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Prewar Japanese Economic Development:
Rethinking Zaibatsu in Perspectives of Corporate Governance"**

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Role of holding companies in prewar Japanese economic development:
Rethinking zaibatsu in perspectives of corporate governance*

by

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* This paper is the English summary version of Okazaki[1999a].

Abstract

This paper examines the function of corporate governance of the zaibatsu holding companies. Since 19th century, or in some cases since 17th century, zaibatsu accumulated assets and diversified them into various businesses. Expansion and diversification of the businesses caused problems which resulted from asymmetric information, namely adverse selection and moral hazard of the agents who executed the businesses. In order to resolve these problems, zaibatsu introduced organizational innovation. By early 1920's, each zaibatsu established the holding company, while it separated the businesses into joint-stock companies.

The holding company of zaibatsu had the organizations and full-time staffs to monitor the affiliated companies. In many cases, the concerning sections of the holding company, such as the section of audit, inspection etc., checked the budget and financial data of the affiliated companies, while the matters of the board of directors were approved by the holding company *ex ante* and *ex post*. There existed systematic rules on the allocation of powers between the holding company and the affiliated companies. Also, the holding company frequently dispatched directors to the affiliated companies.

The efficacy of these devices of governance was tested quantitatively. We compared ROE between zaibatsu affiliated firms and non-zaibatsu firms, using panel data of 135 firms from 1922 to 1936. By controlling the effects of company scale, industry-specific shocks, and macro-shocks, we obtained the result that zaibatsu-affiliated firms clearly outperformed the other companies. This result supports the hypothesis that the zaibatsu holding company played the role of monitoring the affiliated companies.

Besides this governance function concerning the affiliated companies, zaibatsu also disciplined the non-affiliated companies in the capital market. The holding companies and the core affiliated companies frequently executed take over, which contributed to restructure the targeted companies, thorough replacement of the directors, assistance of management.

1. Introduction

By the revision of the anti-monopoly law in 1997, the holding company, which had been banned since 1947, came to be legal in Japan. In the discussion concerning the revision, prewar zaibatsu was frequently mentioned. Those who were against the revision, stressed the revival of zaibatsu, while those who were for it, denied the possibility of the revival (Subcommittee on Basic Problems, Industrial Structure Council [1993]).

It is remarkable that both camps took it for granted that zaibatsu were monopolistic, which implies that concerning zaibatsu, both camps took the “monopoly branch” in the Oliver Williamson’s cognitive map of contract (Williamson[1985], p.24). It is natural, because the postwar dissolution of zaibatsu and legislation of the anti-monopoly law, which aimed at maintaining the results of the dissolution, were based on this standpoint. However, it is not self-evident that the other approach, namely “efficiency branch,” is not useful for understanding zaibatsu.

In this paper, we will re-examine the role of zaibatsu in “efficiency” perspectives. In other words, this paper focuses on the corporate governance function of the zaibatsu holding company. Williamson[1975] stressed the role of multi-divisional firm (M-firm) in corporate governance. Unlike the naïve assumption of the neoclassical economics, there usually exists serious information asymmetry between investors in the capital market and corporate managers, which makes it difficult for the capital market to discipline corporate managers effectively. According to Williamson[1975] M-firm resolves the information asymmetry. First, the general headquarters of M-firm with full-time staffs could intensively monitor the divisions under it. Second, it also has good capability to evaluate the potential value of the non-affiliated companies in the market. Thorough, purchase and sale of stocks and corporate take over, M-firm could effectively discipline non-affiliated as well.

As is discussed in the following sections, zaibatsu holding companies played the role of these functions which Williamson[1975] attributed to M-firm. In this sense, zaibatsu was an organizational basis for the corporate system in prewar Japan¹. The governance function of the internal market of zaibatsu was discussed in Okazaki [1993] and Okazaki[1999b]. This paper is an extension of these articles².

¹ Williamson [1975] defined the holding company (H-form) as “the divisionalized enterprise for which the requisite control apparatus has not been provided,” (p.152). However, as Williamson noted himself, this terminology is somewhat special (p.143).

² Kikkawa[1996] stressed that zaibatsu confined the power of ownership in double

The paper is organized as follows. Section 2 briefly overviews development of zaibatsu. Section 3 focuses on the organizational innovations, namely establishment of the holding company, by zaibatsu. Section 4 executes quantitative analyses of the zaibatsu's governance function to the affiliated companies. Section 5 examines the governance function of zaibatsu in the capital market. Section 6 concludes the paper.

2. Accumulation and diversification of assets

Table 1 shows the shares of zaibatsu, in terms of paid in capital, in 1937, which was the last year of the prewar period³. The Holding Companies Liquidation Committee (HCLC), which was established for zaibatsu dissolution in 1946, identified ten major zaibatsu, namely Mitsui, Mitsubishi, Sunmitomo, Yasuda, Furukawa, Nissan, Okura, Nomura, Asano, and Nakajima.. The nine major zaibatsu except Nakajima,⁴ occupied 15 % of the total paid-in capital in Japan in 1937 (Table 1).

When United States started occupation of Japan in 1945, the US government mentioned zaibatsu as “the large industrial and financial combinations which have dominated a large part of the Japanese commerce and industry” (Ministry of Finance[1981], p.22). Table 1 indicates that the US government overvalued the position of zaibatsu, and at the same time that zaibatsu's share was not negligible. Observed by industry, zaibatsu's shares were relatively high in finance, mining, manufacturing, shipping and real estate. On the other hand, they were lower in utility, land transportation and commerce.

In order to make clear the position of zaibatsu in large companies, we compiled a company database. The data sources are (1)Toyo Keizai Shinposha ed. *Kabushiki Gaisha Nenkan (Joint-stock Company Yearbook)*, 1937 issue, (2)Osakaya Shoten ed. *Kabushiki Nenkan (Stock Yearbook)*, 1938 issue, and (3)HCLC[1951]. Sources (1) and (2) cover major companies whose stocks were openly traded in the capital market. On the other hand, they miss those companies whose stocks were held by small number

senses. Namely, the power of the family over the holding company and the power of the holding company over the affiliated companies were limited (pp.81-93). This view is meaningful as a criticism to the traditional view which focuses on the “control” by zaibatsu, and I myself have stressed that the governance of the affiliated companies by the zaibatsu holding company, had long-term time horizon (Okazaki[1993]). However, the view of Kikkawa[1996] missed the corporate governance issue.

³ Sino-Japanese War broke out in July 1937.

⁴ Nakajima formed corporate group in 1940's.

of shareholders, which were frequently the case concerning zaibatsu affiliated companies. To cover those closed companies, we referred to (3).

By (1), (2) and (3), 355 private companies whose paid-in capital were over five million yen in 1937, were identified. Table 2 shows how many zaibatsu affiliated companies are in the top 10, 50, 100, 200 and 300 companies, in terms of paid-in capital. There are 3, 10, 18, 38, and 65 zaibatsu affiliated companies respectively, which means that approximately one third of the large companies were affiliated to zaibatsu. The share is higher than that in Table 1, but we need not change the above evaluation concerning the position of zaibatsu in the prewar Japanese economy.

Growth of zaibatsu can be observed by the amount of assets of the holding companies (Figure 1). The data of Mitsui, Mitsubishi, Sumitomo, Yasuda, and Nissan are available. The former four zaibatsu expanded rapidly in late 1910's. Nissan, one of the "new zaibatsu," was formed in 1928, succeeding to the companies of Kuhara zaibatsu, which was bankrupted in 1920's. The rapid expansion in late 1910's was mainly due to the boom caused by the World War I, but it was nominal to some extent. If we measure the scale of each zaibatsu in terms of the ratio of its assets to nominal GNP, the ratio increased almost steadily from 1880's to 1930's (Figure 2).

In the growing process of zaibatsu, their assets were diversified into various businesses. The chronology of diversification of each zaibatsu is summarized in Table 3

-Table 8. For example, there are 18 Mitsui affiliates in the above data base of 355 companies. Table 3 shows (1) the year when they were established, and (2) the year when Mitsui started the business of the companies. Usually (2) preceded (1). The cases in which (1) preceded (2), imply that Mitsui acquired exiting companies. The lines are arranged in the order of (2). The process of diversification can be followed by those tables. For saving space, we focus on the cases of Mitsui and Nissan.

Among Mitsui's businesses in 1937, finance, originated in 17th century, was by far the oldest. Although the first business of Mitsui was a *kimono* store, it was separated from Mitsui in 1904 (Yasuoka[1987]). When Meiji government was established in 1860's, Mitsui, one of the major financiers, was entrusted administration of the government funds, which came to be a major source of its profit, until Bank of Japan was established in 1882. In 1876, Mitsui founded Mitsui Bank, succeeding its financial business (Yasuoka ed.[1982] pp.87-88).

Other two major businesses of Mitsui, commerce and mining, were derived from the financial business in 1870's. In 1874, Mitsui started commercial business, which would result in Mitsui & Co., and set up 27 branches all over Japan. It was intended

that expansion of trade would enlarge the exchange business (Mitsui Bunko ed.[1980a] p.227). Also in 1870's, Mitsui acquired several metal mines through foreclosure (Yasuoka ed.[1982] p.128). It extended mining business through acquisition of state-owned Miike Coal Mine, whose products came to be a basis for Mitsui & Co.'s overseas business (Mitsui Bunko ed.[1980a] p.303). In this sense, the financial, mining and commercial business of Mitsui were complementary one another⁵.

In 1880's, Mitsui entered into manufacturing industries, under the leadership of Hikojiro Nakamigawa, a vice president of Mitsui Bank (Morikawa[1978] p.66; Yasuoka ed.[1982] p.144). His "industrialization policy" was not so successful in terms of short-run profitability, but several important manufacturing companies, such as Shibaura Manufacturing (Shibaura Seisakujo), one of the predecessors of Toshiba, and Onoda Cement, came to be affiliated to Mitsui, owing to the policy

After the death of Nakamigawa in 1901, Mitsui continued to invest in the manufacturing industries, based on its mining business. In 1907, Hokkaido Coal Mine and Shipping (Hokkaido Tanko Kisen), an affiliated coal mining company, set up Nihon Steel Works (Nihon Seikojo), jointly with British companies, through which Mitsui indirectly entered into steel industry (Mitsui Bunko ed.[1980b] pp.176-179). In 1912, a chemical plant, utilizing cokes gas, started to work at Miike Mine, which was an origin of Miike Nitrogen Industry (Miike Chisso Kogyo) and Toyo High Pressure Industry (Toyo Koatsu Kogyo), established in 1930's (Yasuoka ed.[1982]). In 1920's, Mitsui entered into life insurance and food industries through acquisition (Mitsui Bunko ed.[1994] pp.38-39). Under the prolonged depression, many companies came into financial distress. Mitsui, as well as other zaibatsu, acquired those companies. Its implication will be discussed in section 5.

As mentioned above, Nissan zaibatsu was established in 1928, succeeding Kuhara zaibatsu. In 1920's Kuhara went into financial distress, due to failure of commodity speculation. Fusanosuke Kuhara, the owner of Kuhara zaibatsu, entrusted Gisuke Ayukawa, his brother in law, to restructure the businesses. Ayukawa reorganized Kuhara Mining (Kuhara Kogyo) into Nihon Sangyo as a holding company, and Nihon Mining (Nihon Kogyo) as a mining company (Udagawa[1984]). Nihon Sangyo held the shares of ex-Kuhara companies, such as Nihon Mining, Hitachi Manufacturing (Hitachi Seisakujo), and Hitachi Electricity (Hitachi Denryoku) (Table 8).

