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THE COMPETITIVE CAPABILITIES AND COST OF PREWAR BUSINESS GROUPS

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Abstract

This paper presents an examination of the evolution and economic functions of business groups—often designated as zaibatsu—in prewar Japan. First, after providing an overview of the emergence of prewar business groups, the ownership, organization, and business portfolios of various business group types are summarized. Secondly, four hypotheses related to the competitive capabilities of the business groups are presented and evaluated: the financial role of internal markets, scale and scope of economies, synergy and spillover effects, and effective monitoring of subsidiary firms, based on earlier research that emphasized positive features of business groups. Third, their negative traits are specifically examined, such as entrenchment and tunneling, and over-investment and under-investment. Fourth, results are presented demonstrating how various business groups affect performance. Finally, we provide insights into the commonality and uniqueness of prewar business groups in comparison with postwar business groups in Japan, and with business groups in currently emerging economies.

Keywords: zaibatsu, competitive capabilities, synergy and spillover, sale and scope of economy, internal capital markets, over-and under-investment, entrenchment, tunneling.

JEL classification: G32, N85

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1. INTRODUCTION

The objective of this paper is to examine the evolution and economic function of business groups, often referred to as zaibatsu, in prewar Japan. Japan is the only country outside of Europe and North America to industrialize successfully prior to World War II. During Japan's industrialization process, business groups emerged as a prominent form of corporate organization.

It should be noted, however, that in spite of the prominence of the zaibatsu as economic actors, the share of business groups in the prewar economy was not as high as often assumed. In fact, when compared to business groups in other developing countries such as Korea or Thailand, or even in the U.S. or U.K. in the early twentieth century, and in postwar Japan, where bank-centered business groups were predominant, business groups in prewar Japan had a much lower share of overall economic activity. According to HCLC (1951), the largest nine zaibatsu accounted for 19% of total paid-in capital in 1937, while all business groups accounted for 35% of the largest 100 industrial firms (asset base) in the same year. While the share of business groups in an economy will vary depending on definitions of business groups and dates of estimation, their prewar share was also modest when compared to the shares of their counterparts in current developing economies (Khanna and Yafeh 2007). In prewar Japan, most large firms operated as stand-alone entities, and most of them were listed on the stock exchange. To put it differently, the prewar Japanese economy was not dominated by business groups, and instead was characterized by the co-existence of business groups and stand-alone (independent) firms.[1]

Prewar business groups are defined as a set of legally independent firms that are wholly or partly owned by a holding company or a parent firm. Family or entrepreneurs, sometimes exclusively, owned the holding or parent company, and kept effective control over group firms. The holding or parent company pyramidically (some of subsidiary firms are listed) or hierarchically (most of them are unlisted) organized the multi-tiered subsidiaries, which businesses commonly diversified into multiple sectors[2].

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[1] Refer to Shibagaki (1968), and recent works of Okazaki (1999a, 1999b). Franks, Mayer and Miyajima (2009) also documented the co-existence of business groups and stand-alone firms, focusing on ownership structures.

[2] The term 'hierarchical' is employed here to imply control structure where most of the subsidiaries in a business group are unlisted. Although the term 'hierarchical' normally encompasses pyramidal structures having listed subsidiaries, it has been used here to imply non-pyramidal business groups. This division has been necessary to distinguish groups where control is disproportionate to the ownership.

Sharing these traits, however, prewar business groups showed non-trivial differences. **Figure 1** is a three-dimensional rendering of the differences in the characteristics of the various types of business groups as reflected in three criteria: whether groups have a holding company at the apex or not, whether the apex and group firms are privately or publicly held, and extent of diversification. The size of the balloons for each business group type are of different sizes to reflect differences in the aggregate percentage shares of the assets of the 100 largest firms in 1937 held by the groups and subsidiary firms within each group category.

Insert **Figure 1** about here

The first type of business group (Type I) was comprised of the Three Established zaibatsu (Mitsui, Mitsubishi and Sumitomo). They were family-controlled pyramid groups, with private holding companies at their apex and widely diversified subsidiaries ranging from finance and trading to manufacturing and mining. They held the largest share of the asset of top 100 industrial firms at nearly 19%. Type II business groups consisted of the smaller zaibatsu, which shared traits with Type I such as family ownership and private holding companies at the apex, but their systems of control were less elaborate. Its group structure is hierarchical in some cases, and their level of diversification was much more modest. The Type II business group share of the assets of the top 100 industrial firms dramatically declined during the interwar period to 3.2 % in 1937 from 15.6% in 1921 due to the bankruptcy of some groups. The Type III business groups had publicly held firms at their apex and were led by distinguished entrepreneurs. Among them, Nissan was unique with a publicly held holding company at its apex with pyramid structure (Type IIIa in **Figure 1**). Nissan had widely diversified its businesses even though it did not establish financial and trading firms, and had emerged as the third largest business group in 1937 with a 7% share of the assets of the top 100 industrial firms. Other corporate groups are categorized as Type IIIb groups because they shared with Nissan features such as entrepreneurial founders and public ownership but did not have a holding company at their apex. Type IIIb business groups attempted only limited diversification, primarily vertically at high tech sectors, and thus were often referred to as industrial business groups (establishing a model for the postwar vertical keiretsu).[3] Most Type I and II groups can trace their

[3] Among them were the local zaibatsu, whose business coverage was limited to a specific geographical area. See Morikawa (1976) for a more detailed description.

beginnings to the mass privatization drive of the mid-1880s, while Type III groups emerged or expanded in the 1930s against the backdrop of the stock market boom.

Focusing on the Established Three zaibatsu and Nissan, this paper examines how business groups in prewar Japan evolved, and what functions they served. To support our analysis, we constructed a micro data base on ownership, capital composition, and performance for the prewar period. It is comprised of the 159 manufacturing and mining firms that appeared on the list of the top 100 firms at least once during 1921, 1928, and 1937.

The next section provides an overview of the emergence of prewar business groups. Section 3 summarizes the ownership, organization, and business portfolios of the various business group types. Section 4 addresses the competitive capabilities of business groups, addressing the hypothesis put forth in earlier research that emphasizes the positive features of business groups: scale and scope of economies, synergy and spillover effects, financial role of internal markets, and effective monitoring of subsidiary firms. Section 5 examines their negatives traits including phenomena such as entrenchment and tunneling, and over- and under-investment. Section 6 shows how the various types of business groups affect performance. In the last section, we provide insights on the commonality and uniqueness by prewar business groups with postwar business groups in Japan, and business groups in currently emerging economies as well.

2. EMERGENCE AND EVOLUTION OF BUSINESS GROUPS

In contrast to the postwar Japanese economy, the prewar Japanese economy was basically liberal and open from the time of the establishment of a modern capitalist system in the Meiji period. Tariffs were generally set very low due partly to the unequal treaties with the developed countries (Japan did not acquire full tariff autonomy until 1911), and partly to a careful consideration of the benefits of trade. Up to the early 1930s, there were few restrictions on inflows and outflows of capital, and foreign direct investment played a crucial role especially in the high-tech area. A legal framework for corporations had been established and property rights were well protected, but economic activities were only loosely regulated, and there were no regulations explicitly governing the shareholding of firms and banks. A modern corporate law was enacted in 1899, modeled after German civil law. An application of the recent law and finance framework (La Porta et al. 1998) will show that investor protections earn a low score of only one out of a maximum score of six (Franks, Mayer and Miyajima 2009). Given the relatively liberal economic environment, and limited investor protections, business groups and publicly held stand-alone firms chose to

organize themselves in a variety of ways. Let us begin with a brief overview of the events that are signposts in the evolution of business groups in Japan (outlined in **Table 1**).

Insert **Table 1** about here

2.1. Establishment and Spurt: Privatization of state-owned firms

Many business groups in prewar Japan can trace their origins to the mass privatization drive that was implemented in the mid-1880s. The new modern factories and facilities that the Meiji government established after the Meiji Restoration frequently encountered operational difficulties and financial troubles. Minister of Finance, Masayoshi Matsukata, decided to sell off state-owned enterprises in almost all areas except munitions. As a result, coal and metal mining companies, machinery manufacturers, and shipbuilding and textiles firms were transferred into private hands. By 1896, the state had privatized 26 large SOEs.

