A HISTORY OF MONEY WAGES IN THE NORTHERN KYŪSHŪ INDUSTRIAL AREA, 1898–1939*

By KONOSUKE ODAKA**

I. *Introduction*

In previous work done on wages in Japan, the view is prevalent that the wage-differential structure was first formed during or after World War I. For example, 1906–32 has been specified as the period of the emergence of wage differentials by Ohkawa and Rosovsky.[1] Evidence for this view may be presented by comparing the 1909 and 1914 editions of *Kōjō tōkeihyō* [Census of Manufactures[2]] with the 1932 *Kōgyō chōsasho* [Survey of Manufactures in Metropolitan Areas]; the latter survey shows marked differences in wage according to the size of firms, but these differentials are not as evident in the former survey.[3] Other indirect support for this view comes from a more recent contribution by Ohkawa and Rosovsky who have investigated the differentials in both wages and average labor productivity existing between primary and secondary industries. Assuming that agriculture corresponds roughly to the "traditional" sector, and manufacturing industries to the "capitalistic" sector, they observe that "somewhere between 1919 and 1931 the relative wage of agriculture (or of the traditional sectors) fell sharply and remained in this position more or less until the present."[4]

The purpose of this paper is twofold: first, to present the estimates of money wages in the Northern *Kyūshū* area (Section II); and, second, to utilize these estimates to set up an independent historical indicator of the wage-differential structure (Section III). To anticipate the major findings, it will be shown that the views summarized above may be accepted and that the differential structure in metal and machinery industries was created during the period of contraction following World War I.

II. *Estimates of Wages in the Northern Kyūshū Area*

The Northern *Kyūshū* area has been chosen for the purpose of the study partly because of the availability of data, and partly because it is one of the most highly industrialized regions in the southwestern part of the country. True, one finds a rather depressing picture in the

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[1] Ohkawa and Rosovsky [20], pp. 52-53, 77-81.

[2] More literally, Factory Statistics.

[3] See, e.g., Nibuya Ryū in Shōwa Dōjin Kai [29], Part II, and Shinohara [28], pp. 14-16; for *Kōgyō chōsasho* see also Umemura [32], p. 209 and Hyōdō [5], p. 84.

[4] Ohkawa and Rosovsky [22], p. 23.

1884 report of a high government mission to this region; they write:

> ...these provinces are exceptionally suited for industrial development with fertile soil, resourceful sea- and land-products, and abundant coal deposits, all added to the convenience of transportation; nonetheless, the industrial and commercial transactions are in an amazingly stagnant state in contrast to all the other activities in the area.[5]

Another observation in the same year reports that the manufacturing industries in *Fukuoka* Prefecture "not only experienced the reduction in revenues but most of them could not even make both ends meet since 1881 after paying the wages and the costs of materials."[6] But Northern *Kyūshū* was soon to emerge from such a state of affairs. In fact, the proportion of the gainfuly employed persons in manufacturing industries in the combined prefectural zone of *Fukuoka*, *Saga* and *Nagasaki* prefectures was up to 18.8 percent in 1920, compared with a meager 4.6 percent in 1884.[7]

[5] Ōkurashō (Ministry of Finance), [24], p. 9. It should, of course, be noted that 1884 marked the beginning of a recovery from a dip in an equipment cycle (see Fujino [2], pp. 62-66). The areas surveyed by the officials consisted of *Fukuoka*, *Saga*, *Nagasaki*, *Kumamoto* and *Kagoshima* prefectures.

[6] Nōshōmushō (Ministry of Agriculture and Commerce), [9], p. 207.

[7] These figures are based on the following table.

Engaged in:	The Proportion of Gainfully Occupied Persons in:					
	Fukuoka		Saga		Nagasaki	
	1884	1920	1884	1920	1884	1920
Agriculture	78.3%	34.0%	64.4%	53.4%	76.6%	54.3%
Manufacturing	6.5	20.7	5.7	14.3	2.3	17.8
Others	15.1	45.3	29.9	32.2	21.1	27.8
Total	99.9	100.0	100.0	99.9	100.0	99.9
Total Persons	534,953	2,119,113	138,635	653,481	505,639	1,097,485

Sources: 1884: Ōkurashō (Ministry of Finance), [24], pp. 11, 20, 22.
1920: *Taishō 9 nen kokusei chōsa* [The 1920 Population Census].

In terms of the share in national manufacturing output, the zone seems to have gained slightly between 1891 and 1914, as shown in the following figures:

Year	The Share of Northern *Kyūshū* in National Manufacturing Output (Excluding Government Factories)			
	Fukuoka	Saga	Nagasaki	Total
1889 (Meiji 22)	2.2%	1.0%	1.3%	4.5%
1891 (Meiji 24)	1.8	.9	1.2	3.9
1909 (Meiji 42)	3.0	.6	1.0	4.6
1914 (Taishō 3)	3.6	.4	1.0	5.0

Sources: 1889 and 1891: Umemura Mataji, "Fuken tōkeisho ni yoru kōgyō seisan no suikei I: Meiji 22-24 nen [Estimates of Manufacturing Outputs Based on Prefectural Statistical Yearbooks I: 1889-1891]", Institute of Economic Research, Hitotsubashi University, Rockefeller Project C-14 (mimeo.).
1909 and 1914: *Kōjō tōkeihyō* [Census of Manufactures], 1909 and 1914.

Note that all the four years selected above correspond to cyclical troughs (See Fujino, *op. cit.*, p. 66). Furthermore, the percentage figures will no doubt increase if government factories and/or mining industries are added.

Perhaps the greatest misgiving in limiting one's attention to a particular region is that the analysis is bound to be affected by any special characteristics of the area chosen. It follows that one must be cautious in making generalizations on the basis of findings for that region. With respect to the Northern *Kyūshū* area, the following points have been noted in the past:[8]

(1) The industries requiring large quantities of coal and primary metals show high rates of concentration in the area;
(2) While the share of *Fukuoka* Prefecture in the national output of metal products is outstanding (28 per cent in 1934 including Yawata Iron and Steel), the share in machinery and in basic consumption goods such as textiles is extremely small (2.2 and 1.0 per cents, respectively, in the same year); and,
(3) As a result, the area tends to be an exporter of basic or intermediate goods and an importer of finished products.

The inclusion of *Nagasaki* Prefecture creates no fundamental change in this picture. It should be noted that the following analyses are subject to this reservation.

The major strategy of the following approach is to construct two sets of historical data on manufacturing wages in the Northern *Kyūshū* industrial area and to make a comparison between them. The first set of data consists of two wage series, one occupational and the other industrial, each representing respectively the average wage level of indigenous craftsmen and manufacturing firms.[9] By contrast, the second set of statistics comprises the wage data of two large, outstanding firms: *Yawata Seitetsujo* (Yawata Iron and Steel Company) and *Nagasaki Zōsenjo* (Nagasaki Shipbuilding Yard).[10] The contention here is that each of the two sets of data stands for "small" and "large" establishments so that a contrast drawn between them provides an indicator of the dynamic changes in the employment mechanism.

As to the basic data, the estimated wage series and explanations on technical points in the estimation procedures are all assembled at the end in the Statistical Appendix. In the remaining pages of this section, the general background and nature of the statistics will be discussed in detail.

Set I (1) Occupational Wage Statistics

In 1886 *Nōshōmushō* (Ministry of Agriculture and Commerce) issued an order concerning the collection by mail of various industrial statistics, to be reported by the prefectural governors. Included in the list of survey items were the biannual (at June and December) mean averages of wage rates for a group of prescribed occupations.[11] Subsequently in 1894 the timing of the data collection was changed to March and September;[12] in the year 1900 the occupational wage survey was entrusted to regional chambers of commerce, as the burden of

[8] See, e.g., Hatano and Toki [3] and Hatano and Yoshimura [4].

[9] By "indigenous" we mean those occupations which were in existence, either themselves or in the from of prototypes, prior to the Meiji Restoration (1868). Note that this definition of the term is looser than the one offered by Rosovsky and Ohkawa [26].

[10] They will be abridged hereinafter as *YAS* and *NIZ*, respectively.

[11] *Nōshōmu tsūshin jikō tasshi* [Ministerial Order Concerning the Mail Reporting Procedures, Ministry of Agriculture and Commerce], in *Meiji 19 nen Hyōgoken otsu No. 137 tasshi* [Order B-137, *Hyōgo* Prefecture, 1886], reprinted in Nōrinshō (Ministry of Agriculture) [19], pp. 228-30.

[12] *Meiji 27 nen Nōshōmu kunrei No. 14* [Ministerial Directive No. 14, 1894, Ministry of Agriculture and Commerce], in Nōrinshō (Ministry of Agriculture) [19], p. 372.

statistical compilation had become increasingly heavy for local governments.[13] Thus initiated, the survey continued until 1936, around which time it was taken over by *Shōkōshō*'s *Chingin chōsa* [Survey on Wages by Ministry of Commerce and Industry].[14]

In recording occupational wages, three kinds of rates—maximum, average and minimum —were to be specified. As to the selection of sampling location, the departmental directive merely notes that "the survey shall be conducted at convenient spots within the jurisdiction of the prefecture concerned."[15] Little more is known on the actual procedures by which the occupational wage rates were assembled. In particular, it is regrettable that the governmental orders and directives failed to provide job descriptions; they were classified presumably according to the popular notion of what constituted these occupations. The unknown characteristics of the data and careless errors discovered not infrequently among the prefectural reports caused an official at the central government to express grave misgivings about the validity of the series:

> Dubious figures were often discovered among the wage reports submitted by the chambers of commerce. So different were they from those in preceding or succeeding periods, it was frequently hard to decide whether or not they were reliable.[16]

On the other hand, however, one may make a case for relying on the occupational wage surveys when the general pattern of wage movement is the main point of interest. To begin with, most of the occupations stipulated by the survey consist of skilled jobs, which were recognized in the pre-Meiji era as independent crafts. In some cases, such as tailors of western clothes, they are "hybrids"—the combination of traditional artisanship and imported styles or materials. In any case, it seems safe to assume that the market rates of remuneration were established for these skilled crafts.

Moreover, it is known that many such tradesmen formed independent *kumiai* (trade councils), the major function of which was to meet twice a year for the determination of wage rates.[17] The instance of lumbermen in the Tokyo district is reported as follows:

> ...twice each year, on the 25th of January and July, the [council] calls a special meeting to discuss and arrange the wages for the coming half year...[18]

One may also draw another example from the case of shipwrights in Yokohama who made "a resolution to demand a raise of 17 *sen* per day on their wages"[19] in 1897 and won a strike. Similar organizations existed for shoemakers, tailors, and others; the most famous example is

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[13] See [19], p. 628.

[14] The national average of occupational wage series, as well as the figures for selected cities for the period of 1900-29 are gathered in one volume: Shōkōshō (Ministry of Commerce and Industry), *Chingin tōkeihyō* [Wage Statistics]: a most frequently cited source of historical wage series. Also see [17], pp. 270-81; [23], ch. 9, I. The *Shōkoshō* survey since 1934 has not been incorporated in the present study, since its occupational and industrial classifications are at variance with its predecessor.

[15] *Meiji 27 nen Nōshomu kunrei No. 14* [Ministerial Directive No. 14, 1897, Ministry of Agriculture and Commerce], in Nōrinshō (Ministry of Agriculture) [19] p. 372.