After the reorganization, Nissan rapidly expanded businesses though aggressive

⁵ Zaibatsu played the role of resolving the problem due to complementarity, which was carried out by MITI's the industrial policy in the postwar period (Okazaki[1997]).

M &A. In 1931, Nissan acquired Datto Automobile Manufacturing (Datto Jidosha Seizo) to enter into the automobile industry (Nissan Automobile[1965] pp.27-39). In 1934, Nissan merged a fishery company (Kyodo Fishery, Kyodo Gyogyo) and a shipbuilding company (Osaka Manufacturing, Osaka Tekkojo), which was then separated to be a subsidiary of Hitachi Manufacturing (Nihon Fishery[1961] pp.297-298; Wada[1937] p.200). In 1937, Dainihon Coal Mining (Dainihon Tanko) under Nissan was reorganized to be Nihon Chemical Industry (Nihon Kagaku Kogyo) to merge Dainihon Fertilizer (Dainihon Hiryo) (Nissan Chemical [1969] p.98).

3. Organizational innovation for governance: establishment of the holding company

In general, expansion and diversification of businesses of the company, increase monitoring costs of the investors. Growth of zaibatsu, described in the previous section, caused this problem. To cope with it, zaibatsu carried out various countermeasures, the core of which was to set up holding companies, specialized in monitoring affiliated companies. From 1900's to 1920's, each zaibatsu reorganized its businesses into joint-stock companies, and established a holding company which held the shares of those companies⁶.

Organization of the holding company

Mitsui Gomei, the holding company of Mitsui zaibatsu, was established in 1909. Its purpose was prescribed in the "Business Rules," as monitoring and coordination of the affiliated companies. For this purpose, Mitsui Gomei had the Section of Inspection (Keisa-ka) and the Department of Finance (Zaimu-bu) (Figure 3). The Section of Inspection checked the documents sent by the auditors of the companies, a large part of whose stocks was held by Mitsui Gomei. It also inspected the businesses and accounts of those companies. The Department of Finance was in charge of finance of Mitsui Gomei itself and its affiliated companies (Kasuga[1987] pp.27-29).

Mitsubishi Goshi was established as the headquarters of Mitsubishi zaibatsu in 1893, which managed the businesses by the multidivisional organization. From late 1910's to early 1920's, Mitsubishi Goshi separated its divisions into joint-stock companies, and came to be the holding company. Meanwhile, Mitsubishi Goshi reformed its internal organization to set up four sections, namely, Monitoring (Kanri), Personal Affairs (Jinji), Industrial Research (Sagyō) and General Affairs (Somu) (Figure 4).

⁶ Okazaki [1999a] describes the process of the organizational reforms more in detail.

The Section of Monitoring audited the accounts and businesses of the Mitsubishi Goshi itself and its core affiliated companies, and it was also in charge of budget, settlement of accounts and finance of those companies. In this sense, the Section of Monitoring was a counterpart of Mitsui's Section of Inspection and Department of Finance. The Section of Personal Affairs was in charge of personal affairs of the core affiliated companies, as well as Mitsubishi Goshi itself (Mishima ed.[1981], pp.88-92).

Sumitomo set up Sumitomo Sohonten as the headquarters in 1909, succeeding Sumitomo Honten. By 1920, Sumitomo reorganized its businesses of finance, steelmaking and cable manufacturing into Sumitomo Bank (Sumitomo Ginko), Sumitomo Steel (Sumitomo Seikojo), and Sumitomo Cable Manufacturing (Sumitomo Densen Seijojo), respectively. Consequently, Sumitomo Sohonten came to be the holding company, although it still had various its own businesses. In 1921, Sumitomo Sohonten was reorganized into Sumitomo Goshi, and after that, it successively separated its businesses to be the holding company in the narrow sense.

In 1928, when most of the Sumitomo's businesses had been reorganized into joint-stock companies, the "Company Rules" of Sumitomo Goshi was enacted. According to the "Company Rules," four departments, namely, Personal Affairs (Jinji), Finance (Keiri), General Affairs (Somu), Engineering (Kosaku) were established (Figure 5). The Department of Finance checked the budgets and settlements of the core affiliated companies, and supervised them. Also, it investigated the new business frontier. The Section of Accounting (Kaikai-ka) in the Department of General Affairs monitored the accounts and cash flows of the core affiliated companies. The Department of Personal Affairs, like the case of Mitsubishi, administrated personal affairs of the core affiliated companies as well as Sumitomo Goshi itself (Asajima[1983] pp.69-72).

Yasuda Hozensha was established in 1887 to administrate the shares of the Yasuda Bank. However, it was a nominal company without organization and full-time staff, and the shares of the affiliated companies were held by Yasuda Bank (Yui[1986] pp.83-88) . In 1905, three departments with full-time staffs were set up in Yasuda Hozensha. At the same time, major part of the shares which Yasuda Bank had held, were transferred to Hozensha. Consequently, Yasuda Hozensha came to be the holding company of Yasuda zaibatsu (Yui[1986] pp.255-261, pp.290-291).

In 1922, one year after Zenjiro Yasuda, the founder of Yasuda zaibatsu, was assassinated, an organizational reform of Hozensha was carried out, under the leadership of Toyotaro Yuki, who was invited from Bank of Japan to the top management of Yasuda zaibatsu. As a result, Hozensha came to be composed of six

departments, namely, Secretary (Hisho), General Affairs (Shomu), Finance (Rizai), Bank (Ginko), Company (Kaisha) and Research (Chosa). The Department of Bank was in charge of inspection of the affiliated banks, as well as financial adjustment of those banks, which reflected the fact that Yasuda zaibatsu concentrated its assets into the banking sector. On the other hand, the Department of Company was in charge of checking the accounts of the affiliated companies, their finance, and inspection of them (The Editorial Committee of the History of Yasuda Hozensha and Its Relating Businesses ed.[1974] pp.532-537).

The organization of Nihon Sangyo was reformed in 1934, when diversification of businesses had proceeded. Three department, namely General Affairs (Gyomu), Monitoring (Kanri), and Business were set up (Figure 6). The Department of Monitoring monitored the management of the affiliated companies, and also was in charge of legal affairs regarding M&A. Ayukawa compared the Department of Monitoring to the Board of Audit of Japan (Kaikei Kensain) (Udagawa[1984] pp.53-54).

Allocation of powers and information system

In Mitsui zaibatsu, the core affiliated companies should have the *ex ante* approval by Mitsui Gomei to determine the matters of the board of directors. In other words, while routine decision makings, other than board of directors matters, were entrusted to each core affiliated companies, Mitsui Gomei held veto power regarding important matters. This *ex ante* approval was, at the same time, an information system for Mitsui Gomei to monitor the core affiliated companies (Kasuga[1987] p.27).

Dispatching stuffs of the holding company to the affiliated companies was, like other zaibatsu, a basic tool for monitoring (Okazaki[1999b]). In Mitsui Gomei case, it was prescribed in its “Business Rules” that dispatched directors should report the business of the company to the president of Mitsui Gomei as occasion calls, and, concerning important matters, rely on his *ex ante* judgment (Kasuga[1987] p.27).

Mitsubishi zaibatsu had systematic rules on power allocation between the holding company and the core affiliated companies, namely (1) “Rules on the relationship between the core affiliated companies and Mitsubih Goshi” (1918), (2) “Internal rules on the board of directors of the core affiliated companies” (1919, revised in 1922), (3) “Rules on the fund raising and application of the core affiliated companies” (1918). Main points of (1) were as follows (Mitsubishi Economic Research Institute [1958] pp.65-67).

- a. Directors and auditors of a core affiliated company should be registered at

Mitsubishi Goshi

- b. Rules enacted by Mitsubishi Goshi should apply to the core affiliated companies. In case a core affiliated company enacts different rules or important rules, approval by the president of Mitsubishi Goshi is necessary. All the rules enacted by the core affiliated companies should reported to Mitsubishi Goshi.
- c. Budgets and settlements of a core affiliated company should be approved by the president of Mitsubishi Goshi.
- d. A core affiliated company should send the expected fund flow and expected profit and loss to Mistubihi Goshi.
- e. The Chief of the Section of Audit, Department of General Affairs, should audit the accounts of the core affiliated companies, according to the order of the president of Mitsubishi Goshi⁷
- f. The stuffs of a core affiliated company should be screened and employed by Mitsubishi Goshi. The personal affairs of the stuffs above the counselor (sanji) need approval of the president of Mitsubishi Goshi. The personal affairs of the other stuffs should be sent to the president of Mitsubishi Goshi, by way of the Section of Personal Affairs, the Department of General Affairs, in advance⁸

The rules (2) prescribed that the matters determined by the board of directors of a core affiliated company, should be approved by the president of the Mitusbihi Goshi before enforcement. In case of emergency, they should be approved *ex post* (Mishima[1981] p.93). According to (3), a core affiliated company should concentrate its operational accounts to the Bank Department of Mitsubishi Goshi⁹. Mitsubishi Goshi could monitor the operations of a core affiliated company thorough the Bank Department (Mitsubishi Keizai Kenkyujo [1958] pp.63-65; Hagimoto[1995] pp.82-84).

In Sumitomo zaibatsu, “Sumitomo Family Laws” and “Sumitomo Accounting Rules” (until 1928) or “Company Rules” (since 1928), prescribed allocation of powers and information system. According to “Company Rules,” a core company should send the “Estimated Accounts” *ex ante*, and “Report of Actual Accounts” *ex post*, to

⁷ The Section of Audit, the Department of General Affairs was reorganized into the Section of Monitoring in 1919.

⁸ The Section of Personal Affairs, the Department of General Affairs was reorganized into the Section of Personal Affairs in 1919.

⁹ The Bank Department of Mitsubishi Goshi was reorganized into Mitsubishi Bank in 1919.

Sumitomo Goshi every year (Asajima[1983] pp.79-90).

As to Yasuda's core affiliated company, the articles of incorporation, important rules, unroutinized matters of the shareholders meeting and the board of directors, budget, settlement, disposition of profit and loss, personal affairs etc. should be consulted with Yasuda Hozensha *ex ante*. Also, a core affiliated company should notify applications to and orders from the public agencies, matters of the shareholders meeting, matters of the board of directors, personal affairs, balance sheets and its detailed data, business situation etc (Hashimoto[1992] p.118; Editorial Committee of the History of Yasuda Hozensha and its Businesses ed.[1974] pp.538-539).

4. Quantitative analysis of profitability

As described in the previous section, the holding companies of zaibatsu devised various mechanisms to monitor their affiliated companies. We can test efficacy of those mechanisms quantitatively, thorough analysis of profitability. The sample firms were selected as follows.

First, out of the 1937 issue of Osakaya Shoten ed. *Kabushiki Nenkan* and HCLC[1951], we picked up all the company whose paid-in capital were over 10 million yen. The purpose of using HCLC[1951] was, like the case of section 2, to include those companies whose stocks were held by small number of shareholders.

Second, out of those primary sample firms, we picked up the firms whose financial data from 1922 to 1936 are available. The sources of the financial data are the various issues of Osakaya Shoten ed. *Kabushiki Nenkan*, and each firm's business reports which are included in either of the Yushodo's microfilm collection of business reports or of the collection of original business reports at the library of the Faculty of Economics, the University of Tokyo. In order to increase sample firms, we included those firms with a data lacking period of a half year. Consequently, 135 firms were picked up, 30 of which were affiliated to zaibatsu¹⁰.

