Japan's Corporate Groups: Some International and Historical Perspectives[*]

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I. Introduction

Much has been written about Japan's corporate groups over the last 25 years. Academic and popular views of the *keiretsu*, as the postwar Japanese groups are sometimes called, range from complete dismissal to admiration of the groups' influence, whether it is alleged to enhance economic growth or to restrict entry into the Japanese market. The present chapter has three objectives. The first is to review the literature on corporate groups in Japan and elsewhere, and to summarize the existing evidence on the economic roles (if any) that corporate groups have played in the Japanese economy. The second objective is to present, for the first time, a comparison of Japanese corporate groups and business groups in other (developed and developing) countries. The main conclusion that emerges from this comparison is that Japanese groups, while similar to groups in other countries in many respects, are different in their risk and return characteristics. The third and final objective is to describe the evolution of Japan's corporate groups over the past 25 years, and to examine whether or not groups constitute an impediment to structural change in Japan. The thesis of this chapter is that, with some exceptions, there is limited

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evidence on the economic importance of corporate groups in the postwar Japanese economy. There is also little to suggest that groups have had a major impact on growth rates of particular industries in Japan, and no evidence that Japanese groups (unlike groups in other countries) enjoy any particular political clout. It is therefore unlikely that corporate groups will constitute an impediment to structural change.

Powerful, family controlled, pyramidal groups (*zaibatsu*) existed in Japan between the late nineteenth century and the end of the World War II. Our focus here, however, is on corporate groups in postwar Japan. These are usually divided into two types: "horizontal," "financial," or bank-centered groups, consisting of member firms operating in many industries, with large financial institutions (a city bank, a trust bank, insurance companies) at the core of the group. There are six major groups of this type in Japan. The second type of group is often described as "vertical" or manufacturer-centered group, consisting of a large manufacturer and related suppliers within the same industry or in closely related sectors (e.g. Toyota or Hitachi). The discussion in this chapter is focused mostly on the former type, the bank-centered groups, and is organized as follows. The next section reviews the literature on business groups in general, and evaluates the existing empirical evidence on the economic importance of Japan's corporate groups. Section III focuses on a cross-sectional comparison between Japanese corporate groups and groups in other countries, and Section IV describes the evolution of groups in Japan over time. Section V concludes.

II. Business Groups in Japan and Elsewhere: the Literature

II.1 What is a Group and Who Belongs to It?

Defining a Business Groups

The literature on business groups in general, and on Japan in particular, has struggled with the definition of a business group for a long time (Khanna, 2000). In Japan, as in most countries, group membership is typically informal[1], so that the criteria used to define the boundaries of the group and to identify its members vary considerably across countries and studies. An early study by Leff (1978: p. 673) refers to a business group as "a group of companies that does business in different markets under a common administrative or financial control," but this definition is clearly inappropriate in postwar Japan, where groups lack common control. Strachan (1976) defines a group as a long-term association of firms and the men who own and manage them, and points out that a group cannot be identified purely on the basis of a single metric. Indeed, the criteria used in the literature to identify membership in Japanese groups have mostly been based on several measures of long-term relations between member firms.

Historical Background: The Origins of the Japanese Corporate Groups

The economy of prewar and war-time Japan was dominated by large, diversified conglomerates (*zaibatsu*) which, in 1946, controlled about a quarter of all capital assets in the economy, and much larger shares in modern, heavy industries (Hadley, 1970). The *zaibatsu* were family-owned conglomerates, controlled through holding companies, which in turn held a large number of shares in a first tier of subsidiaries. First tier subsidiaries controlled a second tier of companies, and so forth, and formed a "pyramid"

[1] Chile is a notable exception to this rule; in Italy the law identifies "common control," see, Bianchi et al. (2001).

of firms. Horizontal ownership and personnel ties between group firms were also common. During World War II, the *zaibatsu* groups increased their market power, and played an important role in providing military equipment and supplies to the Japanese Imperial Army. Following Japan's defeat in 1945, the American occupation authorities (The Supreme Commander of the Allied Powers or SCAP) regarded the *zaibatsu* as an important part of the Japanese social and economic structure that was responsible for the war. In particular, the market power of the *zaibatsu* and the tremendous wealth of the founding families made the dissolution of the conglomerates one of the first and most important targets of the American occupation reforms in Japan.

The *zaibatsu* dissolution reforms started soon after the end of the war and ended around 1950. During this period, all holding companies were dismantled and prohibited by law, the founding families stripped of their shares, and many of the prewar managers purged and prohibited from taking office. The resulting change of ownership was of enormous scale, and over 40 percent of all corporate assets in Japan changed hands (Bisson, 1954). The shares transferred were resold by the Holding Companies Liquidation Commission (HCLC) using several methods which were designed to guarantee disperse ownership structure (see Hadley, 1970). Indeed, following the conclusion of the reforms, shareholding by individuals in Japan reached an all time high of approximately 70 percent around 1949 (Aoki, 1988).

Yet despite the hopes of the American occupation authorities, the newly created ownership structure proved unstable. With the reopening of the Tokyo Stock Exchange in 1949, individuals who received shares during the reforms (especially company employees and residents of cities where the companies operated) began to sell the stocks they held. Consequently individual shareholding began to decline, and in the early 1950s a new ownership structure emerged in Japan: Instead of individuals, most Japanese

companies were now owned by other companies and by financial institutions, most notably large commercial banks ("city banks"). Ownership ties were sometimes part of reciprocal cross-shareholding ties, often along the lines of the prewar *zaibatsu* groups (especially in Mitsui, Mitsubishi and Sumitomo, see Hoshi, 1994, Yafeh, 1995). These cross-shareholding ties were further reinforced in the late 1960s, and "new" groups centered on major (city) banks were formed (Dai-Ichi Bank and Nippon Kangyo Bank, which later merged to form DKB group, Fuji, and Sanwa).

