

Is Corporate Diversification Beneficial in Emerging Markets?

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Using a sample of over 1000 firms from seven emerging markets in 1995, we find that diversified firms trade at a discount of approximately 7% compared to single-segment firms. Diversified firms are also less profitable than single-segment firms, but lower profitability only explains part of the discount. We find a discount only for those firms that are part of industrial groups and for diversified firms with management ownership concentration between 10% and 30%. The discount is most severe when management control rights substantially exceed their cash flow rights. Our results do not support internal capital market efficiency in economies with severe capital market imperfections.

This paper examines the costs and benefits of corporate diversification in emerging markets. We use the Worldscope database to study seven emerging markets (Hong Kong, India, Indonesia, Malaysia, Singapore, South Korea, and Thailand) and compare the value of diversified and focused firms within each country. Given the greater level of information asymmetry and other market imperfections in these economies, corporate diversification could impact firm value in two ways. One hypothesis is that the use of internal capital markets could lead to higher values for diversified firms. The second hypothesis is that minority shareholders can be more easily expropriated in diversified firms, which implies a lower firm valuation.

There is support for the expropriation hypothesis, but not for the efficient internal capital markets hypothesis. Using the valuation approach proposed by Berger and Ofek (1995), we find that diversified firms in emerging markets trade at a significant discount of approximately 7%, compared to single-segment firms.

Next, we examine three sets of hypotheses on the determinants of the valuation discount. First, we examine whether diversified firms are valued less than focused firms because diversified firms are less profitable. We find evidence that diversified firms are less profitable than single-segment firms. The industry-adjusted operating income of diversified companies is 1% below that of single-segment firms. However, even after controlling for the difference in profitability, we find a difference in valuation of 6.4%.

Second, we examine whether the discount is related to membership in industrial groups. Since industrial groups offer their member firms some of the benefits of diversification, it is not clear why any members would want to operate as a diversified firm. Therefore, we hypothesize that the diversification discount is more substantial in firms that are members of industrial groups. The evidence supports this hypothesis: diversified firms that are part of an industrial group trade at a discount of almost 15%. This evidence supports the argument that the industrial

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group structure allows for the expropriation of minority shareholders by controlling shareholders.

Finally, we examine the effect of ownership concentration on diversified firm value. Ownership concentration, and management ownership in particular, can be both beneficial and detrimental to diversified firm value. We hypothesize that the valuation of diversified firms relates to the ownership structure of the firms in the sample. The discount is expected to be the most severe in an ownership range in which insiders have enough power to exploit minority shareholders, but do not bear the full cash flow consequences of this exploitation. Tests on the six countries for which we have ownership data (Hong Kong, Indonesia, Malaysia, Singapore, South Korea, and Thailand) show that this is the case. The low valuation of diversified firms is driven by firms with management group ownership concentration between 10% and 30%, where we believe that the likelihood of being entrenched is highest. Firms in this subsample trade at a discount of 16%. When we look at the effect of pyramid ownership structures, we find that the diversification discount is most severe when the control rights owned by insiders exceed their cash flow rights by 25 percentage points or more.

Overall, the results suggest that diversified firms are valued below single-segment firms in emerging markets, and that the difference in valuation is at least partially related to the ability of controlling managers to expropriate small shareholders.

The paper is organized as follows. Section I discusses other studies on corporate diversification. Section II describes the sample selection procedure, Section III contains the valuation results, Section IV contains sensitivity analysis, and Section V analyzes the cross-sectional variation in valuation. Section VI concludes.

I. The Costs and Benefits of Corporate Diversification

Recent evidence indicates that corporate diversification has not enhanced the value of firms in the US, the UK, Germany, and Japan (see Lang and Stulz, 1994; Berger and Ofek, 1995; Servaes, 1996; and Lins and Servaes, 1999).¹ The evidence in these papers suggests that, for the average firm operating in developed capital markets, the costs of diversification outweigh the benefits.

