AGRICULTURE AND LABOUR SUPPLY IN JAPAN IN THE MEIJI ERA*

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Introduction

ACCORDING to Professor Simon Kuznets' illuminating study[1] of an international comparison of the long-run rates of growth of national economies, the most rapidly growing nations in the world in terms of national product have been the United States, Canada, Sweden, and Japan. And in terms of per capita national product, Sweden and Japan have been the most rapidly growing nations in this group. This observation naturally calls forth the question of by what process the Japanese economy has sustained a high rate of growth.

Up to the present, many attempts to answer this question have been made. However, Professor Kazushi Ohkawa's study[2] of the changes in the pattern of the Japanese economic growth are very indicative. He used a two-sector approach and focussed his attention mainly on the pattern of economic growth in the non-agricultural sector. His main findings can be summarized as follows: As far as the non-agricultural sector is concerned, in the first period, which ends about 1905, the rate of growth of the labour force in this sector was definitely higher than that of productivity per worker, while in the second period, 1905–40, the relationship was entirely reversed. Thus, the changes in the rates of growth of both labour supply and productivity per worker played important roles at different times in changing the pattern of economic growth in the non-agricultural sector during the period. Putting this and other evidence together, he concludes that a labour-

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1 S. Kuznets, "Quantitative Aspects of the Economic Growth of Nations. I. Levels and Variability of Rates of Growth," *Economic Development and Cultural Change*, Vol. V, No. 1 (Oct., 1956).

2 K. Ohkawa, *The Pattern of Japanese Long-Term Economic Growth*, 1960 (paper presented to the Hong Kong Conference of the International Association for Research in Income and Wealth).

growth dominant pattern was the feature of the first period, and towards the second period, a productivity-growth dominant pattern. We agree with his conclusion.

The purpose of this paper is to make clear the process through which the labour-growth dominant pattern of Japanese economic growth appeared in the Meiji era and to evaluate the contributions of agriculture to that process. Our analysis will be concentrated on the structure of the labour market in the Meiji period. In Section II, we will deal with the growth of population as the basic determinant in the increase of labour supply. In Section III, we will turn to discuss the outflow of the labour force from agriculture and its quantitative importance in the expansion of employment in the non-agricultural industries. In the following section, the structural characteristics of the labour market in the Meiji era will be pointed out and the importance of the expansion of side-businesses in the peasant household economy will be emphasized. The last section will be devoted to a brief analysis of the relative wage between agriculture and manufacturing, and we will conclude that throughout the Meiji period, equilibrium in the labour market was maintained by the smooth inter-industrial movement of the labour force.

I. THE GROWTH OF POPULATION

The amount of labour available for the production of goods and services is determined by a large variety of demographic, economic, and social factors, the most important of which are those associated with the size of the population. Long-term trends in fertility, mortality, and migration determine the size and structure of the population and set the upper limits of the numbers in the labour force. Therefore, it is reasonable to deal first with the growth of population as the basic determinant of the labour supply.

The biggest event at the very beginning of the modern demographic history of the presently economically well-developed countries is the so-called Vital Revolution.[1] After a long demographic history of repeated alternations of growth and decline in population, the history of which may be conceived of as the real background of the Malthusian population theory, the size of the population in many European countries began to grow steadily as economic development went on.[2] When it

1 K. F. Helleiner, "The Vital Revolution Reconsidered," *Canadian Journal of Economics and Political Science*, Feb., 1957.

is compared with the gloomy stories of mass deaths caused by the successive occurrence of famines and epidemics in the earlier period, this change in population trends appears to be so impressive and so progressive that it has been celebrated as the Vital Revolution. In Japan too, a similar picture of demographic evolution can be found in the Meiji era.

According to the estimates of the Cabinet Bureau of Statistics based on the Population Registration of 1873 and other available sources of vital statistics, the Japanese population increased by about 60 per cent from 34.8 million in 1873 to 55.5 million in 1920 when the first modern population census was made. In spite of great efforts made by the Cabinet Bureau of Statistics, however, the population figures for the early Meiji period seem to suffer from a possible incompleteness in population registration and from a conceivable undercounting of births and deaths, which still remain unadjusted in the series. Therefore, the growth rate of the population derived from this estimate may be considered to be somewhat overstated. However, we do not therefore discount to any extent the importance of the contribution of Vital Revolution to Japanese economic development.

