East Asian Corporations

Heroes or Villains?

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Simeon Djankov
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The World Bank
Washington, D.C.
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Note: The source of all tables and figures is authors' calculations.
Foreword

East Asian corporations differ from their counterparts in other countries in two key ways. First, in many East Asian economies corporate ownership is concentrated among a few large families, while most publicly traded U.S. firms are widely held. Second, affiliation with a corporate group is common in East Asia but nonexistent in the United States and many other developed countries. Until the recent financial crisis these characteristics were considered reasons for the success of East Asian corporations. But the crisis has substantially altered that view, and many scholars now argue that the weak corporate governance and financing structures of East Asian corporations are partly to blame for triggering and aggravating the crisis.

As we continue to ascertain the causes and effects of the crisis, it is clear that we have limited knowledge of East Asian corporate governance and financing structures and performance. For example, the concentrated ownership and group affiliation that characterize East Asian corporations have not been systematically investigated. This paper presents evidence on these and other features, providing quantitative measures of the ownership concentration, group affiliation, and multi-industry diversification of East Asian corporations. In addition, the paper investigates the effects of these characteristics on corporate performance. The region’s diverse economic and financial development makes it possible to investigate how the relationship between these characteristics and corporate performance changes with development.

The paper focuses on six areas. The first section reports basic data on the performance and financial structure of East Asian corporations. The next section documents the concentration of ownership and control patterns in East Asia. It also investigates the effects of such concentration on corporate performance. The third section documents the diversification patterns of East Asian corporations, distinguishing between related and unrelated diversification. For related diversification, the section shows patterns of vertical and complementary diversification in East Asia. This section also compares East Asian firms with U.S. firms, because there is an extensive literature on diversification by U.S. firms. In the next section the paper documents patterns of group affiliation in East Asian corporations and explores the interaction between group affiliation and diversification. It also analyzes the effect of group affiliation on firm performance. After that the paper returns to the issue of diversification to explore the costs and benefits of diversification in East Asian economies. The final section describes the aggregate effects of ownership concentration on institutional development, exploring how ownership structures relate to the economic and financial development of East Asian economies and what this may mean for future structural reforms.

Gerard Caprio, Jr.
Director, Financial Sector Strategy and Policy
Abstract

East Asian corporations differ from their counterparts in other countries in important ways. Before the recent financial crisis these differences were viewed as one of the reasons for the success of East Asian economies. But the crisis has substantially altered that view, and many scholars now argue that the weak corporate governance and financing structures of East Asian corporations are partly to blame for the recent crisis. This paper reviews several features of East Asian corporations, showing that they have high leverage and concentrated ownership, are typically affiliated with business groups, and operate in multiple industries. These characteristics affected the performance of corporations prior to the crisis as well as their ability to deal with its aftermath. Each economy’s level of development also affected how these characteristics interacted with firm performance and valuation. Finally, the concentration of ownership in the hands of a few large families may have influenced economies’ institutional development.
Acknowledgments

This paper draws on previous work by the authors, including work with Joseph H.P. Fan. For useful comments the authors are grateful to Gerard Caprio, Tatiana Nenova, Andrei Shleifer, and Rene Stulz; seminar participants at the 1999 World Bank–Brookings Conference on Financial Market Development, the 1999 National Bureau for Economic Research Corporate Finance Conference, the Thai Federation of Industries, Korea Development Institute, Korea Institute of Finance, World Bank, International Monetary Fund, University of Illinois at Urbana-Champaign, Vanderbilt University, Michigan Business School, and Georgia Institute of Technology. The authors are also grateful to Ying Lin for excellent research support and Nahid Rahman for very valuable research assistance. The paper was edited by Paul Holtz of Communications Development Incorporated. Rose Vo was crucial aid in preparing the manuscript for publication.
Corporate Growth and Financing in East Asia

The East Asian financial crisis started in Thailand in July 1997 and quickly spread to other countries in the region. The crisis has partly been attributed to the weak performance and risky financial structures of the region’s corporations. It has become clear that the operational performance of East Asian corporations was not as stellar as many observers believed—and often involved high-risk investment. The financial structures of many East Asian corporations could not withstand the higher interest rates, depreciated currencies, and large drops in domestic demand that accompanied the crisis.

Yet the financing structures of East Asian corporations did not experience sudden changes just before the crisis. Thus it is not obvious how they could have precipitated it. This section documents corporate performance and financing structures for publicly-listed East Asian corporations in the years preceding the crisis.

Data Sources and Calculations

The Worldscope database is the main source of data for the analysis in this paper. These data are supplemented with information from the Asian Company Handbook, the Japan Company Handbook, the annual reports of the Hong Kong, Kuala Lumpur, and Philippine stock exchanges, the Institute for Economic and Financial Research in Jakarta, Coryo Securities Corporation, the Korean Fair Trade Commission, and the Securities Exchange of Thailand’s Companies Handbook (see the bibliography for details).

Because of different data requirements, the sample coverage varies considerably by section. This section uses balance sheet and income statement data for over 5,500 East Asian firms in nine economies over 1988–96 to establish stylized facts on corporate performance and financing structures prior to the crisis. In the third section of the paper, on corporate diversification, the sample contains more than 50,000 firms because the United States is included as a comparator country. But the fourth section, on the effects of group affiliation, draws on a sample of just 1,200 firms.

The analyses in the sections that follow assess firm performance using an industry-adjusted measure of market valuation. This measure, called the excess value of a firm, is defined as the ratio of a firm’s actual value to its imputed value. A firm’s actual value is measured by its market capitalization—that is, the market value of common equity plus the book value of debt. A firm’s imputed value is calculated by first constructing median market-to-sales ratios for each industry—based on the industry’s two-digit Standard Industrial Classification (SIC) code—using only single-segment firms in each country. (The market-to-sales ratio is market capitalization divided by firm sales.) Then sales in each segment of a firm are multiplied by the corresponding industry median market-to-sales ratio. A firm’s imputed value is obtained by summing the multiples across all of its segments. By

1 Most of the data came from the annual reports of companies listed on the region’s major stock exchanges. The sample covers 588 companies in Hong Kong, 317 companies in Indonesia, 2,526 companies in Japan, 392 companies in the Republic of Korea, 772 companies in Malaysia, 170 companies in the Philippines, 348 companies in Singapore, 265 companies in Taiwan (China), and 564 companies in Thailand.
construction, the median of the excess value variable is about 1. In some cases a performance measure based on the profit margin is also used. This measure, called the excess profit margin, calculates the industry-adjusted profit margin of a firm using a method similar to the method of calculating excess value.

Patterns in Performance

Several measures of the return on assets (ROA) were used to gauge corporate performance. The first is the real return on assets in local currency, which is calculated at the firm level as earnings before interest and taxes in local currency divided by total assets minus the economy's annual inflation rate. The advantage of this measure is that it is not influenced by the corporation's liability structure, because it excludes interest payments, financial income, and other income or expenses.

Using this measure, in 1988–96 real returns on assets were relatively low for corporations in Hong Kong, Japan, the Republic of Korea, and Singapore, hovering around 4 percent—particularly in recent years (table 1). Profits were highest in the Philippines and Thailand, where real returns on assets averaged 8–10 percent. Returns on assets fall in between these two groups for corporations in Indonesia, Malaysia, and Taiwan (China), but at about 7 percent are closer to the high performers. Such returns support the view that corporations contributed significantly to high economic growth in East Asia during most of this period.

Returns on assets were also calculated in U.S. dollars, adjusted for the effects of currency movements (table 2). This measure of performance reflects the perspective of an international investor who can allocate resources across several economies. Except for Japan (6.6 percent) and Taiwan, China (8.4 percent), East Asian economies had quite high returns on assets in U.S. dollars. The Philippines (17.2 percent), Thailand (14.7 percent), and Indonesia (13.0 percent) had the highest average returns in 1988–96.

Table 1. Real returns on assets in local currency in East Asia, 1988–96
(percent, medians)

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Table 2. Returns on assets in nominal U.S. dollars in East Asia, 1988–96
(percent, medians)

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The high returns in table 2 are partly driven by real exchange rate appreciation. Correcting for real exchange rate appreciation relative to the U.S. dollar significantly lowers the returns on assets. For example, in Korea this correction lowers the return in 1988 from 25.1 percent to 8.4 percent. Mathematically, this is nothing more than the sum of the real return in Korean won (4.4 percent) and the U.S. inflation rate (4.0 percent)—all other terms cancel out in the calculation. This implies that the relative comparisons of returns corrected for real exchange rate appreciation are the same as those in table 1.

