JAPAN - A CASE STUDY IN AN INDEPENDENT CAPITALIST ECONOMIC DEVELOPMENT

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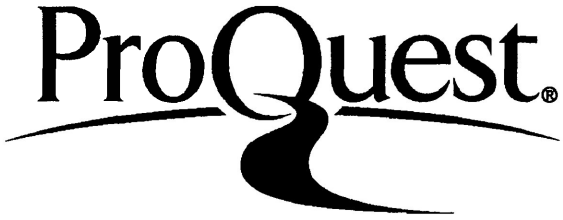

To My Parents

ABSTRACT

Since 1868, Japan has displayed a very strong propensity for rapid growth. Before this date, Japan's economy was so backward as to be indistinguishable from the other backward nations of Asia; while after this date she transmitted to the position of being the sole, highly industrialized country of the continent and the third largest economy of the world.

This study examines the economic history of Japan with a view to identifying the factors that have contributed significantly to Japan's impressive and unique record of economic development. Therefore, there are two sets of questions to answer. One is to observe the history to find out 'what happened'. The other is to provide an analysis as to 'how it happened'. The socio-economic conditions of the two centuries preceding the year 1868 and the years thereafter have been placed on historical perspective. This is the subject of Part One. To the

extent that each of these socio-economic conditions was abolished, left unchanged, altered or otherwise utilized to pursue a growing modern economy is the subject of Part Two. The method used in this study is time-series analysis, based on data provided mainly by Japanese and Western institutions and private individuals. Thus, each chapter contains a chronological order of events, phases, and policies.

In conclusion, although the economy has been subject to many erratic fluctuations, the long-run tendency has been an acceleration of the growth rate and the development of an ever-increasing capacity for growth.

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To Professor K.J. Charles I owe a very special debt, or perhaps several debts of different kinds. Professor Charles must have literally "found" time, since he had none available in the ordinary twenty-four-hour day, to read the text with a teacher's critical eye. His critical, thoughtful, patient reading of the entire work revealed countless suggestions for reorganization of structure, sharpening of analysis, and clarification of expression. K.J. Charles is due much credit for whatever may be this work's strengths, while I properly accept the blame for its weaknesses.

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INTRODUCTION

In the history of Japan the year 1868 is a turning point marking her entry into a new era. The new era was noted for political, economic, cultural, and sociological changes through which Japan emerged as a modern state.[1]

The year 1868 witnessed the abolition of feudalism, an institution which had kept the Japanese economy in a low-level equilibrium trap; during the last 150 years of which Japan's population, income, and capital had remained constant.[2]

Since 1868, Japan has displayed a very strong propensity for rapid growth. In addition to the abolition of the feudal regime, a number of factors may be cited as having contributed to the transition of the economy -- from one so backward as to be indistinguishable from the other backward nations of Asia, to the position of being the sole, highly industrialized country of the world. Of these factors, three have played a crucial role in the transition: (1) the agricultural sector was able to produce food, foreign exchange, capital, manpower, and thus created the base for industrialization; (2) a large population with a high level of education provided an abundant labor force of high quality; and (3) a high rate of saving made capital investment available for labor's utilization.

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[1] A modern state possess the following characteristics: capital accumulates at an increasing rate, population expands, and economy as a whole (employment and national income in terms of its components) grows while growth of secondary and tertiary sectors is fast enough to transfer labor from the primary sector to these sectors.

[2] This issue is discussed in Chapter I and V.

Throughout her modern history, Japan's economy was subject to many erratic fluctuations; the most striking of which resulted from the outbreak of the Second World War. During this War, Japan -- already a world power -- lost 25 percent of her national wealth, 40 percent of her capital stock, 2.8 million of her inhabitants, and almost all of her ocean-going fleet.[1] In addition, not only did she lose all of her colonial possessions, she herself became subjugated to the Allied Powers.

After the War, Japan once again began to resume her economic development. The Korean War (1950 - 52) provided a strong stimulus to the regeneration of the Japanese economy. That is, the reconstruction of the economy accelerated under the indirect influence of this War. Japan's recovery has been rightly called "the miracle of the post-war world".[2] The gross national product (GNP) rose at an unprecendentedly high rate and her total output surpassed that of many, highly industrialized, countries. Since 1968, the centennial of the Restoration,[3] she has possessed the third highest GNP of the world -- after the United States

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1 Discussed in Chapter II.

2 A phrase used by the observers of Japan's economic history - such as M. Bronfenbrenner, in his article, "Economic Miracles and Japan's Income Doubling Plan", in W.W. Lockwood, ed., The State and Economic Enterprise in Japan, (Princeton: Princeton University Press, 1965); and K. Ohkawa and H. Rosovsky in their book, Japanese Economic Growth, (Stanford: Stanford University Press, 1973).

3 The events which followed the year 1868 established the return of the new government to a direct public reliance on the supreme authority of the emperor; to this extent a "restoration" had taken place, John Whitney Hall, Japan - From Prehistory to Modern Time, (New York: Delacorte Press, 1970), pp. 265-72.

of America, and the Soviet Union. With a population of over 114 million and a national income exceeding $642.8 billion, the Japanese economy rivals the advanced countries in both her productive power and in her commanding role in world markets.

Profound changes have taken place in all phases of Japanese national and individual life over the past century: political, economic, cultural, and social. This study examines the progress recorded by Japan in her economic life and attempts to shed some light on the underlying causes of this unique record. With this objective, in Part One, after reviewing the historical background of Japan during the Tokugawa Rule (1603 - 1868), an attempt will be made to examine the economic history of modern Japan after the Restoration of 1868. Part II will try to identify the factors of major importance in relation to the phenomenal growth of the Japanese economy. We will then discuss the following: (1) the significance of agriculture; (2) characteristics of labor market; and (3) the leading role of investment. The study also traces the impact of rapid growth on the economic and social welfare of the Japanese people. This is the subject of Appendix II.

PART ONE

GENERAL VIEW OF THE ECONOMY

CHAPTER I: HISTORICAL REVIEW

While 1868, the year of the Meiji Restoration marks the beginning of the modern period of Japanese history, the two hundred years that preceded it witnessed many changes that prepared Japan for modernization and rapid growth. Hence, some examination of Japanese history during the Tokugawa Rule is necessary for an understanding of the circumstances which made possible the country's transformation after 1868. Such an investigation leaves no room for the hypothesis that such energy and restless ambitions leading to modernization came to Japan all of a sudden.

Tokugawa Era (1603-1868)

Isolation and feudalism were the two main features of Tokugawa Japan. By the "closing of the economy" decree issued by the Shogun (referring to the Tokugawa administrator) in 1637[1] foreigners were not permitted to live in Japan -- the decree lasted for more than two centuries. Trade, travel, and study abroad were terminated and made inaccessible to Japanese citizens. The minor

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1 G.B. Sansom, Japan, A Short Cultural History, (London: The Cresset Press, 1962), p. 454.

exception was the trade with the Dutch and Chinese on the extreme South of Japan.

Inside the country, the Tokugawa family, officials of the Imperial Court, ruled Japan; administering their government from Edo (now Tokyo) whilst the Emperor lived in Kyoto.[1] A quarter of the land was owned by the Shogun and the rest was divided among approximately 270 lords.[2] The numbers varied through deaths and feuds. The lords were obliged to maintain an alternate residence in the capital city (Edo) where they had to spend some part of the year participating in special and costly ceremonies and regularly attend the Shogunal court. Their families were kept in Edo as hostages when they returned to their provincial estates. The movement of lords with their people[3] contributed to the development of roads, inns, restaurants and other services related to travelling.

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1 Ieyasu, the first Shogun who won supremacy for his family by defeating a coalition of his opponents, did not eliminate the Imperial Court and the Emperor. Rather, he assumed the military and financial control of the country as a hereditary prerogative for his family, and left a few purely formal and ceremonial prerogatives to the Emperor -- such as appointment of the Shogun and certain other officers of the state. For this and other historical aspects of this period, see Ibid., p. 433-63, and H. Pratt, Japan -- Where Ancient Loyalties Survive, (American Council, Institute of Pacific Relations, 1937), pp. 62-80.

2 Sansom, op.cit., p. 466.

3 A part of these people were samurai who were largely a parasitic class, serving as feudal administrators, and were forbidden to participate in agriculture or commerce.

In spite of isolation and the traditional nature of the economy, Tokugawa Japan was not a primitive society. Except at the end of the period, the Tokugawa Government was efficient in administering Edo, Kyoto, and Osaka which were among the largest cities in the world and which were under direct Tokugawa control. Thirty million people[1] were supported despite scarcity of fertile land. Houses were usually well-designed, and satisfied the people's needs. The standard of hygiene was high compared to European nations. During this period, Japan started the quest for a literate, self-conscious citizenry. It is estimated that 40 to 50 percent of Japan's males and 10 to 15 percent of the females were literate at the time the Meiji Restoration began.[2]

Toward the end of the Tokugawa Rule, roughly 70 to 80 percent of the people were classified as peasants. This crudely reveals a type of society of a low level of income per capita. Although peasantry produced a large surplus above subsistance, it had to pay a substantial proportion of its produce as rent to landlords and to meet its other feudal obligations.

Bearing in mind that technology was backward, the economy was busy in the production of rice, textiles, copper goods, paper, tea, handicrafts, and traditionsl drugs.[3] The market sector of the economy

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1 Estimate for 1860.

2 This issue is discussed in detail in Chapter IV.

3 A. Maddison, Economic Growth in Japan and the U.S.S.R. (London: George Allen & Unwin Ltd., 1969), p. 6.

was relatively large with a developed financial system by Asian standards.[1] Money had replaced rice as the medium of exchange.[2] Agricultural technology was traditional; that is, with labor intensive methods, it depended on the skill of individual workers for gains in productivity while fixed capital was a minor element in the production function. Units of production were small,[3] and yields were well below their potential level even in terms of existing practices.

Toward the end of the period, the social and economic condition became increasingly more difficult. Financial difficulties of the Shogun, indebtedness of the lords to merchants, increasing number of peasants' revolts, and major rivalries between the Shogun and the more powerful and distant lords were some of the influential characteristics of the time. The major factor, however, to push this system to its breakdown was the intrusion of foreigners and opening of the economy to foreign trade through treaties following the forceful entry of Commodore Perry of the American Navy in 1853.[4] Foreign contact, moreover, opened Japan's eyes to her material inferiority. In order to catch up with the West she had forced herself to adopt many technological changes which themselves led to further technological

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1 Maddison, op.cit., p. 6.

2 This was achieved mainly due to expansion of market and commercialization of farming; see T.C. Smith, The Agrarian Origins of Modern Japan, (Stanford: Stanford University Press, 1959), pp. 67-74.

3 Slightly less than one hectare on the average.

4 Maddison, op.cit., p. 7.

improvements.[1]

The Tokugawa family ruled Japan for over two hundred years. These were rich, eventful years from the cultural and social points of view. In these respects, the Tokugawa society was traditional but not stagnant. Isolation itself had some positive effects. It was advantageous to be isolated from empire-building Europeans, and this created sources of inner strength and peace. In other words, isolation forced Japan to be self-reliant and made possible the development of indigenous enterprising talents.

Yet, in spite of all these, when Japan entered the year 1868, she was still in a state of economic backwardness. It was difficult to distinguish her from other economically backward Asian countries. But as noted earlier, underneath the appearance of underdevelopment the seeds of change were germinating in the heart of her feudal economy.

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[1] See, for example, W.W. Lockwood, The Economic Development of Japan, (Princeton: Princeton University Press, 1954), pp. 8-12.

CHAPTER II: MODERN JAPAN

The Meiji Restoration overthrew the Tokugawa Rule and paved the way for the emergence of Japan as a modern state through a variety of far-reaching changes and reforms.

The history of modern Japan can be divided into two eras -- one lies before World War II (A), and the other after the War (B). Indeed, some observers of Japanese economic history claim that it is only after World War II that Japan could be rightly called a modern state. While there is no doubt that after the War, the government, the economy, and the society underwent many dramatic changes, the period preceding the War was also notable for profoundly altering the pattern and pace of Japanese life. As best it could be said that the year 1868 is a turning point in the Japanese economic history. From this date Japan was set firmly on the road to modernization and industrial development.

A. Pre-World War II Era (1868-1940)

In considering the years before World War II, two distinctive sub-periods may be studied: (a) the period from the Meiji Restoration to the Russo-Japanese War, and (b), from the Russo-Japanese War to World War II.

a) From the Meiji Restoration to the End of the Russo-Japanese War (1868-1905)

The Meiji Restoration proved to be more than just a reshuffling of political influence. Rather it generated the momentum of

political change and of social and economic reform, which eventually carried far beyond the simple act of destroying the Shogunate. Feudalism was abolished, the lords were dispossessed, the samurai as a feudal warrior class was demolished, and social equality and freedom of individual movement promulgated.

The Meiji Restoration was neither a bourgeois nor a peasant revolution, although both of these features were found among the individuals who led the attack on the Shogunate. The leadership came chiefly from another source: from within the samurai class itself.[1] These leaders had been privileged uniformly by a high level of education and military skill as they had already served the lords as diplomatic advisors and/or organizers of new military units. They came to power with the skill necessary for the task of building a modern country on the basis of an industrial economy. The Restoration thus marked Japan's transition to modernity, and as such, it proved to be one of the vital events in Japan's history.

In the early years after the Restoration, the surplus funds that supported the government and built up the financial reserves, with which new industries developed, came chiefly from the agricultural sector. Later, the contribution of this sector to the development of Japan will be discussed in detail. However, at this point it is worth stating that the funds generated by this sector were used to build up

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[1] There are a number of modern examples of groups dislodged from their traditional privileged position, gradually re-emerging as leaders of a new dynamic modern sector. The Ibo tribe in Nigeria and the Brahmans in South India are two striking examples.

social overhead capital in the form of railroads, ports, irrigation canals, and to import technology for the establishment of industries such as cotton, textiles, and the manufacturing of military supplies and equipment. The role of government in the initial period of industrialization was very significant. In order to build up an industrial state which would be able to sustain itself, it was necessary for the Meiji government to participate directly in economic activities. Since it was felt the merchant capitalists had no experience in managing certain fields of industry, government had to take the initiative in building up railways, banks, insurance companies, a cotton spinning mill, a silk reeling mill, cement works, a glass factory, a brick factory and shipyards. Also, special attention was given to the organization and construction of military installations. Once the initialization procedure had been achieved, and the private sector was able to maintain the pace of industrialization and growth, these establishments were sold off to public at low prices. The one exception to this change in control was that the government remained active in heavy industries connected with armaments.[1]

Another surplus-generating activity was sericulture. Silk was an industry which had its roots in the traditional village economy; yet it served a growing international need. Between 1899 and 1905 Japan produced more than 15 million pounds of raw silk annually, becoming the

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[1] Maddison, op.cit., pp. 22-3.

world's largest producer of that commodity.

Next to silk was the cotton-spinning industry which eventually became Japan's second highly profitable industry.[1] With the introduction of mechanized cotton-spinning techniques, the Japanese quickly adapted their labour-structure to the requirement of the new form of industry. By moving large segments of surplus labour -- largely female -- into new factories, industrialization proceeded without undue disruption of the traditional economic base prevailing in rural areas.

From a political point of view, this period carried some significance. From 1894, Japan entered into a new phase of international relations, a phase which began with her war with China and ended eleven years later with a military victory over Russia (1905). The 1894-95 War with China marked Japan's coming of age in the eyes of the world. Japan was then able to protect her international security not only as a result of her dramatic political reorganization after 1868 and her skill in the diplomatic game, but with institutional and technological reforms such as: 1) the lifting of class and occupational restrictions, while placing a burden on the samurai class, 2) revision of the land tax,[2] and 3) establishment of a unified currency and banking system.[3] These combined to put Japan on a remarkable course of economic growth and provided her with the economic as well as political means of competition.

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1 Lockwood, op.cit., pp. 28-32.

2 See Chapter V, p.99 and pp. 119-20.

3 Lockwood, op.cit., p. 14.

Moreover, these wars required entire national determination, effort, and patriotic sacrifice, resulting not only in the development of a formidable military machine but also in the creation of a nation unified behind that machine and behind its government.

By the end of the Russo-Japanese War, Japan became a regional power in the true sense of the term. She was now justifiably called "Imperial Japan", possessing an empire consisting of Formosa -- acquired in 1895 -- and the Liaotung Peninsula -- acquired in 1905.

An overall economic view of this period is contained in Table 2-1. From 1878[1] to 1905, population, national income in real terms[2], total and secondary industry's gainfully occupied population grew at average annual rates of 0.9, 4.2, 1.1, and 4.7 percent, respectively.[3] In 1878-82, 36 percent of the national income originated from secondary and tertiary industries employing 18 percent of the total employment while in 1903-07 these figures reached to 55 and 33 percent respectively. The sectoral changes as such led to higher productivity of labor. Thus, from 1878 to 1905, both labor productivity and per capita national income increased by 126 and 63 percent respectively.[4]

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1 Data are available only since this date.

2 1928-32 prices.

3 These figures are calculated directly from K. Ohkawa, The Growth Rate of the Japanese Economy Since 1878, (Tokyo; Kinokuniya, 1957), Table 1, p. 140, Table 2, p. 145 and appendix, Table 4, p. 248.

4 These figures are calculated from Ohkawa, ibid., Table 1, p. 140 and appendix, Table 4, p. 248, Table 2, p. 145.

TABLE 2 -1.

POPULATION, EMPLOYMENT, NATIONAL INCOME, AND LABOR PRODUCTIVITY (1878-1937)
(FIVE YEAR AVERAGE), (1928-32 PRICES)

Period	Pop. (1,000) (a)	Gainfully occupied pop. distribution by industry				Real national income (NI) distribution by ind.				Labor part. rate b/a	Labor prod. (yen) c/b	Per capita NI (yen) c/a
		Prim.	Secd.	Tert.	Total (1,000) (b)	Prim.	Secd.	Tert.	Total (mill. yen*) (C)			
1878-82	36,911	82%	6%	12%	19,537	64%	11%	25%	1,424	53%	73	39
1883-87	38,437	79	7	14	21,156	54	14	32	1,808	55	85	47
1888-92	40,107	76	9	15	22,570	53	16	31	2,170	56	96	54
1893-97	41,894	73	10	17	23,762	50	19	31	2,887	57	121	69
1898-1902	44,154	70	12	18	24,761	47	21	32	3,727	56	151	84
1903-07	49,914	67	13	20	25,584	45	20	35	3,948	51	154	79
1908-12	49,727	63	15	22	26,166	42	21	37	4,897	53	187	98
1913-17	53,261	59	16	25	26,513	36	26	38	5,654	50	213	106
1918-22	56,146	55	17	28	27,147	34	25	41	7,212	48	266	128
1923-27	59,839	52	17	31	28,441	27	25	48	9,333	48	328	156
1928-32	64,234	50	17	33	29,263	21	27	52	12,389	46	423	193
1933-37	69,240	48	19	33	30,798	19	32	49	14,995	44	487	217

Source: Calculated from K. Ohkawa et al., The Growth Rate of the Japanese Economy Since 1878,

* The value of yen in this period varied within the range from one yen equal to $0.50 US (in 1920 --the first year for which data is available) to one yen equal to $0.29 US (in 1937).

Diminutives: Pop.=population; ind.=industry; part.=participation; prod.=productivity; Prim.=Primary; Secd.=Secondary; Tert.=Tertiary; mill.=million.

Therefore, it can be concluded that by the end of the Russo-Japanese War, Japan -- politically powerful in the region -- reached an economic level sufficient to be called a modern state.

b) From the End of the Russo-Japanese War to World War II (1905-37)[1]

The next distinctive period in the evolution of the Japanese economy extends from the end of the Russo-Japanese War until World War II. It includes the sub-periods: i) From the Russo-Japanese War to World War I (1905-1913), and ii) From World War I to the outbreak of World War II (1914-1937).

i) 1905-13

By 1905, as mentioned earlier, there existed evidence that Japan had begun to move into a new phase of economic development. By this time, more than half of Japan's exports were machine made, consisting of cotton yarn, cotton, and silk piece goods -- compared to 1868 when raw silk, and tea accounted for two-thirds of Japan's exports.[2] Tokyo, Osaka, Yokohama and Kobe became the centers of new heavy industries and growing commercial and financial combines. A period of industrialization was in the making.

Indeed, the Russo-Japanese War did not directly cause an industrial boom as did the previous war with China. But in due course, an industrial boom started with the construction of hydroelectric power

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1 This year is conventionally chosen because since 1937, Japan was involved in the war with China and World War II.

2 Maddison, op.cit., p. 27.

plants which produced large supplies of low cost energy and thereby laid the foundation of Japan's heavy industry. As such, industries like iron and steel began developing. The government-established Yawata Iron Work, by itself, produced 59 percent of the total pig iron consumption during 1906-1910.[1] By 1913, all locomotives operating at home were domestically produced. The development forces further penetrated into the mining industry; hence, the coal output rose from 0.8 million metric tons in 1880 (1877-84 average) to 22 million metric tons in 1914.[2]

Turning to Japan's international trade, the period was marked by sustained progress. Indeed, from 1880 to 1913 Japan's exports recorded an unprecedented rate of growth of 8.4 percent per year, unsurpassed by any other country in the world.[3] Furthermore, the share of exports in GNP increased from 3 to 13 percent during the same time.[4]

One of the policies of the government to promote industrialization was the provision of financial support to private industries. Among all supported industries, the shipping industry was subsidized the most. This was, of course, a deliberate government policy to help

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1 See S. Okita and T. Miki, "Treatment of Foreign Captial -- A Case Study for Japan", in Capital Movements and Economic Development, J.H. Adler, ed., (London: MacMillan, 1967), p. 150.

2 Maddison, op.cit., p. 24.

3 At constant prices, ibid., p. 28.

4 At constant prices, ibid., p. 28.

finance its rapidly expanding imports by means of building up earnings from this industry.[1] Through this support, during this sub-period, 60 percent of all ships owned by Japanese shipping companies were domestically produced.[2] And by the end of the period (1913) Japan ranked as the world's sixth largest merchant marine owner in terms of steam tonnage (1.5 million).[3]

Therefore, the main character of the period between the end of the Russo-Japanese War and the outbreak of World War I was the foundation, expansion of productive capacity, and hence the reduction of imports of some heavy industrial products.

ii) 1914-1937

From World War I to the years preceding World War II was a time of rapid growth. In fact, Japan grew faster than any of the industrialized countries during this period[4], obtaining momentum for such a growth from World War I.

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1 In spite of the impressive capacity to abstain from consumption and earnings from industries as such, for most of this period Japan was in need of capital. In this regard government borrowed overseas several times. This point will be extensively discussed in Chapter V.

2 Maddison, op.cit., p. 23.

3 In 1914, 57 percent of her trade was carried by her own merchant fleet, in contrast to India and China, where practically all international trade was carried by foreign shipping lines. See Maddison, ibid., p. 23, p. 29; and Lockwood, op.cit., p. 23.

4 Ibid., p. 35.

The events which occurred during World War I produced some positive economic results for Japan in the years that followed. Japan's co-operation with the Allied Powers did not generate physical damage or manpower loss. On the contrary, the War provided a stimulus which involved her deeply in the production of industrial import substitutes both for herself and other Asian markets where goods were no longer available as a result of the forceful withdrawals of trade from other sources.

In this process, her share in the textile market increased markedly. Cotton textiles developed as the chief industry and finished textile products made in Japan became highly competitive throughout Asia as well as in other markets of the world. In addition, her shipping lines were increasingly demanded as other normal supply lines were greatly restricted. All these activities resulted in the accumulation of vast reserves of foreign exchange for the country.

By the time Japan reached the year 1920, the targets she was to face were those of spreading industrialization, mass political participation, and increased world involvement. By the standards of that time, Japan was now a heavily urbanized society. The total population had reached more than 55 million.[1] Tokyo had grown to a large size, with over 2 million inhabitants, and Osaka to over 1 million.