It is generally believed that this population increase was very influential in accumulating a large reservoir of labour which was subsequently siphoned off to meet the rapidly expanding employment in the course of industrialization. Since it is well-known in the general course of history that the Industrial Revolution is necessarily accompanied by a Vital Revolution, if the surprisingly rapid expansion of the Japanese economy during the Meiji era could be explained mostly by the reserve army of labour supply thus far accumulated, the rate of growth of the population must have been much higher in Japan than in any other already industrialized country. We will examine this point below.

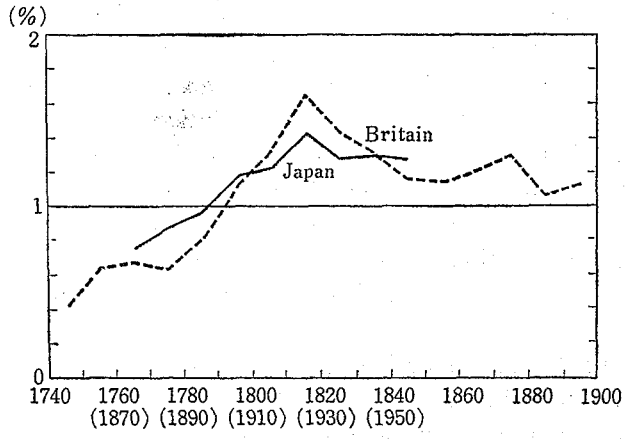
According to the experiences of the present economically well-developed countries in the 18th and 19th centuries, the rate of growth of population in the early stages of economic development was not very great and seldom exceeded a rate of 1 per cent per annum. This was true also in Japan. In this respect, the picture is quite different from that of recent experiences in the developing countries which are undergoing high spurts of population growth. The comparison of the rate of growth of the population between Japan and Britain is given

2 U. N., *The Determinants and Consequences of Population Trends*, New York, 1953, Chap. 2.

in Figure 1. The similar patterns of population trend in the two countries can be easily identified. The annual rate of growth of the Japanese population in the latter 19th century averaged 0.8 per cent, which is almost equal to that of England and Wales in the latter 18th century. And it accelerated remarkably until its peak rate of 1.42 per cent was finally reached in the 1920's. Then the subsequent gradual decreasing trend continued up to the present with a minor interruption just after World War II. Here again, the similarity of the population trends between the two countries is quite marked. If the effect of international migration on the British population trend could be separated out, the similarity would be even clearer. From these observations, we may conclude that the course of demographic evolution in Japan has concurred with that of British population with a time lag of a little more than a century. Therefore, as far as the rate of growth of the population is concerned, Japan possessed no special advantages for accumulating a reserve army of labour.

The next point to be considered is the change in the proportion of the parts of the population which contribute to the labour supply.

Figure 1. ANNUAL COMPOUND RATE OF GROWTH OF TOTAL POPULATION, JAPAN AND BRITAIN



Notes: 1. England and Wales for the years before 1801 and Great Britain for the years since 1801.
2. Date indicated in the parentheses is for Japan.

Source: Japan—Bureau of Statistics, *Nihon no Jinkō* (The Population of Japan), 1960 Edition, Tokyo, pp. 214-215, and 1963 Edition, p. 251.
Britain—G. T. Griffith, *Population Problems of the Age of Malthus*, London, Cambridge Univ. Press 1926, p. 18; Royal Commission on the Distribution of the Industrial Population Report, Cmd. 6135, Jan., 1940, p. 138; and ILO, *Year Book of Labour Statistics*.

Even when the size and structure of the population are given, a large variety of economic and social factors are also believed to be influential in deciding the amount of labour supply in a given age group. Since we have a very typical case in which the sharp rise of the labour force participation rate among youngsters, aged persons, and women greatly stimulated the expansion of the Japanese economy in the post-World War II period,[1] we cannot neglect the possibility that the labour force participation rate might have changed in the Meiji era when various institutional changes were put into force. However, the data available are not sufficient enough to allow us to enter into the problem and we will leave it for the time being.

II. INTER-INDUSTRIAL MOVEMENT OF THE LABOUR FORCE

It is a well-recognized fact that the outflow of the labour force from agriculture provides a big source of labour for the rapidly expanding non-agricultural industries. Marxian economists have traditionally regarded the function of enclosure in providing labour in the Industrial Revolution as crucial, and have rejected the alternative view that the appearance of the reserve army of labour was merely a product of growing population.[2] Recently, however, J. D. Chambers attempted to test the Marxian abstract formula of an institutional creation of the reserve army by fitting it to the local facts in Nottinghamshire, and made a great contribution in correcting the biased view.[3]

As seen in Table 1, the rate of increase of total employment in Japan has remained almost constant at a rate of some 1 per cent per annum throughout the whole period. In Britain, it was a little higher than 1 per cent per annum in the latter 19th century and dropped to a level of about 0.5 per cent after World War I. Owing to the lack of relevant data, we cannot deal with the British experience in the Industrial Revolution. However, a rough estimation will be given later. To be noted is the fact that the rate of increase of total employment appears to be a little higher in Britain than in Japan.