A third measure of profitability is the operational margin, calculated as the difference between the sales and costs of goods sold, expressed as a share of sales (table 3). A corporation’s liability structure and other income or expenses do not influence this measure, but its capital intensity does. The operational margin was stable for most economies throughout 1988–96. Differences between economies may indicate that firms were exposed to different degrees of product market competition. Singapore had the lowest margin, followed by Malaysia, Hong Kong, and Korea.

Surprisingly, Japanese firms had higher margins, possibly reflecting the high capital intensity of Japanese firms and the (often argued) lower competition in Japan. The highest-margin producers were Indonesia, the Philippines, and Thailand, which may reflect low domestic competition, lower wages, and the large share of natural resources in these countries’ exports (the latter especially for Indonesia). No strong trend appears over time, though there is some decrease in operational margins for Hong Kong, Indonesia, and Singapore, possibly reflecting their higher wage growth and increased competition.

The differences in returns on assets are not directly reflected in differences in sales growth (table 4). On average, East Asian corporations recorded high real sales growth over the period. Malaysia, Indonesia, and Thailand stand out, followed by Taiwan (China). Other economies also had high sales growth rates. These high sales growth rates mirror the high growth in export and domestic demand that characterized the region during this period. But Indonesia, Japan, Singapore, Taiwan (China), and Thailand saw sales growth slow in 1996, possibly reflecting lower export growth.
Table 3. Operational margins in East Asia, 1988–96
(percent, medians)

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Table 4. Real year-on-year sales growth in East Asia, 1989–96
(percent, medians)

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Table 5. Capital investment in East Asia, 1988–96
(percent, medians)

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High sales growth rates partly reflect the high investment rates in the region (table 5). Here investment is measured as new investments as a share of existing fixed assets. Indonesia, Korea, and Thailand stand out, with average investment rates of 13 percent or more, followed by Malaysia, the Philippines, and Singapore, with rates averaging about 10 percent. Hong Kong, Japan, and Taiwan (China) saw investment in fixed assets grow by about 8 percent. Japan has seen lower investment in the 1990s, reflecting its sustained financial and corporate crisis.
Patterns in Financial Structure

In some economies low returns and high investment meant that considerable external financing was needed because corporations’ internal sources of capital—that is, retained earnings—were limited. This high external financing, mostly from banking systems, has always been a feature of East Asian corporations. Thus leverage, defined as total debt over equity, was also high for many East Asian countries (table 6). Korea had by far the highest leverage in 1988–96, more than four times the lowest, in Taiwan (China). Malaysia and Singapore also had low leverage. Leverage in the Philippines, while rising, was still much below that in Indonesia and Thailand.

Most East Asian corporations saw an increase in leverage in recent years, especially in Japan, Korea, Malaysia, and Thailand. Japan had seen de-leveraging early in the decade because there was financial retrenchment, but corporate difficulties and a lack of equity may have meant that no new equity was raised and loans were rolled over in the later part of the period. Thus leverage rose. The rise in leverage in the Philippines was probably the result of reforms in the mid-1980s that revived the country’s corporate and financial sectors and led to better financing possibilities.

In 1988–96 long-term debt (as a share of total debt) was low throughout East Asia (table 7). Malaysia, Taiwan (China), and Thailand stand out, with long-term debt accounting for only about 33 percent of total debt. Japan and the Philippines have the highest shares—about 50 percent. Other East Asian economies average about 43 percent. In contrast, 76 percent of the debt of U.S. corporations is long term, and in Germany the share is 55 percent.

A lot of attention has been paid to the role of short-term debt in the East Asian crisis. Table 7 shows (in some cases large) drops in long-term debt in Hong Kong, Korea, and the Philippines, as well as considerable variation in Malaysia, Singapore, Taiwan (China), and Thailand. But these data do not distinguish between foreign and domestic debt, and the composition may have shifted from short-term domestic debt toward short-term foreign debt.

### Table 6. Leverage in East Asia, 1988–96

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Table 7. Long-term debt in East Asia, Germany, and the United States
(percentage of total, medians)

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The structure of debt (domestic or foreign, short term or long term) differed across the region. The distribution of debt in 1996 in the six economies most affected by the crisis is shown in figure 1. Malaysia had the largest share of foreign short-term debt, followed by Korea and Thailand. The Philippines and Taiwan (China) had the largest shares of domestic long-term debt.

Figure 1. Structure of debt in East Asia, 1996

The data also suggest large differences in interest payment coverage. This is calculated as the ratio of earnings before interest and taxes (but adding back depreciation)—that is, EBITDA, or operational cash flow—to interest expenses. With the low interest rates in Japan, corporations there needed to devote only a small portion of EBITDA to interest payments, so the interest coverage ratio was about 8 in 1996, followed by Taiwan (China) with 6.1. The lowest interest coverage ratios occurred in Korea, at 2.1, and Thailand, at 2.7. Hong Kong, Indonesian, Malaysian, and Philippine corporations averaged between 3 and 4, while Singaporean firms averaged 4.5.

Conclusion

During 1988–96 there were big differences in corporate performance across East Asia. Profitability, as measured by the real return on assets in local currency, was relatively low in Hong Kong, Japan, Korea, and Singapore. But corporations in Indonesia, the Philippines, and Thailand had high returns. In 1994–96 performance declined somewhat in several East Asian economies, especially Japan and Korea. These differences did not show up as much in sales growth because investment was high and often drove output rates.

Low profitability and high investment meant that some economies needed a lot of external financing. Because outside equity was used sparingly, leverage was high in most East Asian economies, and increasing in Korea, Malaysia, and Thailand. High
leverage created large risks because short-term (foreign) borrowing became increasingly important, especially in Malaysia, Taiwan (China), and Thailand. Thus some of the vulnerabilities in corporate financial structures that triggered and aggravated East Asia’s financial crisis were already in existence in the early 1990s.

**Corporate Ownership and Valuation in East Asia**

East Asian corporations are an exception to the notion of widely held ownership. But the degree to which ownership is concentrated has not been systematically documented. This section documents ownership and control patterns at the end of fiscal 1996 for almost 3,000 publicly traded companies in Hong Kong, Indonesia, Japan, Korea, Malaysia, the Philippines, Singapore, Taiwan (China), and Thailand.

This sample typically accounts for about three-quarters of market capitalization even though the firms in the sample sometimes account for less than half the number of listed firms (figure 2). This is because the sample always includes the hundred largest firms in terms of market capitalization, so the average firm in the sample is larger than the average firm listed on the stock market.

**Figure 2. Number of corporations, sample coverage, and the sample’s market share**

In documenting ownership and control patterns, the focus is on the shareholders who ultimately control more than 20 percent of the votes. In most cases the principal shareholders are corporate entities, nonprofit foundations, or financial institutions. We then identify the owners of those organizations, the owners of those owners, and so on. We do not distinguish among individual family members, instead using the family as a unit of analysis.

Thus control is measured using data on ultimate ownership—that is, voting rights, not cash-flow rights. This distinction can make an enormous difference in the analysis. Suppose that a family owns 15 percent of the stock of publicly traded firm A, which owns 31 percent of the stock of firm B. In looking at control rights, we would say that the family controls 15 percent of firm B—the weakest link in the chain of voting rights. But we would say that the family owns about 5 percent of the cash-flow rights of firm B—the product of the two ownership stakes along the chain.

Corporations are divided into widely held corporations and corporations with ultimate owners. In widely held corporations no owner has more than 20 percent of control rights. Ultimate owners are further divided into families, the state, widely held financial institutions (banks, insurance companies), and widely held corporations.

Our definition of ultimate ownership means that a firm can have more than one significant owner. If, for example, firm C has three owners—a family, the state, and a widely held corporation—and each holds 20 percent of voting rights, we say that this firm is one-third controlled by each type of owner. A different picture emerges if the owners do not have equal shares of voting rights. If, for example, firm D has two owners—a family with 30 percent of voting rights and a widely held financial institution with 10 percent of voting rights—then it is
defined as being 100 percent family-controlled.

