

## Korean Urbanization in The Asian Context

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The urban population in Asia more than doubled between 1960 and 1985, growing by 3.0 percent per annum on average. Yet during that period, the proportion of the total population living in urban areas increased only from 21 to 27 percent. This seeming paradox is explained by the relatively high rates of rural population growth in Asia, which averaged 1.8 percent over the same period. The Republic of Korea has experienced the most rapid rate of urbanization in Asia during the past century. The proportion urban jumped from 28 percent in 1960 to 65 percent in 1985.

There is a clear association between economic growth and the pace of urbanization in Asia. Currently natural increase accounts for about 60 percent of urban growth, but the speed of urbanization is projected to increase after 1990, and migration, reclassification and annexation will comprise about half of urban growth. Seoul is currently the fourth largest urban agglomeration in Asia, and its population is projected to be over 13 million by the end of the century.

It is argued that policies to deconcentrate urban population will not be generally successful in Asia and that governments should attempt to manage the growth of large metropolitan areas more efficiently.

### I. Overview

#### 1. The Urbanization Paradox

Ten of the world's 20 largest cities are located in Asia. Five of those exceed 10 million population, and in only another 13 years, 14 Asian

urban agglomerations will contain over 10 million inhabitants each. The total urban population of Asia has more than doubled from 341 million in 1960 to 729 million in 1985.

The urban population of the Republic of Korea more than doubled in the 14--year period from 1966 to 1980, from 10.0 to 22.5 million. (Urban is defined as all Si plus those Eub with a

**Table 1. Percentage of the Population Living in Urban Areas, Regions and Selected Countries of Asia, Selected Years 1950 to 2000**

Region and country	1950	1960	1970	1980	1985	1990	2000
Asia	16.2	21.1	23.2	25.6	26.9	28.7	33.6
East Asia	16.8	25.0	26.9	28.1	28.6	29.5	32.9
China	11.0	19.0	20.1	20.4	20.6	21.4	25.1
Japan	50.3	62.5	71.2	76.2	76.5	76.4	77.8
D.P.R. Korea	31.0	40.2	50.1	59.7	63.8	67.4	72.9
Rep. Korea	21.4	27.7	40.7	56.9	65.3	71.1	79.6
Southeast Asia	14.8	17.6	20.2	24.0	26.3	29.0	35.5
Burma	16.1	19.3	22.8	23.9	23.9	24.6	28.2
Indonesia	12.4	14.6	17.1	22.2	25.3	28.8	36.5
Malaysia	20.4	25.2	27.0	34.2	38.2	42.3	50.4
Philippines	27.1	30.3	33.0	37.4	39.6	42.4	49.0
Thailand	10.5	12.5	13.3	17.3	19.8	22.6	25.9
Viet Nam	11.7	14.7	18.3	19.3	20.3	21.9	27.1
South Asia	15.9	17.3	19.5	23.2	25.2	27.6	33.6
Afghanistan	5.8	8.0	11.0	15.6	18.5	21.7	29.1
Bangladesh	4.4	5.1	7.6	10.4	11.9	13.6	18.3
India	17.3	18.0	19.8	23.4	25.5	28.0	34.2
I.R. Iran	27.7	33.6	41.0	49.1	51.9	54.9	61.1
Nepal	2.3	3.1	3.9	6.1	7.7	9.6	14.3
Pakistan	17.5	22.1	24.9	28.1	29.8	32.0	37.8
Sri Lanka	14.4	17.9	21.9	21.6	21.1	21.4	24.2

Source : United Nations, Department of International Economic and Social Affairs, *The Prospects of World Urbanization: Revised as of 1984-85*, Population Studies No. 101, New York, 1987, table A-1

Note : The figures for Asia and the regions refer to the entire area, including countries of under 10 million population, which are not shown.

population over 50,000.) During the same period, the population of Seoul grew from 3.8 to 8.4 million.

In spite of the rapid increase of the urban population in Asia over the past quarter century, the level of urbanization, or percentage of the total population living in urban areas, has increased only gradually. The percent urban in Asia in 1960 was about 21, and in 1985 about 27 (Table 1). The paradox of a rapidly increasing urban population but a simultaneous slow rise in the percentage urban results first because the

level of urbanization has been relatively low, so that a large proportional increase does not translate into a great absolute increase in the level. More importantly, however, because rural population growth rates have remained high in most countries of Asia until recently, somewhat higher urban growth rates have caused only small shifts in population toward the urban sector.

The urban and rural populations of the Philippines illustrate these dynamics. The doubling of the urban population in 20 years from 10.3 to 21.6 million represented an absolute gain of 11.

3 million persons. During the same period, the rural population increased by only 48 percent from 22.2 to 32.9 million, but the absolute increase was 10.9 million persons, nearly equal to that of the urban population.

As may be seen from Table 1, the overall level of urbanization in Asia has remained low because it was low in the world's two largest countries, China and India. Economic and social policies in China held the percentage urban nearly constant for two decades. In India the percentage urban has increased more quickly after 1970, but equalled only 25.5 in 1985.

Aside from in India, the level of urbanization in South Asian countries increased by only small amounts between 1970 and 1985, but this finding is somewhat deceptive. Although the percentage urban grew only modestly in Nepal (3.8 points), Bangladesh (4.9) and Pakistan (4.9), in the first two countries the increase was from very low figures and in the latter two countries, because of their size, a shift of only 1 percent of the population involves a million persons (Table 1).

The level of urbanization in Sri Lanka appears to have decreased since 1970, but the finding may be spurious, resulting from migration to areas near Colombo defined as rural but that are actually urban in nature. The percentage urban in Burma and Viet Nam increased but little between 1970 and 1985.

Aside from these two countries, the countries in Southeast Asia generally urbanized more rapidly than those in South Asia over the past 15 years. The percentage point increase in the level of urbanization in Thailand (6.5) was about the same as in the Philippines, but from an initial level only about one-third as high. The percentage urban in Indonesia increased by 8.2 points between 1970 and 1985, and that in Malaysia by 11.2 points, the largest increase in either Southeast or South Asia. Malaysia's per-

centage urban is projected to surpass that of the Philippines soon after 1990.

