

Rakesh Mohan: Asia's urban century - emerging trends

Keynote address by Mr Rakesh Mohan, Deputy Governor of the Reserve Bank of India, at the Conference on Land Policies and Urban Development, organised by the Lincoln Institute of Land Policy, Cambridge, Massachusetts, 5 June 2006.

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I. Urbanisation: a recent phenomenon

Widespread all pervading urbanisation is a truly twentieth century phenomenon. Although cities have always existed, even cities such as Memphis, Babylon, Thebes, Athens, Sparta, Mohen-ja-daro and Anuradhapura existed in antiquity, there is little evidence of widespread urbanisation in the early years of civilization. Rome was perhaps the first settlement to reach 1 million people in BC; only in 1800 did London become the second city to reach this population size.

In 1800, only 2 per cent of the world's population was urbanised. By the year 1900, out of a total world population of close to 1.5 to 1.7 billion, only 15 percent of the population, about 250 million, lived and worked in urban areas, a number lower than the total urban population of India alone today. By the year 1950 the proportion of urban to total global population had risen to 30 per cent, with Europe, North America and Oceania having the highest levels of urbanisation then. By the year 2000, 2.8 billion people lived in urban areas equaling approximately 49 percent of the world's population. So the pace of urbanisation witnessed in the twentieth century was truly unprecedented, and it is a wonder that the world has coped as well as it has. We are 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 in a time period that is incredibly short by historical standards. While the world's urban population grew by approximately 500 million between 1900 and 1950, it grew by 2.1 billion in the next fifty years; and is expected to grow by a similar magnitude in just the next thirty years. The speed of urbanisation in Latin America in the second half of the twentieth century was spectacular, vaulting from a just over 40 percent urbanisation level to 75 percent by the end of this period which was also a period of rapid population growth and demographic transition. As may be seen (Table 1) the focus of change is now in Asia with the urban population expected to double in the next 30 years or so. This phenomenon of such rapid urbanisation 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 change.

In the last two centuries, cities have consistently provided the environment for institutional and technological innovation, and 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 four fold, while urban population almost tripled, taking the world from 33 percent urban to 47 percent urban in forty years (Table 2).

Table 1: Urban population growth across the globe

Region	Urban Population		Urban Population		Urban Population		Urban Population	
	1900		1950		2000		2030	
	in Millions	Per cent of total	in Millions	Per cent of total	in Millions	Per cent of total	in Millions	Per cent of total
Africa			32	14.7	295	37.2	787	52.9
Asia			244	17.4	1376	37.5	2679	54.1
Latin America & 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	~ 15	751	29.8	2862	47.2	4981	60.2
Increase			501	14.8	2111	17.4	2119	13.0

Source: United Nations (2002)

Table 2: Global GDP and growth in urban population

	1960	1970	1980	2000
World GDP (constant 1995 \$ trillion)	7.9	13.5	19.5	34.3
Share of agriculture in world GDP	-	-	6.5	3.9
Share of industry in world GDP	-	-	38.0	20.8
Share of services in world GDP	-	-	55.5	66.3
World population (mm)	3020	3675	4428	6053
Per cent urban population	33.3	36.5	39.3	46.7

Source: World Bank database.

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 fifty years, developing countries will be urbanising at a much more rapid pace than developed countries.

A review of the regional dynamics of urbanisation reveals interesting developments (Table 3). 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 urban population in Europe and North America was about 1.5 per cent. The share of Europe and North America in global urban population declined from about 53 per cent in 1950 to 27.5 per cent in 2000 and is expected to decline further to about 17 per cent by 2030. Africa has experienced consistent high growth in its urban population, which grew at an annual rate of 4.4 per cent during 1950-2000, and its share in global urban population is expected to rise to 16 per cent by 2030 (from 4.3 per cent in 1950). Latin America has now become predominantly urban, surpassing urbanisation levels in Europe and will almost be at par with North America by 2030. Interestingly, Asia is where almost half of urban population of the world lives and soon it will have the majority of the world's urban population.

Table 3: Global urbanisation trends – level of urbanisation

Region	(Per cent)	
	1920	2030
World Total	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)

It is now well established that the acceleration of urbanisation generally takes place with corresponding acceleration of economic growth. Urbanisation is promoted by (i) economies of scale in production particularly in manufacturing; (ii) the existence of information externalities; (iii) technology development, particularly in building and transportation technology; (iv) substitution of capital for land as made possible by technological developments. Information asymmetries contribute to agglomeration economies. As economies of scale in production begin to take hold larger size plants become necessary, thus contributing to the need for larger settlements of people. The services needed by the rising agglomeration of people gives rise to an even greater number of people living together: thus cities are born and 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, enables people to live at greater distances thus contributing to the expansion of city size. The existence of agglomeration economies gives rise to continuing accretion of people in a settlement, thus promoting city growth. These linkages become more prominent with economic growth thereby promoting the acceleration of urbanisation. With the growing weights of industry and services in developing countries, urbanisation has proceeded apace over the last 50 years. As we will see, the relatively concentrated pattern of Asian urbanisation that has occurred along with a very high rate of economic growth perhaps best illustrates the economic gains accruing from agglomeration economies and economies of scale.