To better understand the variety of ownership structures that determine the ultimate control of companies, consider an example from our data. The Ayala group is the largest conglomerate in the Philippines, with 48 companies whose ultimate owner is the Ayala family (figure 3). First consider the ownership of Ayala Corporation, the second largest company on the Manila Stock Exchange. The principal owners of the corporation are the privately held Mermac Inc. (58 percent of the corporation’s shares) and Mitsubishi Bank (20 percent). (The other owners hold less than 10 percent of the stock.) Next consider the owners of the owners of Ayala Corporation. The Ayala family has 100 percent control of Mermac Inc., while Meiji Life Insurance of Japan has 23 percent control of Mitsubishi Bank. (There are no other significant owners of Mitsubishi Bank.) Since the Ayala family holds an absolute majority of the vote, the voting rights of Meiji Life Insurance are irrelevant. Thus we say that the Ayala family, with 58 percent of control rights, is the ultimate owner of Ayala Corporation.

Figure 3. Ownership stakes in the Philippines’ Ayala group

Source: Claessens and others 1999b
Next consider the ultimate control structure of Globe Telecom, another member of the Ayala conglomerate. The two principal owners of Globe Telecom are ITT (32 percent) and the Ayala Corporation (40 percent). We have already established that Ayala Corporation is controlled by the Ayala family and Meiji Life Insurance. Thus we conclude that Globe Telecom has two ultimate owners: the Ayala family (40 percent) and ITT (32 percent).

Finally, consider ultimate control for Automated Electronics (lower right corner of figure 3). Two of the ultimate owners are easily identified: the International Finance Corporation (part of the World Bank Group) and Japan Asia Inc. each controls 20 percent of Automated Electronics. Another 30 percent of Automated Electronics is owned by Assemblies Inc., which is 90 percent owned by IMicro Electronics, which is 74 percent owned by Ayala Corporation. Thus Automated Electronics has three ultimate owners: the IFC with 20 percent, Japan Asia Inc. with 20 percent, and the Ayala family with 30 percent.

**Distribution of Ultimate Ownership**

There are large differences across East Asia in the distribution of ultimate control (figure 4 shows unweighted averages). Less than 10 percent of Japanese companies are controlled by families, while nearly 80 percent are widely held. In Korea and Taiwan (China) families control 48 percent of corporations. In Thailand family control is 62 percent, and in Malaysia 67 percent.

Some of these differences likely arise from variations in company laws and company charters. For example, differences in shareholding percentages required to block major decisions or to call an extraordinary shareholder meeting help determine the minimum stake needed to exercise effective control. Other rules also affect the size of ownership needed to exercise effective control. In Korea restrictions on the voting rights of institutional investors in listed companies and the high percentages required to file class action suits imply that relatively low ownership stakes can result in effective control.

**Figure 4. Unweighted distribution of control of publicly traded companies**

(percentage held by different classes of owners)

The evolution of capital markets has also probably influenced the degree to which corporations are widely held. In Indonesia and Thailand formal stock markets were only established in 1977 and 1975, while the stock market in Japan has been in existence since 1878, and the Stock Exchange of Hong Kong has been in operation since 1891. Furthermore, after World War II the occupational forces dispersed ownership more widely in Japan. Widely held financial institutions play a limited role in all East Asian economies. This is not surprising because four of the nine economies studies here (Hong Kong, Japan, Korea, Singapore) limit the share of ownership that banks can have in other companies, while Indonesia prohibits such ownership (Institute of International Bankers 1997).

Company size appears to play a big role in explaining the distribution of control across ownership classes. In most economies family ownership is higher among smaller firms. This pattern is especially strong in Japan, where just 1 of the 20 largest corporations is under family control, while
most of the smallest companies are controlled by families. The same pattern occurs in Korea and Taiwan (China). A similar pattern prevails in Indonesia, Malaysia, the Philippines, Singapore, and Thailand, though many large companies are also controlled by families. The exception is Hong Kong, where about 75 percent of the 20 largest companies are under family control, while less than 60 percent of the smallest companies fall in the same category.

Given the differences in control structures that derive from firm size, a more complete picture of cross-economy differences emerges once firms’ ownership is weighed by market capitalization. State ownership becomes much more pronounced, especially in Korea, Malaysia, Singapore, and Thailand. The control of widely held financial institutions and corporations falls, as does control by families.

**Figure 5. Methods used to enhance control**

(percentage of firms using these methods)

Several mechanisms—multiple classes of voting rights, pyramid structures, cross-holdings—can be used to enhance control even in the presence of small ownership stakes. East Asia does not exhibit any significant deviations from the one-share-one-vote rule through shares with different voting rights (figure 5). For example, it takes an average of 19.2 percent of shares to get 20 percent of voting rights. (Moreover, these data may actually exaggerate deviations from the one-share-one-vote rule because we do not consider company-specific voting caps, because we generally do not have access to company charters.) Around the world, companies tend not to issue shares with superior voting rights.

Pyramid structures are defined as owning a majority of the stock of one corporation that holds a majority of the stock of another—a process that can be repeated a number of times. In the sample ultimate control involved a pyramid structure for more than two-fifths of companies, with the largest share in Indonesia and the smallest share in Thailand (see figure 5). Singaporean companies also show a high incidence of pyramiding, while only a quarter of Hong Kong companies that are not widely held are controlled through pyramid structures.

There is not much evidence of cross-holdings—where a company holds shares in another company in its chain of control—except in Malaysia and Singapore. Korean companies are above the East Asian average on this indicator even though cross-holdings are limited by law. (Note that our indicator on cross-holdings does not weigh by the size of cross-holdings.) Thai companies show the least evidence of cross-holdings.

Many East Asian firms have a single controlling owner. That is, there is no second controlling owner—defined as someone with at least 10 percent of voting rights. When such a party (or parties) exists, it may be more difficult for the first owner to control the firm. In the sample more than half of the companies that are not widely held have just one ultimate owner (see figure 5). This share is highest in Japan and lowest in Thailand. The results for Thailand, combined with its limited degree of pyramid structures and cross-holdings, reflects the importance in Thailand of informal alliances among the small number of families that control most Thai companies. Often, several families jointly own a large stake in a
corporation, with one family taking the role of primary controlling shareholder.

Finally, we studied the separation of control and management by investigating whether a member of the controlling family or an employee of the controlling widely held financial institution or corporation is the chief executive officer, chairman, honorary chairman, or vice chairman of the company. It is generally difficult to determine whether a manager is an employee of the controlling financial institution or corporation, although such information exists in the stock exchange investment guides of several East Asian companies. It is easier to find family membership, even if the manager does not have the same last name.

There is a close relationship between control and management (see figure 5). On average, two-thirds of companies that are not widely held have a controlling owner linked to a member of top management. At least 80 percent of companies in Indonesia, Korea, Malaysia, and Taiwan (China) have managers who are family members of the controlling owner. The correspondence between control and management is lower in Japan and the Philippines, where less than half of managers are related (by family) to the controlling owner.

We next investigate the average concentration of ultimate cash-flow rights and voting rights (figure 6). Thai corporations show the most concentrated ultimate cash-flow rights, followed by Indonesian and Hong Kong companies. Japanese and Korean corporations have the least concentrated ultimate cash-flow rights. Also important, a quarter of Thai companies have more than 40 percent of cash-flow rights in the hands of the largest blockholder, while a quarter of Japanese companies have only 2 percent of cash-flow rights in the hands of the largest blockholder.

Figure 6. Mean concentration of ultimate cash-flow rights and control rights

The concentration of ultimate control rights is similar to the concentration of cash-flow rights, with Thai and Indonesian companies having the highest concentration, followed by Malaysian and Hong Kong companies. Control rights are least concentrated in Japan, Korea, and Taiwan (China). Finally, the ratio of cash-flow to control rights is lowest in Japan, Indonesia, and Singapore, and highest in the Philippines and Thailand.

Overall, there are remarkable similarities across East Asia in the forms and means through which corporations are controlled. Most economies exhibit a similar pattern of family control through pyramid structures and with management that is related (by family) to the ultimate owners.

Ownership Structure and Firm Performance

An industry-adjusted excess valuation measure was used to quantify firms' performance. This measure has a median of 1 by construction, with values greater than 1 indicating above-average performance relative to an industry median. Larger cash-flow rights are associated with higher median excess valuation (figure 7). The relationship tapers off, however, with the median values for the fourth quartile only marginally higher than those for the third quartile, where firms fall into quartiles based on their increasing ratio of cash-flow to voting rights.
The data for control rights indicate that block-holder control has negative costs, because the median excess valuation is lower for higher levels of control, though the relationship is not very strong. Because cash-flow rights and control rights are correlated, it not obvious what net effect increases in both cash-flow and control rights would have on valuation. Thus we also calculated the median valuation for different quartiles of the ratio of cash-flow to control rights. The median is the lowest for the first quartile and increases monotonically with the ratio (see figure 7).