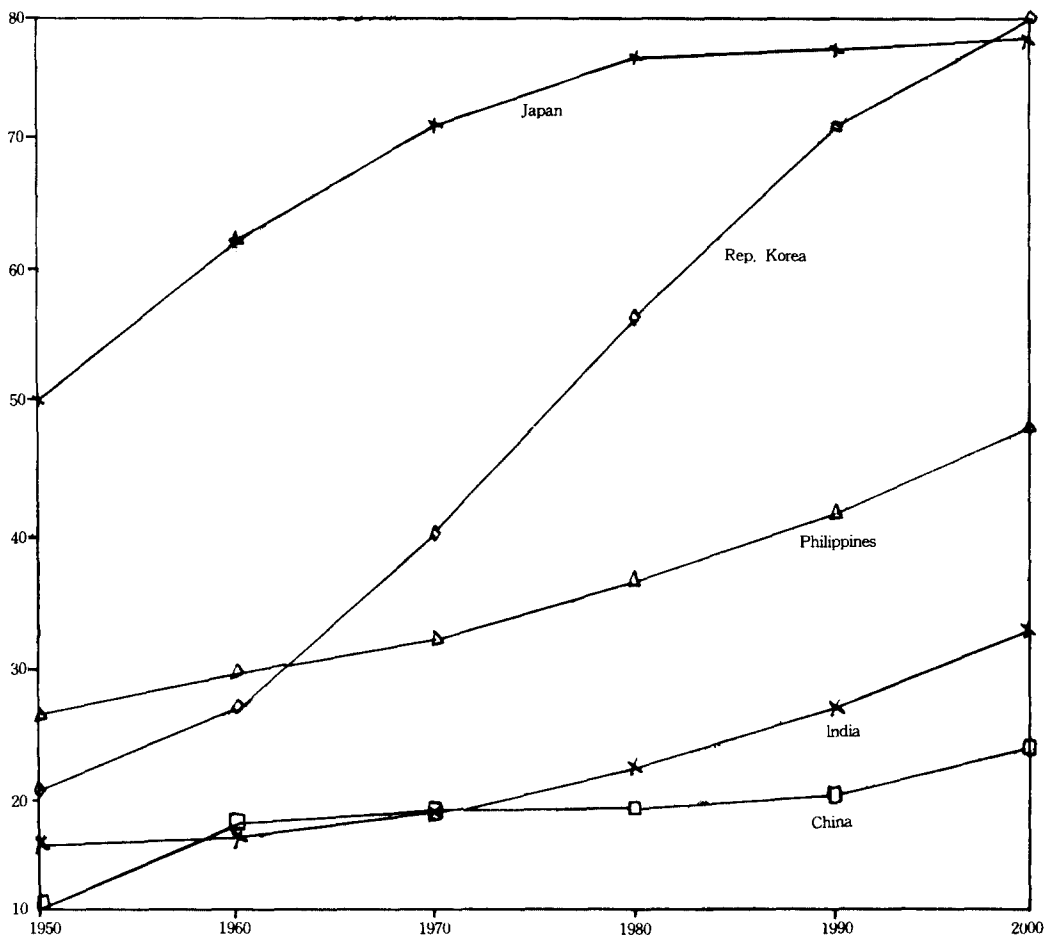
Although Japan was highly urbanized by 1970 (71.2 percent), urbanization continued at a steady pace until 1980, after which the pace has fallen considerably (Figure 1). The level of urbanization in the Democratic People's Republic of Korea increased by 13.7 percentage points during the period 1970-1985, but the largest increase in Asia was in the Republic of Korea, 24.6 percentage points. During that period, the urban population of the Republic of Korea doubled from 13.0 to 27.0 million.

A clear pattern of regional differences among Asian countries emerges, albeit with some significant exceptions. Gains in the level of urbanization were the lowest in South Asia between 1970 and 1985, although gains in Iran were well above average. Increases in percentage urban in most countries of Southeast Asia exceeded those in South Asia, but were much smaller than in the two Koreas. Thus urbanization in the recent past has been related to rates of economic growth. Iran stands out in South Asia as a petroleum exporter. The countries of Southeast Asia generally had buoyant economies during the 1970's, except for Burma and Viet Nam, where urbanization increased only marginally. Urbanization in the Republic of Korea coincided with a period of extremely rapid economic and social change. Between 1970 and 1980 alone, the gross national product more than doubled and the proportion of the labour force in agriculture fell from 51 to 34 percent while that in the secondary sector increased from 20 to 29 percent (Republic of Korea).

## 2. Comparability

United Nations estimates and projections of urban population utilize national definitions, and this practice affects the comparability of cross

Figure 1. Percentage of the Population Living in Urban Areas, China, India, Japan, Republic of Korea and Philippines, 1950-2000



Source : United Nations, Department of International Economic and Social Affairs, *The Prospects of World Urbanization: Revised as of 1984-85*, Population Studies No. 101, New York, 1987. table A-1.

—national measures. In Thailand, for example, the definition of urban used is areas that have been designated by Royal Decree as municipalities, but some areas of an urban nature have not been so designated. The 1980 census reported a population of 2.96 million in urban sanitary districts. If these are included in the urban population, the proportion urban in 1980 was 23.6 percent, rather than the official figure of 17.0 percent. The higher figure is also an underestimate because it excludes the urbanized popula-

tion on the fringes of designated municipal areas. The population in those areas may be large and the fastest growing part of a city's population.