Distribution of the 135 firms by industry is shown in Table 9. Many firms of the capital intensive industries like utility and land transportation, namely railways, are included. Next to them are the financial industry and textile industry, which led the prewar industrialization of Japan. Comparing the distribution of firms by industry between zaibatsu group and non-zaibatsu group, we find that there was substantial

¹⁰ In the sense that each firm of them was affiliated to one of major nine zaibatsu, namely Mitsui, Mitsubishi, Sumitomo, Yasuda, Furukawa, Nissan, Okura and Nomura, according to HCLC[1951].

difference (Figure 7). Zaibatsu affiliated companies relatively concentrated in finance, mining, metal, machinery, chemical, ceramics, commerce, and real estate and warehouse. On the other hand, non-zaibatsu companies relatively concentrated in paper, textile, foods, electricity, land transportation, and shipping.

Return on equity (ROE) of each firm is computed by (net profit of each term)/(paid in capital and retained profit at the end of the term). The total (non-weighted) average of ROE in 1922-1936 was 8.9%. Splitting the samples into three sub-periods, 1922-1926, 1927-1931, 1932-36, we find decline of ROE in the second sub-period, which was due to the Great Depression in Japan.

On the other hand, movement of ROE by industry in Table 9 reflects the trend of the industrial structure in Japan. First, the light industries such as paper, ceramics, textile and foods industries, continued to outperformed the average. Second, the mining, shipping, and development, real estate and warehouse, continued to fall behind the average. Third, the heavy and chemical industries such as metal, machinery and chemical industries, which at first had fallen behind the average, came to outperform it in 1930's. Fourth, finance and commerce, which had outperformed the average, came to fall behind it in 1930's.

The first group were, so to speak, mature industries, which continued to bring about rich fruits. The second group were stagnating industries. In fact, they developed earlier than the manufacturing industries in nineteenth century. The third group were developing industries, which had started to grow during the World War I, and came to be the new leading industries in 1930's. Meanwhile, the fourth group were declining industries.

It is remarkable that the major investment fields of zaibatsu shown in Figure 7, were the stagnating and declining industries (the third and the fourth groups), and the developing industries (the second group). Keeping in mind the process of diversification described in section 2, we can say that zaibatsu invested the capital, which had been accumulated in the old industries since nineteenth century, into the newly developing heavy and chemical industries.

Average ROE of zaibatsu firms were lower than the total average, except the sub-period of 1932-36 (Table 10). However, it is mainly because of the difference of firm distribution by industry between zaibatsu and non-zaibatsu firms. If we compare ROE by industry, zaibatsu firms tend to outperform the average. Out of 30 comparable cases concerning the three sub-periods, ROE of zaibatsu firms was higher than the average in 18 cases.

In order to compare profitability between zaibatsu and non-zaibatsu firms more

formally, we regress ROE to (a)paid-in capital (CAPITAL), (b)dummy variable which is 1, if the firm is affiliated to zaibatsu and 0, if otherwise (ZAIBATSU), (c)industry dummies (INDUSTRY), (d)year dummies (YEAR), and (e)constant. (a) is for controlling the scale effect, while (c) is for controlling industry-specific shocks. And (d) is for controlling macro-shocks. Our hypothesis is that the coefficient of ZAIBATSU is positive, because zaibatsu holding companies intensively monitored the affiliated companies, using the organization and devices, discussed in the previous section. We use panel data of above 135 firms from 1922 to 1936 (2,025 samples).

Equation (1) of Table 11 was estimated by OLS with the whole samples. As we expected, the coefficient of ZAIBATSU is positive and statistically significant at 1% level. Furthermore, the magnitude of the zaibatsu effect is substantial. Because ROE is measured by %/year, the estimated equation implies that, on average, ROE of a zaibatsu affiliated firm is 3.651% higher than that of a non-zaibatsu firm, if scale effect, industry-specific shocks, and macro-shocks are controlled.

This result is robust, if we split samples into three sub-periods. Equation (2), (3) and (4) of Table 12 were estimated by OLS with the samples of 1922-26, 1927-31 and 1932-36, respectively. In all of the equations, the coefficients of ZAIBATSU are positive and large in absolute value. Also, concerning the sub-periods of 1922-26 and 1932-36, they are statistically significant at 1% level.

Those results support our hypothesis on the governance function of the zaibatsu holding company. Concerning this view, there might be a criticism from a standpoint of the “monopoly approach,” that the high profitability of zaibatsu affiliated companies reflects the monopoly rents. However, if the monopoly rents are based on the price control, it should be distributed across the firms in the same industry, whether they were affiliated to zaibatsu or not.

The regression results excluding the industry dummies are also reported in Table 11 and Table 12. The coefficients of ZAIBATSU are negative in the equations of 1922-36, 1922-26, and 1927-31, although they are not statistically significant. On the other hand, in the equation of 1932-36, the coefficient of ZAIBATSU is positive and statistically significant at 5 % level. These results can be interpreted to be reflect the distribution of firms by industry and the strategy of zaibatsu behind it. As mentioned above, zaibatsu invested heavily in the declining/stagnating industries and the newly developing industries. The strategy of zaibatsu to shift portfolio from the former industries to the latter, came to be rewarded in 1930’s.

5. Governance function of zaibatsu in the capital market

Gisuke Ayukawa, the top of Nissan zaibatsu, wrote in his book on the role of Nissan zaibatsu as follows (Ayukawa[1937] pp.165-166).

The job of Nissan resembles to that of a gardener. Nissan buys various seeds and young plants, and grows them by letting them bathe in the sun, and supplying water and fertilizer. If flowers and fruits come out, Nissan distributes them to its shareholders. Also, if a rare tree or a good plant stagnating in the shade, is found out, Nissan buys it at a low price to cultivate by changing soils and grooming. Furthermore, it has a skill of grafting to let plum flowers come out on a peach tree.

Nissan's function which Ayukawa discussed figuratively, is that of a take over raider stressed in Williamson[1975]. According to Ayukawa, Nissan found out those firms of poor performance due to infancy or bad management, and bought them to provide with financial and technological support and to improve management. If those firms came to be profitable, the profit was distributed to the shareholders of Nissan thorough it. In some cases, he wrote, Nissan sold the firms to earn capital gains.

In this section, we check the function which Ayukawa claimed, through case studies. In order to select cases, we can use Table 3-Table 8 of section 2. As explained there, the cases in which the year when the companies were established, preceded the year when the zaibatsu started the business, imply that the zaibatsu acquired exiting companies. Picking up all of those cases from Table 3-Table 8 and arrange them in order of the year of acquisition, we have Table 13. Zaibatsu except Nissan acquired companies mainly in 1920's, while Nissan, the "new zaibatsu," aggressively took M&A strategy in 1930's. In this sense, Ayukawa's book cited above, is well-grounded.

Among them, we focus on the four cases which occurred in the period from 1925 to 1933, namely Sumitomo Life Insurance (Sumitomo Seimei), Tokyo Steel (Tokyo Kozai), Nihon Flour Mill (Nihon Seifun), and NEC (Nihon Denki). This is for convenience to rely on the financial database which we used in the previous section.

Sumitomo Life Insurance

The predecessor of Sumitomo Life Insurance was Hinode Life Insurance, which was founded in 1907 by Toshiyuki Okamoto, the president of the branch company of a US. life insurance company. Hinode Life Insurance fell in the financial distress after the World War I. Okamoto asked Denpei Shimogo, the president of Ninju Life Insurance, to buy the company, and Shimogo family bought it in 1921 (Sumitomo Life Insurance[1977] pp.11-13). However, even after the acquisition by Shimogo, the position of Hinode in the industry was not improved. The difference of the growth rate

of insurance contract amount between Hinode and the average of Nihon Life Insurance (Nihon Seimei) and Teikoku Life Insurance (Teikoku Seimei), the top two companies, continued to exist (Table 14).

Meanwhile, Sumitomo Goshi planned to enter into the life insurance industry, on the ground that it was protected by the government regulation and that it was complementary with banking and trust industries. Because of the entry regulation, Sumitomo intended to acquire an existing company (Sakudo ed.[1982] pp.223-224), when Shimogo asked Sumitomo Bank to refinance the fund for the acquisition of Hinode. Then, Masatsune Ogura, the executive director of Sumitomo Goshi, instructed the Research Section of Sumitomo Bank to analyze Hinode, and the Research Section concluded that Sumitomo should acquire it.

In April 1925, the patriarch of Sumitomo family (Kichizaemon Sumitomo) and the General Director of Sumitomo Goshi (Kinkichi Nakata) approved to acquire Hinode. Thorough negotiation between Sumitomo Goshi and Shimogo, all of the Hinode's shares held by Shimogo, were bought by Sumitomo Goshi (Hashimoto[1992] pp.126-127; Sumitomo Life Insurance [1977] pp.14-17). At the shareholders' meeting in June 1925, the board of directors of Hinode was completely reorganized (Table 15). The Seiichi Kokubu, who had been the main office manager of Sumitomo Bank became the executive director of Hinode, and eight of ten directors of Hinode came to be the persons affiliated to Sumitomo. Only one incumbent director remained at the position. In May 1926, Hinode was renamed to be Sumitomo Life Insurance (Sumitomo Seimei), and at the same time it got the position of a core affiliated company of Sumitomo.

After the acquisition by Sumitomo, Hinode or Sumitomo Life Insurance actively increased branch offices and developed new insurance commodities, the results of which was reflected in the growth of insurance contracts. The growth rate substantially increased since 1925 to get ahead of Nihon Life Insurance and Teikoku Life Insurance (Table 14). In other words, acquisition by Sumitomo was a turning point of Hinode or Sumitomo Seimei's position in the industry.

Tokyo Steel

Tokyo Steel was established in 1917, succeeding to Tokyo Steel Manufacturing (Tokyo Kozai Seisakujo) founded by an engineer of Kanegafuchi Cotton Spinning (Kanegafuchi Boseki). It came to have relation with Mitsubishi zaibastu thorough a loan of 500 thousand yen from the Bank Department of Mitsubishi Goshi in 1917 (Mitsubishi Steel [1985] pp.81-82).

In 1919, Tokyo Steel went into deficit, because of the price decline and large stock of products and raw materials. Although it tided over this distress owing to the

support of Mitsubishi Bank, it came to a deadlock in 1925, because of the damage by the great earthquake in 1923, as well as price decline (*Ibid.*, pp.95-99, p.109; Table 16). In those days, Tokyo Steel, whose paid-in capital was 2,000,000 yen, owed debt of more than 2,000,000 yen to Mitsubishi Bank besides 1,400,000 yen to other creditors. As some of the creditors other than Mitsubishi Bank tried to seizure assets, Tokyo Steel was frequently faced with a bankruptcy (*Ibid.*, p.110).

Under this situation, Koyata Iwasaki, the president of Mitsubishi Bank and Mitsubishi Goshi instructed Takeo Kato, the executive director Mitsubishi Bank, to resolve the Tokyo Steel problem. At Kato's request, six staffs of Mitsubishi Iron Works (Mitsubishi Seitetsu), one of the core affiliated company, investigated into Tokyo Steel. They sent the following report to Mitsubishi Bank:

Tokyo Steel will not recover, unless substantial amount of new fund is invested. However, because its business is indispensable to the industries of Japan, it is a great loss for our nation to let it bankrupt. On the other hand, if substantial amount of new money is invested to make its management go well, it will not go into deficit in future.

