

EMPLOYMENT STRUCTURE IN THE SERVICE INDUSTRIES*

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The development of the service industries is a recent and prominent trend in advanced nations. In the case of Japan too, this trend first became more or less visible during the 1960's. It took the form of a gradual shift of employment in both absolute numbers and in relative percentages to the service sector. However, the influence exerted by this trend differs according to the specific type of business within the service sector. Therefore, in this paper I intend to clarify the influence not merely of major groups, but also of subgroups as well; and at the same time to analyze the characteristics of Japan's service industries through an international comparison.

INTRODUCTION

V. R. Fuchs of the City University of New York, in his recent book *The Service Economy*,¹ has described the Post World War II development of U.S.A.'s service industries as "dramatic," stating that "this country became the world's first 'service economy'—that is, the first nation in which more than half of the employed population is not involved in the production of food, clothing, houses, automobiles, or other tangible goods." Such an expansion in the weight of service industries not only brings about fundamental changes in the trends of the national economy, but also necessitates new additions to and readjustments of a number of points in past and present economic analysis. This is due to the fact that hitherto, economic analysis has been built upon a theoretical apparatus which centers upon the production of commodities and consumption, while there has been insufficient development

* This paper is based upon the following articles by the author which have appeared in Japanese journals, and enlarges upon the subjects treated therein:

- (1) "Sābisu sangyō kenkyū no shomondai" (Various Problems Related to Study on the Service Industries), *Hitotsubashi ronsō*, LVI-5 (November, 1966).
- (2) "Sābisu sangyō no seisānsei to seifu katsudō" (Productivity of the Service Industries and Government Activity), *Keizai kenkyū*, XVIII-2 (April, 1967).
- (3) "Sābisu sangyō no kokusai hikaku" (An International Comparison of Service Industries), *Keizai hyōron*, XVI-13 (December, 1967).
- (4) "Sābisu ryōkin shisū ni tsuite" (Concerning Indices of Charges for Services), *Keizai kenkyū*, XIX-2 (April, 1968).

¹ Victor R. Fuchs, *The Service Economy*, New York, National Bureau of Economic Research, 1968.

of theoretical and empirical analysis which reflects the special characteristics of the service industries in terms of economic goods.

However, it is not the purpose of this paper to construct an economic theory for the analysis of the service industries. Rather, I wish to focus upon the employment structure of the service industries, and to present a number of fact findings based chiefly upon recent trends in Japan.

I. LONG-TERM DEVELOPMENT OF THE SERVICE INDUSTRIES²

The recent and sudden appearance in the spotlight of Japan's service industries came about circa 1959. One reason for this has been the trend toward increased weight of the service industries in national product and employment structure; another reason has been the trend toward rises in the charges for services, which are said to lead rises in consumers' prices. These two phenomena are of course not unrelated.

The *1965 White Paper on Labor*,³ in the section dealing with characteristics of recent changes in employment, recognized the fact that employment structure "gradually transfers its weight from centering on industries in the

Table 1. Change in the Percentages of Employment Composition by Industry and by Employer-Employee Status

	(Figures= %)				
	1956	1959	1962	1965	1968
Industry					
Total	100.0	100.0	100.0	100.0	100.0
Primary	42.0	37.5	30.1	26.2	18.0
Secondary	23.9	26.1	31.1	32.2	36.0
Tertiary	34.1	36.4	38.7	41.5	46.0
Class of Workers					
Self-employed	26.4	26.0	22.9	21.7	20.4
Family Workers	29.2	25.1	20.7	18.2	17.3
Employees	44.3	48.4	56.4	60.1	62.3

Notes: 1. Primary industries include agriculture, forestry, fisheries; secondary industries include mining, construction, and manufacturing; tertiary industries include wholesale and retail trades, finance and insurance, real estate, transportation and communications, electricity, gas and water, services, and government.

2. Industries which could not be classified are included in the total (=100).

3. "Persons not at work" are excluded.

4. Figures for 1968 have been appended by the author.

Source: Office of the Prime Minister, Statistics Bureau, *Shūgyō kōzō kihon chōsa hōkoku, zenkokuhen* (Employment Status Survey, All Japan).

² "Service industries" as used here is virtually the same concept as Colin Clark's "tertiary sector." However, Fuchs defined "service industries" in juxtaposition to "goods industries," and excludes transportation, communications and electricity, gas and water from the former.

³ Japan: Ministry of Labor, *Shōwa 40 nen rōdō keizai no bunseki* (Analysis of the Labor Economy in 1965), July, 1966, p. 137; and *Shōwa 42 nen rōdō keizai no bunseki*, July 1968, p. 50.

secondary sector, primarily manufacturing industries, to concentration on the tertiary sector service and wholesale-retail industries." The Table 1 is presented in the White Paper.

In other words, it is clear that over the ten-year period from 1956 to 1965, there is a conspicuous contrast between the radical decline (-15.8%) in the percentage of workers employed in primary industries and the increase (8.3% and 7.4%) in both secondary and tertiary industries. Thus, although the percentage of employment in the tertiary sector—that is to say, the service industries—in Japan is not equal to that of the U.S., it has already exceeded 40%. Moreover, the rate of growth in the employment index surpassed 45% in 1967 and may be predicted to amount to 50% in the early 1970's.

One problem is the consideration of what kind of change in employment structure is brought by such a displacement of the weight of employment into the service industries. But before discussing this matter I would like to give a general view of long-term change in employment structure in Japan and the U. S. Tables 2 and 3 present the long-term trends in employment structure according to sector for Japan and the U. S., respectively.

First, looking at the long-term trends in Japan in Table 2, we can see that in 1872—a few years after the Meiji Restoration—primary industries accounted for an overwhelming 85% of employment, while secondary industries accounted for a slight 5%, and tertiary industries for 10%. In 1965, approximately one century later, primary industries ranked smallest with 25%; secondary industries next with 32%, and tertiary industries with 43%, marking a complete change in employment structure. This shows the very facts that first during the past one hundred years industrialization has progressed dramatically and second, as may be seen in Table 1, this tendency

Table 2. Percentage Composition of Gainfully Occupied Population by Industry, 1872-1965 (Japan)

(Figures=%)

	Primary	Secondary	Primary & Secondary	Tertiary
1872	84.9	4.9	89.9	10.2
1880	82.2	6.7	88.9	11.1
1890	76.1	10.4	86.5	13.5
1900	70.0	13.8	83.8	16.2
1910	63.0	17.7	80.7	19.3
1920	54.5	20.4	74.9	25.1
1930	49.7	20.8	70.5	29.5
1940	44.4	26.8	71.2	28.8
1955	41.0	23.5	64.5	35.0
1960	32.6	29.2	61.8	38.2
1965	24.6	32.3	56.9	43.0

Sources: 1878-1937: Kazushi Ohkawa, *The Growth Rate of the Japanese Economy since 1878*, Tokyo, Kinokuniya, 1957.

1955-1965: Office of the Prime Minister, Statistics Bureau, *Kokusei chōsa hōkoku* (Report of the Census).