II. Asia becomes urban

Presently the highest rates of economic growth are being witnessed in Asia, and hence high urban growth. This is particularly noticeable in China and India, which today have the largest rural populations but are urbanising rapidly. Even in other Asian countries where a large number of cities are witnessing high rates of economic growth, the growth in their urban population is also going to be higher. Of the 10 most populous countries, 6 are in Asia (Table 4). Even as more than two billion people will be added to Asia's population in the next 30 years many of these countries will still be rapidly urbanising. This phenomenon has now gained such prominence that even popular news magazines have begun to take note (Newsweek, 2003). This is also reflected in Figure 1 which shows that rural population in Asia is expected to decline, in absolute terms during 2000-2030, yet another unprecedented event, while urban population will almost double during the same period. Therefore, while thinking and thought processes related to urbanisation were dominated by the growth of urbanisation in Latin America between 1950 and 2000, the 21st Century will be the "Asian Urban Century".

Table 4: Emergence of mega cities:

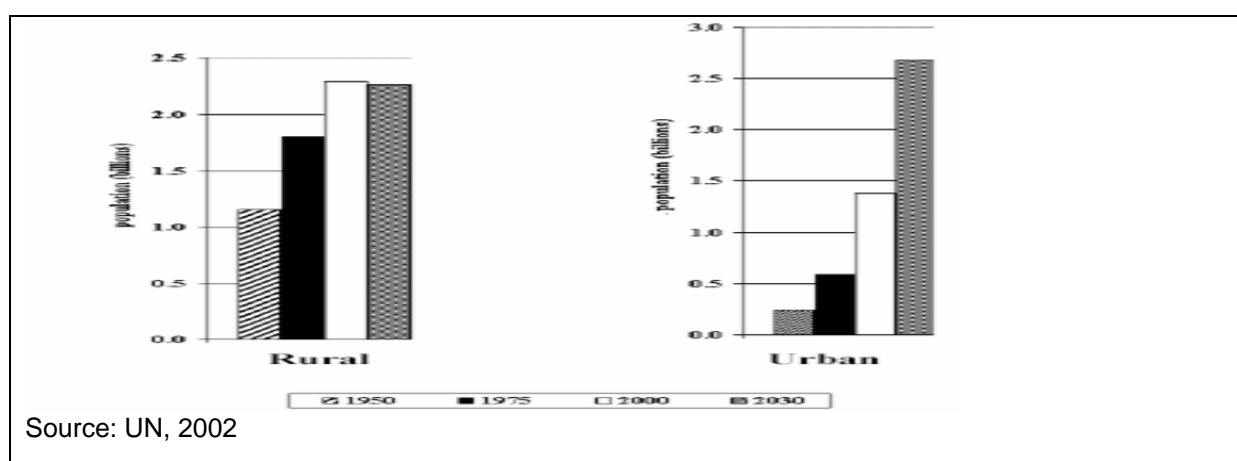
Population of Cities with 10 million or more inhabitants

(in Millions)

1950		1975		2000		2015	
New York	12.3	1 Tokyo	19.8	1 Tokyo	25.2	1 Tokyo	27.2
		2 New York	15.9	2 Sao Paulo	18.3	2 Dhaka	22.8
		3 Shanghai	11.4	3 Mexico City	18.3	3 Mumbai	22.6
		4 Mexico	10.7	4 New York	16.8	4 Sao Paolo	21.2
		5 Sao Paulo	10.3	5 Mumbai	16.5	5 Delhi	20.9
				6 Los Angeles	13.3	6 Mexico City	20.4
				7 Kolkata	13.3	7 New York	17.9
				8 Dhaka	13.2	8 Jakarta	17.3
				9 Delhi	13.0	9 Kolkata	16.7
				10 Shanghai	12.8	10 Karachi	16.2
				11 Buenos Aires	12.1	11 Lagos	16.0
				12 Jakarta	11.4	12 Los Angeles	14.5
				13 Osaka	11.0	13 Shanghai	13.6
				14 Beijing	10.8	14 Buenos Aires	13.2
				15 Rio de Janerio	10.8	15 Metro Manila	12.6
				16 Karachi	10.4	16 Beijing	11.7
				17 Metro Manila	10.1	17 Rio de Janerio	11.5
						18 Cairo	11.5
						19 Istanbul	11.4
						20 Osaka	11.0
						21 Tianjin	10.3

Source: United Nations (2002).