But the Japan of the 1920's had to adjust herself to the following events: 1) the 1920-21 world recession; 2) a major earthquake

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[1] Ohkawa, op.cit., p. 141.

disaster; and 3) the 1927 financial panic of yen overvaluation which held back the exports and diminished her foreign exchange reserves.[1]

However, Japan managed to help the export activities made possible by a greater overvaluation of the (Indian) rupee and (British) sterling. So, she was able to penetrate into Great Britain's traditional markets, especially India. During 1932-33, Japan shared equally with the U.K. the Indian import market of cotton piece goods, as compared to 1913 when Japan's market share was 0.3 percent and that of the U.K. was 97.1 percent.[2] Moreover, by this time she was able to impose some discriminatory trade preferences in her own empire. Thus, through a combination of these factors, the value of export in real terms rose by 70 percent between 1929 and 1937 -- another achievement unmatched by any other country.[3] By 1937, exports of goods and services accounted for 27 percent of GNP; and by 1938, a high share (58 percent) of the Japanese exports were finished goods.

Toward the end of this period, the consumption share of GNP was about 60 percent; and the rest was absorbed by the government and private sector for investment. Hence, some more heavy industries like chemicals, metals and machinery, and large industrial units were added to the existing textile base. A great deal of demand for these products

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1 Okita & Miki, op.cit., p. 153.

2 Maddison, op.cit., p. 37.

3 On the contrary, during these years, France, Germany, the U.K. and the U.S.A. all suffered a fall in their exports. See Maddison, Ibid., p. 37.

was created by the government purchase, especially through military expansion policies (approximately 16 percent of GNP in the 1930's was spend on the military).[1]

Regarding the general functioning of the economy, figures in Table 2-1 disclose the following. From 1906 to 1938, annual rates of growth of population, the level of employment, and national income (in real terms) were 1.3, 0.6, and 4.6, respectively.[2] During the first five years (1903-07), 33 percent of the occupied population was employed in secondary and tertiary industries producing 55 percent of national income. Toward the end of the period, 52 percent of the occupied population was employed in secondary and tertiary industries producing 81 percent of the national income. During the same period, labor productivity rose 216 percent (Table 2-1).

The general view of the economy during the entire period from 1868 to World War II can be summarized as follows: During the first sub-period, Japan obtained modern capitalist institutions which, in turn, led to the impressive achievement of a growing economy unsurpassed by any other nation in the second sub-period.

B) Post-World War II Era

In considering the years after World War II, two distinctive periods may be studied: a) from World War II to the Korean War (1945-50),

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1 Ibid., p. 38.

2 See footnotes 3 and 4, p. 13.

and b) from the Korean War (1950-52) to the present.

a) From World War II to the Korean War (1945-50)

World War II is believed to have had the most devastating effect on the Japanese economy. It is estimated that Japan lost approximately 25 percent of her national wealth and 40 percent of her capital stock during this war.[1] Furthermore, she had a loss of 2.8 million of her inhabitants [2] and her major cities were destroyed by conventional as well as atomic bombs. Internal transportation was disrupted, and the ocean-going fleet was wiped out -- some had been sunk and the rest were damaged so heavily as to be inoperable. Former colonial possessions and overseas investments had been stripped away; assured sources of raw material and captive markets had gone. In their place several million repatriates flocked back to the Japanese homeland.

By the time Japan started to rebuild the economy she was under severe strain at her most vulnerable point: the importation of raw materials. The country's prospects of economic recovery looked bleak, indeed.

Japan became occupied, following her defeat and surrender. The calm way the Japanese people greeted the occupiers was astonishing. In the words of Hugh Patrick and Henry Rosovsky[3]: "...the Japanese proved extremely cooperative with the new authorities. There was no resistance

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1 H. Patrick & H. Rosovsky, "Japan's Economic Performance: An Overview", in Asia's New Giant, ed., (Washington, D.C.: The Brookings Institution, 1976), p. 9.

2 Patrick & Rosovsky, ibid.

3 Ibid.

and there were no violent incidents. Everyone joined in the effort to bring things back to a state of normalcy as quickly as possible."[1] 'The state of normalcy' was, in fact, different from what prevailed in the past. That is, the Occupation Authority brought some hard, restrictive, political and institutional reform under which the framework of the Japanese society underwent some changes. Among these were: i) land reform; ii) dissolution of the Zaibatsu[2] and abolition of monopolies; iii) trade union promotion; and iv) sharp curtailment in military expenditure to forestall any recrudescence of militarism.

i) The Land Reform

In order to democratize farming communities, the new government implemented a series of measures, known as "the land reform", designed to foster owner-farms. The reform greatly reduced the proportion of total property held as tenant-land and sharply increased the number of owner-farms. The land reform, hence, provided the foundation for the vitalization of Japanese agriculture which had been stagnating for some time.[3]

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1 Ibid.

2 Large business trusts generally vertically organized through a number of industries and usually including their own financial arms. These diversified corporate entities had evolved in the pre-war years around a number of powerful families, and the family head reigned supreme over all Zaibatsu affairs.

3 This issue is discussed in detail in Chapter III.

ii) Dissolution of Zaibatsu

As these organizations played a dominant role in the Japanese economy before and during the War, the Occupation Authority was determined to drastically reduce their significance. A series of steps were taken which included the freezing of the assets of companies affiliated with Mitsui, Mitsubishi, and other Zaibatsu; compulsory transfer of stock owned by Zaibatsu holding companies and Zaibatsu families; and also a ban on the Zaibatsu family members' assumption of directorships in affiliated companies. During the occupation, however, the personnel running these firms co-operated informally as they were still mostly loyal to their old organizations. Maintaining the business in this way led the Zaibatsu reform to reverse, as soon as the occupation ended.

Essentially, the Zaibatsu remain an important economic factor, although, in terms of ownership, having broadly dispersed their domain.[1]

iii) Trade Union Promotion

Shortly after the War, by implementation of the Labor Union Law Japanese workers' right to organize themselves was guaranteed. By 1948, union membership rose to 6.7 million compared to 420,000 in 1936, which at that time was the peak pre-War membership.[2] But, since the unions were militant and some were under communist influence,

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1 Maddison, op.cit., p. 48.

2 Ibid.

this policy was short-lived as the Occupation Authority themselves initiated a reverse course. So membership conditions became stringent. However, workers' conditions greatly improved through these actions and counter-actions.

iv) Curtailment in Military Expenditures

The most prolonged change introduced and imposed was that of the tremendous curtailment in military forces and expenditures. In the short-term, it left Japan with a high productive capacity[1] which had no immediate peace-time use. Yet, in the long-run, it was beneficial as it freed resources for Japan to mount a very high investment effort.

The combination of military defeat, occupation, and the urgent desire of the Japanese for reform and reconstruction turned the post-War era into another period of headlong changes. The upheaval which followed Japan's first modern defeat was probably as significant as that of the Meiji Restoration. There are those who claim that only after World War II could Japan be said to have become truly modern. And indeed, changes in government, economic, and social conditions after World War II were of such scope and variety that they clearly marked the beginning of a new era in Japanese economic history.

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[1] In spite of tremendous human and capital loss during World War II.

b) From the Korean War to the Present

The devastation and disruption of World War II created massive problems of rehabilitation for the Japanese nation, and it was not until after 1952 by the end of the occupation that the economy again attained its prewar level of production. Yet, while figures were comparable on an aggregate basis, it was clear that the Japanese economy was qualitatively quite different in 1952 from what it had been during the 1930's and 1940's. The serious dislocation which the War brought to the normal pattern of production and consumption, the frantic attempt of the government to tamper with and then patch the economic machinery, and finally the demands of the Korean War all had had their effects.

Under the supervision of the Occupation Authority, an astonishing recovery process started in Japan.[1] However, it was the outbreak of the Korean War which accelerated the process in a manner such that the Japanese economy grew at a rate unparalleled to other nations.

A number of factors may be said to be responsible for such an economic growth. Wartime devastation had reduced the economy to such an extremely low level that the recovery process necessarily involved a high rate of capital accumulation;[2] this made possible the

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1 The development process of this period, specially the policies persued by the U.S.A. in giving Japan financial and advisory assistance is discussed in Chapter V.

2 For a detailed account of this issue see Chapter V.

introduction of advanced foreign technology; besides, it made funds available for research and innovations; and the plentiful supply of educated labor was pressed into service to achieve rapid production expansion. The upshot of these processes was a phenomenal rate of growth.

By 1952 the Japanese economy, as a whole, appeared to be fully recovered from the effects of the War. Japan, no longer dependent on special financial supports from the United States but assured of military protection under the provision of the Security Treaties (signed on September 8, 1951 and February 28, 1952 between the United States and Japan), and freed from crippling military expenditures, began to emerge as a major world power as well as America's counter-revolutionary ally in East Asia.

Since 1952 the new Japanese economy has expanded at a rate literally unmatched by that of any other major country. "The new capitalism" as W.W. Lockwood called it, as far back as 1965,[1] possesses certain distinctive features which distinguish it from the prewar, and particularly the wartime economy. Perhaps the most apparent evidence to the casual observer is the obvious rise in the general standard of living and level of consumption. Clearly "the new capitalism", based on a vigorous and expanding "private economy" -- "private economy" in

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[1] W.W. Lockwood, "Japan's New Capitalism", in The State and Economic Enterprise in Japan, (Princeton: Princeton University Press, 1965).

the peculiar Japanese sense[1] -- is able to sustain its growth without the supports or distortions which had characterized the period up to the end of the Occupation.

More specifically, some indices of the Japanese economic performance in the period after 1952 include a high annual rate of growth of income, an increase in the level of employment, and a marked increase in the productivity of labor. A continuous rise in national income at a rate of 8.1 percent between 1952 and 1976 resulted in a five-fold increase in output during the period (see Appendix I, Table 1). The level of employment grew at an average annual rate of 1.4 percent accompanied by a 6.7 percent rate of growth of labor productivity during the period.

However, shortly after Independence, the Japanese economy ran into a serious foreign currency shortage. The sharp dwindling of foreign currency holdings led Japan to turn to the International Monetary Fund (IMF) for the first loan. The reserve crisis can be traced to the internationally high level of Japanese product prices that emerged in

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[1] Norman Marca writes that "First the Japanese like to say that theirs is an unplanned economy. But in our Western terms it isn't...It is, ...the most intelligently dirigiste system in the world today. The ultimate responsibility for industrial planning, for deciding in which new directions Japan's burgeoning industrial effort should try to go, and for fostering and protection business as it moves in those directions lies with the government." See "The Risen Sun", The Economist, (May 27, 1967). See, also, B. Higgins, Economic Development: Principles, Problems and Policies, (London: Constable & Co. Ltd., 1959, Revised edition), pp. 631-33. Elsewhere , it has been mentioned that: "...over 90 percent of all government activity was devoted directly to looking after business." See J. Halliday and G. McCormack, Japanese Capitalism Today, (New York, London: Monthly Review Press, 1973), p. 165.

the wake of the Korean War boom timed with the worldwide slump, and the increased import of food to make up for poor harvests at home. Eventually the crisis was overcome by a severe tightening of monetary measures, based on the balance of payments status aimed at maintaining the exchange rate of 360 yen to the dollar. This was to be the base of economic administration for years to come.

It was apparent that if the economy was to overcome its internationally high price levels and attain the capacity to sustain itself, the only fundamental answer was to elevate the productivity of the national economy as a whole and thus to lower production costs. To this end, the lag in industrial technology development created during and after the War years had to be eliminated and production facilities had to be modernized. Therefore a series of programs aimed at modernizing key industries was launched during the 1950's and was greatly supported by legal, financial and tax privileges.[1] During this phase, from 1952 to 1955, labour productivity and national income grew at an average annual rate of 4.5 and 7.7 percent, respectively.

Waves of innovations swept through the economy from the latter half of the 1950's by a rush of large scale investment leading to improved production process, the birth of new products and industries, modernization of transportation and communication, and new developments in the energy sector. The final result was increased labour productivity, and lower

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[1] A part of this subject is discussed in Chapter V; for a detailed analysis see for example, Patrick & Rosovsky, op.cit., pp. 11-54.

production cost which, in turn, led to a large increase in Japan's exports by strengthening their competitive power. During this phase, from 1955 to 1960, the labour productivity and national income showed an average annual rate of growth of 6.6 and 8.4 percent, respectively. These figures were 2.1 and 0.7 percent greater than those for similar indicators in the previous phase.

From 1960, a new economic environment emerged in which Japan increased her industrial competitiveness with her strong productive economy. One characteristic of this phase was that economic planning came to assume the nature of policy guidelines for the government. A plan known as income-doubling was conceived which was set to double the nation's income from 1960 to 1970. Actually, the idea of income doubling itself had come to the minds of policy makers sometime before in such concepts as wage-doubling or monthly-income-doubling. But it was in 1960 that the idea was finally incorporated in an economic plan. The actual performance of the economy through 1970, the target year of the income-doubling plan, averaged 9.6 percent in real annual national income growth, considerably better than 7.8 percent envisaged by the plan. Along with the growth of income, the Consumer Price Index (CPI) also increased at an annual average rate of 5.7 percent.[1] But the high tempo economic growth was beyond doubt.

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[1] Such an increase in CPI against the essential stability of wholesale prices is marked as Japan's unique pattern of price trends. (See Table 4-5).

What makes the better-than-predicted economic performance more impressive is that half way through the plan, Japan was faced with a severe down-turn which is remembered as the "1965 recession". In character, it was a recession of off-cycle fluctuation in plant and equipment investment, and it created an atmosphere of credit anxiety.[1]

The first task was to prevent the recession from gaining momentum. Ever since the "Dodge line" (discussed later) the philosophy of a balanced budget had been upheld as a rule that should never be bent or broken. However, in view of the severity of the recession, policy makers felt that the important target was not short-range financial balance but long-range equilibrium in the economy. So, a radical switch of policy in favor of deficit financing was introduced. For the first time in the postwar period fiscal policy was restored to a position of prime importance in economic administration. Finally, the program to counter the recession worked swiftly both in terms of actual economic activity and economic psychology.

After the "1965 recession", the economy moved into another boom phase. One important factor was that the country's balance of payments, which had basically swung toward a surplus from 1968 (see Table 5-6) ceased to work as a cyclical disturbance to the mechanism of high tempo growth.

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[1] G. Ackley & H. Ishi, "Fiscal, Monetary, and Related Policies", in Asia's New Giant.

The boom phase, however, came to a halt in 1970, ushering in a phase of disturbance which has continued to the present. As the 1970's unfolded, the distortions of high growth loomed large on the domestic scene. The pattern of national performance began a moderate shift from total commitment to growth to a policy that combined growth with concern for such social goals as environmental protection, safety of life, and social security.[1] Developments on the international front further forced Japan to reconsider its course of high growth. Global inflation and the oil crisis of 1973 had a decisive impact in this regard. The oil crisis touched off a sudden transfer of wealth to the oil producing countries with resulting balance of payment difficulties and worsened stagflation in industrialized economies. All these shook the traditional order of the international economy to its very roots.

The Japanese economy, which is particularly vulnerable to the shortage in energy supplies (as is clear by figures in Tables 2-2 and 2-3), was rent by dramatic price increases. Economic policy was successful in containing inflation as well as in maintaining the trade balance at a sizable surplus (see Table 5-6). However, in doing so, Japan was confronted with the most serious recession in her postwar history. The recession was most severe due to the prolonged application of fiscal policy designed to contain aggregate demand. Real GNP registered a negative rate of growth in 1974 and industrial production fell very

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[1] This subject is discussed in detail in Appendix II

TABLE 2-2 . JAPAN'S IMPORT DEPENDENCE OF CRUDE PETROLEUM & NATURAL GAS (1960-73).

	Crude Petroleum		Natural Gas	
Year	Total demand (million kilo liter)	Degree of dependency* %	Total demand (million cubic meter)	Degree of dependency %
1960	35.2	98.6	773	0.0
1965	91.5	99.5	1,736	0.0
1970	204.1	99.7	3,662	34.8
1973	285.6	99.7	5,672	55.9

Source: Statistical Survey of Japan's Economy, (Ministry of Foreign Affairs, 1975), p. 29.

* Note: Degree of dependency is defined as the ratio of total export to total consumption.

TABLE 2-3

PRODUCTION AND CONSUMPTION OF ENERGY IN 1973, SELECTED COUNTRIES (MILLION METRIC TONS OF COAL EQUIVALENT, AND KILOGRAMMES PER CAPITA).

Country	Production (1)	Consumption			Per capita consumption (5)	Degree of self sufficiency % [2] (1)/(2)
		Total (2)	Liquid fuel [1] (3)	Natural gas [1] (4)		
Japan	39.73	390.20	250.28	5.51	3,601	10
Autralia	96.88	78.22	33.40	4.25	5,956	124
Canada	285.35	248.01	114.92	72.50	11,237	115
France	47.94	228.99	142.45	21.35	4,389	21
W. Germany	176.30	358.94	173.40	31.20	5,792	49
Italy	28.09	150.25	114.07	20.57	2,737	19
Netherlands	98.14	81.84	27.30	44.78	6,090	120
U. K.	175.00	323.91	139.48	36.57	5,778	54
U. S. A.	2052.26	2576.44	1035.89	872.21	11,960	81
U. S. S. R.	374.30	230.44	398.74	302.85	4,927	112

Source: Statistical Survey of Japan's Economy (Ministry of Foreign Affairs, 1975), p. 28.

Note: [1] Figures for 1972.

[2] Degree of self-sufficiency is defined as the ratio of total domestic production to total domestic consumption.

sharply (see Appendix I, Table I). The general view of the economy led to a large decline in capital formation (discussed in Part II). And, in fact, not only did gross domestic capital formation decline in absolute terms, but it also declined in relation to GNP, from 40.7 percent in 1973 to 37.3 in 1974.[1] Additional reasons for the large decline in industrial production were a considerable rise in the prices of raw materials, the provision of employment adjustment grants to firms, and large accumulation of inventories; all combined to make it easier for firms to cut down industrial production from the point of view of the profit-loss account.

In recent times, public works expenditure have been again on the increase and business has shown a strong tendency to raise prices. Therefore, if the Japanese nation is to restore orderly growth, a substantial expansion of production will be necessary if inflation is not to be reignited.

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[1] Statistical Survey of Japan's Economy, 1975. (Japan: Ministry of Foreign Affairs).

PART TWO

FACTORS FOR ECONOMIC DEVELOPMENT

A combination of various factors can explain the rapid growth of the Japanese economy since the Meiji Restoration. Different studies suggest different factors (or groups of factors). William Lockwood[1], for example, suggests: technology, capital, foreign trade, and structural changes. According to Angus Maddison[2] the contributing factors are: technical assistance from abroad, education, diffusion and development of an appropriate agricultural technology, industrial structure and industrial technology appropriate to a labor surplus situation, research, foreign trade, and investment. Edward Denison and William Chung[3], in dealing with the period after the Second World War, emphasize the role of factor input (capital and labor) on the one hand; and the role of advances in technological and managerial knowledge, better allocation of resources, and economies of scale on the other.

Studies are numerous[4], each applying a model which is, or may look different from the others. Nevertheless, all of them have in common

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1 W.W.Lockwood, The Economic Development of Japan. op. cit.

2 A. Maddison, "Japanese Economic Performance", Banca Nazionale del Lavoro Quarterly Review, (December 1965), 299-354.

3 E.F.Denison and W.K.Chung, How Japan's Economy Grew So Fast: The Sources of Postwar Expansion, (Washington, D.C.: The Brookings Institution, 1976).

4 In addition to three studies above see also S. Okita, Causes and Problems of Rapid Growth in Postwar Japan, (Japan Economic Research Center, 1967); and G.C.Allen, "The Causes of Japan's Economic Growth", The Three Banks Review, No. 55, (1962), 3-21.

several factors of major importance for the phenomenally rapid growth of the Japanese economy: a high rate of capital accumulation, and the peculiar characteristics of Japan's labor market. Furthermore, the significance of the agricultural sector at the outset of modernization has been emphasized by many of these studies.[1] This is because this sector played a very dynamic role in the early stages of modernization. It was through the expansion of this sector[2] that labor found sufficient opportunities to work, and adequate surplus was generated to support other sectors of the economy.[3]

Aside from different models applied to explain the growth, there does not seem to exist any major controversy in respect to sources of growth except for the influence of foreign trade. To clarify, there is a widely prevailing view[4] that Japan's poor natural resources and strong population pressure have created a situation in which foreign trade has

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[1] See references in the footnotes to Chapter III.

[2] This expansion took place through modest but pervasive innovations that required no radical departure from traditional modes of production (discussed in Chapter III).

[3] See Chapter V for transfer of surplus from agricultural sector to non-agricultural sector.

[4] Indicated by works such as: A.Maddison, "Japanese Economic Performance"; G.C.Allen, "The Causes of Japan's Economic Growth"; L.Hollerman,"Foreign Trade in Japan's Economic Transition"; in I.Frank, ed., The Japanese Economy in International Perspective, (Baltimore: The John Hopkins University, 1975), and also

K.K.Kurihara, The Growth Potential of the Japanese Economy, (Baltimore: The John Hopkins Press, 1971); T.R.Kershner, Japan's Foreign Trade, (Lexington, Mass.: D.C.Heath, 1975).

been paramount and the drive for foreign markets has been the prime mover of Japan's industrialization, but this is not borne out by the facts. It is true that during the 1920's and 1930's, when world trade was stagnant, Japan's export expansion appeared particularly spectacular, supported by its aggressive drive for foreign markets. However, the entire record of a century shows that the degree of Japan's dependence on foreign trade has been low (Appendix I, Table 2). Japan's rapid rate of trade expansion is not the result of a special drive for foreign markets but rather a natural outcome of her faster rate of industrialization as compared with Western Countries.[1]

This part therefore will shed some light on the role played by the vitality of the agricultural sector (Chapter III), special characteristics of the labor market (Chapter IV), and the rate and magnitude of investment (Chapter V). This does not, of course, imply the insignificance of other factors, and references are made to them where necessary.

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[1] Supporting this thesis are works such as: K. Ohkawa and H. Rosovsky, Japanese Economic Growth; E.F.Denison and W.K.Chung, How Japan's Economy Grew So Fast; L.B.Krause and S. Sekiguchi, "Japan and the World Economy", in H. Patrick and H. Rosovsky, eds., Asia's New Giant, A.Boltho, Japan - An Economic Survey (1953 - 1973); op. cit., W.W.Lockwood, The Economic Development of Japan; and A.Akamatsu, "A Theory of Unbalanced Growth in the World Economy", Weltwirtschaflliches Archive, Band 86, Heft 2, 1961.

CHAPTER III: SIGNIFICANCE OF AGRICULTURE

Specific attention is given in this chapter to the pattern of development of the agricultural sector and its contribution to the growth of the Japanese economy. Agriculture was a crucial factor which led to the economic breakthrough in the nineteenth century and created the ground for sustained rapid growth thereafter. The agricultural sector contributed to growth in the following directions: it supplied food; it earned foreign exchange; it was the source of capital and manpower; and thus it laid the ground for industrialization.

The pattern of agricultural progress, however, varied from time to time. During the Tokugawa period it is safe to assume that traditional agricultural technology had reached a level of production which was as high as that of any other area in East Asia.[1] When development began, agriculture was the least backward sector which required the least transformation.[2] During the Meiji Rule, the agricultural sector developed rapidly due to the availability of labor and un-utilized land, better irrigation and drainage facilities, superior seeds, better methods of crop cultivation, and increased input of manures and fertilizers. By the end of World War I, these simple methods, using little capital, had been fully exploited. With the slack taken up, and in the absence of institutional changes, further growth was retarded in the agricultural sector. This situation

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[1] T.C. Smith, The Agrarian Origin of Modern Japan, (Stanford, Cal.: Stanford University Press, 1959), pp. 87-107.

[2] H. Rosovsky, Capital Formation is Japan (1868-1940), (New York: The Free Press of Glencoe, 1961), p. 63.

lasted until the early post-World War II period. At this time, land reform accompanied by additional changes took place which eventually saved the sector from more retardation. At present, Japan still shares with the rest of East Asia an intensity of farming based on a large input of labor and small scale units. But the Japanese farmer with elaborate irrigation, heavy use of chemical fertilizer and mechanization has been able to modernize his farming practices to an extent still unknown in neighbouring countries.