In the long-term trend of agricultural employment, we have a sharp contrast among countries. In Great Britain, according to the studies

1 See M. Umemura, *Chingin, Koyō, Nōgyō* (Wages, Employment and Agriculture), Tokyo, Taimeidō, 1961, Chap. 7.

2 See, for example, M. Dobb, *Studies in the Development of Capitalism*, London, Routledge & Kegan Paul, 1946, Chap. 6.

3 J. D. Chambers, "Enclosure and Labour Supply in the Industrial Revolution," *Economic History Review*, April, 1953.

Table 1. ANNUAL COMPOUND RATE OF GROWTH OF EMPLOYMENT BY SECTOR JAPAN AND GREAT BRITAIN

	All Industries		Non-Agriculture		Agriculture	
	Great Britain	Japan	Great Britain	Japan	Great Britain	Japan
1851–61	1.38	—	1.59	—	−0.42	—
1861–71	1.08	—	1.53	—	−1.15	—
1871–81	0.95	0.84*	1.27	4.67*	−1.07	−0.02*
1881–91	1.38	1.01	1.64	4.15	−0.69	0.01
1891–1901	1.06	0.81	1.23	3.10	−0.56	−0.30
1901–11	1.18	0.94	1.25	2.56	0.41	−0.06
1911–21	0.54	0.98	0.62	2.27	−0.47	−0.06
1921–31	0.84	0.80	0.99	1.67	−1.24	−0.05
1931–41	0.36	0.90	0.40	1.82	−0.36	−0.15
1941–51		1.08		0.53		1.76

Note: * 1875–1880.

Source: Japan—M. Umemura, op. cit., p. 117.
Great Britain—F. D. W. Taylor, "Numbers in Agriculture," *Farm Economist*, Vol. VIII, No. 4 (1955).

of J. D. Chambers and J. Saville,[1] agricultural employment did not decrease under the influence of the enclosure movement during the Industrial Revolution, but on the contrary it increased through the adoption of labour intensive farming; i. e., the introduction of root crops into the traditional rotation system and the increasing number of livestock. After the middle of the 19th century agricultural employment began to decline. In Germany, France, Italy, and other countries in continental Europe, the agricultural working force increased after about 1880 until around 1920 when its peak level was finally attained. Thus, the absolute decline in the number of the agricultural working force in many European countries is relatively a fresh phenomenon which began only in the 1920's. In contrast to this, the long-run trend of the number of persons engaged in agriculture in Japan remained almost constant throughout the entire period before World War II. In fact, we can say rather that it was slightly decreasing. It is one of the most distinctive features of the Japanese economy that employment in agriculture never did increase in the early stage of economic development. Various factors are believed to have been influential in keeping the agricultural working force stable. Among them, the limited supply of virgin land suitable for cultivation, little progress in livestock production, and the creation of job opportunities for the growing rural population by the rapid expansion of traditional small-scale manufactur-

1 J. D. Chambers, op. cit.; J. Saville, *Rural Depopulation in England and Wales, 1851–1957*, London, Routledge & Kegan Paul, 1957.

ing and commerce in the rural districts were most important in checking a possible increase in the agricultural working force.

Since the motive power driving an economy into a steady sustained growth lies in the non-agricultural industries, especially mining and manufacturing, the changes of employment in these sectors are crucial for economic development. In Britain, the rate of the increase of employment in the non-agricultural industries seems to have been almost entirely governed by the growth of the labour supply as a whole, and seems not to have been influenced to any sizable extent by the changes of agricultural employment. On the contrary, the rate of the increase of employment in the non-agricultural sector in Japan appeared to be quite independent of the growth rate of the labour supply as a whole. In spite of the fact that the total labour supply continued to grow at a constant rate of 1 per cent per annum, non-agricultural employment grew at a rate of more than 4 per cent per year both in the 1870's and 1880's, though the rate of growth gradually declined year by year. A similar pattern in the increase of non-agricultural employment can be observed in the United States, too. The mechanism through which it was realized, however, is quite different in the two countries. In the United States, it was realized by a big wave of immigration from Europe. But in Japan, there was no such immigration, and the main spring of the labour supply for the rapid expansion of the non-agricultural working force had to be sought in the internal migration of the labour force from the agricultural sector.