Figure 1: Growth in urban and rural population in Asia over the years



Source: UN, 2002

By 2030, Asia alone will have about 2.7 billion urban people accounting for over 50 per cent of its total population. All the other regions of the world will have a combined urban population of about 2.3 billion. Six of the 10 countries with the largest urban populations are in Asia. Urbanisation in Bangladesh has been among the fastest in the world (5.6 per cent during 1950-2000). The only African country in the top 10 list, Nigeria, has also urbanized very rapidly in the past 5 decades (World

Urbanisation Prospects, 2001). Interestingly, by 2010, Lagos is projected to become the third largest city in the world.

Moving to the city level urbanisation trends, the growth of urban agglomerations in developing countries has far exceeded that in developed countries. In 1950, there was only one city with a population of over 10 million people: New York City. In 2000 there were 17 cities with a population above 10 million, 22 cities with population between 5 and 10 million; 402 with a population of 1 to 5 million; and 433 in the 0.5 to 1 million category. An important characteristic of urbanisation in Asia has been the emergence of mega-cities – large multi-nuclear 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 17 global megacities were in Asia. It is expected that 12 out of the 21 mega cities in the year 2015 will be in Asia (Table 4).

Of the 21 cities expected to reach 10 million plus by 2015, 17 of them will be in developing countries. Of these 17 cities, 11 of them will be in developing countries in Asia and those will be Dhaka, Mumbai, Delhi, Jakarta, Kolkata, Karachi, Shanghai, Metro Manila, Beijing, Istanbul and Tianjin (Table 5).

Table 5: Out of the 10 most populous countries 6 are Asian

Country	1950		2000		2030	
	Per cent urban	Population (mn)	Per cent urban	Population (mn)	Per cent urban	Population (mn)
1 China	12.5	555	35.8	1275	59.5	1485
2 India	17.3	357	29.0	1009	40.9	1409
3 USA	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)

The historical pattern of urbanisation suggests that countries tend to urbanise very slowly until they attain urbanisation levels of around 25 to 30 per cent. 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 urbanisation levels of 25 to 30 per cent and 55 to 60 per cent has typically been observed to take place in a very short historical time frame of 25 to 50 years. This happened in European countries and North America at different times in the late nineteenth century and early twentieth century, and in Latin America during the latter half of the twentieth century. Japan went from about 25 per cent urbanisation level in 1930 to over 70 per cent in 1970; and Korea from about 25 per cent urban in 1955 to 50 per cent by 1975. During this rapid phase of urbanisation, the demand for urban infrastructure investment is massive and countries have usually been observed to need external savings to supplement available domestic resources to finance such investment. So far, the world has been able to cope with such demands as the scene of urbanisation has shifted from one region to another and the overall magnitude of increase in urban population has been manageable. What is new in the next 25 to 30 years is that three of the world's most populous countries, China, India and Indonesia, with combined total population of about 2.5 billion will be undergoing this process simultaneously, with Pakistan and Bangladesh not much far behind. The magnitude of the increase in urban population in Asia in 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 urbanisation process, is a negative one, despite the benefits it brings. For many, the emergence of such cities connotes environmental degradation, the generation of slums, rampant urban poverty and unemployment, loss of control and traffic chaos. But what is the reality? Given the unprecedented increase in urban population over the last 50 years from 300 million in 1950 to 2 billion in 2000 in developing countries, 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 availability of water and sanitation, power, health, education, telephones, and the like, and poverty has fallen. 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.

By way of illustration, we can look at the coverage of water and sanitation services in Asian cities. As presented in table 6 a large number of urban residents have been provided with improved water in urban areas in Asia's largest countries. Although in some countries such as China, Indonesia and the Philippines, the access to improved water 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 been provided improved services. Although the definition of urban areas as well as the concept of improved water services varies across the different countries referred to in the following tables, the increase in access is documented by each country within their own definitions as presented here. In the four countries taken together, an additional population of approximately 262 million has been provided with improved access to water in urban areas during the 1990s, which is a population greater than that of most countries today.

Table 6: Improvement in access to water in urban Asia

Country	Per cent of urban population with access to improved water		Additional people provided (million)
	1990	2000	
China	99	94	115
India	88	95	107
Indonesia	92	90	27
Philippines	93	91	12
Korea, Rep.		97	

Source: World Bank database, 2003

These countries in Asia have made significant progress in the provision of sanitation services too, together providing for an additional population of more than 293 million citizens within a decade. In this parameter there has been a consistent increase in the percentage of urban population covered in all the countries (Table 7).