Because most East Asian corporations are family-controlled, we studied separately the effects of cash-flow and control rights for corporations in which families are the largest control block-holder. Families are the largest block-holder in 1,158 corporations, or about a third of the sample. The effects of family ownership concentration are similar to those for all classes of ownership combined (figure 8). As before, there is evidence of a positive impact of cash-flow rights but a negative impact of control rights, also relative to cash-flow rights. Because the slopes appear steeper than when all ownership classes were combined—especially for the ratio of cash-flow to control rights—the valuation discount may be due to family control.

To further investigate whether the results of control ownership concentration for all classes of firms are due to family ownership only, we considered the relationship between valuation and other types of control ownership. Cash-flow ownership by financial institutions is positively associated with corporate valuation, while control by financial institutions is negatively associated with valuation. There is a positive relationship between valuation and the ratio of cash to control rights. Detailed analysis suggests that the negative effect of control by financial institutions arises from the role of financial institutions in Japan.

Results are less clear for ownership by widely held corporations. None of the relationships between cash-flow rights and valuation, control rights and valuation, and the ratio of cash to control rights are monotonic. There is evidence that low cash-flow rights relative to control rights are associated with higher discounts, but the slope changes for high cash-flow rights relative to control rights. The results could be due to the ownership structures in some countries—particularly in Japan and Korea, where there is considerable cross-ownership.

The association between state ownership and market valuation is similarly not obvious, regardless of whether cash-flow
rights, control rights, or the ratio between the two is used. Increases in cash rights are associated with decreases in valuation up to the third quartile, and increases in control rights are associated with decreases in valuation up to the second quartile. But valuation increases sharply for the fourth quartile for all three indicators. The high valuation for the fourth quartile suggests that the state “chooses” its ownership and has large stakes in valuable enterprises.

**Location and Firm Valuation**

The previous section presented aggregate results for the nine economies in our sample. But given the diversity of ownership structures and economic developments in East Asia, relationships between firm value and cash-flow and control rights may vary substantially. Thus we investigated these relationships for individual economies.

Across the region, there is significant variation in the way cash and control rights are related to firm valuation. Indonesia, Malaysia, and the Philippines show the same relationship between firm valuation and cash and control rights as the overall sample (table 8). In these countries cash-flow rights are positively related to firm value and control rights are negatively related to firm value. Hong Kong and Korea deviate from the overall sample in terms of the relationship between firm valuation and cash-flow rights—that is, excess firm value is negatively related to cash-flow rights.

Japan and Singapore differ from the sample in that there is a positive relationship between excess value and control rights. Finally, Taiwan (China) and Thailand differ from the sample in that the relationship between firm value and control rights is U-shaped in Taiwan and there is no monotonic relationship between firm value and cash-flow or control rights in Thailand.

The relationship between firm value and the ratio of cash to control rights is more homogeneous across the region. Of the nine economies, seven show a positive relationship between firm valuation and the ratio of cash to control rights (see table 8). The other two, Taiwan (China) and Thailand, do not show a monotonic relationship between firm valuation and the ratio of cash to control rights.

These results indicate that control has a negative effect on firm performance in many East Asian economies, especially Indonesia, Malaysia, and the Philippines. In addition, family ownership drives the relationship between performance (as measured by valuation) and cash and control rights in East Asia. Thus family control seems to play an important role in the relationship between firm value and ownership structure. Even in cases where there is not a monotonic relationship between cash-flow or control rights and valuation, low cash-flow rights and high control rights lead to significantly lower firm valuation.

**Table 8. Summary results on excess valuation, cash-flow rights, and voting rights**

<table>
<thead>
<tr>
<th>Economy</th>
<th>Excess valuation/cash-flow rights</th>
<th>Excess valuation/control rights</th>
<th>Excess valuation/ratio of cash-flow rights to control rights</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hong Kong</td>
<td>+/-Non-monotonic</td>
<td>+/-Non-monotonic</td>
<td>+/-Non-monotonic</td>
</tr>
<tr>
<td>Indonesia</td>
<td>+/-Monotonic</td>
<td>+/-Monotonic</td>
<td>+/-Non-monotonic</td>
</tr>
<tr>
<td>Japan</td>
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<td>+/-Non-monotonic</td>
<td>+/-Non-monotonic</td>
</tr>
<tr>
<td>Korea, Rep. of</td>
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<td>+/-Non-monotonic</td>
<td>+/-Non-monotonic</td>
</tr>
<tr>
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<td>+/-Non-monotonic</td>
<td>+/-Non-monotonic</td>
</tr>
<tr>
<td>Philippines</td>
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<td>-/Monotonic</td>
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</tr>
<tr>
<td>Singapore</td>
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<td>+/-Non-monotonic</td>
<td>+/-Non-monotonic</td>
</tr>
<tr>
<td>Taiwan (China)</td>
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<td>U-shaped</td>
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</tr>
<tr>
<td>Thailand</td>
<td>Non-monotonic</td>
<td>Non-monotonic</td>
<td>Non-monotonic</td>
</tr>
</tbody>
</table>

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Conclusion

In East Asia higher cash-flow rights are associated with higher market valuation, while higher control rights are associated with lower market valuation—especially cash-flow rights are low. Moreover, family control helps explain the negative relationship between control rights and market valuation. The degree to which certain ownership structures are associated with valuation discounts likely depends on economy-specific circumstances, including the quality of banking systems, the legal and judicial protection of individual shareholders, and the degree of financial disclosure required.

Corporate Diversification in East Asia and the United States

Strong evidence has shown that corporate diversification—as measured by the number of business segments—hurts firm valuation in the United States. Recent studies of other countries have also found that diversification has detrimental effects on corporate value. These studies are often criticized because they do not document the precise nature of diversification, both across countries and over time, or the potentially different effects of different forms of diversification. For example, the rapid expansion of East Asian corporations through vertical diversification into new business segments was seen as an important factor contributing to the region’s rapid economic growth. Less is known about the incidence of complementary diversification in East Asia and other regions.

This section explores the diversification patterns of East Asian corporations using U.S. corporations as a benchmark. We distinguish between vertical and complementary diversification and study differences in diversification across economies and over time. We also investigate how diversification has been associated with firm valuation.

Diversification Patterns

The sample for this section covers 16,522 multi-segment firms and 36,460 single-segment firms over 1990–96. Japanese and U.S. firms dominate the sample—of the sample firm-years, 87 percent of the multi-segment firms and 96 percent of the single-segment firms are from Japan and the United States (figure 9).

Figure 9. Origins and diversification patterns of sample firms

The secondary axis in figure 9 plots the share of multi-segment firms in the 10 sample economies. About 30 percent of the sample is composed of multi-segment firms. When U.S. firms are excluded, however, the share of multi-segment firms jumps to 65 percent, reflecting the considerable diversification among East Asian firms. Malaysia and Singapore rank especially high, with multi-segment firms accounting for about 70 percent of the total. Among East Asian economies, the Philippines and Thailand have the lowest shares of multi-segment firms. Of the 10 countries in the sample, the United States ranks lowest, with about 20 percent multi-segment firms.

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2 The relevant variables were constructed using the same methodology as in Claessens and others (1999b). Data on firms' diversification came primarily from the Compustat and Worldscope databases.
The number of segments in a firm is another measure of diversification. Malaysia has the highest average number of segments, followed by Singapore and Hong Kong. The United States has the lowest average number of segments, followed by Thailand and Korea.

**Related diversification**

The share of multi-segment firms and number of segments capture the extent of diversification, but they do not capture the type. Firms can diversify into related and unrelated activities, and related activities can be vertical or complementary. Two variables were constructed to measure related diversification. The first measures vertical relatedness ($V$)—that is, the opportunity for a diversified firm to integrate forward or backward into its secondary segments, given its primary segment. The second variable measures the complementarity of operations ($C$)—that is, the opportunity for primary and secondary segments to complement each other in procurement and marketing.

**Figure 10. Vertical relatedness and complementarity**

Vertical relatedness is highest in Thailand, followed by Singapore, Hong Kong, and Indonesia (figure 10). The United States ranks second from the bottom (after Taiwan, China) in vertical relatedness. Indonesia has the highest complementarity, followed by Singapore, Hong Kong, and Thailand. Malaysia has the lowest complementarity, followed by Korea, the United States, and the Philippines.