The buyers were wealthy families such as the Mitsui, and emerging entrepreneurs such as Iwasaki (later Mitsubishi), Yasuda, Asano, Furukawa and others. These firms were purchased at prices much lower than their book values.[4] But this was not surprising because many of the SOEs had performed poorly, and operated at a loss. The families and entrepreneurs that acquired the former SOEs succeeded in bringing them into the black through transfers of business know-how and management skills. As a result of the state's sell-off of SOEs, the zaibatsu acquired enterprises that later became cash cows. Mitsui, for example, bought Miike Mining, which became one of its core businesses during its early growth stages, while Mitsubishi acquired Nagasaki Shipyard, and the Takashima and other mining operations, all of which became major profit centers.

2.2. Industrialization and the World War I boom (1890-1919)

Japan began its modern economic growth around the turn of the century.[5] The Three Established zaibatsu -- Mitsui, Mitsubishi, and Sumitomo -- continued to grow as they

[4] Mitsubishi (Iwasaki) bought Nagasaki Shipbuilding, whose book value was 1,130,949 yen, for 459,000 yen. See Morck and Nakamura (2008) and Kobayashi (1977) for more details. Sumitomo was reluctant to purchase SOEs because it was wary of the political risks.

[5] There is a broad consensus among Japanese economic historians that Japan's industrial revolution began sometime between the 1890s and 1900s. Rostow (1956) also suggests that the Japanese economy's takeoff into modern economic growth began by 1900 and by 1914 at the latest.

entered their next phase of development. Mitsui, whose core businesses were originally in mining, trading, and banking, diversified into businesses ranging from paper to textiles, with the Mitsui Bank playing a leading role. In 1895, Mitsubishi added banking to its business portfolio by merging local banks, and it built a vast business group that encompassed a wide variety of businesses ranging from mining and shipbuilding to finance. The Sumitomo zaibatsu, whose core businesses were copper mining (Besshi Copper Mining) and banking, began to expand through diversification into related businesses. Sumitomo acquired downstream industries such as copper refiners, processors, and smelters. In this phase, mergers and acquisitions played a central role in growth strategies, and the three zaibatsu grew steadily. In our rough estimation, the total assets of the three zaibatsu in 1914, prior to the outbreak of WWI, accounted for 18.3% of the aggregate assets of the top 100 industrial firms.[6]

As a result of active diversification, the three zaibatsu gradually devised their own group structures, and thus established. Motivated by the tax reform instituted during the Russo-Japanese War (that made the joint stock company preferable to other forms in corporate tax, while the received dividend of firms continue to be tax exemption), Mitsui, the largest business group at the time, chose to incorporate its headquarters (Mitsui Omotokata) into a holding company in the legal form of a partnership with limited liabilities, and its first-tier firms into joint stock companies in 1909. Mitsubishi followed this organizational innovation in 1918 by spinning off its multi-divisional units, while Sumitomo established its holding company in 1921 and spun off its in-house divisions in stages. Other second-rank family groups also established holding companies in 1917 and 1920. (see **Table 1**)

The industrialization process, which was initially driven by the textile, railway, and electricity industries, was given an added fillip with the establishment of heavy industries after the Russo-Japanese War (1904-1905). Following in the footsteps of the Three Established zaibatsu and other family business groups, a second generation of entrepreneurs emerged during this new incorporation boom. Suzuki Shoten, which was originally established as a sugar merchant, gradually enlarged its business. Nippon Chisso (a chemical firm), and Kuhara Mining, the forerunner of the later Nissan group, were also established in the early 1900s. World War I provided a big boost to the new entrepreneurial firms, enabling them to further expand their business networks.

[6] In 1914 Mitsui Gomei had total assets of 78 million yen, Mitsubishi Goshi 49 million yen, and Sumitomo 41 million yen. The assets of their three holding companies were added to the denominator. Note that since the assets of holding companies include non-manufacturing businesses, this share is not strictly comparable to the data in **Table 2.**

Particularly active were Suzuki, Kuhara, and Kawasaki, which are often referred to as the "Taisho" (the name of an era from 1912 to 1926) zaibatsu. Suzuki, for example, expanded into shipping, iron and steel, and synthetic fiber (Teikoku Jinken Co.), utilizing its huge profits from wartime trading. By 1920, the Suzuki group was almost as large as Mitsui. Kuhara Mining newly entered into trading (Kuhara Trading Co), shipping (Nippon Kisen) and shipbuilding (Osaka Iron Works), while the Kuhara group incorporated and spun off its former in-house electric machine division (Hitachi Seisaku-jo). **Table 2** shows the number of group firms and group-firm percentage shares of the assets of the top 100 firms in the mining and manufacturing sectors in 1921. The Three Established Zaibatsu had nine firms among the top 100 industrial firms, which accounted for 18.8% of the total assets of the top 100, while other types of groups had 13 firms, and accounted for a share of 21.3% of top 100 total assets.

Insert **Table 2** about here

2.3. Interwar period: the stable growth of Three Established zaibatsu and the emergence of new zaibatsu (1920-1937)

The post WWI boom ended in March 1920, after which the Japanese economy entered into a deflationary period that continued for more than a decade and exerted severe pressure on some family-controlled groups. Suzuki Shoten and Kawasaki Shipbuilding had been highly dependent on leverage for their growth during WWI, and were hit hard by the economic shock of declining prices and shrinking demand. In 1927, both companies faced serious financial distress and had to be reconstructed under bank control. The family owners were forced to retire, and Suzuki Gomei was dissolved. As a result, the share of Type II groups declined from 15.6% in 1921 to 3.2 % in 1937.

By contrast, the Three Established zaibatsu adhered to a conservative strategy during the deflationary period, and adapted their businesses to shrinking demand by rationalizing their businesses and balance sheets. While the diversification of the Established Three into manufacturing slowed, they newly entered into other areas of finance including the trust business and insurance (Hashimoto and Takeda 1992: chap.2).

After the gold standard was abolished in December 1931, the Japanese economy rebounded more rapidly than most other countries that were experiencing the Great Depression. Low interest rates, government fiscal policy, the Manchuria Incident, and a stock market boom contributed to the early economic recovery. This stock market boom was exceptional, bucking the global trend of depressed stock markets (Rajan and

Zingales 2003). Taking advantage of this economic boom, the Three Established zaibatsu began to turn to external funds for financing in the 1930s, and took their first- and second-tier subsidiary firms public.

But the Type III groups led by new entrepreneurs were even more aggressive in utilizing these favorable macroeconomic conditions. Nissan, Nippon Soda, and Nippon Chisso came to be known as the “new” zaibatsu. Their talented entrepreneurs made the decision to expand into high-tech sectors such as electronics, chemical, and aluminum. They enlarged their businesses very rapidly through IPOs, new seasoned issues, and mergers and acquisitions through exchanges of stock that was highly valued by the stock market. Their growth could indeed be described as stock market driven. The share of Type III groups increased from 5.7% in 1921 to 13.6% in 1937.

2.4. Expansion of business groups during wartime (1937-1945)

The growth of business groups was accelerated by the wartime planned economy, which triggered a decentralization of their governance structure. The war had a twofold impact on the evolution of business groups. First, government policy influenced the organization and strategy of business groups. Some reformist military officers and government officials were highly critical of shareholders in general, and zaibatsu families in particular. The enactment of the State Mobilization Law in 1938 enabled the government to intervene in important corporate decisions. The government used the new law to restrict dividend payments and compensation at firms from 1939. The Munitions Company Law in 1943 made it possible for government to appoint the CEO of designated companies, and suspend the decision-making of general shareholder meetings if necessary. These procedures gradually restricted the ability of families to exercise effective control over their subsidiary firms (Okazaki 1999a; Hoshi and Kashyap 2001; Miyajima 2004: chap. 6).

Second, although anti-zaibatsu sentiment was widespread, wartime realities were such that the economy could not operate smoothly without the active involvement of zaibatsu-affiliated firms. Consequently, resource allocation by the planning agency tended to give priority to the zaibatsu-affiliated firms, especially from 1939. On the other hand, firms had a strong incentive to organize their own networks because the supply of materials was increasingly constrained, and their systems for distributing resources were far more efficient. The planned economy provided an advantage to internal transactions (within groups) and placed external transactions (through distribution agencies) at a disadvantage, and thus served to promote a slew of mergers

and acquisitions, and alliances with other firms (Hashimoto and Takeda 1992; chap. 3; Miyajima 2004: chap. 6).

Consequently, business groups increased their share of the economy. Firms affiliated with the Three Established zaibatsu firms accounted for 25.6% of the assets of the top 100 firms in 1942, while the other types of groups also grew rapidly (**Table 2)**[7]. The new Type **III** business groups, whose main businesses were closely tied to wartime demand, also expanded, and strengthened their vertical group networks. Along with existing business groups, other entrepreneur firms (Matsushita Electronics and Toyota Automobile) and managerial firms (Nippon Iron and Steel, Kanegafuchi Spinning) also began to organize vertical networks. Further, zaibatsu-affiliated firms (first- and second-tier firms) also organized their own vertical organizations. For instance, Hitachi, which was a first-tier firm of Nissan, set up its own vertical group network with its main supplier (Shimotani 1993).