[16] Kure [10], pp. 536-37.

[17] *Kumiai* should be distinguished from *kabunakama* (guilds), which were dissolved by public order in 1872. See Sumiya [30], p. 33 ff.

[18] Katayama [8], p. 257.

[19] Takayama [31], p. 268.

perhaps that of *Nihon Tekkō Kumiai* [Japan Mechanics' Union[20]], a genuine craft union which was under the influence Samuel Gompers.[21] Undoubtedly the nature of craftsmenship underwent rapid transformation as time passed. However, the fact remains that the activities of these *kumiai* indicate that the market rates did prevail for these occupations. This being the case, there is good reason to attach a moderate degree of confidence on the reliability of the reported figures.

All the data on occupational wages in the present study are derived from *Fukuoka ken tōkeisho* [Statistical Yearbook of Fukuoka Prefecture]. The coverage, which is confined to the municipal districts, broadens gradually as urbanization proceeds. In estimating the series, simple, arithmetic city averages have been calculated for each year.[22] The results of these estimations are shown in Statistical Appendix Table A-1.

Set I (2) Industrial Wage Statistics

The amendment in 1899 of the regulation concerning *Nōshōmushō*'s *kōjō chōsa* [Factory Survey by the Ministry of Agriculture and Commerce] introduced factory wages as an item to be surveyed by local authorities. *Kōjō chōsa* covered all the private factories with more than ten production workers regardless of the form of ownership. According to the directive instituting the change, the number of production workers and of apprentices, as well as their average daily wages, were to be reported, being classified by sex and two age classes (14 years and over, and below 14).[23] The survey continued until 1918 and its annual nationwide tabulation appeared in *Nōshōmu tōkeihyō* [Statistical Tables of the Ministry of Agriculture and Commerce].[24]

The results of the *kōjō chōsa* by prefecture have not always been made accessible to the public. In the case of *Fukuoka* Prefecture it is reported luckily in the *Statistical Yearbook of Fukuoka Prefecture* for the period of 1904 through 1917.[25] During the earlier days (1904-

[20] Following Hyōdō's [6] translation of the term; "ironworker" would seem better than "mechanic" as the word for *tekkō*.

[21] See, e.g., Hyōdō [6] for a detailed description of the union.

[22] Employment data are not available. However, one author reports the following statistics which are said to have been taken from a document collected by the Army.

Number of Craftsmen in Fukuoka Prefecture
(As of December 31, 1889)

Carpenters	7,250	Blacksmiths	1,935
Shoemakers	71	Shipwrights	472
Cartwrights	84		

Source: Nozaki Naotarō, "Shokkō ichiranhyō [A Table Showing the Number of Craftsmen]," *Tōkei shūshi* [Journal of Statistical Research], No. 130 (January 1891), pp. 19-21.

An alternative approach in finding average wages would be to restrict the number of cities to be included in the computation. The present method was chosen in order to allow for the spread of urbanization.

[23] *Meiji 32 nen Nōshōmushō kunrei No. 34* [Ministerial Directive No. 34, 1899, Ministry of Agriculture and Commerce], in Nōrinshō (Ministry of Agriculture) [19], p. 423.

[24] The first half of the Umemura-Minami estimates of long-term industrial wage series are based on the *Nōshōmushō* data. See Ohkawa, *et. al.* [23], ch. 9, III.

[25] For instance, the report of the factory surveys does not appear in *Nagasaki ken tōkei sho* [Statistical Yearbook of Nagasaki Prefecture].

14), however, tabulation of data was done on the basis of individual factories and aggregation has been necessary. The present study estimates employment and wages of male production workers, 14 years old and over, on the basis of industrial classification à la Minami.[26] It should be noted that the wage data are missing for certain factories—mostly those in the food industry during the earlier period—and that these cases have been excluded in the computation. Consequently, the number of workers in the food industry ought to be treated with care. The estimated series are shown in Statistical Appendix Table A-2.

In addition to the nine industrial groups, the wages in mining industry have been estimated between the years 1904 and 1916, for the significance of this industry in the area is beyond any doubt (see Statistical Appendix Table A-3). Furthermore, the wages of male workers who were contracted on a daily basis (*hiyatoi rōdō nimpu*) have been separately obtained for the period covering 1904-14 (Statistical Appendix Table A-2). In general, the day laborers were not directly involved in production processes. However, there were at least two exceptions for this: (1) the mining industry, where most of the workers were engaged by the day; and possibly (2) the case of the brewing industry (a major food industry in *Fukuoka* Prefecture), where skilled workmen were traditionally hired on a daily basis.[27]

In 1908 the Ministry of Agriculture and Commerce initiated an independent census of manufactures (*kōjō tōkei*) which covered the establishments employing, on the average, five and more production workers.[28] The second survey was taken in 1914 and annual publication of *Kōjō tōkeihyō* [Census of Manufactures] was started in 1919.[29] As a result, two sets of wage data are available for the years 1909 and 1914 (see Table 1). Considerable discrepancies are displayed in some cases. Especially the gaps observed in both employment and wages for group (3) are surprising; this is perhaps ascribable to the inclusion in the present estimates (series A) of the machine shops attached to various mining firms. In certain other instances, the differences are accountable by the smallness of the samples taken.

Information on manufacturing wages for *Fukuoka* prefecture is not given in the *Census of Manufactures* during the period of 1919-28. Unfortunately, there is no easy way to fill this blank. It is only after the revision of the *Census* regulation in 1929 that prefectural wage information becomes available for the second time. Even then, however, the *Census* offers only the total manhours worked and the aggregate wage payments; consequently, it is the

[26] Note that the Umemura-Minami series contain wokrers of all ages (See Ohkawa, *et. al.* [23], ch. 9, III). Younger workers (below 14 years of age) are eliminated from the present estimation in order to make the data comparable with those in the later period (an act of 1922 made it illegal to employ persons of 14 years old and under). The absolute number of such young workers was comparatively small in manufacturing industries, however.

It may be mentioned parenthetically that the ceramics industry is of considerable importance in Northern *Kyūshū*. The development of the industry is closely related to that of metal manufacturing which requires a large quantity of bricks for the construction of furnaces.

[27] According to Endō [1], the brewing industry provides one of the earliest cases of contractual wage labor (p. 129).

[28] *Meiji 42 nen Nōshōmushō rei, No. 59* [Ministerial Order No. 59, 1909, Ministry of Agriculture and Commerce], in Nōrinshō (Ministry of Agriculture) [19], p. 565.

[29] The Ministerial Order No. 39 of the Ministry of Agriculture and Commerce in 1919 defines "production workers" to be not only those engaged directly in production activities but also in maintenance, repairs, and transportation within the premises of factories. Furthermore, all payments in goods are to be converted to money terms and added to wage figures, provided that they are furnished at the same time as the payment of monetary remuneration (Nōrinshō, *ibid.*, pp. 700-01).

TABLE 1. COMPARISON OF TWO SETS OF ESTIMATES FOR MEN, 1909 AND 1914

(Unit of wages: yen)

Industry Number	1909				1914			
	Employment		Daily Wages		Employment		Daily Wages	
	A	B	A	B	A	B	A	B
1	1,316	1,665	.53	.52	1,376	1,555	.51	.52
2	348	372	.60	.57	1,472	1,662	.57	.63
3	1,642	917	.59	.69	2,833[a]	3,005	.58	.68
4	944	1,417	.54	.48	1,471	1,847	.57	.53
5	188	175	.44	.44	339	519	.52	.49
6	99	296	.78	.67	184[a]	404	.68	.67
7	205	313	.51	.46	258	413	.52	.53
8	481	2,950	.56	.52	756[a]	3,417	.52	.50
9	126	212	.56	.62	152	317	.61	.58
Total	5,349	8,317	.56[b]	.54[b]	8,841[a]	13,139	.56[b]	.57[b]

Notes: Industry groups are numbered as follows:
(1) Textiles; (2) Metal and metal products;
(3) Machinery; (4) Ceramics;
(5) Chemicals; (6) Wood and wood products;
(7) Printing and binding; (8) Food; and
(9) Miscellaneous.

[a]: Including the factories where wage data are not reported.

[b]: Weighted by employment.

Sources: Series "A": the present estimates.
Series "B": *Kōjō tōkeihyō* [Census of Manufactures], 1909 and 1914.

hourly rates for both sexes that can be estimated (see Statistical Appendix Table A-4). The hourly wages have been converted to a daily basis by using the Bank-of-Japan data on the national averages of actual working hours (h).

In addition to the data mentioned in the preceding paragraph, manufacturing wages in the years 1924, 1927 and 1933 for *Fukuoka* Prefecture may be found in *Rōdō tōkei jitchi chōsa* [Survey of Labor Statistics], administered by *Naikaku tōkeikyoku* (Prime Minister's Office, Bureau of Statistics).[30] (See Statistical Appendix Table A-11.) Unfortunately, the regional tables of the 1924 and 1927 surveys do not list government factories (including *YAS*) separately, so these data give a somewhat overestimated picture for certain industries: metal, machinery and printing. On the other hand, it is of great interest to compare the employment and wage data (for both sexes) by the *Census of Manufactures* with that of the 1933 *Survey of Labor Statistics*. This is done in Table 2 below. In principle, the latter survey covers the establishments employing 30 or more production workers (100 or more for the silk industry and 300 or more for the cotton textile industry; for details see the note to Statistical Appendix Table A-11). Therefore, the employment figures according to the *Census* (series

[30] In addition, the Bank of Japan's *Rōdō tōkei* [Labor Statistics] contains a special tabulation for the "*Kita Kyūshū*" (Northern *Kyūshū*) area. Again, this data source has not been made use of in the present work, since (i) the coverage of the survey is at most half of that of the *Survey of Labor Statistics* and (ii) the geographical specification is not entirely clear.

TABLE 2. COMPARISON OF TWO SETS OF ESTIMATES (BOTH SEXES), 1933

Industry Number[a]	Employment		Daily Wages (yen)	
	B	C	B	C
1	12,783	13,513	.80	.90
2	8,023	6,597	2.08	1.99
3	5,945	3,797	1.63	1.81
4	5,092	5,281	1.74	1.66
5	7,161	10,291	1.43	1.21
6	916	156	1.02	1.18
7	1,557	705	1.30	1.44
8	6,260	2,557	1.40	1.65
9	4,201	183	.91	.80
Total	51,938	43,080	1.35	1.37

[a]: For industry specifications, see notes to Table 1.

Sources: Series "B": *Kōjō tōkeihyō* [Census of Manufactures], 1933 (as of Dec. 31, 1933).
Series "C": *Rōdō tōkei jitchi chōsa* [Survey of Labor Statistics], 1933 (as of Oct. 10, 1933).
Both series are net of government factories.

B) should be greater than their corresponding figures in series C. It will be seen that this is not always the case; the reason for this is yet to be explored.

This completes the discussion on the first of the two sets of the wage series in question. The following diagrams in Figure 1 depict the results of the estimation; the diagrams marked with dots indicate industrial wage series.