An estimate of the inter-industrial movement of the labour force from agriculture in the Meiji era is given in Table 2 in successive

Table 2. THE INTER-INDUSTRIAL MOVEMENT OF THE LABOUR FORCE, 1875–1915

(Unit: thousand persons)

	Outflow of the Agricultural Working Force per Annum	Annual Increase in Employment in Non-Agricultural Industries	Contribution Rate (%)	Outflow Rate (%)
1875–1880	146	159	91.8	0.99
1880–1885	165	192	85.9	1.12
1885–1890	171	199	85.9	1.16
1890–1895	178	204	87.3	1.21
1895–1900	174	213	81.7	1.19
1900–1905	178	228	78.1	1.24
1905–1910	172	228	75.4	1.20
1910–1915	166	229	72.5	1.16

Source: M. Umemura, op. cit., Table 20 in p. 159.

quinquennial averages. It was about 170,000–180,000 per year with a slightly increasing trend. M. Namiki's estimate[1] based on independent sources, putting it at 180,000–210,000, almost coincides with ours. The contribution rate, which is defined as the proportion of the outflow of the labour force from agriculture to the increase of the non-agricultural employment, was some 85 per cent in the early Meiji era and was still a little more than 70 per cent at the end of the Meiji period.

The following numerical example will illustrate the role of the inter-industrial movement of the labour force in preparing the rapid expansion of labour supply in the non-agricultural sector. For simplicity of explanation, we will assume an economy consisting of two sectors, namely agriculture and manufacturing (hereafter cited as A and M sectors respectively), and further assume the same rate of growth of labour supply, n, in both sectors. n_a and n_m are the rates of increase of employment in A and M sectors respectively; p_a and p_m are the proportions of employment in A and M sectors to the total employment at the beginning of period respectively. By using these notations, the following relationship is derived:

$$n_m = 1/p_m(n - p_a n_a), \qquad \text{where } p_m + p_a = 1.$$

From this it is understandable that, in a case of given magnitude of n and n_a, the lower the numerical value of p_m, the higher the numerical value of n_m will be, and vice versa. For example, where $n = 1\%$, $n_a = 0\%$, and $p_m = 20\%$ (the Japanese case), n_m will be 5 per cent, and where $n = 2\%$, $n_a = 0\%$, and $p_m = 80\%$ (the British case), n_m will be 2.5 per cent. The difference between n_m and n, 4% and 0.5% respectively, represents the magnitude of inter-industrial migration of the labour force from A sector to M sector expressed as its proportion to the size of employment in M sector at the beginning of the period. Then, by dividing the difference between n_m and n by n_m, the contribution rate defined above is derived, namely 80% and 20% respectively in the above example. On the other hand, the difference between n and n_a, 1% and 2% respectively, represents also the magnitude of the outflow of the labour force from agriculture, being expressed as its proportion to the initial size of employment in the A sector. The proportion is called the outflow rate. The above arguments clearly suggest that the rapid increase in the non-agricultural working force in the Meiji era can be attributed mainly to the inter-industrial migration of workers from agriculture, which corresponded to only a small portion

1 M. Namiki, "Nōson Jinkō no Idō (Migratory Movement of Rural Population)," in S. Nojiri ed., *Nōson no Jinkō* (Rural Population), Tokyo, Chuōkeizaisha, 1957, p. 57.

of the total agricultural working force, and that the observed big difference of n_m between Japan and Britain can be easily explained by reference to the big difference in the proportion of agricultural employment given as an initial condition between the two countries.

The above conclusion, however, must be reinforced by a further examination of the labour supply in the British Industrial Revolution. Owing the lack of relevant data at hand, we are obliged to speculate an approximate numerical relationship among the values of n, n_a, n_m, p_a and p_m in the latter 18th century in England and Wales. Based on Griffith's estimate of the growth rate of the total population as shown in Figure 1, the maximum value of n can be assumed to be 1 per cent per annum. According to Chambers, n_a is assumed to be positive but almost nearly equal to zero, and based on Phyllis Deane is estimate[1] for 1801, a value of p_a is assumed to be about 35 per cent, and consequently $p_m=65$ per cent. Putting these figures together into the above identity, we get 1.5 per cent as a possible maximum value of n_m. Now, it becomes clear that the value of n_m realized in the Meiji era was really two or three times as high as that of England and Wales in the latter 18th century.

