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Edited by Gregory K. Ingram and Yu-Hung Hong

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Asia's Urban Century: Emerging Trends

Rakesh Mohan

Widespread, all-pervading urbanization is truly a twentieth-century phenomenon. Although cities have always existed, and cities such as Memphis, Babylon, Thebes, Athens, Sparta, Mohenjo-Daro, and Anuradhapura existed in antiquity, there is little evidence of widespread urbanization in the early years of civilization. Rome was perhaps the first settlement to reach a population of 1 million people; only at the turn of the nineteenth century did London become the second city to reach this population size.

In 1800 only 2 percent of the world's population lived in urban areas. By 1900, out of a total world population of 1.5–1.7 billion, only 15 percent of the population, about 250 million, lived and worked in urban areas, or fewer than the total urban population of India today. By 1950, the proportion of urban to total global population (referred to as *level of urbanization*) had risen to 30 percent, and Europe, North America, and Oceania had the highest levels of urbanization. By 2000, 2.8 billion people, or some 47 percent of the world's population, lived in urban areas. Thus, the pace of urbanization witnessed in the twentieth century was truly unprecedented, and it is a wonder that the world has coped as well as it has. But it is now at a turning point in human history: the number of people living in cities is about to exceed those in the countryside, perhaps in this calendar year.

The last 50 years have been truly remarkable in terms of the number of people who have been successfully absorbed in cities during a time period that is incredibly short by historical standards. Although the world's urban population grew by about 500 million between 1900 and 1950, it grew by 2.1 billion in the next 50 years; and is expected to grow by a similar magnitude in just the next

I would like to express my deep appreciation to Shahid Yusuf for bibliographic guidance and inspiring discussions that brought me up-to-date on Asian urbanization. I am also indebted to Gregory Ingram and Yu-Hung Hong for their comments on an earlier version of this chapter. Assistance of Kumarjit Mandal and Partha Ray is gratefully acknowledged.

30 years. The speed of urbanization in Latin America in the second half of the twentieth century was spectacular, vaulting from just over a 40 percent urbanization level to 75 percent by the end of this period, which was also a period of rapid population growth and demographic transition. Table 10.1 reveals that the central point of change is now in Asia, where the urban population is expected to double in the next 30 years or so. This phenomenon of such rapid urbanization is indeed unprecedented, and it has changed human geography beyond recognition. In the process, the complexion of development objectives and processes has also undergone significant changes.

Over the last two centuries, cities have consistently provided the environment for institutional and technological innovation. For that reason, they have often been referred to as "engines of economic growth," "agents of change," and "incubators of innovation." Between 1960 and 2000, world output went up fourfold, while the world's urban population almost tripled, from 33 percent urban to almost 47 percent urban in 40 years (table 10.2).

It is now well established that the acceleration of urbanization generally corresponds with the acceleration of economic growth. Urbanization is promoted by: (1) economies of scale in production, particularly in manufacturing; (2) the existence of information externalities; (3) technology development, particularly in building and transportation technology; and (4) substitution of capital for land as made possible by technological developments. As economies of scale in production begin to take hold, larger plants become necessary, thereby contributing to the need for larger settlements of people. The services needed by the rising agglomeration of people give rise to an even greater number of people living together. Thus,

Table 10.1
Urban Population Growth Across the Globe, 1900–2030

Region	1900		1950		2000		2030 (projected)	
	Population (millions)	% of TPC	Population (millions)	% of TPC	Population (millions)	% of TPC	Population (millions)	% of TPC
Africa	—	—	32	14.7	295	37.2	787	52.9
Asia	—	—	244	17.4	1,376	37.5	2,679	54.1
Latin America and Caribbean	—	—	70	41.9	391	75.4	608	84.0
Oceania	—	—	8	61.6	23	74.1	32	77.3
Europe	—	—	287	52.4	534	73.4	540	80.5
North America	—	—	110	63.9	243	77.4	335	84.5
Global total	250[a]	15[a]	751	29.8[b]	2,862	47.2[b]	4,981	60.2[b]
Increase			501	14.8	2,111	17.4	2,119	13.0

— = Not available.
TPC = Total population of the continent.
[a] Estimated figures.
[b] Percentage of the world's total population.

Source: United Nations (2002).

Table 10.2
Global Gross Domestic Product and Growth in Urban Population, 1960–2000

	1960	1970	1980	2000
World GDP (constant 1995 $ trillions)	7.9	13.5	19.5	34.3
Share of agriculture in world GDP (percent)	—	—	6.5	3.9
Share of industry in world GDP (percent)	—	—	38.0	20.8
Share of services in world GDP (percent)	—	—	55.5	66.3
World population (millions)	3,020	3,675	4,428	6,053
Percentage of urban population	33.3	36.5	39.3	46.7

— = Not available.

Source: World Bank database, multiple years.

cities are born, and that is how they grow. As technology develops and capital is substituted for land, taller buildings become possible, intensifying population densities further. Similarly, technology development in transportation, enabling faster speeds, allows people to live at greater distances, also contributing to the expansion of city size.

Meanwhile, agglomeration economies give rise to the ongoing accretion of people in a settlement, thus promoting city growth. These linkages become even more prominent with economic growth, thereby promoting the acceleration of urbanization. Under the growing weights of industry and services in developing countries, urbanization has proceeded apace over the last 50 years. The relatively concentrated pattern of Asian urbanization that has accompanied Asia's very high rate of economic growth perhaps best illustrates the economic gains accruing from agglomeration economies and economies of scale.

The twenty-first century will therefore be an urban century. For the first time in human history, more people will live in cities than in the countryside. The urban situation will get more pronounced as the century unfolds. As in the last 50 years, developing countries will be urbanizing at a much more rapid pace than developed countries.

A review of the regional dynamics of urbanization reveals interesting developments. For one thing, there has been a dramatic shift of the fulcrum of urban population away from Europe and North America to the developing regions of the world. During the period 1950–2000, the growth rate of the urban population of Europe and North America was about 1.5 percent. Meanwhile, Europe and North America's share of the global urban population declined from about 53 percent in 1950 to 27.5 percent in 2000 and is expected to decline further, to about 17 percent by 2030. Africa has experienced consistently high growth in its urban population, which grew at an annual rate of 4.4 percent during 1950–2000, and its share of the global urban population is expected to rise to 16 percent by 2030 (from 4.3 percent in 1950). Latin America has now become predominantly urban, surpassing urbanization levels in Europe, and will almost be on a par with North America by 2030 (table 10.3). At the same time, almost half of the world's urban population now lives in Asia, and soon it will have the majority of that population.