Based on the report, Mitsubishi Bank proposed a rescue loan to Tokyo Steel, on the condition that the loan should not used for returning the existing debt. As a result of negotiation, it was agreed that 20% of the debt from the other creditors would be repaid with the rescue loan, and that 80% of it would be cut off.

Mitsubishi Bank did not intend to hold the shares of Tokyo Steel at first. However, because in the process of the rescue operation, the third party tried to take over Tokyo Steel, Mitsubishi Bank added as a condition of the rescue loan that more than half of Tokyo Steel's share should be negotiated to it in order to secure control of the company. Then, Tokyo Steel collected a major part of its share to negotiate Mitsubishi Bank in 1925 (*Ibid.*, pp.112-118).

Table 17 compares the composition of the large shareholders between before the acquisition and after that. While all of the top ten shareholders were individuals, each of whom had 1-5% of the shares before the acquisition, 84.3% of the shares were held by Isaji Endo, who was the chief of the Section of Loan, Mitsubishi Bank, and had been dispatched to Tokyo Steel as an auditor, in 1928. In July 1926, the board of directors was totally reorganized, and all but one directors were occupied by the persons from Mitsubishi Iron Works. The Diary of Mitsubishi Goshi wrote, "Mitsubishi Iron Works took in charge of the management of Tokyo Steel. All of the executives were

selected from Mitsubishi Iron Works, and they started to manage the company in July 31.” (p.7269)

Before the transfer of control to Mitsubishi, Tokyo Steel handed documents concerning its management, including personal affairs, finance and assets etc.. Due to the acquisition, “the organization, rules and office procedures were reformed, and the corporate culture was recast by Mitsubishi color.” (Mitsubishi Steel [1985] pp.119-121). After the acquisition, ROE of Tokyo Steel, which had been below the average of the metal industry, came to be higher than the average. Although ROE fell in the depression from 1929 to 1931, it exceeded the average again in 1930’s (Table 16).

Nihon Flour Mill

Positive effects of the acquisition by zaibatsu on the corporate performance, were observed more clearly in the case of Nihon Flour Mill (Nihon Seifun). Nihon Flour Mill, established in 1896, was a major company of the flour industry, as well as Nisshin Flour Mill (Nisshin Seifun). In early 1920’s, Nihon Flour Mill came to have relation with Suzuki Shoten, a major trading company which rapidly grew during the World War I. It became more and more dependent on Suzuki, as its financial condition got worse (Nihon Flour Mill[1987] pp.37-42). In 1922, Suzuki came to be a top shareholder with 13.1% of the shares (Table 18).

In 1920’s, ROE of Nihon Flour was around 10%, but it was relatively low in the foods industry. Also, it was lower than the rival company, Nisshin Flour Mill (Table 19). Furthermore, failure of wheat speculation in 1924, gave a damage to Nihon Flour Mill. To cope with the situation, it made a merger contract with Nisshin Flour Mill in October 1926, but just after that, Nisshin refused to merge, on the ground that Nihon Flour Mill’s debt were larger than expected. Failure of merger was evaluated as a bad news by the financial market. The stock price of Nihon Flour Mill fell from 54.0 yen in October 1926 to 13.4 yen in January 1927. Also, it came to be difficult for the bills of Nihon Flour Mill to be discounted (*Ibid.*, pp.43-44; Toyo Keizai Shinposha [1928] p.44).

Due to Suzuki’s movement, Taiwan Bank, a public bank which had intimate relation with Suzuki, provided with a rescue loan. Then, Nihon Flour Mill reduced the three quarters of the capital to clear the deficit, and increased the capital again to replace the debt from Suzuki. By this operation, Suzuki’s share of stocks increased to 72.8% (Table 17). At the same time, Komakichi Kubota, the chief of Suzuki’s Tokyo branch was installed as the president of Nihon Flour Mill, and besides it, two directors were dispatched from Suzuki and Taiwan Bank (Nihon Flour Mill[1987] p.45). Nihon Flour Mill started to restructure itself under the control of Suzuki and Taiwan Bank.

However, just after that, by the financial crisis in 1927, Suzuki and Taiwan Bank bankrupted, and the reconstruction scheme of Nihon Flour Mill collapsed. To cope with it, Nihon Flour Mill asked assistance to Mitsui & Co. (Mitsui Bussan), to which it had trade connection. In March 1928, a new board of directors was installed, with Yunosuke Yasukawa, the executive director of Mitsui & Co. as the chairman. Five of the seven directors were affiliated to Mitsui & Co., including Yasukawa, the chairman and Toichi Nakamura, the executive director. At the same time, the shares of Nihon Flour Mill held by Taiwan Bank, were bought by Mitsui & Co. at the price of 25 yen per share. Consequently, Mitsui & Co. came to be a dominant shareholder with more than 60% of shares (Ibid., pp.46-49; Table 18,20).

Under the control of Mitsui & Co., Nihon Flour Mill reformed its organization, concentrating powers to the headquarters, which came to be control procurement, marketing and finance of the whole company. Also, the headquarters' system of monitoring branches was reinforced (Ibid., pp.49-50). After the acquisition by Mitsui & Co., the performance of Nihon Flour Mill was sharply improved. In 1929, ROE went beyond the average of the foods industry, and in 1932 it surpassed that of Nisshin Flour Mill (Table 18). Also, the stock price rose substantially. If we use 76.3 yen of 1935 as a benchmark, it is calibrated the 48,000 shares which Mitsui & Co. had bought in 1928, brought about capital gains of 2,460,000 yen.

NEC

NEC (Nihon Denki) was established by two Japanese engineers jointly with Westinghouse in 1899. Westinghouse held 54 % of NEC shares, which were transferred to International Western Electric (IWE), established by Westinghouse to administrate its affiliated companies abroad in 1918. In 1920, NEC and Westinghouse tied up with Sumitomo Cable Manufacturing (Sumitomo Densen Seizojo) to transfer the patent of the telephone cable. NEC acquired 25% of Sumitomo Cable's shares, and Sumitomo Cable, in turn, acquired 5% of NEC's shares. Also, NEC and Westinghouse dispatched directors to Sumitomo Cable, while Kinkichi Nakata, a director of Sumitomo Goshi, was installed as a director of NEC (NEC[1972] p.107). Consequently, NEC came to be connected with Sumitomo zaibatsu. In 1925, IWE was acquired by International Telephone and Telegraph (ITT) to be International Standard Electric (ISE).

In late 1920's, the tightening policy of the government gave a damage to NEC, which relied on the public procurement of telephone equipment. Furthermore, the "buy Japanese" policy was disadvantageous to NEC, more than half of whose shares were held by a foreign company. To cope with it, ITT and ISE intended to entrust

NEC to a Japanese company. In 1932, ISE and Sumitomo Goshi made a contract as follows. ISE and Sumitomo Goshi exchanged 36,064 shares of NEC and Sumitomo Cable each other. Sumitomo Goshi participated in the management of NEC with ISE. Sumitomo Goshi held the power to appoint NEC's top management. Also, it bore the final responsibility of management policy of NEC, which is continuously notified to ISE (NEC[1972] p.157).

Consequently, the share of ISE fell below 50%, while that of Sumitomo Goshi and Sumitomo Cable rose to 14% (Table 21). At the same time, Sumitomo Goshi appointed Takesaburo Akiyama, its executive director, as the chairman of NEC, and Fumio Shida, the chief engineer of Sumitomo Cable, as the executive director of NEC (NEC[1972] pp.159-160).

After Sumitomo acquired the control of NEC in 1932, its performance was improved. On the other hand, unlike the three above cases, the relative level of ROE compared with the average of electric machinery industry, did not rise (Table 22). However, it is not a counterexample of zaibatsu's governance function for the following reason.

The special condition concerning NEC was a joint-venture with a foreign company. Since 1926, ISE dispatched three directors to NEC, two of whom resided in Tokyo. Personal affairs of the directors should be approved by ISE *ex ante*. The matters beyond the certain scope should be consulted with ISE *ex ante*. ISE executed budget control, and American accountants monthly audited its accounts (NEC[1972] pp.141-142). In other words, NEC had already been intensively monitored by ISE, the company specialized in monitoring affiliated companies abroad, before it came to be monitored by Sumitomo. In this sense, it is natural that the relative level of ROE compared with the average of electric machinery industry, did not rise after 1932.

6. Concluding remarks

Since 19th century, or in some cases since 17th century, zaibatsu accumulated assets and diversified them into various businesses. Expansion and diversification of the businesses caused problems which resulted from asymmetric information, namely adverse selection and moral hazard of the agents who executed the businesses. In order to resolve these problems, zaibatsu introduced organizational innovation. By early 1920's, each zaibatsu established the holding company, while it separated the businesses into joint-stock companies.

The holding company of zaibatsu had the organizations and full-time staffs to monitor the affiliated companies. In many cases, the concerning sections of the

holding company, such as the section of audit, inspection etc., checked the budget and financial data of the affiliated companies, while the matters of the board of directors were approved by the holding company *ex ante* and *ex post*. There existed systematic rules on the allocation of powers between the holding company and the affiliated companies. Also, the holding company frequently dispatched directors to the affiliated companies.

The efficacy of these devices of governance was tested quantitatively. We compared ROE between zaibatsu affiliated firms and non-zaibatsu firms, using panel data of 135 firms from 1922 to 1936. By controlling the effects of company scale, industry-specific shocks, and macro-shocks, we obtained the result that zaibatsu-affiliated firms clearly outperformed the other companies. This result supports the hypothesis that the zaibatsu holding company played the role of monitoring the affiliated companies.

Besides this governance function concerning the affiliated companies, zaibatsu also disciplined the non-affiliated companies in the capital market. As the above case studies indicate, the holding companies and the core affiliated companies frequently executed take over, which contributed to restructure the targeted companies, thorough replacement of the directors, assistance of management.