In the Republic of Korea, if urban is defined as all S<sub>i</sub> (designated cities) plus all E<sub>ub</sub> (county seats) with a population of 50,000 or more, the population in 1980 was 60.0 percent urban. Were a broader definition of urban used, to include all E<sub>ub</sub> of 20,000 or more, the proportion urban would have equalled 66.4 percent. Growth rates of the urban population would generally be less

**Table 2. Average Annual Growth Rate of Urban and Rural Population, and URGD\*, Regions and Selected Countries of Asia, 1970–1980, 1980–1990 and 1990–2000**

Region and country	Average annual growth rate(per cent)						URGD		
	Urban			Rural			1970–1980	1980–1990	1990–2000
	1970–1980	1980–1990	1990–2000	1970–1980	1980–1990	1990–2000			
Asia	3.03	2.75	3.02	1.71	1.22	0.73	1.32	1.53	2.29
East Asia	2.19	1.67	2.16	1.60	0.99	0.59	0.59	0.68	1.57
China	1.97	1.70	2.67	1.78	1.08	0.64	0.19	0.62	2.03
Japan	1.80	0.67	0.58	-0.77	0.29	0.07	2.57	0.38	0.51
D.P.R. Korea	4.36	3.62	2.83	0.47	0.29	0.22	3.89	3.33	2.61
Rep. Korea	5.12	3.86	2.41	-1.41	-2.40	-2.19	6.53	6.26	4.60
Southeast Asia	4.00	3.86	3.71	1.77	1.29	0.72	2.23	2.57	2.99
Burma	2.64	2.20	3.08	2.04	1.83	1.23	0.60	0.37	1.85
Indonesia	4.90	4.44	3.88	1.63	0.96	0.38	3.27	3.48	3.50
Malaysia	4.75	4.40	3.44	1.32	0.98	0.20	3.43	3.42	3.24
Philippines	3.77	3.58	3.40	1.85	1.50	0.72	1.92	2.08	2.68
Thailand	5.10	4.49	4.24	1.99	1.14	0.70	3.11	3.35	3.54
Viet Nam	2.89	3.27	4.02	2.25	1.67	1.19	0.64	1.60	2.83
South Asia	4.02	3.78	3.70	1.82	1.46	0.89	2.20	2.32	2.81
Afghanistan	5.14	5.98	5.05	1.12	1.95	1.15	4.02	4.03	3.90
Bangladesh	5.94	5.36	5.27	2.49	2.31	1.80	3.45	3.05	3.47
India	3.87	3.61	3.54	1.69	1.21	0.63	2.18	2.40	2.91
I.R. Iran	4.87	3.95	3.47	1.61	1.61	0.92	3.26	2.34	2.55
Nepal	6.90	6.81	6.21	2.21	1.93	1.68	4.69	4.88	4.53
Pakistan	3.91	3.95	3.96	2.28	2.08	1.38	1.63	1.87	2.58
Sri Lanka	1.55	1.54	2.42	1.73	1.66	0.80	-0.18	-0.12	1.62

Source : United Nations, Department of International Economic and Social Affairs, "The Prospects of World Urbanization : Revised as of 1984–85", *Population Studies, No. 101, New York, 1987, tables A-3 and A-5.*

*Note : The figures for Asia and the regions refer to the entire area, including countries of under 10 million population, which are not shown.*

*The URGD is the urban–rural growth difference, or the difference between the urban and rural growth rates.*

affected by the lack of comparability than would absolute numbers or the proportion urban.

In contrast to the definitions of urban areas in Thailand and the Republic of Korea, that employed in the Philippines is quite comprehensive and probably omits very few areas of an urban nature. The population censuses of 1970,

1975 and 1980 classified as urban :

1. Cities and municipalities with a population density of at least 1,000 persons per square kilometer ;

2. Poblaciones or central districts of municipalities and cities with a population density of at least 500 persons per square kilometer ;

3. Other poblaciones or central districts containing specified urban establishments and facilities ; and

4. Barangays with at least 1,000 inhabitants which have some urban features (as in point 3) and where the occupation of the inhabitants is predominantly non-farming and non-fishing.

## II. Urban Population Growth and Urbanization

### 1. Urban-Rural Growth Difference

A valuable measure of the pace of urbanization is the urban-rural growth difference (URGD), or the difference between the annual growth rates of the urban and rural populations. The URGD is useful because it demonstrates the importance of rural population growth in the speed of urbanization. According to United Nations estimates and projections, there will be little change in the growth rate of the total urban population in Asia between 1970 and 2000 (Table 2). The growth rate of the rural population is projected to decline rapidly during that period, however, from 1.7 percent per annum in 1970-1980, to 1.2 percent in 1980-1990, and to 0.7 percent in 1990-2000. Consequently, the pace of urbanization will increase steadily, with the URGD equalling 1.3, 1.5 and 2.3 in the three respective decades.

The distinction between the rate of growth of the urban population and the pace of urbanization may be illustrated by comparing projections for the Philippines and the Republic of Korea. During the period 1990-2000, the urban population of the Philippines is projected to grow by 3.4 percent a year, compared with a rate of 2.4 percent for the Republic of Korea (Table 2). According to the projection, the rural population of the Philippines will be growing at a rate of 0.7 percent per annum during that period ; con-

sequently the URGD will equal 2.7. In contrast, in the Republic of Korea the rural population is projected to be declining by 2.2 percent a year, thus the URGD will equal 4.6. Although the rate of urban growth is projected to be considerably greater in the Philippines than in the Republic of Korea during 1990-2000, the pace of urbanization will be much slower in the Philippines because of the higher rate of rural population growth.

Currently, the slowest paces of urbanization are observed in Sri Lanka, Burma, Japan and China. The figures for 1980-1990 in Table 2 are actually projections based on 1980/1981 data, and it is probable that in China urbanization is proceeding more rapidly than was projected. The pace of urbanization is also relatively low in Viet Nam and Pakistan.

In terms of the URGD, the speed of urbanization in the Philippines is only modest, and it is only slightly greater in India and Iran. Although at a low level, urbanization in Bangladesh is proceeding rapidly, and the URGD in Nepal is the second highest in Asia.