There are several possible reasons why the period of dispersed ownership in Japan was so short. Individuals may have been too poor and too risk averse to wish to hold equity, and preferred to increase their consumption or save in the form of bank accounts rather than hold risky shares. Another reason, which is commonly asserted by many authors (e.g. Miyajima, 1994) is that the reformed firms in Japan were exposed to hostile takeovers once their prewar *zaibatsu* shareholders were removed. The low equity prices in the Tokyo Stock Exchange soon after the war may have made Japanese firms easy targets for hostile takeovers. To prevent this, firm managers sought to establish a friendly and stable ownership structure by convincing managers of firms associated with each other in the prewar period to acquire some of each other's equity on behalf of the companies they manage, and thus insulate management from external threats. This created the foundation of cross-shareholding arrangements, which have allegedly made hostile takeovers extremely rare. However, it is far from certain that the motivation behind the change in ownership that was observed in Japan in the early 1950s was indeed the threat of hostile takeovers. In fact, it is not clear who the potential raiders could have been. Instead, an alternative explanation for the short life of individual ownership in Japan is simply that it was inefficient. Yafeh (1995) shows that, other things equal, the greater the percentage of a firm's outstanding shares expropriated and

resold by the American authorities, the worse was the firm's performance in the early 1950s. This is consistent with the view that large shareholders play an important role in corporate governance (Shleifer and Vishny, 1986). Although dispersed ownership could have been replaced by concentrated family ownership this did not happen in Japan, apparently because the "old wealth" of the prewar period had been destroyed by the American occupation reforms. This argument, however, is less likely to explain the reinforcement of cross shareholding ties in the 1960s which was, perhaps, a response to opening to foreign capital, and possibly some fear of hostile takeovers.

Who is a Group Member?

Unlike the prewar *zaibatsu*, postwar groups in Japan have no central control, and affiliation with a group is not straightforward to define. Core group members typically take part in Presidents' Clubs which, are regular meetings of senior executives of the largest companies within each group. Members of these "Clubs" are easy to identify, and constitute about 10 percent of all listed manufacturing firms in Japan (Weinstein and Yafeh, 1995). Beyond the Presidents' Club, group affiliation is informally defined, and researchers have used a variety of measures to identify group members. Existing definitions weigh various aspects of the relationship between a firm and other group members, including the extent and stability of cross shareholding arrangements, the extent and stability of credit and equity relations maintained with the group's main financial institutions, and the extent and frequency of exchange of personnel.[2] The weighting schemes (and the corresponding data sources) usually concur as far as the identification of core group members is concerned, but may differ considerably in defining the boundaries of groups. Thus,

[2] Commonly used definitions are *Keizai Chosa Kyokai*'s *Keiretsu no Kenkyu*, *Toyo Keizai*'s *Kigyo Keiretsu Soran*, and Dodwell Marketing Consultants' Industrial Groupings in Japan.

Weinstein and Yafeh (1995) find the correlation between the list of members identified by different sources to be not very high, although all commonly used definitions suggest that group affiliated companies constitute about 40-50 percent of all listed manufacturing firms.[3]

II.2 Explanations for the Existence of Groups

The section begins with an evaluation of "positive" explanations for the existence of groups (viewing them as efficient solutions to various market imperfections), and their relevance to Japan. It then proceeds to discuss more "negative" views of the economic roles of corporate groups.

Groups as a mechanism to reduce transaction costs

Corporate groups may be important for reducing transaction costs associated with intra-group trade. Applying this idea to Japan, Flath (1993) argues that cross shareholding arrangements help reduce moral hazard risks among trading partners, thus facilitating transaction-specific investments. Yet the empirical evidence in support of this argument is rather scarce (Flath provides some), and it appears that the volume of intra-group trade within the bank-centered groups is rather low (e.g. Odagiri, 1992, Miwa and Ramseyer, 2001). By contrast, intra-group trade and transaction-specific investments may be a major factor explaining the structure and performance of manufacturer-centered (vertical) groups, where joint development of new products and in-time supply of inputs are crucial. Indeed, there is substantial evidence that manufacturer-centered groups combine insurance and incentives in a way that is designed to reduce holdup problems through long-term relations without

[3] Gibson (1995), who studies bank firm ties in the early 1990s without reference to groups, suggests that several plausible methods identify the same bank as the "main bank" of most companies, although

full vertical integration (Asanuma, 1989, Kawasaki and MacMillan, 1987, Fujimoto, 1999).

Groups and the Coordination of Investment across Industries

Another possible *raison d'être* for groups is that they facilitate major investments by providing a mechanism for coordination across firms and industries. Groups may therefore be of help in orchestrating a "big push." Thus, Ohkawa and Rosovsky (1973) view the prewar *zaibatsu* as an important component in Japan's ability to absorb foreign technology, which could be spread across group members. Goto (1982) argues that the reason why groups are observed in a market economy like Japan is their ability to coordinate in R&D and new investments. While this may well have been part of the roles played by the prewar *zaibatsu*, systematic evidence on joint investments and R&D among members of Japan's postwar groups is not available. There is little in the literature on inter-firm coordination in R&D and technology absorption to suggest that the bank centered groups have played a particularly important role in this respect (although there is some evidence on the importance of vertical groups, see Branstetter, 2000, Okada, 2001).