**Distribution of diversified firms**

How are diversified firms distributed in terms of the number of segments and in terms of vertical relatedness and complementarity? About 65 percent of U.S. multi-segment firms have just two segments, while among East Asian economies the highest percentage of firms with only two segments is 54 percent in Thailand (figure 11). Firms with five or more segments account for just 3 percent of U.S. multi-segment firms but are much more common in East Asia. In Singapore 27 percent of multi-segment firms have five or more segments, and in Hong Kong the share is 26 percent.

**Figure 11. Distribution of multi-segment firms by number of segments**

So far, our analysis does not control for the type of diversification. Firms can diversify into related and unrelated activities and related activities can be vertical or complementary. We construct inter-industry relatedness coefficients, using the 1992 Use Table of Benchmark Input-Output Accounts for U.S. Economy. The Use Table is a matrix containing the value of commodity flows between each pair of roughly 500 private sector intermediate input-output industries; it reports for each pair of industries i and j,
the dollar value of i's output required to produce industry j's total output, denoted as $a_{ij}$. The Bureau of Economic Analysis updates the Use Table every five years. In this paper, we use the most recent, 1992, Use Table to construct relatedness variables.

The vertical relatedness variable measures the opportunity for a firm to integrate forward and/or backward into secondary segment(s), given its primary segment. We provide an example to illustrate how the vertical relatedness coefficients are constructed. We take the plastics and the bags (non-textile) industry in the United States as an example. In 1992, the total plastics output was $31,502 million. The total output of bags was worth $8,389 million. The bags industry consumed $1,259 million worth of plastics ($a_{ij}$), whereas the plastics industry employed $10 million worth of bags ($a_{ji}$) as an input. On a per-dollar basis, the bag industry consumed $0.15 (=1,259/8,389)$ worth of plastics for each dollar of bags produced ($v_{ij}$), whereas the plastics industry consumed $0.0003 (=10/31,502)$ worth of bags for each dollar of plastics produced ($v_{ji}$). The vertical relatedness between the two industries is $0.0751 (V_{ij}=1/2(v_{ij}+v_{ji}))$, the average input transfer between the two industries on a per dollar basis. $V_{ij}$ can be intuitively interpreted as a proxy of the opportunity of vertical integration between industry i and j.

The complementarity variable measures the opportunity for the primary and the secondary segments to complement each other in procurement and marketing. To construct complementarity coefficients, we need to measure how related industries' i and j share output and input. We compute for each industry the percentage of its output supplied to each intermediate industry k, denoted as $b_{ik}$ from the Use Table. For each pair of industries i and j, we compute the simple correlation coefficient between $b_{ik}$ and $b_{jk}$ across all k except for i and j. A large correlation coefficient in the percentage output flows suggests a significant overlap in the markets to which industries i and j sell their products. For each pair of industries i and j, we also compute a simple correlation coefficient across industry input structures (all k except for i and j) between the input requirement coefficients $v_{ki}$ and $v_{kj}$ of the two industries. A large correlation coefficient between the two suggests a significant overlap in inputs required by industries i and j.

We define the complementarity coefficient as the average of the two correlation coefficients, i.e., $C_{ij} = \frac{1}{2}[\text{corr}(b_{ik},b_{jk}) + \text{corr}(v_{ki},v_{kj})]$. $C_{ij}$ serves as a proxy for the degree of complementarity between industry i and j. We use the plastics and the paperboard containers industry in the United States as an illustration. The correlation of output flows between the two industries is 0.2940 (corr($b_{ik},b_{jk}$)), whereas their correlation of input flows is 0.0384 (corr($v_{ki},v_{kj}$)). The complementarity coefficient between the two industries is calculated as the average of the input and output flow correlations, 0.16 ($=0.294+0.0384)/2$).

Figure 12. Distribution of multi-segment firms by vertical relatedness

The distribution of multi-segment firms by vertical relatedness is shown in figure 12. In the United States 77 percent of multi-segment firms have a vertical
relatedness measure below 0.005, less than in Taiwan, China (87 percent) but about the same as in Indonesia, Japan, Korea, and the Philippines. Hong Kong, Malaysia, Singapore, and Thailand have more dispersed distributions. For example, 50 percent of Thai firms and 44 percent of Hong Kong firms have vertical relatedness measures greater than 0.005.

The distribution of multi-segment firms by complementarity is shown in figure 13. Among U.S. firms, 80 percent have a complementarity measure below 0.2, similar to levels in Korea, the Philippines, and Taiwan (China). Other East Asian firms have more dispersed distributions—for example, 53–62 percent of Hong Kong, Indonesian, Singaporean, and Thai firms have a complementarity measure below 0.2.

**Figure 13. Distribution of multi-segment firms by complementarity**

The patterns in figures 12 and 13 suggest that multi-segment U.S. firms tend to diversify into one or two segments that are relatively unrelated to their main business segment, either vertically or in terms of complementarity.

**Diversification and economic development**

Some theories suggest that firms in less-developed economies diversify more to reap the benefits of internal markets. To investigate this issue, we examined the relationship between an economy’s per capita GNP and share of multi-segment firms. There is no clear pattern between degrees of diversification and levels of development, even though the sample spans economies with 1997 per capita GNP ranging from $1,110 (Indonesia) to $37,850 (Japan).

**Time-series patterns in diversification**

Figure 14 reports the time series (1990–96) of the average number of segments for U.S. firms, Japanese firms, and East Asian (except Japanese) firms (combined because coverage of East Asian economies except Japan is limited). The sample used to count the number of segments includes single- and multi-segment firms. Over time the number of segments decreased somewhat for U.S. firms and for East Asian firms except those in Japan, where it increased.

**Figure 14. Change in average number of segments, 1990–96**

Patterns of vertical relatedness and complementarity also changed during 1990–96. Because a firm must have more than one segment for these measures to be calculated, only multi-segment firms were used. Mean vertical relatedness increased for all firms. Complementarity increased mildly for U.S. firms, but the patterns for East Asian economies are unclear.
**Overall diversification patterns**

The comparison of U.S. and East Asian firms supports several stylized facts. First, U.S. firms tend to diversify into one or two segments that are relatively unrelated to their main business segment, whether vertically or in terms of complementarity. This pattern is uncommon among East Asian corporations, however. There is no obvious explanation for this striking divergence of diversification patterns. But the rapid expansion of East Asian corporations in vertical and horizontal businesses—which partly resulted from the active encouragement of governments—has been seen as an important factor in the region’s rapid economic growth and may have driven the differences.

Second, today’s U.S. firms have fewer segments than East Asian firms. But in the 1970s and 1980s U.S. firms had 2.0–2.5 segments, a level similar to that of East Asian firms in the 1990s. This finding suggests that diversification trends in East Asia trail those in the United States by 10–20 years.

Third, except in Japan, a decrease in the number of segments is accompanied by an increase in vertical relatedness. This evidence suggests that firms in the United States and in East Asian economies except Japan have adopted corporate strategies to reduce unrelated segments. While increasing vertical relatedness may not have been the main goal, the reduction in unrelated segments has led to this phenomenon.

**Diversification and Firm Performance**

As in the section on corporate ownership and valuation, here we assess firm performance using excess value. In this section the definition of excess value removes industry effects but not location effects, because we only use firms from each economy, allowing us to conduct cross-economy comparisons.

Figure 15 shows the relationship between mean excess value and number of segments for firms in the United States, Japan, and East Asian economies except Japan. For U.S. firms mean excess value decreases with the number of segments. No similar monotonically decreasing trend occurs in East Asia. But comparing two-segment firms with single-segment firms, we observe a mean valuation decline for the United States, Japan, and the other East Asian economies. Thus while there is strong evidence that diversification is associated with lower valuation for U.S. firms, similar evidence for East Asian firms only develops when comparing single-segment and two-segment firms—the results are mixed for multi-segment firms in East Asia.

**Figure 15. Excess value by number of segments**

![Graph showing excess value by number of segments for different regions.](image)

Next consider the relationship between mean excess value and vertical relatedness (figure 16). In the United States excess value increases with vertical relatedness. In Japan the only significant negative effect of vertical relatedness happens between the fourth and the fifth vertical relatedness category, where categories are defined as before in terms of the number of segments. In other East Asian economies there is a significant drop in excess value from the third to the fourth vertical relatedness category. Though excess value increases
from the fourth to the fifth category, excess value for the fifth category is still much lower than for the third category. The evidence generally supports the notion that excessive vertical diversification hurts performance.

**Figure 16. Excess value by vertical relatedness**

We also considered the relationship between mean excess value and complementarity (figure 17). There is variation in excess value relative to complementarity among U.S., Japanese, and other East Asian firms, but the relationships are not consistent or significant.