Set II (1) Employment and Wages in Nagasaki Shipbuilding Yard (NIZ)

NIZ is the oldest privately-owned concern engaged in the production of steel vessels. Originally established in 1857, and operated for a while (1857–83) by the government,[31] it was entrusted with the management of Mitsubishi Company in 1884 until the final purchase was made three years later. During the formation period, the operation of the shipyard was very much dependent on the guidance of Dutch engineers; by the turn of the century, however, virtually all the production processes were in the hands of Japanese.[32]

Under the influence of the Dutch system, from the beginning the yard adopted a nine hour day.[33] It seems that wages were paid by the hour and a holiday was granted once every week;[34] however, realizing that the total daily wages of the workers were insufficient, the company was prompted to switch to a ten hour working day in 1900.[35]

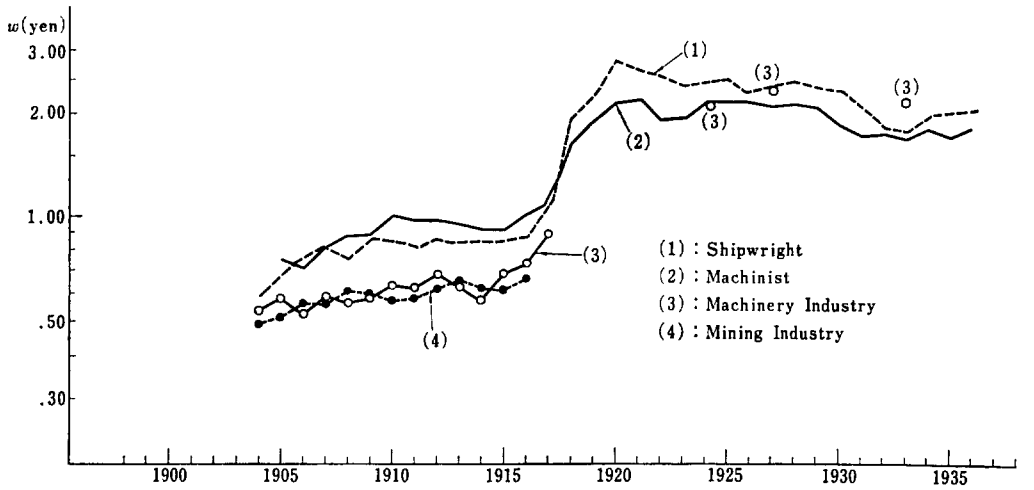
In addition to the regular workmen, the employer found it necessary to have a group of day laborers (*nimpu*), the demand for which fluctuated greatly according to the tightness of the product market. Like many other large firms, the employer contracted with the agents

[31] By the *Tokugawa* Shogunate: 1857-67; and by the Meiji government: 1868-83.
[32] See [12] on this point.
[33] Probably straight hourly wages were observed in the beginning ([14], p. 106). Later on, Halsey's incentive-payment system was introduced (*ibid.*, p. 331).
[34] *Ibid.*, p. 106.
[35] *Ibid.*, p. 331.

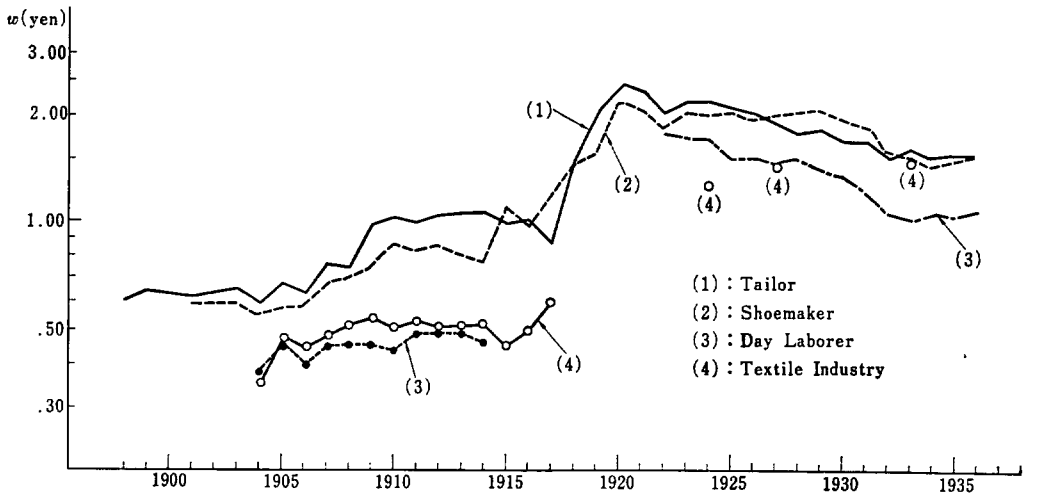
who were to supply a required number of such workmen to the Yard. The agents would receive a lump-sum payment at the end of the day to be distributed among the laborers after deducting a certain amount of handling charge. In 1906 the company regulation stipulated:

FIG. 1. SELECTED MONEY WAGE SERIES (MEN)

(I)



(II)



Sources: Statistical Appendix Tables A-1, A-2, A-3 and A-11.

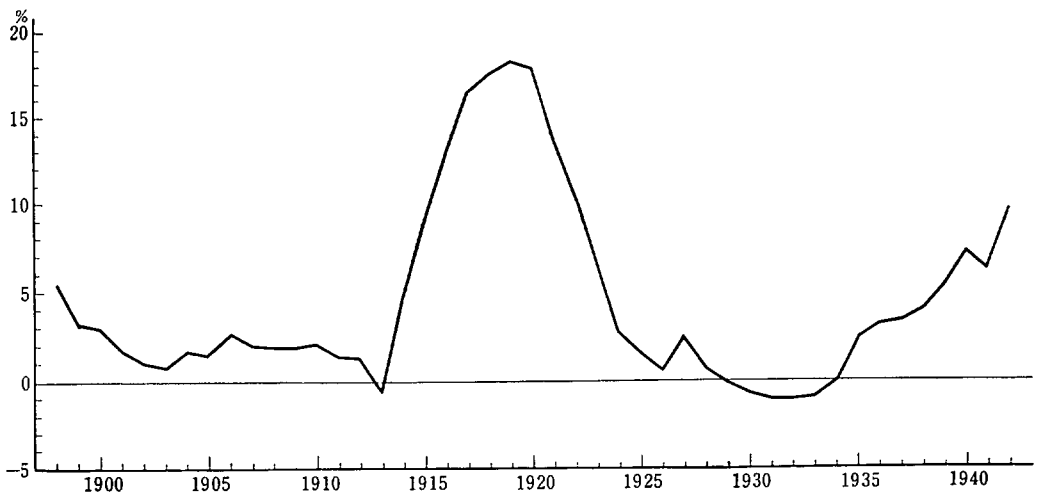
> The daily compensation of a day laborer shall be 40 *sen* per day (from 7.00 a.m. to 5.30 p.m.) for an adult male, 25 *sen* for a youth, and 22 *sen* for an adult female. Prescribed additional rates shall be paid for overtime work;[36]

whereas the daily wage for an average, regular production worker of about that time was 57 *sen*.

Nagasaki Zōsenjo shi zokuhen [A History of Nagasaki Shipbuilding Yard, Volume 2] [13], as well as the previously cited *Nagasaki Zōsenjo rōmu shi* [A History of the Personnel Management of Nagasaki Shipbuilding Yard] [15], provides unusually interesting information on the employment and wages of the workers at the Yard. These documents permit one to estimate employment, hourly and daily rates of wages for the years 1894–1950 (for the estimated series, see Statistical Appendix Table A-7). This is perhaps the longest wage chronology obtainable for a single manufacturing company in the "modern" sector. Two independent sets of daily wages of production workers are also available for the period of 1911–42 in Shōwa Dōjin Kai, *Wagakuni chingin kōzō no shiteki kōsatsu* [Historical Analyses of the Japanese Wage Structure]; one of these includes both trainees and temporary workers whereas the other excludes them.[37] The magnitudes of the present estimates (series w_2 in Statistical Appendix Table A-7) stand in between the above two. It is not clear how the difference came about. Some additional data of daily wages for an earlier period (1876–82) are also presented in Table 5 in Section III.

Figure 2 below depicts the seven-year moving averages of rates of change in money wages

FIG. 2. SEVEN-YEAR MOVING AVERAGES OF RATES OF CHANGE IN MONEY WAGES (NAGASAKI SHIPBUILDING COMPANY)



Sources: Statistical Appendix, Table A-7.

[36] *Ibid.*, p. 342. One reads in the same regulation that a kind of hiring hall was established on the grounds of the factory, where the day laborers were kept waiting for calls to come.

[37] See pp. 450–51.

calculated from the above series. It is obvious that the 1920's mark a very peculiar period in the entire span of time for which data are available. One may also note that the movements of the annual rates follow those of the general price index with a lag of two to three years.[38] Furthermore, judging from the general behavioral pattern of nationwide occupational wages prior to 1894, it seems reasonable to suppose that there was a peak around 1897.[39]

Set II (2) Employment and Wages in Yawata Iron and Steel Company (YAS)

The Meiji government realized from the beginning that steel production was a crucial factor in fostering the development of economic as well as military power of the nation. However, all its efforts to find a private entrepreneur willing to undertake the task failed; it was considered too risky a business in which to get involved, due to Japan's paucity of good quality iron ore. Finally, the government decided to take the initiative. Legislation was passed, and *Seitetsujo* (Iron Foundry) was thus erected in the town of Yawata in 1901 and put under the direct control of *Nōshōmushō* (Ministry of Agriculture and Commerce). It was long afterward (in 1934) that the Foundry left the hands of the central government and came to be known as *YAS*.

The background of the company makes it possible to trace its employment and wage statistics back to 1902, because tne government needed to keep a detailed record of iron production. In some instances, moreover, two or more kinds of data are available for a single year. It is not surprising that these alternative statistics are almost always conflicting, for they were collected by different offices for a variety of distinct purposes. However, this makes it no easy matter to determine which set of data is more appropriate for the purpose at hand. For instance, daily wages for 1901–05 taken from the report of the company's *shukeika* (Accounting Office) (series E) may be contrasted with those reported in *Nihon Teikoku tōkei nenkan* [Statistical Yearbook of the Empire of Japan] (see Table 3).[40]

TABLE 3. COMPARISON OF TWO SETS OF WAGE DATA FOR *YAS*, 1901–05[a]

Year	Series D	Series E
1901	— yen	.499 yen
1902	.539	.510
1903	.567	.543
1904	.521	.524
1905	.508	.521

[a]: Production workers only, excluding day laborers.
Sources: Series D: Statistical Appendix, Table A-8.
Series E: Saigusa and Iida [27], p. 571.

[38] See Ohkawa and Rosovsky [21], p. 21; cf. also Shinohara [28], pp. 78–79.

[39] See, e.g., Ohkawa, *et. al.* [23], p. 44 and Table 25.

[40] By the same token, it may be noted that annual statistics showing the total payment of wages to both regular production workers and day laborers are found in Ōkurashō (Ministry of Finance), *Sainyū saishutsu kessansho* [Annual Statement of Revenues and Expenditures] for the period of 1901 to 1933. The series has not been adopted in the present study, since characteristics of the figures are not always clear. In particular, there is no simple way to adjust for changing composition of working forces. To give an example, a change of the work-rule in the end of the Taishō era stipulated that the classes of workers at foreman level and above would be reclassified as *shokuin* (staff employees) instead of *kōin* (production workers). See *YAS* [33], p. 249.