Table 10.3
Global Urbanization Trends, Level of Urbanization: 1920 and 2030 (urban population as percent of total)

Region	1920	2030 (projected)
World	19	61
Less developed regions	10	57
Africa	7	54
Asia	9	55
Latin America	22	85
More developed regions	40	85
Europe	46	83
North America	52	85
Oceania	47	75

Source: Mohan and Dasgupta (2005).

Asia Becomes Urban

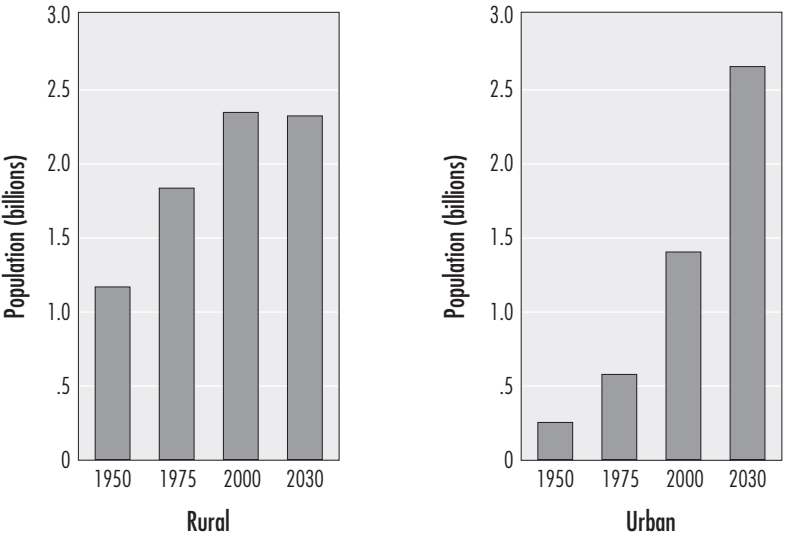
Presently, Asia is enjoying the world's highest rates of economic growth and thus high urban growth. This growth is particularly noticeable in China and India, which today have the world's largest rural populations but are urbanizing rapidly. In other Asian countries as well, a large number of cities are experiencing high rates of economic growth, and thus high rates of growth of their urban populations. Of the 10 most populous countries, six are in Asia (table 10.4).

Table 10.4
Urban Population of Selected Countries, Selected Years

	Country	1950		2000		2030 (projected)	
		Percentage Urban	Total Population (millions)	Percentage Urban	Total Population (millions)	Percentage Urban	Total Population (millions)
1	China	12.5	555	35.8	1,275	59.5	1,485
2	India	17.3	357	29.0	1,009	40.9	1,409
3	United States	64.2	158	77.2	283	84.5	358
4	Brazil	36.5	54	81.2	170	90.5	226
5	Indonesia	12.4	79	41.0	212	63.7	283
6	Nigeria	10.1	30	44.1	114	63.6	220
7	Pakistan	17.5	40	33.1	141	48.9	273
8	Mexico	42.7	28	74.4	99	81.9	135
9	Japan	50.3	84	78.8	127	84.8	121
10	Bangladesh	4.3	42	25.0	137	44.3	223

Source: United Nations (2002).

Figure 10.1
Growth of Rural and Urban Populations in Asia, 1950–2030



Source: United Nations (2002).

Even as more than 2 billion people are added to Asia's population over the next 30 years, many of these countries will still be rapidly urbanizing. This phenomenon has now gained such prominence that even popular news magazines have begun to take note (*Newsweek* 2003). It is also reflected in figure 10.1, which shows that the rural population of Asia is expected to decline in absolute terms from 2000 to 2030, yet another unprecedented event, while the urban population will almost double during the same period. Therefore, the growth of urbanization in Latin America that dominated the thinking on urbanization between 1950 and 2000 is giving way in the twenty-first century to the "Asian Urban Century."

By 2030, Asia alone will have about 2.7 billion urban dwellers accounting for over 50 percent of its total population. All the other regions of the world will have a combined urban population of about 2.3 billion. The annual growth of the urban population of Bangladesh has been among the fastest in the world, 5.6 percent. The only African country in the top 10 list (see table 10.4), Nigeria, has also seen the rapid growth of urban areas over the past five decades (United Nations 2003). By 2015 Lagos is projected to become the ninth largest city in the world (see table 10.5).

As for the city-level urbanization trends, the growth of urban agglomerations in developing countries has far exceeded that in developed countries. In 1950 only two cities worldwide had a population of over 10 million people: New York City and Tokyo. In 2000, 18 cities had populations above 10 million; 22 cities were between 5 and 10 million; 402 were between 1 and 5 million; and 433 were in the 0.5–1 million category. An important characteristic of urbanization in Asia has been

Table 10.5
Emergence of Megacities: Population of Cities with 10 Million or More Inhabitants, Selected Years (millions)

1950		1975		2000		2015	
1 New York	12.3	1 Tokyo	26.6	1 Tokyo	34.5	1 Tokyo	36.2
2 Tokyo	11.3	2 New York	15.9	2 Mexico City	18.1	2 Mumbai	22.6
		3 Shanghai	11.4	3 New York	17.8	3 Delhi	20.9
		4 Mexico City	10.7	4 São Paulo	17.1	4 Mexico City	20.6
				5 Mumbai	16.1	5 São Paulo	20.0
				6 Kolkata	13.1	6 New York	19.7
				7 Shanghai	12.9	7 Dhaka	17.9
				8 Buenos Aires	12.6	8 Jakarta	17.5
				9 Delhi	12.4	9 Lagos	17.0
				10 Los Angeles	11.8	10 Kolkata	16.8
				11 Osaka	11.2	11 Karachi	16.2
				12 Jakarta	11.0	12 Buenos Aires	14.6
				13 Beijing	10.8	13 Cairo	13.1
				14 Rio de Janeiro	10.8	14 Los Angeles	12.9
				15 Cairo	10.4	15 Shanghai	12.7
				16 Dhaka	10.2	16 Metro Manila	12.6
				17 Moscow	10.1	17 Rio de Janeiro	12.4
				18 Karachi	10.0	18 Osaka	11.4
						19 Istanbul	11.3
						20 Beijing	11.1
						21 Moscow	10.9
						22 Paris	10.0

Source: United Nations (2003).

the emergence of megacities—large, multinuclear urban agglomerations of more than 10 million people. There were no such agglomerations in Asia in 1950, two in 1975, and by 2000, 10 of the 18 global megacities were in Asia. Of the 22 megacities likely to be in place in 2015, 12 are expected to be in Asia (see table 10.5).