Groups as a Substitute for Missing Labor and Capital Market Institutions

The early descriptive literature on groups has suggested that groups make up for institutions that are missing in developing countries, most notably, capital markets (e.g. Leff, 1978). Khanna and Palepu (1999) suggest more explicitly that groups in India and in other developing countries make up for missing institutions, such as the market for skilled labor and management, capital market, institutions enforcing

his methodology is not useful in identifying members in bank-centered groups.

property rights, and more. This, they argue, is one plausible explanation for the evidence on superior performance of group members in India (and in other emerging markets, see below), especially when groups exceed a certain size (or diversification) threshold. Also in this vein, Perotti and Gelfer (1999) argue that Russian Financial-Industrial Groups (FIGs) manage an internal capital market that may add value in the face of inefficient external capital markets in that country. In addition, there is some evidence that internal capital markets in the Korean *chaebol* conglomerates create value (Chang and Hong, 1999). This argument, when applied to skilled labor and management, could perhaps be related to the history of the prewar *zaibatsu*, which apparently trained a new generation of executives, but seems more difficult to apply to the experience of postwar Japan, and is not supported by in any Japan-specific study. There is little to suggest efficient allocation of capital within the Japanese corporate groups, whose growth rates and other measures of performance (discussed below) have not been superior to those of non-group firms. Nevertheless, some relations between the postwar corporate groups and certain aspects of capital markets (risk sharing and corporate governance) are discussed below.[4]

Groups as a Mutual Insurance Mechanism

One function of capital markets that has been associated with business groups is the provision of mutual insurance opportunities for member firms. This idea originates in the literature on the Japanese groups, where several studies suggest that groups provide an organizational mechanism through which risks are shared. A theoretical formulation of this hypothesis by Aoki (1988) suggests that employees

[4] Hoshi, Kashyap, and Scharsfetin (1990, 1991), argue that investment decisions of group affiliated companies are less sensitive to their cash flow positions than investment decisions of non-group firms, and also that some unnecessary bankruptcies are prevented within the groups. This could be viewed as

with firm-specific human capital cannot easily protect themselves against adverse shocks and therefore appreciate risk reduction through firm relations with other firms within a corporate group, and especially with the group's main bank. Nakatani (1984) provides empirical support for the claim that Japanese business groups provide a low profit and low volatility environment. Kashyap (1989) suggests that the low volatility of profits documented by Nakatani is a result of intra-group trade relations (and therefore is not a characteristic of final good producers within the groups). There is also evidence on a particular form of risk sharing under the auspices of the main bank within the big six groups, namely, assistance during financial distress. For example, Sheard (1989) documents a variety of cases in which banks rescued ailing clients, typically within their group and often with the assistance of other group members. Hoshi et al. (1990) provide econometric evidence on main bank assistance to financially distressed firms. Weinstein and Yafeh (1998) also argue that members of the bank-centered Japanese groups adopt low risk investment strategies, although the motivation for this behavior is, in their view, not related to risk sharing but to the (excessive) influence that the group bank and other creditors exert on group firms. Finally, Khanna and Yafeh (2001) conduct a battery of risk sharing tests among corporate groups in Japan and elsewhere, and find consistent evidence for mutual insurance among member firms of Japanese (and Korean) corporate groups, in contrast with most of the other countries they examine.[5] Thus, while there is limited evidence on other possible economic roles of corporate groups in Japan, the risk-sharing hypothesis does enjoy some empirical support. Furthermore, this mutual insurance feature seems to distinguish Japanese groups from most corporate groups in

evidence that groups do make up for some deficiencies of imperfect capital markets in the allocation of capital.

[5] Further discussion of risk and return within groups is included in Section III.

emerging markets.[6]

Groups and Corporate Governance

Another capital market function that has sometimes been associated with Japanese business groups is corporate governance. For example, group members are viewed as important in the theoretical corporate governance model of Berglof and Perotti (1994). Yet overall, the empirical support for the special role of groups in corporate governance appears to be limited. There is much evidence on the role of main banks, typically within corporate groups, in disciplining managers of distressed firms, and in restructuring their operations (Yafeh 2000, Hoshi and Kashyap, 2001).[7] There is also some evidence on the role of large shareholders (often part of the group as well) in corporate governance, again mostly with respect to poorly performing companies (Kang and Shivdasani, 1995 and 1997).[8] But there is very little to suggest that corporate groups contribute to corporate governance beyond the roles played by the group banks and by large shareholders.

Groups and Monopoly Power

The fear that groups with "deep pockets" may drive more focused (smaller) competitors out of the market is not new, and was one of the motivations for the

[6] The sociological literature has also emphasized risk sharing within Japan's corporate groups, see Lincoln et al. (1996). At the same time, the evidence on risk sharing within corporate groups in Japan has not been unchallenged, see Beason (1998), Kang and Stulz (2000), and Miwa and Ramseyer (2001a) and (2001b).

[7] The vast literature on the Japanese main bank system will not be discussed here (see Aoki and Patrick, 1994, and Hoshi and Kashyap, 2001). What should be noted, however, is that the empirical literature on Japan has often treated bank-firm relations and group affiliation as one of the same. To a great extent, this is because the available definitions of group affiliation focus on ties with the group's main bank. Thus, a large number of empirical studies actually rely on group data to suggest that long term bank-firm relationships may matter for corporate governance, mitigation of informational asymmetries between the firm and its financiers, and the resolution of financial distress.

