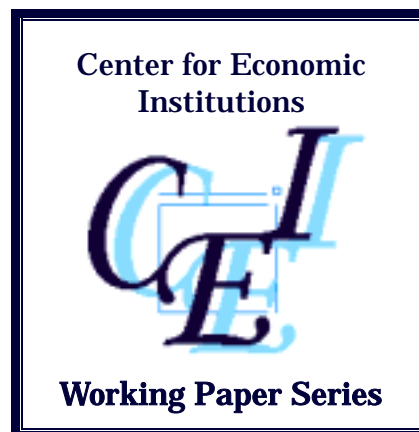


Center for Economic Institutions
Working Paper Series

CEI Working Paper Series, No. 2000-5

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East Asia

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The Costs of Group Affiliation: Evidence from East Asia

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This version: July 2000

Abstract

We examine the costs of business group affiliation using data for 2,600 firms in nine East Asian economies for the 1994-1996 period. We find that group-affiliated firms are on average valued below independent firms, with the discount attributable to firms whose ultimate owners have voting rights exceeding cash-flow rights. When there is no divergence between voting and cash flow rights, group-affiliated firms actually have a slight value premium over independent firms. Our results are robust to different valuation measures, time periods and estimation techniques. The evidence is consistent with the view that the anticipation of expropriation associated with group affiliation more than offsets any possible benefits of group membership.

¹ World Bank, World Bank and CEPR, Hong Kong University of Science and Technology, and the Chinese University of Hong Kong, respectively. We thank Utpal Bhattacharya, Erik Berglof, Doug Diamond, Jack Glen, Shing-Yang Hu, Tatiana Nenova, Giovanna Nicodano, Enrico Perotti, Gordon Phillips, Henri Servaes, Andrei Shleifer, Yu-Hui Su, Sheridan Titman, Jeremy Stein, Rene Stulz, and participants at the 1999 NBER Summer Institute, the 1999 Conference on Equity Market Development in Emerging and Transition Economies, the 2000 NTU Conference on Finance, and the 2000 AEA and EFA Meetings for helpful suggestions. Joseph Fan and Larry Lang gratefully acknowledge the Hong Kong UGC Earmarked grant for research support. The opinions expressed do not necessarily reflect those of the World Bank. Corresponding author: Joseph Fan, Department of Finance, Hong Kong University of Science & Technology, Clearwater Bay, Kowloon, Hong Kong; email: pjfan@ust.hk; phone: (852) 2358 8016; fax: (852) 2358 1749

The Costs of Group Affiliation: Evidence from East Asia

1. Introduction

Business group structures have long been associated with early stages of countries' development as they can substitute for underdeveloped markets and institutions (Amsden, 1989; Aoki, 1990). A group can be described as a corporate organization where a number of firms are linked through cross-ownership or where a single individual, family or coalition of families owns a number of different firms. Relative to independent firms, group structures are associated with greater use of internal factor markets, including financial markets. Capital-constrained firms may establish internal financial markets that allocate capital among firms within the group, which leads to economic benefits when external financing is scarce. At the same time, a diminished role of external markets in monitoring resource allocation and the more complex ownership structure of groups may prove conducive to greater expropriation. This has social costs, as some profitable investments are not undertaken while others (that are undertaken) require a higher rate of return. The importance of these expropriation costs associated with corporate groups is the issue investigated in this paper.²

² The economic benefits of internal capital markets in allocating financial capital compared to external markets have been discussed in Williamson (1985) and Stein (1997). On the other hand, a body of literature suggests that agency costs in diversified organizations could worsen allocation of resources and lead to inefficient investment (Shin and Stulz, 1998; Scharfstein and Stein, 1997; Scharfstein, 1998; Rajan, Servaes, and Zingales, 2000). In the context of groups, Lins and Servaes (1999a) report that the diversification performance of group-affiliated firms in Japan is inferior to that of independent firms. On the other hand, Khanna

Group affiliation is a prevalent feature of publicly traded corporations in East Asia (Prowse, 1992; Backman, 1999; Claessens, Djankov, and Lang, 2000a), in contrast to the United States where publicly traded companies are typically independent. Corporations that belong to business groups are characterized by deviations of voting from cash flow rights that allow owners to gain effective control of their firms with low cash flow rights. As argued in Stulz (1988) in the context of tender offers, and Shleifer and Vishny (1997) and La Porta et al. (1999b) in the context of expropriation, differences between cash flow rights and voting rights can affect corporate policies and firm value. Large, controlling owners have incentives to expropriate minority shareholders by making investments that benefit themselves at the expense of minority shareholders. Firms with large controlling shareholders may also forego profitable investment opportunities. This is because their cost of capital is high, as investors anticipate the expropriation. Examples of expropriation are channeling corporate resources to projects that generate utility for the controlling owners but provide little benefits to the minority owners.

The complicated ownership structures of groups—stock pyramids, cross shareholdings, and, to a lesser extent, dual-class shares—facilitate the creation of separation between the ultimate owners' voting rights and cash-flow rights. This provides ultimate owners the ability and the incentive to divert corporate resources for their private benefits at the expense of outside investors. Expropriation is more likely when voting rights are high and cash flow rights low, since the controlling owner gains in private benefits but bears little of the consequences of the reduction in the

and Palepu (2000) and Perotti and Gelfer (1999) provide evidence that groups and their internal factor markets are beneficial in emerging economies. However, they do not rule out the possibility of private appropriation of value.

firm's value (Bebchuk, 1999). A recent literature actually argues that groups are being formed as a mean to capture private benefits. Wolfenzon (1999) models the rationale for forming groups. He argues that the pyramidal structures of groups can be used by controlling owners to expropriate outside investors in countries with poor investor protection. Group structures may also be used to prevent outsiders from taking over firms and sharing the private benefits (Nicodano, 1998, Bebchuk et al., 1999).