Table 3. Gainful Workers, Goods and Service Sectors, 1870-1963 (U.S.A.)
(Figures=%)

	All Industries		Alternative Services	
	Goods	Services	Goods*	Services**
1870	80.8	19.2	30.0	11.0
1880	80.7	19.3	30.1	12.2
1890	77.9	22.1	34.8	14.8
1900	75.9	24.1	37.8	17.0
1910	73.0	27.0	40.9	19.6
1920	72.4	27.6	44.3	21.2
1930	64.8	35.2	42.1	28.1
1929	59.6	40.4	38.8	26.5
1937	55.1	44.9	35.3	26.7
1948	54.1	45.9	40.9	29.1
1953	51.2	48.8	40.8	28.8
1957	49.2	50.8	39.7	30.5
1963	45.3	54.7	37.1	32.5

Notes: * Goods excluding agriculture and government enterprise.

** Service excluding real estate, households and institutions, and general government.

Source: Victor R. Fuchs, *The Growing Importance of the Service Industries*, National Bureau of Economic Research Occasional Paper, No. 96, New York, NBER, 1965.

is still continuing to the present day. This trend may be taken to mean that at present employment structure in Japan has taken the form in advanced Western nations. Looking at the long-term trends presented in Table 2 and comparing the primary and secondary sectors, it goes without saying that there was a gradual increase in the secondary sector in contrast to a tendency to decline in the primary sector. It may be pointed out that in the 1960's, the secondary sector exceeded the primary sector. Of course, it need not be remarked that the rates of decline or of increase, respectively, differ according to the phase of economic growth. However, what merits attention here is the contrast between the secondary and tertiary industries, and between the tertiary industries and goods industries of the primary and secondary sectors combined. First, there is the fact that over the past one hundred years, the share of employment of the tertiary sector has not once declined in contrast with the secondary sector. On the opposite side, it may also be said that the secondary sector never had an opportunity for its share to become biggest.⁴ This would indicate that Japan's experience is not necessarily in agreement with Colin Clark's Law, but in itself may be taken to suggest that Japan's tertiary industries differ in character from those of the advanced nations. Second, the trend towards an increase in the share of the tertiary sector occurred at a more moderate rate than that of the secondary sector. However, the extremely rapid rise in the rate of the tertiary sector

⁴ Because there are no figures for the Pacific War years, this period has been excluded from consideration.

since 1963 is of the same variety as that pointed out in the opening paragraph of this article. The long-term development of the service industries as given above may be grasped more clearly if one compares the long-term development in the two major categories—the service industries and goods industries.

Table 3 examines long-term trends in the U.S.A. through a comparison of the service industries with goods industries. As the period under observation is virtually the same as that for Japan, it is possible to draw a comparison between Japan and the U.S. through the use of Tables 2 and 3. In the case of the U.S.A., unlike Japan, however, employment in the service industries did not always surpass that in the secondary industries; while it may be thought of as having surpassed the secondary industries after the 1930's.⁵ If one examines the development of the service industries in the U.S. in reference to total industry in Table 3, then the ratio of goods to services is approximately on the order of 80 to 20 in 1890, becoming 45 to 55 in 1963, and in recent years moving to 40 to 60. That is to say, contrast between the relative decline in the share of goods and the tendency to increase in the share of services may clearly be taken as identical to the case of Japan. Because of certain differences in definition, it is impossible to take Fuchs' "service industries" as equivalent to our tertiary sector industries. But if one ignores this and compares Tables 2 and 3, then because in 1965 the share of the tertiary industries versus the primary and secondary industries in Japan was almost the equivalent of the share in the U.S. in 1937, it is clear that the structure of employment in Japan, insofar as this point is concerned, lags some thirty years behind the U.S. However, it is also conceivable that this thirty-year lag could be reduced, considering the changes in employment structure which have occurred in contemporary Japan.

What should be noted in Table 3 is the fact that Fuchs contrasts observed changes in the trends of goods versus services with an alternative series. Thus if we look at the alternative series, goods tended to rise until the 1920's, diverging from the total series; and subsequently scarcely moved at all. In contrast it may be noted that services consistently tended to rise from 1870, identical to the situation in the total series, even though the slope of the quantity of increase appears to be moderate. The chief industry which has been omitted from the alternative series of goods is agriculture; likewise, general government has been excluded from services. Therefore, comparing the two series, the increase in goods from 1870 to 1920 which may be seen in the alternative series represents the progress of industrialization. Thus, the discrepancy between this and the total series signifies the stagnation of agriculture. Again, we can also think of the subsequent lack of movement in the primary and secondary industries as deriving from the sluggish ability of the manufacturing industries to absorb employment. From the point of view of employment structure, the period from 1870 to 1930 corresponds to the stage in which there was a shift from agriculture to industry; and the

⁵ "Service industries" here is comprised of the tertiary sector with transportation, communications, and public utilities excluded. Cf. Fuchs, *The Service Economy*, p. 24, Table 4.

years from then constitute the stage in which there was a shift from industry to services. That is to say, the U.S. conforms well to Clark's Law. And the trend toward an increase in the share of service industries which is expressed with some moderation in the alternative series means that the rate of growth in employment by general government was higher than the rate of growth in employment in total service industries excluding general government. However, the consistently rising trend shown in the share of service industries even when general government is omitted is probably due to the fact that the weight of the industries whose rate of employment growth is high is remarkably large compared to industries of the primary and secondary industries. We may point out the fact that the core industries which stimulated the transition from primary and secondary industries to service industries, which may be seen in the change in the sectoral share of the labor force as noted above, are related to the declining trend in agriculture and the increasing trend in general government. Therefore, the relative weight occupied by general government in employment in the service industries is increasing, as is shown in the Table 4 from Fuchs' book. Thus, in 1929, general government amounted to less than half the share occupied by retail business, which placed first among the service industries; by 1963 general government had increased to being on a level with retail business. However, only general government experienced an increase within the service industries; all other business categories either declined or remained the same. One further thing to be noted is that when we consider government activity in a broad sense, there is a rise in the shares of government enterprises within the primary and secondary industries. When the two are combined, we may point out the tendency for increases in the weight of the public sector occupied in all industries. However, it goes without saying that the chief function of the government sphere of activity lies in the service industries.

Table 4. Share of Total Persons Employed in the Service Industries by Business Category, 1929-1963 (U. S. A.)

	1929	1937	1948	1953	1957	1963
As a Percentage of Total Services						
Wholesale Trade	9.3	8.8	10.1	9.3	9.5	8.9
Retail Trade	32.6	29.8	32.1	29.3	29.9	27.8
Finance & Insurance	6.5	5.0	5.0	5.4	6.0	6.4
Real Estate	2.0	2.1	2.1	1.9	2.0	2.0
Households & Institutions	17.4	14.5	11.4	10.2	11.1	11.4
Professional Occupations, Personal Business & Repair Services	17.3	15.9	16.6	15.0	15.7	16.3
General Government	14.9	23.9	22.7	28.8	26.8	27.2
.....						
Government Enterprises as a Percentage of Goods Industries	1.5	1.8	2.3	2.5	2.6	3.1

Source: Fuchs, *The Growing Importance...* Calculated from Table 1 and Table 11.

II. CHANGES IN EMPLOYMENT STRUCTURE IN JAPAN'S SERVICE INDUSTRIES

Let us briefly summarize the changes in the service industries' share of employment as seen above in the case of the U.S.A., now in reference to Japan. In Table 5, we have utilized the same definition of the service industries Fuchs used, and have excluded transportation, communications and public utilities. Table 5 shows the changes in composition of employment for the service industries. We can point out the following as characteristics of the employment structure in Japan's service industries.