In the above context, therefore, the pattern of development and the economic significance of the agricultural sector will be analysed in three periods: the first period, from the Meiji Restoration (1868) to the end of World War I (conventionally 1917); the second period, from the end of World War I to World War II (1940); and the third period from the end of World War II (1946) to the present.

A) First Period (1868 - 1917)

During this period, the area of arable land increased from 4,769 thousand hectares (in 1878 - 82) to 5,862 thousand hectares (in 1913 - 17), marking an annual rate of growth of 0.6 percent. Land productivity (defined as net output divided by amount of arable land) grew at an average annual rate of 1.8 percent (Table 3-1).

The agricultural labor force declined slightly from 15,573 thousand in 1878 - 82 to 14,613 thousand in 1913 - 17, which was a decrease at an average annual rate of 0.1 percent (Table 3-1).

The result was the growth of agricultural product. Throughout the years of first period the net agricultural output (defined as gross

TABLE 3-1. NET LABOUR AND LAND PRODUCTIVITY, 1878-1974[1]
(FIVE YEAR AVERAGE)

Periods	Agricultural labour force (1000)		Arable land (1000HA)		Labour[2] Productivity		Land[3] Productivity	
1st period: (1928-32 prices)								
1878-82	15573	-	4769	-	53.0	-	17.3	-
1883-87	15511	(-1%)	4556	(-4%)	60.2	(14%)	20.5	(18%)
1888-92	15466	(-1%)	4905	(8)	70.4	(17)	22.2	(8)
1893-97	15397	(-1)	5025	(2)	77.7	(10)	23.8	(7)
1898-02	15303	(-1)	5060	(1)	93.5	(20)	28.3	(19)
1903-07	15184	(-1)	5323	(5)	99.9	(7)	28.5	(1)
1908-12	14490	(-1)	5646	(6)	115.2	(15)	30.5	(7)
1913-17	14613	(+1)	5862	(4)	125.2	(9)	31.2	(2)
Average annual rate of growth		-.1		0.6		2.6		1.8
2nd period: (1928-32 prices)								
1918-22	14235	(-3%)	6021	(3)	137.2	(10)	32.8	(5)
1923-27	14103	(-1)	6016	(-1)	134.8	(-2)	31.6	(-4)
1928-32	14192	(1)	6016	(0)	148.6	(10)	35.5	(12)
1933-37	14414	(2)	6018	(7)	159.9	(8)	38.3	(2)
Average annual rate of growth		-.1		.4		1.3		.8
3rd period: (1951-55 prices)								
1946-50	17962	(-)	6491[4]	(-)	87.7	(-)	242.6	(-)
1951-55	17278	(-4%)	6321	(-3%)	74.5	(-15%)	203.8	(-16%)
1956-60	15428	(-11)	6063	(-4)	91.7	(23%)	231.1	(13)
1961-65	13074	(-15)	6054	(-1)	146.9	(60)	317.1	(37)
1966-70	10058	(-23)	5467	(-10)	246.9	(68)	454.0	(43)
1971-74	7370	(-27)	4748[5]	(-13)	294.6	(19)	457.0	(1)
Average annual rate of growth		-3.2		-1.2		6.5		3.2

Sources: Table 3-1; K. Ohkawa & H. Rosovsky, "The Role of Agriculture in Modern Japanese Economic Development", in Economic Development & Cultural Change, 9(1960/61), pp. 43-67; and FAO, FAO Production Yearbook.

Notes:
1. Figures in parenthesis are rates of change.
2. Calculated by dividing net agriculture product (Table 3-2) by agricultural labour force.
3. Calculated by dividing net agricultural product by arable land.
4. Figure for 1949.
5. Average of 1971-72.

output minus intermediate goods) grew at an average 2.5 percent per year, while the growth rate of gross output was even higher (Table 3-2). This growth was higher than the growth of population (1.1 percent per annum), so that agricultural output per capita increased.

The above discussion reveals that, for increasing the level of output, gain in the productivity of land and labor was more important than the expansion of the land and the extraction of labor from farms. The comparison also reveals that some improvement in land saving and labor-saving techniques was achieved during this period. With minor attention toward mechanization of the farms, these improvements required little fixed investment. This point needs further clarification.

The increase in output and productivity took place in the traditional pattern of rural organization inherited mainly from the Tokugawa period, a pattern which consisted of traditionally small family farms of about one hectare per household on the average, the transfer of high rent in kind from tenant to landlord, a regular supply of labor (equal to the natural increase of the farm population) from the agricultural to the industrial sector, and an extremely low expenditure for machinery and equipment.[1] There were two main factors responsible for improvements in agriculture. The first was land improvement, including better irrigation and drainage facilities and the reclamation of some arable land - mostly paddy rice fields. The second was the utilization of superior seeds, application of better methods of crop cultivation[2], and increased input

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1 R.P. Dore, Land Reform in Japan, (London: Oxford University Press, 1959) pp. 3-23.

2 This was mainly initiated by the government which provided instructors who travelled around the country offering guidance to the less experienced farmers. At the beginning some attempts were made in direct imitation

of manure and fertilizers. The latter group of technological advance did not require investment in fixed capital like machinery or livestock. Rather, increases in working captial, which were within the reach of the small family unit, accomplished the task.[1] The first group, however, required fixed capital investment that small farmers were unable to provide.[2] Part of this investment was provided by government as part of social overhead capital; and part of it was supplied by landlords. The incentive for landlords was that the rent was high and although in some cases it was nominally fixed over the period of one to five years, it tended to fluctuate in accordance with the yield and estimation of coming harvest.[3] A further stimulus was that the terms of trade between agricultural commodities and non-agricultural commodities remained virtually unchanged (Table 3-3).

The increase in agricultural output per capita also resulted in increased consumption as income rose. But a country like Japan, dependent on imports of essential raw materials, relied heavily on a

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of the Western technology by bringing in some foreign advisors. But soon after the new know-how proved unsuitable for many crops and many regions the government provided official encouragement for local initiative. After this date (1880) among the instructors there were more experienced Japanese farmers whose knowledge was mainly based on "what was good in the old" while "deliberately recorded and experimented in the conscious hope of making useful innovations". For these quotations as well as a good account of this issue see R.P. Dore, "Agricultural Improvement in Japan: 1870-1900", Economic Development and Cultural Change, 9 (October 1960), 69-91, pp. 69-75.

1 K. Ohkawa, and H. Rosovsky, "The Role of Agriculture in Modern Japanese Economic Development", Economic Development and Cultural Change, 9 (October 1960), 43-67, p. 50.

2 Although these activities were in major part labor-intensive as Rosovsky argues; see Rosovsky, op.cit., pp. 16-19. This argument, also emphasizes the role of capital in the agricultural sector as a minor factor.

3 Ibid., p. 51; and Smith, op.cit., p. 152.

TABLE 3-2

REAL DOMESTIC PRODUCTION IN AGRICULTURAL SECTOR ,1878 - 1974*, (in million yen)

Periods	Gross agricultural product		Net agricultural product	
1st.period(1928-32 prices)				
1878-82	961	(-)	825	(-)
1883-87	1088	(13%)	934	(13%)
1888-92	1349	(24)	1089	(17)
1893-97	1420	(5)	1196	(10)
1898-1902	1688	(19)	1432	(20)
1903-07	1842	(9)	1517	(6)
1908-12	2129	(16)	1722	(14)
1913-17	2306	(8)	1829	(6)
Average annual rate of growth :		(2.7)		(2.5)
2nd.period(1928-32 prices)				
1918-22	2517	(9)	1975	(8)
1923-27	2524	(0)	1901	(-4)
1928-32	2756	(9)	2109	(11)
1933-37	2985	(8)	2305	(9)
Average annual rate of growth :		(1.3)		(1.2)
3rd.period(1951-55 prices)				
1946-50	-	-	1575000	(-)
1951-55	-	-	1288000	(-18%)
1956-60	-	-	1401000	(9)
1961-65	-	-	1920000	(37)
1966-70	-	-	2482000	(29)
1971-74	-	-	2171000	(-13)
Average annual rate of growth :				(1.8)

Sources : Computed from K.Ohkawa,et.al. The Growth Rate of the Japanese Economy Since 1878 ,Part II, Tables 3,4,6,and Part IV, Table 6; and FAO, FAO Production Yearbook.

Note : * Figures in parantheses are rates of changes .

TABLE 3-3

TERMS OF TRADE BETWEEN AGRICULTURAL AND NON-AGRICULTURAL SECTOR (5 year average) (1878 - 1975)

Periods	Price index of agricultural commodities (1)	Price index of non-agricultural commodities (2)	Terms of trade (1)/(2)
1st. 1928-32=100			
1878-82	44	44	1.00
1883-87	30	33	.91
1888-92	34	34	1.00
1893-97	44	41	1.07
1898-1902	56	53	1.06
1903-07	66	63	1.05
1908-12	70	68	1.03
1913-17	77	82	.94
2nd. 1928-32=100			
1918-22	161	161	1.00
1923-27	155	140	1.11
1928-32	100	100	1.00
1933-37	109	134	.81
3rd. 1951-55=100			
1946-50	-	-	-
1951-55	100	100*	1.00
1956-60	114	111	1.03
1961-65	126	128	.98
1966-70	169	134	1.26
1971-75	224	152	1.47

Sources: For first two periods, Ohkawa ,et.al.,p.130; for the last period, FAO, FAO Production Yearbook .

Note : * Average of last three year .

domestic supply of agricultural produce. Up to around 1890 Japan was actually a net exporter of farm products.[1] For the rest of the period under consideration, Japan maintained a high degree of self-sufficiency for agricultural products.[2]

Aside from supporting economic development through sufficient supplies of labor and food, the agricultural sector provided a great part of the funds to finance other sectors of the economy. One means of transfer was the land tax which provided 86 percent of government revenue in 1888-92, 63 percent by the turn of the century, and even 38 percent during World War I.[3]

Japan was also a producer of some commercial crops like silk cocoons and tea leaves, both of which served domestic as well as international markets. These commercial crops -- particularly raw silk -- were important sources of foreign exchange for the country.[4]

B) Second Period (1917-1940)

The improvement based on traditional techniques reached its peak during World War I. Most farmers were already using greater quantities of fertilizer. Seeds had also reached a much higher level of quality. And although there was a government extension program to carry improved techniques to the farmers, it was not adequate to the needs of the situation. There was thus a need for introduction of new technology or other factors of production to maintain the rate of growth.

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1 Ohkawa & Rosovsky, op.cit., p. 47.

2 Ibid., p. 47; and W.W. Lockwood, The Economic Development of Japan, (Princeton, New Jersey: Princeton University Press, 1954), pp. 20-25.

3 For a detailed discussion see Chapter V.

4 Lockwood, op.cit., pp. 14-16.

This was a kind of knowledge which would have required more intensive consumption of capital, because land and labor utilization had already reached their peak. More intensive consumption of capital meant application of more machinery per unit of land. But there were many constraints. The units of production were small; the man-land ratio was unfavorable;[1] there was a growing tenancy among cultivators (30 percent at the beginning of the Meiji period[2] compared to 46 percent in 1941) -- (Table 3-6); rents were about 50 to 60 percent of the crop[3]; cheap colonial production was competing unfairly;[4] farm income was stagnating while industrial wages were rising; finally, the collapse of the silk market in the late 1920's was a serious blow to the farms. All these factors created more than 35 years of agricultural depression. Agriculture shifted from being a dynamic supporter of economic development

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[1] The size of the farm labor force and the area of arable land remained almost constant (Table 3-1); with population pressure and the inability of other sectors to absorb a greater share of the rural labor surplus, farms remained overcrowded; ibid, p. 59.

[2] Dore, Land Reform in Japan, p. 17.

[3] Ibid., p. 17.

[4] In 1918, the growing secular shortage of rice resulted in its retail price reaching a record high. The government had to embark on a massive import of rice (from Korea and Taiwan) in order to avoid domestic crises. But since the cost of production was lower in colonies largely due to the depressed standard of living, the competition greatly damaged the Japanese farmers. The situation later further deteriorated when a number of large harvests between 1927 and 1931 drove prices down to disastrously low levels. See ibid, p. 20 and pp. 68-9; Ohkawa & Rosovsky, op. cit., pp. 56-8; and Lockwood, The Economic Development of Japan, pp. 527-28, 555-6.

to a relatively passive position.

During this period, the amount of arable land remained almost constant while the labor force in agriculture moderately decreased (Table 3-1). The rates of change in the productivity of land (=0.8%) and labor (=1.3%) were slower in this period compared to 1.8 and 2.6 percent, for the first period. The output of the agricultural sector, however, continued to increase for the period, but the rate of acceleration decreased by 50 percent (Table 3-2).

The decrease in the growth rate of agricultural products, at a time when other sectors of the economy were growing at an increasing rate (see Table 3-4), resulted in reduction of the share of agriculture in national income. On the average the agricultural sector produced 51 percent of national income in the first period and 27 percent in the second (Table 3-5). Furthermore, in the second period population grew at an average annual rate of 1.3 percent (compared to 1.1 percent for the previous period), widening the gap which already existed between the demand for and the supply of agricultural products[1].

C) Third Period (1946 - Present)

After World War II, basic changes in the circumstances of farmers brought a solution. These changes created favorable situation for the consistently desired application of mechanized farming techniques. First, of the most important postwar changes which greatly affected Japanese farming was the land reform of 1946 that reduced the amount of tenanted

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[1] Ohkawa & Rosovsky, op. cit., p. 47.

TABLE 3-4
REAL NET NATIONAL OUTPUT PRODUCED BY THE INDUSTRIAL SECTOR[1] (1878-1917 & 1918-1942)
(1928-32 prices, in million yen)

Periods	Primary Industry[2]			Secondary Ind.[2]			Tertiary Ind.[2]			Total	
	Output		%	Output		%	Output		%		
1st.											
1978-82	909	(--)	64	147	(--)	10	368	(-)	26	1424	(--)
1883-87	974	(7%)	54	262	(78%)	14	572	(66%)	32	1808	(27%)
1888-92	1150	(18)	53	356	(36)	16	663	(16)	31	2170	(20)
1893-97	1467	(28)	51	528	(48)	18	892	(35)	31	2887	(33)
1898-1902	1757	(19)	47	793	(60)	21	1177	(32)	32	3727	(29)
1903-07	1791	(2)	45	803	(1)	21	1354	(15)	34	3948	(6)
1908-12	2040	(14)	42	1037	(29)	21	1820	(34)	37	4897	(24)
1913-17	2025	(-1)	36	1479	(43)	26	2150	(18)	38	5654	(15)
2nd.											
1918-22	2409	(19)	33	1826	(23)	26	2977	(38)	41	7217	(28)
1923-27	2551	(5)	27	2253	(23)	24	4529	(52)	49	9333	(29)
1928-32	2552	(0)	21	3373	(50)	27	6463	(42)	52	12389	(33)
1933-37	2862	(12)	19	4713	(40)	32	7420	(15)	49	14995	(21)
1938-42	3156	(10)	17	7050	(50)	37	8534	(15)	46	18740	(25)

Source: Computed from K. Ohkawa & H. Rosovsky, p.53

Notes: [1]Figures in paranthesis are rates of change.

[2]Primary industry consists of:agriculture, forestry, fishery, & hunting. Secondary ind. consists of: mining, manufacturing & construction. Tertiary industry consists of: wholesale and retail trades; banking, insurance and real estate; transportation, communication, and other public utilities; services; and public administration and defence. (As defined by Bureau of Statistics, Office of the Prime Minister, Japan.)

TABLE 3-5

SHARE OF AGRICULTURE IN NATIONAL INCOME
(5 year average, current million yen)
(1878-1974)

Periods	National income	Agricultural product	% share of agriculture in national income
1st.			
1878-82	667	431	65
1883-87	606	333	55
1888-92	808	460	57
1893-97	1,209	632	52
1898- 1902	1,978	959	48
1903-07	2,521	1,230	49
1908-12	3,366	1,501	45
1913-17	4,598	1,787	39
2nd.			
1918-22	11,384	4,062	36
1923-27	12,949	3,902	30
1928-32	12,132	2,756	23
1933-37	16,161	3,277	20
3rd.			
1946-50	1,882,000	548,000	29
1951-55	5,811,000	1,288,000	22
1956-60	10,005,000	1,592,000	16
1961-65	20,118,000	2,400,000	12
1966-70	42,175,000	4,091,000	10
1971-74	83,689,000	4,534,000	5

Sources: Table 3-4; Ohkawa et.al.,p.247, Table3 ;FAO, FAO,Production Yearbook .

Note: The striking difference between 1933-37 and 1946-50 for the values of national income and agricultural products is mainly due to unprecedented inflation - i.e., the rate of increase of general price level in the post-war period was roughly more than 300 times the pre-war base . Besides,one must bear in mind that the drastic changes and disorder during and immediately after the war make a cotinuous observation throughout the pre- and post-war periods a very difficult task . For further problems related to measurement see ibid., pp.231-37

land in Japan from 40 percent in 1947 to 10 percent in 1950[1] (Table 3.6). Tenancy had expanded during the Meiji era when rice prices were low and many farmers were forced to sell their land to meet high taxes. The land was bought by professional people and industrialists as a stable investment, who in turn leased it out at very high rent. As a result, unrest had grown among the farmers and the Japanese were already feeling their way towards land reform when the Supreme Commander of Allied Powers issued an edict that this was to be done. A bill was framed by the Japanese government providing that no farmer could own more than 2.5 acres[2] (30 acres in Hokkaido), thus limiting the size of holdings to a very small area. The excess land was transferred to tenants, with government acting as the middleman, payments were made in bonds bearing 3.2 percent interest and redeemable over a period of thirty years. But, postwar inflation reduced the value of the bonds and raised farm prices. Thus most of the farmers paid off their debts in two years.

New owner farmers, with no rent to pay, had been able to invest in machinery, improved irrigation and drainage and fertilizer as well as spend more on consumer goods. Simultaneously the government, following a pre-war policy of providing guidance for farmers, established agricultural research stations. These were to improve farm technology toward a better understanding of soils, crops, fertilizers, pesticides, and toward bettering hygienic conditions.

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1 Discussion on "Land Reform" in this paragraph is based on Dore, Land Reform in Japan, pp. 16-20, pp. 129-48, pp. 174-98.

2 2.5 acres is almost equal to one hectare; therefore the land reform officially stabilized the size of holdings to what it had been (on average) in the first period.

TABLE 3-6

OWNERSHIP AND TENANCY OF CULTIVATED LAND

(RICE AND UPLAND)

Period	Owner-cultivated land, 1000 'schō	%	Tenant-cultivated land, 1000 'schō	%	Total*
1941	3,178	54	2,689	46	5,869
1947	3,031	60	1,981	40	5,012
1950	4,676	90	514	10	5,200

Source : calculated from : R.P.Dore, Land Reform in Japan , Table 8 , p. 175 .

Note : * Totals do not add owing to the specification of a small amount of land neither tenant nor owner cultivated .

Second, as a result of the destruction of industry and food shortages immediately after the War, there was a vast back-flow of population to the rural districts; but with a short delay, a reverse flow was established, which was due to expanding alternative employment opportunities[1] (Table 3-1). Decline in agricultural labor force provided a rapid increase in the land-labor ratio during the post-war period - at an average annual rate of 2.5 percent[2]. This rate was achieved in spite of a decline of arable land at an average annual rate of 1.2 percent; because agricultural labor force declined more rapidly at average annual rate of 3.2 percent (Table 3-1). But in spite of these changes, Japanese small farms have been very labor intensive. As Table 3-7 indicates, in terms of labor intensity Japanese agriculture could be categorized in a group consisting of the developing countries like Sri-lanka, Egypt, China, and South Korea. However, this labor intensive agriculture is mechanized to such a degree that Japan, in terms of tractors per unit of land surpasses the U.S.S.R., Canada, and the U.S.A.[3] In this respect she resembles countries like France and Italy[4].

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[1] Discussed in Chapter IV.

[2] Calculated from Table 3-1.

[3] One should bear in mind that data as gathered in Table 3-7 may not be internationally quite comparable due to different kind of technology used in each country; for example, different type and size of tractors, and different practices such as double cropping, and co-operatives, etc.

[4] Needless to say, in terms of tractors per unit of labor the developed countries of Canada, U.S.A., West Germany, France, and Italy have far higher ratios.

TABLE 3-7

INTENSITY OF LABOR AND TRACTORS IN AGRICULTURE (1961-75)

Countries	Man-land ratio per 100 HA[1] arable land (1)			No. of tractors per 10,000 HA arable land (2)			Intensity of agr. tractors: agr. labour force/ no. of tractors in use (3)		
	'61-65	70	75	'61-65	70	75	'61-65	70	75
Japan	219	182	151	32	484	628	684	38	24
Brazil	42	40	40	23	28	69	183	143	58
Canada	2	2	1	135	145	145	1	1	1
China	202	196	195	6	9	15	3,367	2,178	1,300
Columbia	49	49	48	48	55	61	102	89	79
Cuba	49	30	25	100	138	176	49	22	14
Egypt	184	178	192	53	62	75	347	287	256
France	17	15	13	414	650	725	4	2	2
Germany-Fed.	34	25	19	1,249	1,697	1,789	3	1	1
India	88	92	96	2	4	14	4,400	2,300	686
Israel	27	25	23	230	404	502	12	6	5
Italy	33	25	25	222	412	665	15	6	4
Korea-Rep.	263	240	235	0,1	0.5	2	263,000	48,000	11,750
Phillipines	103	105	99	7	8	8	1,471	1,313	1,238
Sri-Lanka	121	117	130	40	40	79	303	293	165
U.S.A.	2	2	1	263	238	196	1	1	1
U.S.S.R.	17	13	11	62	85	100	27	15	11
Yugoslavia	59	56	53	51	81	280	116	69	19
Developing Far East	96	99	103	3	4	13	3,200	2,475	792

Source: FAO, Production Yearbook, 1972-76

Note: [1]HA = Hectare (one hectare = 2,47 acres)

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Source: FAO, Production Yearbook, 1972-76

Note: [1]HA = Hectare (one hectare = 2,47 acres)

Finally, another important factor facilitating the application of recently advanced methods in agriculture was the shift of terms of trade, between prices received and paid by the farmers, in favor of farmers (Table 3.8). That is, input materials including machinery, were available to farmers under favourable price conditions. Simultaneously, the market for output was becoming even more attractive. As inferred later, this advantage was provided by government actions on behalf of the farmers.

The importance of these changes is reflected in increased productivity of land and labor. Labor productivity, which had grown at an annual rate of 2.6 percent in the first period and only 1.3 percent in the second, grew 6.5 percent a year in the third period. The same trend holds true for land productivity; it grew 1.8 percent, 1.0 percent, and 3.2 percent for these periods, respectively (Table 3.1). Net agricultural product showed annual percentage growth rates of 2.5, 1.2, and 1.8 in the three consecutive periods (Table 3.2), illustrating a similar trend in productivity. A closer look at Table 3.2, however, suggests that the trend in agricultural production was reversed in the 1971-74 sub-period, as the labor force migrated out of rural sector at an unprecedented rate and some farms became the sites of industrial plants. The decrease of agricultural product indicated that the increase in land and labor productivity was not high enough to offset the reduction in these two factor inputs.

In general, as industry has been developing more rapidly farming has become relatively less important in the Japanese economy. At the beginning of this period, farms managed to provide job-opportunities for

TABLE 3-8

INDEX NUMBERS OF PRICE RECEIVED AND PAID BY FARMERS (1951 - 75)

(Five year average, 1951-55=100)

Period	Received (1)	Paid (2)	Ratio (1)/(2)
1951-55	100	100	100
1956-60	102	105	97
1961-65	144	121	119
1966-70	204	151	135
1971-75	278	210	132

Sources : Calculated from FAO, Monthly Bulletin of Agriculture and Economic Statistics ; and FAO , Production Yearbook .