The historical pattern of urbanization suggests that countries tend to urbanize very slowly until they attain urbanization levels of about 25–30 percent. The pace of economic growth and overall development then quickens, with rapid structural shifts occurring in the economy, away from agriculture to industry and services. The pace of urban growth between urbanization levels of 25–30 percent and 55–60 percent typically takes place in a very short historical time frame of 25–50 years. This pace was found in European countries and in North America at different times in the late nineteenth and early twentieth centuries and in Latin America during the latter half of the twentieth century. Japan went from about 25 percent of its population living in urban areas in 1930 to over 70 percent in 1970, and the Republic of Korea went from about 25 percent urban in 1955 to 50 percent urban by 1975. During such rapid urbanization, the demand for urban infrastructure investment is massive, and countries usually must rely on external savings to supplement the available domestic

resources to finance such investment. So far, the world has been able to cope with such demands as urbanization has shifted from one region to another, and the overall magnitude of the increase in the urban population has been manageable. Over the next 25–30 years, however, three of the world's most populous countries—China, India, and Indonesia, with a combined total population of about 2.5 billion—will be undergoing this process simultaneously, with Pakistan and Bangladesh not far behind. The magnitude of the increase in the urban population in Asia during this period will be unprecedented and will undoubtedly give rise to unforeseen problems as well as opportunities.

The popular view of towns and cities in developing countries, and of the urbanization process, is a negative one, despite the benefits they bring. For many people, the emergence of such cities connotes environmental degradation, more slums, rampant urban poverty and unemployment, loss of control, and traffic chaos. But what is the reality? Because of the unprecedented increase in urban population in developing countries over the last 50 years, from 300 million in 1950 to 2 billion in 2000, the wonder really is how well the world has coped, and not how badly. In general, the urban quality of life has improved in terms of the availability of water and sanitation, power, health, education, telephones, and the like, and poverty has fallen. But these improvements must be viewed against the fact that they have been achieved in the presence of rapidly increasing population, under difficult fiscal situations, and with strained human resources for the emerging needs of public management.

The coverage of water and sanitation services in Asian cities serves as an illustration. As depicted in table 10.6, in Asia's largest countries a large number of urban residents are now receiving improved water services (the definition of urban areas as well as the concept of improved water services vary among countries, however). Although in some countries such as China, Indonesia, and the Philippines the access to improved water services in terms of percentage of total urban population seems to have declined from 1990 to 2000, in absolute numbers millions of additional citizens have actually seen improvements. The increase in access

Table 10.6
Improvement in Access to Water in Urban Asia, 1990 and 2000

Country	Percentage of Urban Population with Access to Improved Water Services		Additional People Benefiting (millions)
	1990	2000	1990–2000
China	99	94	115
India	88	95	107
Indonesia	92	90	27
Philippines	93	91	12
Korea, Rep. of	—	97	—

Note: The definition of urban areas as well as the concept of improved water services differ among countries, however.
— = Not available.

Source: Mohan and Dasgupta (2005), based on World Bank database, 2003.

Table 10.7
Improvement in Sanitation Facilities in Urban Asia, 1990 and 2000

Country	Percentage of Urban Population with Access to Improved Sanitation Facilities		Additional People Benefiting (millions)
	1990	2000	1990–2000
China	57	68	130
India	44	61	96
Indonesia	66	69	23
Philippines	85	93	15
Korea, Rep. of	—	76	29

— = Not available.

Source: Mohan and Dasgupta (2005), based on World Bank database, 2003.

to water is documented by each country within its own definitions. In China, India, Indonesia, and the Philippines taken together, an additional 261 million people received improved access to water in urban areas during the 1990s, which is more people than live in most countries today.

These Asian countries have made significant progress in providing sanitation services as well; together providing services for an additional 293 million citizens within a decade (table 10.7). In this parameter, there has been a consistent increase in the percentage of urban population covered in all five Asian countries.

This general improvement in access to urban infrastructure and services in the Asian cities can also be observed in other sectors such as health services, education, and housing. A look at the change in poverty levels is revealing as well. In terms of both nutrition levels and life expectancy, most Asian urban areas have seen consistent progress. However, in terms of income poverty, the experience has been mixed, thereby highlighting the importance of macroeconomic management of a country and its relevance to reducing urban poverty. In India, the steady macroeconomic environment and economic growth in the 1990s led to a steady improvement in income poverty levels.

The progress made in providing essential urban services has been significant. Unlike the popular view that urbanization causes deprivation, urbanization has been relatively well addressed in Asian cities and has led to an increase in the living standards and quality of life of its residents. Indeed, the progress achieved is quite noteworthy in view of the vast increase in the urban populations of these countries; their low per capita income; the constrained fiscal circumstances of their governments, leading to low expenditure on urban infrastructure; and the existence of weak local governments in most urban areas. In all probability, the quality of life in developing Asian urban areas is significantly better than that found in the eighteenth and nineteenth centuries in European cities, which had grown under similar circumstances but perhaps at higher prevailing income levels. But they did not have to cope with megacities during their rapid urbanization phase. The achievements being made today probably stem from the availability of better technology and systems.

Some Distinctive Features of Asian Urban Growth

The rapid economic growth in Asia during the last half-century must be among the most spectacular periods of development in recorded human history. The magnitude of the population that has benefited from this growth far surpasses that of the rest of the world, and in particular that of Western Europe and North America. Broadly speaking, the evolving pattern of Asian urbanization has naturally corresponded with the shifting focus of economic growth over this period.