However, in emerging markets, the relative costs and benefits are not necessarily the same size, because market imperfections are more severe. Khanna and Palepu (1997; 2000) argue that diversification can be valuable in emerging markets because diversified firms can mimic the beneficial functions of various institutions that are present in developed markets. They discuss the imperfections in capital markets, contract enforcement, business-government relations, product markets, and labor markets that make it more difficult for focused firms to survive. Firms can take advantage of these imperfections by diversifying at the firm level or through membership in industrial groups that are common in many emerging and developed capital markets.

¹However, Matsusaka (1993) and Hubbard and Palia (1999) present evidence that diversifying acquisitions were beneficial to bidding firms during the 1960s. Hyland and Diltz (2002), Villalonga (2000), Maksimovic and Phillips (2002), Campa and Kedia (2002), and Graham, Lemmon, and Wolf (2002) present arguments and evidence that the valuations of diversified firms may not be low because of diversification per se. In particular, Campa and Kedia (2002) and Villalonga (2000) argue that firms already perform poorly before they decide to diversify, while Graham et al. (2002) find that firms tend to acquire companies that trade at a discount, which leads to a measured discount subsequently. Note, however, that Graham et al. (2002) do not find that firms trade at a discount before they diversify. Denis, Denis, and Yost (2002) report a similar result. In addition, Berger and Ofek (1996) report that firms with a greater diversification discount are more likely to be acquired, often in a bust-up takeover. This finding suggests that value can be created when prior value-destroying diversification is undone.

Greater imperfections in the external capital markets of emerging economies should make internal capital markets relatively more attractive for firms. Williamson's (1975) work, which is further developed by Stein (1997), is at the root of this hypothesis. Information asymmetries increase the cost of external funds over internal funds. Diversification allows firms to bypass the external capital market in favor of an internal market where divisions that have high cash flows, but poor investment opportunities finance the investment of divisions that have low cash flows, but excellent investment opportunities. However, in the US, the empirical evidence by Lamont (1997), Houston, James, and Marcus (1997), Shin and Stulz (1998), Scharfstein (1998), and Rajan, Servaes, and Zingales (2000) on the efficacy of internal capital markets suggests that funds may actually flow in the wrong direction (i.e., from divisions with excellent investment opportunities to divisions with poor opportunities). When information gaps are severe, as is the case in emerging markets, the price differential between internal and external finance increases, which should make diversification more beneficial. Khanna and Palepu (1997) mention the lack of reliable financial reporting and limited analyst following as causes of the substantial information gap between a firm's managers and its investors in emerging markets.

The severe market imperfections in emerging economies also increase the potential agency costs associated with diversification. Higher asymmetric information might allow management and large shareholders to more easily exploit the firm for their own purposes. Such opportunities for exploitation are likely exacerbated when the rule of law is weak, which makes contract enforcement difficult; when accounting standards are poor; and when shareholders have fewer rights. Such imperfections make it easier for diversified firms in emerging markets to engage in empire building (Jensen, 1986 and Stulz, 1990).

Hostile takeovers are rare in emerging markets, so the discipline of management must come from internal monitoring mechanisms. For example, a search of Country Reports published by The Economist Intelligence Unit (EIU) mentions no hostile takeover activity in any of the countries over the period 1993-1996. In India, hostile takeovers were illegal until a change in the law effective January 1998. The EIU reports that South Korea has a "culture where hostile takeovers are frowned on." Consistent with this line of reasoning, La Porta, Lopez-de-Silanes, and Shleifer (1999) find that ownership is more concentrated in countries with weak investor protection.

Concentrated ownership, particularly by the management group, can be both beneficial and detrimental to diversified firms. Under the convergence-of-interest hypothesis (Jensen and Meckling, 1976), managers who are owners are less likely to squander corporate wealth via poor diversification choices. Under the entrenchment hypothesis (Morck, Shleifer, and Vishny, 1988), manager-owners might derive nonpecuniary benefits in excess of their share of lost corporate wealth.