51 percent of the total labor force[1], producing 29 percent of national income; in more recent years they only gave employment to 14 percent of the labor force and supplied only 5 percent of national output (see Table 3.5 and 3.9).

In spite of such a decline, Japan's agriculture has successfully kept pace with the demand of modernization[2]. Despite the scarcity of arable land, Japan's five million hectares cultivated area produces rice in excess of the demand of the large domestic market; not only that, it also produces 40 percent of other principal food products' demanded[3], while the rate for general agriculture foodstuffs amounts to 74 percent[4]. So far, Japanese farming has applied great inventiveness and effort to make the most of its natural potentialities. Probably no form of agriculture is more intensive than that which grows two or three crops of rice on a single field.[5] Japan has specialized in food crops - scarcity of productive land and large and expanding population requires that the land produces

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1 Although some of it took the form of under-employment as discussed in Chapter IV.

2 In this period, the net contribution of this sector to others has been positive, see K. Ohkawa and B.F. Johnston, "The Transferability of the Japanese Pattern of Modernizing Traditional Agriculture", in Erik Thorbecke, ed., The Role of Agriculture in Economic Development, (New York: National Bureau of Economic Research, 1969), p. 278.

3 Calculated from M.D.Bale, and B.L. Greenshields, "Japanese Agricultural Distortions and Their Welfare Value", American Journal of Agricultural Economics, 60(February 1978), 59-64, p. 60.

4 Statistical Handbook of Japan, (Bureau of Statistics, Office of the Prime Minister, June 1977), p. 31.

5 As long ago as the Tokugawa period, double or tripple cropping had been one of the techniques to intensify the land use (Rosovsky, Capital Formation in Japan, p. 61). However, one should not overstate the degree of such practice - only for some parts of Japan do environmental conditions permit the practice. For example, from 1903 to 1922 around 30 percent

TABLE 3-9

SHARE OF AGRICULTURAL LABOR FORCE IN TOTAL LABOR FORCE , (1878- 1975)
(five year average, 1,000's)

Periods	Total (1)	agricultural (2)	(2)/(1)%
1st.			
1878-82	19537	15573	79
1883-87	21156	15511	73
1888-92	22570	15466	69
1893-97	23762	15397	65
1898-1902	24761	15303	62
1903-07	25584	15184	59
1908-12	26166	14490	55
1913-17	26513	14613	55
2nd.			
1918-22	27147	14235	52
1923-27	28441	14103	50
1928-32	29263	14192	48
1933-37	30798	14414	47
3rd.			
1946-50	35548	17962	51
1951-55	38784	17278	45
1956-60	43256	15428	36
1961-65	46252	13074	28
1966-70	49806	10058	20
1971-75	51934	7218	14

Sources: Ohkawa et.al.,op.cit.; and ILO, Yearbook of Labour Statistics .

Note : * Owner cultivators are part of the agricultural labor force (source :" The 1960 World Census of Agriculture, Japan", FAO,Monthly Bulletin of Agriculture and Economics .

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of paddy fields had grown a second crop, J.I.Nakamura, "Growth of Japanese Agriculture" in W.W.Lockwood, ed., The State and Economic Enterprise in Japan, (Princeton: Princeton University Press, 1965), p. 269. Present percentages are not known due to incomplete information.

maximum calories per unit. For this reason, industrial crops are not an important part of the pattern and industrial raw material which might be produced at home are mostly imported. In 1975, for example, Japan imported total domestic demand for wool and raw cotton, and 64.2 percent for lumber.[1]

The present record of food production and of self-sufficiency could not have been achieved without a heavy government protection by measures of tariffs and subsidies, (with world surplus sold in the world market at considerably lower levels; for example, something as much as 50 percent lower in the United States[2]). Farm size and poor soil make the economic use of labor difficult and do not permit a desirable growth of productivity, which in turn increases the cost of Japanese farm products. The high cost of production has resulted in high prices for agricultural products which, in turn, have contributed to an increase in the consumer price index. In this regard, the ceiling on land holding instituted by the land reform was modified in 1962 to allow larger, more efficient farms to develop. This has not been, however, a very effective measure because a fear of growing tenancy has not allowed for an efficient increase in the farm size.[3]

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1 White Paper on the International Trade, 1978, (Japan Ministry of International Trade and Industry, October 1978), p. 27.

2 Bale and Greenshields, "Japanese Agricultural Distortions ..." p. 60.

3 In 1976, average size of holding was 1.1 hectare per household, Statistical Handbook of Japan, 1977, p. 31.

There are arguments against the protection of domestic farmers[1], but a vote-oriented farm support policy does not permit liberalization[2]. Apparently, the policy will go on because the Japanese government is undertaking an ambitious "Co-ordinated National Food Supply Program" in an attempt to increase food self-sufficiency over the next decade[3]. In other words, the Japanese government has embarked on a program to feed the population on more expensive domestic-produced food for the protection of domestic farmers.

Summary

Until the end of the last century, agriculture remained the backbone of Japan's economic life. It produced 55.4 percent of net national product and provided employment for 69.6 percent of the total labor force on average. It was a growing sector, relying for its growth on increased intensity of use of land and labor rather than through any change in traditional small-scale organization of production.

This period of fairly rapid growth was followed after the end of World War I by a period of consolidation and moderate growth. In the years following World War II, the spectacular growth of the industrial sector provoked some significant changes in the agricultural sector. The

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1 Bale and Greenshields (ibid.,) argue that the welfare cost (or net social loss) has been positive. Also see,K.K.Kurihara, The Growth Potential of the Japanese Economy, (Baltimore and London: The Johns Hopkins Press, 1971), p. 16 & 57.

2 To give some indications, the maximum differential in the weight of urban/rural vote is 5:1; and fifty percent of Diet members represent rural constituencies (see Halliday and McCormak, Japanese Imperialism Today, pp. 170-71.)

3 Bale and Greenshields, "Japanese Agricultural Distortions...", p. 60.

most important of these changes was the tremendous outflow of the farm population to the industrial centers resulting in the wide use of machinery in agriculture. However, due to the determination of the Japanese people to preserve, to the extent possible, the traditional values and non-economic benefits inherent in a large rural population, the institutional framework of small-scale and labor intensive agriculture has been retained. This has resulted in a high cost of production and a perennial dependence of the agricultural sector on a protected home market.

CHAPTER IV

ROLE OF LABOR

The role of labor in Japanese economic development merits a systematic and separate examination. There are three areas of interest in the structure of labor market in Japan:

A) The interaction between supply and demand - abundant supply at the outset and scarcity at present.

B) Education and quality of Japan's labor force.

C) Industrial relations.

Section A deals with the quantitative analysis of Japan's labor market. In the early part of Japan's development labor was in abundant supply. But this situation gradually changed in the course of high rate of economic expansion; with the result that labor scarcity has been one of the problems that Japan has had to deal with in recent years.

Section B tries to explain that most of the qualities of the Japanese labor force -- well-disciplined, skilled, and hard-working -- are mainly related to the kind and amount of education that went on in the Japanese schools. Japan possesses one of the most educated labor force in the world. Therefore part of the phenomenal growth is explained by the education factor.[1]

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[1] For a good account of the existance of positive relationship between education and economic growth see E.F.Denison, Why Growth Rates Differ, (Washington D.C.: The Brookings Institution, 1967), pp. 78-80. See also R.P.Dore's studies as cited in the footnotes to the above section.

Finally, section C will make an attempt to discuss how Japanese industrial relations have contributed to the stability of employment within Japanese firms; and in this way to the growth of the economy.

A) Labor: From Unlimited Supply to Shortage

From the Restoration of 1868 to around 1960,[1] one of the greatest assets Japan possessed in developing the country was the availability of a reserve army of unemployed population, and a large potential of highly mobile labor in the form of an underemployed work force in the agricultural sector.

Up to World War II, there was a gradual migration of labor force from rural to urban areas; with the result that the proportion of the labor force in the primary sector was declining. With the exceptional circumstances after the War -- large repatriations from the lost empire, and abnormally poor opportunities outside agriculture while the economy was undergoing rehabilitation -- the number of employed increased again in the primary sector almost to the same level as around 1900, and by that time the proportion of primary sector in total employment also increased. And it was not till after the beginning of the next decade that the number

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[1] This year is arbitrary chosen because, in fact, in 1961 for the first time in Japan's modern history the number of vacancies reported on the employment exchanges exceeded the number of job opportunities. See K. Inoue "From Labour Surplus to Labour Shortage Economy: The Case of Japan", International Labour Review, 113 (1976), 217-25, p. 217.

started to decrease. In this regard, this section is divided into two periods: one before the Second World War, the other after the War.

a) From the Restoration to World War II

The first figures for the labor force, those deriving from the Registration Bureau of the Ministry of Home Affairs in 1872, show that, of a total working population of 19,179,000, the agricultural working population was 14,791,000 which accounted for 77 percent of the total employed population (Table 4-1). By 1920, the total figure rose to 27,263,000 -- an increase of over eight million. While the agricultural labor force remained almost unchanged, at 14,848,000, its share decreased, in relation to the total employed population, to 54 percent. In other words, the increase of eight million employed took place in the non-agricultural sector. This transfer was made possible by the rapid expansion of the industrial sector which absorbed the rising labor force (42 percent between 1872 and 1920[1]) from the rural sector into the urban areas.

The other characteristic of this phase was the increase in the percentage share of the occupied population in the total working age population (persons with the age-range of 15 to 59), so that from 1872 to 1920 the ratio increased from 80.9 to 88.1 percent[2]. This was, of course, attributed to more job opportunities in the growing economy.

The detail on the exact type of employment opportunities of the time are not clear, but it seems from present documents that before 1920 the bulk of this out-migration was into small-cottage industries

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[1] Calculated from Table 4-1.

[2] Ohkawa, et al., op. cit., p. 148.

TABLE 4-1

PERSONS EMPLOYED IN MAJOR DIVISION OF ECONOMIC SECTOR

(1872-1975)

Year	Total		Distribution by industry					
	1000 persons	Annual% increas	Pri.industry No.	%	Sec.industry No.	%	Ter.industry No.	%
1872[1]	19,179[2]	-	14791	77	719	4	1,426	7
1880	19,542	0.2	16,076	82	1,105	6	2,361	12
1885	21,163	1.7	16,757	79	1,553	8	2,853	13
1890	22,583	1.3	17,198	76	2,013	9	3,372	15
1895	23,769	1.1	17,385	73	2,466	11	3,918	16
1900	24,768	0.8	17,331	70	2,929	12	4,508	18
1905	25,599	0.7	17,038	67	3,367	13	5,194	20
1910	26,169	0.4	16,489	63	3,887	15	5,793	22
1915	26,527	0.3	15,716	59	4,318	16	6,493	25
1920	27,263	0.6	14,848	54	4,593	17	7,822	29
1925	28,442	0.9	14,785	52	4,865	17	8,792	31
1930	29,619	0.8	14,721	50	5,067	17	9,831	33
1935	31,400	1.2	14,769	47	6,218	20	10,413	33
1940	32,478	0.7	14,401	44	7,659	24	10,418	32
1947[3]	33,329	0.4	17,664	53	7,666	23	7,999	24
1950	36,480	3.2	18,530	51	7,866	22	10,084	27
1955	40,870	2.4	17,400	43	9,420	23	14,050	34
1960	44,610	1.8	14,490	32	12,380	28	17,740	40
1965	47,450	1.3	12,120	26	15,010	31	20,320	43
1970	50,940	1.5	8,860	17	18,260	36	23,800	47
1975	52,230	0.5	6,610	13	18,810	36	26,800	51

Sources: Ohkawa et.al., The Growth Rate ... ;&ILO, Yearbook of Labor Statistics.

Notes: 1 First year for which data are available

2 The total does not add up since 2,243,000 workers were classified as 'others'

3 Due to unavailability of data for 1945.

scattered almost everywhere in the country[1]. These were labour-intensive industries (like textiles) which were established mainly to utilize abundant (and thus cheap) labour - to meet growing domestic and international demand for these products.

In the next phase from 1920 to 1940, the figures for employment in agriculture slightly decreased (see Table 4.1). However, the total increase of 5,762,000 in the secondary and tertiary sector could not all be accounted for by the out-migrants from the agricultural sector. Some came from the growing population in urban areas.

A closer look at the Table 4.1 further reveals that during the 1920's the increase was largely in the tertiary sector (85 percent of total increase), whereas during the 1930's the increase was concentrated in the secondary sector (91 percent of total increase)[2]. This crudely

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[1] See for example Lockwood, op. cit., pp. 18-42.

[2] The changes occuring to different sub-division of these sectors are tabulized below:

PERCENTAGE CHANGE OF EMPLOYMENT IN DIVISIONS OF SECONDARY AND TERTIARY SECTOR (1920-1940)

Years	SECONDARY SECTOR: Gov. manufacturing	Bldg. & Construction	Private Mfg.	Mining
1920's	63	25	9	-24
1930's	-29	-11	49	89

Years	TERTIARY SECTOR: Commerce	Transport. & Commun.	Gov't & Prof. Services
1920's	31	19	15
1930's	-12	18	23

Source: Ohkawa, et al., The Growth Rate of Japanese Economy, Table 2, p. 246.

suggests that there was also a difference between the two decades in the type of jobs available and taken by migrants from farm families.

In spite of all these movements and developments, the overall rate of unemployment was very high. Unfortunately, studies on the Japanese labor market are lacking in data on unemployment before 1950's[1] and, therefore, there has been considerable difficulty in combining the available figures. In the year 1905, the first year for which derivation becomes possible, the rate of unemployment was calculated to be 24 percent.[2] This rate of unemployment had decreased to only 23.6 percent by the year 1920 (the second year for which calculation is possible), and by 1940, stood again at 24.0 percent.

Therefore, the characteristics of the Japanese labor market in this sub-period could be summarized as the existence of massive unemployment in general, prevailing underemployment in agriculture, and exodus of labor from rural to urban areas.

b) After World War II

The outflow of population from rural districts to urban areas was, however, reversed after World War II. The unemployment situation of the time -- with vast numbers of defeated soldiers, civilians repatriated from abroad and workers laid off from war industries crowding on to the labor market -- was one of the worst in Japanese history. Most of these

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1 This fact is specifically pointed out in Ohkawa and Rosovsky, Japanese Economic Growth, p. 123.

2 Calculated from data as given in ibid., p. 121; and Ohkawa, The Growth Rate of the Japanese Economy, p. 148.

people were gradually absorbed into underemployment in the agricultural sector.

This pattern was short lived; with the reconstruction of industry the situation returned to the pattern that had persisted in the past. There was, however, a sharp distinction between these two periods. The out-migration from agriculture in the prewar period did not substantially decrease the labor force in the sector (this is reflected in both Tables 3-9 and 4-1); it was the tremendous outflow in the post-war period that finally reduced the agricultural labor force. The main component of migrants who left agriculture at an unprecedented rate was the new school graduates entering the labor force. Before the War, farmers with large holdings frequently kept their younger sons at home up to ten years after leaving school to help with work on the farm. Since the War, younger sons, among other children, usually went to high school or university and right after graduation searched for employment in the industrial and service sectors.[1]

The continuous outflow of labor from the rural sector was due to two reasons. First was the overcrowding of the farms. This contributed to keeping the productivity of labor in this sector lower than in the other sectors - and much lower than otherwise would have been the case. Productivity gap which had been greatly widened before the War continued in the same trend afterwards. From the turn of the century through the years

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[1] For a specific account of out-migration see M. Namiki, "The Farm Population in the National Economy Before and After World War II", Economic Development and Cultural Change, 9 (1960/61), pp. 29-41.

preceding the War the productivity gap between the primary and secondary sector, and between primary and tertiary sectors had been increased 319 and 283 percent, respectively.[1] After the War, due to the higher growth rate of productivity in the non-agricultural sector than that in the agricultural sector, the gap had become even greater.[2] The over-crowding and low productivity of the farms had also widened the income gap between agriculture and the other sectors, with the result that income in the former sector had fallen to the level of subsistence.[3] Therefore, surplus labor was eager to emigrate to other sectors for almost any gainful employment.[4]

The second was the absorptive power of the non-agricultural sector; so long as the abundant labor was willing to move from traditionally low pay (either agriculture or small-scale factories) to modern high-pay sectors,[5] a ceiling to wage rates (or to wage increases) was set which

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1 Productivity is in terms of real product per worker in each sector as given in Ohkawa, et. al., op.cit., p. 20. "Gap" refers to absolute difference between productivity in each two sectors.

2 See, for example, L. Klein and K. Ohkawa, eds., Economic Growth: The Japanese Experience since the Meiji Era, (Homewood, Ill.: Irwin, 1968), p. 14.

3 Ohkawa & Rosovsky, Japanese Economic Growth, p. 131.

4 A good account of this issue is also found in Y. Mundlak, and J. Strauss, "Occupational Migration Out of Agriculture in Japan", Journal of Development Economics, 5 (March 1978), 55-71.

5 Japan's labor market for long has been characterized by existence of wage differentials. While data for the entire period is not quite reliable (because, the very concept of wage in something as traditional as Japanese farming may even appear questionable - at least for the early phases), the comparison between prewar (1938) and postwar (1954) reveals that the ratio of agricultural wage to manufacturing wage had declined from 56.7 percent to 37.3 percent; see Klein and Ohkawa, Economic Growth, p. 18.

had produced an elastic supply of labor to the industrial sector.[1]

Thus in this process, the primary sector supplied a great deal of labor force to other sectors. In 1950, of total employment, 51, 22, and 27 percent were employed in the primary, secondary, and tertiary sector, respectively; while in 1960, these ratios changed to 32, 38, and 40 percent; a sharp decline in the share of the primary sector's employment which compensated mainly for the rise in the service sector (Table 4-1).

This process could not, of course, last forever. The abundant supply of labor in low-pay occupations, both in agriculture and in those technologically weak segments of the secondary and tertiary sectors, was soon absorbed. In fact, from 1961 onwards, a shortage of labor began to develop.[2] It is more appropriate to refer to this surplus which had so far been absorbed as "real surplus" because with 32 percent of employment in the agricultural sector and another reserve of underemployment in the industrial sector,[3] there was also a "potential surplus" if the demand for labor was to grow.

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1 This argument calls to mind some features of the Lewis model for economic development, A.W. Lewis, "Economic Development with Unlimited Supplies of Labor", Manchester School, (May 1954).

2 See footnote 1, p.62.

3 In 1961, about 40 percent of employment in industrial sector was employed in small scale factories or workshops (each with one to 50 workers), calculated from Ohkawa & Rosovsky, Japanese Economic Growth, p. 86.

Indeed the demand for labor did grow; not only that but the supply contracted too; and by these forces a great deal of "potential surplus" was removed.[1]

Thus, removal of the surplus was due to simultaneous pressures from three directions: the increased demand for labor created by the expanding economy, a decrease in the rate at which the supply of labor increased, and also a decrease in the movement from rural to industrial sectors.

As the share of employees' compensation in Japan's national income was low -- the lowest among other industrialized countries (as shown in Table 4-2); and as the productivity of labor was still rising much more rapidly than wages;[2] the demand for this factor input was very high. On the other hand, the combined impact of several causes may explain the drop in the rate of supply of labor and its elasticity. The first cause was the human loss of the War which also was followed by the deceleration in the rate at which population grew - except for the "baby boom" period right after the War. In other words, population which had expanded at about 1.5 percent per year during the 1930's, grew at only

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[1] By 1970, approximately the same percentage (40%) stood for the share of employment in factories and workshops employing between one and 99 workers; see Boltho, Japan - An Economic Survey (1953-1973), p. 26.

[2] Ohkawa & Rosovsky, Japanese Economic Growth, p. 119, fig. 5.1.

TABLE 4-2

EMPLOYEES' COMPENSATION AS PERCENTAGE OF NATIONAL INCOME (1955, 1965, 1975)

Countries	1955	1965	1975
Belgium	53.1%	61.0%	60.9%
Canada	65.8	69.0	64.4
Denmark	57.6	63.1	64.1*
France	58.2	62.2	59.9
West Germany	58.8	65.4	62.0
Italy	50.8	59.3	64.7
Japan	48.7	56.6	59.8
Netherland	53.6	63.7	68.3
Norway	59.8	65.1	68.9
U.K.	72.9	74.0	73.7
U.S.A.	68.4	69.5	70.2

Source : ILO, Yearbook of Labour Statistics .

Note : * Data for 1974.

1.2 percent per year since this date until 1962[1]. Secondly, the wider spread and longer duration of education was reflected in a lower labor participation ratio[2] (defined as total labor force divided by working age population). For example, the participation ratio decreased from 59.9 percent in 1955 to 58.4 percent in 1960 (declining further to 57.7 percent in 1965)[3]. Third was the improvement in the agricultural sector itself[4] with the expected result that agricultural wages started to rise absolutely since around 1961, and more significantly they rose sharply from the same date relative to non-agricultural wages[5]. Further, the government agriculture-protection policy made this sector attractive enough so that a high proportion (compared to other industrialized countries) of the labor force have remained on the farm land. At present, as Table 4-3 indicates, 13 percent of employment is in agricultural sector which gives Japan the third highest ranking in the countries mentioned in the table.

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1 ILO, Yearbook of Labour Statistics; calculatation excludes the years immediately following the War.

2 See next section (B) Quality of Labour.

3 Ohkawa & Rosovsky, Japanese Economic Growth, p. 121.

4 See Chapter III.

5 ILO, Yearbook of Labour Statistics.

TABLE 4-3

AGRICULTURAL LABOR FORCE AS PERCENTAGE OF TOTAL LABOR FORCE FOR SELECTED DEVELOPED COUNTRIES , (1961 - 1975)

Countries	61-65	75
Austria	10	13
Canada	11	7
France	18	11
West Germany	11	6
Italy	25	15
Japan	28	13
U.S.A.	5	3
U.S.S.R.	34	21

Source : ILO , Yearbook of Labour Statistics.

Furthermore, while forces of supply and demand were at work to produce a shortage of labor in Japan, a move to the five-day week started[1]. This led to a sharp drop in input of working hours which in turn decreased the rate at which labor input was increasing and contributed towards tightening the labor market.

The progressive excess demand for labor is reflected in a fairly rapid rise in wage levels. The wage increase gathered speed after 1960, with the result that wages in the manufacturing industries rose steeply by 9.3 percent-a-year for the 1960-65 period as compared with 6.4 percent per year between 1952 and 1960.[2] The wage increases were, moreover, more conspicuous in the traditionally lower-wage sector -- that is, small business and the service industries. This is an important consequence of the tight labor market. Smaller enterprises and service industries had to compete with the larger firms by provision of improved conditions to attract the necessary manpower. This development is reflected in the contraction of the traditionally wide wage differentials between the larger and smaller enterprises (Table 4-4)[3].

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[1] It is not clear to me when this move started. However, it is not difficult to make an estimation. In Ohkawa and Rosovsky, Japanese Economic Growth, Table 3.3, the index as adjusted for man-hours worked increased faster than the index for the actual employment, in 1953-61. This meant that hours worked increased during the period. However the index adjusted for man-hours worked remained stable from 1961 and 1962 (while employment increased) and it actually declined in 1963 (the last year cited). In another source (Galenson and Odaka, "The Japanese Labor Market", Table 9.3) the rates of change of working hours are consistantly negative from 1960 to 1975 (the average of each consecutive five years). Therefore it can be concluded that the above practice started sometimes in late 1960 or in 1961.

[2] Calculated from Table 4-6.

[3] The contraction will be less, however, if total earnings are considered as semi-annual bonuses and non-wage benefits are higher for larger enterprises, see Galenson & Odaka, "The Japanese Labor Market", in Asia's New Giant, op.cit., pp. 607-9.

Of course, not all of the wage increase is due to excess demand. Some part of it might be explained by: 1) higher productivity achieved due to increase in capital intensity in the various sectors of the economy; and 2) with the increasing levels of education attained by the new entrants to the labor force, there was also a corresponding increase in the level of wages.[1] However, as these forces were at work even in the previous phases, it is safe to assume that a large part of wage increases was due to excess demand for labor.