Postwar reforms initiated by the General Headquarters (GHQ) of the Supreme Commander of the Allied Powers targeted these expanded business groups. As its main targets, GHQ designated 56 families of 10 zaibatsu as well as 83 holding companies, which included 23 pure holding companies and 60 business enterprises with holding company traits. The designated families, holding companies and zaibatsu line firms were mandated to transfer their stockholdings to the Holding Companies Liquidation Committee, which liquidated them in sales to the public with strict priority rules. GHQ also dissolved pure holding companies, and banned their future establishment (Article 9 of Anti-trust Law). By GHQ's order, the incumbent top managers who were appointed by designated holding companies (so-called zaibatsu appointees) were thoroughly purged from the business world. Subsequently, young salaried managers were promoted from within the firms to take over their positions. Thus, these postwar reforms gave rise to a highly dispersed ownership structure with insider boards (Hadley 1970; Miyajima 1994).

3. STRUCTURE AND STRATEGY

3.1. Ownership, Capital Composition and Governance

Three Established Zaibatsu: Concentrated Ownership, Low Leverage, and Strict monitoring

[7] At war's end, the four largest and ten largest zaibatsu accounted for 25%, and 35% of paid-in capital respectively (Hoshi and Kashyap 2001: 69; Hadley 1970).

The three established family-controlled groups had similar ownership, capitaland organizational structures. To illustrate how they were organized, we will examine the structure of Mitsui, the largest zaibatsu.

The Three Established Zaibatsu had a holding company, organized in the form of a partnership, at its apex. Mitsui Gomei in 1909 took the form of a partnership with unlimited liability, while Mitsubishi Goshi followed in 1918 and Sumitomo Goshi followed in 1921 by forming partnerships with limited liability. The partnerships were comprised exclusively of members of the controlling families. In the Mitsui group, eleven families jointly held the shares of Mitsui Gomei and were not allowed to sell them. The partnership form was maintained until the inheritance and dividend income tax was revised in 1937, inducing the group to reorganize its partnership into a joint stock company.[8] In spite of the dominance of family members on the board of directors of the holding company, the Established Three Zaibatsu delegated professional managers (riji) to run their holding companies[9]. The members of its professional board of directors were usually recruited from its first-tier subsidiaries (Bank, Trading Co. and Mining), so that they had sufficient knowledge of subsidiary operations.

The ownership structure of the subsidiary was designed to ensure that it remained under the exclusive control of the holding company. Banks and other financial institutions were the exception, however. The controlling families were aware of the quasi-public traits of such companies, and thus allowed them to go public at an early stage. However, the other manufacturing and mining firms that were spun off in the 1910s and 1920s were initially exclusively owned by their holding companies. These firms did not go public until the 1930s, and even then the holding companies carefully maintained majority control through cross-shareholdings among group firms. On the 13 firms of Type I groups, the average percentage share held by the largest shareholder (C1), which is in fact identical to the share held by holding company, was 65.5% in 1928 and 40.0 % in 1937 respectively (**Table 3, panel A**). The cumulative share held by the five largest shareholders (C5) accounted for 83.1% of all shares in 1928 and still 60.7% in 1937. As long as group firms of the Big Three were less reliant on financing from the public, the wedge between control rights and cash flow rights remained relatively small.

[8] See Morck and Nakamura (2005) for a brief summary and Morikawa (1992) for a detailed description. The Mitsubishi holding company raised capital from the public for the first time in 1940.

[9] This delegation could be traced back to the early Edo period (17th century) for Mitsui and Sumitomo.

Looking at their capital structure of the first-tier firms in the Three Established Three, they relied on a low level of leveraging. The families of the three zaibatsu had a strong preference for a healthy capital composition, so the average debt- asset ratio of group firms was significantly lower than that of stand-alone firms (**Table 3, panel B**). The average debt-asset ratio of the 14 first- and second-tier firms of the Three Established Zaibatsu (Type I) from 1921-37 was 32.7%, which was comparable to the 36.1% of stand-alone firms, but considerably lower than the 46% plus for firms in Type II groups. **Panel C** shows the estimation results which regressed the debt-asset ratio for the top 100 firms on some control variables (size, capital intensity, year dummy) and a zaibatsu dummy to avoid possible bias from unconditional comparison. We find that the Type I (the Established Three) group dummy is significantly negative, and the estimated coefficient suggests that their debt-asset ratio is 5.5% lower than that of stand-alone firms. This result suggests that the characteristics of business groups affected their capital decisions.

Insert **Table 3** about here

Given these ownership and capital structures, the corporate governance of the Three Established Zaibatsu was characterized by the strict monitoring of subsidiary firms by the holding company. Applying standard terminology of agency theory, we can describe the investment projects of each subsidiary as being initiated by professional managers, whose proposed projects were then ratified by the holding company after weighing the financial implications. After obtaining ratification by the holding company, the top management of the first-tier firms implemented the investment projects. The holding company would then evaluate the performance of the projects, and take necessary action if its performance were substantially lower than originally planned.

We would like to point out two aspects of the relationship between holding company and subsidiaries. On the one hand, the top managers of each subsidiary were guaranteed a greater degree of autonomy compared to that afforded in their former multi-divisional organizations. By providing legal status to the former divisions, their discretion (in the sense of Burkart, Grambo and Panunzi 1997) as salaried managers was substantially enhanced.

On the other hand, however, ratification by the holding company was not a mere rubber stamp, but a substantive process. On occasion, the holding company overruled or modified projects proposed by professional managers, as was the case with Sumitomo Fertilizer's plans to enter into the ammonia/nitrogen fertilizer sector in the late 1920s. The top management of this company initiated an adventurous investment plan with an

eye to economies of scale. However, its holding company, Sumitomo Goshi, strictly vetted the plan, and encouraged Fertilizer to modify it to reduce the technological risks. The plan that was ultimately implemented was based upon the introduction of technology from a foreign partner with cost that far exceeded the original budget, so the holding company criticized the top manager of Fertilizer, and finally dismissed him. Sumitomo Goshi did not approve subsequent investment plans during the Showa depression either, insisting that any investments should be suspended under such uncertain conditions (Hashimoto and Takeda 1992: 120; Miyajima 2004: 187). This example shows that real authority, as this concept is used by Aghion and Tirole (1997) , was wielded by the holding company.

As illustrated by the above example, the main tools for wielding control over first-tier firms were personnel appointments, and the allocation of financial resources. The CEO of the first-tier firm was appointed by the holding company, and often rotated among subsidiary firms. Personnel management was fully centralized in the Established Three.[10] On the other hand, the holding company also exercised strict financial control over affiliated firms. Budgets, settlements, and dividend payments required ratification from the holding company. Affiliated firms were also required to submit detailed financial statements to the holding company every half year. Investment plans that exceeded internal funding capacity required ratification by the holding company, so the top management of the first-tier firms did not have autonomy over capital decisions. Furthermore, it is documented that at Mitsubishi, temporal surpluses associated with operations were deposited at the holding company during the 1920s (Asajima 1983). Such strict financial controls may have enabled the holding company to mitigate the free cash flow problem at subsidiary firms.

Nissan and other Groups

Unlike the Three Established Zaibatsu (Type I), the medium-sized family groups (Type II) did not have well-organized holding companies, and were less likely to delegate professional managers to operate group firms. Since these families had a strong incentive to maintain at least a controlling majority over their subsidiaries, they tended to raise funds through external sources in the form of debt, consequently, their organizational structure is sometimes hierarchical rather pyramidical (see **Table 4**).

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[10] Refer to Morikawa (1980) for Mitsui, Asajima (1983) for Mitsubishi, and Asajima, eds. (1987) for the Three Zaibatsu. Miyajima (2004, chap 4) also provides a brief description. Kawamoto and Miyajima (2008) show that the turnover of presidents of zaibatsu firms was less sensitive to corporate performance compared to stand-alone firms, suggesting that holding companies rotated top managers among their group firms.

Panel B of **Table 3** shows that the debt-asset ratio of Type II firms was significantly higher than that of Type I and stand-alone firms.