[8] Yafeh and Yosha (2002) provide some evidence for the role of large shareholders in corporate governance in companies whose performance is normal.

American occupation forces' attempt to dissolve the prewar *zaibatsu* (Yafeh, 1995). While groups in some countries, e.g., Korea, do appear to dominate markets, the general evidence on the relation between market power and business groups is weak. Encoua and Jacquemin (1982) find little evidence of monopolization by French groups. Lawrence (1993) argues that Japanese groups constitute a barrier to entry because they prefer to purchase inputs from other group members, and thus restrict competition by foreign firms. The evidence on the limited extent of intra-group trade is inconsistent with this argument and, moreover, Lawrence's empirical evidence in support of this argument is not fully convincing (Saxonhouse, 1993). Weinstein and Yafeh (1995) use an industrial organization framework to examine the relation between the intensity of competition and the market share of Japanese bank-centered groups. They suggest that, if anything, group members tend to compete more aggressively than other firms; although fierce competition may well constitute a barrier to entry, there is no evidence of collusion among group members at the expense of "outsiders."

Groups and Political "Rent Seeking"

As in prewar Japan, the origins of business groups and their initial growth in many countries was influenced by close ties with the government. The prewar *zaibatsu* emerged in the 1880s as part of the Matsukata privatization of government owned assets, and expanded to a large extent through government contracts and procurement. Groups in India emerged after independence, when businessman with government ties acquired assets that had belonged to the British. In Korea, the *chaebol* groups were formed under the auspices of the government, and started off by using assets left after the end of the Japanese occupation. Such close government ties

have prompted accusations that business groups derive benefits from rent seeking and government favors, and are therefore inefficient. Fisman (2001) finds explicit evidence for this in Indonesia. Nevertheless, there seems to be no systematic evidence linking the postwar Japanese groups with corruption or specific government favors and contracts. Industrial policy was notoriously conducted at the industry level and no firm-specific subsidies were given (Johnson, 1982). Recent corruption scandals do not seem to involve group affiliated firms more than other corporations, and corporate groups have never been mentioned as part of the traditional LDP constituencies (which are usually thought of as composed of farmers, small shop owners, and perhaps the construction industry).[9]

Groups and Expropriation of Minority Shareholders

A growing recent literature has blamed business groups with "tunneling," the expropriation of minority shareholders. Claessens et al. (1999) argue that groups are associated with minority shareholder expropriation in Asia. Similarly, Johnson et al. (2000) as well as Bertrand et al. (2000) view groups as institutions that are associated with poor protection of property rights and enable "tunneling" of funds from minority shareholder to the controlling party. This argument is also unlikely to be particularly relevant to Japan, most notably because Japanese groups do not have a controlling shareholder, and also because, according to the commonly used La Porta et al. (1998) classification, the legal protection of minority shareholders in Japan is not bad. Even though some cases in which unhappy Japanese shareholders sued corrupt corporations have been reported in the press, there is little systematic evidence to suggest that group affiliated firms in Japan are particularly prone to minority shareholder

[9] One measure of government-business ties in Japan is the practice of *Amakudari*, the transfer of bureaucrats from the government to the private sector. Van Rixtel (2002) finds that firms within

expropriation.

In sum, much has been written on Japan's corporate groups, and yet concrete evidence (positive or negative) on their economic importance is surprisingly scarce. Only the groups' role in mutual risk sharing has received some empirical support. In addition, there is much evidence that large shareholders (often within a corporate group), and main bank relationships (also typically within a corporate group) are often important for corporate governance, although there is little to suggest the importance of the group structure per se.

III. Business Groups in Japan and Elsewhere

This section compares Japan's corporate groups with groups in other countries. The main thrust of the comparison is that Japanese groups are not unique in structure, but are perhaps "special" in their (low) risk and (low) return characteristics. Because of data constraints, most of the countries included in this comparison are "emerging markets," although some comparisons will be made with Italian groups as well.

Corporate Groups around the World: A First Look

Table 1 describes corporate groups in Japan and in a several emerging markets. The fraction of firms classified as group affiliated ranges from about a fifth in Chile and Venezuela to about two-thirds in Indonesia. In Italy more than 50 percent of all industrial companies belong to pyramidal groups (Bianchi et al., 2001). As noted above, in Japan, members of Presidents' Clubs account for less than 10 percent

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corporate groups were less likely to receive *Amakudari* than other firms.

of listed manufacturing firms, whereas other group definitions (e.g. the one provided by Dodwell Marketing Consultants, or *Keiretsu no Kenyu*'s) identify close to a half of all listed manufacturing firms are group members. Thus, in terms of overall prevalence groups, Japan does not seem to be different from many other countries.

Table 1 also indicates that in Japan, as well as in virtually all the other countries for which data are available (Turkey being the only exception), group affiliated firms are larger than unaffiliated firms.[10] This pattern is very pronounced in Italy as well, where large firms are predominantly group affiliated: over 99 percent of the firms with over 1000 employees are group members, and so are about 89 percent of the firms with 500-1000 employees. By contrast, less than 40 percent of small firms (with less than 100 employees) are group members (Bianchi et al., 2001).

