

# POPULATION INCREASE AND MANPOWER UTILIZATION IN IMPERIAL JAPAN

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THREE centuries ago the population problems of Asian lands were relatively simple. Asia then included only one-third the number of people who now secure a limited subsistence from its crowded rice lands, its dry plains and its eroded hills. As elements of the culture of the West expanded eastward, the stability and order of centralized governments and controlled economies replaced the civil strife and the hazardous inefficiencies of self-sufficient groupings. Export crops were introduced, subsistence increased and the force of epidemics limited. Mortality declined, but as the life in the peasant villages proceeded in the routine of the centuries the number of children born was not decreased proportionately. The population increase thus generated was long accepted as evidence of the beneficent influence of imported governments and technologies in the East.

As numbers became super-abundant, governments sought solutions through extending irrigation projects, improving agricultural techniques and redistributing people. There was a general lack of awareness of the elementary fact that population cannot increase indefinitely within a finite area, no matter how expansible the resources. It was more comfortable to evade than to wrestle with the fundamental contradictions of an expanding technological culture whose ultimate welfare problems increased in approximate ratio to its economic efficiency and its humanitarianism. Yet analysis of the historical developments in area after area reveals these contradictions. Order, economic development and medical technologies permitted the decline of death rates, while ancient ways of living and thinking among the peasants insured that birth rates remain at or near the levels that had been essential to biological and cultural survival in earlier centuries.

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Technical assistance and economic development for the countries of Asia are today discussed as international responsibilities. Their justification is phrased in terms of political, economic, and humanitarian goals that together constitute a rational good for both recipient and donor nations. There are critical differences between this contemporary movement and those that preceded it under imperial auspices, but the basic similarities are sufficient to raise serious questions concerning the demographic consequences. Many students of the East, and probably most demographers, suspect that the major consequence of socially unplanned economic action may be the maintenance of additional people within an all-pervasive poverty. Other students, more immersed in scientific and technical pursuits, see today's potentialities for human subsistence so expansive as to make the problem of man's numbers in the foreseeable future one requiring only minor adjustments. Hence it becomes essential to search within the experience of the past, and particularly that of Asia, for experience that will permit analysis of the demographic consequences of economic development. The classic historical experiment is Imperial Japan, for here industrialization proceeded within an Eastern culture that remained sovereign at the same time that it extended its area of political hegemony and economic utilization to include other Asian peoples.

#### GENERAL PARALLELS—JAPAN AND THE WEST

The processes of population increase, distribution, and manpower utilization in an industrializing Japan were similar to those that occurred earlier in the countries of the West. In premodern Japan some thirty million people secured a precarious subsistence from the limited land. Deficiencies in the quantity and quality of the food available for local consumption combined with the general ignorance of medical and sanitary practices to make peasant and urban dwellers alike vulnerable to the disorganization and the physical destruction of typhoon, flood, and fire. Famine and epidemic were so common

as to be noted in the chronicles only when they became devastating forces of extinction over wide regions. People and culture survived only because the attitudes, the values, and the taboos of family, community and state were compulsive forces channeling the lives of women into early marriage and frequent child-bearing.<sup>2</sup>

The opening to the West, and particularly the power-oriented state that followed the Meiji Restoration, brought an expanded and more intensive agriculture and an accelerating industrialization that provided employment opportunities for the youth of the countryside and moved a once-peasant people cityward. Mortality declined even during the early decades of modernization. Fertility changed more slowly, for the resistances of an ancient and integrated rural culture were buttressed by the resources of a state whose preeminent goal involved the creation of political and economic power within an oligarchic social structure. The forces generated by the industrialization process were more compulsive than those that had evolved in the agrarian world of the past, though, for even the conservative forces of a society continuous for millenia could not achieve that segmentation of culture and personality implicit in the co-existence of a changing economy and a stable social system. It was impossible to base the industrialization essential to power on an illiterate peasantry. And a former peasantry, educated, concentrated in cities, subject to the pressures of a pecuniary economy and exposed to the potentialities of that economy for material advancement and psychological liberation, could but

<sup>2</sup> This is not to deny the existence of abortion and infanticide as folk techniques of population control in premodern Japan. The critical question is not their existence but the extent of their practise throughout the population and the magnitude of their impact on the number of live births allowed to survive the process of birth and hence become subject to the very high rates of mortality that existed in the Japan of that period. The analysis of the hazards implicit in day-to-day living and the recorded losses from famines, epidemics, and the cataclysms of nature indicate that death rates must have fluctuated irregularly on a very high level. Hence the existence of a relatively unchanging total population in the eighteenth and early nineteenth centuries would have necessitated a birth rate that, for the country as a whole and over substantial periods of time, equalled the death rate. The fact that Japan's population was not declining precipitantly throughout the last century and a quarter of the feudal period means that the contemporary reports of the frequency of infanticide must be gross exaggeration if applied to the country as a whole.

question if it did not evade the obligation of abundant parenthood.