Economic growth in Asia was kindled by the remarkable post–World War II recovery of Japan in the 1950s and 1960s, and stretching into the 1980s when Japan became the second-largest economy in the world. A particular characteristic of Japanese economic and urban growth was the heavy concentration of economic activity in the Tokkaido region (Tokyo-Nagoya-Osaka corridor), which was aided and abetted by an apparent conscious choice of concentrated infrastructure investment in this region. The Japanese economy benefited from high savings and investment rates during this period—almost 40 percent of the gross domestic product (GDP) by 1970—which provided resources for the heavy transportation and urban infrastructure investments. The rapid increase in manufacturing investment and production gave rise to the rapid growth in manufacturing employment that was responsible for very high rates of rural–urban migration. During this period, the Japanese countryside was literally drained of people, and the Tokkaido region became one of the most densely populated urban corridors in the world. Between 1950 and 1970, Japan's rural population fell from its peak of about 52 million to less than 30 million. By then, almost 40 percent of Japan's total population, and as much as 60 percent of its urban population, was concentrated in the 500-kilometer Tokkaido coastal corridor (Mills and Ohta 1976).

The kind of economic concentration that emerged was perhaps instrumental in economizing on infrastructure investment that would have been larger and more costly had it been spread out over a larger part of the country. The geographical proximity of different activities gave rise to agglomeration economies that aided rapid productivity growth and also enabled innovation in traditional production processes through the introduction of new systems such as just-in-time (JIT) modes of inventory management. Such innovations enabled much more outsourcing of components, a process that contributed to the drastic reduction in manufacturing costs that was the foundation of Japan's competitiveness. The more efficient inventory management resulting from JIT and overall supply management has also enabled a significant reduction in the corporate need for bank financing, leading to significant changes in bank portfolios. Creativity and innovation have been among the distinctive characteristics of Japanese economic and urban growth.

The focus of growth began to shift later to the "Asian Tigers": Hong Kong, South Korea, Singapore, and the Republic of China (Taiwan). It is noteworthy that the overall pattern of growth was similar in these countries. Singapore and Hong Kong exhibited concentrated growth. But South Korea and Taiwan also concentrated on specializing in manufacturing. Like Japan, they first specialized in labor-intensive, low-technology goods production, and then they began to move up the technology chain. Whereas South Korean manufacturing production was concentrated in large manufacturing conglomerates, Taiwan's was spread over a large

proportion of small and medium enterprises. However, both countries exhibited a strategy of concentrated spatial development in urban concentrations, Seoul/Pusan in South Korea and Taipei/Kaohsiung in Taiwan. By the mid-1970s, the Seoul and Pusan metropolitan regions accounted for almost 70 percent of South Korea's urban population (Mills and Song 1979, 188). Each of the Asian Tigers adopted an export-oriented and outward-oriented strategy that required heavy investments in key transportation and communication links with the rest of the world. The economic activities located in these cities were as connected with the rest of the world as with their hinterlands, if not more. The heavy spatial concentration common to Japan, South Korea, and Taiwan can also be attributed to the fact that they are among the most densely populated countries in the world.

Once the Tigers had demonstrated their success, it was then the turn of the "Cubs," the Southeast Asian countries of Thailand, Indonesia, and Malaysia. During the 1980s, the pattern of concentrated heavy investment was repeated in the metropolitan cities of Bangkok, Jakarta, and Kuala Lumpur. This effort was also export-oriented, and thus once again heavy investments were made in transportation and communication links, as well as in urban infrastructure.

Overall, the urban development pattern that emerged in Asia was that of concentrated development in the coastal regions of each country. The economic linkages of communications, transportation, and commerce that grew among these coastal cities then contributed to the emergence of transborder urban corridors. In fact, a look at the Asian urbanization pattern as it has emerged reveals a long and almost continuous urban coastal corridor stretching from Tokyo to Sydney, through Seoul, Taipei, Shanghai, Hong Kong, Kuala Lumpur, Singapore, and Jakarta (Douglas 1998).

Interestingly, Chinese economic and urban growth in the 1980s and 1990s was the result of a similar strategy: export-oriented, labor-intensive manufacturing located in the coastal areas—initially in and around Shanghai and in the Pearl River Delta region. Once again, infrastructure investment was concentrated in the special economic zones, and, as in the other countries, heavy rural–urban migration ensued. Because of the size of China, it is not easy to portray its pattern of urbanization. Until the 1990s, rural–urban migration was heavily constrained through the use of the household registry system, which has since been loosened considerably. In principle, households could not migrate to a city without official permission to live there. Although there is a great degree of debate about the actual level of Chinese urbanization, in 2000 it was somewhere between 30 and 36 percent. China now has about 90 cities that are home to more than 1 million people each. The Chinese authorities are clearly seeking to accelerate urbanization to absorb surplus labor from rural areas into more productive urban systems (Webster 2004).

India's strategy was almost a mirror image of the one being used in East and Southeast Asia. The ethos was dispersed development: the government frowned on and actively discouraged urban concentration, and the import-substituting, inward-oriented manufacturing approach persisted until the 1980s. Investment in infrastructure, particularly urban infrastructure, was of lower intensity. Unlike in the East and Southeast Asian countries, during the period of accelerating economic growth in India in the 1980s and 1990s industrial growth was high, but manufacturing employment and urban population growth decelerated (Mohan and

Dasgupta 2004). At the aggregative level, India has experienced a slowing pace of urbanization during the last 25 years or so. Even though the 1980s and 1990s in India were characterized by accelerated economic growth with nonagricultural growth surging ahead of agricultural growth, urbanization slowed down. This slowdown was probably caused by not only faulty national-level economic policies that discouraged urban employment growth, particularly industrial employment, but also local and state-level policies that introduced urban-level and other rigidities that inhibited urban infrastructure investment. Despite the fact that India is a peninsula with a long coastline, there was no attempt to concentrate economic activity in the coastal areas: in fact, growth in the old concentrations of Calcutta, Madras, and Bombay (now Kolkata, Chennai, and Mumbai) slowed down in the 1980s and 1990s, while, interestingly, inland cities such as Bangalore, Hyderabad, and Delhi prospered (an unusual phenomenon, to say the least).