Nissan was a unique business group in prewar Japan because the holding company at its apex was publicly held, and it had a highly dispersed ownership structure. Kuhara Mining, the forerunner of Nissan, already had 14,277 shareholders in 1921 with a C3 of 31.1%. In 1926, Kuhara Mining faced financial difficulties due to failed speculation in a trading business that was newly established during WWI. Fusanosuke Kuhara asked his brother-in-law, Yoshisuke Ayukawa, to take over as CEO of this company. His basic scheme for drastic corporate restructuring was to newly establish Nippon Mining as the operating company and to transfer Kuhara Mining's fixed assets to Nippon Mining through exchange of stock. Kuhara Mining, which had now become a pure holding company, changed its name to Nippon Sangyo (Nissan is its abbreviation).

Ayukawa had a clear strategy that viewed the holding company as a vehicle for raising money from public investors.(Ayukawa 1934) Nissan group, whose size was modest at the end of 1920s, grew rapidly through M&A and IPOs in the 1930s, in tandem with the stock market boom. In 1932, Nissan decided to hold IPOs for its subsidiaries (Hitachi, and Nippon Mining), while Nissan itself also issued new stock for the purpose of investing in existing subsidiaries and acquiring firms in new areas such as foods, chemicals, and fisheries. (Wada 1937; Udagawa 1984).

As a result, the ownership structure of Nissan in 1937 was completely dispersed with 51,804 shareholders, and C3 of 5.6%, while Ayukawa held only 3.1% of Nissan shares. Nissan as a holding company had a majority stake in its first-tier firms, which in turn held a controlling majority in the second-tier firms. In this sense, the Nissan group was publicly financed and its pyramid structure was accompanied by a large wedge between control rights and cash flow rights (Morck and Nakamura 2005). Nissan exercised less control over subsidiary firms and had a more decentralized structure than the Three Established Zaibatsu.

3.2. Group Structure and Business Portfolio

Three Established Zaibatsu

Table 4 illustrates group structure and the business portfolios of groups 1937. Taking pyramid structure, the Three Established Zaibatsu diversified into almost all sectors except textiles. They commonly had influential banks, insurance companies, and mining firms in their first tier. Mitsui and Mitsubishi group also had their general trading

firms.[11] These first-tier firms formed the core of each group, and were highly profitable and cash cows for most of the prewar period. Obviously, the banking, trading, and mining companies operated in unrelated sectors, so diversification contributed to the stabilization of zaibatsu profitability as a whole.

On the other hand, however, once these first-tier core companies were curved out around the time of WWI, they become main drivers of further diversification. For instance, one of the most active players was general treading company, Mitsui & Co., which founded a shipbuilding company in 1917, purchased an iron and steel firm in 1924, and established Toyo Rayon to enter into synthetic textiles. In 1937, Mitsui & Co. held a majority stake in 22 subsidiaries and held 76.3 million yen in securities which was accounted for 13.9 % of total assets (Mitsui Bunko 1994; HCLC 1951).

Insert **Table 4** about here

After WWI, the first-tier firms diversified mainly into related fields, and did so through internal growth, and not through M&A. For instance, the mining companies of the Big Three Zaibatsu diversified into chemicals (dyestuffs or fertilizers) using their knowledge of coal mining, and spun off companies. Mitsubishi Shipbuilding curved out its former in-house electric machine division in an alliance with Westinghouse, and entered into the aviation sector, using its engine technology. In the 1920s, the Three Established Zaibatsu hardly ever merged with or acquired other firms, except when they were involved in restructuring efforts. The low level of M&A activity can be attributed to the limited supply of potential targets in the new high-tech industries, and concerns about the organizational costs associated with mergers and acquisitions. The zaibatsu firms had elaborate promotion and training systems, which enabled them to gradually accumulate organizational assets, so they may have been reluctant to acquire other firms which could bring high adjustment costs.

Nissan and other groups

In both smaller family groups (Type II) and new business groups (Type III), taking either pyramidical and hierarchical structure of group firms, the scope of diversification was relatively narrow as shown in **Table 4**. Some business groups diversified primarily into finance (Yasuda), and the others (Suzuki, Kawasaki and Nippon Chisso) did not have their own financial institutions, although some (Furukawa and Asano) had

[11] Sumitomo had its sales division within its holding company, which was spun off during the postwar zaibatsu dissolution program.

entered into these businesses only to fail. Furukawa diversified its business from copper into wiring and electronics. Kawasaki newly entered into iron and steel, and aviation using its windfall earnings during WWI. In all these cases, the diversification was directed toward related areas.

Among the Type II and III groups, Nissan was unique in its decision to adopt an unrelated diversification strategy. Ayukawa thought that one of the advantages of establishing a holding company system was the ability to stabilize profits (Ayukawa 1934; Morck and Nakamura 2008). He also strongly believed that businesses which catered to the lifestyles of the expanding growing middle class had tremendous potential. His belief prompted Nissan to enter into the automobile field as well as to establish the largest fishery and seafood processing firm (Nippon Suisan) through M&As. As a result, Nissan became the third largest group in Japan in 1937, with first- and second-tier firms in mining, manufacturing, distribution, and insurance.

4. COMPETITIVIVE CAPABILITIES OF PREWAR BUSINESS GROUPS

4.1. Scale and Scope of Economy: Synergy and Spillover

Given the unique characteristics of prewar business groups described above, what kind of competitive capabilities did they bring to the table? And what role did they play in spurring economic growth in Japan?

First, as first movers, the zaibatsu possessed managerial skill, know-how, accounting standards, and monitoring systems which provided them with real advantages, given the imperfections in the managerial, labor, and capital markets.[12] At the beginning of Japanese industrialization, the zaibatsu sustained a dominant position in their core businesses. This dominance made it possible for them to collect large quasi-monopolistic rents, enabling them to rely on their internal capital markets to innovate continuously. Furthermore, the sustained profits provided job security and relatively high compensation to corporate insiders, and allowed them to invest in firm-specific human capital. These factors enabled the zaibatsu to become the major technology innovators (Odagiri and Goto 1995).

Mitsui Mining's entry into the dyestuffs market illustrates how the zaibatsu used their advantages. In the prewar period, the dyestuffs market was originally dominated by German oligopoly firms (later IG Farben). Once WWI erupted, and imports

[12] The zaibatsu recruited top managers and technicians with high salaries, which might have affected the allocation of talent, and possibly discouraged talented people from seeking careers in government. (Morikawa 1980: 16-19). On the other hand, by the turn of the century at the latest, the zaibatsu had become a supplier of managerial talent. (Hashimoto and Takeda 1992: chap.1)

stopped, the price of dyestuffs soared. However, dyestuffs were considered high-tech goods at the time, and dyestuff patents were monopolized by the German oligopoly. Mitsui Mining's resources, however, allowed it to provide substitutes for foreign imports (Miyajima 2004：chap. 3）.

Second, given serious market imperfections in the prewar era, business groups, and especially general trading companies, filled a crucial role. Mitsui & Co. was the sole sales agent of Mitsui Mining, and helped to increase coal sales volume and reduce transaction costs. The company also helped group firms to introduce new technology from foreign firms, lowering the cost of searching for technology, and intermediating transactions between foreign and groups firms. Furthermore, Mitsui & Co. played a significant role in importing cotton spinning machines from Pratt Brothers, for example. It arranged technology deals not only for firms within the Mitsui group but also for other spinning firms, and also played an intermediary role in supplying locomotives to railways and chemical machines for nitrogen production. The activities of trading firms such as Mitsui & Co. had strong positive externalities.[13]

Third, the trust and reputations that were built during the growth stage were also important to their competitiveness. Around 1900 the word "zaibatsu" began to be used in journalism to refer to the family groups as a way of acknowledging their uniqueness and dominance. But the name of each zaibatsu also began to acquire its own brand value. The brand name provided strong advantages in their businesses under imperfect market conditions, as emphasized in Khanna and Yafeh (2007). When foreign companies sought to directly invest in Japan by alliance or joint ventures, Mitsui, Mitsubishi, Sumitomo, and Furukawa were among the handful of firms that could be trusted without having to invest substantial search and monitoring costs. For ordinary transactions, goods supplied by Mitsui & Co. were considered reliable and trustworthy. Furthermore, the enhanced brand value of zaibatsu also provided them with an advantage in recruiting talented employees.

The zaibatsu carefully managed their brand names to maintain their reputations. For example, the Mitsui Group bestowed the Mitsui name to its first-tier firms, but gave the name Toyo to second-tier firms engaged in riskier businesses. Even dividend payments to minority shareholders were used to burnish the brand name. Mitsubishi Mining, which was one of the first zaibatsu firms to go public at the beginning of 1920s, earned very low profits and only a 3-4% return on equity from 1921 to 1924. Though Mitsubishi Goshi, the holding company of the Mitsubishi held 58% of Mitsubishi

[13] Morck and Nakamura (2007) emphasizes that zaibatsu served to provide a big push, and were a substitute for active government industrial policies by the World War One.