The first three quarters of a century of controlled modernization produced appreciable declines in death and birth rates. By the 'thirties fertility was falling more rapidly than mortality. Mechanical projection was tempting and many "predictions" were made. Although they varied in the complexity of their mathematics, all assumed continued declines in fertility and mortality, without explicit consideration of the social and economic developments required for the achievement and support of the numbers forecast. The majority of these estimates indicated that the population would increase to some 90 millions by 1960 and reach a maximum of perhaps 100 to 115 millions near or after the end of the century. Eventually the people of an industrialized Japan, as those of an industrialized West, would cease to increase. Moreover, as contrasted with the West, the period of transition would be shortened and the multiplier would be less. Japan would take only a quarter of a century to approach the new stability of low birth and death rates, and population increase would be only three or four-fold. This, it should be noted, is the optimistic picture of the decade before World War II.

If we examine the transformations in the geographical distribution and the internal structure of the population, the situation in Japan is again comparable to that in the West. The proportion of the population that was rural declined with relative consistency from 1872 to 1940; the *number* of people in the rural areas changed little between 1872 and 1930, and declined thereafter. Cities and non-agricultural employment absorbed their own natural increase and the major portion of that of the rural areas beyond maintenance requirements. Youth left agriculture and the rural areas, adjusted early to the relatively greater economic opportunities and the freer social atmosphere of the cities, founded their own families at considerably later ages than would have occurred in the ancestral villages, and limited the numbers of their children to correspond more nearly

to the realities of a pecuniary economy. Declining fertility and hence the solution to the problems of growth created by modernization appeared to inhere in urbanization, itself an essential correlate of industrialization. Residential and occupational movement away from the peasant village and its agrarian activities was the overt manifestation of the cultural and psychological transformation that signaled the "Westernization" of the Japanese and their escape from the economic difficulties of increasing numbers.

Japanese experience demonstrates that the population growth which accompanies industrialization is time-limited in the East as in the West. It is essential to note, however, that in Japan, a unique combination of political, economic, and social factors facilitated industrialization, urbanization, declining mortality, and declining fertility. Even under these particular circumstances, generally more favorable than those that now exist elsewhere in Asia, the modernization process involved a population increase of more than two and one-half times within its first century. The sheer magnitude of the numbers involved is significant if Japan is regarded as a laboratory experiment in what might happen elsewhere—and the problem of how Japan utilized those increasing numbers is just as relevant a part of her demographic history as is the description of how changing fertility and mortality generated the numbers.

There is a further barrier to the generalization of Japanese experience as a basis for assessing probable occurrences in other modernizing Asian areas, and it is a formidable one. Japan achieved her economic-demographic transition through the intermediation of an imperial system that utilized the products of other regions of Asia without contributing proportionately to the modernization of the subject peoples. The process of capital formation itself involved the assertion of the supremacy of the state over the welfare of the individuals. Thus, whether considered in relation to the people of Japan or to those of the conquered areas, the "success" of Japan's solution to the demographic problems of modernization is not a suffi-

cient answer to the question of its relevance to planning for the future in other areas. Democratic peoples might hesitate to offer or to accept economic assistance if the demographic hazards of the future could be averted only by political, economic, and welfare actions inconsistent with the democratic process. Hence it becomes essential to examine the demographic development of modern Japan in somewhat more detail, with emphasis on the magnitude of the population expansion, its relationship to economic expansion and the urbanization process, and the interconnections of demographic and economic transformations as manifest in changing patterns of manpower utilization with political expansionism and war.

#### DEMOGRAPHIC EXPANSION

The people of Japan numbered 30 million in the middle of the nineteenth century, 35 million at the time of the Meiji Restoration. In 1920 there were 56 million people. In 1940 there were 73 million. (Table 1). Increase of this order of magnitude is difficult to comprehend. The increase of 17 million in two decades was greater than the population of the Philippine Islands in 1939, as great as that of Korea in 1920. It would have peopled an empty Japan with 115 persons per square mile. Each year there were three-quarters of a million additional claimants to the products of the Japanese economy.

In Japan, as elsewhere in Monsoon Asia, population increase occurred among a people already densely settled on the land suitable for utilization with existing techniques. In 1920, the number of persons per square mile of total area was 380; in 1940, it was 500. These are crude figures, for Japan is a land of mountains and turbulent rivers, where only one acre in each six is cultivable. If we make our assumption of equal distribution somewhat more realistic and allocate the people to the land that was cultivated or regarded as available for cultivation, we secure density figures that are startling. In 1920, in this country still predominantly peasant, there were almost 2,500 people per square mile of cultivable land. If the 17 mil-