A question naturally arises concerning the nature of wage data for the Foundry. Since it was run by the central government, it is quite likely that the managing director was not empowered to respond quickly to the demand-supply conditions of the labor market. Some may even become skeptical about the applicability of the concept of market rate to the wage determination in *YAS*.[41] But it seems equally (if not less) difficult to make a strong case for such skepticism. It is granted that *YAS* was not entirely free to manipulate individual wage rates in order to stimulate higher work efficiencies.[42] One observes, on the other hand, that the Foundry issued a directive discouraging the mobility of its production workers.[43] This at least indicates that *YAS* was not completely free from the impact of the general market condition. It is also possible to infer something about the actual procedure of wage determination at government enterprise by examining the work-rule at *Kaigun Kōshō* [The Naval Dockyard]. According to its 1911 edition,

> The wage rates of production workers shall be determined according to the attached grading scale. However, *the mean average of the rates shall be set anew every year*.[44]

In other words, there was room for adjusting the wage rates according to the tightness of the market. By analogy, one may infer that the wages of the production workers in *YAS* followed closely the condition of the labor market, perhaps with a certain lag of adjustment. During the downswings, however, the wages at government establishments were conceivably more rigid downward than those at private firms. It may be added also that the workers required by *YAS* on a temporary basis could be freely contracted at the discretion of the Managing Director.[45]

The wage series adopted in the present study rely on *Nihon Teikoku tōkei nenkan* [Statistical Yearbook of the Empire of Japan] for the first half of the period and mostly on the surveys on labor statistics by the company itself for the second half. Employment figures are also available in *Yawata Seitetsujo 50 nen shi* [The Fifty Years of Yawata Iron and Steel Company]. All the pertinent data are assembled in Statistical Appendix Tables A-8 and A-9.

One final remark is necessary concerning the comparability of the wages of these two corporations, *NIZ* and *YAS*, with the corresponding geographical averages. In order to justify the comparisons, it suffices to establish that the workers in these companies were drawn mostly from the neighboring regions. But it is known in general that the predominant method of recruiting production workers in the pre-World War II decades was to rely on

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[41] This was undoubtedly the case for *shokuin* (staff employees).

[42] Imaizumi lists this as a reason why he thinks it better to transfer the Foundry to private ownership. Imaizumi [7], p. 241. Imaizumi served once as a high official at *YAS*.

[43] See Saigusa and Iida [27], pp. 646-47.

[44] Article 40, *Meiji 44 nen Kaigunshō tasshi No. 117, 1911* [Ministerial Directive, Ministry of the Navy No. 117, 1911]. Italics added. A similar regulation may be found in Article 4 of the Navy Directive No. 2, 1900.

[45] "The employment of workers required by the Foundry for the construction of furnace and the installation of machinery may be freely contracted [at the discretion of the Managing Director]." (*Meiji 33 nen kunrei*, No. 400, 1900 [Cabinet Order No. 400, 1900].) Cf. the following quotation: "The wage rates and the date of payment for *nimpu* (day laborers) shall be determined by the Managing Director in accordance to the specific circumstances of work place concerned." (*Meiji 33 nen Kaigunshō tasshi No. 2* [Ministerial Directive No. 2, 1900, Ministry of the Navy], Article 14.)

enko (personal connections).[46] This was in fact the case for *NIZ*.[47] On the other hand, statistics are available for *YAS* showing the places of origin of production workers (see Statistical Appendix Table A-10). According to this table, approximately 43 per cent of the workers were recruited from *Fukuoka* Prefecture in the years 1924-29; taken as a whole, the *Kyūshū* area accounted for as much as 80 per cent.[48] Such being the case, it is more meaningful to draw a contrast between the wage chronologies of these two representative firms with those of the surrounding area rather than, say, with the national averages.[49]

III. *The Emergence of Wage-Differential Structure*

In Figure 1 it may be observed (i) that up to 1917 the industrial wage series is generally found below the occupational wage series and (ii) that since 1924 the gap between them seems to have narrowed. One may note that the change in the relative position of both series in Set I, occupational and industrial, is consistent with the hypothesis that a certain structural transformation took place during the 1920's; for instance, one may conjecture that indigenous components in the industrial series were of lesser importance in the 1930's compared with the 1910's.

The contrast between the two periods, before and after 1920, stands out more clearly when the Set I series (occupational and industrial) are placed against the Set II series (*NIZ*

TABLE 4. COMPARISON OF *NIZ* SERIES WITH MACHINERY-INDUSTRY SERIES
(Daily, in yen)

Year	*NIZ*	Machinery Industry
1904	.57	.53
1905	.54	.57
1906	.54	.53
1907	.56	.60
1908	.60	.58
1909	.63	.59
1910	.65	.64
1911	.63	.63
1912	.65	.64
1913	.66	.64
1914	.68	.58
1915	.68	.69
1916	.66	.73

Sources: Statistical Appendix Tables A-2 and A-7.

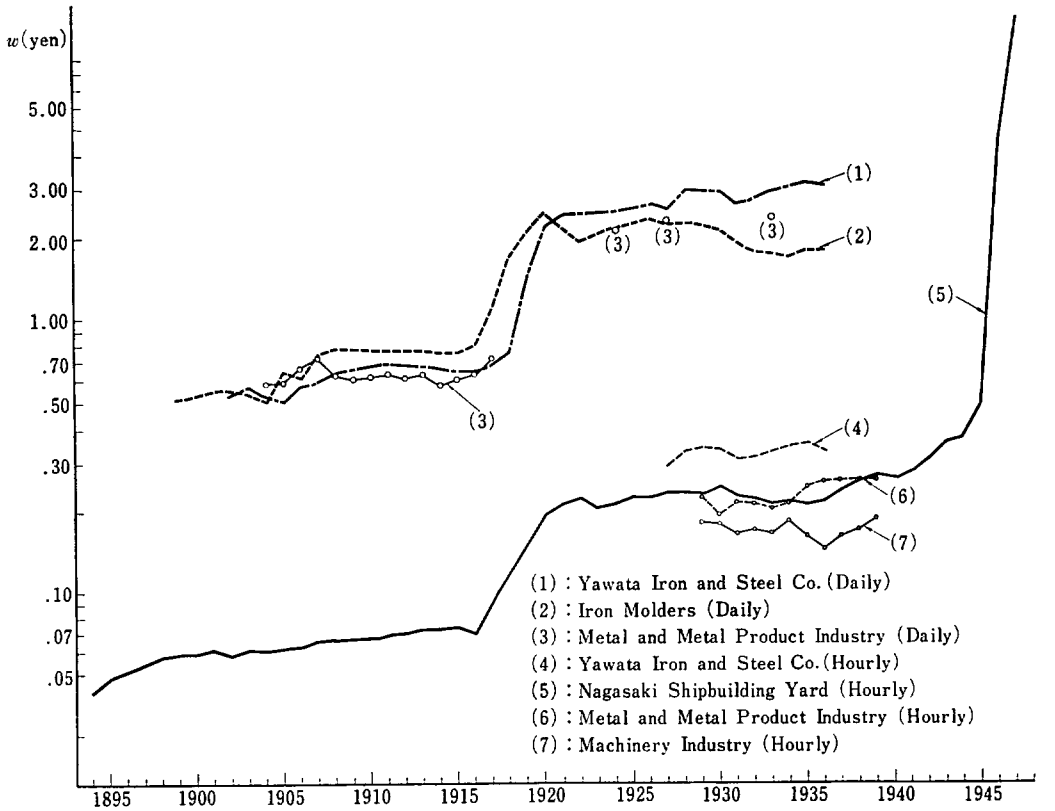
[46] Matsushima [11], pp. 388-89. In contrast to the female textile workers, recruiters were seldom dispatched for scouting male production workers.

[47] Yoshida [34], p. 128.

[48] At the very beginning, the planning committee of *YAS* feared that the wage level of Northern *Kyūshū* would be quite high due to harbor construction and to mining activities. They suggested, therefore, that the source of labor be sought in *Yamaguchi* or *Hiroshima* prefectures ([18], p. 253).

[49] In some cases, the emigration of agricultural labor from southern *Kyūshū* to urban centers followed two steps: first, they were employed as wage laborers in *Fukuoka* farms on a yearly-contract basis and then moved into the cities (Namiki [16], p. 124).

FIG. 3. SELECTED MONEY WAGE SERIES
(III)



Sources: Statistical Appendix, Tables A-1, A-2, A-4, A-7, A-8, A-9 and A-11.

and *YAS*). The diagrams in Figure 3 display such comparisons for a few select combinations. Taking *YAS* series (denoted as (1)) first, one notes that its relative position to the series (2) —a proxy for the "traditional" sector—is clearly reversed around 1920. By the same token, the divergence between series (1) and (3) are comparatively small prior to the 1920's, whereas they become wider between (4) and (6).

Similar observations may be made with regard to *NIZ* series. Obviously there are marked differentials in hourly rates between (5) and (7) according to Figure 3. By contrast, an inspection of Table 4 for the pre-World War I period will reveal that the daily wages at *NIZ* are approximately equal to those of the machinery industry series. That is to say, a reversal must have taken place somewhere between 1917 and 1928.

The phenomenon becomes less distinct when *NIZ* series is compared with the occupational wage series. An examination will show in this case (i) that the latter recorded generally higher values than the former before the 1920's, and (ii) that the transposition of their relative positions did not occur until the late 1920's despite somewhat narrowed differentials during the decade. These two points are particularly noticeable when the *NIZ* series is compared

TABLE 5. COMPARISON OF NAGASAKI WAGE SERIES

(Unit: yen)

Year	Occupational Series (Nagasaki City)			Industrial Series (Nagasaki Prefecture)		Nagasaki Shipbuilding Series		
	Iron Molder	Blacksmith	Shipwright	Machinery Industry		(I)	(II)	(III)
	(Daily)	(Daily)	(Daily)	(Daily)	(Hourly)	(Daily)	(Daily)	(Hourly)
1876/77	—	—	—	—	—	.234[a]	—	—
1877/78	—	—	—	—	—	.237[a]	—	—
1878/79	—	—	—	—	—	.265[a]	—	—
1879/80	—	—	—	—	—	.318[a]	—	—
1880/81	—	—	—	—	—	.266[a]	—	—
1881/82	—	—	—	—	—	.285[a]	—	—
1884	—	.40(.28)[b]	—	—	—	—	—	—
1909	.75[c]	.80[c]	1.00[c]	.68[f]	—	.63	—	—
1910	.80[c]	.80[c]	1.00[c]	—	—	.65	—	—
1913	.70[d]	.80[d]	.85[d]	—	—	.66	.72	—
1914	—	—	—	.74[f]	—	.68	.75	—
1916	.70[e]	.70[e]	.80[e]	—	—	.66	.75	—
1917	1.00[e]	1.20[e]	1.10[e]	—	—	.85	.98	—
1918	1.10[e]	.80[e]	1.00[e]	—	—	1.06	1.29	—
1919	2.21[e]	1.95[e]	2.00[e]	—	—	1.39	1.59	—
1920	1.80[e]	1.80[e]	2.30[e]	—	—	1.78	2.00	—
1921	1.70[c]	1.70[c]	2.30[c]	—	—	1.93	2.14	—
1922	1.70[c]	1.70[c]	2.80[c]	—	—	2.01	1.97	—
1929	—	—	—	—	.22[f]	—	—	.23
1930	—	—	—	—	.21[f]	—	—	.25
1931	—	—	—	—	.19[f]	—	—	.22
1932	—	—	—	—	.19[f]	—	—	.22
1933	1.65[d]	1.67[d]	2.50[d]	—	.18[f]	1.98	2.33	.22
1934	1.65[d]	1.69[d]	2.50[d]	—	.20[f]	1.99	2.48	.22
1935	1.60[d]	1.63[d]	1.86[d]	—	.21[f]	1.98	2.44	.22
1936	1.60[d]	1.60[d]	1.80[d]	—	.20[f]	2.00	2.37	.22
1937	1.50[d]	1.65[d]	1.85[d]	—	.21[f]	2.23	2.50	.24
1938	—	—	—	—	.21[f]	—	—	.26
1939	—	—	—	—	.25[f]	—	—	.27

Sources: [a]: *Nagasaki Zōsenjo rōmushi* [A History of the Personnel Management of Nagasaki Shipbuilding Yard], as reproduced in *Nihon rōdō undō shiryō* [Collected Documents on Japanese Labor Movement], Vol. 1, pp. 107-09. Figures cover the period from July through June. The figure for 1876/77 is corrected after checking with the same original data reproduced in *Nagasaki shisei 65 nen shi* [The Sixty-Five Year History of the City of Nagasaki], Vol. 2, p. 77.