Table 7: Improvement in sanitation facilities in urban Asia

Country	Per cent of urban population with access to		Additional people provided (million)
	Improved sanitation facilities		
	1990	2000	1990 to 2000
China	57	68	130
India	44	61	96
Indonesia	66	69	23
Philippines	85	93	15
Korea, Rep.		76	29

Source: World Bank database, 2003

This general improvement in access to urban infrastructure and services in the Asian cities can be observed in other sectors too such as health services, education and housing. Looking at the change in poverty levels too is revealing; in terms of both nutrition levels and life expectancy most of the Asian urban areas have seen consistent progress. However, in income poverty terms the experience has been mixed, bringing to the fore the importance of macro-economic management of a country, and its relevance for urban poverty reduction. In India, a steady macro economic environment and economic growth in the 1990s has led to steady improvement in income poverty levels.

Progress in the provision of essential urban services has been significant. Unlike the popular view that urbanisation causes deprivation, urbanisation has been relatively well addressed in Asian cities and has led to an increase in living standards and quality of life of its residents. Given the (i) vast increase in urban population in these countries, (ii) low per capita income, (iii) constrained fiscal circumstances of governments, leading to low expenditure on urban infrastructure, and (iv) the existence of weak local governments in most urban areas, the progress achieved is indeed quite noteworthy. In all probability the quality of life in developing Asian urban areas is significantly better than the situation witnessed in the 18th and 19th centuries in European cities, which had grown under similar circumstances, but perhaps at higher prevailing income levels. We may also recall that they did not have to cope with mega cities during their phase of rapid urbanisation. These achievements have probably been enabled by the availability of better technology and systems now.

III. Some distinctive features of Asian urban growth

The rapid economic growth of Asia in the last half century must be amongst the most spectacular periods of development in recorded human history. The magnitude of population that has benefitted from this growth far surpasses that of the rest of the world, and in particular of Western Europe and North America. Broadly speaking, the evolving pattern of Asian urbanisation has naturally corresponded to 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 (almost 40 per cent of GDP by 1970) during this period, which provided the resources necessary for the heavy transportation and urban infrastructure investments that were made. The rapid increase in manufacturing investment and production gave rise to high growth in manufacturing employment that was responsible for very high rates of rural urban migration. The Japanese countryside was literally drained of people during this period 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 per cent of Japan's total population, and as much as 60 per cent of its urban population was concentrated in the 500 km Tokkaido coastal corridor (Mills and Ohta, 1970). The kind of economic concentration that emerged was perhaps instrumental in economizing on infrastructure investment that would have been larger 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 significant reduction in 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 Taiwan. What is noteworthy is that the overall pattern of growth was similar in these countries. Singapore and Hong Kong being city states were, of course, somewhat different and had to exhibit concentrated growth. But South Korea and Taiwan also concentrated on specialising in manufacturing. Like Japan they first specialized in labour intensive low technology goods production and then began to move up the technology chain. While Korean manufacturing production was concentrated in large manufacturing conglomerates, that of Taiwan was spread over a large proportion

of small and medium enterprises. However, they both exhibited a strategy of concentrated spatial development in urban concentrations, Seoul/Pusan in Korea and Taipei/Kaohsiung in Taiwan. The Seoul and Pusan metropolitan regions accounted for almost 70 per cent of South Korea's urban population by the mid 1970s (Mills and Song, 1979 p.188). Each of the Tigers adopted an export-oriented and outward orientated strategy, which also necessitated 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. This common heavy spatial concentration in these countries, Japan, South Korea and Taiwan, can perhaps also be attributed to the fact that they are among the most densely populated countries in the world.

Given the success of the tigers, it was then the turn of the cubs, the South East Asian countries of Thailand, Indonesia and Malaysia during the 1980s. Once again, the pattern of concentrated heavy investment was repeated in the metropolitan cities of Bangkok, Jakarta and Kuala Lumpur. The orientation here was also export oriented and hence, again, heavy investment had to be incurred in transportation and communication links, and in urban infrastructure.

The urban development pattern that emerged in Asia was that of concentrated development around coastal regions of each country. Moreover, the transportation links that grew between these coastal cities in terms of economic linkages of communication, transportation and commerce, contributed to the emergence of trans-border virtual urban corridors. In fact, a look at the Asian urbanisation pattern as it has emerged reveals a long almost continuous urban coastal corridor stretching from Tokyo to Sydney, through Seoul, Taipei, Shanghai, Hong Kong, Kuala Lumpur, Singapore and Jakarta (Douglas, 1998).