In Japan, since the number of the agricultural working force, which occupied the dominant part of the total labour force, was almost constant at the level of some 14 million throughout the period in spite of a relatively moderate growth in total population, the supply of labour in the non-agricultural industries was able to grow at a rate of more than 3 or even 4 per cent per annum. Furthermore, since the outflow of the labour force from agriculture was limited to the incremental part of the agricultural population, little reorganization of agricultural production was needed and this fact in turn assisted the smooth process of the inter-industrial movement of the labour force. In Britain, however, the proportion of the agricultural working force to the total labour force had already fallen to a large extent before the time of the Industrial and Vital Revolutions in the mid-18th century, and consequently there remained little room for the full operation of the mechanism which contributed very much in creating the abundant labour supply in Japan.

From the big differences observed in both the initial conditions underlying the subsequent economic development and the rate of population growth among nations, three different cases of economic develop-

1 Phyllis Deane and W. A. Cole, *British Economic Growth 1688–1959*, London, Cambridge University Press, 1962, p. 142.

ment can be seen: in Britain the process of economic growth was restrained somewhat by the relatively limited supply of labour; in Japan it was prompted by the reserve army of labour thus far created; and in the present developing countries in which the traditional agriculture still dominates but the population grows quite rapidly, it suffers from a shortage of food instead of labour. Thus, the comparison seems to suggest that the Japanese experience in the Meiji era is the typical case for economic development with unlimited supplies of labour.[1] We will discuss this aspect of the problem in more detail in the following section.

Table 3. STRUCTURE OF EMPLOYMENT, 1879 AND 1920 (%)

		Total	A Sector	M Sector	S Sector
Proportion of Workers with Side-Occupations Classified by Their Main Occupations					
1879, Yamanashi	Male	31.8	35.6	5.2	9.7
	Female	33.4	29.8	47.4	10.5
	Total	32.5	33.1	37.1	9.9
1920, Yamanashi	Male	54.5	73.7	22.4	22.0
	Female	37.5	51.2	17.9	8.1
	Total	46.8	63.3	20.0	17.0
1920, Nation-Wide	Male	30.5	49.5	11.6	13.9
	Female	27.7	40.0	7.6	6.7
	Total	29.4	45.3	10.5	11.3
Ratio of Side-Occupation Workers to Main Occupation Workers in each Sector Indicated					
1879, Yamanashi	Male	31.8	14.8	162.2	121.1
	Female	33.4	17.4	87.4	17.7
	Total	32.5	15.9	107.1	100.0
1920, Yamanashi	Male	54.5	69.0	31.9	25.7
	Female	37.5	55.3	7.7	12.5
	Total	46.8	62.3	19.2	20.9
1920, Nation-Wide	Male	30.6	40.9	22.1	19.1
	Female	28.0	31.9	38.3	7.6
	Total	29.6	37.0	26.3	11.3

Notes: A sector Agriculture, Forestry, and Fishery.
M sector Mining, Construction, Manufacturing, Transportation, and Communications.
S sector Commerce, Finance, Public Service, and Other Services.

Source: Bureau of Statistics, *Kai no Kuni Genzai Jinbutsu Shirabe* (Population Census of Kai District), Tokyo, 1882, and *Report on 1920 Population Census of Japan.*

III. CHANNELS OF LABOUR MOVEMENT

The migratory movement of the labour force from agriculture has

1 W. A. Lewis, "Economic Development with Unlimited Supplies of Labour," *The Manchester School of Economic and Social Studies*, May, 1954.

two distinct channels, one of which comes from the relative expansion of side-business in the peasant household economy and the other from the direct outflow of members of peasant families who go to factories or shops and become wage-earners. Reallocation of the labour force through the first channel is usually supposed to be free from most of the frictions caused by a large variety of social, psychological, and moral factors, while reallocation through the second channel is generally accompanied by an interregional movement of labour and consequently suffers from a regional immobility of labour. We will discuss the first channel first.

Table 3 shows an aspect of the employment structure in the early Meiji era and its subsequent changes up to 1920. In 1879, one-third of all the gainfully occupied persons in Yamanashi Prefecture had side-jobs. This situation did not change greatly until 1920. Noted here is the big difference observed among sectors of the economy. In the early Meiji era, the proportions of the gainfully occupied persons having side-jobs were 33 per cent in sector A, consisting of agriculture, forestry, and fisheries, and 37 per cent in sector M, composed of mining, construction, manufactures, transportation, and communications, while the gainfully occupied persons engaged in other service industries, sector S, were already fairly specialized in their lines of business. However, as time went on, the proportions fell in sector M, especially for females, and have risen remarkably in sector A both for males and females.