[b]: *Nihon rōdō undō shiryō* [Collected Documents on Japanese Labor Movement], Vol. 1, p. 11. The figure in parentheses is the average of nine districts in *Nagasaki* Prefecture.

[c]: *Nagasaki Shōkō Kaigisho hannempō* [Biannual Report of Nagasaki Chamber of Commerce].

[d]: *Nagasaki ken tōkei sho* [The Statistical Yearbook of Nagasaki Prefecture].

[e]: *Nagasaki shisei 65 nen shi* [The Sixty-Five Year History of the City of Nagasaki], Vol. 2, pp. 1,001-02.

[f]: *Kōjō tōkeihyō* [Census of Manufactures]. The figures for 1909 and 1914 are for male production workers and exclude those who are under 14 years old. The hourly series is for both sexes. Attempt has *not* been made to eliminate Nagasaki Shipbuilding Yard from the "industrial series."

All the other figures, except those in the column (II), are taken from Statistical Appendix Table A-7. The data in the column (II) are based on Shōwa Dōjin Kai [29], pp. 450-51.

with the wages of shipwrights.

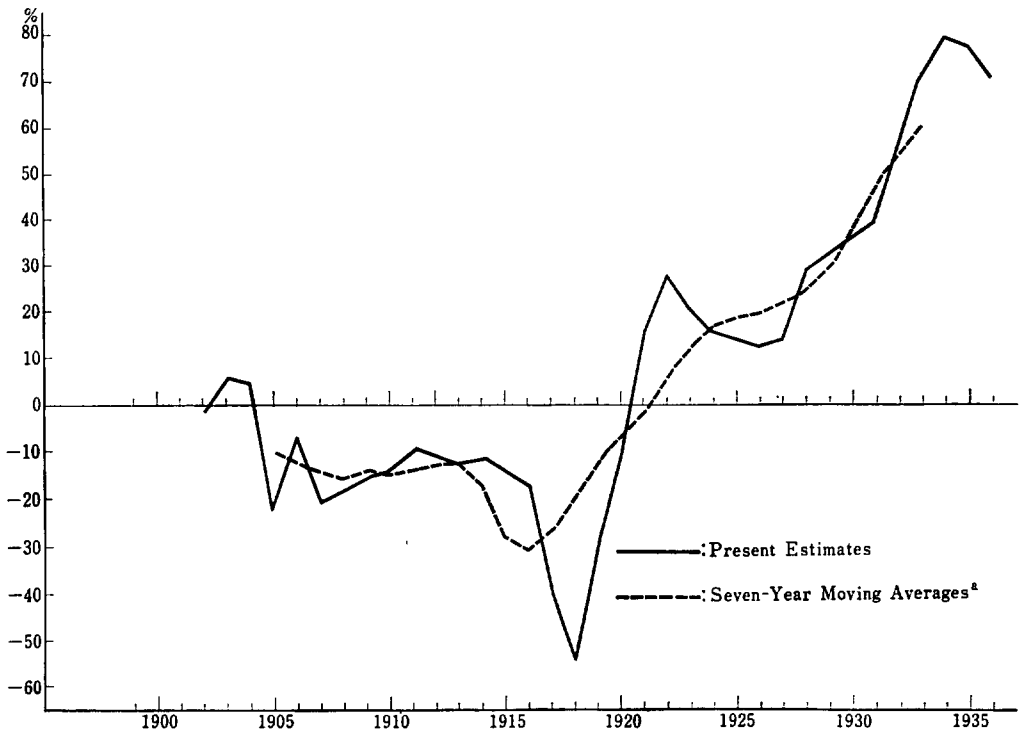
As pointed out in the previous section, an alternative daily wage series is available for *NIZ* covering the period of 1911–43. The wages according to this series are, on the average, 11 per cent higher for 1911–39 than the present estimates.[60] However, the adoption of this series will not change the observation in the preceding paragraphs. With regard to the period preceding 1920, it will be recalled that the industrial wage series (3) is probably biased downward so that their relative positions are only slightly affected by the substitution; whereas the conclusion is a fortiori valid as to the years following 1920. In other words, the more conservative version of the statistics is sufficient to make the necessary point.

Finally, we might ask: what about the geographical differentials between *Fukuoka* and *Nagasaki* prefectures? So far an implicit assumption has been made that such differentials are, if any, negligible. In order to answer the criticism, Table 5 has been prepared. Although the quality of the data is inferior to that from *Fukuoka* data, it may be seen that they are consistent with the foregoing observations. In particular, there are indications that the

FIG. 4. SELECTED WAGE RATIOS

(I)

$$\left(\frac{\text{Yawata Iron and Steel}}{\text{Iron Molders}} - 1\right) \times 100$$



[60] 12 per cent in the 1910's, 8 per cent in the 1920's, and 13 per cent in the 1930's. The series is found in Shōwa Dōjin Kai, *op. cit.*, pp. 450–51. The nature of the data (source, composition of workers covered, etc.) is not entirely spelled out in the above reference.

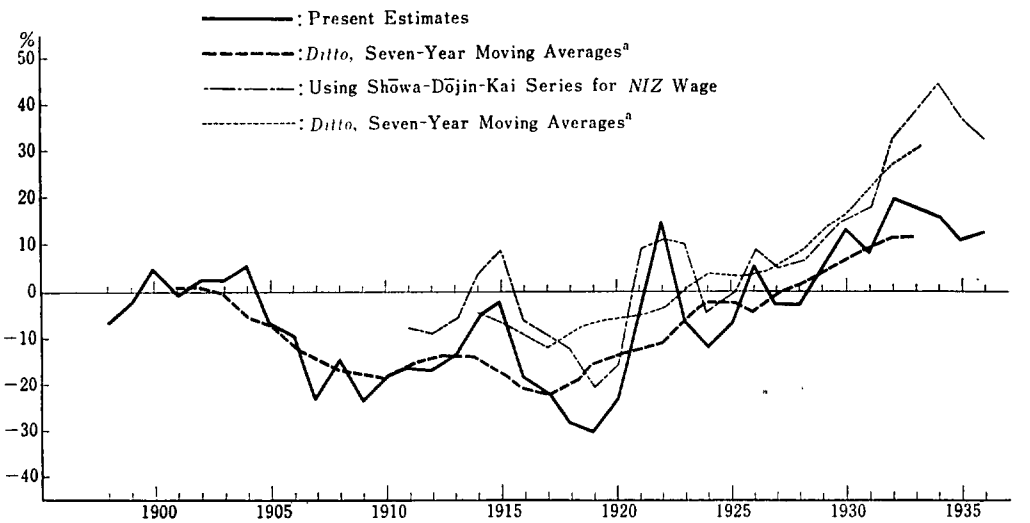
occupational wages in *Nagasaki* City have generally been lower than those in *Fukuoka* Prefecture. Since the reversal is shown when the *NIZ* series is contrasted with the latter, the same conclusion should apply if the *Nagasaki* data are substituted for *Fukuoka*.[51] The contrast is obscured between the *NIZ* and the industrial series, because the former is contained in the latter. But even in this case the findings are at least consistent with the hypothesis.

By way of summary, two sets of ratios have been computed as crude indicators of the emergence of the wage-differential structure and displayed in Figure 4. Although not conclusive, there seems to be an inverse relationship between the movement of wage differentials as approximated by these ratios and the long-swing periodization suggested by Ohkawa and Rosovsky.[52] One may perhaps explain this relationship as follows. During the upswing, the cumulative effect of the growing rate of investment gradually tightens the market for labor. Consequently, the level of wages for the "traditional" sector is pushed up relative to that of the "modern" sector. On the other hand, the decline in the long-run demand for labor pulls

FIG. 4. (Continued)

(II)

$$\left(\frac{\text{Nagasaki Shipbuilding Yard}}{\text{Blacksmiths}} - 1\right) \times 100$$



[a]: Seven-year moving averages of the respective wage series have been computed first; the one being subsequently divided by the other.

Sources: Statistical Appendix, Tables A-1, A-7, A-8 and Shōwa Dōjin Kai [29], pp. 450-51.

[51] Besides *NIZ*, there were several other shipbuilding factories in the City of *Nagasaki*. The oldest of them was called *Matsuo Tekkōjo* [Matsuo Iron Factory] (established in 1892), which employed 375 workers in 1922. As of the end of the same year, there were 14 other factories engaged in the construction and/or repairing of wooden ships. *Nagasaki shōgakkō shokuin kai* [Elementary School Teachers' Association in Nagasaki] [14], pp. 422-23.

[52] Ohkawa and Rosovsky [22]; according to their periodization, the years 1898 and 1919 constituted peaks, whereas 1905 and 1931 were troughs.

down the wages of the "traditional" sector while those in the "modern" sector remain comparatively stable, resulting in widening of the wage differentials.[53] This explanation does not seem facetious when one takes into consideration the various historical developments in the labor markets during this period. If in fact such a correspondence is established, it follows that the problem of intra-industry wage differentials should be studied in the long-run, instead of the short-run, context. This is especially true if one is to make a prediction on the future course of the employment and wage-differential structure.

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[53] See Reder's theory in this connection (Reder [25]).