Interestingly, early Chinese economic and urban growth in the 1980s and 1990s was also the result of a similar strategy: export-oriented labour-using manufacturing located in the coastal areas; initially in and around Shanghai and in the whole 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. Given the size of China it is, of course, not easy to portray its pattern of urbanisation. Until the 1990s, rural urban migration was heavily constrained through the urban residence permit system, which has since been loosened considerably. Although there is a great degree of debate on the actual level of Chinese urbanisation, in 2000 it was somewhere between 30 and 36 per cent. It now has about 90 cities with more than 1 million population. The Chinese authorities have a clear priority objective of accelerating urbanisation to absorb surplus labour from rural areas into more productive urban systems (Webster, 2005).

In contrast to this common experience, the Indian strategy was almost a mirror image of the East and South East Asian strategy. The ethos was of dispersed development: urban concentration was frowned upon and actively discouraged; and the import substituting inward oriented manufacturing approach persisted till the 1980s. Investment in infrastructure, particularly urban infrastructure has been of lower intensity. As I have documented elsewhere, unlike the East and South East Asian countries, during the period of accelerating economic growth in India in the 1980s and 1990s, although industrial growth was high, manufacturing employment and urban population growth decelerated (Mohan and Dasgupta, 2004). Despite being 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. There have perhaps been few such examples of inland cities growing faster than coastal cities and regions.

The fulcrum of global economic growth has now shifted to the large economies of China and India. In the case of China, with the initial growth impetus having come from the coastal zones, the emphasis is now shifting to inland cities. Although economic growth has perhaps now got more concentrated regionally in India, there is still little evidence of strategy shifting to the promotion of greater urban concentrations. So the export led, coastal urban growth that has been characteristic of Asian urban growth in the last 50 years can now be expected to move inland in the large land masses of India and China. Such a pattern of urban growth will probably necessitate higher degree of infrastructure investment – both intra-urban and inter-urban in order to ensure international economic competitiveness.

IV. Emerging issues for the next wave of Asian urbanisation

By all accounts Asia has coped well with the unprecedented magnitude of urbanisation that it has experienced in 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 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, given its own resource needs for continuing investment, particularly in the infrastructure needed for further urbanisation.

Although the rate of urbanisation 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 urbanisation in Asia will be the largest in magnitude over any 30 year period in human history. The key question that arises is whether the region will have enough resources to cope with this magnitude of urbanisation. It is the most populous countries of China, India and Indonesia, along with Pakistan and Bangladesh, which will undergo large urbanisation 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 invested adequately in infrastructure already and there would appear 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, given the current magnitude of its current account surplus, coupled with the flow of external savings into the country, and the large magnitude of forex reserves invested elsewhere, it has enough of a cushion to meet most if not all its needs in the foreseeable future. As I have discussed, the change that can be expected is that of a change in focus towards inland cities. The question that then arises is whether these cities will be productive and competitive enough to produce the economic surpluses necessary for their continued sustainability. The attainment of such productivity will necessarily mean greater inter-urban infrastructure investment, so that these cities are well integrated with their coastal cousins. Furthermore, given the information technology and communication revolution, along with the secular decline in per unit air transportation costs, they can now also be connected to the rest of the world without intermediation of the coastal cities. But this would also mean that they will need to specialize more in service industries, rather than in manufacturing; the latter could be handicapped in global competitiveness because of excessive transport costs. Thus, it is certainly the case that much greater inter-urban infrastructure investment will be necessary to make these cities competitive. It would appear that this has already begun in China in all the various facets of infrastructure: road, rail, airports and telecommunications.

The Indian story is somewhat different with relatively low attention being paid to urban development over the years, and slowing urbanisation over the last quarter century. There have been systematic policy biases against labour using industrialization, location of industries in urban areas, and against urban concentrations. Correspondingly, India has severe problems in both the management and financing of cities. With the new found economic resurgence of India, a 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 new "National Urban Renewal Mission" has been launched. However, the biases against labour using manufacturing remain in overall economic policy making, in the industrial regulatory regime, labour regulations and in urban land policy. Thus employment growth in manufacturing remains low. As I have argued elsewhere, these policies could have contributed significantly to the slow down observed in Indian urbanisation over the last quarter century (Mohan and Dasgupta, 2004).

Industrial competitiveness in India has now recovered after the shock of competition having 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 2000-01), about 14 per cent of sales of Indian firms is now exported and this proportion continues to grow, as compared with 7 per cent in 1991-92. Consequently, the continued high growth of the Indian economy would get strengthened if the efficiency of Indian cities improves. It is noteworthy that those 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. As it happens, a good number of relatively high technology public sector industries were also located

in most of these cities. With the availability of such an educational and technical ethos, these cities have a knowledge base that is significantly superior to that of other cities. Consequently, 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 since the information technology exports are not dependent on these elements of infrastructure. All they needed was appropriate communication 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 being placed on the existing infrastructure. Traffic congestion has arisen due to much elevated levels of auto ownership; housing demand has escalated in both quantity and quality leading to rapid increases in land and housing prices; and much increased power demand is putting great stress on existing power supply systems. Businesses are therefore beginning to look for other locations. The competitiveness of these cities will therefore 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.