AREA	1920	1925	1930	1935	1940 <sup>e</sup>
POPULATION (IN THOUSANDS)					
The Empire	77,729	84,279	91,421	98,934	105,226
Japan Proper	55,963	59,737	64,450	69,254	73,114
Outlying Areas	21,766	24,542	26,971	29,680	32,112
Korea <sup>a</sup>	17,264	19,523	21,058	22,899	24,326
Taiwan	3,655	3,993	4,593	5,212	5,872
Karafuto	106	204	295	332	415
Kwantung <sup>b</sup>	688	766	956	1,134	1,367
South Seas <sup>c</sup>	52	56	70	103	131
AMOUNT OF INCREASE					
The Empire		6,550	7,142	7,513	6,292
Japan Proper		3,774	4,713	4,804	3,860
Outlying Areas		2,776 <sup>d</sup>	2,429	2,709	2,432
Korea <sup>a</sup>		2,259 <sup>d</sup>	1,535	1,841	1,427
Taiwan		338	599	620	660
Karafuto		98	91	37	83
Kwantung <sup>b</sup>		78	190	178	233
South Seas <sup>c</sup>		4	13	33	29
PER CENT INCREASE					
The Empire		8.4	8.5	8.2	6.4
Japan Proper		6.7	7.9	7.5	5.6
Outlying Areas		11.3 <sup>d</sup>	9.0	9.1	7.6
Korea <sup>a</sup>		13.1 <sup>d</sup>	7.9	8.7	6.2
Taiwan		9.2	15.0	13.5	12.7
Karafuto		92.4	44.9	12.5	25.0
Kwantung <sup>b</sup>		11.8	24.8	18.7	20.6
South Seas <sup>c</sup>		7.8	23.7	47.3	27.9

Table 1. Demographic expansion of the Japanese Empire, 1920-1940.\*  
(Total population of each area.)

\* Kōjima, Reikichi. *Waga kuni saikin no fuken oyobi toshi jinkō, Shōwa jugō-nen Kokusei chōsa no kekka ni yoru.* (The population of the prefectures and cities of Japan in most recent times.) Toshi mondai pamphretto (Municipal Problems Pamphlet), No. 41. Tokyo, 1941. 35 pp. Translation by Edwin G. Beal, Jr., in *Far Eastern Quarterly* 3(4): 313-362. Aug. 1944.

<sup>a</sup> A "special survey" rather than a census was taken in Korea in 1920.

<sup>b</sup> The Kwantung Leased Territory alone is included in this compilation. The South Manchuria Railway Zone, formerly a part of the Empire, was attached to Manchoukuo in 1937.

<sup>c</sup> Nanyō-guntō, the South Sea Islands received as a mandate from the League of Nations.

<sup>d</sup> Since the special survey taken in Korea in 1920 was probably an undercount, the increase between 1920 and 1925 may be over-estimated for Korea and hence for the Outlying Areas and the Empire as a whole.

<sup>e</sup> The censuses of 1920-1935, inclusive, were *de facto* enumerations of the populations of the various areas. In 1940 the enumeration of the general civilian population was *de facto*, but members of the armed forces and persons attached thereto wherever they might be, whether within or outside the Empire, were allocated to the place of enumeration of their nearest of kin.

lion people who were added to the Japanese population between 1920 and 1940 had been equally distributed over the cultivable land, there would have been 740 additional persons on each square mile. By October 1, 1940, the hypothetical allocation of equal areas of cultivable land to each person would yield 3,200 persons for each square mile of such land.

Citation of rates of population increase, density figures, or other population statistics for Japan Proper as measures of the demographic transformation of the Japanese people ignore the essential characteristic of that transformation, its integral relationships with political and economic expansionism within and outside the Home Islands. In the late nineteenth century the island of Hokkaido was occupied in a northward thrust that carried the Japanese up through the southern part of Saghalien Island. Expansionism turned southward and the Ryu-ku Islands were added to Japan Proper, Taiwan to the Empire. In the early twentieth century the drive to economic and political advance focused landward. The Kwantung Leased Territory, the South Manchuria Railway Zone and Korea were added to the Empire. The South Sea Islands, which Imperial Germany had once held, were acquired after World War I as a mandate from the League of Nations and added to the Empire in fact if not in legal right.

Japanese moved outward to the islands of the Pacific, across the narrow waters to northeastern Asia, and eventually southward below the Great Wall. (Table 2). In 1920 there were 726 thousand Japanese in the colonial areas outside Japan Proper, including the military; in 1940, there were 1.7 million, excluding the military. This was internal redistribution in a sense, for it was movement under the Japanese flag. Expansion beyond the area of Japanese sovereignty but within the area of political hegemony increased sharply during the 'thirties. In 1920 some 580 thousand were beyond the jurisdiction of Japan, at least in theory. In 1940, the number abroad had increased to 1.9 million, of whom 820 thousand were in "Manchoukuo," 365 thousand in occupied North China. This redistribution



and expansion of the Japanese reflected a complex adjustment of social and economic pressures at home, economic opportunities abroad. The main concentrations remained in Japan Proper, though, for here lived 99 per cent of the world's Japanese in 1920, 97.5 per cent in 1940.