Thus, today the fulcrum of global economic growth has shifted to the large economies of China and India. In China, the initial growth impetus came from the coastal zones, but the emphasis is now shifting to inland cities. Although economic growth is perhaps now more concentrated regionally in India, there is still little evidence of its strategy shifting to the promotion of greater urban concentrations. Thus, the export-led, coastal urban growth characteristic of Asia over the last 50 years will likely now move inland in China, and inland growth may continue in India. Such an inland pattern of urban growth will probably necessitate a higher degree of infrastructure investment—both intraurban and interurban—to ensure international economic competitiveness.

Emerging Issues for the Next Wave of Asian Urbanization

By all accounts, Asia has coped well with the unprecedented magnitude of urbanization it has experienced over the last 50 years. The Asian habitat pattern has been transformed over a historically brief time period: an Asian is now almost as likely to be found living in an urban area as in a rural area, with a high probability of being found in a city of significant size. Because of the particular economic strategy followed over much of Asia, its cities are engines of economic activity exhibiting ever-increasing productivity gains and prosperity. This prosperity has enabled Asia to finance its urban infrastructure investment without excessive international borrowing. In fact, the financial surplus that the region is now exporting to other regions of the world has come as a bit of a surprise in view of its own resource needs for continuing investment, particularly in the infrastructure needed for further urbanization.

Although the rate of urbanization will, no doubt, slow down overall, the magnitude of urban population accretion in Asia over the next 30 years will be roughly equal to that experienced in the last 50 years. In fact, this next wave of urbanization in Asia will be the largest in magnitude over any 30-year period in human history. The central question is whether the region will have enough resources to cope with this magnitude of urbanization. It is the most populous countries—China, India, and Indonesia—along with Pakistan and Bangladesh that will undergo widespread urbanization during this period, even though the pace of change may well be faster in other countries such as Vietnam, Laos, and Myanmar.

China seems to have already invested adequately in infrastructure, and there appears to be little doubt of its ability to generate enough internal resources to finance its investment needs over the foreseeable future and its ability to attract external resources if needed. In fact, because of the current magnitude of its current account surplus, coupled with the flow of external savings into the country and the large magnitude of foreign exchange reserves invested elsewhere, it has enough of a cushion to meet most, if not all, of its needs in the foreseeable future. As noted earlier, the change to be expected is a shift in focus toward inland cities. The question that then arises is whether these cities will be productive and competitive enough to produce the economic surpluses needed for their continued sustainability. The attainment of such productivity will necessarily mean greater investment in interurban infrastructure, so that these cities are well integrated with their coastal cousins. Furthermore, because of advances in information and communications technology, along with the secular decline in per unit air transportation costs, these cities can now connect to the rest of the world without the intermediation of the coastal cities. That said, these cities will have to specialize more in service industries rather than in manufacturing, because manufacturing enterprises located in these cities could be handicapped in global competitiveness by their excessive transport costs. Thus, a much greater investment in interurban infrastructure will be needed to make these cities competitive. Meanwhile, it appears that this investment has already begun in China in all the various facets of infrastructure: roads, rail, airports, and telecommunications.

India's story is somewhat different: relatively little attention has been paid to urban development over the years, and urbanization has been slowing over the last quarter-century. There also have been systematic policy biases against labor-using (or labor-intensive) manufacturing, against locating industries in urban areas, and against urban concentrations. Correspondingly, India has severe problems in both the management and financing of its cities. With the newfound economic resurgence of India—the result of consistent economic reforms since the early 1990s—the importance of urban infrastructure investment has finally begun to occupy the minds of key policy makers, and a "National Urban Renewal Mission" has been launched. However, the biases against labor-using manufacturing continue to influence overall economic policy making, the industrial regulatory regime, labor regulations, and urban land policy. Thus, employment growth in manufacturing remains low. As this author has argued elsewhere, these polices could have contributed significantly to the slowdown in Indian urbanization over the last quarter-century (Mohan and Dasgupta 2004).

Meanwhile, industrial competitiveness in India has recovered now that the shock of competition has been absorbed through significant financial and business process restructuring in Indian firms. The export orientation of Indian industry at large has also increased significantly in recent years. On average, since 2000–2001 about 14 percent of the sales of Indian firms have been exported (compared with 7 percent in 1991–1992), and this proportion continues to grow. Consequently, the continued high growth of the Indian economy will become even stronger if the efficiency of Indian cities, in terms of providing public infrastructure and local services, improves.

It is noteworthy that those Indian cities that have shown great economic vigor over the last decade in India—such as Delhi, Bangalore, Hyderabad, Pune, and

Chandigarh—exhibit certain common characteristics. They have an unusually large endowment of educational institutions at all levels and research institutions. A good number of relatively high-technology public sector industries are also located in most of these cities. Because these cities have a knowledge base that is significantly superior to those of other cities, they have been able to lead the Indian information technology revolution and to benefit from all the high economic growth that has followed. The lack of appropriate physical infrastructure and transport linkage inland or with rest of the world has not come in the way, because the information technology (IT) exports are not dependent on these elements of infrastructure. All they need is the appropriate communications infrastructure, which has indeed been provided progressively.

However, the prosperity brought by the success of the IT industry in these cities has itself resulted in greater pressures on the existing infrastructure. Traffic congestion has risen because of the much higher levels of auto ownership; housing demand has escalated in both quantity and quality, leading to rapid increases in land and housing prices; and the much higher demand for power is putting great stress on existing energy supply systems. Businesses are therefore beginning to look for other locations. The competitiveness of these cities will depend on acceleration in urban infrastructure investment and improvement in urban governance and management. The successful financing of such an enhanced level of investment will depend crucially on the financial viability of such projects.

Because the level of Indian urbanization is still less than 30 percent and 60 percent of the total population of India is still dependent on agriculture, the continuation of high economic growth will depend on how successfully cities absorb more labor. Such a development will depend on much higher growth in labor-using manufacturing and higher levels of urban infrastructure investment, along with knowledge-based, forward-looking city management. Thus, India's situation is quite different from that of China. If India's urbanization does speed up as it surpasses the 30 percent mark and as annual per capita income approaches US$1,000, an acceleration in India's urban growth could be expected under normal circumstances. But such an acceleration will, in turn, require significant acceleration in urban infrastructure investment and thus in the mobilization of financial resources for such investment. Although so far India has not relied significantly on external savings for its investment needs, it is possible that the demand for urban infrastructure investment will necessitate greater use of external savings during this phase of India's urban growth.