Mining stock, it declined to receive dividends, even though Mitsubishi Mining continued to pay out the same level of dividends to other shareholders (Miyajima 2004: Chap. 5). By maintaining their trust and reputations, the zaibatsu could benefit in other ways such as by earning premiums on new share issues (Franks, Mayer and Miyajima 2009) [14].

4.2. Internal Capital Markets

Business groups in prewar Japan also possessed another competitive capability: an advantage in capital allocation. It is commonly understood that internal capital markets have played a significant role under market imperfections (Khanna and Yafeh 2007). In the case of prewar Japan, massive investment and new entry into the high-technology sectors were supported by the internal capital markets of business groups.(Takeda 1993; Okazaki 1999b) For the Three Established Zaibatsu, internal capital markets were particularly important during the early phase of industrialization. They invested their high profits from mining (a cash cow sector) into growth sectors such as chemicals and electric machinery.

In the 1920s, outsider money was not often channeled to firms (divisions) with high growth opportunities because the holding company imposed a strict budget constraint on its subsidiaries. In the 1930s, however, the Three Established Zaibatsu decided to allow their first-tier firms to go public, so internal capital markets began to play a role reallocating funds raised externally. The Three Zaibatsu firms could raise capital for subsidiary firms through rights issues. The holding company paid the face value of the stock to the subsidiary and then sold the shares to the public at a higher offer price. For example, shares were created in Mitsubishi Heavy Industry Company in August 1934 with a face value of 50 yen per share. The shares were then sold to the public for 65.0 yen. This premium was used for donation, responding to to the soaring anti-zaibatsu sentiment in the early 1930s, and only a limited portion of it was used to purchase newly issued shares of group firms (Takeda 1993). In sum, the mechanism for channeling external funds to affiliated firms suggested by Morck and Nakamura (2005) was rarely tapped by the Three Established Zaibatsu.

[14] Another reason for their high reputation is that zaibatsu were regarded as having good monitoring capabilities. In the late 1920s, when some firms with dispersed ownership and interlocking directorships faced financial distress, zaibatsu-affiliated firms continued to turn in stable performances. Observers at the time criticized firms with dispersed ownership and interlocking outside directors, and recommended small investors invest in zaibatsu-related firms (Okazaki 1999b; Takahashi 1930).

Supplying patient capital and risk sharing

The Three Established Zaibatsu also played an important role as a supplier of "patient capital" during business downturns. After the WWI boom ended, most firms that had newly entered growth sectors such as shipbuilding, mining, iron and steel, and chemicals faced financial troubles under serious international competition, and had to reconstruct their businesses. Some stand-alone firms went bankrupt, and others were downsized. Even within the Three Established Zaibatsu, there were serious internal arguments over whether to continue the new businesses. For example, Asahi Glass, which had newly entered into soda ash (Solvey Methode) production, faced serious competition from international giants (later Imperial Chemical Industry Co.) after WWI ended, and considered exiting this market. However, Asahi Glass decided to continue the business, and even added investment to achieve the minimum optimal plant size. Similar scenarios unfolded in the iron and steel (Mitsubishi, and Mitsui) and dyestuffs (Mitsui) markets in the 1920s (Miyajima 2004; chap. 2).

Channeling external funds to growth sectors

On the other hand, Type II and III groups utilized both internal and external capital markets on a large scale to exploit new business opportunities. During WWI, Type II business groups raised loans externally and distributed the funds to group firms through internal markets. For instance, Suzuki Shoten and Kawasaki Shipbuilding invested their high profits in new industries, in combination with new money raised through borrowing (Tsurumi 1974).

In the 1930s, Type III groups, and Nissan in particular actively turned to the external market, using the proceeds from new share issues to invest in new businesses. For instance, Nissan sold shares in its first-tier firms (Hitachi and Nippon Mining) and invested the new money in the automobile industry. Since the even the smallest automobile plant had to be quite large to optimize output, this industry could not be entered without getting a high premium. Thus, Nissan assumed a role in Japan's development which resembled that of venture capital firms in the United States (Morck and Nakamura 2005: 397).

Nissan also used its internal capital market and its reputation to engage in M&A and IPOs. Ayukawa regarded food-related businesses as a growth area, and looked for appropriate targets in the early 1930s. Nissan purchased the Nippon Ice Companies, a listed company, through exchange of stock (Wada 1937). After reconstructing the business, Nissan spun off the firm as a separate legal entity, and let it go public through

an IPO at a substantial premium. In this case, it played a role that buyout firms fill today.

5. COST OF BUSINESS GROUPS IN PREWAR

5.1. Underinvestment by strict monitoring

Prewar business groups also exacted costs. One of these costs was excessively strict monitoring of subsidiaries (mainly first-tier firms) by the holding company. This cost, which is common to monitoring by large shareholders, as Shleifer and Vishney (1997) suggest, applied mainly to the Three Established Zaibatsu (Type I) groups.

When the holding company exercises strict monitoring over and applies a hard budget constraint on its subsidiaries, the investment level of its firms is likely to be lower than that of stand-alone firms, especially during business upturns. It has been documented that the investments of Mitsubishi Shipbuilding were much more modest than that of other shipbuilders during WWI, and the investments of both Mitsui and Mitsubishi Mining in the 1930s were also much more modest than their industrial rivals (Morikawa 1980; Hashimoto 1992; Miyajima 2004: chap.4). Their reluctance to enter into high-tech industries such as chemicals and automobiles is further evidence of their conservatism. In spite of frequent urging by the government and military authorities, the Three Established Zaibatsu decided not to enter into those industries (Morikawa 1980). In general, the professional managers of subsidiary firms were seemingly hesitant to initiate risky investment projects, in light of strict monitoring, and a desire not to be overruled by the holding company.

Miyajima (2004, chap. 5) estimated the standard investment function for testing whether internal funds and default risks (proxied by the debt-asset ratio) constrained the investment of groups firms.[15] Although the results are still highly tentative due to limitations in the availability and reliability of data, the investments of Three Zaibatsu firms were much more sensitive to cash flow than that of other firms. Miyajima (2004) also found that the investments of the Three Zaibatsu firms were much more negatively sensitive to debt-asset levels. Higher leverage was likely to produce lower investment than stand-alone firms. Overall, the results are consistent with the understanding that the group firms of the Three Zaibatsu were constrained by their internal funds and capital structure.

[15] Using 68 large firms as a sample, Miyajima (2004) estimates the investment behavior of firms in the 1920s and 1930s. Since most zaibatsu firms were not listed, it uses the real growth rate of sales (or revenues) as a proxy for business opportunity.

5.2. Entrenchment, Tunneling, and Overinvestment

Prewar business groups in Japan were also accompanied by other costs including the tunneling and overinvestment effects that are part and parcel of business groups around the world (Morck, Wolfzon and Yeung 2005).

In general, the pyramid structure of business groups entrenched the controlling families or entrepreneurs, shielding them from outside investors, and leading to various forms of tunneling such as excessive compensation, loan guarantees, dilutive share issues, insider trading, and other financial transactions that discriminated against minority shareholders (Johnson et al. 2000). Tunneling in this sense was observed in prewar business groups. For example, there was a considerable amount of price discrimination in the new issues among the Three Established Zaibatsu[16]. However, tunneling was not a serious issue among them, because the ownership structure of Type I groups was highly concentrated, and debt was carefully used as financial resources.

Tunneling was much more severe in Type II and III business groups, however. A typical case was the Suzuki group, whose holding company, Suzuki Gomei, used subsidiary assets (Kobe Seiko and Teikoku Synthetic Fiber) as loan collateral. When Suzuki Gomei went bankrupt in 1927, these two firms were under bank control. Another example involved high dividend payments from subsidiary firms to the holding company. Furukawa Electric Metal paid over 70% of its earnings as dividends to Furukawa Gomei (holding company), which used the dividends to compensate losses at its trading businesses. The pyramid structure of family-owned business groups made it possible to entrench managers away from the pressure of outside investors or effective monitors, and induced overinvestment, or asset substitution. This was often the case for Type II groups, and their overinvestment was supported by their exclusive relationship with banks ("organ" bank system).