The relevance of population increase to economic and political transformation cannot be assessed easily from the statistical data on the maze of movements and counter-movements that produced the internal redistribution and the external expansion portrayed in the preceding tables. It can be deduced in hypothetical form, though, if we assume that on October 1, 1920, all Empire nationals and aliens are expelled from Japan and the Home Islands are sealed as they had been throughout the centuries of Tokugawa control. Within this stable and isolated universe births and deaths occur at the age-specific rates

Table 2. Demographic expansion of the ethnic Japanese, 1920-1940.\*

AREA	NUMBER OF ETHNIC JAPANESE (IN THOUSANDS)			PER CENT INCREASE IN ETHNIC JAPANESE		
	1920	1930	1940	1920-1930	1930-1940	1920-1940
The World	57,191	65,766	75,372	15.0	14.6	31.8
The Empire <sup>a</sup>	56,611	65,149	73,500	15.1	12.8	29.8
Japan Proper <sup>b</sup>	55,885	63,972	71,810	14.5	12.2	28.5
Outlying Areas <sup>a</sup>	726	1,177	1,690	62.1	43.6	132.8
Korea	377	527	708	39.9	34.3	87.8
Taiwan	164	228	312	39.0	36.8	90.2
Karafuto	103	284	395	176.3	38.8	283.7
Kwantung	79	118	198	50.0	68.1	152.0
South Seas	3	20	77	476.8	292.3	2163.0
Foreign Countries <sup>c</sup>	580	617	1,872	6.3	203.4	222.5

\* 1920: Nihon. Naikaku tōkei-kyoku. (Cabinet Bureau of Statistics): *Taishō kunen Kokusei chōsa ki-jutsu-ken*. (Descriptive summary of the 1920 census.) Appendix. Tokyo, 1933. 1930. *Ibid.*: *Shōwa gonen Kokusei chōsa saishū hōkoku sho*. (Final report of the 1930 census.) Tokyo, 1938. 1940. Japan. Cabinet Bureau of Statistics: *Census of 1940. Selected tables*. Microfilm copy, Library of Congress, Washington, D. C. Table 1. The number of Japanese in foreign countries in 1940 is based on a compilation from Japanese sources, modified where census or registration data permitted more accurate estimation.

<sup>a</sup> Excluding the South Manchuria Railway Zone, which became part of "Manchoukuo" in 1937 and hence technically outside the Empire.

<sup>b</sup> Ethnic Japanese only, i.e., excluding natives of the Empire and aliens.

<sup>c</sup> Including the South Manchuria Railway Zone, which had a Japanese population of 81 thousand in 1920 and 107 thousand in 1930.

that characterized the actual population of Japan from 1920 to 1940. Let us now limit the analysis to men, and assume that each man enters the labor force at age 15 and remains in it continuously until death or retirement at age 65. Furthermore, there is no expansion of economic opportunities, and no job is vacated except by the death or retirement of its holder. Japan's population problem thus becomes by definition the increase of her manpower between the ages of 15 and 65, for adjustment techniques, whether economic, political, or demographic, are ruled out by definition. Under these assumptions there would have been 180 Japanese entering labor force ages for each 100 vacancies created by death or retirement. One hundred of these 180 potential entrants would be utilized; eighty would find no place within this completely occupied and stationary economy. In other words, 45 per cent of the annual increment to the number of men in the productive ages would be surplus. Given the validity of the assumptions underlying the computations, this would be the measure of Japan's demographic difficulties.

Before considering the actual relationships between numbers, economic development, and politico-economic factors in Japan, let us transfer Japanese rates of demographic expansion by direct analogy to some regions of potential modernization and assess the magnitude of the numerical increase that would occur if their demographic developments should perchance follow those of Japan. Instead of a China or an India where numbers quickly become fantastic, let us consider Indonesia, for here the Outer Islands and their resources may permit an orthodox pattern of economic-demographic modernization for crowded Java. If Indonesia should follow the path of Japan, today's 76 million people would become 140 millions by the second decade of the twenty-first century. Java's own population would be little beyond its present 50 millions, perhaps less, for the necessary food for the increasing people would be produced on lands now utilized only by the inefficient techniques of the native peoples of the Outer Islands. The major portion of the hypothetical increase of some 65 million people would have been

absorbed in the new industrial developments, perhaps located in the Outer Islands. Great cities with millions of inhabitants would have replaced the Balipapans of today. Perhaps this is a possible picture, perhaps not. In any event, the internal migration of the maturing youth of Java's over-crowded areas to developing industrial centers in the Outer Islands is implicit in the plans of Indonesia's leaders who are cognizant of the demographic dilemma that underlies their economic development plans.