The other large country in Asia is Indonesia, which is spread over a large number of islands. Until the Asian financial crisis in 1997, Indonesia exhibited economic policy characteristics similar to those of other East Asian countries in terms of openness and export orientation. It had more of an economic policy mix, however, which was also concerned with promoting import-substituting industries and conscious dispersal of economic activities beyond the natural concentration in Java. Nevertheless, the greater Jakarta region, known as Jabotabek, exhibited a high degree of urban and economic concentration, despite the large size and dispersed nature of the Indonesian archipelago. The somewhat lower level of Indonesia's per capita income and the very rapid growth of the Jabotabek region have led to the proliferation of slums in the region (Webster 2004). Furthermore, Indonesia

was perhaps the Asian country most highly affected by the 1997 East Asian financial crisis. It has yet to fully recover from that shock and gain its earlier economic dynamism. Thus, the persistence of slums and the accompanying urban distress are likely to persist in Indonesia longer than in its Southeast Asian counterparts. The urban future of Indonesia is more beset with uncertainties, reflecting the parallel economic uncertainties it faces.

How will Asia's urban situation evolve over the next 30–50 years? And how will it be different from the experience of the last half-century? The one central difference is that because of the increasing globalization and ever-higher levels of income currently benefiting the region, the present-day residents of Asian cities will be much more adamant than their predecessors in demanding the quality of urban services that they deem to be their right and the urban amenities that are now viewed as normal. Thus, it is likely that urban investment will be different in terms of its composition and intensity.

Second, as globalization increases and trade protection diminishes, each Asian city will have to be more competitive on a global scale than it has been in the past. The larger countries will inevitably experience tension between the claims of coastal urban areas that possess natural comparative advantage and those of the vast hinterland that will need greater infrastructure investment for attaining competitiveness. Policy makers will therefore probably need to give greater explicit attention to the ingredients of competitiveness, to the corresponding public investment that will be appropriate to achieve such competitiveness, and to the modes of financing that will have to be mobilized.

Third, as already discussed, Asian urbanization in the last half-century has been based disproportionately on rapid, city-based manufacturing growth in the labor-using industries that have pulled in labor from rural areas, thereby relieving rural areas of excess labor and enabling growth in both rural and urban productivity. With the changes in technology already in place, it is an open question whether labor-using industry will continue to survive and grow in the same way it has done over the previous 50 years, and whether it will be as easy as in the past for urban areas to absorb the kind of rural-urban migration experienced earlier.

This issue is of great importance to India, because manufacturing makes up a somewhat lower share of its economy than could be expected at India's current level of economic development (Mohan 2002). If India is not able to change its economic and urban-specific policies to encourage labor-using manufacturing in and around urban concentrations, and if the global economic imperative is that such patterns of industrialization are no longer feasible, how will its cities grow and absorb the large rural population that needs to get off the farm so that both rural and urban productivity can grow faster? Thus, the pattern of Indian industrialization and urbanization can be expected to differ from that of East and Southeast Asian countries.

And yet it must still be understood that successful and sustainable urbanization will depend on the rise of manufacturing as a share of the economy, but with somewhat different characteristics (Yusuf and Nabeshima 2006). First, the manufacturing process has itself changed significantly, so that many of the activities that were earlier concentrated in one location in one plant are now often outsourced to many different locations within an urban concentration and even across bor-

ders. For example, product design is now increasingly dependent on information technology and typically locationally divorced from the core manufacturing plant. Moreover, product development and design are being increasingly outsourced on a global basis. The availability of competent engineering skills at a lower cost in India is contributing significantly to the relocation of product development and design from developed countries to India (Marsh 2006a, 2006b, 2006c). Conversely, Indian manufacturers are also outsourcing their product development and design in the opposite direction.

Second, the rising global competition is also inducing firms to look for practical ways in which to reduce their core manufacturing costs. Local outsourcing of components and processes has been found useful in this regard. Because of inventory control and management, such outsourced manufacturing activities must be in close proximity to the mother plants. Thus, successful industrialization in this manner in India would increasingly require a greater concentration of these activities than has been experienced in the past. As the quality of manufactured goods continues to improve, it is becoming clear that the demand for low-skilled labor is unlikely to accelerate. A core component of economic and urban policy would therefore have to be enhancement of labor force skills at all levels. Most countries have found it difficult to provide vocational training. For training to be successful, it must target skills that are in demand. The private sector has not been investing adequately in training since it cannot see the return on this investment. The public sector's investment in vocational training is not always driven by market forces. The answer to this problem is a public-private partnership, but that is not easy to design. In the future, successful urbanization will be crucially dependent on the availability of labor with the appropriate skills.

Thus for growing Asian cities over the next 30–50 years, the key to their success will indeed lie in the continual enhancement of human resources. In the globalizing world, creativity and entrepreneurial dynamism will be the essence of successful cities (Yusuf and Nabeshima 2006). All the East Asian cities—Bangkok, Beijing, Singapore, Seoul, Tokyo, and others—exhibit high levels of educational attainment and have impressive endowments of educational and research institutions. In fact, some of these cities, such as Hong Kong and Singapore, that did not traditionally have higher education institutions particularly noted for high quality have in the last two decades consciously invested intensively in higher education institutions in terms of both quantity and quality. Each of these major Asian cities now houses large numbers of universities. For example, Tokyo has 113 universities and Beijing has 59, although their quality varies greatly (Yusuf and Nabeshima 2006). Similarly, in India a large number of private colleges and universities have emerged in the southern region to cater to the increasing demand from industry for technical personnel. Apart, then, from the traditional needs for physical urban infrastructure investment for successful urbanization, similar attention now must be given to the soft infrastructure that is related to the creation, production, and retention of knowledge, along with facilities that enable continual skill enhancement.