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STATISTICAL APPENDIX

TABLE A-1. DAILY WAGES (MEN) FOR SELECTED OCCUPATIONS

(Unit: yen)

Year	Tailor	Carpenter	Machinist	Shoemaker	Cartwright	Iron Molder	Blacksmith	Typesetter	Shipwright	Day Laborer
1898 (M 31)	.600	.542	—	—	—	—	.500	—	—	—
1899	.633	.533	—	—	.500	.515	.500	—	—	—
1900 (M 33)	.625	.588	—	.775	.538	.525	.533	.375	—	—
1901	.623	.583	—	.583	.550	.550	.550	.467	—	—
1902	.632	.583	—	.583	.550	.550	.550	.475	—	—
1903	.642	.567	—	.580	.545	.537	.547	.475	—	—
1904	.592	.567	—	.558	.567	.500	.542	.442	.592	—
1905 (M 38)	.665	.658	.750	.567	.617	.650	.583	.427	.683	—
1906	.628	.671	.717	.583	.638	.617	.594	.425	.763	—
1907	.763[b]	.775	.825	.658[a]	.738	.743	.733	.538[a]	.813	—
1908	.750[b]	.788	.875	.690[a]	.750	.783	.695	.566[a]	.750	—
1909	.975	.888	.900	.738	.763	.775	.825	.575	.869	—
1910 (M 43)	1.013	.900	1.000	.850	.788	.775	.788	.644	.856	—
1911	1.000	.863	.975	.825	.769	.763	.763	.644	.825	—
1912	1.031	.888	.975	.831[c]	.769	.763	.769	.613	.863	—
1913	1.063	.825	.963	.788	.725	.763	.763	.613	.850	—
1914	1.050	.825	.938	.763	.688	.750	.725	.613	.850	—
1915 (T 4)	.990	.808[d]	.940[d]	1.110[d]	.730[d]	.750[d]	.690[d]	.590[d]	.860[d]	—
1916	1.020	.850	1.010	.960	.775	.800	.810	.590	.880	—
1917	.866	.965	1.120	1.143	.990	1.110	1.080	.545	1.250	—
1918	1.470	1.455	1.660	1.465	1.530	1.690	1.490	.800	1.960	—
1919	2.045[c]	1.978[c]	1.940	1.590[c]	2.030	2.100	1.990[c]	1.300	2.270	—
1920 (T 9)	2.429	2.536	2.200[c]	2.171	2.643[e]	2.457	2.350	1.621	2.825	—
1921	2.336	2.586	2.218	2.036	2.586	2.144	1.966	1.707	2.650	—
1922	2.043	2.679	1.940	1.857	2.229	1.934	1.780	1.593	2.533	1.779
1923	2.193	2.714	1.990	2.007	2.400	2.059	2.032	1.579	2.450	1.729
1924	2.231	2.688	2.193	2.019	2.363	2.188	2.228	1.638	2.486	1.713
1925 (T 14)	2.125	2.588	2.194	2.038	2.300	2.226	2.218	1.753	2.511	1.513
1926	2.038	2.544	2.186	1.963	2.350	2.339	2.081	1.644	2.329	1.500
1927	1.975	2.431	2.150	1.988	2.200	2.238	2.200	1.663	2.414	1.488
1928	1.834	2.500	2.163	2.050	2.163	2.263	2.200	1.663	2.500	1.500
1929	1.838	2.488	2.125	2.038	2.088	2.250	2.125	1.638	2.429	1.438
1930 (S 5)	1.719[f]	2.338	1.900	1.988	2.019	2.138	1.988	1.575	2.386	1.331
1931	1.706	2.078	1.783	1.844	2.028	1.917	1.889	1.456	2.107	1.178
1932	1.530	1.925	1.790	1.595	1.825	1.755	1.710	1.320	1.850	1.060
1933	1.609	1.873	1.710	1.542	1.825	1.705	1.682	1.390	1.779	1.023
1934	1.548	1.870	1.843	1.435	1.840	1.692	1.719	1.390	1.988	1.045
1935 (S 10)	1.555	1.813	1.753	1.490	1.700	1.786	1.779	1.452	2.038	1.040
1936	1.578	1.930	1.875	1.577	1.878[g]	1.793	1.781	1.458	2.056	1.083

TABLE A-1. (Continued)

CITY COVERAGE OF THE WAGE STATISTICS

Name of City	Tailor	Carpenter	Machinist	Shoemaker	Cartwright	Iron Molder	Blacksmith	Typesetter	Shipwright	Day Laborer
Fukuoka	1898	1898	1905	1900	1901	1899	1898	1898	1904	1922
Kurume	1898	1898	1905	1901	1901	1899	1898	1899	1904	1922
Kokura	1904	1906	1906	1906	1906	1906	1906	1906	1906	1922
Moji	1898	1898	1907	1900	1904	1908	1898	1900	1904	1922
Wakamatsu	1915	1915	1915	1915	1915	1915	1915	1915	1915	1922
Yawata	1920	1920	1920	1920	1920	1920	1920	1920	1934	1922
Ohmuta	1920	1920	1923	1920	1920	1920	1920	1920	1920	1922
Tobata	1924	1924	1924	1924	1924	1924	1924	1924	1924	1924
Nohgata	1931	1931	1931	1931	1931	1931	1931	1931	—	1931
Iizuka	1932	1932	1932	1932	1932	1932	1932	1932	—	1932

Notes: All the figures are arithmetic means of the city wage rates; wages for the months of March and of September are available and they have been averaged to obtain the yearly figures. The table of "City Coverage" indicates the first years when the wage statistics of the respective cities are incorporated in compiling the above table (Table 1).

a: Monthly wages reported for Moji were divided by 30 to obtain the estimates of daily wages.
b: Monthly wages reported for Moji and Fukuoka were divided by 30 to obtain the estimates of daily wages.
c: Missing value for Moji was estimated by linear interpolation of the wages of immediately preceding and succeeding periods.
d: Missing value for Fukuoka was estimated by linear interpolation of the wages of immediately preceding and succeeding periods.
e: Missing value for Wakamatsu was estimated by linear interpolation of the wages of immediately preceding and succeeding periods.
f: Missing value for Tobata was estimated by linear interpolation of the wages of immediately preceding and succeeding periods.
g: The figure for Wakamatsu is missing.

Source: *Fukuoka ken tōkei sho* [The Statistical Yearbook of Fukuoka Prefecture], 1898-1936.
Glossary of the Terms:

Tailor:	*Yōfuku shitatekō.*	Carpenter:	*Daiku.*
Machinist:	*Kikai shokkō.*	Shoemaker:	*Kutsu shokunin.*
Cartwright:	*Kuruma seizō kō.*	Iron Molder:	*Imono kō.*
Blacksmith:	*Kaji kō.*	Type-setter:	*Kappan shokuji kō.*
Shipwright:	*Funa daiku.*	Day Laborer:	*Hiyatoi rōdōsha.*

M: *Meiji.* T: *Taishō.* S: *Shōwa.*

TABLE A-2. MANUFACTURING EMPLOYMENT (n) AND MONEY WAGES (w)

(1) Production

Year	Textiles		Metal and Metal Products		Machinery		Ceramics		Chemicals	
	n	w	n	w	n	w	n	w	n	w
1904 (M 37)	337	.350	114	.544	2,111	.534	712	.425	170	.374
1905	601	.470	124	.601	2,839 (2,904)	.574	525	.458	171	.420
1906	649	.425	104	.671	3,509	.527	800	.464	180	.421
1907	754	.479	103	.703	1,687	.600	868	.508	164	.473
1908	795	.518	294	.622	1,617	.578	818	.514	193	.440
1909 (M 42)	1,316	.529	348	.604	1,642	.590	944	.538	188	.440
1910	1,448	.511	319	.617	1,598	.637	811	.544	180	.440
1911	880	.522	435	.628	1,964	.629	967	.526	192	.493
1912	925	.507	420	.608	2,410	.636	964	.553	198	.503
1913	1,135	.508	973	.627	2,508	.635	1,266	.585	189	.552
1914 (T 3)	1,376	.513	1,472	.568	2,647 (2,833)	.583	1,471	.566	339	.518
1915	1,237	.453	1,937	.601	2,597	.693	1,815	.530	336	.429
1916	1,620	.501	5,937	.625	3,850	.726	3,370	.530	1,413	.544
1917	1,795	.587	4,378	.707	5,893	.879	4,011	.719	2,218	.571

[a]: Weighted by employment.

Note: Figures in parentheses include the number of workers in factories whose wage data are missing.

Source: *Fukuoka ken tōkei sho* [The Statistical Yearbook of Fukuoka Prefecture], 1904-1917.

(2) Day Laborers[a]

Year	Textiles		Metal and Metal Products		Machinery		Ceramics		Chemicals	
	n	w	n	w	n	w	n	w	n	w
1904 (M 37)	43	.336	13	.304	2,020	.431	300 (310)	.425	41	.400
1905	133	.476	8	.419	2,786 (3,032)	.492	391 (395)	.409	66	.436
1906	139	.394	1	.450	545	.390	294	.464	49	.400
1907	167	.414	11	.336	408	.462	361	.473	40	.450
1908	182	.453	14	.550	249	.479	383	.478	40	.450
1909 (M 42)	158	.524	72	.525	162	.431	209	.462	46	.450
1910	127	.492	99	.520	207	.421	277	.485	55	.450
1911	185	.584	72	.524	279	.442	281	.458	58	.447
1912	117	.585	175	.512	297	.434	415	.499	70	.507
1913	138	.562	69	.585	324	.455	542	.491	22 (59)	.511
1914 (T 3)	81 (82)	.407	121	.464	312	.446	422	.467	82 (173)	.437
1915	193	—	197	—	354	—	320	—	106	—
1916	289	—	777	—	196	—	672	—	125	—
1917	279	—	685	—	615	—	980	—	449	—

[a]: Weighted by employment.

Note: Figures in parentheses include the number of workers in factories whose wage data are missing.

Source: *Fukuoka ken tōkei sho* [The Statistical Yearbook of Fukuoka Prefecture], 1904-1917.

FOR (1) PRODUCTION WORKERS AND (2) DAY LABORERS

Workers (*shokkō*) (Men)

(Unit of *w*: yen/day)

Wood and Wood Products		Printing and Binding		Food		Miscellaneous		Total	
n	*w*	*n*	*w*	*n*	*w*	*n*	*w*	*n*	w^a
—	—	116	.363	844(869)	.404	44	.324	4,448	.439
—	—	124	.358	946	.401	49	.600	5,379	.512
—	—	154	.454	1,150	.451	38	.350	6,584	.493
—	—	144	.497	612	.491	41	.350	4,373	.538
47	.550	137	.534	490	.570	42	.350	4,433	.548
99	.777	205	.505	481	.558	126	.563	5,349	.558
80	.708	195	.509	487	.536	74	.430	5,192	.563
105	.624	244	.511	466	.563	95	.519	5,348	.575
124	.673	241	.502	493	.588	69	.447	5,844	.584
146	.585	201	.488	648	.590	32	.666	7,098	.593
168(184)	.680	258	.517	734(756)	.515	152	.610	8,617	.558
125	.707	309	.540	2,767	.550	101	.585	11,224	.576
143	.640	320	.550	2,914	.560	88	.565	19,691	.602
193	.750	337	.650	2,839	.610	106	.713	21,770	.719

(*hiyatoi rōdō nimpu*) (Men)

(Unit of *w*: yen/day)