The fastest pace of urbanization among the regions is in Southeast Asia, where the URGD equals 2.6. Urbanization in that region is led by Indonesia, with a URGD of 3.5 ; Malaysia, with 3.4 ; and Thailand, also with 3.4. As was seen above, urbanization is rapid in the Democratic People's Republic of Korea, but the most rapid pace in Asia is found in the Republic of Korea. Although the growth rate of the urban population has declined from 5.1 percent in 1970-1980 to 3.9 percent in 1980-1990, because the decline of the rural population has accelerated in the current decade, the URGD has dropped only slightly, from 6.5 to 6.3.

The United Nations makes use of the URGD as a single parameter for projecting the level of urbanization. It is assumed that the ratio of the urban to the rural population at time  $t$ ,

denoted by  $S(t)$ , grows  $n$  years later as follows:

$$S(t+n) = S(t) \exp[(u-r)n] = S(t) \exp[gn] \dots (1)$$

where  $u$  and  $r$  are the rates of growth of the urban and rural populations, respectively, and  $g = u - r$ . Thus  $g$  is the URGD employed above divided by 100.

As the relationship between the proportion urban at time  $t$ ,  $U(t)$ , and the urban / rural ratio is :

$$U(t) = \frac{S(t)}{1 + S(t)} \dots (2)$$

it is established through substitution that :

$$U(t+n) = \frac{1}{1 + [1/S(t)] \exp[-gn]} \dots (3)$$

Equations (1) and (3) imply that if the urban / rural ratio,  $S$ , grows exponentially, the proportion urban,  $U$ , of the total population will increase according to the logistic growth curve.

When the proportion urban is projected by holding the last observed value of  $g$  constant, however, a very high level of urbanization results in a short period of time. Thus  $g$  is modified by introducing a hypothetical value  $g^*$  based on cross-sectional data and estimated as :

$$g^* = 0.044 - 0.028 U(t_0) \dots (4)$$

where  $U(t_0)$  is the proportion urban at the beginning of each projection period.

The projected value of  $g$ , or  $g(t)$ , is defined as a weighted value of the last observed value of  $g$  and the hypothetical value  $g^*$  :

$$g(t) = W(t) g + [1 - W(t)] g^* \dots (5)$$

In the most recent projections, the values assigned to the weights are as follow (United Nations, 1987, pp. 35-37).

period	w(t)
1985-1990	0.8
1990-1995	0.6
1995-2000	0.4
1000-2005	0.2
2005 +	0.0

The projected value for  $g(t)$  obtained in equation (4) is then employed in equation (3). Urban and rural populations are obtained by applying the projected proportion urban,  $U(t+n)$ , to the previously projected total population. Even the downward adjustment to  $g$ , or the URGD, appears to yield rapid rates of urbanization, however. It is difficult to believe that rural populations of the Philippines and Thailand will increase by only 0.7 percent a year during 1990-2000, as indicated by Table 2. The projected rural growth rates in Indonesia of 0.4 percent, in Malaysia of 0.2 percent, and in India of 0.6 percent also seem implausible.

The United Nations urban and rural population projections are based on projections of the total population prepared in 1984 (United Nations, 1986). Since that time, it has become evident that the fertility level in several major Asian countries is currently on a plateau and has been nearly constant for the past few years. The crude birth rate (CBR) in India remained between 33 and 34 from 1977 to 1984, then declined slightly to 32.7 in 1985 (India, 1985). The CBR in peninsular Malaysia rose from 29.5 in 1978 to 30.7 in 1984 (Malaysia, 1987). The CBR in the Philippines increased from 34.8 in 1975 to 36.3 in 1983, and may have remained at or above that level since (Hull, 1985). A recent study of fertility trends in Pakistan concludes that no decline occurred between 1973 and 1981, when the total fertility rate (TFR) equalled about 7 children per woman (Retherford, et. al., 1987).

The 1986 Demographic Sample Survey in Nepal found a TFR for ever-married women of 5.86, compared with a rate of 5.93 measured by the 1976 Nepal Fertility Survey, indicating essentially no decline over a ten-year period (Nepal, 1987, table B. 5) The CBR in China fell rapidly to 17.5 in 1984. In 1985 it equalled

17.8, then it rose sharply to 20.8 in 1986 (China, 1987).

As a consequence of this fertility plateau, population growth rates during the 1980s will be greater than those projected by the United Nations in 1984. Because the method of projecting the proportion urban described above does

**Table 3. Decomposition of Urban Growth for Regions and Selected Countries of Asia, 1970-1980, 1980-1990 and 1990-2000\***

Region and country	1970-1980		1980-1990		1990-2000	
	Natural increase	Migration, reclass., annexation	Natural increase	Migration, reclass., annexation	Natural increase	Migration, reclass., annexation
Asia	67	33	60	40	48	52
East Asia	80	20	71	29	50	50
China	92	8	71	29	42	58
Japan	61	39	87	13	80	20
D.P.R. Korea	60	40	67	33	72	28
Rep. Korea	37	63	44	56	55	45
Southeast Asia	58	42	51	49	46	54
Burma	83	17	87	13	56	44
Indonesia	46	54	42	58	39	61
Malaysia	50	50	52	48	49	51
Philippines	71	29	67	33	59	41
Thailand	48	52	40	60	38	62
Viet Nam	87	13	63	37	47	53
South Asia	57	43	54	46	47	53
Afghanistan	45	55	38	62	42	58
Bangladesh	47	53	50	50	45	55
India	56	44	51	49	43	57
I.R. Iran	64	36	71	29	69	31
Nepal	35	65	34	66	36	64
Pakistan	66	34	69	31	58	42
Sri Lanka	100	-36	100	-29	56	44

Source : Rate of natural increase (not shown) from United Nations, Department of International Economic and Social Affairs, *World Population Prospects: Estimates and Projections as Assessed in 1984*, Population Studies No. 98, New York, 1986 : urban growth rates from table 2 of this paper.