Group Structure and Location across Industries

Japan's postwar corporate groups are different from groups in other countries in the conspicuous absence of a centralized decision making mechanism. Without holding companies (legally banned between the end of World War II and 1998) and any other formal joint control mechanism, it is hard to expect groups to coordinate their activities to a large extent. This is in sharp contrast with Italian groups, where an elaborate pyramid structure guarantees centralized control; indeed, Bianchi et al. (2001) argue that the very reason for the prevalence of groups in Italy is to generate a wedge between control and cash flow rights. Although the degree of cohesiveness of groups varies across countries and across groups, in many emerging markets, including Korea, groups seem to be far more centrally controlled than they are in

[10] Difference in median size between Presidents' Clubs members and other firms are somewhat bigger than differences in means – the mean size of Presidents' Clubs members is about seven times bigger than that of non-members. The mean size of firms, which are classified as group affiliated by Dodwell is about 50 percent higher than the size of unaffiliated firms.

Japan. Thus, the "loose" structure of Japan's postwar groups appears to be distinctly different than the structure of groups in many emerging markets (and also in sharp contrast with the prewar *zaibatsu*).

The spread of groups across manufacturing industries is displayed in Table 2 (data on services are incomplete). Perhaps the most notable pattern is the absence of a clear pattern of group location across industries, although there is some evidence that groups in several countries tend to locate in somewhat more capital intensive industries. This pattern is reminiscent of the prewar Japanese zaibatsu, although it is far from universally true. The postwar Japanese group firms seem to be evenly spread across many sectors (the so called "one set policy"). This pattern is not unique to Japan; for example Chilean groups also seem to exhibit this tendency, although their structure appears to be less "complete" than that of the Japanese groups. In terms of sales, relatively more capital intensive sectors such as metals or chemicals seem to be particularly important for Japan's corporate groups both in terms of the fraction of total group assets as well as in terms of the group firm's market shares. These sectors are generally important for the Japanese economy as a whole, so this finding is hardly surprising. Finally, the importance of services, most notably financial services, varies tremendously among groups in different countries. Whereas in some countries groups' entry into the financial services industry has been restricted (e.g. Korea), in other countries services constitute the bulk of the group's activity. Thus, it appears that, aside from the loose control, the structure and organization of Japan's corporate groups is not unique.[11]

Risk and Return of Group Members

Table 3 displays simple profit rates and profit volatility statistics for group and non-group member firms in Japan and elsewhere. The Japanese corporate groups appear to be characterized by low-risk and low-return, although differences in medians appear to be small and not statistically significant. Differences in mean profitability (3.7 percent for members of President Clubs versus 4 percent for other firms) are also statistically insignificant, although differences in mean standard deviation of profitability are statistically significant (standard deviation of operating profitability of 2.4 for Presidents' Clubs members versus 2.9 for other firms). Using the Dodwell definition, group affiliated firms exhibit significantly lower mean profitability, as well as significantly lower mean and median standard deviation of profitability relative to other firms. It is interesting to note that low risk and low return is far from a universal characterization of groups around the world. Only in six out of twelve countries in the table are profit rates and profit volatility lower for group affiliated firms, though not always in a statistically significant manner.

The characterization of the Japanese groups as providing a low risk and low return environment is borne out in more sophisticated econometric tests of the mutual insurance hypothesis conducted in Khanna and Yafeh (2001). They report that Japanese business groups (members of Presidents' Clubs) seem to provide mutual insurance for members firms according to virtually all of the tests they conduct.[12] At

[11] It is also hard to argue that the presence of groups has changed Japan's industrial structure in some way, because group firms tend to be located in sectors that could well be described as part of Japan's comparative advantage, although see Lawrence (1993) for another view.

[12] The main tests that were applied to Japanese data are the following: 1) A benchmark OLS regression where the standard deviation of operating profitability is regressed on a number of control variables and a group affiliation dummy. 2) A test of the relation between the squared residuals from a regression with profitability as a dependent variable, and a group affiliation dummy. 3) Tests of first order stochastic dominance comparing the distributions of profit volatility among group affiliated and non-affiliated firms. 4) A test comparing whether the distribution of profitability among group firms is more skew than among non-group firms because groups bail out member firms in financial distress and should therefore include fewer poorly performing members. 5) A two-dimensional stochastic

the same time, this is hardly true for most groups around the world: while groups in Korea and a few other countries also seem to provide a low risk environment according to these tests, groups in most emerging markets do not. Furthermore, there seems to be little relation between the extent of development of a country's financial system and the extent of mutual insurance provided by groups. In Japan too, there is little difference between measures of mutual insurance within business groups before and after the liberalization of Japan's financial markets in the 1980s.

The simple profitability statistics reported in Table 3 suggest that in many cases, group affiliated firms outperform their unaffiliated counterparts. More detailed econometric studies (controlling for various firm and group characteristics) also confirm that group membership is often associated with superior performance (e.g., Chang and Choi, 1988, for Korea, Keister, 1998, for China, Khanna and Palepu, 1999, and 2000, for Chile and India). By contrast, the raw figures for Japan, suggesting lower profit rates for group affiliated firms, are confirmed by a list of empirical studies. Caves and Uekusa (1976), Nakatani (1984), Odagiri (1992), Weinstein and Yafeh (1995 and 1998), and Kang and Shivdasani (1999) all find that members of bank-centered Japanese groups under-perform otherwise comparable unaffiliated firms. Weinstein and Yafeh (1998) also point out that growth rates among group affiliated companies were never higher than growth rates of corresponding unaffiliated companies. A plausible explanation for this phenomenon is that Japanese group firms do something other than profit maximization, perhaps in accordance with the interests of influential creditors (banks) within the group (see Hoshi and Kashyap, 2001). We conclude that, in terms of risk and return tradeoffs, Japanese corporate

dominance test of the hypothesis that group affiliated firms exhibit both low profitability and low profit volatility relative to non-group firms. 6) A test derived from Asdrubali, Sorensen and Yosha (1996) of the extent to which shocks to profitability are smoothed through changes in dividend received. For Japanese groups, evidence of risk sharing (low profit volatility) was found in all tests except 5.

groups appear to differ from most of the corporate groups elsewhere.