Openness to the outside world does not just mean an increase in trade in goods and services; it also means greater openness to ideas and new practices. At a recent conference on "Urban Dynamics in New York City" organized by the Federal Reserve Bank of New York (yes, central banks are interested in city growth),

Columbia University professor Kenneth T. Jackson attributed the great success of New York City to its openness to new waves of immigrants over time: "The constant infusion of new energy and ideas into the metropolis over the years enabled New York to meet economic and technological challenges that destroyed the prospects of competing cities" (Jackson 2005). It is quite remarkable that most of the successful East and Southeast Asian cities have remained very open to the presence of foreign citizens with high levels of education and skills. Almost 100,000 foreign citizens are said to be in Beijing alone (Yusuf and Nabeshima 2006). Such a presence of foreigners contributes greatly to the economic vitality so needed by growing cities, because it provides residents with new competition, while facilitating the flow of new ideas in both directions. In fact, a large number of universities and other technical institutions in the developed world have also begun to realize that it would be increasingly efficient for them to relocate some of their activities to Asian cities rather than drawing Asian personnel to their parent campuses. Enhancement of human capital at different levels will therefore involve different strategies and a greater openness to the cross-border flow of institutions and personnel.

The Challenges of Urbanization in the Twenty-First Century

Of the additional 2.1 billion people expected to move to urban centers between 2000 and 2030, about 1.3 billion, or about 60 percent, will be in Asia (table 10.1). In the second half of the twentieth century, the total accretion to the world's urban population was similar in magnitude (about 2.1 billion), but the Asian share was somewhat lower—about 53 percent. As emphasized repeatedly in this chapter, the magnitude of urbanization expected in Asia is unprecedented, and thus its management, in all its multifaceted aspects, will be one of the most important challenges facing mankind.

Just as the structure of American cities is different from that of European cities, depending on their vintage, the twenty-first-century Asian city can also be expected to exhibit different characteristics. The older European or Asian city is typically more densely populated and less spread out than American cities, reflecting in particular the different degrees of motorization that existed at their inception. American cities are much more dependent on privately owned motorized transportation than cities in Europe and Asia. Even as early as the outset of the 1970s, nearly 80 percent of U.S. urban commuters traveled by car, as compared with only 15 percent in Japan. In fact, 65–70 percent of Tokyo commuters and 60 percent of those in Seoul traveled by public transit in the early 1970s (Mills and Ohta 1976; Mills and Song 1979). With rising incomes and aspirations, the pace of growth in auto ownership in Asian cities has become rapid, much like the growth in traffic congestion.

The current increase in oil prices is sharpening the tensions typically found in debates related to urban transportation. With the increase in ownership and use of private automobiles, the intensification of investment in intraurban expressways in many Asian cities has been noticeable. This development typically leads to accelerated urban sprawl, a still faster increase in auto ownership and then an even greater demand for oil, and higher pollution levels. Over time, road traffic congestion inevitably catches up, leading to yet more demands for road investment or for

mass transportation, which is then expected to reduce road traffic congestion and pollution. The current trends suggest that the result is high levels of investment in both modes of transportation. Because of the current higher levels of income and the expected rapid increase in income growth, the emergence of these patterns is perhaps inevitable. The demand for both financial and physical resources will clearly intensify, and the question is whether it will be possible for Asian cities to impose appropriate taxation systems and user charges that can finance the investments required.

It is widely accepted that the current surge in oil prices is related more to demand than to disruption in supply as was true earlier. In view of the expected pace of Asian urban growth over the next 30 years, will oil prices continue to rise in response to the ever-increasing demand? Or will there be a corresponding supply response, as in the past, that will contribute to oil prices falling again? In either case, appropriate petroleum pricing and urban transport pricing will be as crucial for urban policy as for economic policy as a whole.

It is also well known that the emerging transportation pattern crucially affects city structure, and so urban transport policy will be of great importance to the kind of growth expected in Asian cities in the coming years. Will the growing Asian cities be an amalgam of the typical old, densely populated city centers and the suburban sprawl characterized by motorized transportation modes and shopping malls akin to the American pattern? In some Asian cities, the old city centers are being completely reconstructed, such as in Beijing and Kuala Lumpur, whereas in others the tension between the old and new continues.

Another general issue affecting the pattern of urbanization will be the nature and pace of rural-urban migration. In China, because of the long-standing one-child policy, the natural growth of the urban population is low, and thus the same rate of urban population growth gives rise to a much higher order of rural–urban migration than in other countries such as India, where the natural rate of urban population growth is higher. In China, household size is presumably smaller, and therefore for the same population size investment in housing and associated infrastructure will have to be higher per capita. Furthermore, the cultural problems associated with first-generation migrants are likely to be greater. Conversely, it is also possible that with higher natural urban population growth there could be greater local resistance to in-migrants, giving rise to associated problems in economic and social policy. Thus, policy makers also should pay attention to the specific nature of economic demographics in their respective countries as it affects urbanization.

Because Southeast Asia experienced the rapid growth of urban areas in the 1970s and 1980s, slums and the associated deficiencies in urban infrastructure services related to water, sanitation, sewerage, and solid-waste disposal received much attention. These problems have taken care of themselves in many high-growth countries, but in low-income, populous countries such as India, Bangladesh, Pakistan, and Indonesia the existence of slums and lack of services remain serious issues. Because of the large numbers of people involved, issues related to change management are as important as those related to financing and resource management. Flexibility in urban land policy and zoning, the working of land markets, the availability of housing finance, and the facilitation of urban land development all need attention. The availability of sympathetic policy makers and professionals in

these areas is at a premium in these countries. Generating skills and professionalism in urban management in all its aspects will therefore be among the key challenges accompanying Asian urbanization in the coming years.

One of the consequences of globalization—more open trade in both goods and services and the vastly greater transborder mobility of the professional classes—has led to the prevalence of international compensation levels for these groups, despite lower average income levels in Asian cities, and thus to greater inequality in these cities. Members of these "creative classes" also seek an assortment of urban attributes that were not demanded earlier (Yusuf and Nabeshima 2006). They are much more demanding in terms of quality of housing and urban services, health, and education services. Knowledge workers are also very interested in the availability of recreational amenities, a clean environment, efficient and comfortable transportation, and international level communications services. Thus in order to attract and retain the very people who are essential for city competitiveness, Asian cities will have to prematurely invest in world-class facilities at much lower average income levels. The most competitive of Asian cities have clearly recognized this need, as is evident in cities such as Shanghai, Hong Kong, Singapore, Kuala Lumpur, and Seoul, with Bangkok fast attempting to catch up.