Given that the level of Indian urbanisation is still less than 30 per cent, and that 60 per cent of the Indian total population is still dependent on agriculture, the continuation of high economic growth will depend on the success of a higher rate of labour absorption by cities. This will need much higher growth in labour using manufacturing, higher levels of urban infrastructure investment, along with knowledge based forward looking city management. Thus, the Indian situation is quite different from that of China. If Indian urbanisation does speed up as it surpasses the 30 per cent mark and as Indian per capita income approaches US \$1000, in normal circumstances we should expect acceleration in Indian urban growth. This will need significant acceleration in urban infrastructure investment and hence in the mobilisation 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 usage 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. Till the Asian financial crisis in 1997, Indonesia also exhibited economic policy characteristics similar to those of other East-Asian countries in terms of openness and export orientation, although it had more of a mix in economic policy, which was also concerned with promotion of import substituting industries and conscious dispersal of economic activities beyond the natural concentration in Java. Nevertheless, the greater Jakarta region, known as the Jabotobek region, exhibited a high degree of urban concentration where a high proportion of Indonesian economic activities got concentrated despite the large size and dispersed nature of the Indonesian archipelago. Given the somewhat lower level of Indonesian per capita income and the very rapid growth of the Jabotobek region, the extent and proliferation of slums has been high in the region. (Webster, 2004) Furthermore, Indonesia was perhaps the most highly affected of the Asian countries from the 1997 East Asian financial crisis. It has still to fully recover from that shock and is yet to regain earlier economic dynamism. Thus the persistence of slums and the accompanying urban distress is likely to persist in Indonesia longer than its other South East Asian counterparts. The urban future of Indonesia is more beset with uncertainties, reflecting the parallel economic uncertainties that it faces.

How do we then look at Asia's evolving urban future over the next 30-50 years? How will it be different from the experience of the last half century? The one key difference is that with increasing globalisation and ever higher levels of income that the region as a whole is now blessed with, the residents of Asian cities will now be much more demanding relative to their predecessors in terms of the quality of urban services that they deem to be their right and the urban amenities of living that are now seen as normal. Hence it is likely that urban investment will be different in terms of its composition and intensity. Second, with increasing globalisation and reduction in trade protection, each Asian city will have to be more competitive on a global scale than has been the case in the past. In the larger countries there will be inevitable tension between the claims of coastal urban areas that possess natural comparative advantage and the vast hinterland that will need greater infrastructure investment for attaining competitiveness. Hence, policy makers probably need to give greater explicit attention to the ingredients of competitiveness, the corresponding public investment that will be appropriate in this regard, and the modes of financing that will need to be mobilised. Third, as discussed, Asian urbanisation in the last half century has been based disproportionately on rapid city-based manufacturing growth in labour intensive industries that have pulled in labour from rural areas, thereby relieving rural areas of excess labour and hence enabling growth in both rural and urban productivity. With the changes in technology that have now taken place it is an open question whether labour

intensive industry will continue to survive and grow in the manner and experience of 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 since the share of manufacturing in its economy is somewhat lower than could be expected at its current level of economic development (Mohan, 2002). If India is not able to change its economic and urban specific policies to encourage labour 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, we can expect the pattern of Indian industrialization and urbanisation to be different from that of East and South East Asian countries.

It must still be understood that for successful and sustainable urbanisation the share of manufacturing will still need to increase, but with somewhat different characteristics (Yusuf and Nabeshima, 2006). The manufacturing process has itself changed significantly so that many 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 borders. Often product design is now increasingly information technology dependent and typically locationally divorced from the core manufacturing plant. Moreover, product development and design is now increasingly being 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, 2006, a,b,c). Conversely, Indian manufacturers are also outsourcing their product development and design in the reverse direction. Second, increased global competition is also leading firms to look for continuous reduction in core manufacturing costs in whatever ways that are practical. Local outsourcing of components and processes is one of the common practices that has been found to be useful in this regard. The requirements of inventory control and management require the location of such outsourced manufacturing activities to be in close proximity to the mother plants. Thus, successful industrialisation in this manner in India would increasingly require greater concentration of these activities than has been experienced in the past. With the quality of manufactured goods improving all the time, it is becoming clear that the demand for low skilled labour is unlikely to accelerate. Hence, a core component of economic and urban policy would have to be enhancement of skills of the labour force at all levels. The provision of vocational training has been difficult in most countries since successful training needs to be market determined; but the private sector often finds it difficult to design an appropriate revenue model and public provision is typically not market sensitive. The need is for public private partnership, which is not easy to design. Successful urbanisation in the future will be crucially dependent on the availability of labour with appropriate skills.