This planning for the year 2025 would not be terminal, though, for a further fifty per cent increase would lie ahead. Indonesia's ultimate population would go beyond 200 million, the Philippines under comparable assumptions beyond 60 millions.

#### ECONOMIC TRANSFORMATION

The economic transformation of Japan in the seventy-five years of its history as an expanding imperial power was a movement away from agricultural self-sufficiency toward an industrial and a commercial economy dependent on the world market alike for the purchase of its raw materials and the sale of its finished products. At the beginning of the 'twenties Japan's industry was predominantly textile, cocoons and silks tying the agricultural and the industrial segments of the economy together in dependence on the vagaries of taste and the fluctuating purchasing power of American women. The 'twenties were a period of expansion in the traditional pattern. The major exports were textiles and those cheap products of the small shop and sweated labor that had come to stigmatize the label, "Made in Japan." The depression of the late 'twenties and the early 'thirties shattered the world's demand for Japan's silk and cotton textiles. Poverty spread in ever-widening circles from the employees in the textile mills to the small farmers who supplemented agricultural production with the cultivation of mulberry trees and the raising of cocoons. The depreciation of the yen, increasing efficiency in organiza-

tion, and controlled sales restored Japanese products to the world markets, but only at the heavy price of depressed wages at home and increased accusations of "dumping" abroad. World trends toward economic autarchy, controlled trade, managed currencies, and the political manipulation of economic relationships seemed to threaten the economy of a nation that required trade to survive.

Awesome predictions of the fate awaiting the multiplying Japanese again proved false. By the end of the 'thirties Japan's strengthened and diversified economy indicated progress toward mature industrialization. The index of industrial productions, with a base of 100 in 1930-1934, reached beyond 200 in 1941. The production of the metal and the chemical industries had trebled, while the manufacturing of machinery had increased six-fold.<sup>3</sup>

The immediate demographic consequence of the economic transformation of the interwar decades was the urbanization of the population structure, for the city-ward movement of the peasant was an essential aspect of the process of capital formation, industrialization, and political expansion. The villages and the smaller towns became producers of children, exporters of youth, and havens for the aged. The maturing youth moved toward the cities and non-agricultural employment in such numbers as to create an urbanization seldom paralleled in the history of the West. (Table 3).

Between 1920 and 1940 the population of the cities (*shi*) increased from 10.1 to 27.6 millions, while that of the rural areas (*gun*) changed only from 45.9 to 45.5 millions. Fewer than five million people lived in cities of 500,000 and over in

<sup>3</sup> Economic progress was a by-product of military expansion and preparedness for further expansion. The response of Japan's statesmen and military leaders to a constricting outer world and cumulating internal friction was an outward surge that carried the Kwantung armies into Manchuria and established a Manchu emperor on a puppet throne. The decade of heavy capital investment thus initiated resulted in the establishment of an economic and military bastion from which the Soviet Union could be held while China below the Great Wall was invaded. In Taiwan, Korea, and Karafuto there was forced industrialization somewhat comparable to that of Japan's early post-Restoration period, and here too it was oriented toward heavy industry and military preparedness.

1920; 14.4 million lived in such cities in 1940. In relative terms, the population living in communes of 10,000 or less declined three per cent during this twenty-year period, while that in cities of 100,000 and over more than trebled.

The urbanward movement was predominantly from the rural area to the large city or the great metropolitan center. In 1920 over two-thirds of the total population lived in communes of less than 10 thousand population. Only half lived in such communes in 1940. In 1920 one in each twelve or so persons lived in a city of 100,000 or more. In 1940, one in each five lived in such a city. All the provinces of Japan contributed substantial portions of their natural increase to the great metropolitan cities of Tokyo, Yokohama, Nagoya, Osaka, Kyoto, and Kobe. In fact, for the interwar decades as a whole

Table 3. The urbanization of the population structure of Japan Proper, 1920-1947.\*

YEAR	POPULATION BY SIZE OF COMMUNES <sup>a</sup> (IN THOUSANDS)					
	Total	Under 10,000	10,000-50,000	50,000-100,000	100,000-500,000	500,000 +
<i>Prewar Area</i>						
1 October 1920	55,963	37,927	9,177	2,105	2,128	4,626
1 October 1925	59,737	37,884	9,667	3,445	2,538	6,203
1 October 1930	64,450	38,158	10,409	4,402	3,876	7,605
1 October 1935	69,254	37,502	10,549	3,685	4,873	12,645
1 October 1940	73,114	36,627	11,338	3,858	6,907	14,384
<i>Postwar Area</i>						
1 October 1940	72,540	35,998	11,457	3,792	6,907	14,384
1 November 1945	71,996	39,460	16,126	5,397	5,045	5,969
26 April 1946	73,114	38,482	15,630	5,537	6,389	7,076
1 October 1947	78,098	38,690	16,474	6,148	7,778	9,009

\* 1920-1940, *prewar area*. Compiled from the appropriate volumes of the respective censuses of Japan. 1940-1947, *postwar area*. SCAP, Economic and Scientific Section, Research and Programs Division: Distribution of population of Japan by *shi*, *machi*, and *mura* in selected size groups 1940, 1945, 1946, 1947. *Japanese Economic Statistics, Bulletin, Section III. Population, Labor, Food, and Prices*. Bulletin No. 34, June, 1949. Also Ueda Masau: Some recent tendencies in urban and rural population. Tables. *The Third General Meeting of the Population Association of Japan, Data Paper*. 13 November, 1949.