In this paper, we empirically examine the economic significance of expropriation in group-affiliated firms. As minority shareholders anticipate expropriation when firms are affiliated with groups, we expect that the value of group-affiliated firms be lowered by the relative amount of anticipated expropriation. To investigate this, we assemble a database containing group affiliation and ultimate ownership data for over 2,600 firms during the 1994-1996 period in nine East Asian economies. Using these data, we document group affiliation of firms and the differences in ultimate ownership patterns between group-affiliated and independent firms. We find that around 70 percent of firms are group-affiliated, and over 60 percent of affiliated firms have ultimate owners with more voting rights than cash flow rights. In contrast, divergence between cash flow and voting rights is almost non-existent among independent firms.

We then compare the value of group-affiliated firms with that of independent firms and examine the extent to which expropriation can explain valuation differences. We find that group-affiliated firms in East Asia are associated with a four-percent value discount. To capture the incentives for expropriation, we use the degree of divergence between voting and cash flow rights of each firm's largest ultimate owner. We find that the discount for group-affiliated firms arises from firms whose ultimate

owners have more voting than cash-flow rights, and that the value discount disappears when there is no or only a small divergence. These results control for a number of firm-specific factors affecting valuation and are robust to different valuation measures, time periods and estimation techniques.

This paper contributes to the literature on the costs and benefits of groups by identifying expropriation as one important source of value loss of group-affiliated firms. It suggests that legal reform in emerging and transition economies should focus on protecting minority investors, thus supporting other recent work (La Porta et al. 1999b; Berglof and von Thadden, 1999). Our evidence can also be compared to studies that emphasize the economic benefits of internal markets associated with groups in emerging economies (Khanna and Palepu (1999) and Perotti and Gelfer (1999)).

The paper proceeds as follows. Section 2 describes the sample and empirical measures. Section 3 compares ownership and other characteristics between group-affiliated and independent firms and examines the impact of separation of cash flow and voting rights on the value of affiliated firms relative to independent firms. Section 4 undertakes a number of robustness tests. Section 5 concludes.

2. Data and measurement

2.1. The sample

We use data for 2,657 listed companies from nine Asian economies—Hong Kong, Indonesia, South Korea, Japan, Malaysia, the Philippines, Singapore, Taiwan and Thailand—for the years 1994-1996. We start with 2,980 firms for which ultimate ownership data has been assembled by Claessens et al. (2000a). The ownership data come primarily from Worldscope that reports block ownership (more than 5% stakes)

and full financial information on companies. It is supplemented with ownership data from the Asian Company Handbook, the Japan Company Handbook, the Annual Reports of the Hong Kong, Jakarta, Seoul, Kuala Lumpur, and Manila Stock Exchanges, as well as with data from the Korean Fair Trade Commission, the Securities Exchange of Thailand Companies Handbook, and the Singapore Investment Guide.

We drop 323 firms whose annual financial data are not reported by Worldscope in all years between 1994 and 1996.³ We use this period as Worldscope covers substantially fewer companies before 1994. The sample period ends in 1996 to avoid any effects of the 1997 East Asian financial crisis on our empirical results.

We identify group affiliation status of the remaining 2,657 firms from country specific sources, as documented in Table 1. The definition of group membership is country-specific, as there is no unified approach to define group affiliation. In Korea, we use data provided by the Korean Fair Trade Commission, which defines group-affiliated firms as those that are owned at least 30% by other firms in the same group. The definition of Indonesian and Thai business groups is based on whether the controlling family is the largest shareholder in the firm, irrespective of the actual level of holding. In Taiwan, the definition of business groups is based on whether at least 20% of the firm's stock is owned by other firms in the respective group.

Table 2 summarizes the characteristics of our sample and compares some sample characteristics with all listed firms. Our sample represents between 88 percent

³ Companies across the region report their annual results using different fiscal year-ends, but mostly March 31st or December 31st. To facilitate comparison across the companies, we define the end of a year as March 31st of the next year. For example, 1996 is defined as beginning on April 1, 1996 and ending in March 31, 1997.

(Singapore) to 24 percent (Taiwan) of listed firms, with an average of 46 percent for the nine economies. Of the 2,657 firms, 1,210 firms (45%) are from Japan. The average market equity value of the sample firms is \$1,445 million, compared to \$806 million for all listed firms, i.e., there is a bias towards larger firms. Firms from Japan (\$2,290 million) are the largest, followed by Taiwan, Hong Kong, Singapore, Thailand, Malaysia, the Philippines, and Korea, with Indonesia the smallest (\$459 million). This ordering is the same as that of all listed companies, except for Thailand.