Table 5. Shares of Persons Employed in Japan's Service Industries, Selected Years, 1930-1965

	1930	1940	1950	1955	1960	1965
a. Number of Persons Employed in the Tertiary Sector	8,788	9,403	10,568	13,928	16,682	20,484
b. Number of Persons Employed in (a) in Transportation, Communications, & Public Utilities	1,289	1,516	1,810	2,046	2,474	3,152
c. a-b	7,499	7,887	8,758	11,879	14,208	17,332
d. c/a (%)	85.3	83.9	82.9	85.3	85.2	84.6
As a Percentage of the Service Sector						
Wholesale & Retail Trade	54.8	51.8	45.3	46.1	48.7	49.0
Finance, Insurance, Real Estate	2.6	3.8	4.1	5.2	5.5	6.6
Services	32.8	36.6	37.4	37.2	36.4	35.7
Government	9.8	7.8	13.2	11.5	9.3	8.6
Unclassifiable	0.9	2.8	0.4	0.0	0.0	0.1

Notes: 1. Public enterprises include electricity, gas and water.
 2. From 1950, service industries are classified as (1) personal and entertainment services; (2) business and repair services; and (3) miscellaneous services including professions such as medicine, health and education.
 3. Unclassifiable industries are included in service industries for convenience.

Sources: 1930-1955: Office of the Prime Minister, Statistics Bureau, *Nihon no jinkō Shōwa 35 nen* (Japan's Population in 1960), pp. 406-407.
 1960-1965: Office of the Prime Minister, Statistics Bureau, *Kokusei chōsa hōkoku*, 1960 and 1965.

1. The combined share of wholesale and retail trade is the same in Japan as in the U.S., ranking highest among the service industries. But in contrast with the U. S. in which a declining trend was not followed from 1929 to 1963, there was a decline in Japan from 1930 to 1950, while a gradual increase may be witnessed from 1950 to 1965. Therefore, the 49% seen in Japan in 1965 is fairly high compared with the 36.7% in the U. S. in 1963.

2. In the U.S., finance, insurance and real estate stayed at the same level, while in Japan there was a continuous and consistent increase.

3. If we assume that U. S.'s households and institutions, professional, personal business and repair services are together equivalent to Japan's service

industries, then in the U.S. there was a decline from 1929 to 1953 followed by a shift towards a slight increase. In Japan, in contrast, there was an increase from 1930 to 1950, followed by either a slight decline or no movement. We may thus recognize a disparity in the patterns of long-term change. Japan's 35.7% in 1965 is quite high compared with the U. S.'s 27.7% in 1963.

4. As has been pointed out above, the number of government employees in general government in the U. S. displays a consistent tendency to rise from 1929 to 1963. In the case of Japan, there was a gradual decline after 1950, and the percentage was 8.6% in 1965, remarkably low at less than 1/3 of the U. S.'s 27.2% in 1963.

To summarize the above points, we may note that, although the share occupied by employment in the service industries in Japan in total industry has increased along with the growth of the economy and presently stands at 45%, when we look at the substance of the employment structure and compare it with U.S. among the advanced nations, it is fairly different in character. That is to say, briefly, the weight of wholesale-retail trades and other miscellaneous services is quite high, the number of government employees is dramatically low, and there is no conspicuous tendency to increase in government employment. The problem is the investigation of why there is such a difference. For this purpose it is necessary to clarify the various categories within the service sector according to sex, employer-employee status, scale of industry, etc; and along with this, to cross-tabulate employment and occupation classifications, and to examine the differences in employment structure from a variety of aspects.

III. EMPLOYMENT STRUCTURE IN THE SERVICE INDUSTRIES

Let us first look at the composition of employment in the service industries according to sex and employer-employee status. The characteristics are clear when one compares employment in the service industries with other industries as in Table 6.

We may say that first, the percentage of women employed in the service industries is 41.1% ranking next highest to agriculture; and second, in terms of employer-employee status, the percentage of self-employed is high, and the percentage of family workers in service industries is highest among non-agricultural industries.

In synthesizing these two points, it is not necessarily the case that the reason for the high percentage of female employment in the service industries and the reason for high employment of family members in agriculture are the same. That is to say, it is possible to consider the relationship between male and female employment in agriculture as almost the equivalent of that between self-employed and family workers. Thus it is clear that agriculture in Japan is based on small-scale farm families totally dependent on family labor. The percentages of self-employed and family workers are high even in the service industries, among the non-agricultural industries; but on the

Table 6. Persons with a Job and Their Shares by Industry, Sex, and Employment Status (1965)

	Total Number of Employees	Percentage of Employees to Total	Sex		Employment Status		
			Male	Female	Self- Employed	Family Worker	Employee*
All Industries	44646	100.0	63.0	37.0	21.7	18.2	60.1 (4.7)
Agriculture & Forestry	11125	24.9	48.1	51.9	42.9	53.6	3.5 (1.9)
Non-agriculture	33521	75.1	67.9	32.1	14.7	6.5	78.8 (5.6)
Manufacturing	11202	25.1	68.6	31.4	8.0	4.4	87.6 (5.0)
Transportation, Communications & Public Utilities	3002	6.7	87.5	12.5	2.4	0.6	97.0 (3.3)
Service Industries	15562	34.9	58.9	41.1	20.6	9.1	70.3 (3.0)
Wholesale & Retail Trade	7465	16.7	57.7	42.3	27.2	15.0	57.8 (2.6)
Wholesale Trade	2445	5.5	74.1	25.9	9.9	4.3	85.8 (2.3)
Retail Trade	5020	11.2	49.8	50.2	35.6	20.3	44.1 (2.7)
Finance, Insurance & Real Estate Services	1186	2.7	59.5	40.5	6.9	0.8	92.3 (1.7)
Personal Services	5420	12.1	54.1	45.9	20.1	5.3	74.6 (3.5)
Business Services	1502	3.4	38.6	61.4	41.6	14.4	44.0 (3.7)
Repair Services	516	1.2	68.0	32.0	8.5	1.2	90.3 (4.1)
Medical & Health Services	368	0.8	90.8	9.2	24.5	5.4	70.1 (3.0)
Educational Services	721	1.6	37.3	62.7	17.5	3.3	79.2 (2.6)
Professional Services not included Elsewhere	1219	2.7	60.0	40.4	0.6	0.2	99.2 (1.8)
Miscellaneous Services	726	1.6	60.6	39.4	21.5	1.9	76.6 (3.0)
Government	368	0.8	61.1	38.9	10.9	1.6	87.5 (10.9)
	1491	3.3	82.2	17.8	—	—	100.0 (4.2)

Note: * Figure in parentheses is the number of temporary and day laborers.
Source: *Shūgyō kōzō kihon chōsa hōkoku, zenkokuten* (for 1965).

other hand, the percentage of employees amounts to 70%. This means that within the service sector minute individual enterprises intermingle with large-scale corporate enterprises. Therefore, the high percentage of female employees is not necessarily a high percentage of family workers. This may be seen as due to the fact that places which have up to now been open to women are relatively numerous within the service sector.

The relationship among these things becomes all the more clear when one examines the service sector broken down to medium and small categories.