Thus for Asian cities growing in the next 30 to 50 years it is becoming increasingly clear that the key to their success will indeed lie in the continuous 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, such as, Bangkok, Beijing, Singapore, China, Seoul, Tokyo and others exhibit high levels of educational attainment, and have impressive endowments of educational and research institutions. In fact, it is noteworthy that some of these cities, such as Hong Kong and Singapore, which did not traditionally have higher education institutions that were 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. Illustratively, Tokyo has 113 universities and Beijing has 59 although, there is a great deal of variation in the quality of these universities (Yusuf and Nabeshima, 2006). Similarly, in India, it is the southern region where a large number of private colleges and universities have emerged to cater to the increasing demand from industry for technical personnel. Thus, apart from the traditional needs for physical urban infrastructure investment for successful urbanisation, similar attention now has to be given to the soft infrastructure that is related to the creation, production, and retention of knowledge, along with facilities that enable continuous skill enhancement.

Openness to the outside world does not just mean increase in trade in goods and services. It also means greater openness to ideas and new practices. In 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), Kenneth 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 South-East Asian cities have remained very open to the presence of foreign citizens with high levels of education and skills. There are said to be almost 100,000 foreign citizens in Beijing alone (Yusuf and Nabeshima, 2006). Such presence of foreigners contributes greatly to the economic vitality so needed by growing cities, as it provides new competition to residents, 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. Thus, enhancement of human capital at different levels will evolve different strategies and increasingly greater openness to cross-border flow of institutions and personnel.

V. The challenges of urbanisation in the twenty first century

Of the total projected increment to world urban population between 2000 and 2030 of about 2.1 billion people about 1.3 billion or about 60 per cent, will be in Asia (Table 1). In the second half of the twentieth century the total accretion to urban population in the world was similar in magnitude (about 2.1 billion), but the Asian share was somewhat lower at about 53 per cent. As I have repeatedly emphasized, it is this expected magnitude of urbanisation expected in Asia that is unprecedented and hence the management of it is the key challenge facing us in all its multifaceted aspects.

I have attempted to speculate about the possible changes in urbanisation patterns and requirements that may emerge in the future. Just as the structure of American cities is different from that of European cities depending on their vintage, we can expect the 21st century Asian city to also exhibit different characteristics. The older European or Asian city is typically more densely populated and less spread out than the 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 the older continents. Even as early as the early 1970s, nearly 80 per cent of US urban commuters traveled by car, as compared with only 15 per cent in Japan. In fact, 65-70 per cent of Tokyo commuters and 60 per cent of those in Seoul traveled by public transit in the early 1970s (Mills and Ohta, 1976; Mills and Song, 1979). With increasing incomes and aspirations the pace of growth in auto ownership in Asian cities is awesome as is the growth in traffic congestion.

The current increase in oil prices is sharpening the kind of tensions that are typical in debates related to urban transportation. With the emergence of increased private motorized transportation there has been a noticeable intensification of investment in intra-urban expressways in many Asian cities. This typically leads to accelerated urban sprawl, a still faster increase in auto ownership and consequent demand for oil, and higher pollution. Over time, road traffic congestion inevitably catches up leading to further demand for road investment or for mass transportation that is then expected to reduce road traffic congestion and pollution. The current trends suggest that the result is high investment in both modes of transportation. Given the higher levels of income that already exist, and 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 more demand related than to disruption in supply as was the case earlier. With the expected pace of Asian urban growth over the next 30 years do we then expect ever increasing oil price increases in response to ever increasing demand? Or will there be corresponding supply response, as has been the case in the past, which will contribute to oil prices falling again? In either case, appropriate petrol pricing and urban transport pricing will be as crucial for urban policy as for economic policy as a whole. As is well known the emerging transportation pattern also affects city structure crucially: so urban transport policy will be of great importance to the kind of growth that we observe in Asian cities in the coming years. Will the growing Asian cities be a new amalgam of the typical old densely populated city centre, co-existing with suburban sprawl characterised by motorized transportation modes, shopping malls akin to the American pattern. In some Asian cities, the old city centres are being completely reconstructed as in Beijing and Kuala Lumpur, whereas in others the tension between the old and new continues.

Another general issue affecting the pattern of urbanisation will be the nature and pace of rural urban migration. In the case of China, because of the long standing one child policy, natural growth of urban population is low and hence 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 the former, household size is presumably smaller and hence, 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 need to give attention to the specific nature of economic demographics in their respective countries as it affects urbanisation.