\* Percentage of urban growth attributable to natural increase and to net migration, reclassification, and annexation assuming that the rate of natural increase in urban areas equals that of the region or country as a whole.



not take into account rates of growth of the total population, the level of urbanization would not be affected by changes in those rates. In reality, however, it may be expected that the slowing of fertility declines will be more pronounced in rural areas, and as the majority of the population of Asia lives in rural areas, their proportion of the total population will be greater than projected. Thus the level of urbanization may be less than expected at the same time as urban growth rates increase owing to fertility rates higher than projected and greater rural-to-urban migration.

## 2. Components of Urban Growth

If it is assumed that the rate of natural increase in urban areas of a country equals that of the country as a whole, urban population growth may be decomposed into that caused by natural increase and that attributable to the combined effects of net migration and reclassification and annexation of previously rural areas. Frequently urban rates of natural increase are less than those in rural areas, thus the assumption employed yields an upward bias to estimates of the contribution of natural increase to urban growth.

Bearing this bias in mind, it may be observed that natural increase is projected to decline steadily as a component of urban growth in Asia in the three decades between 1970 and 2000 (Table 3). In general, when a country is at a low level and pace of urbanization, natural increase comprises a large proportion of urban growth, as may be seen particularly for Burma and Pakistan. As the pace of urbanization increases, the other components become more important. Thus the proportion of urban growth contributed by those components is projected to increase steadily from 1970 to 2000 in China, Indonesia, the Philippines, Thailand, Viet Nam and India as well as in Asia as a whole and in each of the regions of Asia

(Table 3). When a country is highly urbanized, however, migration, reclassification and annexation decline in importance and natural increase again becomes the largest component of urban growth. This shift is now occurring for the Democratic People's Republic of Korea and the Republic of Korea. A fourth stage is reached when the rate of natural increase approaches zero and the other components of urban growth again increase in importance. Japan has now entered this fourth stage (Zelinsky, 1971).

## III. Urban Hierarchy

### 1. Urban Population by City Size

Concomitant with increasing urbanization in Asia is a rapid increase in the size of cities in which the urban population live. In 1970 there were 31 cities in East Asia with a population of over 1 million each, and their total population equalled 90 million (Table 4). In one decade the number of such cities increased to 42 and their total population increased to 132 million. In South Asia (in this case including Southeast, Middle South, and Southwest Asia), the expansion of the upper part of the urban hierarchy was even more dramatic. The number of cities exceeding 4 million population increased from four to nine (ten had been projected). The number of cities with more than 1 million population grew from 23 to 36 and their total population expanded from 59 to 106 million.

In the past there was a greater number of, and larger population living in, cities of over 1 million population in East Asia than in South Asia, but the situation will be reversed during the current decade. By 1990 it is projected that East Asia will contain 61 million—plus cities with a total population of 191 million, but that South Asia will have 65 such cities with a total of 199

million inhabitants. Large increases in the number of cities and the total population in the top city-size categories are also projected to occur during the 1990–2000 decade in Asia.

Figure 2 shows the population of Asia living in cities exceeding 1 million population in 1980 and 2000, by city-size category. According to the projection, the larger categories will expand by greater proportional amounts. The total population living in cities of over 4 million population and that in cities of 2–4 million will each in-

crease by 155 percent in twenty years. The total population in cities of 1–2 million will expand by 129 percent during the same period.

The shift of urban population up the urban hierarchy is also demonstrated by Table 5. Between 1980 and 1990, for example, the percentage of the total urban population in each of the city-size categories over 1 million inhabitants will increase in both East and South Asia. In East Asia the proportion of the urban population living in million-plus cities will increase from 36.8

**Table 4. Urban Population by City Size, East and South Asia, 1970, 1980, 1990 and 2000**

Subregion and city size in thousands	(Population in thousands)							
	1970		1980		1990		2000	
	No. of cities	Popu- lation	No. of cities	Popu- lation	No. of cities	Popu- lation	No. of cities	Popu- lation
East Asia								
Total urban	—	265,137	—	359,457	—	476,462	—	622,441
4,000+	6	48,781	7	71,072	10	103,095	14	142,175
2,000–3,999	5	13,794	9	25,066	13	35,265	22	55,607
1,000–1,999	20	27,920	26	35,772	38	52,910	46	63,772
500–999	29	20,379	42	29,844	53	37,644	—	360,887***
250–499	61	20,816	72	25,973	—	247,548**		
100–249	92	15,196	—	171,730*				
<100	—	118,251						
South Asia****								
Total urban	—	217,287	—	329,760	—	515,685	—	790,685
4,000+	3	17,172	10	61,372	12	102,764	21	194,852
2,000–3,999	7	22,270	9	21,957	16	46,271	24	64,290
1,000–1,999	13	19,395	17	22,550	37	50,050	50	69,021
500–999	27	17,043	49	33,565	61	41,791	—	426,522***
250–499	57	20,580	83	28,139	—	274,809**		
100–249	174	26,394	—	162,177*				
<100	—	94,433						

Source : United Nations Department of International Economic and Social Affairs, "Patterns of Urban and Rural Population Growth", *Population Studies*, No. 68, New York, 1980, Tables 20 and 22