1. The high percentage of female employment in the service sector is seen when "service sector" is understood in its narrow sense, but even within this the personal services and medical and health services are highest, surpassing 60%. Among wholesale and retail trades, retail trades are high. The high rate among medical and health services is due to the fact that these include nurses, hygienists, etc. The high percentage in personal services and retail trades is due to the fact that the sales and service activities associated with these business categories are appropriate for females.

2. However, what is important is the comparison of employer-employee status. First, in terms of subdivisions, the percentage of self-employed is conspicuously high for personal services at 41.6% and for retail trade at 35.6%; while the percentage for family workers, on the other hand, is likewise a relatively high 20.3% for retail trade and personal services at 14.4%. Retail trade are lower than personal services in percentage of self-employed, and more numerous in percentage of family workers, due to the fact that sales activities are relatively simple matters and thus can easily depend upon family labor. However, combining these two forms of employment gives a striking 56%, and therefore the percentage of employees is low. Comparing these facts with the U.S., the weight that wholesale and retail trades, and personal and business services occupy in Japan in terms of the total service sector is high. This is due to the fact that the weight of retail trades and personal services is high. Again, it may also be thought of as due to the fact that the combined percentage of self-employed and family workers is high. From here on, therefore, it is probable that within the service sector, both categories will lower the percentage of self-supplied family workers and heighten the percentage of employees. Let us look at the trends concerning these points over the period of the last ten years.

First, looking at total industry in Table 7, the percentages of self-employed and family workers display a marked tendency to decline. Through this the percentage of employees has come to be high. The decline of family workers is particularly striking, which may be considered due to the fact that there is a high percentage of children who become employees without taking over the family business. If we look at total industry in terms of general classification into agricultural and non-agricultural spheres, as has already been pointed out agriculture is exclusively dependent upon the self-employed and family workers, while the non-agricultural sphere centers upon employee labor, as goes without saying. In terms of the characteristics seen through

Table 7. Shares of Employment by Industrial Sector and Employment Status (1956-1968)

	(Figure=%)				
	1956	1959	1962	1965	1968
Total					
Self-employed	26.4	26.1	22.9	21.7	20.4
Family Workers	29.2	25.1	20.7	18.2	17.3
Employees	44.4	48.8	56.4	60.1	62.3
Agriculture & Forestry					
Self-employed	35.9	39.9	41.4	42.9	42.1
Family Workers	59.6	56.7	55.1	53.6	54.7
Employees	4.5	3.4	3.3	3.5	3.2
Non-agriculture					
Self-employed	20.1	18.8	15.4	14.7	14.7
Family Worker	8.5	7.3	6.8	6.5	7.4
Employees	71.4	74.4	77.8	78.8	77.9
Service					
Self-employed	28.1	25.9	22.5	20.6	19.5
Family Workers	11.3	10.1	9.8	9.1	10.3
Employees	60.6	64.0	67.7	70.3	70.2

Source: *Shūgyō kōzō kihon chōsa hōkoku, zenkokuhē.*

change over time, however, there has been clearly witnessed a gradual increase in self-employed in agriculture while in contrast, there has been a gradual decline of self-employed and a gradual increase in employees in non-agricultural industries. And while in the service sector a tendency may be seen for self-employed to gradually decline and employees to increase, the extent of this change is expressed more than that throughout the non-agricultural industries as a whole. This may be explained by the fact that the service industries have had up to now a high rate of dependence on family labor and therefore have generally been slow to modernize their employment structure. During the period under observation, however, they have progressed towards modernization at a somewhat faster tempo than other non-agricultural business categories.

Of course, government employees are included in the service sector, and because it may be that employment structure might change if examined in terms of smaller classifications of businesses, let us examine structural changes of the same variety in terms of the smaller category of service industries excluding government employees.

Looking at Table 8, all categories with the exclusion of business service show some degree of change. We may see that the percentage of self-employed declines, that of family workers remains steady, and that of employees shows a tendency to increase. Categories in which the extent of decline in self-employed (or in other words, of conspicuous increase in employees) may

Table 8. Shares of Persons Engaged in the Service Sector, by Employment Status (1956-1968)

	(Figure= %)				
	1956	1959	1962	1965	1968
Wholesale Trade					
Self-employed	19.3	15.6	11.9	9.9	8.9
Family Workers	6.6	5.1	4.7	4.2	5.1
Employees	74.1	79.3	83.4	85.9	86.0
Retail Trade					
Self-employed	43.4	42.8	38.2	35.6	31.4
Family Workers	22.8	20.8	20.9	20.2	22.1
Employees	33.8	36.4	40.9	44.2	46.5
Personal Services					
Self-employed	44.0	42.3	41.2	41.6	41.9
Family Workers	13.5	13.1	14.4	14.4	14.9
Employees	42.5	44.6	44.4	44.0	43.2
Business Services					
Self-employed	—	6.3	7.2	8.5	8.5
Family Workers	—	1.1	1.4	1.2	1.3
Employees	—	92.3	91.4	90.3	90.2
Repair Services					
Self-employed	—	38.2	30.8	24.5	20.8
Family Workers	—	8.0	7.2	5.4	7.4
Employees	—	53.8	62.0	70.1	71.8

Notes: 1. The business categories given here are taken from among the service industries and, from the point of view of compositional changes in employment status, have been selected as being most representative.

2. The 1956 figures for Business Services and Repair services differ in concept from those given from 1959 and hence have been omitted.

Source: Same as Table 7.

be seen include wholesale and retail trades followed by repair services. In contrast, there is no conspicuous change in personal services; and in cases like business services this means an increase in the rate of dependence on family labor. This fact may be considered along the following lines: when retail and wholesale trade, which are concerned with the sale of commodities, reach the stage at which the rate of dependency upon employment of family members is high and the labor force has gradually come to be constricted, it is a natural tendency for there to be a transition from self-management to company management. For example, the ratio of self-employed to employees in retail trade has done an about-turn over the last ten years, and now the ratio of employees is approaching 50%. In contrast, the structure of employer-employee status in personal services has hardly changed, and is generally continuing unchanged. It may be pointed out that because the provision of services, in contrast with the selling of goods, places importance on personal human contacts within fixed limits, it is difficult to change easily

the form of employment. And despite the fact that in general the percentage of self-employed is decreasing, the fact that the percentage of family workers is at a standstill may be thought of as signifying the gradual enlargement of the scale of self-management. In any event, from the above examination, there probably will be no objection to the statement that the recent over-all increase in employment in the service sector is based on the remarkable growth of employees which has chiefly accompanied modernization of the service industries.

IV. THE RATE OF MARGINAL CONTRIBUTION OF SERVICE SECTOR EMPLOYMENT

Let us here, through the form of the rate of marginal contribution, attempt to grasp the relationship to the continued trend to increase in the absolute numbers employed in the service sector and again in the relative percentage to total employment. Table 9 utilizes the figures quoted above from the *Shūgyō kōzō kihon chōsa hōkoku* (Employment Status Survey), and shows the rate of incremental contribution of each industry to total of non-primary sector employees.