TABLE 4.4. WAGE DIFFERENTIALS BY SCALE IN MANUFACTURING (1955, 1961, and 1970)

SCALE (No. of Employees)	1955	1961	1970
4 - 9	32.3	36.8	-
10 - 99	45.1	52.6	64.6
100 - 499	64.8	66.6	74.5
500 - 999	80.4	79.2	84.9
1000+	100.0	100.0	100.0

Sources: K. Ohkawa, H. Rosovsky, Japanese Economic Growth, (Stanford, Cal.: Stanford University Press, 1973), p. 112, Table 4.17;

and,

A. Boltho, Japan - An Economic Survey (1953-1973), (London: Oxford University Press, 1973), p. 28, Table 2.3.

Wage increases induced by a shortage of labor could occur in any country, but it was particularly pronounced under the conditions of rapid growth in Japan. The rise in the wage level necessarily led to an increase in costs, which in turn raised prices, including consumer prices (Table 4-5, column 3). From 1952 to 1960, the CPI increased 21 percent, while from 1960 to 1975 it increased 203 percent.

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[1] For the relationship between level of education and entrance base pay see section C in this chapter.

TABLE 4-5. WAGES AND PRICES (1952 - 1975)

Year	Monthly Earnings		Price Index (1952 = 100)	
	Non-agricultural sector (1000 yen)	Manufacturing industries* (1000 yen)	Consumer	Wholesale
1952	-	13.5 (100)	100	100
1955	-	16.7 (123)	111	98
1960	24.4	22.6 (167)	121	99
1965	39.4	36.1 (267)	163	101
1970	75.7	71.4 (529)	213	112
1975	177.2	163.7 (1213)	367	176

Source: ILO, Yearbook of Labour Statistics

* Figures in parentheses are indeces.

Owing to the present depression the unemployment rate has recently increased (Table 4-6[1]), but it seems that this is a merely a passing phenomenon and that once the economy has recovered the excess demand for labor will show its face again.

Finally, it is of interest to make reference to the Japanese government as an employer, because the relative importance of public enterprise in directly productive activities has been one of the characteristics of the Japanese economy.

In the infancy of Japanese factory industries when government enterprise was of considerable importance the share of government employees in total employment was also considerably high. The figures for 1878

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[1] As this table indicates Japanese economy possesses a labor market with a very low unemployment rate in an international comparison. Despite shortage of labor, part of it might be due to Japan's employment practices such as permanent employment and seniority - wage system (while one's seniority is not transferable); see section C in this chapter.

TABLE 4-6

RATE OF UNEMPLOYMENT , (1955-77)

countries	1955	1960	1965	1970	1977
Belgium	5.8%	5.4%	2.4%	2.9%	6.8%
Canada	4.4	7.0	3.9	5.9	8.3
Denmark	9.7	4.3	2.4	2.9	7.3
France	2.0	1.4	1.2	1.3	4.9
Italy	7.6	4.2	3.6	3.2	7.7
Japan	1.8	1.1	0.8	1.2	2.0
Netherlands	1.3	1.2	0.7	1.1	5.1
Norway	1.2	1.7	1.2	-	0.8
U.K.	1.1	1.6	1.5	2.6	6.0
U.S.A.	4.4	5.6	4.5	4.9	7.0
West Germany	5.1	1.2	0.6	0.7	4.5

Source : OECD, Main EconomicIndicators .

indicate that of total non-agricultural employment 22 percent were classified as workers in government manufacturing, and government and professional services[1]. However, with the growth of private capitalism, state-owned enterprise became relatively less important. By 1890 government manufacturing and services employed 18 percent of total non-agricultural employment; by 1905 their share had dropped to 12 percent. During the inter-war period the share slightly increased (to 15 percent)[2]. However, as the government policy of the time required, a good portion of them were employed in "turning out machinery, vehicles, and instruments, mainly for the armed forces".[3] For the period after World War II and the Korean War there is a lack of appropriate data. However, statistics revealed by the Japanese government indicates that in 1960, of total employment only 3 percent were government employees and further it dropped to 2 percent in 1975[4]. In spite of a low portion of government employees in total employment, however, their role in the nation's economic, social, and political life is far more significant than the number suggests. This is because of the nature of their activities: they provide such important services as transportation, communication, finance, and public housing.

To sum up, an overall view of Japan's labor market reveals that the changes which occurred in more than one hundred years were to cancel

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[1] Ohkawa, et al., p. 245.

[2] Ibid., p. 245.

[3] W.W.Lockwood, "The Scale of Economic Growth in Japan, 1868-1938" in S. Kuznets, et al., eds., Economic Growth: Brazil, India, Japan, (Durham, N.C.: Duke University Press, 1955), p. 149.

[4] Statistical Handbook of Japan, 1977, (Japan: Bureau of Statistics, Office of the Prime Minister, June 1977), pp. 110-112.

the first three of the four adjectives - plentiful, cheap, highly elastic, and good quality, customarily applied to Japanese labor. Of course, this is only natural, since one of the great benefits of industrial development is that at some point real wages are forced up. However, it is still true that cheap labor, which was one of the most important factors accounting for Japan's rapid growth and competitiveness in the world economy, no longer plays this crucial role in Japanese development.

B) Quality of Labor

The quantity of labor alone does not adequately represent the labor force. The labor force is composed of people who are different in quality and efficiency. Therefore quality changes in the labor force are of great interest for the study of economic development. Changes in the skills of the labor force during the process of economic growth are implied in changes of industrial structure and of trade structures and may eventually result in faster development.

Educational background is a crucial determinant of the quality of labor. It is the condition for and also conditions both the type of work an individual is able to do and his efficiency in doing it. In this sense the word "education" means much more than just ability to read, to write and count. Rather it is defined as: "moulding or influencing the development of: moral attitudes; intellectual capacity, techniques, attitudes or knowledge; and artistic or physical attitudes or skill -- with the aim of equipping a person with: qualities of vocational utility for his latter life; qualities which will make him most useful for society; and qualities which are held to be of direct non-material value to him".[1]

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[1] This definition is taken from R.P.Dore, Education in Tokugawa Japan, (Berkeley: University of California Press, 1965), p. 34.

However, it is sometimes observed that growth in knowledge and skills, mainly due to educational effort is unable to contribute to growth[1]. Educating the mass must be accompanied by an adequate rate of capital accumulation; only then can the educated mass be absorbed into the production process to increase the growth of the economy, and newly acquired skills and knowledge can be preserved. Otherwise the outcome would be a tense, frustrated and over-educated society which, instead of contributing, would hinder growth. Therefore the term "knowledge" in the above definition of education must render the notion of "capital accumulation as the mainspring for growth" and the term "technique" must imply methods of acquisition and application of capital.

However, since systematic learning through formal education deliberately influences the development of a child's abilities, knowledge or attitudes; and since methodological analysis of the link between what one learns and what one performs would be confined to each criteria as changes in the pattern of formal education, literacy rates, and enrolment ratios; this section is aimed at shedding some light on these issues.

a) Changes in the Pattern of Education

i) From the Restoration to W.W.II

By the time the Meiji Restoration began 40 to 50 percent of the Japanese boys and 10 to 15 percent of the girls were literate.[2] These rates were much higher than those of the Western European countries at that time.[3] The development of such a high rate of literacy during this period was attributed

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1 See for example K.J.Charles, and P.G.K.Panikar, "Kerala: A Cautionary Tale", Development Digest, 5(January 1968), 82-90.

2 Dore, op. cit., p. 254.

3 J. Halliday, "Japan-Asian Capitalism", New Left Review, No. 44 (1967), p.5.

mainly to availability of schools in 250 (out of approximately 270) fiefs which provided mainly Chinese scholarship to the samurai class[1], and also to the availability of about 10,000 (Terakova) schools[2] which offered instructions in the basic skills of reading, writing, and arithmatic to peasants, artisans, and merchants. In other words, the traditional education of the Tokugawa era was not uniform, and was biased in favour of the elite class.

With the Meiji Restoration' overall reform, specific attention was paid to the promotion of education as one of the necessary preconditions of the country's eventual renaissance. By 1872 the first national system of education was formed in Japan. Later, in 1886, four years of schooling became compulsory (twenty-one years later, in 1907, this compulsion extended to six years).[3]

From the beginning to around the turn of the century there was a planned unbalanced growth between primary education and middle-school or higher education in favour of the former. As a result of this policy by 1900, 90.6 percent of males and 71.7 percent of females studied in primary schools, but for only approximately 5 percent of them did there exist enough accomodation in secondary schools[4]. It was in this way that

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1 V.N.Kobayashi, "Morale in Education and Social Development in Japan", Asian Profile, 5(December 1977), 509-17, p. 509.

2 Dore, op. cit., p. 253.

3 Maddison, Economic Growth in Japan and USSR, op. cit., p. 16.

4 R.P.Dore, "The Importance of Educational Tradition: Japan and Elsewhere", Pacific Affairs, 45(1972), 491-507, p. 491.

Japan was provided with the means to give the mass of people the enjoyment of receiving at least some years of schooling.

In the next phase (after 1900) as soon as the mission of giving some years of general education to the nation was accomplished, a rapid spurt in secondary education took place. Therefore the Japan of 1940 saw 51.5 percent of all boys and 40.4 percent of all girls leaving the elementary schools enrolled in the secondary schools[1].

ii) After W.W.II

After W.W.II, the Occupation Authorities, among other reforms, fastened upon educational change and established the present day school system. A standard six-three-three-four system was instituted in which the first two levels - six years of elementary schooling and three years of junior high schooling - were made compulsory[2]. These nine years were open to all children of school age (6 to 14 years) and were to be free. Furthermore, under the new system, and for the achievement of a higher degree of uniformity, a single comprehensive type of senior high school was created. The new schools were to replace the several specialized types (ie., agriculture, commerce, academic, etc.) inherited from prewar days. The previous system was permitted to continue provided that it offered a minimum national curriculum of general education subjects. In rural areas, however, the creation of the new system was recommended side by side with continuation of the old one to meet the needs of all the youth in the community, whether they were heading for an academic or a vocational career.

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[1] R.P.Dore, "Education in Japan's Growth", Pacific Affairs, 37(Spring 1964), 66-79, p. 69.

[2] Kobayashi, op.cit., p. 510.

The enforcement of all these policies in the postwar period has been very successful. The attendance rates for various levels of education have increased satisfactorily. By 1950, for example, all children of school age attended elementary schools and the percentage for those attending secondary schools (only three years of which is compulsory) was as high as 70 percent and increased further to 81 and 90 percent in 1960 and 1970, respectively. Enrolment ratio for post-high school education has also increased from 11 percent in 1950 to 17 percent in 1970 with a relatively greater contribution of females.[1]

An international comparison, as in Table 4-7, reveals that the Japanese people have received as much education as those of Northwest Europe, a bit less than those of U.S. and Canada, and considerably more than other countries in Asia.

TABLE 4-7 GROSS ENROLMENT RATIOS,[1] 1970

Countries	Elementary School (1)	High School (2)	(1)+(2)	Post-High School (3)
Canada	118	77	100	35
Denmark	98	74	87	18
France	118	74	92	16
Germany, FDR	129	66	93	14
India	68	N.A.[2]	N.A.	4
Iran	83	26	54	3
Israel	132	33	79	21
Italy	107	59	79	17
Japan	101	91	96	17
Netherland	102	91	97	20
Norway	105	86	96	16
Saudi Arabia	34	9	23	1
Singapore	105	47	77	8
U.K.	111	75	93	14
U.S.A.	109	100	105	49

Source: UNESCO, Statistical Yearbook, 1974.

1 The gross enrolment ratio is the total enrolment of all ages divided by the population of the specific age groups which correspond to the age groups of each level of schooling.

2 N.A. = Not available.

1 UNESCO, Statistical Yearbook, 1974.

Postwar reforms in education also led to an increase in the number of post-high school institutes. Especially during the 1960's there occurred an enormous increase in the number of private institutions, which grew rapidly to accomodate the increasing demand for higher education. The number of national and local public universities grew little between 1952 and 1975 (from 105 to 115); while the number of private universities rose from 116 to 305. The proportion of students enrolled in private universities grew from 57 to almost 80 percent[1]. Therefore, it was mostly the private sector that accommodated the increased demand.

As far as the financing of educational expenditure is concerned, in spite of imposing a great part of the cost (at higher levels which are not compulsory) on students[2], Japan ranks high in an international comparison in terms of proportion of public expenditure spent for education. As Table 4-8, column I indicates, the highest ratio - 26.6 percent belongs to the Netherlands and that for Japan is 20.4 percent. However, Japan spends a very low share of G.N.P. on public education among comparable developed countries (column 2).

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1 Statistical Handbook of Japan, (Bureau of Statistics, Office of the Prime Minister, Japan, 1977).

2 N. Glazer, "Social and Cultural Factors in Japanese Economic Growth", in Asia's New Giant, op. cit., pp. 824-25.

TABLE 4.8 PUBLIC EXPENDITURE ON EDUCATION (1970)

Countries	As Percentage of Total Public Expenditure (1)	As percentage of GNP (2)
Canada	17.1	8.5
Denmark	16.9	7.0
France	18.7	3.5
W. Germany	13.8	4.0
India *	17.5	2.6
Iran	7.1	3.1
Israel	12.8	7.4
Italy	17.4	4.3
Japan	20.4	4.1
Netherlands	26.6	7.8
Norway	15.5	5.9
Singapore	11.7	3.1
U.K.	13.2	5.9
U.S.A.	17.5	6.5

Sources: UNESCO, Statistical Yearbook, 1974; and Statistics Canada, Canada Yearbook, 1974.

Note: * data for 1965.

b) Education and Development

So far, the pattern through which the Japanese nation became educated has been presented. However, the central point is beyond this presentation. Rather it is to find out how these educational efforts have been channeled to contribute to the development of the country. To analyze how the basic educational structure has trained the human resources so as to enable them first, to frame both political and social

institutions capable of development and second, consistently apply intelligence to evaluate these institutions so that none becomes the hindrance to development.

As far as the first contribution is concerned, there is adequate evidence that education was partly responsible for the changes which took place in Japan in the last quarter of the nineteenth century. The key factor was the high literacy rates: 40 to 50 percent of boys and 10 to 15 percent of girls were literate by the time the Meiji Restoration began while, the samurai class was entirely educated[1] . Yet, literacy of this degree had been achieved not by force on an unwilling people; rather it was supported by parents' voluntary choice and sacrifice. Parents themselves, therfore, were not rigidly tradition-bound and were willing to raise their children in a reasonably free atmosphere, with less restrictions than would be expected in a society characterized by lower levels of literacy.

The notion of self-improvement--enhancing prestige and self-respect-- as well as improvement of chances in a material sense through education had been diffused. The wide diffusion of a basic literacy meant that Japan had a better chance, when the process of industrialization and political change began, of putting the nation's best intellectual resources to good use. Possession of a literate population also had some political implication; that is, the administration by written directive could reach down to the lowest level of the society. The success of the 1868 Revolution, leading to emergence of a modern country, was created not only by a top-

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[1] Dore, Education in Tokugawa Japan, op. cit., p. 254.

level change, but also by a "cummulation of a mass of small initiatives by large numbers of people who could appreciate new possibilities, make new choices, or at the very least allow themselves to be persuaded to do for the first time something they had never done before".[1] Above all, the high rate of literacy also implied that once the Meiji Restoration took over and began its program of forced-pace modernization, its decrees ordering the establishment of a universal system of elementary schooling already had a substantial foundation on which to build.

The creation of the national system of education helped increase the level of literacy yet further, and thus served a vital function in giving Japan the capacity to modernize and to gain popular acceptance of the basic aims of the state. For it was now official doctrine that: the nation had to progress and that it could only do so by mobilizing all the talents of individuals devoted to self-improvement.

What was very impressive with the new system was the kind of education that went on, as these schools established a particular pedagogical tradition in the Japanese culture. And since Japan had maintained her domestic issues in isolation from the rest of the world, her modern educational system was not built around a framework originally devised to train the subordinate local members of a colonial administrator. Primary schools were established in villages which gave farmers' children the opportunity for general education. This was a kind of education so firmly in harmony with the tradition which did not raise the Japanese

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[1] Dore, Education In Tokugawa Japan, op. cit., p. 294.

villagers "too proud to get their feet wet and their hands dirty";[1] rather, it extended the technical skills, politics, and social attitudes required to reinforce their commitment to work on the land.

Exchange of loyalty, and paternalism in Japanese factories are deeply rooted in the ethics courses taught in primary schools of the first half of the twentieth century. One may even claim that the strong ability of the whole Japanese nation to abstain from consumption and to save 15 to 25 percent of income, has something to do with the type of education that prevailed.[2]

The Meiji educational reform, therefore, greatly widened the prospects, for the people and for the country, by setting the seal of official approval on the ambitious educational efforts. Since then Japan has always had one of the highest literacy rates in the world. However, with the educational level so high throughout the history of modern Japan, education has not been so significant to appear as a net positive factor[3] in the rapid economic development since the Korean War[4]. Nevertheless, it has kept working well to accommodate the needs of a growing economy by motivating and mobilizing the population's talents. It is, of course, an exaggeration to say that education is the sole explanation of the vitality of the Japanese intellectual culture and of

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[1] Dore, "The Importance of Education", op. cit., p. 565.

[2] See for example Dore, "Education in Japan's Growth", op.cit., p. 74.

[3] Because there is a negative side to more schooling as well. The declining number of those who terminate their education at the middle school level means a reduced supply of semiskilled factory laborers.

[4] This is particularly claimed by: Denison & Chung, How Japan's Economy Grew So Fast, p. 38 & pp. 59-62.

her enterprise. Education is only a partial expression of a cultural tradition, as well as being only one of the mechanisms which sustain it and transmit it from one generation to another. But it is an important mechanism.

C) Industrial Relations

The so called "paternal relation" between employer and employee is believed to explain the Japanese industrial relation system. Paternal relation means that, instead of trading work for pay or pay for work, the worker and employer are said to reciprocate "loyalty". This, on the other hand, implies both the obligations of the former to the latter and the responsibilities of the latter to the former. J. Abegglen, whose book has dominated the Western view of industrial relations in Japan until very recently, writes that: "At whatever level of organization in the Japanese factory, the worker commits himself on entrance to the company for the remainder of his working career. The Company will not discharge him even temporarily except in the most extreme circumstances. He will not quit the company for industrial employment elsewhere".[1] In other words what it implies is a life-time commitment for a job once one accepts. It also makes a suggestion that labor is a fixed factor in the short-run production function; while it is subject to "rachet type effect" in the long-run. That is, during upswings, as demand for output goes up, employment will increase. During downswings the opposite of the relationship is not the case. Instead, as incomes follow a downward direction employment remains constant because the practice of life-time

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[1] J.C.Abegglen, The Japanese Factory, (Glencoe, Ill,: Free Press, 1958). p.17.

commitment prohibits employers from firing the unwanted laborers.

Given the assumption of life-time commitment, within a firm the worker is paid on the basis of the level of education and age at the time of entry; and his wage is raised by so called "seniority". In other words, education and age determine the starting pay; that is, once one gets hired he will get a special wage scale with that firm depending mainly on whether he has entered as a junior high school graduate, a senior high school graduate, or as a university graduate. In each specific wage scale, base pay, fringe benefits, and retirement pay are scaled in such a way as to increase steadily with his length of service (or seniority).

This system works depending on the fulfillment of a dual set of expectations that are deeply rooted in Japanese traditions and cultural norms. For the worker, there is the expectation that he will be able to stay with his chosen firm, and that he intends to do so. This intention is conditioned by the fact that he will be within the norm of Japanese occupational life and that he has a good deal to gain financially by staying on. For the employer, there is the expectation that the worker will stay, provided he is offered standard wages and conditions of employment. Social conditions and cultural norms impose a sense of obligation on the employer, who is expected to provide work for his employees and take care of them. This system provides the employee with a sense of security. The probability of wage interruption due to business cycles is low. The employee has a multitude of opportunities for training,

receiving new wage benefits, and upward mobility within the company with accompanying psychic satisfaction. Monetary rewards are not necessarily associated with upward mobility or improved performance but are instead primarily a function of one's seniority in the company. At the same time, the performance of an employee can be evaluated over a period of years. There are a few more advantages for an employer. This system increases the probability that on-the-job training benefits in production will accrue to the training firm; it lowers probability of industrial strife; and it also lowers turn-over costs.

The concept of training needs further clarification. American employers seem to be reluctant to invest in training that imparts general skills, transferable to other employers, and more willing to train for jobs unique to the individual firm leaving the general training to vocational schools. It is generally recognized that Japan's government-run vocation school system is modest[1]. But neither does there appear to be an excessive expenditure on training within the individual enterprise. An OECD manpower team pointed out that despite a considerable volume of internal training, most of it was brief. In attempting to explain the Japanese success in skill formation; the team came up with the following comment: "Maybe the conclusion can be drawn that the special features of the Japanese employment relationship -- the whole system of consultations, social participation, informal training, incentives and motivations which

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[1] See Beatrice G. Rubens, "Manpower Training in Japan", Monthly Labor Review, 96(September 1973), p. 18. Rubens points out that 250,000 public trainees a year for a labor force of 50 million is not impressive. Sweden, with a labor force of 4 million, had 94,000 students enrolled in government training programs in 1971.

exist in the individual enterprise -- make an ad hoc process of skill acquisition highly effective".[1] To have a precise comparison of the resources allocated to industrial training in Japan and other industrialized nations would be of interest. In their absence, it can only be pointed out that Japanese enterprises obviously have managed in one way or another - to create the skills necessary to maintain their rapid rate of expansion.

The origin of this system -- permanent employment and seniority based wage -- can be traced to the ancient paternal relations of lords and their retainers in feudal Japan. In the course of industrialization, this practice was preserved in the family tradition of the old Zaibatsu. The bureaucratic structure of government and early state-owned enterprise provided another forum for the adaption of the system. Another element that added a fillip to this practice and institutionalized the arrangement in modern enterprise came into its own in the 1920's, when the prevailing socioeconomic conditions made such an arrangement both feasible and desirable. At that time, firms began to find it difficult to hire employees from other firms. To protect their own employees from being hired away, some measures were necessary since technology was becoming diverse and complex and employees needed workers with more specific skills. The ideology developed its own independent momentum and reinforced the values such as morality as the essence of industrial management, and loyalty. After W.W.II, these arrangements were preserved in a more formal manner, and thus the present "life-time commitment" and "seniority-

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[1] OECD, Manpower Policy in Japan (1973), p. 138.

based wage system" were institutionalized.[1]

There is, however, a great deal more to the Japanese industrial relations system. Closer examination shows that the picture is more complicated than that presented by Abegglen.(It is also possible that some important changes have taken place since Agegglen wrote his book.) For example, Marshall's study[2] reveals that, in its early formation in the modern era, this system classified the workers into two basic groups consisting of regular or permanent and irregular or temporary employees, and excluded the latter group from benefiting from such a system. For instance, these concepts were found as early as the 1870's in the government-operated Yokosuka Shipyard - where the notion of "a wage scale with built-in incremental increases that rewarded seniority over and above job-related performance"[3] was germinating. Furthermore, the system was limited to certain large-scale enterprises at least as far back as the 1920's[4]. At present, this system possesses an even wider area of exclusion. That is, it is only applied to male workers but not to female workers, to more educated workers but not to less educated workers, to full-time regular employees but not to temporary or sub-contracted workers, and to workers of large enterprises but not to those of small enterprises.[5] This leaves only 40 percent of all employees

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[1] B.K.Marshall, "Japanese Business Ideology and Labor Policy", in Columbia Journal of World Business, 12(Spring 1977), 22-29, pp. 23-26; and Ken'ichi Imai, "Japan Industrial Organization", Japanese Economic Studies, 6(Spring-Summer 1978), 3-67.

[2] Ibid.

[3] Ibid, p. 25.

[4] Ibid, p. 25.

[5] A.Boltho, Japan-An Economic Survey (1953-1973), op. cit., p. 35.

to benefit from the system.[1]

The gradual breakdown of the system may be due to: 1) unionization (during Allied Occupation); 2) tightness of the labor market reflected in the long history of low unemployment; 3) less opportunity to return to the farm; 4) increased cost of providing new wage benefits; and 5) increased demand for leisure as income has increased.