The de facto bankruptcies of Suzuki and Kawasaki were glaring examples of the zaibatsu dysfunction. They faced serious financial trouble when the wartime boom ended. However, instead of launching early efforts to reconstruct their businesses, both companies adjusted their balance sheets through additional borrowing from related banks, which were often called 'organ banks'. The Suzuki and Kawasaki groups had close ties with the Taiwan Bank and Dai Jugo (Number 15 National) Bank respectively. Since these banks were heavily committed to both companies, they could not withdraw their loans, and instead supplied additional loans, even though both banks were aware that drastic balance sheet improvements were essential. The lack of a credible threat

[16] Franks, Mayer and Miyajima (2009) document the price discrimination in the case of Toyo Rayon, a second-tier subsidiary of the Mitsui zaibatsu.

induced morally hazardous behavior in both companies typical of soft budget constraint situations. Finally, these firms and their banks went bankrupt in the Financial Crisis in 1927.

The estimation results of Miyajima (2004, chap.5) support the understanding that Type II and III groups are likely to be entrenched from outside investors. It reports that the investments of either Type II or III business groups or firms with high managerial ownership are less sensitive to internal funds, and, somewhat surprisingly, positively sensitive to the debt-asset ratio in the 1920s. The lower sensitivity to cash flow in the 1920s indicates that Type II and III group firms tended to invest more (or even discretionary re-evaluate their fixed assets), whereas the positive sensitivity of investment to the debt-asset ratio implies that these family firms tend to invest (or re-evaluate their assets) more, when their leverage was high. In sum, there is some evidence that some types of Japanese business groups tended to overinvest due to entrenchment from appropriate outside monitors.

6. PERFORMANCE OF BUSINESS GROUPS IN PREWAR JAPAN

As mentioned earlier, business groups in prewar Japan had both positive and negative traits, as did those of other countries. We have examined whether the positive traits outweighed, or were overwhelmed by, the negative, and to identify the nature of the performance differences between the three types of business groups. [17]

Table 5 summarizes the performance (ROE and annual asset growth rate ⊿A) of business groups and stand-alone firms from 1920 to 1937. The ROE of group firms was not higher than that of stand-alone firms in panel A, while group firms showed significant rapid growth in panel B. This result is also supported by the conditional estimation in **Table 6,** where ROE and the annual growth rate of assets are regressed on a group dummy, and industry and year dummy (column 1). Even when we include size (assets) and the debt-asset ratio in the estimation, all dummy types still had no effect (column 3).

Insert **Table 5/6** about here

However, interestingly, when we divided business groups into three types, we found significant differences in performance between them. First, the ROE and annual

[17] Although the sample coverage, estimation period, and definition of zaibatsu vary, Frankel (1999) reports that new zaibatsu had high growth rates, while Okazaki (2001) shows zaibatsu performed relatively higher than stand-alone firms. Miyajima et al. (2009) could not find the high performance of zaibatsu firms, while reporting the U-shape of managerial ownership and performance.

growth rate of the Three Established Zaibatsu (Type I) groups are at almost the same level as that of stand-alone firms. These results are also supported by the conditional estimation in **Table 6**. Note that the results are not contrary to the understanding that Type I firms performed better, because ROE is significantly positively correlated to firm size and negatively to leverage in the prewar period, and they were already dominant and had a healthier capital composition at the beginning of the interwar period. The results just show that there is no evidence that group affiliation had any actual effect on their performance except in terms of economies of scale or capital cost advantages.

Second, Type II groups were low performers, while Type III groups were high performers in terms of both ROE and annual growth rates of assets (**Table 5**). This result remains unchanged after considering other control variables. According to **Table 6**, ROE and the annual growth rate of Type III is 2.4% (column 4) and 12.1 % (column 6) higher than that of stand-alone firms respectively. Business groups with a public apex and entrepreneurs performed better during the interwar period. Accordingly, the low effect of all business groups on ROE is a result of the high ROE of Type III groups being offset by the low ROE of Type II. Furthermore, the high growth rates of business groups that have been observed applies primarily to Type III groups..

Table 5 also tests whether business groups had a stabilizing effect of performance. It is clear that business groups, especially the Three Established Zaibatsu (Type I) groups, were associated with low variance of ROE compared to stand-alone firms. Statistical tests in panel A of **Table 5** support this difference in variance at the 1% significance level. This is the same pattern that was observed for the postwar period (Yafeh 2003) and for business groups in other emerging economies (Khanna and Yafeh 2005). According to **Table 7**, where the interwar period is divided into three sub-periods (from the collapse of the boom to the financial crisis of 1921-1927; the Showa Crisis period of 1928-1932; and the boom period of 1933-1937), the stabilizing effect of groups on performance was remarkable in the deflationary period rather than in the boom period. Type I groups in the Showa Crisis most clearly performed such a stabilizing function. This stability might be partly due to the result of risk sharing among group firms, but in our understanding, is mainly caused by the strict monitoring of affiliated firms by the holding company. Other types of business groups, especially Type II, did not have such stabilizing effects, and rather showed high variance in ROE (Type II) and growth rates (Type III).

Insert **Table 7** about here

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7. WHAT ARE THE UNIVERSAL AND UNIQUE CHARACTERISTICS OF PREWAR BUSINESS GROUPS ?

Business groups in prewar Japan have commonalities with those of other countries in the sense that they were family owned, and had pyramidical or hierarchical structures with highly diversified business portfolios. They emerged as a response to market failures in the industrialization process. They also reaped advantages from internal markets, while they shared negative traits such as the entrenchment of managers beyond the reach of outside investors. Prewar business groups, especially the Three Established Zaibatsu, showed a low variance in performance, which was also common to the postwar period. What, then, are the unique characteristics of the prewar business groups that are relevant to both the postwar Japanese and emerging economies?

One of the characteristics of prewar business groups is the diversity of internal structures and behaviors, as illustrated by the three types introduced in this paper. This organizational diversity distinguished them from the postwar bank-centered business groups whose structures and behaviors were homogeneous, partly due to the economic reforms of the postwar period and subsequent regulations.

The Three Established Zaibatsu (Type I), which were the first movers, assumed a dominant position among business groups in prewar Japan. Their structure was relatively similar to family firms in the European continent in that, they delegated professional managers to run their businesses at operational and partly strategic level. However, families exercised ultimate control, and imposed a significant conservative bias on investment and financial policies. The function of the Type I groups was quite different from that of postwar bank-centered business groups, which induced high investment and high leverage. They were also reluctant to take their subsidiary firms public. It is also worth noting that families put their banks at or near the apex (Morck and Nakamura 2005), and required them to pursue sound banking policy. These banks were never required to finance groups firms in the prewar era, so they were relatively free from tunneling issues.

Type II and III business groups, the Taisho zaibatsu and new zaibatsu respectively, were relatively small and latecomers. Their structure was rather similar to family firms

in emerging economies in that families or entrepreneurs exercised effective control, and were likely to depend on external financing (either equity or debt) to maximize growth. Pyramid and hierarchical group structures allowed them to entrench themselves from outside investors, and sometime induced tunneling, resulting in volatile performances. They also established a blueprint for postwar business groups to take high risks using external financing, making it possible for affiliated firms to be less constrained by cash flow and default risk. However, unlike bank-centered business groups in postwar Japan, some groups preferred equity financing, and other groups depended on debt but were not subject to effective monitoring by banks.

We should conclude by making a few additional comments on the characteristics of prewar business groups. First, prewar business groups were relatively free from the so called "Carnegie Effect", which has been quite common in business groups in emerging economies[19]. Since the Three Established Zaibatsu delegated their businesses to professional managers from the beginning of industrialization, family succession had less of an impact on managerial capabilities. The effective control of new zaibatsu (Type III) mainly resided in the hands of talented entrepreneurs, so that once they died the group ties was likely to be relaxed rapidly. For example, Nippon Chisso group lost its group integrity after founder, Shitagau Noguchi died in 1940. Family succession just remained a significant issue for Type II groups (Furukawa or Asano), where family members still had real control.

Second, the relation between the Three Established Zaibatsu and other types of groups could be characterized as complementary, especially since WWI. Family-owned (Type II) groups and entrepreneur-type groups (Type III) firms had spurts in the boom periods (WWI and 1930s) and assumed enormous risks to enter into new industries (nitrogen fertilizer, aluminum, and automobiles). These Type II and III business groups established many of the new high-tech firms in prewar Japan. They were a good substitute for the Three Established Zaibatsu, which were potential innovators but often tended to avoid risk. However, these Type II and III groups sometimes engaged in over-investment with high leverage, and faced financial difficulty. The Three zaibatsu played a complementary role in two ways: 1) they supplied patient capital to their affiliates, allowing them to survive the depression period; and 2) they at times took the initiative in corporate restructuring through mergers and acquisitions.