**Figure 17. Excess value by complementarity**

To identify patterns related to economic development, East Asian economies were classified into standard World Bank income groups: lower middle income (Indonesia, the Philippines, Thailand), higher middle income (Korea, Malaysia), and high income (Japan, Hong Kong, Singapore, and Taiwan, China). The mean excess value of U.S. firms decreases monotonically with an increase in the number of segments. For lower-middle-income economies, mean excess value turns negative for firms with three or more segments. For higher-middle-income economies, mean and median excess values are positive for firms with three and four segments, suggesting that diversification may not lead to lower valuation. In the high-income group mean excess values are negative for firms with two, three, and four segments; the mean excess value for firms with five or more segments is similar to that for single-segment firms. As before, then, there is a monotonically decreasing trend for U.S. firms in the number of segments, but no clear patterns for East Asian firms.

The evidence that diversification does not necessarily hurt valuation for East Asian firms is consistent with findings for U.S. firms in the 1960s and 1970s. This evidence suggests that diversification’s effect on the valuation of East Asian firms is similar to that of U.S. firms but with a 20- to 30-year delay. This finding complements those earlier on diversification patterns in East Asia.

We next investigate how vertical relatedness and complementarity interact with firm valuation for each income group. Figure 18 plots mean excess values and vertical relatedness for each income group. There is a sizable negative excess value for higher vertical relatedness among higher-middle-income and lower-middle-income groups, with a drop of about 50 percent in excess value between the third and fourth category of vertical relatedness. Moreover, the mean excess values for firms in the higher-middle-income and lower-middle-income groups are negative (29 percent and 18 percent) for the fifth category of vertical
relatedness. U.S. firms exhibit less evidence of negative mean excess values related to vertical relatedness. The same is true for firms in high-income East Asian economies. Still, vertical diversification appears to lower corporate value in most income groups.

Figure 18. Excess value by vertical relatedness and income group

We compared mean excess value and complementarity for each income group but did not find any significant pattern between the two variables. One reason may be that univariate plots do not control for differences in firm size and other confounding factors across economies. The correlation among vertical relatedness, complementarity, and number of segments also may have influenced the results in the univariate plots.

Claessens and others (1999c) examine the relationship between excess value and vertical relatedness and complementarity for U.S. and East Asian firms in a multiple regression framework. They regress excess value simultaneously on number of segments, vertical relatedness, and complementarity while controlling for firm size and year effects. They find that East Asian firms generally show a large decline in value as vertical relatedness increases. But that trend does not occur among Hong Kong, Japanese, and U.S. firms, which show a significant positive relationship between excess value and vertical relatedness. For complementary diversification the authors find that complementarity levels for East Asian firms are significantly and positively related to excess value in Japan, Korea, and Singapore, and weakly and negatively related to excess value in Malaysia and Thailand. In other East Asian economies the relationship between excess value and complementarity is not significant. Finally, U.S. firms show a significantly positive relationship between excess value and complementarity.

Thus diversification (in terms of number of segments) lowers firm value in several East Asian economies, vertical integration lowers firm value in most East Asian economies, and complementary diversification increases firm value in some East Asian economies. It is harder to draw a conclusion between vertical relatedness and complementarity for U.S. firms, but the regression results in Claessens and others (1999c) indicate that the value of U.S. firms is higher when firms have fewer segments and when the segments are vertically or complementarily related.

Conclusion

U.S. firms diversify less than East Asian firms in terms of number of segments and related segments. However, falling number of segments in U.S. firms has been accompanied by an increase in vertical relatedness and complementarity. Japanese firms are more diversified, resulting in more vertical diversification. Among other East Asian economies the trend is similar to that for the United States, leading to more vertically integrated companies. The overall results suggest a more focused corporate strategy and a trend toward vertical integration.

Among U.S. firms there is a monotonic decrease in value with an increase in firm segments. But there is much less evidence of diversification discounts in East Asia, especially for firms with more
than two segments. The effects of diversification also depend on the type of diversification. Higher vertical integration is associated with lower value in East Asian economies except Japan. Complementarity does not necessarily hurt value, and in some economies it actually raises it. For U.S. firms unrelated diversification appears harmful, while increased specialization with fewer segments raises value.

The Role of Business Groups in East Asia

Group affiliation is prevalent among publicly traded corporations in East Asia. It is common for firms to belong to a group, either because an individual, family, or coalition of families controls a number of firms or because firms have extensive cross-ownership. Thus East Asian corporate data provide an opportunity to study the role of group affiliation in corporate policy and performance across economies at different levels of development.

Group structures have long been associated with early stages of development because they can substitute for underdeveloped markets and institutions. Relative to independent firms, group structures tend to make greater use of internal resources, including financial markets, and rely less on external markets to monitor firm behavior. Capital-constrained firms may create internal capital markets to allocate capital among firms within a group. At the same time, the more complex structure of groups may lead to inefficient investment and greater expropriation.

This section documents the degree of group affiliation in East Asia and the differences in diversification patterns between independent and group-affiliated firms. It also assesses the relationship between group affiliation and the divergence of cash-flow and control rights. Finally, it studies the benefits and costs of groups.

The benefits of groups relate to the creation of internal factor markets that do a better job than external markets of allocating resources and investment. The costs of groups relate to high agency costs—and therefore worse allocation of resources and investment—or to the fact that groups are a means for ultimate owners to expropriate wealth from minority shareholders. To examine the benefits of groups, we focus on the effects of diversification within groups, because diversification is a manifestation of the internal markets created at the group level. To examine the costs of groups, we focus on the risk of expropriation, which arises from the large separation between ultimate cash-flow and control rights in group-affiliated firms.

The analysis in this section is based on data for more than 1,200 East Asian companies for 1991–96. Group-affiliated firms are defined as those that are controlled by the same ultimate owner or have extensive cross-ownership links. The focus is on the 12 largest business groups—in terms of market capitalization—in each economy.

Patterns in Group Affiliation

In Hong Kong, Indonesia, Japan, the Philippines, and Singapore more than 60 percent of the companies in the sample are group affiliates (figure 19). Business groups are especially important in Japan and the Philippines, where 83 percent and 74 percent of firms are group affiliated. Only in Thailand is less than a majority (42 percent) of the sample firms affiliated with business groups. For the overall sample of nine East Asian economies, 75 percent of firms are group affiliated.
Since group affiliation can substitute for firm-level diversification in creating internal markets, we compared diversification among group-affiliated and independent firms. Group-affiliated firms are more likely than independent firms to have multiple segments (66 percent compared with 58 percent), with the difference statistically significant. Group-affiliated firms are more likely to have multiple segments in seven of the nine East Asian economies, with the differences statistically significant in Hong Kong, Japan, Malaysia, Singapore, and Thailand. In Indonesia and the Philippines group-affiliated and independent firms are equally likely to have multiple segments.

Group-affiliated firms have an average of 2.55 segments, compared with 2.41 segments for independent firms, and the difference is statistically significant. In seven economies group-affiliated firms have more segments, and in four the difference is statistically significant. These findings are surprising because one would expect group affiliation to substitute for internal markets, causing less diversification in group-affiliated firms than in independent firms.

Next we compare the structure of ultimate ownership for group-affiliated and independent firms. To proxy for the divergence of cash-flow rights from control rights, we use the variables used in the section on corporate ownership and valuation: the ultimate owner’s share of cash-flow rights and of control rights, and the ratio between the two measures. By construction, the ratio is inversely related to divergence and is bounded between 0 and 1.

Across East Asia, the mean level of ultimate owners’ cash-flow rights is 9 percent for group-affiliated firms, significantly less than the 21 percent for independent firms. Similarly, the mean level of control by the ultimate owners of group-affiliated firms is 14 percent, significantly less than the 21 percent for independent firms. In addition, group-affiliated firms exhibit considerable divergence between cash-flow and control rights. In group-affiliated firms the average ratio of cash to control rights is 0.58, compared with 0.99 for independent firms.

The results for individual economies support these findings, with group firms showing higher divergence between cash-flow and control rights (figure 20). This divergence is most severe in Japan, where the ratio of cash to control rights is just 0.52 for group firms. The divergence is smallest in the Philippines, where the ratio is 0.88 for group firms.