However at present,one must not fail to observe that, in addition to 40 percent of the labor force who officially benefits from the system, the traditional Abegglen's "paternal relations" has morally worked as the basis of industrial relations in small scale workshops and factories. But in general, while this system confers a sense of security to regular workers, it has been somewhat exploitative in relation to employees of sub-contractors, women workers, and part-time or temporary workers, who can be regulated easily over business cycles. Some modifications in the system are closely related to this claim (due to reasons number 2 and 4 above); therefore, the employers are less keen to pretend to retraining such concepts as "paternal relations" and "loyalty". And if the tendency to weaken is extrapolated, one may assume that this system is gradually disappearing.[2]

However, in spite of all these controversies, the industrial relations as such have so far worked in Japan in such a way that Japan enjoys a high degree of stability in her labor market. For example, between 1960 and 1970 the average monthly separation rates in the

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[1] Ibid, p. 35.

[2] See for example, R. Minami, The Turning Point in Economic Development: Japanese Experience, (Tokyo: Kinokunia, 1973); and Marshall, op. cit.

manufacturing industries in Japan was 2.3 in comparison to 4.25 and 2.7 for the American and British industries respectively.[1] This has also contributed to a low frictional and structural unemployment rate, thus reducing the overall unemployment rate.

It is essential that, Japanese industries have maintained, still to a good degree, a sound structure on a long-run basis. In this way they have contributed truly to the growth of industry and economy.

Summary

In the course of economic development the general tendency of the Japanese labor force was to move from low-to relatively high-productivity sectors. At the beginning of industrialization this was not difficult, as the low-productivity activities (especially agriculture) had the over-supply of labor. On the other hand, other sectors of the economy were growing, creating continuous demand. This resulted in the out-migration of the labor force from the agricultural to the non-agricultural sector on the one hand, and from small-size to large-size firms on the other. Although this process is still at work, labor has demonstrated increasingly less tendency to do so. The result is that Japan has been facing shortage of labor since the early 1960's.

The history of modern Japan indicates that, Japan has possessed one of the most educated labor forces in the world. This has been one of the assets which contributed to the growth of the Japanese economy.

Finally, Japanese industries have maintained a sound and stable structure on a long-run basis. This has been the result of

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[1] Boltho, op. cit., p. 35.

a growing economy, characterized by kind of industrial relations which have been well-incorporated by the Japanese traditions, norms, and values.

However, this is not to say that labor market with above qualifications has been the key factor for the growth of the Japanese economy; rather it is to say that it has been certainly a major factor.

CHAPTER V: LEADING ROLE OF INVESTMENT

So far, some of the major factors that contributed to the rapid growth of the Japanese economy have been discussed. They are the early and rapid expansion of the agricultural sector and availability of an adequate, skilled, cheap, and well-disciplined labor force. However these factors, though of crucial importance, could not have by themselves supported the rapid rate of advance of the Japanese economy without a sustained and high rate of capital formation.

The study of investment has two aspects. The first is to consider the sources from which investment funds were derived, that is a discussion of savings. The second is to examine the nature and composition of the investment process. This chapter discloses the details of these two aspects.

A) Finance of Investment

Japan, significantly and almost entirely, raised the capital for development from internal sources (Table 5-1). The Japanese people and government were determined to mostly depend on their internal sources even when foreign capital was vigorously available to them. Such determination led to the development of domestic market in directions favouring internal investment financing.

TABLE 5.1 . SHARE OF INVESTMENT AND SAVINGS IN REAL NET NATIONAL PRODUCT (1908 - 1974)

Year	I*/NNP	S*/NNP
1908	8.0%	7.9%
1917	14.7	22.4
1924	15.7	5.3
1931	4.0	6.7
1937	18.3	16.3
1956	14.2	20.4
1962	26.1	25.6
1966	20.1	26.7
1970	25.3	31.1
1974	23.6	26.9

Sources: K. Ohkawa and H. Rosovsky, Japanese Economic Growth, (Stanford: Stanford University Press, 1973), Table 6.9 and Basic Statistical Tables 1 and 5; UN, Yearbook of National Account Statistics.

Notes: * I = Net Fixed Capital Formation
S = Net Total Savings

However, from time to time Japan had to look to the outside world to meet shortages of funds at home; but such borrowing did not make her dependant on the world capital markets. This is because Japan took special measures to prevent such dependance in her dealings with foreign suppliers. Thus, while capital inflow was permitted to meet the needs of the economy an analysis of the characters and conditions surrounding this inflow discloses some of the special features of Japanese relationship to foreign capital.[1]

a) Domestic Market -- the Main Source of Funds

In the early Meiji Rule, as in the Tokugawa era, the primary source of capital was the agricultural sector, and the means of transfer

[1] This subject is discussed in detail in Section b of this chapter.

was taxation. A land tax was introduced in 1873 which required farmers to pay a fixed charge on the newly assessed value of their land amounting to about 25 percent of the yield.[1] This taxation policy as one of the steps in the Meiji reform accelerated the transfer of the surplus by imposing additional burdens on the peasants. According to Paul Baran "...no effort was spared to squeeze as much as possible out of hard-pressed direct producers."[2] While in the first half of the nineteenth century 39 percent of farmers' income was left for their consumption and purchase of crops, after the reform it fell to 32 percent.[3] These taxes were a very high proportion of government tax revenue; the land tax furnished over 90 percent of state revenues in the early 1870's. Twenty years later it still accounted for as much as 60 percent (and still provided a third at the time of World War I).[4]

As the bulk of population were peasants and deprived by the high taxes, the rate of private saving for the late nineteenth century was low; and not only that, it was declining - it declined from 7.7 percent of net national income in 1887-96 to 4.7 percent in 1899-1906.[5]

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1 W.McCord, "The Japanese Model", in The Political Economy of Development and Underdevelopment, C.K.Wilber, ed., (New York: Random House, 1973), p. 280.

2 P.Baran, The Political Economy of Growth, (New York: Monthly Review Press, 1967), p. 154.

3 Ibid, p. 155.

4 Ohkawa & Rosovsky, op. cit., p. 61.

5 H. Rosovsky, Capital Formation in Japan, (New York: The Free Press, 1961) p. 9.

With the beginning of the twentieth century, the saving ratio started to increase. As industrialization got under way, factors such as interest rates, actual (and expected) changes in prices, and money income eventually affected the rates of saving. The result was an increase in the rates at which the private sector saved. This trend continued till around 1917 when the net saving as a proportion of net national product reached the peak of 22.4 percent (Table 5-1). However, in spite of this achievement at this date, the overall rate of savings before World War I was low.[1]

After World War I, the favourable condition provided by the War was disrupted by internal and external events.[2] Consequently the rates of savings sharply declined during the 1920's. Furthermore, the recovery process to offset damages due to the great earthquake of 1923 even compelled households to borrow (Table 5-2). In the course of a general recovery of the economy during the 1930's the saving ratio started to increase again (Table 5-1). Then during World War II and a short period after, the rates of savings remained very low.[3] However, once the economy acquired momentum and income started to grow the rates of savings also followed the same pace. Indeed, it is the post-war saving ratios which have been impressive. On average, for the period between 1956 and 1974 the share of net savings in net national income was 26.1 percent (Table 5-1). Table 5-3 provides an international comparison for a few countries which recorded relatively high saving ratios in the post war period. As it shows, the saving propensity of the Japanese was

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[1] See for example, Rosovsky, op. cit., Table 3, p. 9.

[2] As mentioned in Chapter II.

[3] Ibid., Table 10, pp. 296-97.

TABLE 5-2

COMPOSITION OF SAVINGS (1908-74)

%

Year	Private sector			Government	Capital consumption allowance	Net foreign
	Total	Households	Corporates			
1908	23.7	21.7	2.0	20.6	51.6	- 4.1
1917	57.8	55.6	2.2	15.3	48.7	-21.8
1924	-14.8	-15.4	0.6	44.5	57.5	-12.5
1931	24.5	21.2	3.3	13.2	60.2	- 2.0
1937	50.4	40.9	9.5	23.0	38.8	0.2
1956	47.6	35.6	12.0	19.4	33.0	0.0
1962	45.6	32.9	12.7	21.4	32.7	- 1.9
1966	48.3	36.0	12.3	16.5	35.2	1.5
1970	48.9	32.4	16.5	18.8	33.3	2.4
1974	46.7	50.1	- 3.4	17.4	34.0	- 2.6

Sources: Ohkawa and Rosovsky , Japanese Economic Growth , op.cit. , Table 6.9, p.167; and UN, Yearbook of National Account Statistics .

Note : Due to lack of adjusted data for inventory changes and statistical discrepency these figures are only rough estimates .

TABLE 5-3. SAVING AS PERCENTAGE OF GNP (CURRENT PRICES)

Countries:	Average 1953 to 1972	1973	1974
Japan	36.9	27.1	23.2
France	25.0	15.2	12.7
W. Germany	27.1	15.7	13.5
Italy	23.4*	12.3	10.1
United Kingdom	18.3	8.4	4.8
United States	18.0	8.8	6.3
Finland	28.4	21.9	22.4
Netherland	27.1	19.1	17.7

Sources: For 1953 to 1972, Boltho, op. cit., p. 84; for 1973 and 1974 IMF, International Financial Statistics; & UN, Yearbook of National Account Statistics.

Note: * 1961 to 1972.

higher than those in other countries.

A close look at Table 5-1 and 5-2 discloses that, as the level of savings ratios changed the composition of savings also altered. But during most of the period, national savings originated mainly in the private sector and hence fluctuated with it. At the outset when the share of private savings in the total was low, so was the share of national savings in net national product; the periods when the share of private savings in total was the highest matched the peaks of national saving ratio (the years 1917 and 1937 in Tables 5-1 and 5-2); and for the period after World War II when the shares of private savings are extremely high and increasing, national savings are impressively high and increasing. Finally, in recent years, as the share of private

savings decreased - which was due to corporations' dissavings - the net ratio declined (for example figures for 1974).

The analysis of domestic savings composition further reveals that the major savers in private sector were households (see composition of private sector in Table 5-2). In order to analyze households' pattern of saving, an examination of their level of disposable income and share of saving in this income is required. Unfortunately, relevant data are available only for the period after the Second World War, while for the preceding period data include savings of private corporations. However, data as collected in Table 5-4 indicate that there is a close positive relationship between the level of saving and disposable income (whether the figures belong to total private sector in 1908 - 37 or only to households and non-profit institutions in 1953 - 74).

The other result of the above analysis is that everything noted earlier concerning the share of private sector in the composition of total savings also applies to the households' savings. That is, they both fluctuated together, peaks were at 1917 and 1937 and ratios were high and rising after the Second World War. There is however one exception: during the 1970's, although households continued to save increasingly higher proportions of their disposable income the total contribution of the private sector to national savings declined. As mentioned earlier and also as it is indicated in Table 5-2, this resulted from corporations' dissavings (or their net borrowings).

In sum, the domestic market has been the major source of funds

TABLE 5-4

DISPOSABLE INCOME AND SAVINGS OF PRIVATE SECTOR
(1908 - 1974)

Periods	Disposable Income (1)		Savings (net) (2)		(2) ÷ (1)
	Total Private	Households	Total Private	Households	
1st.period (Million Y)					
1908	2,690	-	156	-	5.8%
1917	8,810	-	1,110	-	12.6
1924	9,155	-	-92	-	-1.0
1931	10,246	-	625	-	6.1
1937	17,522	-	3,189	-	18.2
Average					8.3
2nd.period (Billion Y)					
1953	-	3,736	-	493	13.1%
1956	-	6,397	-	908	14.2
1962	-	15,397	-	2,627	17.1
1966	-	26,306	-	4,725	18.0
1970	-	46,891	-	9,424	20.1
1974	-	78,360	-	19,734	25.2
Average					17.9

Sources: From 1908 to 1937, Ohkawa&Rosovsky , Japanese Economic Growth, op.cit., Table 6.10& Basic Statistical Table 10; from 1953 to 1970 , UN, Yearbook of National Account Statistics; & OECD, Economic Survey, Japan, 1969&1975 .

Note : * Except for 1974 all figures are 5 year moving average .

for capital accumulation. In the domestic market the private sector, and within it the households, has been the main contributor. It is thus clear that for economic growth Japan has relied mainly on domestic sources to acquire capital, while foreign savings were restricted to a purely compensatory role.

b) Foreign Market

Japan's international relations after the end of isolation - marked by entry of Commodore Perry, 1853 - started on a conservative note. From very early times the Japanese jealously guarded their tradition and culture, and their attitude towards foreigners was one of distrust. The fact that borrowing foreign capital often would carry foreign domination made the Japanese very cautious in borrowing, especially, from powerful countries. The necessary requirement for borrowing was for the government to be fully sure of being capable of repayment. Consequently, during the period from the Meiji Restoration to the close of the Sino-Japanese War (1895) Japan borrowed overseas only twice. Two moderate-sized loans were floated in London, totaling only 16.6 million yen in face value, the first one issued in 1870 and the other in 1873.[1] In addition, Japan received from abroad considerable short-term credits and a small amount of direct investment.[2] By 1895, with the current account shifting to surplus and with the government having a strong

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[1] E.P.Rubens, "Foreign Capital and Domestic Development in Japan", in Economic Growth: Brazil, India, Japan, S. Kuznets, et al., eds., (Durham, N.C.: Duke University Press, 1955), p. 185. The interest rate for the first one was 9 percent and for the second one was 7 percent, see Lockwood, The Economic Development of Japan, op. cit., p. 253.

[2] Ibid, p. 185.

tendency for fast liquidation; all of the long-term loans, and most of the short-term credits were liquidated - leaving virtually no foreign obligations.[1] The current surplus was used to liquidate past debt outstanding.

The attitudes towards borrowing overseas changed after the Sino-Japanese War, making 1896 a turning point in Japan's international relations. From this year, there was a rapid expansion of foreign borrowings. Indeed, the indemnity following the Sino-Japanese War played a very significant role in this regard. This transfer, received in London in sterling during 1896-98, yielded Japan 364 million yen.[2] And it provided Japan with a gold and sterling reserve with which she made the important shift to the gold standard in 1897 [3] which, in turn, improved Japan's credit standing to the point where she could borrow advantageously in foreign capital markets.[4] This transfer and that from Japan's victorious interference in the Boxer Rebellion in China (received in annual installments with interest at 4 percent which yielded 24 million yen from 1902 through 1913[5]) were also ranked as another principal category

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[1] Okita & Miki, "Treatment of Foreign Capital...", op. cit., p. 143.

[2] Rubens, op. cit., p. 187.

[3] Lockwood, op. cit., p. 19.

[4] As an example, on a £10 million loan floated in London in the first decade of this century she only paid 4.4% interest (Ibid, p. 254) compared to 9 & 7 percent interest she paid on previous loans (see footnote 1 on previous page.

[5] Rubens, op. cit., p. 187.

of capital available to Japan. Some of them compensated for the Wars' expenses and the rest were spent, partly to redeem a small amount of government bonds, adding to the nation's specie holding abroad, but mainly for further military expansion.[1]

Businessmen who had expected the inflow of indemnities in excess of the wars' costs would lead to relaxation of the prevailing tight money policy[2] and in turn to a lower interest rates actively started to develop the industries. But as government had allocated these funds mostly for military purposes, total capital requirements outran domestic capital. Finally, the national government took steps to facilitate foreign capital inflow to meet the shortages at home. This new policy began with a series of government bond floatations abroad with an initial amount of 43 million yen[3]. These loans were made through the Industrial Bank of Japan which functioned as a central organ through which private firms were supplied with funds for the development of Japanese industries[4]. The existance of such a central organ, which was against the background of a cautious attitude towards foreigners, strongly prevented direct foreign investment in industries selected by foreigners.

As the tempo of economic activities was very strong and as domestic capital was in short supply, Japan borrowed overseas frequently. 93 million yen worth of domestic bonds were floated abroad

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1 Okita & Miki, op. cit., p. 143.

2 This policy is known as the "Matsukata Deflation". Matsukata, then the Finance Minister adopted a very strong deflationary policy to combat the severe inflation which had resulted from issuance of large amount of inconvertable government notes in preceding years, ibid, p. 142.

3 Rubens, op. cit., p. 186.

4 Okita and Miki, op. cit., p. 144.

and another £10 million loan was obtained in London between 1897 to 1903.[1] Yet, the prevailing fear of possible foreign domination dictated that, now that Japan had to rely on external sources, foreign capital was to be used directly for productive purposes in order to assure repayment. Thus, the floating of bonds overseas to raise funds for armament or for other non-productive services was opposed by the general public. They demanded that if the government was to increase foreign capital by floating bonds, the capital should be used for purchasing domestic bonds and stock by the fiscal authorities.[2] But the event to come turned out to be very costly for Japan, making the government reluctant to respond to the public demand.

The outbreak of the Russo-Japanese War in 1904 compelled the Japanese to increase the inflow of capital markedly. Total war expenditure amounted to 1,720 million yen[3] some of which was supplied through 800 million yen worth of bonds issued overseas[4] and a number of foreign issues of individually smaller amounts along with some sales abroad of domestic issues[5] . But not only did these funds help finance of the War, they provided backing for the ever-increasing bank-note

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[1] Lockwood, op. cit., p. 254.

[2] Okita & Miki, op. cit., p. 146.

[3] To give an indication, this amounted to one quarter of GNP of 1905 and 1905; calculated by dividing this figure by GNP figures as given in Ohkawa & Rosovsky, Japanese Economic Growth, op. cit., p. 278.

[4] Okita & Miki, op. cit., p. 147.

[5] Rubens, op. cit., p. 186.

issue by increasing specie reserves.[1]

The Russo-Japanese War made Japan a major debtor in the international capital market. Japan won the War, but she received no indemnity, and bearing the burden of foreign debts she did not enjoy an industrial boom like the one after the Sino-Japanese War. By the time the First World War broke out, outstanding foreign indebtedness of the national government stood at 1,599 million yen which accumulation had provided in financial terms about one-sixth of the State revenues from all sources.[2] In addition to the national government's borrowing some capital was imported by municipal governments as well as Japanese corporations. By the end of 1913, their total obligations outstanding was 370 million yen.[3]

At this point an important shift in policy resulted. In the process of development of industries Japan realized that the need for technological borrowing was much stronger than foreign capital. Therefore, the Japanese policy shifted to encourage also direct foreign investment in the form of joint ventures which were often supported by technical licensing agreements.[4]

Nevertheless, years immediately preceding World War I saw Japan's payments of interest on foreign debts steadily increasing and her imports of goods and services were exceeding exports. There was as a result, a net outflow of gold and silver[5]. These were, on the whole, the signs of

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[1] Okita & Miki, op. cit., p. 147.

[2] Rubens, op. cit., p. 186.

[3] Ibid, p. 186.

[4] Okita & Miki, op. cit., pp. 149, 150, 153.

[5] Ibid, p. 150.

potential instability and crisis for years to come.

But the situation turned well for Japan when the First World War broke out. The World War I period was marked by virtual cessation of capital inflow; indeed, there was a net outflow as the wartime boom in exports and the shipping industry generated a huge surplus. By the end of 1919, Japan stood as the net creditor vis-à-vis the rest of the world with a net foreign surplus on current account of 2,431 million yen which had been accumulated in specie holdings and other assets abroad.[1]

However, this period was short lived as the borrowers soon liquidated their loans and the specie holding abroad was used up to support an overvalued yen and to finance the trade deficit of 1920's.[2] During the twenties although the value of Japan's exports did not decline, a huge amount of foreign exchange started to flow out reflecting a sharp increase in imports.[3]

Again, Japan was compelled to borrow overseas. However, it was never carried to the same relative importance as in the 1896-1913 period. For example, the net foreign debt outstanding in 1929 in current value was 748 million yen as compared to 1,432 million yen in 1913.[4] Moreover, the former volume was relatively much smaller in relation to national income

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1 Rubens, op. cit., p. 190.

2 Lockwood, op. cit., p. 259

3 Okita & Miki, op. cit., p. 151.

4 Rubens, op. cit., p. 190.

(5.9 percent in 1929 compared to 33.7 percent in 1913)[1]. Another important difference between these two periods was that there was a substantial increase in private industrial debentures and a marked decrease in the amount of national and local government bonds.[2]

Japan continued to borrow overseas till the depressed years of the late 1920's[3]. During the 1930's foreign floatation of Japanese long-term loans entirely ceased and inflow of direct foreign investment was also quite limited.[4]

After the Second World War a huge amount of military expenditure was cut down to a minimum enabling the Japanese government to maintain a balanced domestic budget. Nevertheless in this period Japan was in need of foreign capital. From 1946 to 1950 Japan imported capital amounting to 2.7 million dollars, 70 percent of which was provided by financial aid from the U.S.A.[5] American financial aid was accompanied by American advisory policy to combat the inflation developed in the year immediately after the War. The policy is known as the "Dodge Line", for it was formulated by J.H.Dodge, Chairman and Director of the Detroit Bank and Trust Co. who later was appointed as an advisor to General MacArthur (the

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1 Calculated by dividing the above figures by the corresponding figures for national income as given in Ohkawa, et al., op. cit., p. 247.

2 Okita & Miki, op. cit., p. 151.

3 The depression had resulted mainly by lifting of gold embargo and re-embargo causing a fall in the foreign exchange rate of yen, ibid, p. 153.

4 Ibid, p. 153.

5 Ibid, p. 157.

Supreme Commander of the Allied Powers).[1] The policy slowed down the economy; nevertheless, by fixing the exchange rate of 360 yens equal to a dollar, domestic and international prices more or less were set in balance.[2]

However, as it was felt that the Japanese economy was still in a state of disorganization some measures were taken to protect domestic industries and to restrict capital inflow so as to offset the heavy outflow of the earnings of foreign investment which might have led to a deterioration of Japan's balance of payments and weakening the economy. These measures included the enactments of the Foreign Exchange Law and Foreign Trade Control Law in 1949 and the Foreign Investment Law in 1950.[3] Under the Foreign Investment Law foreign investment was required to contribute to the improvement of Japan's international accounts and to the development of key industries and public utility services, and should not impede Japan's postwar economic rehabilitation and development, and contracts for foreign investment should not contain illegal or unfair clauses.[4] In 1952, Japan joined the International Monetary Fund (IMF) and the World Bank; the latter extended a 40 million dollar credit to Japan which was the first sizable foreign capital Japan had imported since the end of the First World War.[5]

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1 Ibid, pp. 157-158.

2 Ibid, p. 158.

3 Ibid, pp. 158-59.

4 Ibid, p. 159.

5 Ibid, p. 158.

In the second half of the 1950's when it was realized that the Japanese economy had markedly expanded, the Foreign Investment Law was relaxed resulting in an increase in imports of capital (Table 5.5). Similar to the prewar period, at this time the inflow of capital was accompanied by advanced technology to fill a technological gap created during the War between Japan and the Western nations.

The relaxation of the Foreign Investment Law, which has happened several times since 1959, did not eliminate the burden on direct foreign investment. Under the provision of the latest revised Foreign Investment Law, direct foreign investment in agriculture, forestry, fishery and certain sectors of other industries are still restricted.[1]

Therefore, it can be said that Japan of post World War II is not significantly different from the past. She is still reluctant to import capital. Her industrial units hardly rely on foreign capital especially in the form of direct investment. This is clearly shown in Table 5.5 which indicates that foreign capital as a proportion of total investment had been below one percent except for 1975 which was slightly over 2 percent.

A closer look at Table 5.5 also reveals that although in 1950 direct foreign investment was much higher than other long-term credits, in the following years it grew at such a relatively low rate that it was surpassed by the latter by a considerable amount. In fact, this is the

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[1] M. Fujiko, Japan and The World Economy, (Japan: Ministry of Foreign Affairs, 1977), p. 10.