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Table1 Shares of zaibatsu in terms of paid-in capital

	Total million yen	Total of the nine zaibatsu %	Mitsui %	Mitsubishi %	Sumitomo %	Yasuda %	Furukawa %	Nissan %	Okura %	Nomura %	Asano %
Total	17,655	15.0	3.5	3.3	2.2	1.4	0.4	2.2	0.6	0.3	1.1
Finance	1,640	25.3	4.3	7.7	3.6	8.6	0.1	0.1	0.0	0.9	0.0
Bank	1,419	21.7	4.2	4.4	3.5	8.8	0.1	0.0	0.0	0.7	0.0
Trust	74	43.6	10.1	10.1	6.8	10.1	0.0	0.0	0.0	6.4	0.0
Insurance	147	50.4	2.0	38.7	2.2	6.0	0.0	0.8	0.3	0.3	0.0
Mining	1,453	35.5	11.2	7.4	2.3	0.0	1.0	11.2	1.1	0.0	1.3
Manufacturing	6,049	18.2	3.5	3.6	2.8	0.5	0.9	3.5	0.7	0.2	2.4
Heavy and chemical	3,613	20.6	3.8	4.3	3.8	0.2	1.4	4.4	0.8	0.0	1.9
Metal	912	14.6	1.6	1.4	6.1	0.0	0.1	0.0	0.7	0.0	4.7
Machinery	1,311	27.2	3.1	8.1	3.2	0.5	3.3	5.8	1.3	0.0	1.9
Chemical	1,389	18.3	5.8	2.6	2.8	0.2	0.5	6.0	0.4	0.0	0.0
Light	2,437	14.6	3.2	2.5	1.5	0.9	0.1	2.2	0.6	0.6	3.1
Paper	346	5.6	0.0	2.3	0.0	2.6	0.0	0.0	0.7	0.0	0.0
Ceramics	298	46.6	8.6	11.1	1.8	0.0	0.0	0.0	0.0	0.0	25.1
Textile	1,075	10.3	3.8	0.5	2.8	1.2	0.1	0.0	1.0	1.0	0.0
Food	718	12.1	1.6	2.1	0.0	0.0	0.0	7.4	0.3	0.6	0.0
Electricity and Gas	2,649	3.6	0.4	0.0	0.7	1.9	0.0	0.2	0.0	0.4	0.0
Land Transportation	1,278	6.4	0.6	0.7	3.5	0.6	0.0	0.0	0.8	0.0	0.2
Shipping	476	19.1	0.6	15.6	0.0	0.0	0.0	0.8	0.0	0.0	2.1
Real estate and warehouse	635	21.2	2.0	1.9	9.0	3.2	0.0	0.5	1.4	0.0	3.2
Commerce	2,920	6.0	4.3	0.8	0.0	0.2	0.0	0.0	0.3	0.3	0.2
Others	554	8.4	1.3	0.9	0.2	0.0	0.1	0.3	3.3	1.9	0.4

Source: HCLC[1951].

table2

Table 2 Position of Zaibatsu in the major companies by industry

Industry	Total number of major companies	Number of zaibatsu companies among them
Total	10	3
	30	10
	50	18
	100	38
	200	65
	300	94
Finance		
Bank	10	4
Trust	7	4
Insurance	1	1
Mining	10	8
Manufacturing		
Metal	10	7
Machinery	10	7
Chemical	10	5
Paper	5	2
Ceramics	10	4
Textile	10	2
Food	10	3
Electricity and Gas	10	0
Land Transportation	10	1
Shipping	7	3
Real estate and warehousing	10	6
Commerce	10	4
Others	10	5

Source: HCLC[1951]; Toyokeizai Shinposha ed. Kabushiki Gaisha Nenkan, 1937 issue; Osakaya Shoten ed. Kabushiki Nenkan 1938 issue.

honshaass

Figure 1 Growth of the assets of zaibatsu Holding companies

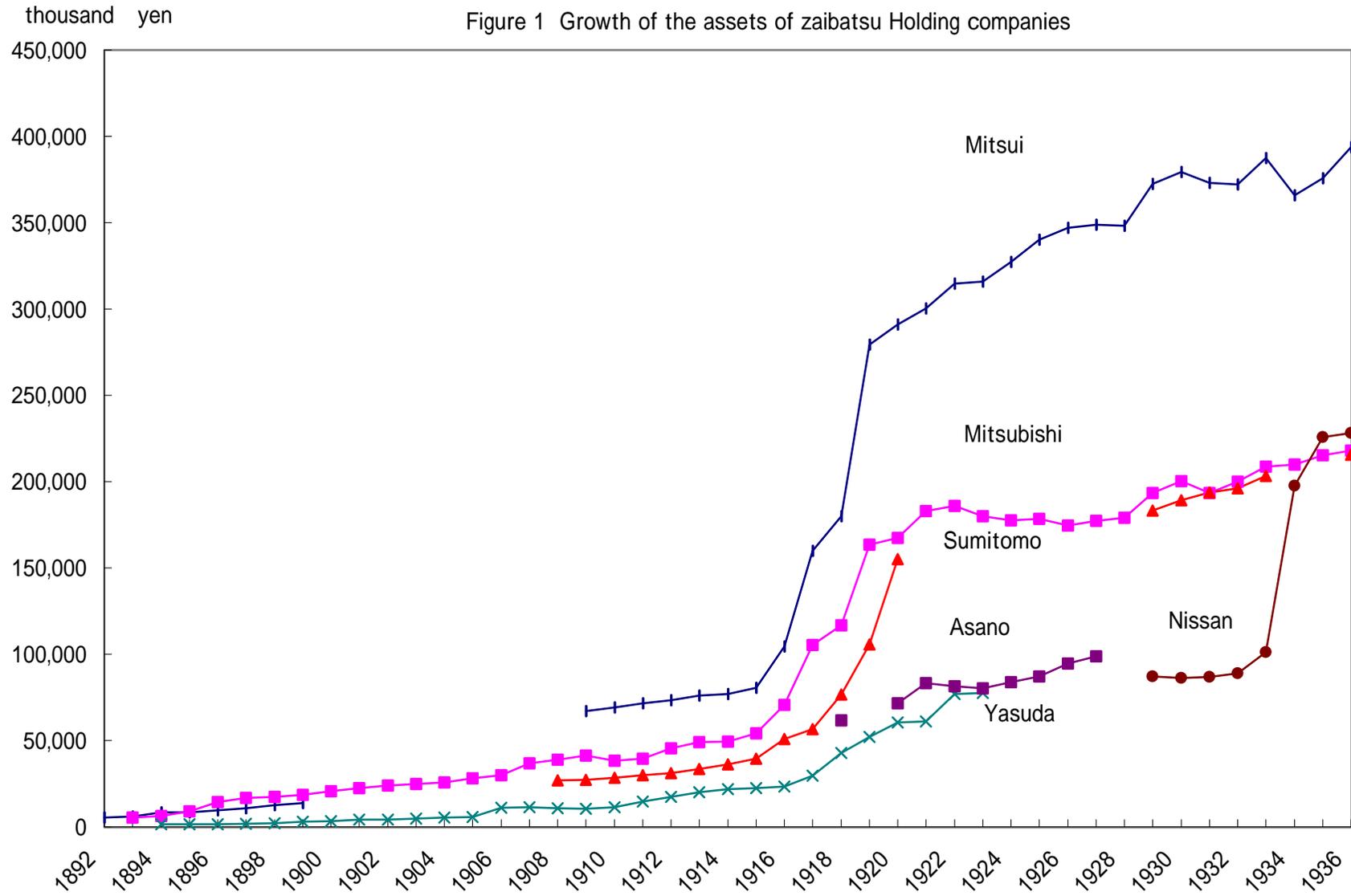


figure2

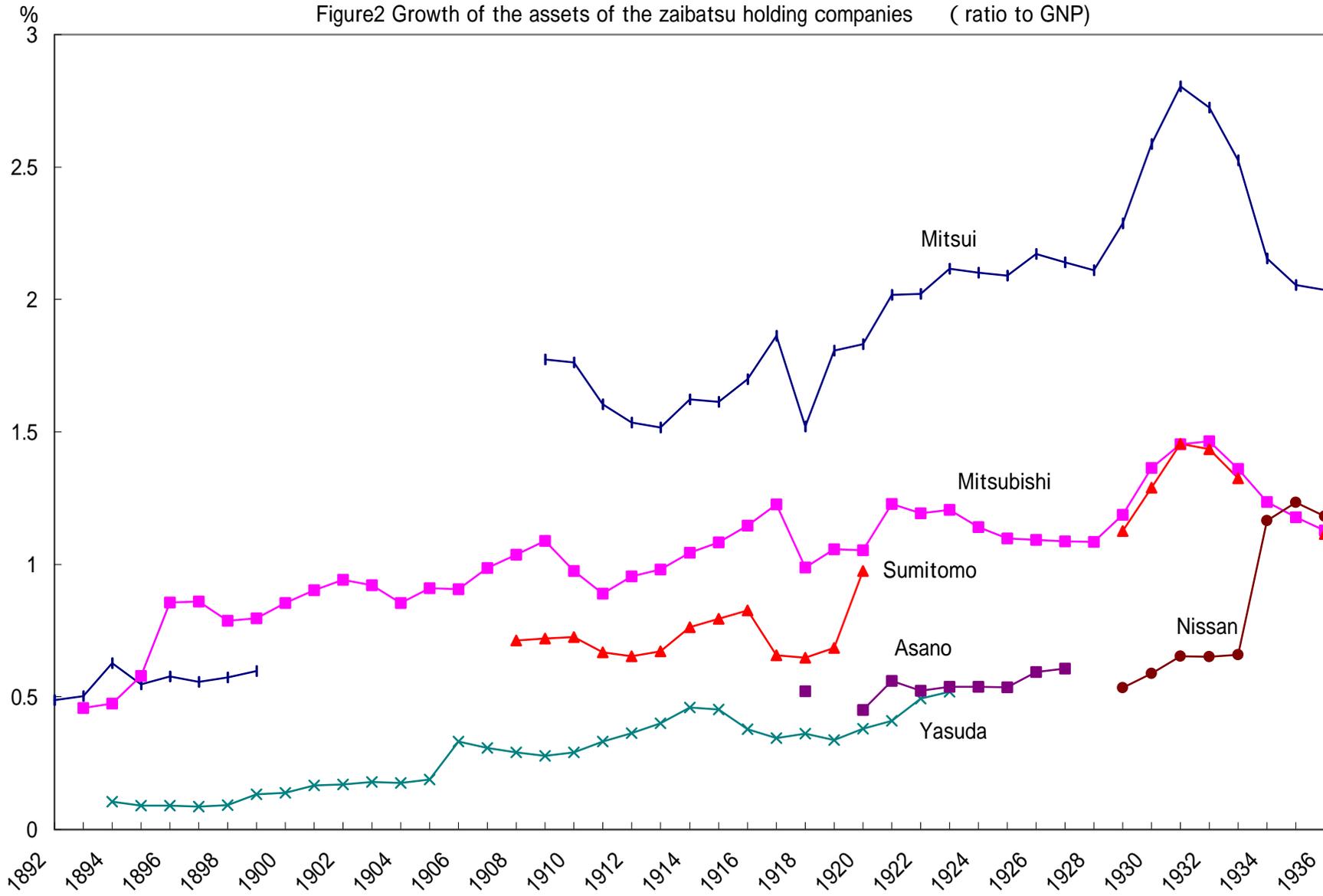


table3

Table 3 Diversification of Mitsui zaibatsu

Major Mitsui companies in 1937	(1)The year of establishment	(2)The year Mitsui started the bussiness
Mitsui Bank	1876	1683
Mitsui & Co.	1876	1874
Mitsui Mining	1907	1874
Toshin Warehouse	1909	1892
Shibaura Manufacturing	1904	1893
Toyo Raw Cotton	1920	1894
Onoda Cement	1881	1897
Hokkaido Coal Mine and Shipping	1889	1899
Nihon Steel Works	1907	1907
Dainihon Celluloid	1919	1908
Toyo High Pressure	1933	1912
Miike Nitrogen Industry	1931	1912
Taiheiyo Coal Mine	1920	1915
Mitsui Trust	1924	1924
Kamaishi Kozan	1924	1924
Mitsui Life Insurance	1927	1926
Toyo Rayon	1926	1926
Nihon Flour Mill	1896	1928

資料 : Wada[1937] ; Yasuoka ed.[1982] ; Matsumoto[1979] ; Mitsui Bunko ed.[1980a,b] ;
History of each company .