On average, 68 percent of our sample firms are affiliated with groups. Group-affiliated firms dominate in Japan (79%), Indonesia (76%), and Philippines (72%), and represent 49% in Thailand, the lowest share. To check the representativeness of our sample, we compare the degree of group-affiliation with that reported for five economies by Chan, Khanna, and Palepu (1999). While they use different sources to classify firms, with the exception of the Philippines, their fractions of group-affiliated firms are very similar to ours.⁴

2.2. Ultimate ownership

We identify for each firm its ultimate owners and their share of cash flow and voting rights, using data of Claessens et al. (2000a). The procedure of identifying ultimate owners is similar to the one used in La Porta et al. (1999a). An ultimate owner is defined as the shareholder who is not controlled by anybody else (and who has at least 5 percent of the control rights of the company). If a company does not have an ultimate owner, we classify it as widely held. Although a company can have more than one ultimate owner, we focus on the largest ultimate owner, i.e., she who has the most voting rights. We identify voting rights as well as cash flow rights of

⁴ The Philippine sample is the smallest in terms of number of firms. This could explain the difference.

this ultimate owner. The divergence between voting rights and cash flow rights can be large. Suppose, for example, that a family owns 10% of the stock of a publicly traded Firm A, which in turn has 20% of the stock of a Firm B. We define the family to control 10% of Firm B, the weakest link in the chain of voting rights. The family has, however, only 2% of the cash flow rights of Firm B, the product of the two ownership stakes along the chain. Using firm-specific information on pyramiding structures, cross-holdings, and deviations from one-share-one-vote rules, we determine the cash flow and voting rights for each firm.

Our starting point is the Worldscope database, which generally provides the names and holdings of large owners. We supplement this data with our information on business group affiliation. Information on dual-class shares is collected from Datastream. We supplement the dual-class information with data from the Company Handbooks for Hong Kong, the Philippines, Singapore, and Thailand. In all cases, we collect the ownership structure as of December 1996 or the end of the 1996 accounting year and use the 1996 ownership structures throughout our study.

2.3. Valuation measure

We are interested in the valuation of firms that are affiliated with groups relative to that of independent firms. Most research has employed Tobin's q to analyze the discount in market values resulting from agency problems (Morck, Shleifer, and Vishny, 1988; Barclay and Holderness, 1989; McConnell and Servaes, 1990). Tobin's q is constructed as the market value of assets divided by the replacement cost of assets. For the purposes of the analysis, we define Tobin's q as the market value of equity plus book value of debt divided by total assets, as replacement values are unavailable for all countries.

To facilitate comparison across firms, we net out industry- and country-wide effects by subtracting from each Tobin's q the median Tobin's q of firms in the same primary industry sector in the same country, where industry sectors are defined at the level of two-digit *Standard Industry Classification* (SIC) codes. We have sufficient peer firms in our sample for most industry sectors in most countries. For a few industry sectors in some countries where we can identify less than three peer firms, we use broad industry groups as defined by Campbell (1996) to compute the industry median Tobin's q.

3. Empirical results

3.1. Characteristics of group-affiliated firms

Table 3 reports the mean statistics for group-affiliated firms and independent firms. We have 7,283 firm-years in the sample period, of which 5,061 for group-affiliated firms and 2,222 for independent firms. Because Japan comprises a large proportion of our sample, we report in a separate panel the statistics for the sample excluding Japan.

In terms of ownership structure, the mean level of cash flow rights and voting rights for all firms is 0.15 and 0.18, respectively (excluding Japan, 0.22 and 0.26). The ultimate owners of affiliated firms have on average lower cash flow rights than those of independent firms: 0.12 versus 0.21 (0.21 and 0.24 if Japan is excluded). Average voting rights are 0.17 for affiliated firms and 0.21 for independent firms (if Japan is excluded, 0.27 and 0.24). This suggests, with the exception of Japan, that ultimate owners of affiliated firms have typically more control rights than ultimate owners of independent firms.

The key difference in ownership structures between group-affiliated firms and independent firms is the extent of divergence between ownership and control rights.

To capture the divergence, we follow Claessens et al. (2000b) and compute the ratio of cash flow over voting rights, which ranges from zero to one.⁵ We expect that a larger divergence is associated with greater incentives on the part of the ultimate owner to expropriate minority owners, implying that the ratio is inversely related to the incentive to expropriate. The average ratio is 0.75 for all firms (0.86 excluding Japan), suggesting significant separation of ownership and control. This is confirmed in the fraction of firms where voting rights exceed cash flow rights: 0.44 (0.35 without Japan). Deviations between cash flow and voting rights are closely associated with group affiliation: the average ratio is 0.64 for affiliated firms compared to 0.99 for independent firms (without Japan, 0.78 and 0.99), with the differences highly statistically significant. Comparing the fraction of firms where voting rights exceed cash flow rights, we find for affiliated firms a fraction of 0.63 and for independent firms only 0.02 (without Japan, 0.57 and 0.03 respectively). These statistics indicate that divergence between cash flow and voting rights prevails among affiliated firms, and is almost not existent among independent firms. The sharp difference arises, as independent firms do not have ownership structures involving stock pyramids and cross shareholdings, and there are only a few independent firms that have dual-class shares.

We compare affiliated firms and independent firms on some other characteristics. Affiliated firms are marginally more diversified than independent firms: measured at the 2-digit SIC code level, 59 percent of affiliated firms and 53

⁵ For a small number of firms, the cash-over-voting rights ratio is above one, as owners hold some stocks that have no voting rights.

percent of independent firms have multiple business segments.⁶ Similarly, on average affiliated firms have 2.39 business segments, while independent firms have only 2.25 segments. Affiliated firms are also typically larger than independent firms are, with an average book value of assets of \$7,128 million versus \$3,556 million for independent firms (excluding Japan, \$1,814 million versus \$2,872 million, but this reversal is due to some extreme values). Affiliated firms appear less profitable than independent firms do, with average operating income to sales ratio of 0.06 versus 0.09 (excluding Japan, 0.09 and 0.11). In terms of sales growth, affiliated firms have significantly lower growth than independent firms do, 4 percent versus 8 percent. This is largely attributable to Japanese firms, however. After excluding Japan, the difference becomes insignificant: 15 percent versus 14 percent.