**Figure 20. Ratios of cash to control rights for group and independent firms in East Asia**

Group Affiliation and Firm Performance

To investigate the effect of group affiliation on performance, we follow the
same approach as in previous sections, examining the relationship between group membership and excess value. Among the full sample the mean excess value of group-affiliated firms is about 5 percentage points lower than that of independent firms (figure 21). This difference is statistically significant at the 1 percent level, suggesting poorer performance. Group-affiliated firms also have lower mean excess values in individual economies, and the differences are statistically significant in Japan, Korea, and Malaysia.

**Figure 21. Group affiliation, diversification, and excess value**

We also compared the performance of group-affiliated and independent firms by degree of diversification. Among multi-segment firms excess value is 2 percentage points lower for group-affiliated firms than for independent firms, but this difference is not statistically significant (see figure 21). By contrast, single-segment firms have statistically significant lower excess value when they are group affiliated, with a difference of 9 percentage points. Thus group affiliation seems to have negative effects, especially for single-segment firms. The lack of a diversification discount in group-affiliated diversified firms may be due to the benefits of internal markets created by group affiliation.

Breaking down the differences another way, we find that among the full sample, multi-segment firms trade at a 3 percentage point discount relative to single-segment firms. Multi-segment firms perform especially badly when they are independent—excess value is 8 percentage points below that of single-segment firms (and statistically significant at the 1 percent level). In all, single-segment independent firms perform much better than other types of firms. In terms of magnitude, the diversification discount is just 0.8 percent for group-affiliated firms, compared with 3 percent for the full sample and 8 percent for independent firms. Thus, as before, group affiliation alleviates some of the costs of diversification.

**Group affiliation and expropriation**

The divergence between cash-flow and control rights can influence value through the risk of expropriation. Large, controlling owners have incentives to expropriate minority shareholders by making investments that benefit themselves at the expense of minority shareholders. Expropriation is more likely when control rights are high and cash-flow rights are low because the controlling owner gains private benefits but suffers few of the consequences of the reduction in the firm’s value. In East Asia deviations between cash-flow and control rights are closely associated with group affiliation. To separate the effects of expropriation and group affiliation, we studied separately the excess values of group-affiliated firms by degrees of divergence of cash-flow and control rights.\(^3\)

\(^3\) The analysis was conducted using data on cash-flow and control rights for ultimate owners. An ultimate owner is any shareholder who has at least 5 percent of the control rights of the company and who is not controlled by anyone else. (See the section on corporation ownership and valuation for the construction of ultimate ownership data.) Although a company can have more than one ultimate owner,
Figure 22 shows the mean excess value for group-affiliated firms for different degrees to which cash-flow rights are lower than control rights ($C < V$). There is a monotonic relationship between the degree of divergence and excess values, with the excess value ranging from $-0.16$ for $C/V < 0.25$ to $0.07$ for $C/V = 1$. Dividing firms into those where cash-flow rights are lower than control rights ($C < V$) and those where cash-flow rights are equal to control rights ($C = V$) makes the difference even clearer. In group-affiliated firms where cash-flow rights are equal to control rights, excess value is 14 percentage points higher than in other group-affiliated firms, with the difference statistically significant at the 1 percent level. This finding shows the importance of controlling for the risk of expropriation, which is highly correlated with a divergence of cash-flow rights from control rights.

**Figure 22. Effect on excess value of the divergence between cash-flow and control rights**

We next examined the value of group-affiliated and independent firms while controlling for the divergence of cash-flow and control rights. The 4 percent discount related to group affiliation is concentrated among firms where cash-flow rights are lower than control rights. Indeed, when cash-flow rights are equal to control rights, group affiliation increases firm value.

**Conclusion**

Group affiliation is widespread among publicly traded corporations in East Asia. Moreover, group-affiliated firms are more likely to diversify than independent firms.

Group affiliation is generally associated with a discount in firm valuation. Group-affiliated firms have a smaller diversification discount than independent firms, however. The evidence that firm-level diversification is less harmful within a group suggests that the greater use of internal markets by groups mitigates the discount. But these benefits are more than offset by the private benefits accruing to the controlling owners of group-affiliated firms. In particular, the degree of divergence between the cash-flow and control rights of a firm’s ultimate owners explains much of the group’s value discount—suggesting that the group discount is mostly due to expropriation.

These findings provide strong empirical evidence that expropriation among group-affiliated firms generates private benefits to controlling shareholders, motivating the formation of groups. While groups can be used as a response to external factor markets that are subject to high transaction costs, they come with costs that offset their economic benefits.

**The Costs and Benefits of Internal Markets**

One common explanation for corporation diversification is that capital-constrained firms establish internal capital markets to allocate scarce capital within the firm. If this explanation is valid, one would
expect internal capital markets to be relatively valuable for firms—such as those in less developed financial markets—that have to spend more to obtain external capital. Internal markets may be more valuable in countries with less developed financial markets because firms can better allocate funds to higher-return projects. To some degree, this is because internal markets can overcome information asymmetries in selecting valuable new projects more easily than can external markets.

While internal markets may be a convenient way to obtain scarce capital, investment projects funded by internal markets are not subject to the same monitoring as external capital markets, which could make them riskier. Indeed, evidence indicates that corporate diversification reduces firm value. Thus internal capital markets may be more valuable for firms in less developed countries during good times because they allow more investment in new activities. But internal markets may increase overall risk if risks only surface during a downturn.

We investigate this hypothesis by studying the performance and value of East Asian firms in 1992–98. This sample offers several benefits. First, the period includes both economic booms and busts in many economies. Second, the sample spans economies with highly diverse financial markets, allowing us to control for the development of external financial markets relative to internal markets. Third, all East Asian economies were affected by a downturn within a short window, limiting the influence of other variables on firm valuation. Finally, East Asian corporations are considerably more diversified than U.S. companies.

The East Asian financial crisis started in Thailand in mid-1997 and spilled over to other parts of the region in the fall of 1997. Thus the first month of the crisis varies by economy. In addition, firms use different fiscal years, ranging from the end of December to the middle of the next calendar year. To facilitate comparison, we define financial data reported prior to December 1997 as pre-crisis data. Data reported in or after December 1997 are classified as crisis data and capture the period from mid-1997 to end-1998. To allow for a meaningful pre-crisis and crisis comparison, we restrict our sample to firms that survived the crisis. This survivorship bias means that the risks associated with diversification are underestimated because non-surviving firms likely had lower market valuation.

In measuring corporate value and performance, we use each firm’s market value and profit margin. In calculating value, we use the excess value measure used in previous sections. We also use the excess profit margin, which is an industry-adjusted profit margin calculated in a manner similar to the calculation of excess value.

**Empirical Analysis**

The internal markets hypothesis suggests that diversification is more beneficial in less developed economies, but the risk hypothesis proposes that diversified firms may be more risky during a crisis. To explore how these two hypotheses interact, we present the pre-crisis and crisis performance of East Asian multi-segment firms, grouping them into the three income groups (high income, higher middle income, and lower middle income) used earlier. The top half of table 9 compares the mean and median excess profit margins for these firms; the bottom half of the table compares the mean and median excess values. The overall patterns support both the internal markets hypothesis and the risk hypothesis.

Before the crisis, there was a monotonic decrease in performance with rising income levels for both excess profit margin and excess value. This finding supports the internal markets hypothesis that
diversification is more value-enhancing in less developed economies. But during the crisis, firms in less developed economies suffered more severe declines in performance. The median differences between pre-crisis and crisis excess profit margins and the mean and median differences between pre-crisis and crisis excess values exhibit a monotonic decline with income because diversified firms in lower-income economies experienced a more dramatic decline in performance. The differences are statistically significant at least at the 10 percent level for the lower-middle-income group for excess value, while the difference is significant for the higher-middle-income group for excess profit margin. The pattern is less clear for mean differences of the excess profit margin, with the most significant decline occurring in the higher-middle-income group. But the results are consistent with the hypothesis that diversified firms in high-income countries exhibit the smallest decline in performance.

To further explore how economic and financial development relates to the crisis-induced decline in performance of diversified firms, we plotted the mean difference between the crisis and pre-crisis performance of firms (in terms of their excess profit margin) against per capita GNP (figure 23). We considered three types of firms: those with one (DIFF1), two (DIFF2), and three or more (DIFF3) segments. Firms with three or more segments saw sharp declines in profits during the crisis. For the six economies with per capita GNP below $20,000, the change in profits during the crisis was always negative and quite pronounced. This was not the case for firms with two segments, which did not show a large decline in mean profits in less developed economies. Finally, undiversified firms fall in the middle—four of the six less developed East Asian economies saw a considerable drop in the mean profits of undiversified firms during the crisis. Thus, in term of the excess profit margin, there is not a monotonic relationship between diversification and performance decline during the crisis.

