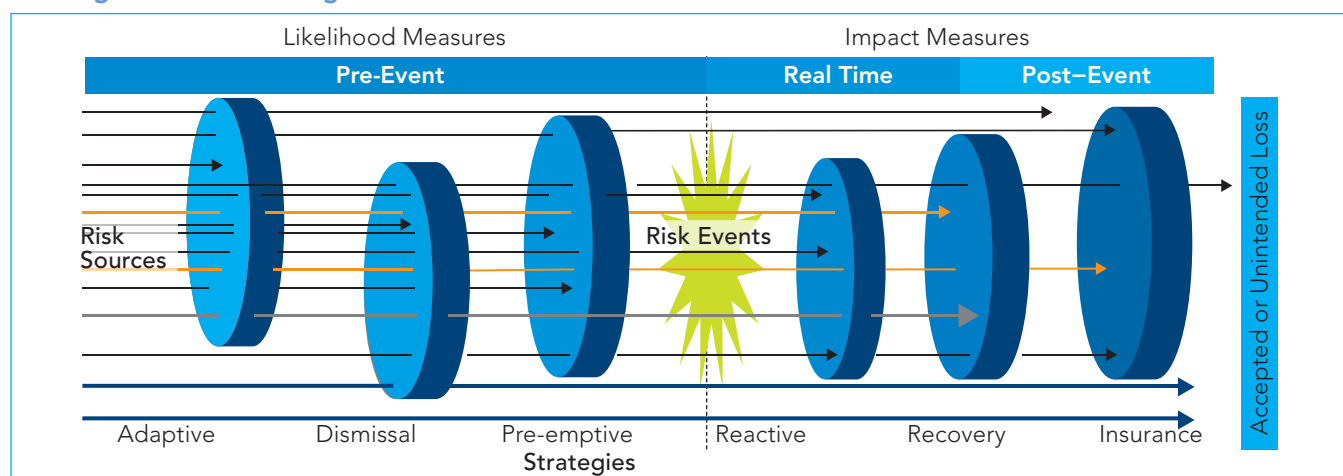
in regional policy is that investment should target those sectors, clusters, or areas that can deliver the best return, measured mainly in terms of productivity.³⁹ This has many common elements with the postwar focus on urban and industrial growth poles as the key to rapid economic development but is more market-driven. It also promotes rural-urban linkages through spatial links such as flows of money, goods, people, and information. Based on locational and other advantages, such an approach seeks to provide capital and skills for local enterprise which can focus on rapidly developing core economic areas.

Basing regional growth on that of cities, following the above principles, is probably the most appropriate approach toward redressing growth inequalities among regions.

Neglected risk management threatens urban economies

Roberts⁴⁰ shows that the key factors in developing and maintaining competitive regional economies are those that attack or form a proactive strategy and those that are defensive or a reactive strategy. The former includes: setting a vision and preparing a strategy (for example export, endogenous or import substitution); creating an enabling environment (logistics of business); providing strategic infrastructure (hard and soft infrastructure); and stretching and leveraging sector competitiveness. The latter comprises: endogenous and exogenous risk management; maintenance of social, physical, economic, and environmental capital; futures management, including marketing intelligence and technology; and uncertainty management.

Strategies for Risk Management



³⁹ ADB. 2005. *Final Report on TA 4175-KAZ: Regional Rural Development in Kazakhstan*. Manila.

⁴⁰ Roberts, Brian. 2006. *Regional Economic Development Risk Assessment and Management: Framework and Case Study on Risk for Two Australian Regions*. Presentation to ADB. Manila.



Until recently, little research had been done on the impact that risks can have on a city–regional economy. There are very few examples of regional risk management strategies. Where they exist, most risk management plans deal with the immediate impacts of disaster. Almost no thought has been given to post-disaster economic recovery before such events occur—the \$150 billion damage to the New Orleans city region by Hurricane Katrina, for example—and equally little identification is undertaken of opportunities that risk mitigation strategies can create for business development. Most risk management strategies prepared for cities and regions pay only passing attention to social, governance, and external economic risks. Risk management is important in maintaining regional business and institutional competitiveness and to encourage innovation. There are very few examples of business and governments working collaboratively on regional economic risk management plans.

The two important measures required for risk assessment are normally the likelihood of occurrence and the impact or consequence of a risk event. But it is difficult to obtain quantitative measurement of these for a city or city region. The risks concerned are those that have the highest potential impact and likelihood of occurrence. And these may have to be estimated in qualitative and/or relative terms.

The most significant risks affecting regional economic development need to be identified. They are those that pose the greatest threats to the economy and the most vulnerable sectors. Only after exogenous and endogenous risks have been assessed is it possible to develop risk management strategies. The diagram on previous page shows a framework for sector risk management strategies.