In the same table, gainfully occupied persons having side-jobs are reclassified by their side-occupations and their proportions to the corresponding main-job workers are computed. The proportions thus far computed could be understood as a rough index of the relative importance of the labour input performed by the side-job workers in the three sectors of the economy, though possible differences in man-hours per occupied person between the main-job workers and the side-job ones cannot be neglected. In 1879, in Yamanashi Prefecture, the proportions were very high both in sectors M and S but low in sector A. These differences were much more distinctive for male workers than for female workers. This suggests to us that in the early Meiji period the national economy still remained at a primitive stage of development, the specialization of economic activity had not yet proceeded within the traditional framework of the peasant economy, and a large part of economic activity both in sectors M and S, which should be the engine of economic development in the subsequent period, consisted only of subsidiary businesses operated mainly by some of the members of

peasant families. However, as time went on, the division of labour, celebrated as the main spring of economic progress by Adam Smith in his *Wealth of Nations*, was gradually promoted. Until 1920 the proportions of the number of side-job workers to those of main-job workers dropped remarkably in both the M and S sectors, while in the A sector the proportion rose sharply and a part of economic activity, formerly performed as main-job occupations, now became subsidiary occupations performed by a part of the gainfully employed workers in other sectors.

The most important implications of our findings may be summarized as follows: In the early Meiji period there was no appreciable progress in the specialization of occupations and most of the various types of economic activity in the nation as a whole (which might be classified into agriculture, manufacturing, or commerce by a simple application of the modern technique of industrial classification) were usually managed as a branch of a single unique production-and-consumption unit, the peasant household economy. Therefore, if production in the side-business sector of the peasant household economy, say silk reeling or weaving, was gradually expanded relative to agricultural production, the reallocation among the sectors of the given resources, labour and capital, would naturally follow. This process provided the inter-sectoral movement of the working force and of savings which were almost free from frictions caused by various non-economic factors. In this case, the only expected obstacles to be overcome would be how to prepare additional finance for the required investment in order to expand silk reeling or weaving production. However, under the prevailing putting-out system in the rural districts the purchase of raw materials, cocoon or yarn—the biggest item of business expenditure—was usually financed in some form or another by clothiers or merchants. Furthermore, thanks to the still low level of prevailing technique, a set of machines and tools—the only items for actual investment by producers under the putting-out system—were not extremely expensive compared with the producers' saving potentials, and sometimes even could be rented from clothiers or merchants.[1]

Although our conclusions depend entirely upon our observations

1 For example, according to H. Hayashi's study of the cotton weaving industry in Bisai district, in the northern part of Aichi Prefecture, a "Takahata" (traditional wooden weaving machine) cost about five or six yen around 1900. See H. Hayashi, "Bisai ni okeru Meiji Kōki no Koyō Rōdō (Contracted Workers in the Bisai District during the latter Meiji Era)," in T. Ichikawa et al., *Hōken Shakai Kaitaiki no Koyō Rōdō* (Contract Workers in the Breakdown Period of Feudal Society), Tokyo, Aoki Shoten, 1961.

concerning the changes of the employment structure in Yamanashi Prefecture, and although regional differences in various aspects of rural economic life in the early Meiji era are supposed to be rather great, it is still considered that these observations can represent, in some sense, a common picture of the rural economy in the early Meiji period. And it must be emphasized that the channels through which the agricultural working force was transferred to the non-agricultural industries were also quite effective for promoting the outflow of savings originating in agriculture to the rest of the economy. However, these considerations are not the whole of our problem. Now, we will turn to discuss the second channel of labour movement, where the picture is quite different from that described above.

Skilled and unskilled labourers are better treated separately, since their labour market situations are believed to be very different. We will discuss the skilled labourer first. Since the establishment of the modern factory system of production in the Meiji era was not made possible through the self-generating technical abilities of domestic origin but was transplanted from well-developed Western countries through great Government efforts, and furthermore since there were quite remarkable differences in level between the domestic and foreign technique, factory owners were obliged to train fresh workers into skilled ones within the factory. Under these conditions a shortage of skilled labourers was inevitable, since the supply of skilled workers depends entirely upon past employment and training. Consequently, a high rate of turnover and an increase in wages for the skilled labourer were quite natural.[1]

In contrast to the fact that the shortage of skilled labourer was of "historical" origin, the labour recruitment problem for unskilled workers, especially female textile workers, occurred because of 'geography.' The development of the modern factory system of production was necessarily accompanied by a concentration of factory locations on the one hand, and by a rapidly growing demand for wage labour on the other hand. These coincided with a lack of regional mobility of labour and produced episodes of hard scrambles for labourers from about the 1890's.