Table 9. Rate of Incremental Contribution in Employment in Non-primary Industry

	I 1956-59	II 1959-62	III 1962-65	IV 1965-68
Total Non-primary Industry Employment	100.0	100.0	100.0	100.0
Secondary Industry	47.8	59.6	33.1	39.6
Tertiary Industry	52.2	40.4	66.9	60.4
Service Industries	43.1	33.0	55.0	50.6

Note: The figures in the present table are only those relating to employees, in contrast to Table 6, Table 7, Table 8 which give general employment figures including self-employed and family workers.

Source: *Shūgyō kōzō kihon chōsa hōkoku, zenkokuhēn.*

If one divides the period under observation into four periods, I through IV, generally speaking, periods I and II were characterized by a drive towards prosperity which included the so-called high level growth period, while on the other hand, periods III and IV may be seen as sluggish in terms of the economic growth rate, during the period of stagnation which centered on 1965 which were the bottom of the depression. The contrast among these business situations is particularly remarkable between periods II and III, but when we compare these two periods, we may see that the highest rate of increase in employees was in the secondary sector in period II, while in period III it was in the tertiary sector. That is to say, the following relationships may be seen: during the period of rise in prosperity the expansion of enterprises focussed on manufacturing absorbed employment; while in contrast, during the period of business stagnation, tertiary industries took charge of employment increases. The chief characteristics of employment in

the tertiary industries from the long-term point of view after the Second World War may be seen as the actualization of the function of propping up employment in a phase of business stagnation.⁶ However, it may be noted that because period IV witnessed an upward turn towards business recovery, tertiary sector employment still maintained a high rate in this stage. We may interpret this as meaning that period III was a turning-point in which the character of the employment structure changed. That is to say, tertiary sector employment not only has supported employment which accompanied a transition in business conditions, but also has been characterized by a gradual long-term increasing trend. But this character has come to be clearly apparent from period III. What must be noted in connection with this is that it was the service industries which formed the character of this tertiary sector. That is to say, the development of the service industries in a narrow sense was the driving force heightening the rate of increase in employment in the tertiary sector.

The problem here is the examination of the question of which of the business categories within the service sector had a high rate of incremental contribution. For this purpose we may refer to Table 10.

Table 10. Rate of Increase in Service Industry Employment for 3-year Intervals
(Figure=%)

	I 1956-59	II 1959-62	III 1962-65	IV 1965-68
Total Industries	10.52	9.16	12.57	17.88
Wholesale & Retail Trade	11.05	10.54	10.92	19.55
Wholesale Trade	21.21	25.60	18.68	16.44
Retail Trade	7.75	5.01	7.49	21.07
Finance, Insurance & Real Estate	13.00	37.12	18.48	13.65
Services	8.65	3.95	12.58	21.53
Personal Services	4.86	2.43	9.95	19.57
Business Services	26.67	25.85	16.47	32.94
Repair Services	1.37	3.13	31.89	24.18
Medical & Other Health Services	13.39	4.72	8.42	13.73
Educational Services	8.81	4.24	12.76	10.99
Professional Services not included Elsewhere	18.10	15.80	19.40	30.16
Miscellaneous Services	—	5.59	1.08	44.02
Government	14.31	4.66	16.57	0.41

Source: Same as Table 9.

Glancing at Table 10 it is possible to indicate the following points. First, the rate of increase in employment in the service industries as a whole was higher in the latter rather than the former period under observation. The

⁶ Cf. Umemura Mataji, "Kokumin shotoku bunseki to daisanji sangyō" (Analysis of National Income and Tertiary Industry), *Keizai seichō to daisanji sangyō ni kansuru kenkyū* (Economic Growth and Research of the Tertiary Sector), Tokyo, Tōkei kenkyūkai, March, 1962 (Mimeographed).

crux of this is services. Second, the business categories in which the rate of increase in employment tended to be higher in the latter rather than the former period were retail trade, personal services, business services, repair services, and professional services other than medical and health, and education.

Generally speaking, it may be seen that consumption-oriented services, rather than production-oriented services, have a greater capacity for growth from now on. What should be noted in particular here is the trend in the newly established service industries which include professional services and "other services." Let us now explore this through an international comparison of professional services.

V. AN INTERNATIONAL COMPARISON OF SERVICE INDUSTRIES

Classification I. International Standard Industrial Classification

Division 0.	Agriculture, Forestry, Hunting, and Fishing (4)
1.	Mining and Quarrying (5)
2-3.	Manufacturing (20)
4.	Construction (1)
5.	Electricity, Gas, Water and Sanitary Services (2)
6.	Commerce (4)
61.	Wholesale and Retail Trade
62.	Banks and Other Financial Institutions
63.	Insurance
64.	Real Estate
7.	Transport, Storage and Communication (3)
8.	Services
81.	Government Services
82.	Community Services
83.	Business Services
84.	Recreation Services
85.	Personal Services
9.	Activities not Adequately Described (1)

Note: Figures in parentheses indicate the number of subdivisions within that category.

Source: ILO, *Yearbook of Labour Statistics*, Geneva, 1966, pp. 728-729.

In the *Yearbook of Labour Statistics* published by the ILO, the headings are given as standard international classifications of industry for economic activity (See Classification I). Table 11 presents the names of the countries ranked in order of percentage of those employed in characteristically service industries on this list to total employed population. Looking at this Table, the ratios of employees in the service industries of fifty-seven countries show a broad spread from the Congo's few points to the U.S.A.'s 50%. The majority of the countries fall between 15-39%. If we examine these countries moving from the low ranking ones to the high-ranking ones, it may be seen that as the ratio of employment in the service industries increases, so does the per capita income level also rise. In order to ascertain this point, let us combine the rates given in Table 11 with per capita income level. As may be clearly

Table 11. Percentage of Employment in the Service Industries, -1960*-

Percentage	Country	Number of Country
45-	U. S. A.	1
40-44	Canada, Uruguay, Israel	3
35-39	Venezuela, Netherlands, Belgium, Denmark, United Kingdom, Australia, New Zealand, Puerto Rico, Trinidad and Tobago	9
30-34	Argentina, Chile, Japan, France, Switzerland, Germany (Fed. Rep.), Ireland, Norway, Luxemburg, Sweden	10
25-29	Panama, Finland, Italy, U.A.R., Jamaica, Austria	6
20-24	Mexico, Peru, Paraguay, Cyprus, Malaya, Spain, Taiwan, Portugal, Ecuador, Korea (Rep. of)	10
15-19	Ghana, Guatemala, Honduras, El Salvador, Iran, Iraq, Philippines, Greece, Hungary, Dominica	10
10-14	Cambodia, India, Indonesia, Pakistan, Thailand	5
5-9	Turkey, Liberia	2
0-4	Congo	1

- Notes: (1) *In the countries whose figures are not available for 1960, those in nearest years before or after 1960 are adopted. The instances in which figures for years other than ca. 1960 include: Congo (1955-57), Guatemala (1964), Uruguay (1963), Taiwan and Iran (1956), Iraq and Malaya (1957), Finland (1951).
- (2) In the ILO's *Yearbook of Labour Statistics*, the classification of structure of employment for approximately 125 countries is given, but the countries were selected on the conditions that figures for standard industrial categories be available for ca. 1960, that the employed population be 300,000-500,000 or more; that national income statistics be usable. Therefore, country figures do not necessarily display a distribution which corresponds to the percentages of employment.