Wood and Wood Products		Printing and Binding		Food		Miscellaneous		Total	
n	*w*	*n*	*w*	*n*	*w*	*n*	*w*	*n*	w^a
—	—	1	.250	6,017(6,129)	.345	3	.400	8,438	.368
—	—	1	.250	934(1,013)	.362	—	—	4,319	.455
—	—	1	.250	1,260	.373	—	—	2,289	.388
—	—	2	.400	2,252	.436	—	—	3,241	.442
24	.458	2	.500	2,243	.451	—	—	3,137	.457
47	.481	1	.450	2,345	.449	—	—	3,040	.455
32	.483	4	.600	1,988	.412	—	—	2,789	.429
85	.496	1	.420	1,991	.482	1	.450	2,953	.483
46	.492	8	.388	2,053	.479	—	—	3,181	.484
38	.483	16	.456	1,976	.474	—	—	3,125	.482
56	.453	3	.350	589(786)	.474	9	.200	1,675	.459
27	—	7	—	401	—	—	—	1,605	—
37	—	20	—	301	—	—	—	2,417	—
37	—	25	—	465	—	—	—	3,535	—

TABLE A-3. EMPLOYMENT (n) AND WAGES (w) FOR MEN IN THE MINING INDUSTRY

(Unit of w: yen/day)

Year	Production Workers (*shokkō*)		Day Laborers (*hiyatoi rōdō nimpu*)		Year	Production Workers (*shokkō*)		Day Laborers (*hiyatoi rōdō nimpu*)	
	n	w	n	w		n	w	n	w
1904 (M 37)	5,588	.496	18,614	.416	1911 (M 43)	6,035	.585	57,219	.580
1905	5,598	.514	18,986	.498	1912	5,609	.619	44,334	.595
			(20,555)[a]		1913	5,432	.649	56,014	.641
1906	4,034	.547	32,406	.507	1914 (T 3)	7,026	.619	54,660	.685
1907	4,856	.563	36,718	.553	1915	53,548	.607	21,278	—
1908	5,503	.614	44,401	.602	1916	69,866	.680	60,616	—
1909 (M 42)	5,491	.588	41,689	.588	1917	—	—	—	—
1910	4,808	.573	50,504	.468					

[a]: Including the factories whose wage data are missing.

Source: *Fukuoka ken tōkei sho* [The Statistical Yearbook of Fukuoka Prefecture], 1904-1917.

TABLE A-4. MANHOURS WORKED (Mh) AND HOURLY WAGES (w) IN FUKUOKA PREFECTURE (BOTH SEXES) BASED ON CENSUS OF MANUFACTURES, 1929-1939 (EXCLUDING YAWATA IRON & STEEL CO.)

(Unit of w: yen/hour)

	Textiles		Metal and Metal Products		Machinery		Ceramics		Chemicals	
	Mh^a	w	Mh^a	w	Mh^a	w	Mh^a	w	Mh^a	w
1929	.339	.110	.149	.223	.101	.181	.112	.156	.082	.192
1930 (S 5)	.356	.094	.153	.194	.086	.177	.120	.217	.082	.183
1931	.354	.090	.140	.216	.073	.166	.116	.196	.135	.136
1932	.347	.089	.134	.217	.092	.172	.097	.207	.091	.153
1933	.273	.081	.154	.209	.115	.165	.093	.184	.144	.143
1934	.226	.079	.259	.239	.107	.186	.089	.161	.132	.142
1935 (S 10)	.202	.080	.243	.250	.145	.162	.086	.178	.141	.150
1936	.179	.081	.246	.261	.143	.145	.093	.195	.173	.117
1937	.191	.093	.163	.261	.174	.162	.092	.216	.250	.139
1938	.173	.101	.176	.258	.231	.172	.073	.177	.233	.169
1939	.127	.116	.155	.266	.296	.190	.064	.193	.228	.176

	Wood and Wood Products		Printing and Binding		Food		Miscellaneous		Total	
	Mh^a	w	Mh^a	w	Mh^a	w	Mh^a	w	Mh^b	w^c
1929	.014	.155	.033	.145	.095	.171	.076	.114	139,689	.154
1930 (S 5)	.015	.147	.035	.147	.100	.156	.052	.106	135,746	.148
1931	.022	.130	.041	.147	.105	.155	.014	.136	123,092	.142
1932	.020	.128	.049	.116	.092	.157	.078	.104	126,395	.141
1933	.023	.108	.035	.134	.081	.148	.082	.093	150,657	.138
1934	.016	.136	.029	.161	.069	.150	.072	.096	180,579	.157
1935 (S 10)	.016	.133	.031	.128	.063	.146	.072	.093	205,082	.159
1936	.018	.127	.029	.131	.053	.150	.066	.084	245,377	.157
1937	.021	.127	.026	.154	.065	.142	.018	.105	232,408	.161
1938	.019	.145	.028	.145	.056	.168	.012	.118	270,538	.173
1939	.031	.179	.018	.168	.060	.154	.021	.117	338,408	.185

[a]: The proportion of total manufacturing manhours accrued to the industry.

[b]: Absolute number of total manhours (in '000s).

[c]: Weighted by manhours.

TABLE A-5. ESTIMATED DAILY EARNINGS IN MANUFACTURING INDUSTRIES (BOTH SEXES) (FUKUOKA PREFECTURE)

(Unit of Earnings: yen)

	Textiles	Metal & Metal Products	Machinery	Ceramics	Chemicals	Wood & Wood Products	Printing & Binding	Food	Miscellaneous	Total[a]
1929	1.152	2.156	1.730	1.482	1.901	1.457	1.424	1.616	1.119	1.514
1930 (S 5)	.926	1.827	1.637	2.044	1.804	1 370	1.423	1.462	1.005	1.412
1931	.882	2.035	1.521	1.819	1 342	1.213	1.408	1.445	1.303	1.355
1932	.870	2.111	1.625	1.946	1.527	1.201	1.111	1.479	1.026	1.357
1933	.795	2.084	1.627	1.742	1.430	1.023	1.296	1.396	.907	1.349
1934	.777	2.419	1.867	1.534	1.419	1.308	1.581	1.425	.948	1.559
1935 (S 10)	.786	2.543	1.631	1.703	1.512	1.293	1.263	1.394	.933	1.588
1936	.795	2.440	1.459	1.868	1.175	1.222	1.301	1.440	.840	1.516
1937	.912	2.688	1.651	2.063	1.408	1.223	1.545	1.366	1.040	1.615
1938	.988	2.678	1.768	1.696	1.724	1.411	1.453	1.635	1.225	1.750
1939	1.137	2.727	1.934	1.868	1.797	1.760	1.700	1.517	1.177	1.870

[a]: Weighted average, using manhours in Table 3 as weights.

Sources: Table A-4 (hourly rates) and Table A-6 (actual working hours).

TABLE A-6. ESTIMATED ACTUAL WORKING HOURS (ALL NATION)

(Unit: hours)

	Textiles	Metal & Metal Products	Machinery	Ceramics	Chemicals	Wood & Wood Products	Printing & Binding	Food	Miscellaneous	Total[a]
1929	10.47	9.67	9.56	9.50	9.90	9.40	9.82	9.45	9.82	9.87
1930 (S 5)	9.85	9.42	9.25	9.42	9.86	9.32	9.68	9.37	9.48	9.55
1931	9.80	9.42	9.16	9.28	9.87	9.33	9.58	9.32	9.73	9.58
1932	9.78	9.73	9.45	9.40	9.98	9.38	9.58	9.42	9.87	9.69
1933	9.81	9.97	9.86	9.47	10.00	9.47	9.67	9.43	9.75	9.78
1934	9.84	10.12	10.04	9.53	9.99	9.62	9.82	9.50	9.87	9.89
1935 (S 10)	9.83	10.17	10.07	9.57	10.08	9.72	9.87	9.55	10.03	9.95
1936	9.82	9.35	10.06	9.58	10.04	9.62	9.93	9.60	10.00	9.76
1937	9.81	10.30	10.19	9.55	10.13	9.63	10.03	9.62	9.90	10.01
1938	9.78	10.38	10.28	9.58	10.20	9.73	10.02	9.73	10.38	10.16
1939	9.80	10.25	10.18	9.68	10.21	9.83	10.12	9.85	10.06	10.08

[a]: Weighted average, using manhours in Table 3 as weights.

Sources:

Textiles through Food: Based on the data originally collected by the Bank of Japan and compiled in *Nihon rōdō undō shiryō* [Collected Documents on Japanese Labor Movement], Vol. 10, p. 231. A reclassification of industrial groups was necessary for Textiles, Machinery, and Chemicals; for these industries, simple arithmetic averages of manhours were computed from the industrial categories originally used. *Miscellaneous*: Naikaku Tōkeikyoku (Prime Minister's Office, Bureau of Statistics), *Rōdō tōkei yōran* [Annual Summary of Labor Statistics].

TABLE A-7. EMPLOYMENT (n) AND WAGES (w) OF NAGASAKI SHIPBUILDING YARD

(Unit of w: yen)

	Number of Production Workers (n)	Estimated Wage Rates (w)		
		Hourly (w_1)	Daily (I) (w_2)	Daily (II) (w_3)
1894	—	.0421	.336	.377
1895 (M 28)	—	.0480	.383	.430
1896	—	.0504	.402	.451
1897	—	.0539	.411	—
1898	—	.0580[a]	.464	—
1899	3,376	.0589	.488	—
1900 (M 33)	3,884	.0596	.561	—
1901	4,849	.0608	.544	—
1902	5,126	.0592	.557	—
1903	5,384	.0614	.560	—
1904	4,982	.0605	.571	—
1905 (M 38)	6,551	.0618	.543	—
1906	8,722	.0623	.539	—
1907	9,513	.0659	.563	—
1908	9,067	.0665	.596	—
1909	6,024	.0706	.633	—
1910 (M 43)	5,555	.0705	.645	—
1911	6,971	.0688	.634	—
1912	7,992	.0700	.645	—
1913	9,230	.0716	.659	—
1914	10,228	.0724	.683	—
1915 (T 4)	9,653	.0730	.679	—
1916	12,126	.0699	.663	—
1917	14,141	.0929	.848	.832
1918	14,141	.1164	1.063	1.043
1919	16,130	.1525	1.393	1.366
1920 (T 9)	17,061	.1952	1.783	1.748
1921	15,528[a]	.2109	1.926	1.889
1922	11,354	.2251[a]	2.056	2.016
1923	10,460	.2078	1.898	1.861
1924	8,458[a]	.2153	1.966	1.928
1925 (T 14)	6,720	.2259	2.063	2.023
1926	6,893	.2293	2.094	2.054
1927	7,407[a]	.2339	2.136	2.095
1928	8,236	.2346	2.142	2.101
1929	8,612	.2341	2.138	2.097
1930 (S 5)	7,492[a]	.2471[b]	2.257	2.213
1931	5,236	.2247	2.052	2.013
1932	5,321[a]	.2230	2.036	1.997
1933	6,345	.2169	1.981	1.943
1934	8,972	.2182	1.993	1.954
1935 (S 10)	9,446[a]	.2167[a]	1.979	1.941
1936	11,358	.2193	2.003	1.964
1937	13,348	.2441	2.229	2.186
1938	16,596	.2636	2.407	2.361
1939	18,451	.2721	2.485	2.437
1940 (S 15)	18,951	.2699	2.465	2.417
1941	21,020	.2844	2.597	2.547
1942	25,177	.3150	2.877	2.821
1943	31,704	.3559	3.250	3.188
1944	35,215	.3705	3.383	3.319

	Number of Production Workers (n)	Estimated Wage Rates (w)		
		Hourly (w_1)	Daily (I) (w_2)	Daily (II) (w_3)
1945 (S 20)	22,826	.4934	4.506	4.419
1946	12,686	4.5057	41.146	40.358
1947	10,870	12.5961	115.028	112.823
1948	10,054	41.9967	383.514	376.164
1949	9,598	58.3276	532.648	522.440
1950 (S 25)	9,433[c]	69.9283[c]	638.585	626.348

Estimation procedures:

n and w_1: Bi-annual figures (at June and December) for the number of production workers, total manhours worked, and total wage payment are reported in the original source. They have been averaged for respective years. The series w_1 have been obtained by dividing the average total wage payment by the average total manhours worked.

w_2 and w_3: On the basis of the daily wages reported for the years 1897 through 1916, actual working hours have been estimated for the respective years; namely,

Estimated Actual Working Hours

1897 (M 30)	7.625 (hours)	
1898	8.000	—Mean average=7.970
1899	8.285	
1900 (M 33)	9.413	
1901	8.947	
1902	9.409	
1903	9.121	
1904	9.438	
1905 (M 38)	8.786	
1906	8.652	
1907	8.543	
1908	8.962	—Mean average=9.132
1909	8.966	
1910 (M 43)	9.149	
1911	9.215	
1912	9.214	
1913	9.204	
1914	9.434	
1915 (T 4)	9.301	
1916	9.485	

Mean average for 1897-1916=8.957

(The break at 1899 has been made, since the work rule stipulated nine hours of work before 1900, and ten hours beginning in 1900. See *Nihon rōdō undō shiryō*, Vol. 1, p. 334.)