Disaster Risk Initiatives

The disaster risks of Asian cities have been under examination recently. The Earthquakes and Megacities Initiatives (EMI) is an international, not-for-profit, scientific organization dedicated to the reduction of disaster risks in major metropolises. It was founded in 1998 to stimulate urban earthquake preparedness and mitigation in developing countries. EMI contributes to capacity development and mainstreaming of disaster risk reduction in the development agenda, planning, and daily operations of local government through its cluster cities project, crosscutting capacities development program, and e-learning training platform, Mega-Learn.

The World Conference on Disaster Reduction in January 2005 at Kobe, Japan gathered experts, practitioners, government officials, civil society, and the media to discuss disaster risk reduction. The proceedings of this conference group the issues and recommendations in five key thematic areas: governance, institutional, and policy frameworks for risk reduction; risk identification, assessment, monitoring, and early warning; knowledge, innovation, and education to build a culture of safety and resilience; reducing underlying risk factors; and preparedness for effective response.

Other useful references include: *Megacities—Megarisks. Trends and challenges for insurance and risk management.* Münchener Rück. Munich Re Group. 2004; and the publications of United Nations International Strategy for Disaster Reduction.

Sources: www.emi-megacities.org; www.unisdr.org/wed/r/; and www.unisdr.org/isdr/index.htm

Governments need to rethink risk

Roberts concludes that external risk factors will have greater impact on local economies in the future. A more collaborative approach to risk management between government and business is needed to reduce the impact of future economic and natural shocks to the economy. Since there is a very poor understanding of risk management in public agencies, they tend to take a conservative approach. This suppresses opportunities for inventiveness, innovation, and commercialization of ideas and solutions to address risk. There is a need for a change of culture and improved skills on risk management within government. City region governments lack knowledge and systems for shared risk intelligence. This leaves all unaware of the nature of risks potentially affecting the economy or where to go to obtain information about these and the management strategies in place to reduce risk. Weakness in these areas reduces investment.

Infrastructure's role in taking out the risk

Infrastructure—basic facilities, services, and equipment—is critical for generating growth, alleviating poverty, and increasing international competitiveness, particularly in East Asia.⁴¹ Major investments in physical and social infrastructure preceded and later reinforced economic growth in the newly industrialized countries of Asia. New and well-functioning infrastructure promotes better access to markets, lowers transaction costs, and provides communities with improved access to education and health care. Efficient infrastructure networks are the backbone of sustainable economic growth.

Getting the most from infrastructure

Although the stock of infrastructure assets is important, how efficiently they are used also impacts economic development. Hulten⁴² shows that low- and middle-income countries that use infrastructure inefficiently pay a growth penalty and realize smaller benefits from infrastructure investments. Using data comparing the growth of Africa with that of East Asia, he shows that over 25% of the differential growth rate between the two areas stems from the difference in effective use of infrastructure resources, even though the difference as a result of new public capital formation is minimal. When comparing high and low growth rate economies, the study found that over 40% of the growth differential can be attributed to the efficiency effect, making it the most important contributor to differential growth performance. The lessons regarding the maintenance of infrastructure and other assets are clear. Asset management, discussed in the previous chapter, is a crucial aspect of successful city management.

Clearly, infrastructure is a force for good, but investments must provide value for money and, more importantly, be located where benefits can be maximized. Some studies now indicate that public sector spending on infrastructure has its greatest impact when it supports high-yield, productivity-oriented projects aimed at growth objectives. A recent ADB review suggests that productivity of cities could be even higher if city efficiency is enhanced.⁴³

At the micro level, Kessides⁴⁴ shows that better infrastructure can boost a firm's production growth by lowering the



production costs, increasing profits and possible higher levels of investment/output, income and/or employment, and by raising the productivity of other factors of production.⁴⁵ Improved physical infrastructure also increases access to social infrastructure, which further raises the productivity of labor/households. Improved water supply, for example, contributes directly to the increased productivity and welfare of households.⁴⁶

In the context of the earlier discussion in this chapter, the focus of infrastructure provision should be on supporting competitive exogenous and endogenous growth. This means supporting existing and potential industry by overcoming their constraints to growth, mitigating risks to growth, and linking the poor to the benefits of that growth—by providing affordable transport that gives the poor access to employment, for example.

Infrastructure needs are massive and usually environmentally related

To help predict investment needs, ADB⁴⁷ has estimated

⁴¹ ADB, Japan International Cooperation Agency (JICA), and World Bank. 2005. *Connecting East Asia: A New Framework for Infrastructure*. Tokyo.

⁴² Hulten, Charles R. 1999. *Infrastructure Capital and Economic Growth: How Well You Use it May be More Important Than How Much You Have*. Cambridge, US: National Bureau of Economic Research.

⁴³ ADB. 2006. *Special Evaluation Study on Urban Sector Strategy and Operations*. Manila.