TABLE 5-5

FOREIGN CAPITAL IN PRIVATE NON-MONETARY SECTOR

(1950, 1960, 1970, 1975)

(In million of US dollars)

Description	1950	1960	1970	1975	Compound annual rate of growth 1950-75
Volume of Direct Investment:	4	6	94	226	16.1%
(as % of domestic investment)	(.23)	(.05)	(.13)	(.15)	
Other Long-term Liabilities	0.1	55	433	2783	40.9%
(as % of domestic investment	(.01)	(.42)	(.62)	(1.9)	
Total	4.1	61	527	3009	26.4%
(as % of domestic investment)	(.24)	(.47)	(.75)	(2.1)	

Source : IMF , Balance of Payments Yearbook ; and IMF, International Financial Statistics .

main feature of shift in attitude towards foreign capital. In other words, the increasing reliance on foreign domestic investment which became a feature of Japanese development during a short period was corrected and foreign loan, once again, became the major vehicle of foreign capital. However, she is today a net creditor country.

Another feature of the postwar Japanese economy is worth noting. With increasing economic development, Japanese industrialists have aggressively sought investment outlets in foreign countries. Japan is today a major capitalist nation and her tireless efforts to seek foreign and investment outlets is a measure of her increasingly important role in the world capitalist system.

This status became firmly established in the early 1960's and was facilitated by the shift to surplus on current account after 1965 (Table 5.6). In fact, in this year Japan reached net creditor status with outflow of capital exceeding the inflow by approximately $500 million. Since then she has been very successful in maintaining this position (except in 1969 and 1971 when she became a net debtor by $23 and $1,353 million, respectively).

A continuous deficit in the capital account reflects, among other things, increased direct foreign investment abroad. As Table 5.7 shows Japanese direct investment abroad are growing at an unprecedented rate: between 1967 and 1974 they registered an average annual rate of growth of 31.4 percent - much higher than U.S.A., Britain, West Germany, France, and Canada. The same years saw Japan increase her share of the

TABLE 5-6

BALANCE OF PAYMENTS (1954-75)
(in millions of US dollars)

Year	Balance on :		
	Current Account[1]	Trade Account[2]	Capital Account[3]
1954	- 51	- 80	+ 22
1961	- 983	- 941	- 11
1962	- 49	- 18	+ 172
1963	- 779	- 734	+ 467
1964	- 480	- 408	+ 107
1965	+ 932	+1017	- 415
1966	+1254	+1389	- 808
1967	- 190	- 12	- 812
1968	+1048	+1223	- 239
1969	+2119	+2300	- 155
1970	+1970	+2178	-1591
1971	+5797	+6548	-1082
1972	+6624	+7089	-4489
1973	- 136	+ 202	-9750
1974	-4693	-4465	-3656
1975	- 682	-272	- 122

Source: IMF, Balance of Payments Yearbook .

Notes : 1 Current Account = Trade Account + Transfer Payments
2 Trade Account of goods and services
3 Long-term capital .

TABLE 5-7 . OVERSEAS DIRECT INVESTMENT OF SELECTED COUNTRIES
(1967,1974)

Countries	Investment outstanding ($ Million)		Share in total investment (%)		Ratio to GNP (%)		Annual average rate of growth of investment outstanding (%) (1967-74)
	1967	1974	1967	1974	1967	1974	
Japan	1458	12666	1.4	5.6	1.2	2.8	31.4
U.S.A.	59486	118613	57.1	52.5	7.4	8.5	10.4
U.K.	17521	32633	16.8	14.4	15.8	17.1	9.3
France	6000	11605	5.8	5.1	5.2	4.2	9.9
West Germany	3015	15258	2.9	6.7	2.4	4.0	26.1
Canada	3728	7571	3.6	3.3	6.1	5.3	10.7
Total	104232	226138	100.0	100.0	6.7	6.7	11.7

Source: White Paper on International Trade , 1976 , (Japan : Ministry of International Trade and Industry).

total direct overseas investment by these main capital exporters from 1.4 percent in 1967 to 5.6 percent in 1975 (compared with U.S.A's 52.5 percent, Britain's 14.4 percent and West Germany's 6.7 percent). However, share of overseas direct investment in GNP was the lowest for Japan among other mentioned nations.

Direct overseas investment is not unrestricted in Japan. Rather the Foreign Exchange and Foreign Trade Control Law - even after carrying some degree of liberalization since 1969 - imposes restriction on the export of capital by Japanese investors. This law, generally, excludes investment in the fields classified either as "being problematic with respect to international cooperation and diplomacy", or as "having grave adverse effects on the Japanese economy".[1] It also restricts foreign investment by Japanese nationals pearl nursery, banking and securities brokerage industries.[2]

Since Japan restricts the inflow of foreign capital, its policy of restriction of the outflow of foreign capital may spring from her wish to make scarce domestic capital more fully served the needs of Japan's internal development. The investment that is permitted to take place overseas is also made complementary to the needs of Japan's internal economy. First, it has been concentrated in the development of natural resources in recipient countries.[3] This has secured the continuity and

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[1] Japan's Overseas Investment, 1977, (Japan: Ministry of International Trade and Industry), p. 1.

[2] Ibid, p. 1.

[3] Mostly the developing countries of South and South East Asia, Africa, Latin America and the Near and Middle East; and U.S.A. and Canada among advanced capitalist countries; for more, see Statistical Survey of Japan's Economy, 1976, (Japan:Ministry of Foreign Affairs).

diversification of raw material supply necessary for Japanese development. Secondly, it has been allocated for establishing distribution operations in host countries thus it has helped support the increased export of goods and services. Finally, overseas investments have provided the location for Japan's labor intensive and high pollution industries.[1]

To sum up, the above study indicates that self-reliance has been a powerful factor influencing Japanese attitude towards foreign capital. However, in carrying out such a policy Japan took care to see that in shutting out foreign domination she did not lose the benefits of foreign technologies. Japan, thus, is a classic example of a country that carried out her development mainly through reliance on her indigenous savings and resources without losing the crucial benefits of foreign technology.

B) Investment and Growth

Japanese institutions of the pre-modern era had been set in such a way that the surplus of the society was transferred from productive to unproductive sector - that is from peasants and artisans to the Emperor, Shogun, and lords with their attached samurai class.[2] This situation

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[1] These locations are in the developing countries as mentioned in the preceding footnote. As a rule the bulk of investments in manufacturing industries has gone to developing countries, while the majority of those in commerce and the service industries have been made in the advanced countries of Europe and North America. (See Japan's Overseas Investment, 1977, op. cit. ; and V. Dybov, "Japan Multinationals in the Structure of World Capitalism", in International Affairs, No. 4, (1978), pp. 98-105.

[2] See Victor D. Lippid, "Economic Development in Meiji Japan and Contemporary China: A Comparative Study", Cambridge Journal of Economics, 2(March 1978) 55-81.

even worsened toward the end of this era when the various administrative, ceremonial and formal expenses surpassed taxes and rents they received. All these expenses made the latter groups become deeply indebted to the emerging merchant class,[1] who by this time had accumulated some wealth. These loans furthermore were seldom repaid to the lenders,[2] and as such during the Tokugawa Rule there were few forces operating to increase capital formation in the country.[3]

It was not until the Meiji Restoration succeeded in creating the potential and economic framework capable of capital development that the impetus was provided for fostering capital accumulation.

a) Pattern of Investment after the Restoration until the World War II

As was discussed earlier in this chapter, it was the heavy taxation of the agricultural sector that provided the greater part of government tax revenue. Now, it must be added that, it was this tax revenue which enabled the government to issue debentures in payment of indemnities to the dislodged lords, to assume their debts, and to pay stipends to the ex-samurais until jobs were provided for them. Lords and samurais, as well as merchants, invested their funds in banks, stocks, landed estates, and industries. This accounted for the most significant contribution to the primary accumulation of stock of saving. However the

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1 For a detailed discussion see Maddison, op. cit., p. 7 and Rosovsky, "Japan's Transition to Modernity:, op. cit., p. 123.

2 Baran, op. cit., p. 152.

3 R.R.Nelson, "Growth Models and the Escape from the Low-Level Equilibrium Trap: The Case of Japan", Economic Development and Cultural Change, 8(October 1959), 378-388, p. 383.

accumulated saving was used extensively in mercantile activities (such as commodity speculation,[1] trade and money lending) rather than for industrial purposes.[2] Hence, we find that for the period before the turn of the century, the annual rate of growth of capital stock was only about 2 percent.[3] Therefore, the rate of growth of 3.8 percent per year of real income[4] was attributed more to the increase in the efficiency of the economy than to the growth of capital.

The growth process can be conceptualized in the form of the following equation:[5]

$$Gy = s\sigma + r \qquad (1)$$

where Gy = Rate of growth of income,

s = The saving ratio $= \frac{S}{Y}$,

σ = The technical marginal efficiency of investment[6] $= \frac{\Delta Y}{I}$,

and r - Percentage increase in national income resulting from organizational and human improvement.

Basically, growth results from increase in the rate of capital formation,

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1 Proportion of inventory in gross domestic capital is the highest before 1900; see Table 5-9.

2 Baran, op.cit., pp. 155-56.

3 Nelson, op.cit., p. 385.

4 S. Kuznets, Modern Economic Growth, (New Haven & London: Yale University Press, 1966), pp. 252-56, Table 5-6.

5 This equation is taken from K.J. Charles, "Capital Efficiency and Economic Growth", Economic Affairs, 12(1967), 15-28. This article, while viewing the growth process of India, reveals that for developing countries increase in rate of capital formation does not necessarily result in growth unless it is accompanied by organizational and human improvement; S. Kuznets, Population: Capital, and Growth, (New York: W.W. Norton & Company, Inc., 1973), pp. 128-29, also has an interesting argument in this regard.

6 Perhaps it should be pointed out that the technical marginal efficiency

or from increase in the efficiency with which capital and other factors are utilized. During this phase - the years before the turn of the century - what happened in Japan was that while s/y, and, in turn, I/y, did not rise markedly, the efficiency factor (r) increased substantially.

As noted earlier, for nearly 150 years prior to the Restoration (1868), Japan's income and capital had remained virtually constant. After the Restoration to around 1900, though savings and investments did not show any marked improvement, the national income grew at a rate of 3.8 percent. From this, we may assume that the increase in national income was largely due to improvement in efficiency of the economy, due to the efficiency factor r in equation 1.

This requires further clarification. In a country in which efficiency is neither unusually high or unusually low, we may expect the value of the capital-output ratio to be around 3 to 4.[1] Study of the capital-output ratios of different countries in different periods shows that for most of the countries, the capital-output ratio lies between this range.

If we accept this to be the normal range of the value of

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of investment, as used here, is not related to the concept of marginal efficiency of capital introduced by Keynes in his General Theory. The latter measures the expected rate of profits, whereas σ used in this analysis measures the amount of output yielded by one unit of investment.

[1] Kuznets, Modern Economic Growth, op.cit., pp. 252-56, Table 5-6.

capital-output ratio, then we may hypothesize that if the actual value of capital-output ratio turns out to be lower than 3 then the economy was subject to substantial improvement in organizational efficiency. On the other hand, if the incremental capital-output ratio turns out to be more than 4, we may assume that organizational inefficiency has been at work in the economy. In terms of our equation, this would mean that in the latter case r has a negative value. It is possible, of course, that a close examination will show that a high incremental capital-output ratio may be due to organizational inefficiency, as to high capital-output ratio required in some sectors of the economy due to high capital intensity and construction of massive infra-structural activities. Even here, the conceptual framework provided in this analysis may suggest that a country is spending large amounts on social overhead capital. The case of Japan, since she entered a period of rapid growth without any marked improvement of savings and investments from the period of stagnation, provides a basis for inferring that improvement in organizational factors accounted for her growth during this period.

In Chart A, for example, if the capital-output ratio of Japan had been within the range of 3 and 4, the actual rate of growth of national income would have been between 0.85 and 1.1 percent. But actually during this period income increased at an annual rate of 3.8 percent. This leads us to conclude that the efficiency factor was between 2.67 and 2.95. In economies such as Italy and Norway, for

Chart A

s/y (1)	Efficiency of Investment based on normal I.C.O.R. (2)	Normally expected Growth (3)	Actual Growth (4)	r (5)=(4)-(3)
3.4	3	1.13	3.8	2.67
3.4	4	0.85	3.8	2.95

similar periods the r factor was negative and incremental capital-output ratios of 8.0 and 7.0 percent, respectively, produced growth rates of income of 1.49 and 1.66 percent, respectively - while saving ratios for both countries were higher than that of Japan.[1]

With the private sector busy in mercantile activities, industrialization began with the government's own initiative in investing heavily in social overhead of railroads, roads, irrigation canals, communication systems, basic industries, and in the production of machinery. In addition, government provided different and significant stimulus for private investors - such as commitment to purchase many years' output of the newly established concerns while providing a guaranteed return on the investments. It was in this way that the transfer of capital from mercantile to industrial activities was induced.[2] These efforts led to a growth rate of investment of 13.7 percent from 1890-1895, 8.5 percent from 1895-1900, and 8.2 percent from 1905-1910 (Table 5-8). Not only that, during this phase while GNP grew annually at 12.3 percent from

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1 Ibid., Table 5-5 and 5-6.

2 See for example, Lockwood, The Economic Development of Japan, op.cit., pp. 9-19.

TABLE 5-8

INVESTMENT AND OUTPUT (1890-1940)[1]

(5-year moving average, million yen of 1932-34)

Year	I[2]	Annual%Δ I	Y[2]	Annual%Δ Y	I/Y
1890	101	-	971	-	10.4%
1895	170	13.7	1569	12.3	10.8
1900	242	8.5	2200	8.0	11.0
1905	827	-	6659	-	12.4
1910	1166	8.2	7706	3.1	15.1
1915	1319	2.6	8869	3.0	14.9
1920	2364	15.8	11695	6.4	20.2
1925	2177	-1.6	12439	1.3	17.5
1930	2361	1.7	14053	2.6	16.8
1935	3352	8.4	18304	6.0	18.3
1940	5574	13.3	21690	3.7	25.7
Average (1905-40)		6.9		3.7	20.1

Sources: For 1890,1895 &1900, Rosovsky, Capital Formation in Japan, op.cit.,p.2&p.9; for the rest of the period Ohkawa & Rosovsky, Japanese Economic Growth,op.cit., p.288

Notes: 1 Due to different sources, figures are not adequately comparable before and after 1900; therefore, the calculation of annual rate of growth is interrupted at this year.

2 I= Gross domestic fixed capital formation

Y= GNP

1890 to 1895, 8.0 percent for the second half of this decade, and 3.1 percent from 1905 to 1910, increasingly greater proportions were demanded for investment activities (Table 5-8).

With the boom following World War I, the volume of investment grew at an unprecedented rate of 15.8 percent, and also the investment ratio reached a record high of 20.2 percent. However, this boom was followed by the difficult years of adjustment to troublesome domestic and international events which lasted to the end of 1920's. During this phase, from 1920 to 1925 investment decreased at an average annual rate of 1.6 percent, and even when it recovered it grew only at the moderate annual rate of 1.7 percent from 1925 to 1930. As a result, the gross investment ratio steadily declined in this phase, from 20.2 percent in 1920 to 17.5 percent in 1925 and even further down to 16.8 percent in 1930. Therefore, output also grew at low rates during this period: at an annual rate of 1.3 percent for the first half of the decade and 2.6 percent for the second half.

With the structural changes in the economy after 1930, characterized by formation of the Japanese war economy, the economy as a whole recovered. Gross investment grew at an average annual rate of 8.4 percent from 1930 to 1935 and 13.3 percent from 1935 to 1940. In fact, by 1940 the share of gross domestic capital formation in GNP rose to an all time high of 25.7 percent. But, as the war economy necessitated, a good proportion of domestic capital equal to approximately 31 percent was spent for military purposes. This was the greatest military expansion effort for Japan since the end of the Russo-Japanese War.[1]

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[1] Rosovsky, Capital Formation in Japan, op. cit., p. 15.

TABLE 5.9.

STRUCTURE OF GROSS DOMESTIC CAPITAL FORMATION (1892 - 1940)
(Decade average, millions of current yen)

Period	Agriculture		Non-agriculture		Change in Stock		Total	
	Amount	%	Amount	%	Amount	%	Amount	%
1892-1901	7.7	3.9	162.8	83.5	24.5	12.6	195.0	100.0
1902-1911	11.0	2.8	342.4	87.8	36.7	9.4	390.1	100.0
1912-1921	18.6	1.4	1161.2	90.0	109.8	8.5	1289.6	100.0
1922-1931	33.7	1.4	2128.3	87.2	278.5	11.4	2440.5	100.0
1931-1940	67.9	1.3	4761.0	92.8	299.1	5.8	5128.0	100.0

Source: Rosovsky, Capital Formation in Japan, op. cit., Tables 1 & 4.

As far as sectoral distribution of domestic capital is concerned, as the Japanese economy moved toward industrialization the relative share of investment for the agricultural sector steadily declined. As Table 5-9 indicates, although the amount of capital for this sector increased - that is, from 7.7 million yen in 1892-1901 to 67.9 million in 1931-1940 - its relative share declined from 3.9 to 1.3 percent of gross domestic capital. Indeed, in spite of the fact that agriculture was the major producer of national output at least until the end of W.W.I, the investment share for this sector shifted from one low level to another. In other words, during this period the non-agricultural sector consumed the most part of domestic capital; that is 83.5 percent in 1892-1901 to 92.8 percent in 1831-40.

During these years, the public sector invested slightly more than the private sector (Table 5-10) - except for the year from 1912 to 1921. However, agricultural investment and most of inventory investment

TABLE 5-10.

NET INVESTMENT: PRIVATE VERSUS PUBLIC SECTOR (1892 - 1940)

Percentage

Period	Private 1	Public 2	NDCF[1] 3=(1+2)	Agriculture 4	Change in Stock 5	Total 3+4+5
1892-1901	36.8	46.7	83.5	3.9	12.6	100.0
1902-1911	37.5	50.3	87.8	2.8	9.4	100.0
1912-1921	47.7	42.3	90.0	1.4	8.5	100.0
1922-1931	40.0	47.2	87.2	1.4	11.4	100.0
1931-1940	44.5	48.3	92.8	1.3	5.8	100.0

Source: Rosovsky, Capital Formation in Japan, op. cit., Table 4.

Note: 1 - NDCF = Net domestic capital formation.

were initiated by the private sector.[1] Hence, even if we assume that the major share of agricultural investment came from private sector, at best investment by the private sector will only equate that of public sector. Therefore, even after making such a generous adjustment, it is clear that the public sector participation in investment activities during this period is unusually high compared to post-war period. However, once the capital consumed for military purposes is excluded the share of private sector in total investment would sharply increase.[2]

To sum up, Japan invested an average 20 percent of her GNP from the turn of the century until 1940. In this period Japan experienced two phases during which investment activities increased sharply: the year immediately following W.W.I. and the year preceding W.W.II. These phases correspond precisely to explicit phases of economic growth in Japan.

b) Pattern of Investment after the Korean War

As discussed in Chapter II, the most effective impulse toward the recovery of the Japanese economy from the vast devastation of the Second World War was provided by the outbreak of the Korean War. In fact, what Japan experienced after this War was quite different from the past. That is Japan found herself in a boom of prosperity resulting from

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[1] Rosovsky, ibid, p. 13.

[2] Ibid, Table 7.

TABLE 5-11
GROSS INVESTMENT AND GROSS OUTPUT
(1953-1975, in million yen of 1965 prices)

Year	I	%Δ I	Y	%Δ Y	I/Y
1953	2176	15.2	10576	5.4	20.5
1954	2337	7.4	11104	5.0	21.0
1955	2368	1.3	12222	10.1	19.4
1956	2923	23.4	13404	9.7	21.8
1957	3490	19.4	14695	9.6	23.7
1958	3608	3.4	15388	4.7	23.4
1959	4145	14.9	16873	9.7	24.6
1960	5502	32.7	19535	15.8	28.2
1961	7090	28.9	22992	17.7	30.8
1962	7692	8.5	24302	5.7	31.7
1963	8306	8.0	26665	9.7	31.1
1964	9691	16.7	30568	14.6	31.7
1965	9765	0.8	31891	4.3	30.6
1966	10919	11.8	35102	10.1	31.1
1967	12894	18.1	39846	13.5	32.4
1968	15750	22.1	45587	14.4	34.5
1969	18432	17.0	51009	11.9	36.1
1970	20965	13.7	56362	10.5	37.2
1971	22905	9.3	60509	7.4	37.9
1972	25338	10.6	66000	9.1	38.4
1973	28642	13.0	72506	9.9	39.5
1974	25844	-9.8	71665	-1.2	36.1
1975	24955	-3.4	72311	0.9	34.5
Average					30.3

Sources: Ohkawa & Rosovsky, Japanese Economic Growth , op.cit., p.289; and Statistical Survey of Japan's Economy,1976 .

increased demand for the production of goods and services. As a result of this boom, investment activities regained momentum and went on at a pace which can only be described as feverish. For example, Japan's investment-output ratio increased from 20 percent in the first period[1] to more than 30 percent in the second period (Table 5.8 and Table 5.11).

A clear distinction between two periods under consideration must be made here. After W.W.II and the Korean War, Japan saw non-governmental investment sharply increased. That is, while the continuing boom resulted in an increasing share of investment in GNP, the private sector accordingly contributed increasingly to the formation of capital. Government sector no longer possessed the leading role in investment undertaking, which was mainly due to a drastic decline in military investment.[2] Comparison of Table 5.12 with Table 5.10 clearly suggests this difference.

TABLE 5.12 .

INVESTMENT*: PRIVATE VERSUS PUBLIC SECTOR (1955 - 74)
percent

Period	Private	Public	Total
1955 - 59	68.0	32.0	100.0
1960 - 64	70.6	29.4	100.0
1965 - 69	72.8	27.2	100.0
1970 - 74	74.1	25.9	100.0

Sources: UN, Yearbook of National Account Statistics; and O.E.C.O., Economic Survey, Japan (July 1975).

Note: * - Investment = Net domestic capital formation.

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[1] This figure actually belongs to the years from 1900-1940 (Table 5.8).

[2] To no more than 1 percent of GNP; see Halliday and McCormack, Japanese Imperialism Today, op. cit., p. 107.

During the years 1931 - 40 the share of government investment was 52.0 percent of total non-agricultural capital investment[1] while in the second period, for example, in the five years between 1955 and 1959 the share of government was 32.0 percent. Furthermore as the table suggests this share was also steadily decreasing.

Returning to the pattern of investment, at the beginning of the second period the investment ratio was much lower than the ratio at the end of the first period (Tables 5-8 and 5-11). But the general performance of the economy created an optimism for Japanese investors which led to greater and greater shares in the next phases. In the seven years from 1953 to 1960, investment increased at an average rate of 12.1 percent a year. Such a high rate of capital accumulation resulted in a 7.7 percent annual rate of growth of economy during this phase. Actually in 1953 when the investment-output ratio was 20.5 percent, the rate of growth was 5.4 percent while in 1960 the investment-output ratio was 28.2 percent and the rate of growth was 15.8 percent.

After 1960, Japan saw her concerns pouring enormous amounts of funds into plant and equipment investments. The share of GNP devoted to capital investment was 30.6 percent in 1965,[2] over 37 percent in 1970, and at extraordinary high level of 39.5 percent in 1973. However, after 1973 when the powerful aggregate demand control policy, which had aimed at controlling the prevailing inflation, exerted a deflationary pressure on

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[1] Agricultural capital investment only formed 1.3 percent of gross domestic capital formation (Table 5-9).

[2] Although this year was a year of depression with growth rate of income at 4.3 percent - the lowest since the end of the Korean War.

the economy a considerable decline in the amount of investment for forthcoming years occurred (Table 5.11). There was also another problem. The vast increase in production and the pattern of investment expansion had produced highly undesirable side-effects which seriously and increasingly affected the well-being of the people. Therefore, in the new policies some measures were taken to bring a shift in attitude from total commitment to quantitative growth of income to improvement of quality of life and the promotion of social welfare.[1] While these measures were not very effective, to the degree they were actually applied, they increased the amount of investment required per additional unit of GNP (because these goals are considered less productive).