table4

Table 4 Diversification of Mitsubishi zaibatsu

Major Mitsubishi companies in 1937	(1)The year of establishment	(2)The year Mitsubishi started the bussiness
Nihon Postal Shipping	1885	1873
Mitsubishi Mining	1918	1873
Tokyo Marine	1878	1878
Mitsubishi Warehouse	1918	1880
Mitsubishi Heavy Industries	1934	1884
Mitsubishi Bank	1919	1885
Tozan Farming	1919	1887
Mitsubishi Paper	1917	1889
Mitsubishi Real Estate	1937	1890
Mitsubishi & Co.	1918	1896
Mitsubishi Marine	1919	1897
Mitsubishi Electric Machinery	1921	1898
Asahi Glass	1907	1907
Kyushu Coal Mine and Shipping	1907	1911
Izuka Mining	1918	1924
Yubetsu Coal Mine and Railways	1919	1924
Tokyo Steel	1917	1926
Mitsubishi Trust	1927	1927
Mitsubishi Petroleum	1931	1931
Nihon Chemical and Synthetic	1934	1934
Mitsubishi Synthetic Oil	1937	1937

Source: Iwai[1937]; Mishima ed.[1981]; History of each Company.

table5

Table 5 Diversification of Sumitomo zaibatsu

Major Sumitomo companies in 1937	(1)The year of establishment	(2)The year Sumitomo started the bussiness
Sumitomo Besshi Mi	1927	1630
Sumitomo Warehous	1899	1873
Sumitomo Bank	1895	1875
Sumitomo Machinery	1934	1889
Sumitomo Coal Mine	1930	1893
Sumitomo Metal Indu	1935	1897
Sumitomo Cable	1897	1897
Sumitomo Chemical	1925	1913
Nihon Sheet Glass	1918	1918
Osaka Northern Port	1919	1919
Shikoku Central Elec	1919	1919
Sumitomo Building	1923	1923
Sumitomo Trust	1925	1925
Sumitomo Life Insur	1907	1925
Kyushu Electricity T	1925	1925
NEC	1899	1932
Sumitomo Alminium	1934	1934

Source: Nishino[1937]; Sakudo ed. [1982].

table6

Table 6 Diversification of Yasuda zaibatsu

Major Yasuda companies in 1937	(1)The year of establishment	(2)The year Yasuda started the bussiness
Yasuda Bank	1880	1864
Yasuda Life Insurance	1900	1880
Teikoku Marine	1893	1893
Teikoku Flax	1907	1890
Tokyo Fire	1887	1893
Yasuda Savings Bank	1896	1896
Tokyo Building	1896	1896
Yasuda & Co.	1899	1896
Shikoku Bank	1896	1907
Oki Electric	1917	1907
Kumamoto Electric	1909	1909
Chugoku Railways	1896	1909
Rinko Warehouse	1919	1919
Nihon Paper Industry	1913	1922
Nihon Chuya Bank	1898	1922
Daisan Bank	1895	1923
Yasuda Trust	1925	1924
Jomo Electric Power	1925	1925
Yasuda Building	1926	1926
Gunma Water Power Elecrtic	1926	1926

Source: Kominato[1938];,Yui ed.[1986]; Editorial Committee of the History of Yasuda Hozensha and Its Relating Businesses ed.[1974]

table7

Table 7 Diversification of Nissan zaibatsu

Major Nissan companies in 1937	(1)The year of establishment	(2)The year Nissan started the bussiness
Nihon Mining	1929	1929
Hitachi Manufacturing	1920	1929
Hitachi Electrtric Power	1927	1929
Nissan Rubber	1934	1929
Kita Karafuto Petroleum	1926	1929
Nissan Automobile	1933	1933
Nihon Fishery	1925	1934
Nihon Chemical Industry	1934	1934
Nihon Fat	1921	1934
Osaka Manufacturing	1913	1934
Nihon Victor	1927	1937

Source: Wada[1937]; Udagawa[1984].

table8

Table 8 Diversification of Asano zaibatsu

Major Asano companies in 1937	(1)The year of establishment	(2)The year Asano started the bussiness
Asano Cement	1913	1883
Iwaki Coal Mine	1883	1883
Toyo Shipping	1896	1896
Nihon Cement	1888	1888
Oki Electric	1912	1907
Tokyo Bay Reclamation	1920	1912
Tsurumi Iron Works and Shipbuilding	1916	1916
Kokura Steel	1918	1918
Asano & Co.	1918	1917
Keihin Canal	1917	1920

Source: Nishinoiri[1937]; Kobayakawa[1980].

Figure 3 Organization of Mitsui Gomei

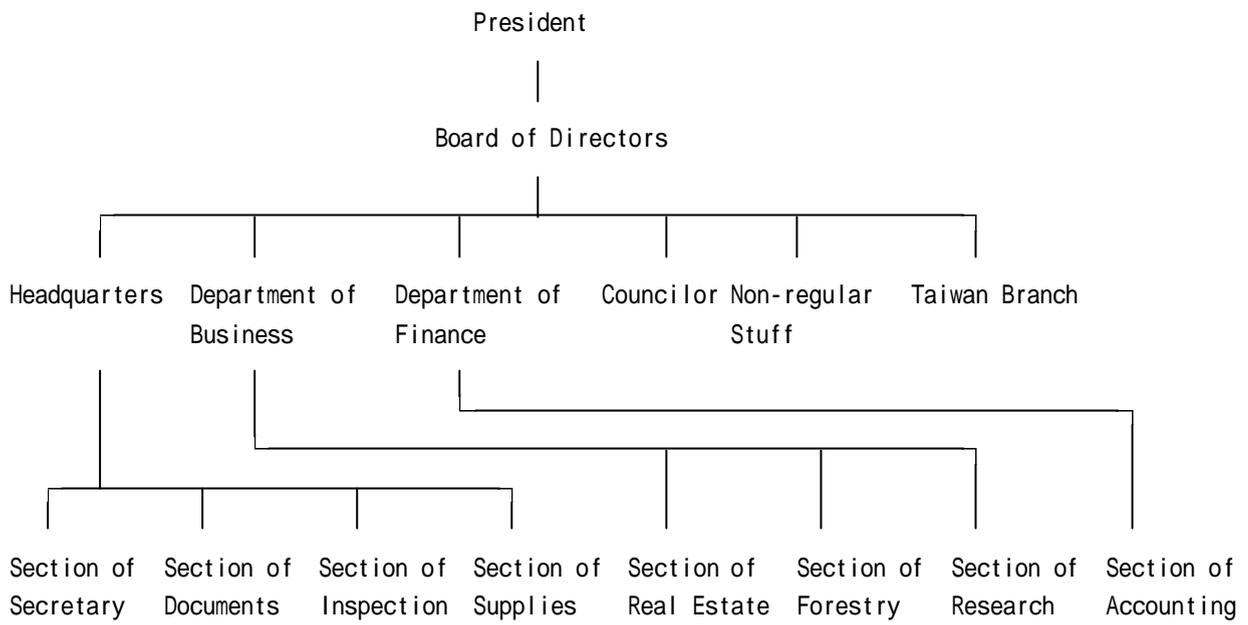
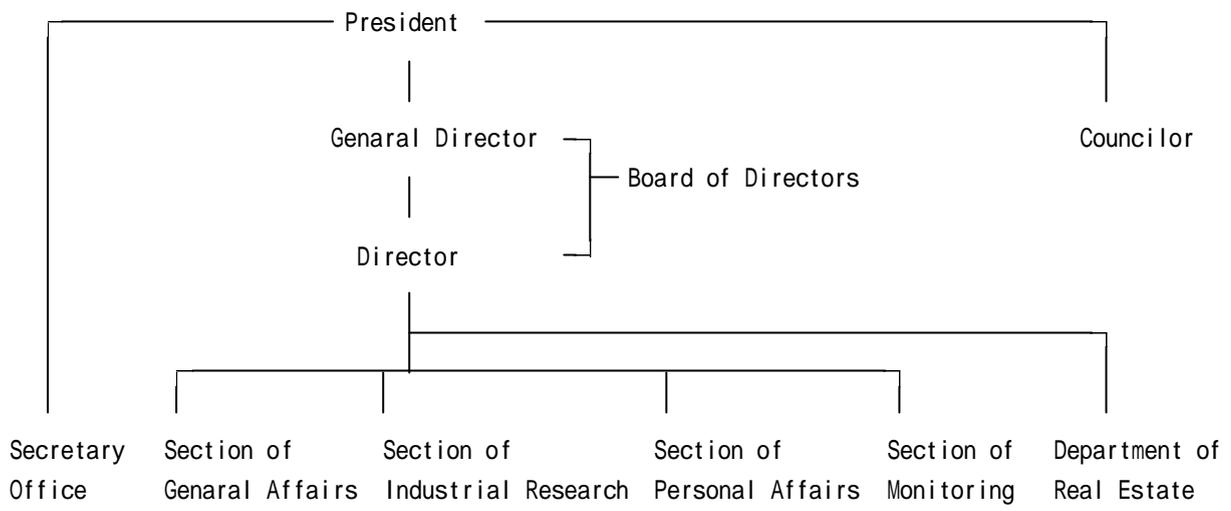


Figure 4 Organization of Mitsubishi Goshi



Source: Mishima ed. [1981] p. 88.