Figure 23. Differences between pre-crisis and crisis excess profit margins for firms with one, two, and three or more segments, by income level

We next investigated how excess market value changed during crisis. Four of the six less developed economies experienced a sharp decline in excess value during the crisis—especially among diversified firms (figure 24). In Indonesia, the country with the lowest GNP per capita, the excess value of firms with three or more segments (DIFF3) dropped 46 percent, and the excess value of firms with two segments (DIFF2) dropped 54 percent, compared with a 24 percent decline for undiversified firms (DIFF1).

Among less developed economies, the Philippines did not show much decline in excess value during the crisis. When Philippine firms are excluded from the sample, it provides a clearer pattern of the decline in excess value in less developed economies. Thus the results generally support the risk hypothesis.
Table 9. Performance of diversified firms before and during the crisis

| Excess profit margin | Mean | Median |  | T-statistic | Mean | Median |  | T-statistic |  |  |  |  |
|----------------------|------|--------|  |            |      |         |  |            |      |         |  |            |
| Income group         | Crisis | Pre-crisis | Difference |  |          | Crisis | Pre-crisis | Difference | Z-statistic |  |  |  |  |
| High income          | -0.0141 | -0.0136 | -0.0005 | -0.13 | -0.0230 | -0.0240 | 0.0010 | 0.29 |
| Higher middle income | -0.0637 | -0.0074 | -0.0563 | -3.72*** | -0.0435 | -0.0210 | -0.0225 | -1.83* |
| Lower middle income  | 0.0079 | 0.0302 | -0.0223 | -0.72 | -0.0425 | 0.0040 | -0.0465 | 1.24 |
| All countries        | -0.0200 | -0.0118 | -0.0082 | -2.08** | -0.0250 | -0.0230 | -0.0020 | -0.64 |

| Excess value | Mean | Median |  | T-statistic | Mean | Median |  | T-statistic |  |  |  |  |
|--------------|------|--------|  |            |      |         |  |            |      |         |  |            |
| Income group | Crisis | Pre-crisis | Difference |  |          | Crisis | Pre-crisis | Difference | Z-statistic |  |  |  |  |
| High income  | -0.0237 | -0.0304 | 0.0067 | 0.36 | -0.0408 | -0.0444 | 0.0036 | 0.14 |
| Higher middle income | -0.0507 | -0.0165 | -0.0342 | -0.62 | -0.0747 | -0.0325 | -0.0422 | -0.68 |
| Lower middle income | -0.2365 | 0.0434 | -0.2799 | -2.42** | -0.1358 | 0.0435 | -0.1793 | -1.79* |
| All countries  | -0.0369 | -0.0272 | 0.0097 | -0.56 | -0.047 | -0.0418 | 0.0052 | -0.33 |

* Results are significant at the 10 percent level.
** Results are significant at the 5 percent level.
*** Results are significant at the 1 percent level.

Note: This table compares the performance of diversified East Asian firms (those with three or more business segments) before and during the 1997–98 crisis. The sample includes 1,999 firms from nine economies. Data reported in or after December 1997 are classified as crisis data. Data reported before December 1997 are classified as pre-crisis data. Firms are classified according to the per capita income of their economy of origin. Following World Bank definitions, the high-income group includes firms from Hong Kong, Japan, Singapore, and Taiwan (China). The higher-middle-income group includes firms from Korea and Malaysia. The lower-middle-income group includes firms from Indonesia, the Philippines, and Thailand.
Figure 24. Differences between pre-crisis and crisis excess value for firms with one, two, and three or more segments, by income level

Aggregations of Extensive Family Control

The weaknesses of East Asian corporations analyzed in previous sections largely stemmed from the institutional environment in which corporations operated. Relevant institutional variables include the role of the financial sector (including its regulation and supervision), the rules for corporate governance, the extent of the rule of law, the degree of competition, and the efficiency of the judicial system. Since the crisis many observers have pointed out weaknesses in these areas in East Asian economies. And indeed, many of the reforms since the financial crisis have aimed at improving these structural deficiencies.

Corporations' actions prior to the crisis may have been an optimal response to these weaknesses, and as such the changes under way will alter their behavior, hopefully leading to a more efficient allocation of resources and less risky financial structures. We do not review here the full range of structural deficiencies and reforms. Instead we use the data on ultimate ownership to examine the degree to which institutional deficiencies may have been related to ownership patterns. In the section on corporate ownership and valuation we investigated ultimate control at the firm level. At the country level a more meaningful unit of analysis—particularly if we are concerned with market entry, access to financing, and government policy—is corporate control by family groups.

To capture this indicator, we analyze the share of market capitalization held by the top 1, 5, 10, and 15 families (figure 25). At the extreme, about one-sixth of market

4 To avoid discrepancies across economies due to different sample coverage, we scaled down the control holdings of each family group by assuming that the firms missing from our sample are not controlled by any of the 15 largest families.

Conclusion

The internal capital markets view of diversification suggests that internal markets may be most valuable for firms in countries with underdeveloped financial markets. But since internal markets are less subject to monitoring, diversified firms may allocate capital to risky projects. The evidence from East Asia supports this hypothesis for the pre-crisis period, with diversified firms valued less than single-segment firms, though less so in less developed countries. But diversified firms performed worse than single-segment firms during the crisis, and diversified firms in less developed countries performed worse than those in more developed countries. Thus diversification may be beneficial in normal times, but it may have hidden costs that only become apparent during economic downturns—as seems to have been the case for less developed East Asian economies.
capitalization in Indonesia and the Philippines can be traced to the ultimate control of a single family (the Salims in Indonesia and the Ayalas in Philippines). The top 10 families in Indonesia and the Philippines control more than half of each country’s corporate sector in terms of market capitalization. Control is also highly concentrated in Hong Kong (China) and Thailand. A quarter of the corporations in Korea, Malaysia, and Singapore are controlled by the 10 largest families. In contrast, family control is insignificant in Japan.

Figure 25. Concentration of family control over corporations

These results suggest that a small number of families effectively control most East Asian economies. Do these families have a strong effect on the economic policy of governments? One direct mechanism for such an effect is the extension of preferential treatment to family members of senior government members. An example is the business empire of the Suharto family in Indonesia. In our sample we identified more than 400 listed and unlisted companies that were controlled by the family through business groups led by children, other relatives, and business partners—many of whom, in addition to former President Suharto, also served in the government.

The concentration of wealth, and the direct and indirect channels though which the government may play an active role in business activity and businessmen may influence politicians, raises the possibility that some legal systems in East Asia may be endogenous to the forms and concentration of control over corporations. If a small number of families plays a large role in the corporate sector and the government is heavily involved in and influenced by business, the legal system is less likely to evolve in a way that protects minority shareholders, and more generally that promotes transparent and market-based activities. While this argument has often been advanced in the wake of the East Asian financial crisis, there has been little evidence to support it.

The concentration of corporate control in the hands of families can be compared with three indexes of judicial and legal development developed in La Porta and others (1999). The indexes measure the efficiency of the judicial system, the extent of the rule of law, and the degree of corruption and run from 1 to 10, with 10 being the best (most efficient judiciary, strongest rule of law, least corrupt). There are strong correlations between the share of the 15 largest families in market capitalization, on the one hand, and the efficiency of the judicial system, the extent of the rule of law, and the degree of corruption, on the other. These findings suggest that the concentration of corporate control is a major determinant of the evolution of the legal system—that is, there is a relationship between the ownership structure of the corporate sector and the level of institutional development.

In most East Asian economies wealth is concentrated in the hands of few families. Legal and regulatory developments may have been impeded by the concentration of corporate wealth. The possible endogeneity of legal systems implies that in some East Asian economies legal and regulatory
reform may not proceed without changes in ownership structures and wealth concentrations.

Going forward, the concentration of corporate wealth in the hands of a small number of (connected) individuals may continue to impede institutional development. Table 10, which compares progress on the structural reforms most relevant for corporate governance in crisis-affected East Asian economies, shows that progress remains incomplete. The continued large role of a few families suggests that legal and judicial systems may evolve slowly. Whether structural reforms can fully take hold without changes in ownership is an open question.
Table 10. Investor protection and judicial efficiency in East Asia

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<th>Korea, Rep. of</th>
<th>Malaysia</th>
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*Note:* A 1 indicates that equity and creditor rights are in the law, that there are time limits to render judgment, and that specialized bankruptcy courts exist. A + indicates that the law has improved since before the crisis (that is, since 1996).

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