[19] The Carnegie Effect refers to the fact that each successive generation of controlling shareholders is sometimes less able than the first generation (founders). Hence, corporate control by heirs adversely affects corporate decision making, as they are prone to being less hardworking and ethical than the self-made founders.

Mitsui & Co. acquired a capital stake in Nippon Flour Mills, and Mitsui Mining acquired two former Suzuki chemical firms (nitrogen fertilizers).

Lastly, we can cite the political stance of the prewar zaibatsu as an additional unique feature. It is true that the government support contributed to growth of business groups by the early 20th century (Morikawa 1992; Khanna and Yafeh 2007: Table 4). However, as group became larger and matured, business groups were relatively independent from the government. During the interwar, representatives of the Three Established Zaibatsu were normally advocates of free trade and laissez faire. Members of business groups rarely indulged in political rent-seeking. Rather, the Three Established zaibatsu manipulated their country's political system to entrench themselves. It has been documented that zaibatsu members tried to minimize government intervention in their activities, while the families of the three zaibatsu adopted house rules and constitutions requiring that company members avoid involvement in political affairs.[20]

[20] The zaibatsu were not enthusiastic supporters of the Important Industries Control Act of 1931 (see Miyajima 2004: chap.3). And it is well known that when the chairman of Mitsubishi Heavy Industries, Kiyoshi Goko, accepted a post as advisor to the Cabinet in 1943, the holding company of Mitsubishi required him to resign his Mitsubishi position on the grounds that it violated the house rule against involvement in politics (Miyajima 2004: 314,18).

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Figure 1 Types of Business Groups

The Holding Company axis denotes whether groups have a holding company at the apex or not. The Public-Private axis denotes whether apex and group firms are private or public. The Diversification axis denotes the extent of diversification. The size of the balloons are an indication of the relative difference in percentage shares of the assets of the top 100 industrial firms in 1937 for each business group type.

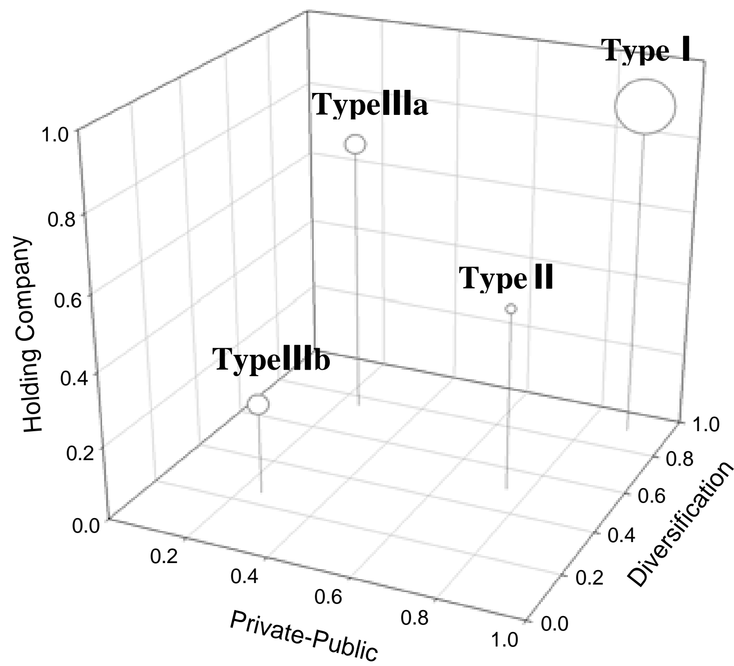

Table 1 Evolution of Business Groups in Japan: 1878 to 1955

Year	Political Events	Business Group Developments
1590		Sumitomo founds copper business
1673		Mitsui opens for business
1868	Meiji Restoration	
1876		Mitsui establishes banking business
1886	Privatization of State-Owned Enterprises begins	
1886	Bank of Japan established.	
1890	Original Company Law introduced.	
		Mitsui Trading, Bank (limited partnership) are incorporated
1893		Mitsubishi Company formed after dissolving Mitsubishi partnership
1894-95	Sino-Japanese War	
1895		Mitsubishi enters into banking business through acquisitions.
		Sumitomo reorganizes financial business into bank.
1899	Commercial Code revised.	
1904-05	Russo-Japanese War/Tax reforms (introduction of income tax created tax advantages for corporations).	
1909		Mitsui Partnership established
1912		Yasuda Partnership established
1914-18	World War I	
1917		Mitsubishi holding company (limited partnership) with spins off former divisions
		Furukawa Unlimited Partnership established.
		Okura Limited Partnership established
1918		Asano Family Holding Ltd. Established (Reorganization of Asano limited partnership formed in 1914)
1920	Tax reforms (Give advantages to holding companies).	
1921		Sumitomo Limited Partnership established,
		Furukawa Trading de facto bankruptcy, merged into Furukawa Mining
1923	Kanto Earthquake	
		Suzuki Unlimited Partnership established
1927	Showa Financial Crisis	
		Suzuki Shoten goes bankrupt, Kawasaki Shipbuilding goes bankrupt
1928		Ayukawa organizes Nippon Sangyo
1929	Showa Depression	
1931	Manchurian Incident	
		Furukawa Bank liquidated
1932	May 15 Incident	
		Hitachi, and Nippon Mining (Nissan Group) go to public
1934	Accounting statement guidelines adopted.	
		Mitsubishi Limited Partnership sells Mitsubishi Heavy Industry Co.
		Nippon Soda goes to public
1936	Feb. 26 Incident	

Table 1 Evolution of Business Groups in Japan: 1878 to 1955 (contd,)

Year	Event
1937	Sino-Japanese War erupts.
	Mitsubishi, Sumitomo Limited Partnership reorganized into joint stock companies.
1938	Enactment of State Mobilization Law and revision of the Commercial Code
1939	World War II breaks out.
	Corporate Profit Dividend and Capital Distribution Directive promulgated.
1940	Mitsui partnership merges with Mitsui & Co (trading company).
	Mitsubishi Company holds initial public offering.
1941	Asia-Pacific War begins.
1943	Munitions Company Law introduced.
1945	War ends.
1946	Corporate Reorganization Law enacted.
	Holding Company Liquidation Commission Directive promulgated, zaibatsu dissolution begins.
1951	Holding Company Liquidation Commission disbanded (zaibatsu dissolution ends)

Source: Morikawa (1992) , Hashimoto and Takeda (1992) and other sources.

Table 2 The Proportion of Group Firms among largest 100 industrial firms

This table presents trends in the percentage shares of the top 100 industrial firms held by each type of corporate group. We constructed a comprehensive list of the largest firms from Appendix A-1 and A-2 in Fruin (1992) for 1918 and 1930, and "*Honpo Jigyo Seiseki Bunseki*" for 1937. For details on data set construction, see Miyajima et al. (2009). Group types correspond to those in Figure 1, **Type I** denotes the Mitsui, Mitsubishi, and Sumitomo groups. **Type II** denotes the Yasuda, Furukawa, Okura, Asano, Suzuki, and Kawasaki groups. **Type IIIa** denotes Kuhara and Nissan, and **IIIb** denotes Nihon Chisso, Nihon Soda, Mori, and Riken.
Source: *Kabushiki Gaisha Nenkan,* Toyo Keizai Inc., *Honpo Jigyo Seiseki Bunseki*" Mitsubishi Economic Research Institute, HCLC (1952) and others.

Panel A : Number of Firms

Business Group Type	1921	1928	1937	1942
I	9	14	17	13
II	9	7	5	7
III	4	5	8	12
(IIIa)	(3)	(3)	(4)	(5)
(IIIb)	(1)	(2)	(4)	(7)
All Types	22	26	30	32

Panel B : Aggregated Assets of business groups (one million yen)

Business Group Type	1921	1928	1937	1942
I	543	673	1,482	5,283
II	450	261	250	923
III	165	264	1,068	3,935
(IIIa)	(140)	(177)	(537)	(2,088)
(IIIb)	(24)	(88)	(531)	(1,846)
All Types	1,158	1,199	2,800	10,140
100 Firms Total	2,891	4,441	7,839	20,600

Panel C : Percentage share of top 100 industrial firm assets held by business groups

Business Group Type	1921	1928	1937	1942
I	18.8	15.2	18.9	25.6
II	15.6	5.9	3.2	4.5
III	5.7	6.0	13.6	19.1
(IIIa)	(4.9)	(4.0)	(6.8)	(10.1)
(IIIb)	(0.8)	(2.0)	(6.8)	(9.0)
All Types	40.1	27.0	35.7	49.2
100 Firms Total	100.0	100.0	100.0	100.0

Table 3 Ownership Structure, Capital Composition of Business Groups

Panel A describes the ownership structure, using a sample smaller than the top 100 industrial firms due to data availability. C_1 is the percentage share held by the largest shareholder, C_5 is the cumulative percentage share held by the five largest shareholders. The definition of business group types is based on Figure 1. **Panel B** describes the capital composition. The statistical significance of the difference of means and standard deviations between business groups and stand-alone firms are also reported. Significance at the 10%, 5%, and 1% level are indicated by *, **, and *** respectively. **Panel C** provides the estimation results for capital composition. Dependent variable, *DA*, is the debt-asset ratio at time t. *SIZE* is the log of total asset, *K/A* is fixed assets divided by total assets at t-1. *ROE* is the three-year average rate of return on equity prior to time t. Type dummy is defined in Figure 1. The t-statistics are reported in brackets. Significance at the 10%, 5%, and 1% level are indicated by *, **, and *** respectively.