Figure 5 Organization of Sumitomo Goshi

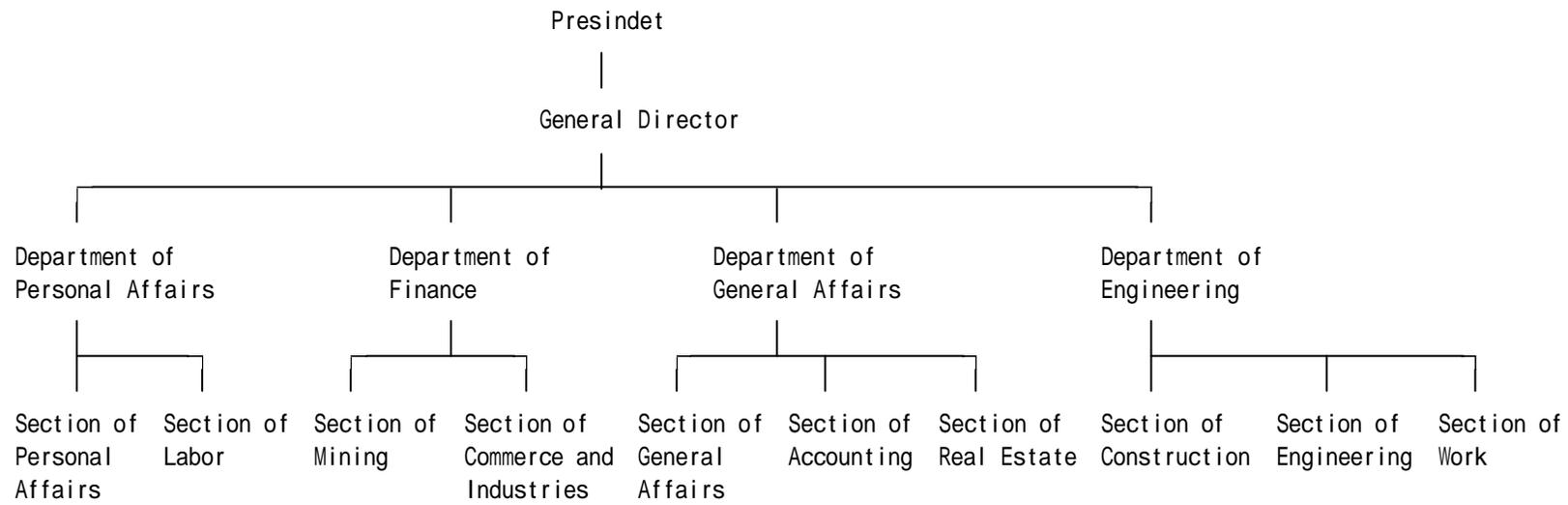


Figure 6 Organization of Nihon Sangyo

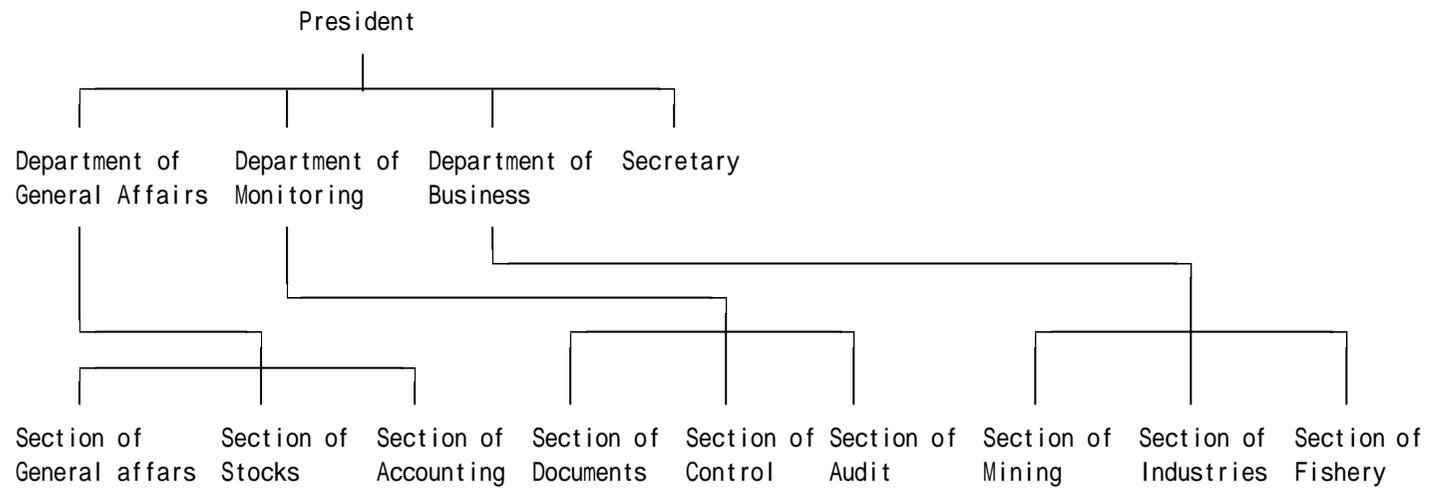


table9

Table 9 ROE of major 135 firms by industry

	Number of firms	Average paid-in capital		Average ROE			
		1922	1936	1922-36	1922-26	1927-31	1932-36
Total	135	19,674	39,799	8.9	10.9	7.0	8.9
Finance	15	27,347	37,281	5.9	11.2	-1.1	7.7
Mining	5	45,025	55,860	6.3	5.5	5.9	7.7
Metal	4	18,906	21,339	4.9	2.2	-3.1	15.5
Machinery	10	19,525	37,315	6.6	10.4	-0.2	9.6
Chemical	6	10,008	31,715	9.9	8.1	8.7	13.1
Paper	1	31,500	187,491	13.1	16.4	11.7	11.4
Ceramics	3	8,704	32,933	10.9	14.6	8.1	10.1
Textile	14	15,420	28,172	11.6	13.5	10.0	11.4
Food	8	19,067	35,785	12.9	15.7	7.8	15.3
Electricity and Gas	33	20,735	60,578	10.7	11.8	11.4	8.9
Land Transportation	21	9,824	24,064	8.3	10.3	8.7	6.0
Shipping	5	31,125	34,475	4.0	5.9	3.5	2.7
Real estate and warehouse	5	32,000	35,350	10.6	14.3	8.4	8.7
Commerce	5	11,500	13,000	5.9	9.3	6.2	2.0

Source: Osakaya Shoten ed. Kabushiki Nenkan, various issues, HCLC[1951]; Business reports of each company

figure7

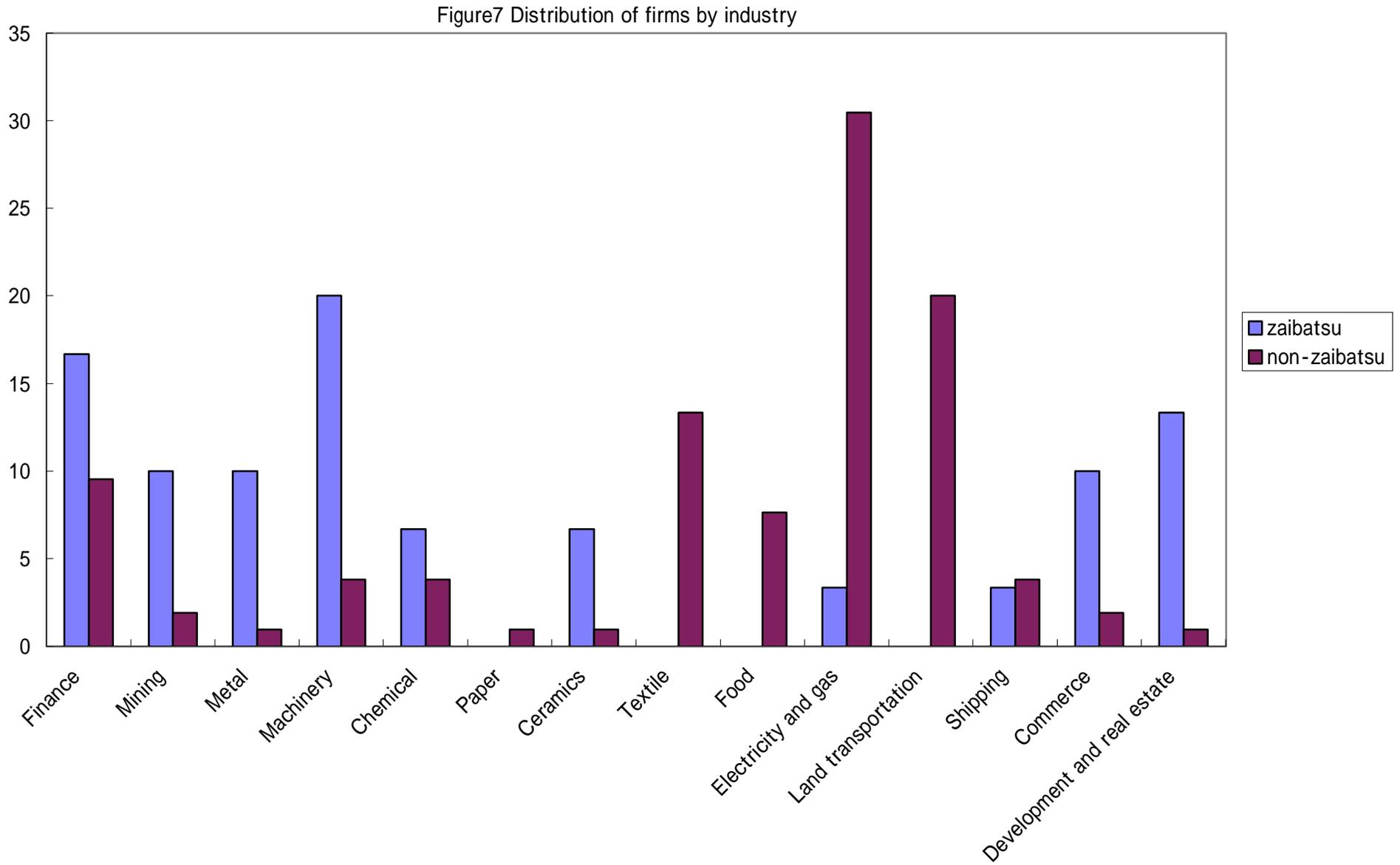


table10

Table 10 ROE of major zaibatsu firms by industry

	Number of firms	Average paid-in capital		Average ROE			
		1922	1936	1922-36	1922-26	1927-31	1932-36
Total	30	25,666	38,654	8.4	10.2	5.7	9.5
Finance	5	37,500	64,050	11.2	13.5	9.5	10.7
Mining	3	54,875	67,433	8.5	6.9	7.6	11.0
Metal	3	20,833	18,333	2.6	2.0	-4.9	10.4
Machinery	6	11,958	27,000	8.2	9.1	4.0	11.4
Chemical	2	8,438	21,250	13.5	14.2	8.1	18.3
Paper	0	...	...	...	...	...	...
Ceramics	2	12,363	44,323	10.6	14.7	8.7	8.4
Textile	0	...	...	...	...	...	...
Food	0	...	...	...	...	...	...
Electricity and Gas	1	14,000	34,687	11.1	13.1	10.8	9.4
Land Transportation	0	...	...	...	...	...	...
Shipping	1	58,000	64,250	3.2	3.7	2.0	4.1
Real estate and warehouse	3	43,333	47,500	9.3	9.3	9.2	9.0
Commerce	4	10,000	11,875	6.1	10.6	6.4	1.1

Source: Osakaya Shoten ed. Kabushiki Nenkan, various issues, HCLC[1951]; Business reports of each company

table11

Table 11 Regression analysis of ROE

	(1)	(2)
Constant	10.559 (7.001) ***	4.310 (1.693) *
CAPITAL	-0.019 (-1.876) *	-0.025 (-2.490) **
ZAIBATSU	-0.233 (-0.257)	3.651 (3.125) ***
INDUSTRY		
Finance		2.386 (1.040)
Mining		2.125 (0.774)
Metal		-0.717 (-0.249)
Machinery		2.194 (0.923)
Chemical		5.919 (2.231) **
Paper		11.635 (2.410) **
Ceramics		5.846 (1.864) *
Textile		8.966 (3.697) ***
Food		10.384 (3.957) ***
Electricity and Gas		8.392 (3.692) ***
Land Transportation		5.532 (2.373) **
Shipping		0.904 (0.321)
Commerce		5.417 (1.985) **
ad-R2	0.0099	0.0311

Notes: 1. Each equation includes year dummies, although not reported.

2. t-values in parentheses

3. *** Significant at 1% level

 ** Significant at 5% level

 * Significant at 10% level

Table 12 Regression analysis of ROE

	1922-26		1927-31		1932-36	
	(1)	(2)	(3)	(4)	(5)	(6)
Constant	9.380 (25.152) ***	2.360 (1.894) *	7.096 (2.814) ***	1.286 (0.204)	9.858 (14.639) ***	0.258 (0.174)
CAPITAL	-0.011 (-2.167) **	-0.019 (-3.665) ***	-0.032 (-1.235)	-0.043 (-1.588)	-0.011 (-1.735) *	-0.016 (-2.709) ***
ZAIBATSU	-0.601 (-1.118)	2.501 (3.706) ***	-1.542 (-0.612)	5.269 (1.618)	1.542 (2.349) **	3.688 (4.784) ***
INDUSTRY						
Finance		5.545 (4.191) ***		-3.719 (-0.513)		7.765 (5.145) ***
Mining		4.309 (2.724) ***		2.141 (0.280)		7.003 (3.880) ***
Metal		3.849 (2.319) **		-9.007 (-1.123)		13.807 (7.294) ***
Machinery		3.619 (2.650) ***		-4.237 (-0.640)		8.636 (5.546) ***
Chemical		8.511 (5.558) ***		5.235 (0.708)		12.987 (7.430) ***
Paper		11.007 (3.940) ***		11.322 (0.845)		13.966 (4.341) ***
Ceramics		5.634 (3.112) ***		3.202 (0.366)		8.863 (4.291) ***
Textile		9.624 (6.877) ***		8.465 (1.252)		12.535 (7.848) ***
Food		9.867 (6.513) ***		6.537 (0.894)		16.556 (9.574) ***
Electricity and Gas		9.038 (6.875) ***		10.657 (1.683) *		10.347 (6.880) ***
Land Transportation		5.620 (4.176) ***		6.971 (1.072)		7.130 (4.642) ***
Shipping		1.006 (0.620)		1.409 (0.180)		3.229 (1.746) *
Commerce		4.522 (2.873) ***		4.115 (0.541)		6.392 (3.560) ***
ad-R2	0.0028	0.1080	0.0004	0.0144	0.0215	0.2250

Notes: 1. Each equation includes year dummies, although not reported.