IV. Japanese Corporate Groups: Long-term Changes and Future Prospects

This section begins with an evaluation of the impact of corporate groups on the development of the Japanese economy in the long run. It then proceeds to a discussion of the evolution of the groups over time, continues to discuss the relative performance of group members in the 1990s, and concludes with an examination of the recent weakening of cross shareholding ties.

Corporate Groups and the Long-run Development of Japanese Industries

One (admittedly rough) way to evaluate the impact of corporate groups on the development of industries in which group members are located is to compare the growth rates of industries in Japan and the US, and to relate the differences to group presence. Using industry-level growth rates (drawn from Carlin and Mayer, 1999), Table 4 displays the fastest growing and declining industries in the US and Japan for the period 1970 through 1995. In terms of capital formation, the same industries lead the list in both countries; in terms of growth of value added there are some differences. Declining industries in the two countries are also quite similar. For the purpose of the present discussion, there is nothing to suggest that the growth rates of industries where group presence is more pronounced (see Table 2), is substantially different in Japan than in the US.[13]

Industry Location of Japanese Groups

There is little evidence that the structure of Japan's corporate groups changed

significantly, at least until the mid-1990s. Group affiliation data drawn from the 1994 volume of *keiretsu no kenkyu*, suggest that group members are still spread across many sectors, with their presence more pronounced in the chemicals, machinery, and electronics industries, much like in earlier periods. There is no reason to suspect that groups have re-organized so as to focus more on certain industries, at least until the early 1990s. The differences in size between group and non-group firms documented earlier seem to have persisted into the 1990s, and, much like in earlier periods, group firms are still somewhat more leveraged (Table 5).

The Performance of Group and Non-group Firms in the 1990s

It is interesting to examine if the risk and return differences between group members and other firms documented earlier can still be observed in the 1990s. Table 4 suggests that small differences in ROA are still present in the 1990s, with group affiliated companies being somewhat less profitable than unaffiliated firms, and with differences in ROA being larger and nearly statistically significant (at the five percent level) in comparison with other measures of profitability. The characterization of group members as less volatile appears to hold for the 1990s as well (Table 5).[14] Table 6 suggests that differences in profitability between group members and unaffiliated firms, at least when measured by ROA or by the ratio of operating profits to assets, are observed in multivariate regressions as well. It is also interesting to note that while the average group affiliated company experienced a (nominal) asset growth of about 10 percent between 1991 and 2000, the assets of non-group companies grew, on average, at about 17 percent during the same period. Thus, risk and return

[13] The industry definitions used in Carlin and Mayer (1999) are somewhat different than the 2-digit SIC classifications used in Table 2. It is therefore difficult to calculate the correlation between industry growth and group market share.

differences between group members and other companies seem to hold in the 1990s as well.

To the extent that performance differences in earlier years were due to bank monopoly power (leading to non profit maximization among group firms, see Weinstein and Yafeh, 1998), the evidence from the 1990s may attest to continued influence of banks on their remaining client firms. It is interesting to note, however, that differences in ordinary profitability (which includes interest payments) which were documented in Weinstein and Yafeh, are no longer observed in the 1990s: perhaps group banks are no longer able to charge relatively high interest rates. Low profitability of group members as a result of low risk strategies may still explain some of the differences in the 1990s, as the low volatility of profits suggests. Finally, it is quite possible that some of the relatively poor performance of group members in the 1990s is due to the phenomenon of good firms ending their long term ties with their main bank, and possibly with their bank-centered group (see Hoshi and Kashyap, 2001), and further discussion below).

The Recent Weakening of Corporate Groups

Some recent studies have focused on the possibility of disintegration of Japan's corporate groups. The on-going recession in Japan and the decline in share prices may have made cross shareholding arrangements costly to maintain and the weakness of the group's main banks may have also contributed to the disintegration of the groups. At the same time, it is possible to argue that mutual risk sharing arrangements within the groups are particularly valuable in the present economic conditions. Suzuki (1998) reports that the sale of equity stakes held by corporations

[14] About 59 percent of the firms in this sample are classified (according to the 1994 volume of *keiretsu no kenkyu*) as group members, a higher fraction than in earlier samples (need to check why).

for long periods of time has not been a widespread phenomenon at the time he conducted his research. A more recent study by Okabe (2001) shows that substantial divestment of shares has been going on within the corporate groups in recent years, especially by non-financial corporations. His main finding is that non-financial corporations have reduced cross shareholding ties with financial institutions substantially, whereas other forms of cross shareholding within the corporate groups (among financial institutions, between financial institutions and non-financial corporations, and among non-financial corporations) have remained virtually unchanged. For example, shares held by financial institutions, as part of cross shareholding arrangements, remained unchanged between 1987 and 1994, and then declined from about 8 percent of all shares in 1995 to 6 percent in 1999. This reflects a small decrease of similar magnitude in shareholding by financial institutions in both financial and non-financial companies. By contrast, shareholding by non-financial corporations declined somewhat in the early 1990s, and then, during the same 1995-1999 period, declined from about 9 percent of total market value to 4.5 percent. This decline is accounted for primarily by a fall in shares held by corporations in financial institutions (a fall of 4.1 percentage points, see Okabe, 2001, Table 2). A Nippon Life Insurance (2001) study (which is the source of Okabe's figures), confirms more broadly that the reduction in cross shareholding is a relatively recent phenomenon (mainly a feature of the second half of the 1990s), and also that this phenomenon is similar across all major corporate groups.[15]