Source: ILO, *op. cit.*

seen in a glance at Table 12 the countries whose rate of employment in the service industries is high are also those whose per capita income level is high. In other words, this means that as income level rises and a country progresses from underdeveloped to advanced, more and more employees are drawn into the service industries. This comparison gives cross-sectional international corroboration to the so-called Petty-Clark Law. But among the countries which fall more or less above or below the diagonal line which runs between the U.S. and Thailand, those which fall above the line have a high rate of employment in the service industries in proportion to the level of income, while those which fall below the line are opposite. Countries such as Uruguay, Trinidad-Tobago, and the countries in the same box as Ecuador, can be referred to as countries in which the weight of employment in the service industries is excessive in proportion to level of income. This is also the case with South Korea and Taiwan; while in the case of Japan it may be said that there is a preponderance of service sector employment in comparison with income. For an explanation of this, it is necessary to explore both the nature of service sector employment and various other conditions.

Table 12. Per Capita Income Level and Percentage of Service Industry, -1960-

Percentage of Employment in the Service Industries	Per Capita Income (U. S. Dollar)							
	Less Than 100	100-200	200-300	300-500	500-700	700-1000	1000-1500	1500-2500
45-								U. S. A.
40-44				Uruguay			Canada Israel	
35-39				Trinidad and Tobago	United Kingdom Venezuela Puerto Rico	Denmark Netherlands	New Zealand Australia Belgium	
30-34				Japan	Chile Ireland	Norway	Sweden Switzerland France Germany (Fed. Rep.) Luxemburg	
25-29					Panama	Austria	Finland Italy	
20-24				Ecuador Paraguay Taiwan Korea (Rep. of)	Portugal Malaya Spain	Mexico Cyprus		
15-19				Honduras El Salvador		Greece		
10-14				Cambodia India	Thailand			
0-9					Turkey			

Note: The fact that in Table 12 the number of countries is 15 less than in Table 11 is due to the fact that per capita national income figures were not available for these 15.

Sources: ILO, *op. cit.* and U.N., *Yearbook of National Accounts Statistics, 1965*. For population: U.N., *Demographic Yearbook, 1964*.

Virtually identical results concerning the relationships seen above may be obtained from an examination expanded to the entire tertiary sector. But it seems that the rate of tertiary sector employment magnifies somewhat the difference in development between the advanced and undeveloped countries. This may be seen as due to the fact that in advanced countries employment in transportation, communications and public utilities is relatively large. Utilizing Tables 11 and 12 as points of departure, let us now proceed to first, an analysis of the forms of employment and second, a comparison of service industries based on occupational classification.

1. The Form of Employment of Service Industries

From the point of view of form of employment it is possible to make four classifications—self-employed, family workers, employees and others.⁷ Moreover, the relationship between the rate of service sector employment and the rise in per capita national income level may be one of direct regression. However, the dispersal above and below the hypothesized standard line may be thought of as being related to whether the additional value of production of the service industries is relatively high or low in comparison with other industries. The chief reason for this may be thought of as resulting from the composition of the form of employment as described above. For the purpose of examining this relationship, we have divided service sector employment into the categories listed above and will compare the rates of composition among each of the countries.

We can see from a general view of Table 13 that among the four categories, the percentage of employees is highest in the majority of countries and ranges from Ghana's 30.8% to Finland's 89.4%. In general it is possible to perceive that as the level of income rises, the percentage of employees in the service sector also rises. That is to say, countries which rank in the 80% bracket include Canada and the U.S.A., followed by various countries of Northern and Central Europe as well as England, Australia, and New Zealand. On the other hand, countries which rank low, in the 30-40% bracket, include Ghana, India, South Korea, Pakistan, Thailand, etc. Because countries in which the number of employees in the service sector is less than 200,000 have been excluded from Table 13, it is necessary to pay attention to the fact that the majority of the newly-emerging African nations have been omitted from the group ranking low in employees. Countries which rank between these two groups in the 60-70% bracket include Mexico, Venezuela, Japan and Malaya, etc., in Central and South America and the moderately developed countries of Asia (from the point of view of per capita income level). It is probable that the fact that such advanced European countries as France and Belgium are included in the 60-70% bracket, however, shows the influence of special historical factors.

⁷ The *ILO Yearbook* breaks employment down into the following four categories:

1. employees and workers on own account, 2. salaried employees and wage earners,
3. family workers, and 4. others and status unknown.

Table 13. Forms of Employment in Service Industries, -1960-

	As Percentage of Total				Total (1,000 persons)
	Employers & Workers on Own Account	Salaried Em- ployees & Wage Earners	Family Workers	Other & Status Unknown	
Ghana (1960)	65.6	30.8	3.6	—	527
Morocco (1960)	31.1	66.7	1.2	1.0	561
U. A. R. (1960)	29.6	66.6	3.8	—	1,978
Canada (1961)	11.4	87.5	1.1	—	2,765
Chile (1960)	22.1	76.9	0.9	—	785
Ecuador (1962)	30.9	65.7	1.4	2.0	288
Mexico (1960)	30.8	68.5	0.3	0.4	2,602
Peru (1961)	28.0	70.5	1.3	0.2	759
U. S. A. (1960)	12.2	83.1	1.0	3.7	32,439
Venezuela (1961)	22.6	76.1	0.8	0.5	876
Taiwan (1956)	29.2	65.3	5.4	0.1	397
India (1961)	46.6	44.3	9.1	—	24,314
Iran (1956)	33.8	64.5	1.2	0.5	302
Japan (1960)	21.7	67.2	11.1	—	14,208
Korea (Rep. of) (1960)	47.1	48.3	4.5	0.1	1,581
Malaya (1957)	27.5	70.1	2.1	0.3	515
Pakistan (1961)	52.3	42.6	5.1	—	3,972
Philippines (1960)	24.8	70.0	5.2	—	1,417
Thailand (1960)	31.2	43.6	25.2	0.0	1,435
Austria (1961)	14.5	80.4	5.1	—	985
Belgium (1961)	26.1	67.6	6.3	0.0	1,271
Denmark (1960)	16.0	81.9	2.1	—	776
Finland (1960)	8.7	89.4	1.9	—	538
France (1962)	19.5	76.6	3.9	—	6,549
Germany (Fed. Rep.) (1961)	14.3	80.7	5.0	—	8,650
Greece (1961)	34.9	87.9	3.7	0.0	706
Ireland (1961)	13.7	79.5	1.9	3.7	372
Norway (1960)	11.4	78.9	0.6	—	446
Netherlands (1960)	15.8	83.6	4.7	—	1,656
Portugal (1960)	18.0	88.4	1.1	1.9	773
Switzerland (1960)	13.6	57.2	2.8	—	826
Sweden (1960)	10.0	80.7	1.6	—	1,082
Turkey (1960)	39.1	57.2	3.1	0.6	1,080
U. K. (1951)	10.5	80.7	0.3	8.5	8,526
Australia (1961)	14.1	83.6	0.3	2.0	1,656
New Zealand (1961)	10.5	88.6	0.2	0.7	345

Notes: 1. This table excludes countries whose total service industry employment is less than 200,000.

2. Excluding Communist nations.

3. For those countries which itemize military personnel separately, the calculations here exclude these figures from the percentages.