As the South East Asian countries urbanized fast in the 1970s and 1980s the problems of slums and associated deficiencies in urban infrastructure services related to water, sanitation, sewerage and solid waste disposal received great attention. Because of the high economic growth these problems have taken care of themselves in many countries. However, in still low income populous countries such as India, Bangladesh, Pakistan and Indonesia the existence of slums and lack of services remain a serious issue. Given 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, availability of housing finance, and facilitation of urban land development all need focused 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 that Asian urbanisation will bring in the coming years.

One of the consequences of globalisation, more open trade in both goods and services, and the vastly increased trans-border 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 hence to greater inequality in these cities. Members of these "creative classes" (Yusuf and Nabeshima, 2006) also seek an assortment of urban attributes that were not demanded earlier. 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, cleanliness of environment, efficient and comfortable transportation, and international level communication 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 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 for managing Asian urbanisation in the next thirty years is therefore more complex than in the previous fifty. In addition to the traditional problems of providing, financing and managing basic physical infrastructure, they have to be more conscious of the emerging demands resulting from globalisation in terms of creating knowledge based cities that also boast of competitive urban amenities. Increase in the sheer number of large cities over any cut off point, one million, five million, or ten million, will also stretch the capability of government authorities of finding people with appropriate skills for city management. Here, it is perhaps correct to say that there has been some decline in international attention to the generation of such skills, and may well be an area for coordinated international attention.

Finally, being a central banker, I can hardly conclude this address without making some remarks on the financing needs of Asian urbanisation over the next thirty years. Urban infrastructure typically lasts for long periods of time. Hence, while urban infrastructure investment has to be made ex-ante at the time of rapid urban growth over a period of 10-15 years, benefits may well flow for periods as long as fifty years or more. Life would be easy if financing sources were such that civic authorities could raise resources in such a manner that the repayment schedule matched the benefit schedule. A scan of urban financing systems across the world does not reveal any uniformity in pattern. Germany has used its mortgage banks to sell Pfandbrief bonds that enjoy high credit quality next only to the Bond, and then intermediate the funds to states and municipal authorities for infrastructure investment. There is a complex system of credit enhancements that makes it feasible to raise long term funds. But this credit quality has been earned over more than a century over which the municipal authorities have made sure that their tax and user charges systems are such that they can redeem the resources raised. In the United States, it is the decentralised municipal bond system that has largely financed urban infrastructure. Here also, since the ability to raise resources depends on the retention of 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 since they have ensured that towns and cities face on incentive structure that encourages them to remain creditworthy and are essentially self-financing.

In Asian countries, financial markets have not been sophisticated enough to allow for such financing methods yet. Financing for urban infrastructure has usually come from higher tier governments who raise resources from taxes, or from banks and financial institutions that have been typically government owned or sponsored. Such systems are not well designed to avoid moral hazard: the recipient towns and cities do not have as strong an incentive to be essentially self financing. The 1990s have seen increasing attempts to privatise the provision of urban infrastructure, but this has met limited success at best. Given the magnitude of urban population accretion expected over the next thirty years, I see little choice. If Asian cities are to thrive and prosper, they will have to develop self sustaining local taxation and user charge systems so that they can tap national and international financial markets for their financing needs.

This brings me to the international dimension of urban infrastructure financing. It is usually the case that, when a country begins its rapid urban growth phase its financial markets are yet to develop, the only way to tap long term funds is to take recourse to external savings, which are then to be repaid over a long period of time. The typical historical experience has been that the regions undergoing intensive urbanisation had to mobilise external savings intensively; followed by periods of balance of payments crises and debt defaults. In Asia, too, the 1997 financial crisis was also partially reflective of large external resource flows earlier that suddenly got reversed, as was the Latin American debt crisis of the 1980s. Since then, however, it is puzzling that the region as a whole is exhibiting financial surpluses that are being invested in Europe and North America. In the great current debate on global imbalances, the assumption seems to be that these imbalances seem to be of a relative durable nature, partly reflecting the favourable economic demographics of Asia and the converse in the West.

I remain somewhat puzzled by this financial turn of events. I would have expected that, the demands of infrastructure investment, particularly that of urban infrastructure, would be such that regional domestic savings will not be adequate to finance the required investment. Perhaps the explanation really lies in the Asian reaction to the 1977 financial crisis and that we may expect higher investment levels in the years to come. The magnitude of urban population growth expected in China, India, Indonesia, Pakistan and Bangladesh expected over the next 30 years is such that pressures on international resource mobilization are bound to arise. Urban infrastructure investment would then exceed available savings in these countries and the current alleged savings glut will disappear over a period of time. Will there then be enhanced competition among Asian countries for available international savings? With the emerging adverse demographics in the West, and hence low savings rates there, will this competition lead to the emergence of higher real interest rates in the years to come: 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 that 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.