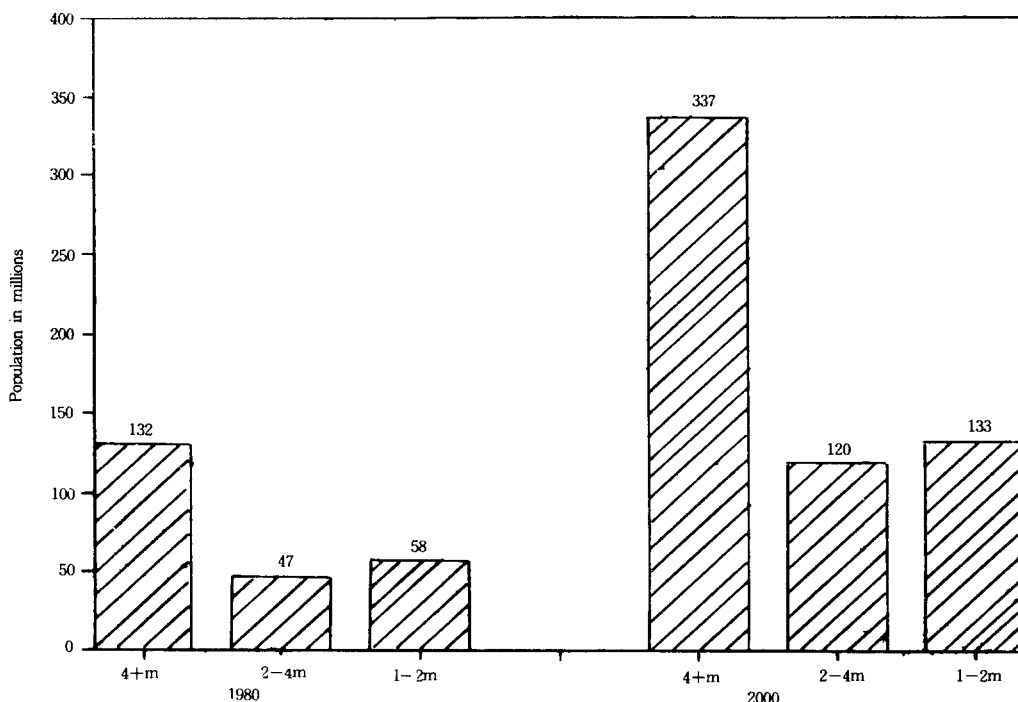
\*Urban population in cities of under 250,000 population

\*\*Urban population in cities of under 500,000 population

\*\*\*Urban population in cities of under 1 million population

\*\*\*\* South Asia includes countries west of the Islamic Republic of Iran, which in 1980 contained 8.8 per cent of the urban population of South Asia as a whole.

**Figure 2. Estimated and Projected Population of Asia in Cities of Over One Million Population, by City Size, 1980 and 2000**



Source : United Nations, Department of International Economic and Social Affairs, *Patterns of Urban and Rural Population Growth*. Population Studies, No. 68, New York, 1980, Tables 20 and 22.

to 40.1 percent during the decade. In South Asia the proportion will increase from 32.1 to 38.6 percent. The more rapid expansion of the larger cities is confirmed by the average annual growth rates shown in Table 5. During 1980-1990, the growth rate of each city-size category above 1 million will exceed that of each category below 1 million in both East and South Asia. It is worth noting that the growth rates of the total urban population estimated and projected by the United Nations in 1984-85 and as shown in Table 2, are much lower than those estimated and projected in 1980 and shown in Table 5, particularly for East Asia. As a consequence, the total population in million-plus cities in South Asia will have surpassed that in East Asia earlier than indicated by Table 5.

As the growth rates shown in Table 5 include increases because of cities shifting from one

category to another, it is worthwhile to decompose them into their various components. In the decomposition shown in Table 6, the rate of natural increase of the total population of each region is assumed to apply to the each city-size category. Change in the population attributable to reclassification is calculated by adding the product of the number of cities entering the category times the lower boundary of the category, and by subtracting the product of the number of cities passing out of the category times the upper boundary of the category. The combined effect of migration and annexation is calculated as a residual.

Reclassification contributes a major share of the growth of the top city-size category but frequently has a small positive or even a negative impact on the other categories.

In 1970-1980 natural increase and the com-

**Table 5. Percentage Distribution and Average Annual Growth Rates of Urban Population by City-size Category, East and South Asia, 1970 to 2000**

Subregion and city size in thousands	Percentage of urban population				Annual growth rate(%)		
	1970	1980	1990	2000	1970-1980	1980-1990	1990-2000
<b>East Asia</b>							
Total urban	100.0	100.0	100.0	100.0	3.04	2.82	2.67
4,000+	18.4	19.8	21.6	22.8	3.76	3.72	3.21
2,000-3,999	5.2	7.0	7.4	8.9	5.97	3.41	4.55
1,000-1,999	10.5	10.0	11.1	10.2	2.48	3.91	1.87
500-999	7.7	8.3	7.9	58.0***	3.81	2.32	2.35***
250-499	7.9	7.2	52.0**		2.21	2.25**	—
100-249	5.7	47.8*			2.52*	—	—
<100	44.6				—	—	—
<b>South Asia****</b>							
Total urban	100.0	100.0	100.0	100.0	4.17	4.47	4.27
4,000+	7.9	18.6	19.9	24.6	12.74	5.15	6.40
2,000-3,999	10.2	6.7	9.0	8.1	-0.14	7.45	3.29
1,000-1,999	8.9	6.8	9.7	8.7	1.51	7.97	3.21
500-999	7.8	10.2	8.1	58.5***	6.78	2.19	3.79***
250-499	9.5	8.5	53.3**		3.13	3.67**	—
100-249	12.1	49.2*			2.94*	—	—
<100	43.5				—	—	—

Source : Table 4.

\* Urban population in cities of under 250,000 population

\*\* Urban population in cities of under 500,000 population

\*\*\* Urban population in cities of under 1 million population

\*\*\*\* South Asia includes countries west of the Islamic Republic of Iran, which in 1980 contained 8.8 per cent of the urban population of South Asia as a whole.

bination of migration and annexation contributed approximately equal amounts to the growth of the various city-size categories. After 1980, however, migration and annexation contribute more to urban growth than does natural increase in all city-size categories (With the one exception of cities of over 4 million population in East Asia in 1990-2000).

In individual countries some of the city-size categories are vacant, so no comparable analysis is possible. In Thailand, for example, there is no city larger than 250,000 population except Ban-

gkok, which had a population of 6.1 million in 1985. In 1970, 67.6 per cent of the urban population of Thailand resided in Bangkok. According to the most recent United Nations projections, this proportion declined to 60.0 per cent in 1985 and will equal 55.6 per cent in 2000.