The evidence on decreasing cross shareholding ratios, especially between non-

[15] For example, in the Mitsubishi group, average cross shareholding remained unchanged between 1987 and 1997, at a level of about 14 percent, and then declined to 11.3 percent by 2000. In the Sumitomo group, the overall decline was from 13.4 percent in 1987 to 8.9 percent in 2000; In Mitsui, the decline was from an average cross shareholding of 10.2 percent in 1987 to a mere 5.1 percent in 2000. In the Fuji, DKB, and Sanwa groups, cross shareholding declined from 11.2, 9.1 and 9.3 percent in 1987 to 4.6, 6.3 and 4.9 percent in 2000, respectively (NLI, 2001, Table 5).

financial corporations and banks, is compounded by evidence on firms deciding to discontinue their long-term relations with the group's main banks. This phenomenon, documented initially by Hoshi, Kashyap and Scharfstein (1993), is investigated more recently in Anderson and Makhija (1999) and in Miyajima and Arikawa (2001). There is no doubt that the phenomenon of firms choosing to discontinue their main bank ties (typically within their corporate group) is of large magnitude.

Another factor, which is likely to further destabilize the corporate groups, is the recent merger wave among financial institutions that cuts across traditional group lines. For example, mergers between DKB and Fuji banks (together with the Industrial Bank of Japan), or between Sakura (Mitsui) and Sumitomo banks, could potentially lead to mergers of their clients firms.[16] It will certainly alter the present situation in which no group contains two competing firms, and no main bank serves two competing companies.

The decline in corporate groups appears to be associated with a general move towards a more market based financial system in Japan (Hoshi and Kashyap, 1999), and may have even contributed to the decline of stock prices in Japan. Yet it would be ridiculous to argue that the miserable returns on the Tokyo Stock Market are simply due to the "dumping" of shares formerly held within the corporate groups. The unwinding of cross shareholding within the groups should have contributed to market liquidity, although this effect is hard to assess given the deteriorating macroeconomic conditions. Finally, a decrease in stable shareholding within corporate groups is likely to increase the likelihood of hostile takeover. Indeed, a few takeovers have been observed in Japan in recent years (Yafeh, 2000), but none of them has involved a core group company so far.

[16] A recent (early 2002) example of this is the merger talks between the marine and fire insurance companies of the Mitsui and Sumitomo groups.

VI. Concluding Remarks

There are signs that corporate groups in Japan are undergoing significant change. A decline in cross shareholding, as well as in the prevalence and intensity of main bank relationships is observed in recent years. The consolidation of banks across groups is likely to accelerate the trend that makes former relationships obsolete. If groups were ever an impediment to structural change, perhaps most notably to hostile takeovers and market based corporate governance, they are unlikely to constitute a major obstacle in the future. Strangely enough, with the exception of some degree of risk sharing that will probably be lost, not much is going to be missed in terms of economic roles played by the groups. Even the mutual insurance provided within corporate groups is likely to decline in importance, as firm-specific human capital will lose its importance and financial markets become ever more developed. Similarly, the corporate governance roles allegedly played by large shareholders and financial institutions within the corporate groups are likely to be replaced by new, perhaps more market-oriented mechanisms guaranteeing the efficient operations of firms. Thus, limited economic importance, combined with little political clout, suggest that Japan's corporate groups are unlikely to constitute an impediment to future changes in financial markets and corporate strategy.

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Table 1: Corporate Groups: Japan and Emerging Markets

The table describes corporate groups in several emerging markets as well as in pre- and postwar Japan. For data sources on all countries except Italy, see Khanna and Yafeh (2001). For Italy, see Bianchi et al. (2001).

Country	Period	Percent of firms affiliated with groups	(Median size of group affiliated firms)/ (Median size of unaffiliated firms)
Argentina	90-97	44	5.5
Brazil	90-97	47	2.5
Chile	89-96	22	18.7
India	90-97	33	4.4
Indonesia	93-95	65	2.8
Israel	93-95	23	5.0
Italy	Early 1990's	Over 50%	Group firms are much larger
Korea	91-95	51	3.9
Mexico	88-97	35	2.3
Philippines	92-97	25	3.4
Taiwan	90-97	44	2.0
Thailand	92-97	62	2.3
Turkey	88-97	52	1.0
Prewar Japan (largest three groups)	32-43	29	6.8
Postwar Japan (President's Clubs	77-92	9	8.5
Postwar Japan (Dodwell definition)	77-92	39	2

Table 2: Group Location across Manufacturing Industries

Based on the number of group and non-group companies as well as on sales. Sample period as in Table 1.