Source: ILO, *op. cit.*

Table 14. Percentage of Employees by Sector, -1960-

(Figures=%)

	Secondary Sector	Tertiary Sector	Service Sector	Total
U. S. A.	88.4	84.9	84.0	82.7
Canada	92.5	88.3	88.0	82.4
Australia	88.0	85.0	83.6	79.3
W. Germany	92.1	83.1	80.8	78.0
Japan	84.9	71.5	67.2	51.3
Malaya	78.0	71.5	70.1	56.0
U. A. R.	79.5	69.2	66.6	49.4
India	38.9	47.9	44.3	12.8

Explanation: The countries are ranked according to per capita income level. Therefore, it is possible to see that as income level rises, so does the percentage of employment rise. In instances in which the percentage of tertiary 9 sector employment is higher than the percentage of service industries, there is a remarkably high rate of employment in transportation, communications, and public utilities.

Source: ILO, *op. cit.*

Turning next to the percentages of self-employed, it goes without saying that there is an inverse relationship to a high percentage of employees. Setting aside Ghana with 65.6%, South Korea, India, Pakistan, etc. show a sizeable ranking in the vicinity of 50% which, with the employees category, cuts in half total employment. Because this relationship also pertains to the secondary sector (see Table 14), it may be considered that with economic development comes a shift in the weight of the form of employment from self-employed to employees.

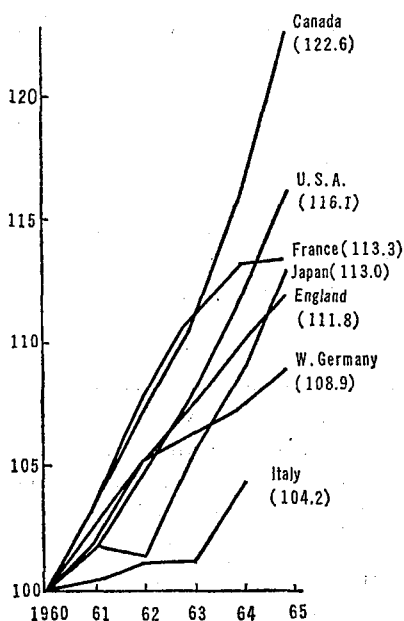
On the other hand, as in the majority of countries, the percentage of family workers stops at only a few percentage points, and in general is not observably important; but it should be noted that the percentages for India, Thailand and Japan are conspicuously high. It would seem necessary to explain the reason for this in relation to the characteristics according to scale of enterprise of the service industries of those countries which are far removed from the standard line. We may categorize service industries according to scale by means of number of employees, amount of capital, etc., and at the same time examine the actual conditions of the business categories of the service industries. The reasons for why Japan's service industries have a high weight of employees in comparison with income level, and why the percentage of family workers is high, lie in the existence of many minute-scale shops and in a high level of dependence upon family labor in these business categories which has not been eliminated. Even though the relationship between the service industries and a percentage of female workers which is relatively high in comparison with other industries, is fairly strong with the high level of dependence on family workers, this is not a characteristic of Japan alone. In any event, it seems justifiable to proceed to an analysis of the form of employment as seen from the tendency to increase in the percentage of em-

ployees in the service industries, centering on an analysis related to employees.

Therefore, it is certainly of interest to examine employment in the service industries through an international comparison of the levels and recent trends in number of employees (both total and by business category), hours, wages, kind of labor, etc. However, the data printed in the *ILO Yearbook* concentrates upon manufacturing industries, and that which is presented for the tertiary sector concerns transportation, storage, and communications, which are related to the secondary sector. Information regarding just the service industries is not given. This is because such conditions as the fact that the standardization of various economic indices is difficult due to the multiplicity of services which may typically be seen in the personal services among the various specific service industries, and the fact that therefore large-scale production based on large-scale enterprises is not appropriate,⁸ manifest themselves even in statistical form. Therefore, we will only touch lightly here upon recent trends in employment in the service industries.

In Figure 1, we have selected Japan and a number of Western nations and have taken a look at the trend toward increase in the number of employees in the service industries in these countries since 1960. Excluding Italy there has been a rapid increase in the employment index. However, France would seem to have become sluggish since 1964. Of course, whether or not this employment increase was truly rapid can only be told through a

Figure 1. Increase in Service Sector Employment (1960=100)



comparison with other industries, and through a comparison with employment indices of similarly defined service industries for the various underdeveloped countries. But even when such checks are made, the fact that the recent increase in employment in the service industries of the advanced countries is remarkable can be verified. Among these countries the increase in the service industries in a narrow sense is largest compared with commerce, finance, and insurance; and this is the case the more advanced a country is. Therefore, if one constructs a figure for the service industries in a narrow sense alone, the slope of increase in the index becomes sharper. However, in the case of Japan, employment in services and commerce seems to be progressing at virtually the same pace.

⁸ Victor R. Fuchs, *The Growing Importance...*, Tables 1 and 4.

2. *Forms of Occupation in the Service Industries***Classification II.** International Standard Classification of Occupations

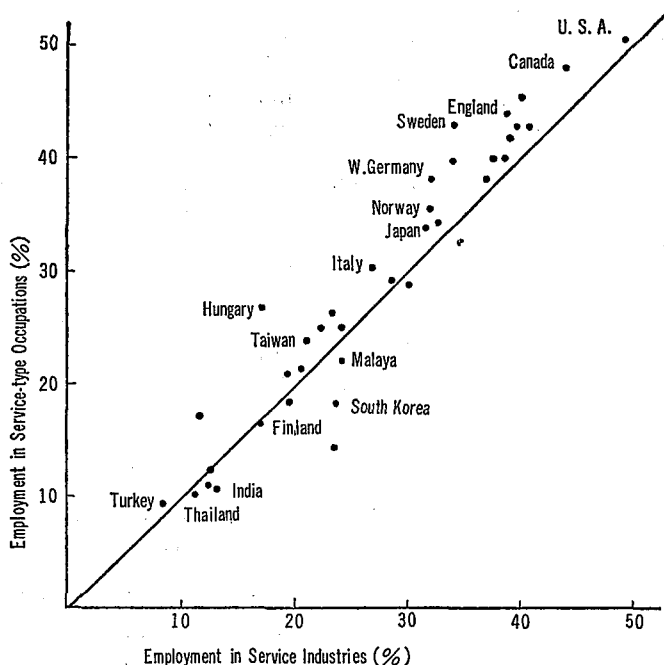
-
- 0. Professional, Technical and Related Workers
 - 1. Administrative, Executive and Managerial Workers
 - 2. Clerical Workers
 - 3. Sales Workers
 - 4. Farmers, Fishermen, Hunters, Loggers and Related Workers
 - 5. Miners, Quarrymen and Related Workers
 - 6. Workers in Transport and Communication Occupations
 - 7-8. Craftsmen, Production-Process Workers, and Laborers Not Elsewhere Classified
 - 9. Service, Sport, and Recreation Workers
 - X. Workers Not Classifiable by Occupation
-

Source: Same as Classification I, pp. 734-736.