The impressively high investment-output ratio for the entire period was achieved as a result of the combination of three major developments. These were the increase in total annual national income (or output) which is to say in the resources available for division between saving and consumption; a rise in the proportion of income saved; and a decline in the price of capital goods relative to the price of other components of the national product, presumably reflecting a decline in the relative production cost of capital goods. These developments are illustrated in Table 5.13.

From 1953 to 1960 investment increased 280.3 percent (1953 = 100) mainly as a result of increase in income (first row), and saving[2]

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[1] See Appendix II.

[2] Gross private investment (GPI) is conceptually identical to gross national saving (private saving + government saving), when government saving is defined as the government surplus on income and product account or government receipt over expenditure when government expenditure includes investment by government.

TABLE 5-13

ANALYSIS OF FIXED INVESTMENT
(Unit %)

Description	First period	Second period	
	1960/1953 1953=100	1971/1960 1960=100	1975/1971 1971=100
1.GNP (constant prices)	176.3	298.4	119.5
2.GPI[1]/GNP (current prices)	152.2	106.0	95.2
3.Price ratio= GNP/FI[2]	100.2[3]	143.2[3]	111.3
4. FI	280.3[4]	399.5[4]	104.6

Sources : First two columns from Denison and Chung, op.cit., p.114; the last column calculated from OECD, OECD, Main Economic Indicators .

Notes : 1 GPI =Gross private investment
2 FI =Fixed business investment
3 Price ratio of GNP to fixed non-residential business investment
4 Fixed non-residential business investment .

(second row). In 1960, GNP in constant prices was 176.3 percent of 1953, and gross national saving at current prices was 152.2 percent of 1953. Increase in the ratio of the average prices of all output to the prices of investment goods cannot account for the increase in investment since it increased only 100.2 percent in this phase.

The further rise in investment after 1960 was mainly due to increase in real income and the persistent drop in the price of investment goods in relation to the average prices of total output. From 1960 to 1971 real income increased 298.4 percent (first row) and price ratio increased 143.2 percent (third row), while the rise in gross saving rate was small (106.0 percent - second row).

The moderate increase in investment from 1971 to 1975 (104.6 percent) was also mainly due to increase in income and a favourable price ratio. In fact in this phase these two developments had to compensate for the decline in the rate of saving (second row).

In sum, when the entire period from 1953 to 1975 is considered, the combination of all three factors: increase in income, gross saving rate, and the average price ratio of GNP to that of investment goods were responsible for investment.

Conclusion

Following Harrod and Domar, output growth is the product of the incremental output - capital ratio and of the average propensity to save. Japan is a unique case where in fact both these variables were at high values in comparison to other advanced countries in

comparable periods of development. The productivity of investment was 25 to 100 percent higher than in other major economies[1] while its saving ratio stood at world record levels since at least the mid 1950's (Table 5.3). Moreover, not only were saving proportions already high, but also they were rising steadily (at least until 1974).

That Japan's capital formation effort was very high by international standards is well known - investment ratio of 30 percent that has been maintained between 1953 and 1975 is unparalled by any of the market economies.[2] However, it is true that international cross-section analyses have often failed to detect a strong relationship between investment shares and GNP growth-rates. Nevertheless, in Japan's case, the association seems striking, especially in the post World War II period. In other words, the fast growing Japanese economy created a strong demand for capital. The main reason investment grew so much is obvious: the demand for investment was derived from the expanding demand for end products which, in turn, stemmed from the rise in income created by the increase in production. However, it is not merely this spiral-- increased investment leading to increased output and so expanded output leading to increased investment-- which is the determinant of the growth. If any of the other organizational and human factors (such as expansion of labor force and improvement of their productivity, general advance in knowledge, improved resource allocations, etc.) had not been favourable to growth of output, capital would have increased less and its contribution to growth would have been correspondingly low.

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[1] Boltho, Japan - An Economic Survey, op. cit., p. 12.

[2] UN, Yearbook of National Account Statistics.

PART THREE

CHAPTER VI: CONCLUSION

This study has attempted to examine the economic history of Japan with a view to identifying the factors that have contributed significantly to Japan's impressive and unique record of economic development. It focused attention on the sequence of events following the Meiji Restoration (1868), because those events played a crucial role in setting Japan firmly on the road to modernization and industrial development.

A little more than a century ago the nation arrived at a fateful crossroads in her economic history. Confronted simultaneously by a crumbling domestic order and the pressure of an expanding Western world, Japan had to make an important decision on national policy. The conviction prevailed that fundamental changes in the established order and way of life had to be made. And, once it was decided to enter the world community and the technological age, there was little desire or possibility to retreat.

The history of Japan during the century following this decision is one of the most dramatic stories of modern times. Throughout this history, although the economy has been subject to many erratic fluctuations, the long-run tendency has been an acceleration of the growth rate and the development of an ever-increasing capacity for growth.

The government of the country at all times showed an acute understanding of the requirement of development and pursued policies to encourage entrepreneurial talents and initiatives, but also protect and safeguard domestic enterprise. Without the initiative, talents and energy of Japan's large cadre of entrepreneurs this outstanding performance would not have been possible. They have always been eager to seize upon profitable opportunities and willing to undertake the concomitant risks.

In the thesis, a tentative assessment of Japan's performance has been made (Chapter II). This chapter will reconsider some of the economic arguments advanced in Chapters III through V, to call attention to a number of significant aspects of Japan's development process.

1) Chapter III focuses on the importance of the agricultural sector in the advancement of the economy. It is disclosed that an agricultural growth was sufficient to provide the early impetus to growth. This vigorous sector continuously supplied the workers required in the expanding industrial sector. It provided much of the

savings that was required for investment in the rapidly expanding industries of the nation. It supplied food, contributed raw materials for industries, and directly or indirectly provided a large share of export earnings.

2) Japan's high rate of growth is seen as depending on the availability of flexible supplies of labor. The main provision of this advantageous situation is found in the productivity gaps, and in turn, the wage differentials between the traditional and modern sectors The Japanese laborer also has been acknowledged for his education and skill, his capacity for hard work and discipline, and his devotion and loyalty to enterprise. The prime cause is observed in the educational practices of the nineteenth century, at the end of the Tokugawa Shogunate (Chapter IV). Education indeed is currently in favour with economists as the philosopher's stone on economic development at all stages of evolution. But the history of Japan confounds conventional wisdom. In many developing countries literacy drives and primary education have merely prompted people to leave the countryside and plunge into the towns, creating tragic slums. Japanese education did not do this for reasons related to family authority, love of the land and other factors. Thus, it enhanced and enriched the cultural norms and values and, in this way, helped develop a socio-economic system which is so unique to Japan.

Another source of socio-economic co-ordination and stability was found in Japanese industrial relations practice which, as the logical extension of her culture, was well incorporated into its tradition, norms and values.

3) Along with the human factors and an accommodating economic environment there has been a rapid growth of the stock of capital. With the Japanese people confirmed in the habit of saving, Japan's investment has been financed almost entirely by domestic savings. Also Japan's historical assimilation of foreign know-how was achieved with relatively little direct investment by foreign business.

This study has not considered in any detail the role played by Japan's foreign trade in her development. In Japan's development the dynamism of exports was largely a symptom of the dynamism of the economy as a whole - rapid growth of exports was the result of rapid growth of the economy rather than its cause.

This remarkable record of economic development has to be seen in perspective. While Japan has established a record of economic development that is unparalleled in world's modern history, she has also paid a heavy price for this singular achievement (Appendix II). A total commitment to growth at times led to the neglect of human welfare, and sharp increases in consumer prices. Large cities manifested alarming signs of increasing environmental pollution, urban conjestion, an alarming rise in traffic accidents, an inadequate mass transportation system

and the general lack of public services and facilities of all kinds. But there are already signs that Japan has become conscious of this lack of balance in her achievements. When a great nation mounting the most serious obstacle in her path to development turns her attention to addressing the imbalances in her social development, it can be reasonably expected that her traditional energy and intelligence will be successfully applied to the solution of this problem. But this is for the future to disclose. Meanwhile this subject opens interesting areas for research. One of these might be a tracing of the welfare costs of Japanese economic development at various times in her modern history. A fresh area to study could be a comparison of social costs involved in the developments of several fast growing industrial economies. This may reveal a positive correlation between the rate of growth of income and the value of welfare costs (or net social loss). Such an inter-relationship, if found, might provide yet another perspective for understanding industrial development.

APPENDICES

APPENDIX I

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TABLE 1

MAIN ECONOMIC INDICATORS (1952-1976)[1]

Year	Population (1000 persons) 1	Employment (1000 persons) 2	National Income (NI) (billion yen of 1965) 3	Per Capita NI (1000 yen) 3/1	Productivity of Labour (1000 yen) 3/2	Share of Japan in world's exports %	Index numbers of industrial production (1952=100) Japan	World
1952	85300(100)	37560(100)	8907 (100)	104 (100)	237 (100)	1.6 (100)	100	100
1953	86700(102)	39120(104)	9667 (109)	111 (107)	247 (104)	1.6 (100)	122	107
1954	88200(103)	39620(105)	10372 (116)	118 (113)	262 (110)	1.9 (119)	131	107
1955	89000(104)	40880(109)	11210 (126)	126 (121)	274 (116)	2.2 (138)	141	120
1956	90020(106)	41720(111)	11838 (133)	132 (130)	284 (120)	2.4 (150)	176	125
1957	90800(107)	43030(115)	13083 (147)	144 (138)	304 (128)	2.6 (163)	204	129
1958	91760(108)	43240(115)	13780 (155)	150 (144)	319 (135)	2.7 (169)	205	126
1959	92740(109)	43680(116)	14912 (167)	161 (154)	341 (144)	3.2 (200)	254	139
1960	93210(109)	44610(119)	16989 (190)	182 (175)	381 (161)	3.6 (225)	305	149
1961	94050(110)	45180(120)	18770 (211)	200 (192)	415 (175)	3.6 (225)	365	154
1962	94930(111)	45740(122)	20418 (229)	215 (207)	446 (188)	4.0 (250)	396	165
1963	95899(112)	46130(123)	22234 (250)	232 (223)	482 (203)	4.0 (250)	435	174
1964	96906(114)	46730(124)	24340 (273)	251 (241)	521 (220)	3.9 (244)	508	188
1965	97960(115)	47480(126)	25613 (288)	261 (251)	539 (227)	4.5 (281)	522	200
1966	98864(116)	48470(129)	28009 (314)	283 (272)	578 (244)	4.8 (300)	592	214
1967	99918(117)	49200(131)	31798 (357)	318 (305)	646 (273)	4.9 (306)	705	221
1968	101080(118)	50020(133)	36141 (406)	358 (344)	723 (305)	5.4 (338)	827	235
1969	103170(121)	50400(134)	40030 (446)	388 (373)	794 (335)	6.8 (425)	966	258
1970	104304(122)	50940(136)	44424 (499)	426 (410)	872 (368)	7.1 (444)	1122	264
1971	105690(124)	51220(136)	46907 (527)	444 (427)	916 (386)	7.9 (494)	1156	275
1972	107180(126)	51260(136)	51176 (575)	477 (459)	998 (421)	7.9 (494)	1234	296
1973	108700(127)	52590(140)	56400 (633)	519 (499)	1072 (452)	7.3 (456)	1424	322
1974	110160(129)	52230(139)	55369 (622)	503 (484)	1057 (446)	7.4 (462)	1391	333
1975	111570(131)	52230(139)	57750 (648)	518 (498)	1106 (467)	7.2 (450)	1234	330
1976	112770(132)	- -	- -	- -	- -	7.7 (481)	1402	359
Annual rate of growth (1952-75)	1.2	1.4	8.1	6.9	6.7	6.5	49.3	1.0

Sources: Calculated from E.Denison & W.Chung, "Economic Growth and its Sources", in Asia's New Giant, Patrick and Rosovsky, ed., (Washington D.C.: The Brookings Institution, 1976); & U.N., Yearbook of National Account Statistics; & ILO, Yearbook of Labour Statistics.

Note : 1 Figures in parantheses are relative.

TABLE 2

COMMODITY FOREIGN TRADE PROPORTIONS, JAPAN AND OTHER DEVELOPED COUNTRIES, SELECTED PERIODS, 1870's to DATE

Country and Product in Denominator	1870's to 1880's (1)	Eve of World War I (2)	1920's or Late 1920's (3)	1957 - 63 (4)	1970 - 1975 (5)
1. Japan, GDP	10.3	29.5	35.5	19.4	12.7
2. United Kindgom, GNP	40.7	43.5	38.1	30.4	23.6
3. France, NNP	32.4	35.2	n.a.	13.6	20.0
4. Germany, total uses	36.7	38.3	31.4	34.6	25.7
5. Italy, national income plus depreciation	21.3	28.1	26.3	25.0	20.4
6. Denmark, GDP (general trade)	52.0	69.1	61.6	53.9	32.6
7. Sweden, GDP	35.5	40.4	31.9	36.5	27.6
8. United States, GNP	12.9	11.0	10.8	7.9	6.9
9. Canada, GNP	30.9	32.2	41.5	31.2	23.8
10. Australia, GNP	36.2	38.9	35.8	26.9	16.0

Sources:
First four columns from L.Klein, and K.Ohkawa, Economic Growth: The Japanese Experience Since the Meiji Era. (Homewood, Ill.: Irwin, 1968), Table 13.3; Column 5 is calculated from IMF, International Financial Statistics.

NOTES: For column (1) the dates for Japan are 1878-87, for the United States, 1879-88, (to avoid effects of the Civil War) and for the other countries around 1870-80. For column (2) the dates are usually from 1909 or 1910 through 1913. For column (3) the period is usually from 1925 to 1929, with the full decade of the 1920's for some countries. For column (4) the period is usually 1957-63, but for Canada it is 1956-60, for Germany, 1960-63, and for France, 1958-63. For column (5) the general trade is in the nominator.

APPENDIX II

A PERSPECTIVE ON WELFARE DEVELOPMENT

Any appraisal of Japanese economic development has to consider not just production but what has happened to the standard of living and what prices Japan has paid in achieving rapid, sustained growth.

Prior to World War II the goal of national power through military strength meant that a significant portion, averaging more than 5 percent of the GNP, was allocated for this purpose.[1] Since 1945 the prime objective of government policy has been economic - first reconstruction and then growth, while large military expenditures were precluded. Defence amounts to only one percent of the postwar GNP, and the government has used its funds instead for investment facilitating growth.

Japan in 1868 had an economic structure and standard of living comparable to a densely populated underdeveloped country of today, not as poor as India but not very well off neither. The process of growth benefited different groups in various ways. Although virtually everyone's material welfare improved until World War II the rich middle class, mostly businessmen, government bureaucrats, landlords, and skilled labor in large firms benefited most. Agrarian tenants and other poor

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[1] H. Rosovsky, Capital Formation in Japan, Table 5.

farmers, and unskilled labor generally, did less well because they constituted a vast reservoir of low-wage labor.

In the postwar period, the benefits of growth have been much more widely diffused, partly as a result of government policy (expressed in increasing rice prices for farmers and progressive taxation, for instance[1]) but mainly because the industrial demand for labor has grown so rapidly that it has absorbed much of the labor reservoir, bidding up wages, real or nominal, in the process.

While it is indisputable that from a purely materialistic point of view the Japanese economy has prospered, the Japanese consumer claims that he has paid too high a price for the high rate of economic growth. He has seen his countrymen suffering and/or dying from pollution - resulted diseases; he has seen that his great attempt of a high rate of saving has favoured the businessman not himself; he has seen inadequate and poor public amenities and services; above all, he has seen the lack of concern in the part of the policy-makers regarding these issues. Considering the consumers' claim therefore it should not be taken for granted that the increasing output has brought about a proportionate prosperity in the state of well-being of the Japanese people. There has certainly been deficiency of the Japanese economy in public works. A deficiency which has stemmed from the fact that the outstanding economic performance has been the consequence of continuous allocation of resources in favor of higher growth - that it, of capacity and productivity growth. Consequently, investment in the public sector has lagged seriously, creating

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[1] J.A.Pechman, and K.Kaizuka, "Taxation", in H. Patrik and H. Rosovsky, eds., Asia's New Giant.

increasing demands (associated sometimes with violence) for a greater emphasis on the improvement of social welfare. Thus, the Japanese economy faces problems created not only as a result of autonomous economic forces prevailing in affluent societies which can be tolerated and accepted as an inevitable by-product of growth; rather, they stem from a conscious industrial policy consistantly pursued until recently.

In an attempt to reconstruct the economy after World War II, formation of social overhead capital was considered as a constraint, on resource supply which would tend to reduce the growth rate of productive capacity. Not only was the demand-generating aspect of such social investments completely neglected, but it was also treated "as if it were entirely of the pyramid-building variety with zero marginal productivity".[1] Later, despite some attempts in recognition of the importance of the issue, it was not until the turn of the recent decade (1970) that the government enforced effective policies in favour of public works. That is, from 1970 to 1972 social overhead capital rose by 40 percent[2] permitting a massive public investment program. However, in a short period, a policy to combat inflation superceded this issue; ie, the 1974 budget reflected a zero growth rate (in money terms) for public expenditure to stabilize accelerating prices[3].

Nevertheless, by this time, as inferred from the above statement, it was realized that the nature of public work spending implies a great

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1 K.K.Kurihara, "The Growth Potential of the Japanese Economy", (The Johns Hopkins Press, 1971), p. 46.

2 Boltho, op. cit., p. 69.

3 Ibid.

deal of demand-creating effect. Hence in 1977, the government embarked on a massive investment program by allocating over 21 percent more than the previous year, for public work spending, in order to combat the present recession.

Of the problems the Japanese have faced, the one which is the most predominant is environmental pollution. As an example, consider what the disease known as Minamata has done to the people among the four different regions of the country. In Minamata itself, mercury poisoning killed 46 and paralyzed and blinded over 70 villagers.[1] The local fertilizer company had discharged a heavy concentration of mercury into the villagers' fishing territory. In 1959 (four years after death of first victim), a medical research team within the Welfare Ministry denied any connection between the mercury poisoning and the disease. When the connection was finally accepted and publicized in 1968, the disease had spread to many other areas. At present, half of the country's commercial fishing ground is unfit and fishermen have to go into deeper and deeper water to get a safe catch.[2] In 1970 the Maritime Safety Agency announced that Japan's coastal waters were on the verge of turning into a dead sea.[3] Yet, the industrial waste continues to be discharged into the sea.

In the Japanese diet, rice is as important as fish. Thus, the pollution of the water irrigating the rice fields is another severe problem.

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1. J.Halliday and G.McCormack, Japanese Imperialism Today, (Monthly Review Press, 1973), p. 191.

2 Ibid.

3 Ibid, p. 192.

For a long time, the Japanese have suffered from a disease known as Itai - Itai (literal translation is "ouch-ouch") indicating the unbearable pain caused by the disease . Although the reports of the symptoms go back to 1910, it was not until the mid 1950's that it finally received some attention. In 1959, it was identified as cadmium poisoning, resulted from the waste of mining and smelting companies which was discharged into the water irrigating rice paddies. The disease victimized 123 persons, of whom 32 have died. Finally, in 1968, the government instituted controls on cadmium discharged.[1]

Various polutants are also discharged into the air which are harmful or deadly if they are found in a sufficiently high concentration. Japan has some serious examples regarding air-pollution. In the heavily industrial districts of Kawasaki and Yokkaichis, several thousands of people have suffered from chronic respiratory disease.[2] In May 1971, the city hospital of Kawasaki announced 10,000 of the above cases, as well as 100 cases of a pollution-induced disease affecting the brain. Since early 1970's the Tokyo residents have suffered from recurrent bouts of photochemical smog. In 1970, 4,000 persons were hospitalized and people were advised to stay indoors and to restrain from any unnecessary activity. The wearing of oxygen masks has become popular in heavily industrialized regions, for example, the fear of being the victim of pollution-related diseases has made at least 65 percent of the Tokyo residents believe that

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I Information stated in this paragraph are taken from E.S.Mills and K. Ohta, "Urbanization and Urban Problems", in Asia's New Giant, op.cit., pp. 730-31.

2 Information stated in this paragraph are taken from Halliday and McCormack, op. cit., p. 192.

they have to wear it at least once a month.

To some extent, regarding the present state of technology, pollution has been the bearable cost of high industrialization and economic progress. One must question whether it is a realistic approach to consider even the slightest degree of pollution as being bearable. However, as this issue is not directly related to my paper, an analysis of this question is not feasible. But the degree of environmental destruction in Japan, among other industrial countries, is so high that the neglect of this issue becomes obvious. In other countries it has been a matter of practicability that some part of the productive capacity be directed toward waste treatment.[1] In Japan, this allocation has been either forgotten or is negligible. During recession the first expenditure to be cut by corporations are those related to anti-pollution measures. During the present recession, in particular, the situation has degenerated as the high cost of oil led to use of low-grade fuels. The result will be an increase in the volume of pollutants being discharged into the environment.

In addition to pollution, other important problems to consider is those related to urbanization. The nature of industrialization promotes urbanization; ie., corporations realize important economies through the concentration of their activities in the large cities, where there is a more convenient access to the money and labor market. Urban concentration however, has been dramatic in Japan, especially in Tokyo, Osaka, and Nagoya - centers of both enterprises and population concentration.

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[1] Whether or not there has been sufficient allocation of resources to control pollution in these countries is another question, whose answer is beyond the scope of this paper.

Naturally, the massive migration into the metropolitan areas as such has led to an explosive need for public services.

However, as a result of policies heavily weighted in favor of the construction of an industrial infrastructure for private enterprises, the needs of urban residents have been relatively neglected. That is, economized investment in public services has resulted in the delay of construction of public housing, sewage systems, and transportation facilities, etc.

Japan faces a severe housing shortage. The latest data reveals that the average occupancy figures for Canada (1975) 0.6; Finland (1970) 1.0; Greece (1971) 0.9; Italy (1971) 0.9; U.K. (1971) 0.6; and U.S.A. (1970) 0.6, are all lower than Japan (1973) 1.1[1]. The solution to this problem, however, has largely been the responsibility of the private sector. The private sector, in turn, has absorbed private savings and invested them in enterprises serving other purposes.

Second, the sewage system is inadequate in Japan. An average of only 35 percent of the urban population is sewered. Besides, it should not be taken for granted that all of the sewered waste is treated.[2]

Finally, there is a chain of problems related to urban concentration. One unsolved problem leads to another. For example, the housing shortage has largely contributed to commuting problems. That is, it has made people accept housing where it is available, with little regard to its

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[1] UN, Statistical Yearbook.

[2] See Mills and Ohta, op. cit., p. 729.

distance from the place of work. Japanese urban residents feel they spend excessive amounts of time commuting. Data on increase in commuting times is not available.[1] However, the number of those commuting at least thirty minutes per day in cities with a population between 300,000 and 1,000,000 increased by 265.9 percent from 1955 to 1970, while it increased by 140.9 percent in cities with a population over 1,000,000 during the same period.[2]

Lengthening commuting time, on the other hand, combined with congestion primarily due to the lack of an adequate public transit system - have decreased the traffic safety factor. The high death-rate in traffic accidents cannot be denied. According to Mills and Ohta's estimates, Japan and the Western European countries, possess the world's highest traffic fatality records.[3]

To sum up, there is no doubt that the objective economic condition of almost all Japanese people has improved over the past century. However, Japanese consumers have not benefited proportionally from the prosperity achieved by the economy as a whole. Previously a few of the several ill-effects of industrialization in Japan were mentioned --ill-effects which were tolerated until recently as an inevitable by-product of growth by many Japanese. While satisfying the demand for a higher level of social welfare is a challenge requiring an economic solution, it is also important to form a solid social basis

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[1] If available.

[2] Mills and Ohta, op. cit., p. 725.

[3] Ibid, p. 739.

to support such economic condition needed to achieve the desired welfare of the people. The term "welfare" has many connotations. In general the quest for welfare seems to be focused on the balance of several elements supporting human development despite the material affluence achieved. In Japan, there is a need for still further shift of resources from the production of private goods and services to public uses. The role of the government is crucial in this issue, although much of the expenditure has been-and should be - provided by the private industries to protect the consumers and their environment.

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