⁴⁴ Kessides, Christine. 1993. *The Contributions of Infrastructure to Economic Development, A review of Experience and Policy Implications*. World Bank - Discussion Paper 213. Washington, DC: World Bank.

⁴⁵ This is a key element of agglomeration economies and is the main factor in "crowding in" effects where companies cluster together around a well-serviced site.

⁴⁶ Because the issue is complex, a review of the literature attempting to link infrastructure provision and productivity is a tortuous exercise. The pivotal article in this area was written by Aschauer (1989) who analyzed the relationship between infrastructure provision (proxied by non-military capital formation in the National Accounts) and productivity. Aschauer concluded that there was a strong relationship between the two and that the rate of return on infrastructure was high—higher than for private investment. From this he concluded that there had been under-investment in infrastructure. Debate has raged, both supporting and dissenting since then.

⁴⁷ Footnote 43.

The Symbiotic Relationship between Economic Growth and Infrastructure Provision

Many Asian cities need a transformation to provide both increased economic growth and improved living conditions—particularly for the poor. In its work on Vision Mumbai, consultants built on the experience of cities from both the developed and developing world that sought such a transformation, and identified three key prerequisites:

- The need for a city to actively focus on its economic growth.
- The need for early developments to focus on a few high-impact projects using public-private partnerships that achieve both real and visible impact.
- The city must have at its helm a committed leader, ably supported by an appropriately skilled, well-coordinated body of administrators.

The importance of the interlinkage between infrastructure and economic growth is borne out by the comparison of the expansions of two major Asian cities, Shanghai and Bangalore. In Shanghai, the mayor, well known for cutting through red tape, led the opening up and development of Pudong, Shanghai's hinterland, between 1987 and 1991. From the start, Pudong has followed a strategy of infrastructure goes first. It undertook 10 major infrastructure projects, including bridges, tunnels, the Metro, and a deep-water port. As a result, Shanghai grew at 8–10% per annum in the 1990s and Pudong at 16–18%. The \$40-billion investment in infrastructure changed the face of Shanghai. Entire blocks were rebuilt and its roads, buildings, transport, and telecommunications emerged as some of the best in the world.

In Bangalore, the information technology companies responsible for its economic success are now confronting the state Government over the decrepit state of infrastructure, which they claim is threatening the city's position as a primary global destination for investment from overseas. The Bangalore Chamber of Industry has said that it is tired of the Government's inability to deal with the problems of traffic congestion, power supply shortages, intermittent water supplies, and inadequate airport facilities. One industrialist has complained: "There is not enough power, so we have to have captive power generation, and there is no sewage treatment plant so we have to set up our own effluent treatment system, and so on."

A drag on growth

In a recent survey, 60% of more than 500 executives polled in India described infrastructure as a "significant constraint on growth," compared with only 23% of their peers in other countries at a similar stage in their development. "The deterioration of the city's infrastructure did not happen overnight. It is the result of long years of faulty planning, which has assumed crisis proportions in the past year," said *Frontline* magazine.

Sources: *Herald Tribune*, 5 September 2005; *Frontline* Magazine, May 2005; Vision Mumbai website.

future demand for urban infrastructure in the developing member countries (DMCs) of the Asia and Pacific region. Total financing requirements for water supply, sanitation, solid waste management, and slum upgrading in urban areas were estimated at \$25 billion per annum from 2006 to 2010 in 2003 prices. The figure doubles to \$50 billion per year if urban roads are included and to \$59 billion if mass transit is added. The estimate excludes electricity, intercity roads and rail, and telecommunications. The overall annual funding requirements for the urban areas are about 1.9% of total GDP of the DMCs, excluding the smaller island states. The highest levels of investment needed relative to GDP are found in the Central Asian republics, the lowest in Thailand. Ratios of about 3% are typical for the other countries studied.

The same research estimates about half of the \$60 billion per year to be financed by governments, external agencies, local financial institutions, and the private sector.⁴⁸ Funding the gap is a major issue. An estimated \$32 billion⁴⁹ should be added to this figure each year to maintain the urban infrastructure stock. And this only includes physical infrastructure. There are also requirements for social infrastructure to develop human and social capital through better education and health, improved skills training, among other needs.

⁴⁸ ADB urban loans in 2002 totaled \$223 million; in 2003, \$1,062 million; and in 2004, \$360 million; less than 1% of total need.

⁴⁹ On the assumption that the proportion of capital investment in urban areas to that nationally, estimated to be 54%, would also apply to maintenance expenditures. The figures are in 2003 prices.