We will deal with the concentration of factory locations first. According to K. Yamaguchi's study,[2] around 1884 about 77 per cent

1 T. Watanabe, "Meiji Zenki no Rōdōryoku Shijō Keisei o megutte (On the Build-up of Labour Market in the Early Meiji Era)," in Meiji Shiryō Kenkyū Renraku Kai, *Meiji Zenki no Rōdō Mondai* (Labour Problems in the Early Meiji Era), Tokyo, Ochanomizu Shobō, 1960, esp. pp. 96–109.

2 K. Yamaguchi, *Meiji Zenki Keizai no Bunseki* (Analysis of the Japanese Economy

of all the factories, excluding breweries, in 43 prefectures were scattered through the purely rural districts, and the remaining 23 per cent were located in the urban and semi-urbanized rural districts. The main reason for this was the availability of water-power. In addition to this, the size of factory in terms of number of workers employed was small. Small-size factories having less than 20 workers made up 72 per cent of all factories. These two conditions combined made it possible for factory owners to employ their workers from the neighbourhoods of their factories. By 1892, however, the situation had drastically changed. The increase of the number of factories, the concentration of factory location into urban districts, and the expansion of the size of factory occurred side by side. The proportion of factories located in the urban districts increased from 23 per cent to 49 per cent over a span of some 8 years, the percentage of the number of factories having more than 20 workers reached 50, and so on. Owing to the rapid progress of industrialization as such, it became almost impossible for factory owners to continue to secure all the needed manpower from villages in the neighbourhood of their factories, and it became necessary to recruit them from distant places.

The regional immobility of the sons and daughters of the peasant families began to strongly affect the labour market. Owing to the keen competition and consequent hard scramble for labourers among the factory owners, labour recruitment practices were becoming so expensive and so disordered[1] that factory owners were forced to come to agreement over the orderly recruitment of labour, and on the other hand, most of the local governments enacted Labour Recruitment Regulation Acts after about the turn of the century.[2] According to the record of a silk reeling company in Suwa district, Nagano Prefecture, the proportions of recruitment cost to wage and salary payments ranged from 3 to 22 per cent during the three decades from 1900. When industry was prosperous the proportion of recruitment cost increased, and when trade was slack the proportion decreased.[3]

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in the Early Meiji Era), Tokyo, Tokyo Daigaku Shuppan Kai, 1956, Chap. 4.

1 K. Fujibayashi, "Meiji 20 Nendai ni okeru Waga Bōsekigyō Rōdōsha no Idō Genshō ni tsuite (On the Labour Turnover in the Japanese Cotton Spinning Industry in the Meiji 20's)," in Meiji Shiryō Kenkyū Renraku Kai, op. cit., pp. 137–176.

2 Labour Recruitment Regulation Acts were enacted by local governments in 30 prefectures out of 47. See S. Watanabe, *Nihon Nōson Jinkō Ron* (Rural Population in Japan), Tokyo, Nankōsha, 1938, pp. 168–173.

3 Dai Nihon Sanshi Kai Shinano Shikai, *Shinano Sanshigyō Shi* (History of Silk Industry in Shinano District), Vol. 2, 1937, pp. 1347–48.

From this evidence, it is clear that in the early stage of economic development inter-sectoral movement of the agricultural working force through this channel was very difficult. Though it cannot be denied that this difficulty was one of the biggest obstacles in the steady advance of industrialization, we must also be careful not to exaggerate this aspect of the problem. The quantitative importance of the labour movement through the second channel surely increased throughout the Meiji period but at the same time was not as big as that through the first channel, though we have no creditable statistical evidence on this point. And it must be also noted here that the labour shortage in some local labour markets, stemming from an insufficient mobility of labour in spite of the plentiful labour supply potential as a whole, is entirely different from a true labour shortage in the sense that the supply of labour falls short of the demand for labour at the ruling wage rate. In the former case a revision of wage rate may be not effective in increasing the supply of labour and recruitment activities must be stimulated, while in the latter case, the opposite is recommended. This picture of the labour market situation in the Meiji era, that is to say the coexistence of "an unlimited supply of labour" and of regional labour shortages in some centres of industrial production may appear somewhat paradoxical, but it is real. In general, at the beginning of industrialization it becomes one of the basic requirements for the capitalistic development to provide a smooth route for the transfer of the labour force from the shiny green villages to the gloomy factories or the dark underground mines.