Panel A: Ownership Structure

Business Group Type	Year	N	C_1		C_5	
			Mean	Std. Dev	Mean	Std. Dev.
I	1928	13	0.655	0.301	0.831	0.274
	1937	16	0.400	0.202	0.607	0.196
II	1928	7	0.378	0.331	0.624	0.347
	1937	5	0.334	0.301	0.514	0.356
III	1928	5	0.310	0.262	0.526	0.309
	1937	8	0.408	0.326	0.526	0.289
Stand-alone	1928	70	0.123	0.159	0.235	0.194
	1937	63	0.140	0.177	0.256	0.190

Panel B : Capital Composition (Debt-Asset Ratio, 1921-37)

Business Group Type	N	Mean	*t*-value	Std. Dev.	*F*-value
I	202	0.327	2.179**	0.168	1.526***
II	122	0.462	-5.162***	0.187	1.229
III	86	0.391	-1.330	0.137	2.291***
All Types	410	0.381	-1.731*	0.177	1.366***
Stand-alone	1,183	0.361	.	0.207	.

Table 3 Ownership Structure, Capital Composition of Business Groups (Contd.)

Panel C : Regression results (1921-37)

	(1) *DA*	(2) *DA*	(3) *DA*
SIZE_1	0.005	0.005	0.005
	(0.81)	(0.99)	(0.92)
K/A_1	0.078	0.055	0.065
	(2.09)**	(1.53)	(1.79)*
ROE_1	-0.468	-0.475	-0.462
	(8.11)***	(8.35)***	(8.04)***
All Types	0.012		
	(0.93)		
TYPE1		-0.055	-0.056
		(3.27)***	(3.43)***
TYPE2-3		0.061	
		(5.01)***	
TYPE2			0.093
			(5.93)***
TYPE3			0.021
			(1.11)
Constant	0.278	0.287	0.289
	(3.95)***	(4.17)***	(4.18)***
Industry Dummies	Yes	Yes	Yes
Year Dummies	Yes	Yes	Yes
Observations	1536	1536	1536
R-squared	0.23	0.25	0.25

Table 4 Diversification of Business Groups in prewar Japan

This table presents the business portfolios of business groups around 1937. ○ denotes that group firms entered into this sector before 1930. ● denotes that a group entered into this sector after 1930. △ denotes that group firms in the sector became independent because holding company sold their holding stocks. × denotes group exit from this sector due to low performance (financial distress) before 1937. Group affiliation is basically identified if a majority (over 50%) of shares was held by the holding company and other group firms. The business portfolios of the Suzuki and Kawasaki groups present their profiles around 1927 just prior to their bankruptcies.

Source: Kikkawa (1996), Okazaki (1999), Udagawa (1983), Hashimoto and Takeda (1992) and other sources.

Business Group Type	Business Group Name	Mining	Manufacturing										Marketing			Finance	
			Food	Fiber	Metal	Paper	Cement	Chemicals	Shipyard	Electric Machines	Auto mobile	Aircraft	Real Estate, Warehouse	Trading	Shipping	Bank	Insurance
I	Mitsui	○	○	○	○	△		○	○	○			○	○	○	○	○
	Mitsubishi	○	○		○	○	○	○	○	○		○	○	○	△	○	○
	Sumitomo	○			○		○	○		●			○			○	○
II	Yasuda	×		○		○							○			○	○
	Furukawa	○			○			○		○				×		×	○
	Okura	○	×		○									○			○
	Asano				○		○		○	○			○		○	×	
	Suzuki			○	○			○	○				○	○			
	Kawasaki				○				○	○		○			○	○	○
IIIa	Nissan	○	●					●	○	○	●		○	×			○
IIIb	Nippon Chisso			○				○									
	Nisso	●		●	●			○									
	Mori	●			●			○									
	Riken				●					●							

Table 5 Performance Indexes and Business Groups

Panel A and B show the average of ROE and annual growth rates of assets between stand-alone and group firms from 1921-1937. The definitions of group types are the same as Figure 1. The statistical significance of the difference of means and the variance deviations between business groups and stand-alone firms are also reported. Significance at the 10%, 5%, and 1% levels are indicated by *, **, and *** respectively.

Panel A : ROE

Business Group Type	N	Mean	*t*-value	Std. Dev.	*F*-value
I	202	0.072	0.044	0.072	1.845 ***
II	122	0.056	1.729 *	0.111	0.774 **
III	86	0.089	-1.500	0.069	1.989 ***
All Types	410	0.071	0.299	0.086	1.305 ***
Stand-alone	1,183	0.073	.	0.098	.

Panel B : Asset growth

Business Group Type	N	Mean	*t*-value	Std. Dev.	*F*-value
I	202	0.090	-1.308	0.216	1.108
II	122	0.040	1.309	0.170	1.790 ***
III	86	0.185	-4.491 ***	0.324	0.491 ***
All Types	410	0.095	-2.093 **	0.236	0.923
Stand-alone	1,183	0.067	.	0.227	.

Table 6 Estimation Results for Performance and Group Affiliation (1921-1937)

This table shows regression results for performance estimations, using the top 100 firms defined in Figure 1. The dependent variable is corporate performance measured by the rate of return on equity, ***ROE***, and ***⊿A*** (growth rate of assets). ***SIZE*** is the logarithm of total assets (a year lag). ***DA*** is the leverage defined by debt to assets ratio (debt / total assets). Type dummy is defined in Figure 1. Industry dummies are also included. Observations with *ROE* or *DA* more than three standard deviations from the mean values are dropped from the sample. The t-statistics are reported in brackets. Significance at the 10%, 5%, and 1% levels are indicated by *, **, and *** respectively.

Dependent Variable	(1) *ROE*	(2) *ROE*	(3) *ROE*	(4) *ROE*	(5) *⊿A*	(6) *⊿A*
SIZE_1			0.010	0.010	-0.032	-0.033
			(3.70)***	(3.63)***	(3.55)***	(3.63)***
DA_1			-0.101	-0.100		
			(7.36)***	(7.13)***		
All Types	0.003		-0.002		0.038	
	(0.44)		(0.27)		(2.76)***	
TYPE1		0.004		-0.007		0.023
		(0.58)		(1.16)		(1.39)
TYPE2		-0.018		-0.012		-0.002
		(1.70)*		(1.16)		(0.10)
TYPE3		0.030		0.024		0.121
		(3.62)***		(2.63)***		(4.09)***
Constant	0.076	0.076	0.003	0.006	0.329	0.339
	(5.32)***	(5.38)***	(0.09)	(0.18)	(3.49)***	(3.60)***
Industry Dummies	Yes	Yes	Yes	Yes	Yes	Yes
Year Dummies	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1536	1536	1536	1536	1536	1536
R-squared	0.14	0.15	0.19	0.20	0.18	0.19

Table 7 Performance Variability

This table reports the standard deviation of ROE by sub-periods. The definitions of group types are the same as Figure 1. Bold denotes when the null hypothesis that variance of performance for each group is the same as that of stand-alone firms is rejected at the 10% significance level.

Year	All Types	I	II	III	Stand-alone
1921-27	***0.095***	***0.090***	0.104	***0.078***	0.113
N	148	59	63	26	515
1928-32	***0.082***	***0.046***	***0.128***	***0.067***	0.097
N	125	68	34	23	346
1933-37	***0.058***	0.047	***0.078***	0.045	0.050
N	137	75	25	37	322
1921-37	***0.086***	***0.072***	***0.111***	***0.069***	0.098
N	410	202	122	86	410