<sup>a</sup> Commune is used as a general term to include *shi* (cities), *machi* (towns), and *mura* (villages). English equivalents are approximate only. Area classifications are as of the census date.

Table 4. Economic utilization of the population of Japan Proper, industrial classification of the gainfully occupied, 1920, 1930, and 1940.\*

STATUS	TOTAL POPULATION				MALES				FEMALES			
	1920	1930	1940		1920	1930	1940		1920	1930	1940	
	NUMBER (IN THOUSANDS)											
<b>TOTAL</b>	55,963	64,450	73,114		28,044	32,390	36,366		27,919	32,060		36,548
<b>Armed Forces</b>	250	243	1,694		250	243	1,694					
<b>Civilian Population</b>	55,713	64,207	71,420		27,794	32,147	34,672		27,919	32,060		36,548
<b>Unoccupied</b>	28,702	34,830	38,937		11,057	13,360	15,142		17,645	21,470		23,795
<b>Occupied<sup>b</sup></b>	27,011	29,377	32,483		16,737	18,787	19,730		10,274	10,590		12,753
<b>Agriculture &amp; Forestry</b>	14,128	14,131	13,842		7,750	7,735	6,619		6,378	6,396		7,223
<b>Fishing</b>	558	568	543		517	515	476		41	53		67
<b>Mining</b>	425	316	598		328	271	529		97	45		69
<b>Manufacturing &amp; Construction</b>	5,300	5,876	8,132		3,716	4,428	6,178		1,584	1,448		1,954
<b>Commerce</b>	3,188	4,906	4,882		2,158	3,406	3,006		1,030	1,500		1,876
<b>Transportation &amp; Communication</b>	1,037	945	1,364		975	907	1,214		62	38		150
<b>Government &amp; Professional</b>	1,192	1,762	2,195		884	1,369	1,515		308	393		680
<b>Domestic Service</b>	655	802	709		71	92	39		584	710		670
<b>Miscellaneous</b>	528	71	218		338	64	154		190	7		64
	PER CENT OF GAINFULLY OCCUPIED											
<b>TOTAL</b>	100.0	100.0	100.0		100.0	100.0	100.0		100.0	100.0		100.0
<b>Agriculture &amp; Forestry</b>	52.3	48.1	42.6		46.3	41.2	33.5		62.1	60.4		56.6
<b>Fishing</b>	2.1	1.9	1.7		3.1	2.7	2.4		0.4	0.5		0.5
<b>Mining</b>	1.6	1.1	1.8		2.0	1.5	2.7		0.9	0.4		0.5
<b>Manufacturing &amp; Construction</b>	19.6	20.0	25.0		22.0	23.6	31.3		15.4	13.7		15.3
<b>Commerce</b>	11.8	16.7	15.0		12.9	18.1	15.2		10.0	14.2		14.7
<b>Transportation &amp; Communication</b>	3.8	3.2	4.2		5.8	4.8	6.2		0.6	0.3		1.2
<b>Government &amp; Professional</b>	4.4	6.0	6.8		5.3	7.3	7.7		3.0	3.7		5.3
<b>Domestic Service</b>	2.4	2.7	2.2		0.4	0.5	0.2		5.7	6.7		5.3
<b>Miscellaneous</b>	2.0	0.3	0.7		2.0	0.3	0.8		1.9	0.1		0.5

\* 1920. Nihon, Naikaku tokel-yoku (Cabinet Bureau of Statistics) : *Taishō kunen Kokusei chōsa hōkoku*. (Reports of the 1920 census). *Zenkoku no bu*. (Section on all Japan.) *Shokugyō*. (Occupations) Tokyo, 1929. Reallocations to produce as much comparability as possible with the later classifications of occupied and unoccupied. 1930. Ibid. : *Shōwa gonen Kokusei chōsa hōkoku*. (Reports of the 1930 census.) *Shokugyō oyobi sangyō*. (Occupations and Industries.) Tokyo, 1935. 1940. United States Strategic Bombing Survey, Manpower, Food, and Civilian Supplies Division : *The Japanese Wartime Standard of Living and Utilization of Manpower*. Washington, 1947. Table pp. B-12, 4.

<sup>a</sup> The armed forces in 1920 and 1930 included only those present in Japan Proper who could not be allocated to another category of the occupational (1920) or industrial (1930) classification. In 1940 the armed forces were reported by their closest category relative and include armed forces and prisoners attached thereto, wherever stationed.