Expected Infrastructure Expenditures for Asia

Country	Infrastructure Expenditures (\$ per Person per annum)		2003 Population (in million)		Expected Annual Expenditure Needs per Country (\$ million)			2003 Gross Domestic Product (GDP) (\$ million)	Annual Infrastructure Needs as % of GDP		
	Total ^b	Urban Sector ^a	Total ^c	Urban Sector ^d	Total	Urban Sector (basic) ^a	Urban plus Other ^e		World Bank	Total	Urban Sector (basic) ^a
Afghanistan	48.0	22.0	22.2	6.7	1,065.6	147.4	353.8	4,595.9	23.2	3.2	7.7
Azerbaijan	90.0	21.0	8.2	4.3	741.1	90.3	216.7	7,275.8	10.2	1.2	3.0
Bangladesh	48.0	22.0	133.4	37.0	6,403.2	814.0	1,953.6	51,913.7	12.3	1.6	3.8
Cambodia	48.0	22.0	13.3	2.5	637.8	55.0	132.0	4,349.4	14.7	1.3	3.0
China, People's Republic of	90.0	21.0	1,292.3	498.0	116,307.0	10,458.0	25,099.2	1,640,962.0	7.1	0.6	1.5
India	48.0	22.0	1,068.0	301.3	51,264.0	6,628.6	15,908.6	600,614.8	8.5	1.1	2.6
Indonesia	90.0	21.0	215.0	94.7	19,353.9	1,988.7	4,772.9	238,525.1	8.1	0.8	2.0
Kazakhstan	90.0	21.0	14.9	8.3	1,341.8	174.3	418.3	30,833.7	4.4	0.6	1.4
Kyrgyz Republic	48.0	22.0	5.0	1.7	240.5	37.4	89.8	1,919.0	12.5	1.9	4.7
Lao People's Democratic Republic	48.0	22.0	5.7	1.2	272.6	26.4	63.4	2,098.8	13.0	1.3	3.0
Malaysia	97.0	19.0	25.1	14.7	2,429.9	279.3	670.3	103,951.8	2.3	0.3	0.6
Myanmar	48.0	22.0	53.2	14.4	2,554.6	316.8	760.3	n/a	n/a	n/a	n/a
Mongolia	48.0	22.0	2.5	1.4	120.0	30.8	73.9	1,274.4	9.4	2.4	5.8
Nepal	48.0	22.0	24.2	3.2	1,161.6	70.4	169.0	5,850.8	19.9	1.2	2.9
Pakistan	48.0	22.0	146.0	50.6	7,005.6	1,113.2	2,671.7	82,350.0	8.5	1.4	3.2
Papua New Guinea	48.0	22.0	5.6	1.0	269.8	22.0	52.8	3,424.7	7.9	0.6	1.5
Philippines	90.0	21.0	81.1	49.7	7,299.0	1,043.7	2,504.9	77,679.9	9.4	1.3	3.2
Sri Lanka	90.0	21.0	19.3	4.6	1,732.7	96.6	231.8	18,246.4	9.5	0.5	1.3
Tajikistan	48.0	22.0	6.6	1.7	315.5	37.4	89.8	1,554.1	20.3	2.4	5.8
Thailand	90.0	21.0	64.0	12.7	5,756.3	266.7	640.1	142,919.8	4.0	0.2	0.4
Turkmenistan	90.0	21.0	6.3	2.2	566.9	46.2	110.9	5,837.4	9.7	0.8	1.9
Uzbekistan	48.0	22.0	25.7	9.4	1,233.6	206.8	496.3	10,128.1	12.2	2.0	4.9
Viet Nam	48.0	22.0	80.9	20.7	3,883.3	455.4	1,093.0	39,671.7	9.8	1.1	2.8
TOTAL			3,318.5	1,142.0	231,956.3	24,405.4	58,573.0	3,075,977.2	7.5	0.8	1.9

Notes:

- Urban sector expenditure in this table confined to water supply, sanitation, solid waste management, and slum upgrading in urban areas.
- Expenditure on Infrastructure in East Asia Region, 2006–2010 by Tito Yepes.
- Asian Development Bank Statistical Database System.
- 2005 World Development Indicators.
- Including mass transit and urban roads.

n/a = not available.

Source: Computations based on figures in ADB. 2006. *Special Evaluation Study on Urban Sector Strategy and Operations*. Manila.

Demand for infrastructure and how to cope

Clearly, all cities are facing massive challenges in planning for and raising funds to construct new infrastructure. But these investments must be made on this major scale if Asia's cities are to remain competitive. Effective infrastructure asset management needs to be linked with overall development plans for a city. Appropriate demand assessments are needed to reflect the affordable limits of the population, business, and the local government. Planning and financing new infrastructure must also be linked and appropriate

resources allocated for maintenance and rehabilitation. Coordination of planning for and investment in infrastructure is critical. But the scale is such that consumers and taxpayers cannot be expected to finance this all at once. City governments will need to seek international and local and foreign private sector partners to help them cope with needs of this magnitude. New and innovative mechanisms will be needed to fund the potential financing gap.