Similarly, in the Philippines, there is no city over 2 million population except the Manila/Quezon city agglomeration, which comprised 33.3 per cent of the total urban population in 1975. That proportion is projected to decline slightly to 32.6 per cent in 1985 and 30.5 per cent in 2000.

Table 6. Decomposition of Urban Growth by City-size Category, East and South Asia 1970-1980, 1980-1990 and 1990-2000

Subregion and city size in thousands	1970-1980				1980-1990				1990-2000			
	A	B	C	D	A	B	C	D	A	B	C	D
East Asia												
4,000+	22,291	9,329	4,000	8,962	32,023	8,941	12,000	11,082	39,080	11,758	16,000	11,322
2,000-3,999	11,272	2,638	6,000	2,634	10,199	3,153	2,000	5,046	20,342	4,022	10,000	6,320
1,000-1,999	7,852	5,340	1,000	1,512	17,138	4,500	5,000	7,638	10,862	6,034	-5,000	9,828
500-999	9,465	3,897	1,000	4,568	7,800	3,755	-4,000	8,045	-	-	-	-
250-499	5,157	3,981	-3,250	4,426	-	-	-	-	-	-	-	-
South Asia												
4,000+	44,200	4,495	28,000	11,705	41,392	14,190	8,000	10,202	92,088	20,144	36,000	35,944
2,000-3,999	-313	5,829	-10,000	3,858	24,314	5,077	10,000	9,237	18,019	9,070	-2,000	10,949
1,000-1,999	3,155	5,077	-5,000	3,078	27,500	5,214	9,000	13,286	18,971	9,811	-4,000	13,160
500-999	16,522	4,461	4,500	7,561	8,226	7,761	-8,500	8,965	-	-	-	-
250-499	7,559	5,387	-2,250	4,422	-	-	-	-	-	-	-	-

Source : Table 4.

A : Growth of city-size category in thousands.

B : Growth of category attributable to natural increase, assuming the rate of natural increase in East Asia equals 1.75, 1.185 and 1.08 per cent and South Asia 2.325, 2.08 and 1.79 in the three periods, respectively.

C : Growth of category attributable to reclassification of cities by category.

D : Growth of category attributable to migration and annexation.

In the Republic of Korea, Seoul was the most rapidly growing urban area between 1960 and 1970. Since then a number of cities have reached 50,000 population and the smaller city-size categories have expanded the most rapidly. In 1960, the urban population was divided almost equally between Seoul; the other metropolitan areas of Busan, Daegu and Incheon; and all other urban areas. The proportion of the urban population in Seoul increased to 42.5 percent in 1970, but declined to 37.2 percent in 1980. The share of the urban population in "other urban" areas dropped to 29.7 percent in 1970, but increased to 36.7 percent in 1980, nearly equal to that in Seoul. Between 1970 and 1980, the number of other urban areas (with a population of 50,000) rose from 35 to 48. Although the combined population of Busan, Daegu and Incheon grew by 4.8 percent a year from 3.61 million in 1970 to 5.85 million in 1980, its share of the total urban population declined from 27.7 to 26.0 percent (Republic of Korea).

## 2. Asia's Largest Cities

Planners and policy makers are less concerned with overall urbanization or the structure of the urban hierarchy than they are with population size and growth in individual urban areas, and it is these that pose severe challenges in Asia. Many of the world's largest cities are in Asia, exemplified by Tokyo/Yokohama, which was the largest urban agglomeration in the world in 1980. By the end of the century, its population will exceed 20 million, but will be surpassed by Mexico City and Sao Paulo, Brazil (United Nations, 1987).

Most of the large urban agglomerations in Asia are continuing to expand at a fast pace. The number with a population over 5 million is projected to increase from 13 in 1980, to 18 in 1990, and to 21 in the year 2000. The attainment of

a population of 10 million will be even more dramatic. In 1980, only two agglomerations in Asia were so large, but the number is projected to reach five in 1990 and 14 at the end of the century—those shown in Table 7, plus Dhaka, Bangladesh.

If the absolute increase of the population of urban agglomerations in Asia in 1970–1985 and 1985–2000 is examined, three distinct groups emerge (Figure 3). The first group is composed of the only three agglomerations in which population increase in the later period will be less than in the earlier period—Tokyo/Yokohama, Seoul, and Osaka/Kobe. The three Chinese cities of Shanghai, Beijing and Tianjin comprise the second group, in which the absolute increase during 1970–1985 was 1 million or less but will increase considerably during 1985–2000.

The remaining six agglomerations in Figure 3 form the third group, in which large absolute increases occurred during 1970–1985, but in which the increments during 1985–2000 will be even greater.

## IV. Policy Implications

It is clear that until a high level of urbanization is reached, the pace of urbanization in Asian countries is related to the rate of economic growth. The extremely high rates of economic growth in the Republic of Korea over the past two decades have been reflected by the most rapid pace of urbanization in Asia.

It is sometimes asserted that Government policies in the Republic of Korea have had little effect in reversing the concentration of population in Seoul. Yet given the rapid economic growth and restructuring that have occurred, a fast pace of urbanization was a certainty. The Government has achieved some success in slowing the concentration of the urban population in Seoul.