2. t-values in parentheses

3. *** Significant at 1% level

 ** Significant at 5% level

 * Significant at 10% level

table13

Table 13 Acquisitions by zaibatsu

	The year of acquisition	The year of establishment	The name of zaibatsu
Tokyo Fire	1896	1887	Yasuda
Hokkaido Coal Mine and Shipping	1899	1889	Mitsui
Shikoku Bank	1907	1896	Yasuda
Chugoku Railways	1909	1896	Yasuda
Kyushu Coal Mine and Shipping	1911	1907	Mitsubishi
Keihin Canal	1920	1917	Asano
Nihon Paper Industry	1922	1913	Yasuda
Nihon Chuya Bank	1922	1898	Yasuda
Daisan Bank	1923	1895	Yasuda
Izula Mining	1924	1918	Mitsubishi
Sumitomo Life Insurance	1925	1907	Sumitomo
Tokyo Steel	1926	1917	Mitsubishi
Nihon Flour Mill	1928	1896	Mitsui
NEC	1932	1899	Sumitomo
Nihon Fishery	1934	1925	Nissan
Nihon Fat	1934	1921	Nissan
Osaka Manufacturing	1934	1913	Nissan
Nihon Chemical Industry	1937	1934	Nissan
Nihon Victor	1937	1927	Nissan

Source: Table 3-Table8.

table14

Table 14 Performance of Hinode and Sumitomo Life Insurance

	Amount of Insurance contracts thousand yen	Its growth rate %/year	Difference from the Average of Nihon and Teikoku Life Insurance %/year
1922	21,036	7.2	-3.5
1923	22,032	4.7	-4.3
1924	23,141	5.0	-5.9
1925	26,349	13.9	3.8
1926	35,768	35.7	29.4
1927	50,681	41.7	36.3
1928	74,441	46.9	36.4
1929	98,505	32.3	17.0
1930	119,447	21.3	7.7
1931	142,857	19.6	7.9
1932	169,470	18.6	10.2
1933	215,434	27.1	12.5
1934	272,824	26.6	9.1
1935	357,318	31.0	13.6
1936	462,046	29.3	5.2

Note: The shadow denotes the year of acquisition.

table15

Table 15 New board of directors of Hinode Life Insurance (6/30/1925)

Position	Name	Remark
Executive director	Seiichi Kokubu	Manager of Main Office of Sumitomo Bank
Director	Kinkichi Nakata	General director of Sumitomo Goshi
Director	Yukinobu Fukushima	Ex-president of Hinode Life Insurance
Director	Kankichi Yukawa	Director of Sumitomo Goshi, Executive director of Sumitomo Bank
Director	Shigeyuki Hashimoto	Ex-executive director of Nihon Life Insurance
Director	Masatsune Ogura	Executive director of Sumitomo Goshi
Auditor	Shigetaro Ueno	Auditor of Sumitomo Bank
Auditor	Yoshiharu Yoshida	Director of Sumitomo Goshi
Auditor	Yukio Imamura	Director of Sumitomo Bank
Manager and Chief of Business Department	Shinichi Sakamoto	Ex-vicemanager of Tokyo branch of Sumitomo Goshi

Source: Sumitomo Life Insurance[1977] p.19.

table16

Table 16 Performance of Tokyo Steel

	Paid-in Capita ROE		Difference from
	thousand yen	%/year	the average of the metal %/year
1922	3000	2.1	-5.0
1923	3000	5.5	-0.2
1924	2000	6.6	4.8
1925	2000	-9.5	-8.2
1926	400	-0.5	1.8
1927	400	-0.4	3.8
1928	400	-1.0	0.3
1929	400	0.5	-0.2
1930	400	-14.5	-11.0
1931	400	-84.5	-75.3
1932	400	15.0	5.9
1933	1000	48.5	27.9
1934	2000	40.9	23.3
1935	2000	19.2	3.3
1936	5000	12.4	-2.2

Note: The shadow denotes the year of acquisition.

table17

Table 17 Major shareholders of Tokyo Steel

				%		
1925		1928		1930		
1	Takayoshi Muramatsu	5.3	Isaji Endo	84.3	Mitsubishi Iron Works	80.0
2	Yujiro Hayashiya	2.8	Teijiro Matsuda	1.3	Teijiro Matsuda	6.3
3	Hiroshi Tankei	2.0	Kajishiro Funakoshi	1.3	Kajishiro Funakoshi	1.3
4	Tadashichi Inamoto	1.8	Gyo Kawamura	1.3	Shigemichi Miyoshi	1.3
5	Tokujiro Inamoto	1.8	Nuishiro Fukushima	1.3	Gyo Kawamura	1.3
6	Tadahiro Takeuchi	1.6	Ryosuke Yamazaki	1.3	Nuishiro Fukushima	1.3
7	Shintaro Suzuki	1.6	Kametaro Matsumura	1.3	Ou Fujimura	1.3
8	Yuzo Matsuda	1.6			Kametaro Matsumura	1.3
9	Torashichi Takahashi	1.3			Norio Akutsu	1.3
10	Nagamichi Shibata	1.1			Tokichi Ichikawa	1.3

Source: Tokyo Steel, Shareholders list, 6/1925; Toyo Keizai Shinposha ed. Kabushiki Gaisha Nenkan, 1928 and 1930 issues.

table18

Table 18 Major shareholders of Nihon Flour Mill

				%		
1922		1927		1930		
1	Suzuki Shoten	13.1	Suzuki Shoten	72.8	Mitsui & Co.	60.1
2	Harunosuke Tani	4.1	Katsuji Simokawa	2.0	Chikuhei Nakajima	1.0
3	Ando Kobei Shoten	2.6	Noda Soy Sauce	0.5	Koshiro Nishimura	0.9
4	Hirabei Hirano	2.6	Hisanosuke Matsushita	0.5	Noda Soy Sauce	0.8
5	Seishichi Iwasaki	2.4	Hajime Matsui	0.5	Iwasaki Seishichi Shoten	0.7
6	Kurihara Rice	2.1	Ichizo Onishi	0.4	Toichi Nakamura	0.6
7	Noda Soy Sauce	2.1	Shoichi Kawanishi	0.3	Shinichi Aya	0.5
8	Komakichi Kubota	2.0	Komakichi Kubota	0.3	Yohshihide Ota	0.4
9	Soshiro Okada	1.7	Tokutaro Hara	0.2	Yoshiji Nakajima	0.4
10	Takeshi Takagi	1.4	Denbei Kamiya	0.1	Kiyoji Maruyama	0.4

Source: Toyo Keizai Shinposha ed. Kabushiki Gaisha Nenkan, 1922, 1927 and 1930 issues.

table19

Table 19 Performance of Nihon Flour Mill

	Paid-in capital thousand yen	ROE %/year	Difference from the average of the foods industry %/year	Difference from the average of Nisshin Flour Mill %/year	Stock price yen	Stock price of Nisshin Flour Mill yen
1922	5,625	10.0	-2.7	-11.0	42.7	85.6
1923	6,810	9.2	-7.8	-9.1	40.7	101.8
1924	8,296	13.3	-6.7	-11.8	44.0	99.8
1925	8,390	12.6	-2.9	-8.4	53.6	104.3
1926	10,720	-76.2	-90.6	-91.3	47.8	99.3
1927	11,075	-154.1	-170.5	-168.5	12.7	91.5
1928	11,075	0.5	-1.8	-14.5	...	103.2
1929	3,938	7.6	0.1	-7.7	55.5	88.8
1930	3,938	9.7	3.3	-3.6	40.3	75.5
1931	3,938	11.0	5.7	-0.9	41.9	79.1
1932	3,938	20.2	9.5	8.6	59.0	85.6
1933	3,938	25.2	11.5	12.1	71.2	83.2
1934	5,953	13.1	-2.2	1.0	69.2	78.7
1935	7,969	17.7	-0.1	2.3	76.3	76.8
1936	7,969	15.5	-3.4	0.6	71.6	81.7

Note: The shadow denotes the year of acquisition.

table20

Table 20 New board of directors of Nihon Flour Mill (3/1928)

Position	Name	Remark
Chairman	Yunosuke Yasukawa	Executive director of Mistui & Co.
Executive director	Masanao Kobayashi	Executive director of Mistui & Co.
Executive director	Toichi Nakamura	Ex-chief of the Business Department of Mitsui & Co.
Executive director	Tokichi Hasegawa	Ex-vicechief of the Business Department of Mitsui & Co.
Director	Hiroshi Tanaka	
Director	Shunsuke Yahiro	
Director	Bunzo Tanaka	Director of Mistui & Co.
Auditor	Katsunori Itakura	
Auditor	Hideo Waratani	Ex-stuff of Mitsui & Co.
Auditor	Tokumatsu Mikimoto	Chief of Accounting Section of Mitsui & Co.

Source: Nihon Flour Mill[1987] p.48.

資料：日本製粉[1987]、p.48 .

table21

Table 21 Performance of NEC

	Paid-in Capital ROE		Difference from the average of the machinery %/year	Difference from the average of the electric machinery industry %/year
	thousand yen	%/year		
1924	10,000	24.4	14.3	12.2
1925	10,000	30.2	20.2	18.7
1926	12,500	26.8	17.5	16.8
1927	15,000	20.7	22.8	13.4
1928	15,000	14.7	10.4	6.0
1929	17,500	12.3	4.7	4.9
1930	17,500	7.3	2.4	-1.4
1931	17,500	4.6	4.8	3.1
1932	17,500	4.1	2.1	1.1
1933	12,500	10.5	1.0	-1.7
1934	12,500	12.4	1.2	-2.9
1935	12,500	14.3	-0.5	-3.5
1936	12,500	17.2	2.0	0.1

Note: The shadow denotes the year of acquisition.

table22

Table 22 Major shareholders of NEC

%

	12/1931		12/1932	
1	ISI	58.9	ISI	49.8
2	Mitsui & Co.	5.6	Sumitomo Goshi	9.1
3	Dairoku Cooperation	5.0	Mitsui & Co.	5.5
4	Sumitomo Cable	5.0	Dairoku Cooperation	5.0
5	Daiichi Life Insurance	4.2	Sumitomo Cable	4.8
6	Fymi Maeda	1.7	Daiichi Life Insurance	4.2
7	Mitsui Uchiyama	1.3	Fymi Maeda	1.7
8	Hisahito Masujima	1.3	Mitsui Uchiyama	1.2
9	Michi Kojima	1.3	Hisahito Masujima	1.2
10	Aikoku Life Insurance	1.3	Michi Kojima	1.2

Source: Shareholder List of NEC.