3.2. Valuation effects

Our main objective is to examine whether group affiliation affects the value of firms and what the role of separation of cash flow and voting rights is in explaining corporate valuation. Table 4 provides the mean and median industry-adjusted Tobin's q of affiliated and independent firms.⁷ Measured by Tobin's q, the mean Tobin's q of

⁶ Company segment data were collected from *Worldscope* and supplemented with additional data from the *Asian Company Handbook* and the *Japan Company Handbook*. Since companies report their segment data at different levels of detail, we group the companies' segments according to the two-digit Standard Industry Classification (SIC) system. Following the previous literature, we classify firms as single-segment if at least 90 percent of their total sales are derived from one two-digit SIC segment. Firms are classified as multi-segment if they operate in more than one two-digit SIC industry and none of their two-digit SIC segments accounts for more than 90 percent of total firm sales.

⁷ The sample size used in this analysis is 7,049 firm-years, smaller than the earlier sample, because of missing value in the computation of adjusted Tobin's q and because we exclude

affiliated firms is significantly smaller than those of the independent firms: 0.08 versus 0.14, with the medians 0.00 versus 0.005 (excluding Japan results are similar, mean (median) adjusted Tobin's q of 0.10 (0.00) versus 0.15 (0.005)).

To investigate the role of separation of ownership and control, we classify affiliated firms into two sub-samples, depending on whether there is divergence or not. When there is no divergence between cash flow and voting rights, i.e., $C/V=1$, there is no statistically significant difference in Tobin's q between affiliated and independent firms. In contrast, when divergence exists, i.e., $C/V<1$, affiliated firms' values are statistically significant lower than that of independent firms, with an average Tobin's q of 0.05 for affiliated firms and 0.14 for independent firms (excluding Japan, a similar result holds). Comparing medians yields the same result. This comparison suggests that valuation differences between affiliated and independent firms are closely related to the divergence between cash-flow and voting rights, not to group affiliation per se.

3.3. Regression analysis

We perform a multiple regression analysis to test if our results in Table 4 hold after controlling for other factors that may affect value. The dependent variable is the industry-adjusted Tobin's q. To capture the valuation effects associated with group affiliation, we include a group dummy variable (GROUP), equal to one if the firm is affiliated with a group, and otherwise zero. We include three control variables. Several studies have provided evidence that diversification is detrimental to firm value (Lang and Stulz, 1994; Claessens et al., 1999 for East Asia; Lins and Servaes, 1999b for emerging markets). As affiliated firms are more diversified than

the top- and bottom-one percent of observations ranked by the adjusted Tobin's q to mitigate any effects of outliers.

independent firms are, value differences could thus be explained by differences in degree of diversification. We therefore include a segment dummy variable (SEG) equal to one if the firm has more than one segment, and zero otherwise.

Prior studies have shown that growth prospect affect value (Lang and Stulz, 1994; Berger and Ofek, 1995). As affiliated firms have on average lower growth rate than independent firms, we control for growth opportunities. Following La Porta et al. 1999b, we include sales growth (GSALES), measured by the growth rate of sales from the previous fiscal year-end to the current fiscal year-end.⁸ U.S. evidence furthermore suggests that the relation between firm size and q is negative (Lang and Stulz, 1994). It is possible that this influences the group-affiliation effect as well as affiliated firms are on average larger than independent firms are. We therefore include firm size (Log(ASSETS)), measured as the natural logarithm of book assets in thousands of U.S. dollar. We also include 1995 and 1996 dummy variables to control for fixed effects.

We employ ordinary least squares regression analysis and use the pooled sample (5,813 firm-years) as well as the sub-sample that excludes Japan firms (2,425 firm-years). The sample size is reduced from the earlier size due to some missing values for the control variables. Regression results are reported in Table 5. Based on the pooled sample, the estimated coefficient of GROUP is a negative 3.66 percent,

⁸ Other studies have used R&D expenditures and capital expenditures. R&D expenditures are missing for most of the firms in our sample. Data availability of capital expenditures is poor for Japan but reasonably good for the other economies. To test if our results are sensitive to the use of proxy for growth prospect, we perform regressions on a smaller sample using capital expenditure over sales instead of sales growth. The results (not reported) are qualitatively similar.

which is statistically significant at the one-percent level (Equation (1)), and consistent with the results reported in Table 4. After excluding Japan, the estimated coefficient is of the same magnitude, but statistically insignificant (Equation (2)). This evidence suggests that group affiliation is associated with a value loss of about four percentage points. The estimated coefficients of the control variables are mostly of the expected signs. Value is negatively related to diversification (SEG), firm size (Log(ASSETS)), while positively related to sales growth (GSALES).

We next account for the effect of separation of ownership and control among group-affiliated firms. We modify the regression model by including an additional explanatory variable: $\text{GROUP} \times \text{C/V}$, which captures the effects of anticipated expropriation induced by the divergence between cash flow and voting rights of ultimate owners for group-affiliated firms. The results are reported in Equations (3) and (4) of Table 5. Using the pooled sample, the estimated coefficient of GROUP is a negative 12.91 percent, which is highly significant (t-statistic -7.20). And, the estimated coefficient of $\text{GROUP} \times \text{C/V}$ is a positive 14.93 percent and is also highly significant (t-statistic 7.63). Without Japan, these two coefficients are -23.10 percent and 25.13 percent respectively and again highly statistically significant. The estimated coefficients of the control variables remain of the expected signs and magnitudes.