The *ILO Yearbook* presents the nine categories as occupational classifications (See Classification II). The occupational classifications used by the Statistics Bureau of the Prime Minister's Office in the *Census* are in line with the ILO classifications. The problem is the matter of the relationship between these occupational classifications and the service industries, and in order to clarify this it is necessary to have a table which cross-tabulates both sets of classifications. However, this is not done for the ILO data. Let us, then, select items 0-3 and 9 from the above occupational classifications as being service-type occupations and, taking the percentage of employment in these categories to total employment as the percentage of service-type occupation employment, construct a figure which correlates this percentage with the percentage of service industry employment. Because on the basis of Figure 2, the majority of the countries plot in the vicinity of the 45 degree diagonal, it is possible to hypothesize that the relationship between the two forms of employment is virtually one of direct proportion, as in the case of the U.S., where employment in the service industries occupies 50% of the over-all figure and the percentage of employment in service-type occupations also occupies 50%. However, those countries which locate relatively far above or below the 45 degree diagonal, do so because employment in the service-type occupations and employment in the service industries are not necessarily congruent.

Fortunately, we may make use of a diagram cross-tabulating occupational classifications with classifications of employment by industry, which was prepared by the Statistics Bureau of the Prime Minister's Office based on the results of the 1960 *Census*, for the purpose of ascertaining the above points in reference to Japan. Looking at Table 15 and reading from left to right, it is possible to perceive the special characteristics in occupational composition by industry. Because our interest here is in the service industries, we may look at this Table from general to tertiary to service industries in that order and, moving horizontally across proportional composition, may see that the outstanding characteristic of the service industries is the relatively high

Figure 2. The Relationship Between the Percentage of Employment in Service Industries and the Percentage of Employment in Service-Type Occupations, -1960-



Source: ILO, *op. cit.*

proportion of employment in professional and technical occupations, sales, and service occupations. As the high proportion of employment in the latter two categories seems natural, let us pay particular attention to the high proportion of professional and technical employment. The high percentage of professional and technical employment in the services, ranking an outstandingly high 33.4%, constitutes the basis of the high proportion of employment in the service sector. Looking across the Table, this percentage is far higher than any of the other occupations in the service industry category. Therefore, it may be seen that the service industries in a narrow sense—namely “services” are highly influential in the formation of the character of the so-called service sector. Of course, this does not mean that the figures for Japan are analogous in their present form to those of other countries, but we can acknowledge the fact that the professional and technical occupations have the higher proportion in the service industries. We include within the category of professional and technical occupations in the service industries, technicians, teachers, medical personnel and hygienists, those connected with law, certified public accountants, etc. We may refer to these as the so-called group employed in the learned occupations. And moreover, within those countries with a high level of economic development, there is the matter of whether or not the relationship between high level economic development

Table 15. Percentage by Occupation and by Number of Employees According to Industry (1960)

	Total (1,000 persons)	As a Percentage of Total Employees								
		Occupational Classification*								
		0	1	2	3	4	5	6	7-8	9
Total	43,691 (100.0)	4.9	2.3	10.4	10.6	32.6	0.8	3.3	28.6	6.5
Primary Industry	14,346 (32.8)	—	0.1	0.3	0.1	98.7	—	0.1	0.7	0.1
Secondary Industry	12,731 (29.1)	1.9	3.5	10.0	2.4	0.3	2.9	2.0	75.9	1.1
Tertiary Industry	16,604 (38.0)	11.4	3.4	19.5	25.9	0.3	—	6.9	16.4	16.1
Service Industries	14,169	13.1	3.4	18.1	30.2	0.4	—	1.8	14.5	18.5
Wholesale & Retail Trade	6,870 (15.7)	0.6	3.5	10.5	58.2	0.4	—	2.2	15.0	9.7
Finance, Insurance & Real Estate	796 (1.8)	0.8	7.7	61.0	24.2	0.1	—	1.9	1.8	2.5
Services	5,171 (11.8)	33.4	2.2	12.5	1.7	0.4	—	1.2	18.4	30.1
Government	1,332 (3.0)	5.9	4.6	53.2	0.1	0.2	—	2.4	4.7	28.9

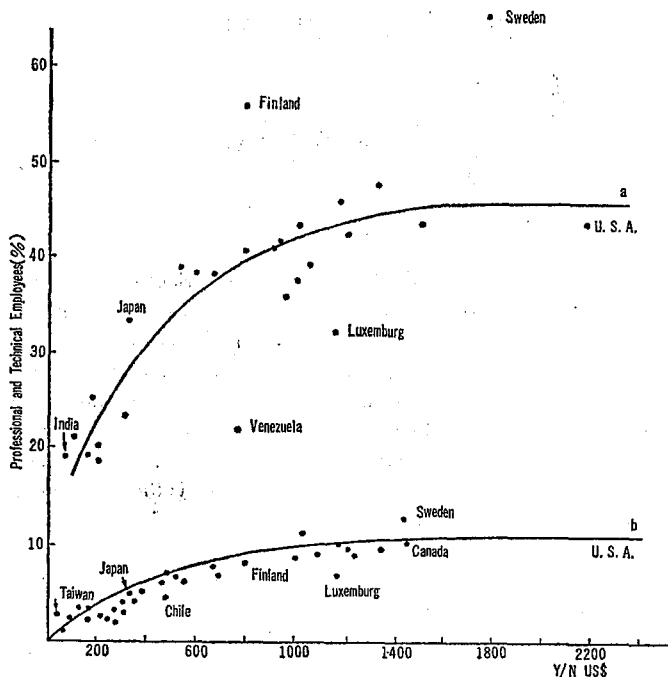
Notes: 1. The total figures include non-classifiable items.

2. *Numbers for occupational classification correspond to those used in Classification II.

Source: Based upon Office of the Prime Minister, Statistics Bureau, *Nihon no jinkō Shōwa 35 nen* (Survey of Japan's Population in 1960).

and a higher percentage of employment in the service sector may also be said to connect up with the percentage of intellectual occupations which occupy a central portion of the service sector. Let us now examine the relationship between the per capita income level and (a) the proportion occupied by professional and technical employees in service industry employment and (b) the proportion of professional and technical employees to total industrial employment. The results are shown in Figure 3. Lines (a) and (b) have been drawn free hand to show the trends in each of the two percentages respectively. As they move toward the right, both lines tend to rise with rises in income level. Looking at line (a), we may see that the percentage rises from a low of approximately 20% to amount to about 45% when income level reaches the vicinity of \$1,400; but after that it seems to come to a standstill. Line (b), on the other hand, rises from a low of 1-2% to exceed 10% when income level is in the vicinity of \$1,000; subsequently, it also comes to a standstill. That is to say, as a country progresses from underdeveloped to advanced, employment in the professional and technical occupations reaches the 10% bracket in total employment. Again, this would seem to suggest that almost half of total service industry employment is occupied by these occupations. In reference to line (a), Sweden and Finland fall remarkably above the hypothesized line, while Venezuela and Luxemburg on the other hand drop far below. Among the countries which are far above the line, besides the two indicated in the Figure, are the socialist countries such as Hungary, etc., plus those countries which are strongly socialist in nature, including Sweden and Finland. Because of this it may

Figure 3. Level of Income and Professional and Technical Occupations, -1960-



seem that deliberate allotment of occupations by the government is influential. In the case of countries which drop below the line, such as Venezuela, income level may be perceived of as relatively high in contrast to employment in the service industries, from the point of view of the employment structure of that country. In any event, in regard to future trends within the service industries, when one thinks of the increasing weight of professional and technical occupations, a more detailed analysis in the form of an international comparison of the so-called learned occupations would seem to be necessary.