The series w_2 have been obtained by multiplying w_1 by 7.970 for the years preceding 1897 and 9.132 for the years following 1916. On the other hand, the series w_3 have been estimated by multiplying the series w_1 by a constant multiplier, 8.957.

Notes to Table A-7:

[a]: Missing values have been estimated by linear interpolation of the same months of immediately preceding and succeeding years.

[b]: For this year interpolation was made on the basis of the number of production workers at June 1929, June 1930 and June 1931. The supposition here is that the difference in manhours are proportional to those in n. Simple, linear interpolation was avoided, because the rate of decline in manhours between June 1929 and June 1931 was quite drastic.

[c]: The data for June 1950.

Sources:

n and w_1: [13], pp. 19, 38, 66, 117 and 175.

w_2 (1897-1916): [15], p. 334.

TABLE A-8. EMPLOYMENT (n) AND WAGES (w) OF YAWATA IRON AND STEEL COMPANY (I)

(Unit of w: yen)

	Number of Production Workers (n_1)[a]	Number of Temporary Workers (n_2)[a]	Wages (w) (Daily)[b]	Actual Working Hours (h)	Number of Working Days (d)
1902	1,763	—	.539	12	306
1903	1,729	—	.567	12	305
1904	3,610	—	.521	12	311
1905 (M 38)	6,155	3,073	.508	12	307
1906	7,263	3,058	.573	12	307
1907	7,876	3,086	.590	12	307
1908	7,602	2,612	.640	12	307
1909	6,457	1,562	.654	12	307
1910 (M 43)	6,380	920	.665	12	305
1911	6,483	1,426	.688	12	307
1912	6,949	1,830	.678	12	308
1913	8,767	2,124	.670[c]	12[c]	308[c]
1914	9,884	2,444	.662[e]	12	308
1915 (T 4)	12,567	2,348	.646[e]	12	306
1916	13,073	3,934	.654[c]	12	307[c]
1917	14,128	4,212	.690	11	307
1918	15,822	4,892	.780	11	307
1919	16,273	5,954	1.450	11	305
1920 (T 9)	17,190	6,185	2.180[d]	11	305
1921	16,434	5,057	2.405	—	306[c]
1922	16,044	4,807	2.482 (2.519)[f]	—	306
1923	16,627	5,566	2.486	—	308
1924	17,211	6,338	2.532	—	305
1925 (T 14)	17,812	5,140	2.538	—	307[c]
1926	17,661	5,133	2.631	— (hours)	307[c]
1927	17,482	5,563	2.550	8.767	309
1928	17,891	7,117	2.917	8.717[c]	309
1929	18,587	8,835	2.986	8.717[c]	311
1930 (S 5)	18,303	7,269	2.915	8.650	332
1931	16,691	4,713	2.673	8.500	311
1932	16,423	6,053	2.739	8.633	322
1933	16,598	8,248	2.952	8.900	329
1934	16,891	9,939	3.034	8.850	326
1935 (S 10)	21,032	11,649	3.177	8.984	328
1936	21,961	10,847	3.074	8.967	329

[a]: Inclusive of female workers.

[b]: Wages for male production workers.

[c]: Missing values have been interpolated by using the data for immediately preceding and succeeding years.

[d]: The arithmetic average of 1.980 (obtained from *Nihon Teikoku tōkei nenkan*) and 2.380 (quoted by Hashimoto).

[e]: Including wages for female workers.

[f]: The figure in the parentheses has been obtained on the supposition that the figure reported in *Nihon Teikoku tōkei nenkan* as the total wage payment for the year (2,674,878) is an error which should have been 12,674, 878.

TABLE A-8. (Continued)

Sources: 1) Series n_1 and n_2 are taken from: Yawata Seitetsujo (Yawata Iron and Steel Co.) [33], Statistical Appendix. These figures are for both sexes.

2) Money wages (w) for the period 1902-20 are based on: *Nihon Teikoku tōkei nenkan* (Statistical Yearbook of the Empire of Japan); for the period of 1920-26, the figures cited in the following work have been adopted: Hashimoto Nobori, "Hompō seitetsugyō rōdō gaisetsu (7) (The Working Conditions in Iron Foundries in Japan)," *Shakai seisaku jihō* (Social Reform), No. 79 (April 1927), p. 76; as to the rest of the years (i.e. 1927-36), the mean averages of actually earned wages have been taken from: (Yawata) Seitetsujo Rōmubu [Personnel Department, Yawata Iron and Steel Co.], (*Yawata*) *Seitetsujo kōjō rōdō tōkei* [Factory Labor Statistics of the (Yawata) Iron and Steel Co.], 1927, 1930-36 and (by the same compiler) *Kōjō rōdō tōkei; Taishō 13 nen yori Shōwa 4 nen ni itaru* [Collected Factory Labor Statistics, 1924-29], 1930. w does not include the wages for temporary workers and it is restricted for male production workers. For the years after 1926, "Jisshū chingin [actually earned wages]" has been adopted here instead of "Kasō nisshū [hypothetical daily earnings]."

3) Hours (h) and days (d): before 1925, *Nihon Teikoku tōkei nenkan*; after 1926, (Yawata) Seitetsujo, *op. cit.* (see the item 2 above).

TABLE A-9. EMPLOYMENT (n) AND WAGES (w) OF YAWATA IRON AND STEEL COMPANY (II)

(Unit of w: yen)

	Total Number of Male Production Workers (n_1)	Number of Male Production Workers on Payroll (n_2)	Wages (w_1) (Hourly)	Wages (w_2) (Hourly)
1927	—	17,291	.291	—
1928	—	17,123	.335	—
1929	—	16,944	.343	—
1930 (S 5)	18,338	17,854	.337	—
1931	17,455	17,013	.314	.307
1932	16,315	15,940	.317	.315
1933	16,453	16,035	.332	.332
1934	16,557	16,163	.343	.339
1935 (S 10)	17,842	16,921	.354	.352
1936	21,251	20,403	.343	.343

Sources: n and w_2: (Yawata) Seitetsujo Rōmubu [Personnel Department, Yawata Iron and Steel Co.], (*Yawata*) *Seitetsujo kōjō rōdō tōkei* [Factory Labor Statistics of (Yawata) Iron and Steel Co.], 1927, 1930-36; w_1: computed from w and h given in Table A-8.

TABLE A-10. CLASSIFICATION OF WORKERS BY PLACE OF ORIGIN, 1924-29 (YAWATA IRON AND STEEL COMPANY)

	Total[b]	Korea	Other Areas	Chūgoku Area			Kyūshū Area								Shikoku Area
				All Chūgoku	Hiroshima[a]	Yamaguchi[a]	All Kyūshū	Fukuoka	Saga	Nagasaki	Kumamoto	Ohita	Miyazaki	Kagoshima	
		%	%	%	%	%	%	%	%	%	%	%	%	%	%
1924	16,331	1.3	2.3	12.4	4.4	5.5	79.4	42.0	7.5	1.9	10.3	11.9	1.3	4.5	4.7
1925 (T 14)	16,959	1.3	2.2	11.8	4.1	5.3	80.2	42.7	7.5	1.8	10.4	11.9	1.2	4.8	4.6
1926	17,699	1.3	2.3	11.6	4.0	5.3	80.3	42.2	7.7	1.8	11.1	11.4	1.2	5.1	4.5
1927	17,980	1.3	2.1	11.4	4.0	5.1	80.9	42.8	7.7	1.8	10.9	11.5	1.3	4.8	4.4
1928	17,248	1.2	2.0	11.3	3.9	5.2	81.3	43.1	8.0	1.8	11.0	11.3	1.2	4.9	4.2
1929	18,096	1.1	1.9	11.3	4.1	5.2	81.5	42.9	8.1	1.8	11.3	11.4	1.3	4.7	4.2

Notes: The rows do not necessarily add up to 100 per cent, due to rounding off.

[a]: Other prefectures besides Hiroshima and Yamaguchi are omitted.

[b]: Total number of workers surveyed.

Source: Seitetsujo Rōmubu [Personnel Department, (Yawata) Iron and Steel Co.]. *Kōjō rōdō tōkei; Taishō 13 nen yori Shōwa 4 nen ni itaru* [Collected Factory Labor Statistics, 1924-1929], 1930, pp. 1-5.

TABLE A-11. MANUFACTURING DAILY WAGES FOR MEN BASED ON BUREAU OF STATISTICS SURVEYS, 1924, 1927 AND 1933

(Fukuoka Prefecture; in yen)

Year	Textiles	Metal & Metal Products	Machinery	Ceramics	Chemicals	Wood & Wood Products	Printing & Binding	Food	Miscellaneous	Total
1924	1.254	2.156[a]	2.168	1.552	1.445	2.016	2.438	1.727	1.431	2.089
1927	1.479	2.320[a]	2.310	2.430	1.635	1.382	1.800	2.060	1.950	2.200
1933	1.477	2.380[a] (2.239)[b]	2.168 (1.884)[b]	1.870	1.463	1.526	1.608 (1.580)[b]	2.000	1.215	1.877

[a]: Including Yawata Iron and Steel Company.

[b]: The bracketted figures eliminate government-owned factories. Public factories cannot be eliminated from the 1924 and 1927 editions, as separate listing is not available for them.

Explanation and Source:

Based on Naikaku Tōkeikyoku (Prime Minister's Office, Bureau of Statistics), *Rōdō tōkei jitchi chōsa* [Survey of Labor Statistics]. In principle, the surveys covered the establishments with more than 30 employees, with the following exceptions: 300 and more for cotton textiles; 100 and more for silk, transportation equipments, paper-producing, matches, and cement; 15 and more for several industries, including explosives, which are dominated by small-scale firms (for detailed explanations, see *Tōkeigaku zasshi* [Journal of Statistics], No. 458 (August 1924), pp. 280-81). The data include both private and public factories.