The positive coefficient of $\text{GROUP} \times \text{C/V}$ indicates that affiliated firms' value are lower when the divergence between voting rights and cash flow rights is large. In the extreme case when C/V is close to zero, the value loss associated with group-affiliation is 12.91 percent (23.10 percent if Japan is excluded). Without divergence ($\text{C/V}=1$), the sum of the two coefficients (GROUP and $\text{GROUP} \times \text{C/V}$) suggests that affiliated firms have a value premium of about 2 percentage points over independent firms (this also holds excluding Japan). This suggests that the value loss reported for

group-affiliated firms is largely due to group-affiliated firms whose ultimate owners possess more voting rights than cash flow rights, i.e., where $C/V < 1$. The evidence is consistent with the view that the anticipation of expropriation is an important negative factor for firms affiliated with groups. Dividing the sample of group-affiliated firms into those with ultimate owners with large control stakes and those with smaller stakes, we find that the value loss is the greatest for the sub-sample of firms characterized by both cash-vote divergence and high control level (not reported). The fact that results are even stronger in this sub-sample yields further credence to the expropriation view.

4. Robustness tests

So far, we have used the industry adjusted Tobin's q . We do not expect any bias from this method, but as a robustness check, we also use the unadjusted Tobin's q in our regressions, i.e., the market to book value of the firm, unadjusted for the effects of the industry the firm is primarily in. Table 6 reports the results, where we also use a fixed-effects estimator (using dummies for industry, country, and year). We find very similar results to those reported in Table 5. The coefficient for GROUP is a negative 2 percent, but not statistically significant. When including the divergence variables, we find that the coefficient for GROUP is a negative -0.1235 , and again highly statistically significant, and the coefficient for $GROUP * C/V$ a positive 0.1551 , also highly statistically significant. Without Japan, the results are again similar, -0.2093 for GROUP and 0.2401 for $GROUP * C/V$. The coefficients for the firm-specific control variables retain their sign and significance. The results thus confirm the importance of anticipated expropriation in explaining the valuation discount for group-affiliated firms.

As a further robustness check, we use a sales-weighted valuation measure. As noted, many East Asian firms have significant operations in multiple segments, i.e., they are conglomerate firms. To examine whether this influences the results when using (adjusted) Tobin's q , we use instead an excess value measure similar to Berger and Ofek (1995). The excess value, EXV, is defined as the natural logarithm of the ratio of the firm's actual value to its imputed value.⁹

Table 7 reports the set of empirical analysis based on this excess value measure. The results are qualitatively similar to the results based on industry-adjusted Tobin's q . The coefficient for GROUP is -0.06 and statistically significant. When including the ownership divergence variables, we find that the coefficient for GROUP is -0.2507 and again highly statistically significant, and the coefficient for GROUP*C/V a positive 0.3020, also highly statistically significant. Without Japan, the results are again similar, -0.3722 for GROUP and 0.4122 for GROUP*C/V. For this estimation, the value of group-affiliated firms with the most divergence, i.e., C/V = 0, would be 25 percentage point lower compared to independent firms. In contrast, for group-affiliated firms with no divergence, i.e., C/V=1, valuation would be about 5 percentage points higher than that of independent firms.

⁹ Market capitalization, the market value of common equity plus the book value of debt, is used as the measure of actual firm value. The imputed value is calculated as follows. We first compute median market-to-sales ratio for each two-digit SIC industry in each country using only single-segment firms. The market-to-sales ratio is the market capitalization divided by firm sales. We then multiply the level of sales in each segment of a firm by its corresponding industry median market-to-sales ratio. The imputed value of the firm is obtained by summing the multiples across all segments.

Lastly, we also run tests for sub-samples by year and using a random effects estimator. Table 8 reports the results, using the specification of equation of Table 5, for each of the three years. All results are similar to those of Table 5, and coefficients barely change compared to using the whole sample. The slope coefficients for GROUP, for example, vary from 0.1167 to 0.1464 and the slope coefficients for GROUP*C/V from 0.1458 to 0.1564, thus bordering the coefficients of the specification of Table 5.

Using different estimation techniques does not alter the results either. Table 9 provides the results from the random effects estimation, again using the specification of Table 5. The results are qualitative and quantitative the same as those of Table 5, as well as results from other specifications.

5. Conclusion

We provide strong empirical support that an important source of value loss of group-affiliation arises from the anticipation of expropriation of minority shareholders by controlling owners. Group-affiliation is associated with more concentration of control in the hands of few ultimate owners and often large divergence of control from cash flow rights. These ownership structures imply that the ultimate owners of corporate groups have the ability and incentive to expropriate minority shareholders. Given the risk of expropriation, it comes as no surprise that minority shareholders discount the value of the group-affiliated firms. We find that the larger the divergence between ownership and control, the larger the value loss. Once we control for the effects of ownership structure, group affiliation does not diminish firm value, and may actually enhance value slightly.

Our findings are generally consistent with the predictions of several recent theoretical models on the causes and consequences of separation of ownership and control (Bebchuk et al. 1999, Bebchuk, 1999, La Porta et al., 1999b) as well as the formation of groups (Wolfenzon, 1999). They also extend the previous body of evidence that expropriation is an important agency problem around the world.

Although we find evidence consistent with the hypothesis that expropriation hurts the value of group-affiliated firms, we have not investigated directly whether groups provide any economic gains. These gains could result from more efficient allocation of resources in internal markets and better risk sharing relative to external financial markets. Future research into the specific relations between group affiliation, internal markets and expropriation would help us understand better the reasons for different organizational structure of firms, and their effects on corporate value.