Country	The groups' most important industries	Industries in which group market share is largest
Argentina	Oil refining and natural resource extraction, metals.	Oil refining and natural resource extraction, textiles, metals.
Brazil	Chemicals, Oil refining and natural resource extraction; metals.	Food, lumber and wood, metals
Chile	Firms spread across sectors, (lumber and wood important).	Food and tobacco, lumber and wood, rubber and plastic.
Indonesia	Firms spread across sectors, lumber and wood, construction, transportation equipment important	Construction, machinery, transportation equipment
Israel	Metals, Electronics, chemicals	Metals, Electronics, chemicals
Korea	Machinery, metals, transportation equipment	Oil refining and natural resource extraction, transportation equipment, rubber, many sectors.
Mexico	Food and tobacco, mining	Food and tobacco, construction, textile, mining.
Philippines	Food and tobacco, oil refining and natural resource extraction.	Food and tobacco, lumber and wood.
Taiwan	Machinery, textile, chemicals.	Misc., oil refining and natural resource extraction, lumber and wood.
Thailand	Firms spread across sectors	Metals, oil refining and natural resource extraction, chemicals.
Turkey	Firms spread across sectors	Construction, food and tobacco, chemicals.
Prewar Japan	Heavy Industry (Hadley, 1970)	Heavy Industry (Hadley, 1970)
Postwar Japan (1987)	One set policy – firms evenly spread across sectors; a bit more weight in chemicals, electronics and transportation equipment	Metals, chemicals.

Table 3: Risk and Return Characteristics of Corporate Groups

The table shows differences in median operating performance and profit volatility for group and non-group companies in several emerging markets as well as in prewar Japan (members of the largest three *zaibatsu*), and postwar Japan (members of Presidents' Clubs and group members according to the Dodwell definition). Statistics are based on the year of maximal coverage for each country (for Japan, 1987 profitability figures, and standard deviation based on 1977-1992 period), and exclude firms with profit rates above 100 percent or below –100 percent. Significance levels for the comparisons of medians are based on Wilcoxon signed-rank tests. * denotes significance at the five percent level and ** denotes significance at the ten percent level. For data sources, see Khanna and Yafeh (2001).

Country	Difference in median ROA between group and non-Group firms	Difference in median standard deviation of ROA between group and non-Group firms
Argentina	-3.9**	-1.2**
Brazil	1.5**	-1.0
Chile	3.7*	0.3
India	2.1*	0.2*
Indonesia	-0.5	-0.6*
Israel	2.4*	-0.5
Korea	-0.3	-0.7*
Mexico	2.1	0.5
Philippines	3.3	-0.4
Taiwan	-1.1	-0.6**
Thailand	-1.5*	-0.6**
Turkey	-1.7	-2.9
Prewar Japan	-0.9	-2.7
Postwar Japan (Presidents' Clubs)	-0.2	-0.1
Postwar Japan (Dodwell)	-0.2	-0.2*

Table 4: Growth of Industries in Japan and the US, 1970-1995
Source: Carlin and Mayer (1999)

	Japan	US
Fastest growing industries measured by capital formation	Electrical machinery transportation equipment non-electrical machinery Metals Chemicals (non industrial)	Plastic Electrical machinery Non-electrical machinery Chemicals (non industrial) Chemicals (industrial)
Fastest growing industries measured by growth of value added	Tobacco Plastic Printing Electrical machinery Chemicals (non-industrial)	Electrical Machinery "Professional Goods" Transportation equipment Machinery Metals
Slowest growing industries measured by capital formation	Wood Footwear Leather Apparel Shipbuilding	Iron Shipbuilding Tobacco Footwear Leather
Slowest growing industries measured by growth of value added	Iron Wood Shipbuilding Textile Furniture	Wood Footwear Leather Apparel Shipbuilding

Table 5: Corporate Groups, 1991-2000

The table reports mean values, and standard deviations (in parentheses). The group affiliation dummy equals one for firms that are classified as group members according to the 1994 *Keiretsu no Kenkyu* definition. Statistically significant differences (at the five percent level) are starred.

	Group firm-years N=3660	Other firm-years N=2536
Total assets (units)	3.02*	1.88
	(5.91)	(5.15)
Debt/assets	0.57*	0.54
	(0.17)	(0.27)
ROA (%)	3.8	3.9
	(3.4)	(4.3)
Mean (within firm) std.	2.0*	2.4
deviation of ROA (%)	(1.2)	(1.5)
Operating profit/assets (%)	3.0	3.0
	(3.3)	(4.5)
Ordinary profit/assets (%)	2.9	2.9
	(3.5)	(5.4)

Table 6: Profitability Regressions, 1991-2000

The dependent variables are measures of profitability and the regressions are OLS using pooled data with heteroskedasticity-consistent standard errors reported in parentheses. The group affiliation dummy equals one for firms that are classified as group members according to the 1994 *Keiretsu no Kenkyu* definition. * denotes a coefficient significant at the five percent level.

	ROA	Operating profits /assets	Ordinary profits /assets
Group dummy	-0.27*	-0.19*	-0.10
	(0.09)	(0.08)	(0.10)
Debt/assets	-5.28*	-5.84*	-10.21*
	(0.48)	(0.41)	(1.65)
Fixed assets/total assets	-5.17*	-5.00*	-6.16*
	(0.39)	(0.40)	(0.40)
Log(sales)	0.41*	0.41*	0.58*
	(0.06)	(0.06)	(0.12)
Std. deviation of ROA	-0.24*	-0.32*	-0.32*
	(0.06)	(0.06)	(0.07)
Percent shares held by top twelve shareholders	0.007	0.012*	0.016*
	(0.006)	(0.006)	(0.006)
Percent shares Held by individuals	0.04*	0.02*	0.02*
	(0.01)	(0.01)	(0.01)
Percent shares held by Financial institutions	0.006	0.003	0.004
	(0.005)	(0.005)	(0.007)
Percent shares held by non-financial firms	-0.07*	-0.04	-0.07
	(0.03)	(0.03)	(0.05)
Industry dummies	Yes	Yes	Yes
Year dummies	Yes	Yes	Yes
N	6196	6196	6196
R^2	0.2958	0.2867	0.4239