<sup>b</sup> The unemployed are included, classified according to the industry of the usual employment.

the net migratory gain of the seven metropolitan provinces (Tokyo, Kanagawa, Aichi, Osaka, Kyoto, Hyogo, and Fukuoka) was greater than the net migratory loss of the remaining forty provinces of Japan, for these provinces attracted not only Japan's own provincials but also the immigrants of Empire.

#### THE UTILIZATION OF INCREASING MANPOWER

The economic force that underlay urbanization was industrialization, including under that broad term the expansion of manufacturing industry and the facilities and services necessarily associated with it, as well as the increasing efficiency of primary production that accompanies advances in techniques and facilities for production and distribution. The human aspect of this industrialization was the changing industrial allocation of the labor force. Agriculture, forestry, and fishing declined in relative importance, while manufacturing, commerce, transportation, and communication increased. (Table 4.) The maintenance of a relatively unchanging population in agriculture was accompanied by a rapid increase in both the numbers and the proportions of the people who secured their livelihood from sources other than agriculture. In 1920, agriculture absorbed slightly more than half those reporting themselves as gainfully occupied, whether employed or not; in 1930, it absorbed slightly less than half; in 1940, it absorbed only 43 per cent. This is an under-statement of the extent of the economic transformation, though, for it is distorted by the numbers of women who are reported as gainfully occupied in agriculture. If men alone are considered, the proportion gainfully occupied in agriculture was 46.3 in 1920, 41.2 in 1930, and 33.5 in 1940.

A more incisive picture of the way in which Japan utilized the increasing numbers of people generated by the modernization process is given if attention is focused on the utilization of the increments rather than on the more traditional pattern of the changing proportions within the civilian labor force. If we consider only the increase in the population physically pres-

ent within Japan Proper, we find that the number of persons aged 10 and above increased 13.5 millions between 1920 and 1940. This figure is complicated in derivation, however, for it represents the balance of the natural increase of the Japanese in Japan Proper, the losses of the Japanese through emigration from Japan, and the gains of Empire Nationals, primarily Koreans, through immigration.

By 1940 over one million Japanese men aged 10 and above had been lost to Japan through the civilian migration that occurred between 1920 and 1940. This removed 14 per cent of the potential increase of 7.7 million men in labor force ages. The impact of these migrations on the labor market was greater than this overall figure would indicate, for migration removed one-fourth of the total increase in the number of men in their twenties, one-fifth of the number in their thirties. This was removal for civilian utilization. If we add to the 1.0 million civilian migrants the 1.4 million men removed from the potential increase in the civilian labor pool through absorption into the armed services, we discover that only two-thirds of the increase in adult manpower was available for civilian utilization within Japan Proper. The number of men aged 20 to 24 available for such utilization in 1940 was actually less than it had been in 1920. The real problem of Japan became the inadequacy rather than the increase of manpower—and in the twenty years under consideration more than half a million Korean men aged 10 or over moved in to fill the jobs vacated by the Japanese who had either moved upward occupationally in Japan Proper and the Empire or had been absorbed into the armed forces.

This is a simplified summary of the changing pattern of manpower utilization, civilian and military, within Japan Proper and within the Empire. It may suffice to indicate the complexity of the economic problems presented by rapid and continuing increase in the population in the productive ages. Moreover, it reveals the inadequacy of numerical increase considered apart from an economic and cultural context as a



measure of either the nature or the magnitude of the economic and political problems or the relative success of the factors tending toward their resolution. Within Japan Proper there were increasing numbers of persons in the productive ages, but military expansion, the development of the heavy industries and direct war production, all necessary concomitants of imperial expansion, provided employment opportunities for large numbers. There were other factors, for at the same time that the safety valves of emigration and militarism operated to remove persons from the civilian labor market, increased public school education and diffusing retirement practices lessened labor force participation among the young and the old. With these dual drain-offs of potential workers plus the existence of the rural areas as subsistence security for the urban unemployed, Japan solved her problems of increasing manpower.

#### WAR AND ITS AFTERMATH

Solutions achieved through militarism are necessarily transitory, for the process creates a dynamism that forces its own continuation. For Japan, the end occurred much more speedily than for the British Empire whose history the Japanese imagined themselves to be repeating. The 'twenties were a decade of peace and accumulating population pressure, the 'thirties a decade of war, preparedness for further war, and manpower deficiencies. If the pattern of the past had continued, the 'forties would have been a period of reorganization and economic development preparatory to another politico-economic expansion of the type that had characterized Japanese history from the acquisition of Taiwan to the creation of Manchoukuo. But the pattern broke. The premature challenge of the West was followed by military defeat, the restoration of the Tokugawa boundaries, and the liquidation of Empire.