The task for policy makers managing Asian urbanization over the next 30 years is therefore more complex than it was in the previous 50 years. In addition to the traditional problems of providing, financing, and managing basic physical infrastructure, they have to be more conscious of the demands arising from globalization such as creating knowledge-based cities that also boast of competitive urban amenities. The increase in the sheer number of large cities will also stretch the ability of government authorities to find people with the appropriate skills for city management. Less international attention is now being paid to the generation of such skills, and so it may well be an area for coordinated international attention.

Finally, being a central banker, I can hardly conclude this chapter without considering the financing needs of Asian urbanization over the next 30 years. Because urban infrastructure typically lasts for a long time, even though the investment in urban infrastructure has to be made ex-ante at the time of rapid urban growth over a period of 10–15 years, its benefits may well flow for periods as long as 50 years or more. Life would be easy if civic authorities could raise financial resources in such a way that the repayment schedule matches the benefit schedule. A scan of urban financing systems across the world does not reveal any uniformity in pattern. The German government uses its mortgage banks to sell Pfandbrief bonds, which enjoy high credit quality next only to that of the Bund, the German Treasury bond and then it intermediates the funds to states and municipal authorities for investment in infrastructure. A complex system of credit enhancements makes it feasible for the mortgage banks and indirectly the cities to raise long-term funds, but this credit quality has been earned over more than a century during which the municipal authorities have made sure that their tax and user charge systems are such that they can redeem the resources raised. In the United States, the decentralized municipal bond system has largely financed urban infrastructure. Here too, because the ability to raise resources depends on retaining healthy credit ratings, municipal authorities have a very strong incentive to stay solvent and service their bond holders. In principle, therefore, such systems

have been successful because they have ensured that towns and cities face an incentive structure that encourages them to remain creditworthy and that they are essentially self-financing.

In Asian countries, financial markets are not yet sophisticated enough to allow for such financing methods. Urban infrastructure is usually financed by the higher-tier governments, which raise resources from taxes or from banks and financial institutions that are typically government-owned or -sponsored. Such systems are not well designed to avoid moral hazard—that is, the recipient towns and cities do not have a strong incentive to be essentially self-financing. The 1990s saw increasing attempts to privatize the provision of urban infrastructure, but these efforts met limited success at best. In view of the magnitude of urban population accretion expected over the next 30 years, there seems to be little choice. If Asian cities are to thrive and prosper, they will have to develop self-sustaining local taxation and user charge systems, so they can tap national and international financial markets for their financing needs.

And what is the international dimension of urban infrastructure financing? It is usually true that when a country begins its rapid urban growth phase its financial markets had not yet developed, and so the only way to tap long-term funds is to resort to external savings, which must then be repaid over a long period of time. Typically, regions undergoing intensive urbanization have had to mobilize external savings intensively, followed by periods of balance of payments crises and debt defaults. In Asia, too, the 1997 financial crisis reflected in part the sudden reversal of large external resource flows, as did the Latin American debt crisis of the 1980s. Since then, however, it is puzzling that the region as a whole is exhibiting financial surpluses, which are being invested in Europe and North America. In the current great debate on global imbalances, the assumption seems to be that these imbalances are relatively durable, reflecting in part the favorable economic demographics of Asia and the converse in the West.

This financial turn of events is, however, somewhat puzzling. One would expect regional domestic savings—the demands of infrastructure investment, particularly that of urban infrastructure, being what they are—to be inadequate to finance the required investment. Perhaps the explanation really lies in the Asian reaction to the 1997 financial crisis, and higher investment levels can be expected in the years to come. The magnitude of urban population growth expected in China, India, Indonesia, Pakistan, and Bangladesh over the next 30 years is bound to produce pressures on international resource mobilization. Urban infrastructure investment would then exceed available savings in these countries, and the current alleged savings glut would disappear over a period of time. Will the available international savings lead to enhanced competition among Asian countries? With the emerging adverse demographics in the West, and thus the low savings rates there, will this competition lead to the emergence of higher real interest rates in the future—the exact converse of the current situation of excess world liquidity and low interest rates? If that happens, the task of urban policy makers and central bankers alike will become much more difficult. The efficient intermediation of financial savings within countries, and across countries, will therefore be as important for urban development as for financial market development per se and for monetary policy makers in the years to come.

REFERENCES

Douglas, M. 1998. East Asian urbanization: Patterns, problems, and prospects. The 1998 Walter H. Shorenstein Distinguished Lecture Series. Palo Alto, CA: Stanford University Asia/Pacific Research Center.

Jackson, K. T. 2005. The promised city: Openness and immigration in the making of a world metropolis. *FRBNY Economic Policy Review* (December):81–88.

Marsh, P. 2006a. Feast of a moveable work force. *Financial Times* (17 May).

———. 2006b. India's fight to slay the dragon. *Financial Times* (18 May).

———. 2006c. A new manufacturing mantra. *Financial Times* (16 May).

Mills, E. S., and K. Ohta. 1976. Urbanization and urban problems. In *Asia's new giant: How the Japanese economy works,* H. Patrick and H. Rosovsky, eds. Washington, DC: Brookings Institution.

Mills, E. S., and B. N. Song. 1979. *Urbanization and urban problems* Cambridge, MA: Harvard University Press.

Mohan, R. 2002. Small scale industry policy in India: A critical evaluation. In *Economy policy reforms in the Indian economy*, A. O. Krueger, ed. Chicago: University of Chicago Press.

Mohan, R., and S. Dasgupta. 2004. Urban development in India in the twenty-first century: Policies for accelerating urban growth. Paper presented at Fifth Annual Conference on Indian Economic Policy Reform, Stanford Center for International Development (2–5 June).

———. 2005. The 21st century: Asia becomes urban. *Economic and Political Weekly* 60(January):15–21.

Newsweek. 2003. Boom towns: Is Asia's urban explosion a blessing or a curse? Special Issue (October–December).

United Nations. 2002. *World urbanization prospects.* New York: United Nations.

———. 2003. *World urbanization prospects: The 2003 revision.* New York: United Nations.

Webster, D. 2004. Urbanization dynamics and policy frameworks in developing East Asia. East Asian Infrastructure Department working paper no. 8. Washington, DC: World Bank.

Yusuf, S., and K. Nabeshima. 2006. *Postindustrial cities in East Asia.* Palo Alto, CA: Stanford University Press.