IV. RELATIVE WAGES: AGRICULTURE AND MANUFACTURING

Taking the structural characteristics of the labour market discussed above as a background, it may be reasonably inferred that there were no appreciable wage differentials among the sectors of the economy, and that the labour market was in near equilibrium throughout the Meiji period. Was this really so? We will examine this point below.

Table 4 shows movements of relative wages between agriculture and manufacturing during the Meiji era. The agricultural wage expressed as a percentage of manufacturing wage remained quite stable throughout the period both for male and female workers. The percentages were 70–80 for male and 90–100 for female. The somewhat lower figures for male workers can be attributed to skill differentials. Judging from the international comparisons of relative wages between

agriculture and manufacturing, it can be said that these sufficiently indicate equilibrium in the labour market.[1] In this very point, the labour market situations in the Meiji era are very different from those in the period since the 1920's, in which remarkable wage differentials have prevailed not only between agriculture and manufacturing, but also within manufacturing.

The full discussion of the mechanism through which the equilibrium was continuously maintained in the labour market throughout the Meiji era cannot be developed here. However, some of the most important contributing factors will be pointed out. (1) Thanks to a large proportion of agricultural employment in the Meiji era (a high value of p_a and consequently a low value of p_m discussed in Section II), even a big variation of n_m could not have any sizable effect upon n_a. For this reason, no significant disturbing effect stemming from changes in the growth rate of employment opportunity in the non-agricultural industries was felt by the traditional peasant household economy. (2) Quick and sufficient adaptation was continuously secured through the smooth reallocation of resources from one sector to another within the peasant household economy, as already discussed above. For example, when

Table 4. RELATIVE WAGES: AGRICULTURE AND MANUFACTURING
(Manufacturing Wage=100)

	Male	Female
1880–84	82.3	88.0
1885–89	69.9	93.3
1890–94	72.9	91.7
1895–99	76.3	94.6
1900–04	73.8	97.0
1905–09	67.8	100.9
1910–14	70.6	92.8
1915–19	72.1	98.2

Source: M. Umemura, op. cit., Table 27 in p. 193.

the manufacturing wage rose above the agricultural wage, the peasant family would expand its small-scale side-business. This means an increase of manufacturing output, which in turn pulls down the price of manufactured products through increasing competition in the product market. The fall in the price of the manufactured product hampers the rise of manufacturing wages. Thus the equalization of the wage

1 See C. Clark, *The Conditions of Economic Progress*, 2nd ed. London, Macmillan, 1951, Chap. 10, and J. R. Bellerby, *Agriculture and Industry: Relative Income*, London, Macmillan, 1956, Chap. 14.

level between industries can be reattained. (3) In the Meiji era, the differences in the level of techniques remained within a relatively narrow range to permit the full operation of the above mechanism. Needless to say, this was one of the consequences of a relatively poor accumulation of capital, which was common in the early stage of economic development. The cotton spinning industry and some heavy industries managed by the Government or the *Zaibatsu* may be exceptions. (4) The product market was sufficiently competitive, and cartel-like practices were not very important. Here again the cotton spinning industry was an exception. (5) Discriminating practices in the factor markets, for example, the lifetime commitment of regular workers, were not introduced until the middle of the Taishō era.

Next, we will turn to discuss briefly the collapse of the Meiji type equilibrium and deal with the transition of the Japanese economy into the subsequent phase of a differential economic structure. The Japanese economy, as a late-comer, has enjoyed the quite favourable position in which it was possible, as far as permitted by the accumulation of capital, to introduce more efficient ready-made techniques from abroad at relatively small expense. The newly-introduced more efficient techniques of Western origin usually require higher degrees of capital intensity, capital per worker. Consequently, the more efficient the technique is, the larger the minimum initial investment will be. The increasing tendency of the minimum initial investment is apt to prevent the introduction of more efficient techniques into small-scale enterprises. Then too, the small business cannot compete with the big ones in the competitive product market if there are no cost reducing advantages on the side of small business. In the capital market no such advantages can be found; rather, the opposite is usual. Thus, the only ground remaining on which small business can survive is none other than the use of the reserve army of labour. These processes were gradually carried out in the latter part of the Meiji era, and some years after World War I the critical point was finally reached. At this time Japan entered the next stage of economic development in which wage and productivity differentials were remarkable.