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Table 1: Sources of Group Affiliation Data for East Asian Firms

Country	Source	Definition
Hong Kong	<p>Chu, Yin-Wah and Gary Hamilton, 1993, Business Networks in Hong Kong, University of California, Davis, mimeo.</p> <p>Far Eastern Economic Review, 1992, Have Cash, Will Travel, March 5, Special Section on the Li ka-Shing Conglomerate</p> <p>Hong Kong Company Handbook, 1998</p>	The family is the largest shareholder of the firm
Indonesia	<p>Fisman, Ray, 1998, Announcement Effects of Suharto's Illnesses on Related Companies, Working paper, Harvard Business School.</p> <p>W.I.Carr Banque Indosuez Group, 1997, Indonesian Group Connections, Jakarta, Indonesia</p> <p>Indobusiness, 1998, 1995 Ranking of Indonesian Largest Conglomerates, available at http://indobiz.com/company/warta/conglo/htm</p>	The family is the largest shareholder of the firm
Japan	<p>Dodwell Marketing Consultants, 1997, Industrial Groupings in Japan: the Anatomy of the "Keiretsu," 12th Edition, 1996/1997, Tokyo, Japan.</p> <p>Sato, Kazuo, 1984, "The Anatomy of Japanese Businesses," M.E.Sharpe, Chapter 4.</p>	The company's CEO sits in the group's President's breakfast.
Korea (South)	<p>Korean Fair Trade Commission, 1997, 1996 List of Largest 30 Chaebol, Seoul, Korea.</p> <p>Lim, Ungki, 1998, Ownership Structure and Family Control in Korean Conglomerates: with Cases of the 30 Largest Chaebol, Seoul University, Korea.</p>	At least 30 percent of the stock of the firm is owned by other firms in the group.
Malaysia	<p>Kuala Lumpur Stock Exchange, 1997, Malaysian Company Handbook</p> <p>Hiscock, Geoff, 1998, Asia's Wealth Club, Nicholas Brealey.</p>	The family is the largest owner.
Philippines	<p>Philippine Stock Exchange, 1997, Investment Guide 1996, Manila.</p> <p>Tan, Edita, 1993, Interlocking Directorates, Commercial Banks, Other Financial Institutions, and Non-Bank Corporations, Philippine Review of Economics and Business, 30, 1-50.</p>	A family member sits on the Management Board and/or the Board of Directors.
Singapore	<p>Singapore Stock Exchange, 1997, Singapore Company Handbook.</p> <p>Hiscock, Geoff, 1998, Asia's Wealth Club, Nicholas Brealey.</p>	The family is the largest owner.

Table 1 (Continued)

Country	Source	
Taiwan	China Credit Information Service, 1997, Business Groups in Taiwan, 1996-1997, Taipei, Republic of China.	The firm is counted as group-affiliated if other firms in the
Thailand	Far Eastern Economic Review, 1994, The Money Machine, August 11, for the corporate holdings of the Kuomintang.	group own 20 percent of the stock.
	Tara Siam Ltd., 1997, Thai Business Groups 1996/1997: A Unique Guide to Who Owns What, Bangkok, Thailand.	The firm is listed as a related company in the annual report of the leading company in the group.
	The Nation, 1998, Thai Tycoons: Winners and Losers in the Economic Crisis, July, Special Issue.	
	Far Eastern Economic Review, 1997, From Chickens to Microchips: the Story of Thai Conglomerates, January 23.	

Table 2: Sample Characteristics

The sample includes 2657 firms whose ownership data are available from the dataset assembled by Claessens et al. (2000a) and whose financial data are available from *Worldscope* in at least one year during the 1994-1996 fiscal years. Group affiliation data of the sample firms are from country-specific sources as reported in Table 1. The market equity value of the sample firms are calculated at their 1996 fiscal year end dates or, if the 1996 data not available from *Worldscope*, the most recent fiscal year end dates prior to 1996. The IFC Emerging Stock Market Factbook as of December 31, 1996 reports the number and market equity value of listed companies in the nine economies.

Country	Number of firms in the sample	Number of listed firms in the economy	Sample firms in fraction of all listed firms	Average equity value of the sample firms (\$ millions)	Average equity value of all listed firms in (\$ millions)	Fraction of the sample firms affiliated with groups	Fraction of listed firms affiliated with groups as reported by Chang, Khanna, and Palepu (1999)
Hong Kong	312	561	0.56	827	801	0.56	-
Indonesia	146	253	0.58	459	360	0.76	0.61
Japan	1210	2334	0.52	2290	1323	0.79	-
Korea (South)	271	760	0.36	563	183	0.53	0.53
Malaysia	197	621	0.32	695	495	0.58	-
Philippines	97	216	0.45	628	373	0.72	0.36
Singapore	196	223	0.88	774	674	0.64	-
Taiwan	92	382	0.24	1364	716	0.55	0.41
Thailand	136	454	0.30	725	220	0.49	0.57
All	2657	5804	0.46	1445	806	0.68	-

Table 3: Comparison of mean characteristics between group-affiliated and independent firms in East Asia

The sample includes 7283 firm-years from 1994 to 1996, of which 5061 are affiliated firms and 2222 are independent firms. Due to missing value, smaller numbers of observations are used to compute the mean statistics for the segment, operating income over sales, and sales growth variables.