The Empire vanished, but the people who were the product of industrialization and imperial expansion survived in major part. The four million natural increase of the war years far surpassed the 1.7 million military dead. Almost six million of

the emissaries of Empire, civilian and military, were returned to the constricted frontiers of a Japan with levelled cities, ruined industries and vanished markets. The Japan of 1947 with its limited economy included 78.6 million people, 3.5 million more Japanese than lived in all the East in 1940.

This is not the end of the tale. Threatening epidemics were conquered, food supplies restored, and the death rate forced downward. A baby boom contributed further to the increasing population. By January 1, 1949, there were 81 million people in the four main islands of Japan Proper, over ten million more than there had been when this was the heartland of an economic development whose nexus of trade penetrated the East and beyond, the center of a military organization that included 100 millions in the Empire, 40 millions in puppet Manchoukuo, and uncounted millions in the occupied areas of China.

Rapid increase in the numbers of adult men and women will continue for decades in the future. If deaths remain at the level of 1948 and there is no movement to or from Japan except the repatriation of some five to six hundred thousand persons between 1947 and 1953, the number of men in the productive ages between 15 and 60 will increase from some 22 millions in 1947 to some 31 millions in 1967, an increase of over 40 per cent in twenty years. This increase in the coming decades is larger both absolutely and relatively than that which occurred in the twenty years between 1920 and 1940.

#### THE BROADER RELEVANCE

The heritage which almost a century of economic development left to a Japan whose economic and political system was shattered while her people remained largely intact is considered in another paper in this series. Here we shall attempt a tentative generalization of the relevance of the Japanese experience for other densely settled areas in process of or contemplating comprehensive industrialization.

Japan constitutes one case study in the demographic correlates of modernization of a predominantly industrial type, albeit

a peculiarly significant one. Japan's historic culture was Eastern. Her industrial and urban transformation was thus divorced from a base in the non-material culture of the West except in so far as specific elements were deliberately selected for imitation or diffused through more informal mechanisms. Japan was shrouded in the quiescent seclusion of the Tokugawa baku-fu when Europe awakened in the Renaissance and the Reformation. She had no Protestant ethic whose interconnections with the evolution of capitalism could be debated, no church whose familial pronouncements implemented the Pauline philosophy. Yet here within the East the demographic correlates of industrialization were roughly comparable to those in the West.

The population growth that accompanies indigenous and comprehensive industrial development and the slowing of that growth through a progressive limitation of child-bearing are alike products of the changes in ways of living and thinking that are precondition and product of industrialization. The relations of culture and demography proceed through the intermediation of the economic process itself. Political stability, a disciplined labor force and rapid capital accumulation are necessary aspects of substantial industrialization. Cultural factors exert a major influence on the extent and the speed of the economic transformation, for there are cultural preconditions to indigenous economic transformations and cultural limitations to imposed transformations. As industrialization extends over time and expands over wider segments of a nation, the demographic transition of declining mortality and declining fertility becomes a necessary consequence of the accompanying economic pressures and cultural stimuli. But industrialization regarded as economic, political, or social process is in turn modified by the changing dynamics of population. The relationships are complex; the particular constellation of factors that produced the population growth of Imperial Japan will not be duplicated in detail elsewhere. The fundamental fact, though, is that experience within the East corroborates the

hypothesis deducible from Western experience: substantial increase in the size of the total population is a correlate of industrialization, but the social and psychological transformations implicit in industrialization result eventually in a lessened rate of reproduction and a slowing growth. Given the technologies and the basic values of the twentieth century, both population growth and the ultimate slowing of that growth are predictable consequences of the industrial and urban transformation of agrarian cultures.

The demographic consequences of industrialization constitute a powerful propulsion toward further industrialization. Phrased in negative terms, industrialization is not a reversible process. To break the dynamism of the economic transformation in midstream is to leave the already cumulated people without the means of procuring the subsistence essential to the maintenance of life. The alternatives in this situation are few. Aggressive action may be attempted, but with a broken economy this is unlikely; if attempted it can only intensify the ultimate problem through defeat. If the political unit has already made the outward thrust and been defeated there may be external subsidy, but this is temporary solution. Hence the most probable consequence of the cessation of expansionism in a situation of continued population increase is a sharp deterioration of living levels. If the industrialization is actually reversed after its long continuation has generated really high densities on limited land, the consequence in the absence of subsidy or flight must be the death of that portion of the people who are "surplus" in the drastically altered resources-cultural-technology matrix.

Japanese demographic evolution paralleled that of the West in earlier decades, with differences explainable in terms of resources, history, technology, and culture. Will Japanese experience then predict within similarly broad limits that which is to occur in other densely settled Eastern areas? This, the critical question for those determining political and economic policy for other under-developed areas, cannot be answered

from population analysis alone. To assume complete parallelism between Japan and an industrializing mainland would be unrealistic. But to ignore the possibility that there may be similar integral relations between economic development, population growth, expansionism, and conflict would be politically hazardous.