**Table 7. Population and Average Annual Growth Rates of 15 Largest Urban Agglomerations in Asia, 1970 to 2000**

Rank in 1985	Agglomeration	Population in millions				Growth rate(%)		
		1970	1980	1990	2000	1970- 1980	1980- 1990	1990- 2000
1	Tokyo /Yokohama	14.91	17.67	19.28	20.22	1.70	0.87	0.48
2	Shanghai	11.41	11.75	12.35	14.30	0.29	0.50	1.47
3	Calcutta	7.12	9.94	12.54	16.53	2.93	2.73	2.76
4	Seoul	5.42	8.47	11.66	13.77	4.46	3.20	1.66
5	Greater Bombay	5.98	8.53	11.79	16.00	3.55	3.24	3.05
6	Osaka /Kobe	7.61	8.71	9.82	10.49	1.35	1.20	0.66
7	Beijing	8.29	9.06	9.59	11.17	0.89	0.57	1.53
8	Jakarta	4.48	6.65	9.48	13.25	3.95	3.55	3.35
9	Tianjin	6.87	7.65	8.25	9.70	1.06	0.76	1.62
10	Teheran	3.29	5.76	9.38	13.58	5.60	4.88	3.70
11	Delhi	3.64	5.87	9.13	13.24	4.78	4.42	3.72
12	Manila /Quezon City	3.60	5.96	8.26	11.07	5.04	3.26	2.93
13	Karachi	3.14	5.17	8.16	12.00	4.99	4.56	3.86
14	Bangkok	3.27	4.96	7.38	10.71	4.17	3.97	3.72
15	Madras	3.12	4.44	6.03	8.15	3.53	3.06	3.01

Source : United Nations, Department of International Economic and Social Affairs, "The Prospects of World Urbanization : Revised as of 1984-85", *Population Studies*, No. 101, New York, 1987, Table A-9.

During 1875-1980, Seoul's population grew at a lower rate than that of Busan, Daegu, Incheon, or all smaller urban areas combined (even if growth from reclassification is excluded).

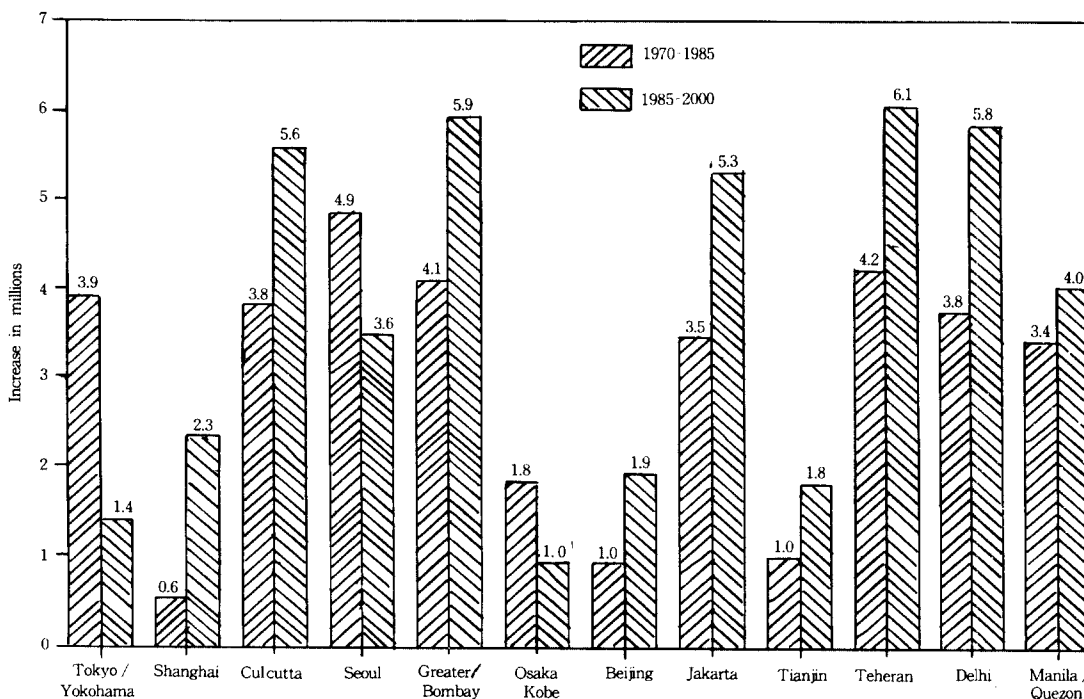
Countries in which the largest city is many times larger than the second largest are less able to reverse the concentration of urban population growth. As an example, the Manila / Quezon city urban agglomeration is projected to increase by 1.23 million persons between 1985 and 1990. If half of the growth is attributable to migration, the net number of migrants would equal 615,000. Were all of these induced to move instead to two other cities of 1 million population each, those cities would grow by an annual rate of 5.36 percent owing to migration alone, and by over 7.0 percent when natural increase is included. Thus slowing Manila's growth by redirec-

ting migration to smaller cities will not alleviate urban problems in the country.

A similar calculation may be made for Thailand, but because that country has no cities other than Bangkok that are much above 200,000 in population, it is assumed that the annual net number of migrants to Bangkok is redirected to five regional growth poles of 200,000 population each. In that case, the smaller cities would expand by over 10 percent a year from migration alone.

In recognition of this situation, Phisit Pakkasesem, Deputy Secretary General of Thailand's National Economic and Social Development Board, argues that decentralization is not the solution to urban problems. He points out that 44 percent of Thailand's gross domestic product in 1985 was produced in the Bangkok Metro-

**Figure 3. Absolute Increase in Population of 12 Largest Urban Agglomerations in Asia, 1970-1985 and 1985-2000**



Source : United Nations, Department of International Economic and Social Affairs, *The Prospects of World Urbanization: Review as of 1984-85*, Population Studies No. 101, New York, 1987, table A-9.

litan Region and that 77 percent of the nation's industrial production occurred there.

Pakkasem states that the efficiency of such metropolitan centers is critical to the growth of their national economies. He believes that, contrary to conventional thinking, urbanization contributes to both rural and national development in several Asian countries because of the close relationship between urban and rural economies. He concludes that, "... premature attempts to slow the growth of the metropolitan areas may be economically inefficient. Government policies should focus on ways of managing more efficiently large metropolitan areas rather than attempting to stop their growth" (Pakkasem, 1987).

Thailand's Sixth Plan, 1987-1991, thus put a new emphasis on promoting efficiency in urban

growth management. Efficiency is stressed in spatial development, urban public development expenditures, financial policies and institutional management. Such an approach is likely to prove more effective than attempts to decentralize urban growth to areas without the capacity to absorb efficiently rapid population and economic expansion.

Note ; In most of this paper, Asia is taken to include the Islamic Republic of Iran and all Asian countries to the east.

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