Variable	All firms	Affiliated firms	Independent firms	T-statistic for difference
Panel A: All countries				
Cash-flow rights	0.15	0.12	0.21	-28.39
Voting rights	0.18	0.17	0.21	-13.30
Cash flow rights over voting rights	0.75	0.64	0.99	-71.52
Fraction of firms with cash-vote divergence	0.44	0.63	0.02	83.32
Number of segments	2.35	2.39	2.25	3.42
Fraction of firms with multiple segments	0.58	0.59	0.53	4.21
Total assets (MM\$US)	6038	7128	3556	5.64
Operating income over sales	0.07	0.06	0.09	-3.36
Sales growth	0.05	0.04	0.08	-4.47
Panel B: East Asia excluding Japan				
Cash flow rights	0.22	0.21	0.24	-7.96
Voting rights	0.26	0.27	0.24	6.18
Cash flow rights over voting rights	0.86	0.78	0.99	-39.51
Fraction of firms with cash-vote divergence	0.35	0.57	0.03	48.43
Number of segments	2.33	2.42	2.19	3.84
Fraction of firms with multiple segments	0.55	0.57	0.50	3.36
Total assets (MM\$US)	2241	1814	2872	-2.26
Operating income over sales	0.11	0.09	0.11	-1.08
Sales growth	0.15	0.15	0.14	0.95

Table 4: Value differences between group-affiliated and independent firms in East Asia

Value is measured by industry median-adjusted Tobin's q. Tobin's q is defined as market value of equity plus book value of debt divided by total assets. Subtracting the median q of the firm's primary industry sector from its own q makes the industry adjustment. The median q is computed from all firms in the same country and primary industry sector. Industry sector is defined at the two-digit SIC code level. In a small number of cases when less than three peer firms are identified within a two-digit SIC code industry, broad industry groups as Campbell (1996) are used. To minimize the effects of outliers, the sample excludes one-percent extreme value. The resulting sample includes 7049 observations of firms from 1994 through 1996. C/V is the ratio of cash flow to voting rights possessed by the largest ultimate owner of a firm. *** denotes statistical significance at the one-percent level.

	Independent firms	Group-affiliated firms		
		All	C/V=1	C/V<1
	Panel A: All countries			
Mean	0.14	0.08	0.12	0.05
T-statistic for difference		-5.12***	1.41	-6.85***
Median	0.005	0.00	0.00	0.00
Z-statistic for difference		-3.57***	0.66	-4.78***
Number of observations	2125	4924	1816	3108
	Panel B: East Asia excluding Japan			
Mean	0.15	0.10	0.14	0.07
T-statistic for difference		-2.63***	0.41	-3.84***
Median	0.005	0.00	0.00	0.00
Z-statistic for difference		-3.06***	1.57	-3.41***
Number of observations	1433	2132	904	1228

Table 5: Regression analysis of the impact of group affiliation and cash-vote divergence on corporate value in East Asia

The regressions employ the ordinary least squares method. The dependent variable is industry adjusted Tobin's q. On the right-hand side, GROUP is a dummy variable equal to one if a firm is affiliated with a corporate group, and otherwise zero. SEG is a dummy variable equal to one if the firm has more than one segment, and otherwise zero. C/V is the ratio of cash flow to voting rights possessed by the largest ultimate owner of the firm. GSALES is sales growth. The regressions also control for fixed-year effects (not reported). The full sample includes 5,826 firm-years from nine East Asian economies during 1994 through 1996. *** and ** denote statistical significance at the one-percent and five-percent level, respectively.

Independent variable	Pooled	Excluding Japan	Pooled	Excluding Japan
	(1)	(2)	(3)	(4)
Intercept	0.6148*** (13.15)	1.0958*** (11.76)	0.6232*** (13.39)	1.1212*** (12.05)
GROUP	-0.0357*** (-2.71)	-0.0350 (-1.54)	-0.1291*** (-7.20)	-0.2310*** (-4.48)
GROUP*C/V			0.1493*** (7.63)	0.2513*** (4.23)
SEG	-0.0387*** (-3.28)	-0.0360 (-1.61)	-0.0363*** (-3.10)	-0.0352 (-1.58)
GSALES	0.0672*** (3.29)	0.0764*** (2.63)	0.0516** (2.53)	0.0752*** (2.59)
Log(ASSETS)	-0.0341*** (-10.50)	-0.0704*** (-10.32)	-0.0346*** (-10.70)	-0.0724*** (-10.62)
Adjusted R ²	0.02	0.04	0.03	0.04
Observations	5826	2438	5826	2438

Table 6: Regression analysis of the impact of group affiliation and cash-vote divergence on Tobin's q in East Asia

The regressions employ the ordinary least squares method. The dependent variable is Tobin's q. On the right-hand side, GROUP is a dummy variable equal to one if a firm is affiliated with a corporate group, and otherwise zero. SEG is a dummy variable equal to one if the firm has more than one segment, and otherwise zero. C/V is the ratio of cash flow to voting rights possessed by the largest ultimate owner of the firm. GSALES is sales growth. The regressions also control for fixed-industry, fixed-country, and fixed-year effects (not reported). The full sample includes 5,826 firm-years from nine East Asian economies during 1994 through 1996. *** and ** denote statistical significance at the one-percent and five-percent level, respectively.

Independent variable	Pooled	Excluding Japan	Pooled	Excluding Japan
	(1)	(2)	(3)	(4)
Intercept	1.8070*** (27.70)	2.2826*** (18.80)	1.8503*** (28.38)	2.3051*** (19.02)
GROUP	-0.0210 (-1.52)	-0.0211 (-0.89)	-0.1235*** (-6.32)	-0.2093*** (-3.84)
GROUP*C/V			0.1551*** (7.40)	0.2401*** (3.83)
SEG	-0.0017 (-0.13)	-0.0256 (-1.04)	-0.0028 (-0.21)	-0.0275 (-1.12)
GSALES	0.0728*** (3.29)	0.0738** (2.47)	0.0730*** (3.31)	0.0735** (2.47)
Log(ASSETS)	-0.0578*** (-14.49)	-0.0867*** (-10.57)	-0.0601*** (-15.09)	-0.0888*** (-10.83)
Adjusted R ²	0.33	0.34	0.33	0.34
Observations	5826	2438	5826	2438

Table 7: Regression analysis of the impact of group affiliation and cash-vote divergence on excess value in East Asia

The regressions employ the ordinary least squares method. The dependent variable is excess value defined as the natural logarithm of actual to imputed value (Berger and Ofek, 1995). On the right-hand side, GROUP is a dummy variable equal to one if a firm is affiliated with a corporate group, and otherwise zero. SEG is a dummy variable equal to one if the firm has more than one segment, and otherwise zero. C/V is the ratio of cash flow to voting rights possessed by the largest ultimate owner of the firm. GSALES is sales growth. The regressions also control for fixed-year effects (not reported). Observations with extreme excess value (excess value > 4 or <0.2) are excluded. The resulting sample includes 5,616 firm-years from nine East Asian economies during 1994 through 1996. ***, **, and * denote statistical significance at the one-percent five-percent, and ten-percent level, respectively.

Independent variable	Pooled	Excluding Japan	Pooled	Excluding Japan
	(1)	(2)	(3)	(4)
Intercept	-0.3406*** (-5.94)	-0.1905** (-1.91)	-0.3203*** (-5.66)	-0.1479 (-1.49)
GROUP	-0.0611*** (-3.80)	-0.0488** (-2.02)	-0.2507*** (-11.57)	-0.3722*** (-6.60)
GROUP*C/V			0.3020*** (12.84)	0.4122*** (6.34)
SEG	-0.0252* (-1.76)	-0.0232 (-0.97)	-0.0211 (-1.49)	-0.0216 (-0.91)
GSALES	-0.0008 (-0.02)	-0.0388 (-1.00)	-0.0458 (-1.58)	-0.0418 (-1.09)
Log(ASSETS)	0.0294*** (7.44)	0.0205*** (2.82)	0.0284*** (7.29)	0.0173** (2.39)
Adjusted R ²	0.01	0.00	0.03	0.02
Observations	5616	2281	5616	2281

Table 8: Year by year regressions of the impact of group affiliation and cash-vote divergence on corporate value in East Asia

The regressions employ the ordinary least squares method. The dependent variable is industry adjusted Tobin's q. On the right-hand side, GROUP is a dummy variable equal to one if a firm is affiliated with a corporate group, and otherwise zero. SEG is a dummy variable equal to one if the firm has more than one segment, and otherwise zero. C/V is the ratio of cash flow to voting rights possessed by the largest ultimate owner of the firm. GSALES is sales growth. The regressions also control for fixed-year effects (not reported). The full sample includes 5,826 firm-years from nine East Asian economies during 1994 through 1996. *** and ** denote statistical significance at the one-percent and five-percent level, respectively.

Independent variable	1994	1995	1996
	(1)	(2)	(3)
Intercept	0.6979*** (8.88)	0.5725*** (7.16)	0.5712*** (7.51)
GROUP	-0.1167*** (-3.72)	-0.1222*** (-3.90)	-0.1464*** (-4.81)
GROUP*C/V	0.1564*** (4.68)	0.1493*** (4.36)	0.1458*** (4.32)
SEG	-0.0419** (-2.03)	-0.0481** (-2.33)	-0.0190 (-0.96)
GSALES	0.1707*** (4.04)	0.0184 (0.56)	0.0182 (0.53)
Log(ASSETS)	-0.0416*** (-7.48)	-0.0312*** (-5.48)	-0.0317*** (-5.77)
Adjusted R ²	0.05	0.02	0.02
Observations	1754	1928	2144

Table 9: Random effect regressions of the impact of group affiliation and cash-vote divergence on corporate value in East Asia

The dependent variable is industry adjusted Tobin's q. On the right-hand side, GROUP is a dummy variable equal to one if a firm is affiliated with a corporate group, and otherwise zero. SEG is a dummy variable equal to one if the firm has more than one segment, and otherwise zero. C/V is the ratio of cash flow to voting rights possessed by the largest ultimate owner of the firm. GSALES is sales growth. The full sample includes 5,826 firm-years from nine East Asian economies during 1994 through 1996. *** and ** denotes statistical significance at the one-percent and five-percent level, respectively.

Independent variable	Pooled (1)	Excluding Japan (2)	Pooled (3)	Excluding Japan (4)
Intercept	0.8117*** (12.22)	1.2751**** (10.65)	0.8073*** (12.21)	1.2948*** (10.84)
GROUP	-0.0385** (-2.00)	-0.0368 (-1.23)	-0.1421*** (-5.19)	-0.2450*** (-3.59)
GROUP*C/V			0.1606*** (5.27)	0.2669*** (3.39)
SEG	-0.0270** (-2.17)	-0.0313 (-1.32)	-0.0258** (-2.07)	-0.0310 (-1.31)
GSALES	0.0080 (0.60)	0.0437** (2.11)	0.0048 (0.36)	0.0435** (2.10)
Log(ASSETS)	-0.0489*** (-10.17)	-0.0845*** (-9.44)	-0.0486*** (-10.16)	-0.0860*** (-9.64)
-2 Res Log Likelihood	4029	3223	4007	3215
Observations	5826	2438	5826	2438