In emerging markets, minority shareholders are even more likely to be exploited if managers and their families use pyramid ownership structures to separate their control rights from the cash flow consequences of exercising their control. Entrenched managers can run a diversified firm like their own personal fiefdom, dispensing patronage in the form of jobs and favors, a situation that we and others call "crony capitalism."

Empirical tests on the costs and benefits of corporate diversification in emerging markets have produced mixed results. Khanna and Palepu (2000) examine the value and profitability of Indian firms that belong to industrial groups. They find that profitability first declines with group size and scope, but then increases beyond a threshold level. This evidence suggests that beyond a threshold level, there might be benefits to diversification at the group level. Since we do not have information on the size or scope of the groups in the sample, we cannot study this relation for the sample.

Fauver, Houston, and Naranjo (2001) use the *Worldscope* database to study firms in 35 countries over the period 1991-1995. Their aim is to determine whether the institutional environment of a country affects the costs and benefits of diversification. One of their conclusions is that in low-income and low-GDP countries, diversification is not harmful to shareholder wealth and could be beneficial. Since the low-income countries are, by definition, emerging markets countries, their conclusions appear to be at odds with our findings. We believe that there are two explanations for the differences. First, most of the firms in their study come from developed markets, because the *Worldscope* coverage for emerging markets in the pre-1994 period is poor and focuses only on large companies.² Second, Fauver et al. (2001) do not correct the SIC code of firms when the industry description and the SIC code do not match. This discrepancy in industry classification could also lead to some differences in results.

Claessens, Djankov, Fan, and Lang (1998) use *Worldscope* to study both vertical integration and related diversification in nine East Asian countries in the 1991-1996 period. In contrast to the evidence of Fauver et al. (2001), Claessens et al. (1998) find a positive relation between per-capita GNP and the valuation effects of both vertical integration and related diversification. Unlike those of Fauver et al. (2001), these findings do support our results.

In a related paper on industrial groups and diversification using the same dataset, Claessens, Djankov, Fan, and Lang (1999) show that diversification has a negative effect on firm value, which is consistent with our findings. In contrast to our findings, their regression models show a positive valuation effect when a firm is diversified and belongs to an industrial group. However, Japanese firms make up two thirds of their sample, while our sample focuses exclusively on emerging markets. This difference in samples might explain some of the differences in results.

II. Sample Selection and Valuation Methods

Worldscope is used as the primary database for the analyses. The 1997 version of this database contains detailed financial information on companies from 49 countries for the fiscal year-end closest to December 1995. First, we identify all countries that have emerging markets according to indexes published by the International Monetary Fund (IMF) and *The Economist* magazine. Because we are interested in comparing segments of diversified firms to stand-alone entities operating in those segments, we eliminate countries with less than 100 firms listed in *Worldscope*. The remaining countries in the sample are Brazil, Greece, Hong Kong, India, Indonesia, Malaysia, Singapore, South Africa, South Korea, Taiwan, and Thailand. Brazil, Greece, South Africa, and Taiwan are eliminated from the sample because *Worldscope* reports sales per segment for only a small fraction of the diversified firms in these countries.

The final sample comprises seven emerging-markets countries, all of which are located in Asia. The firms on *Worldscope* have between 80% and 99% of the total stock market capitalization in each country in the sample, except for India, where the coverage is 61% (EIU, 1997 and IFC, 1997). We also note that the IFC does not consider that Hong Kong or Singapore have emerging markets. All of the tests are repeated for the smaller IFC emerging markets subsample, and all conclusions continue to hold. These findings are not reported in the paper, but they are available from the authors on request.

²For the countries in our sample, the fiscal year 1991 *Worldscope* database contains no firms from Indonesia or Thailand, and one firm from India. The *Worldscope* coverage for fiscal year 1993 is the same, except that it includes 23 firms from Thailand.

A firm is classified as diversified when Worldscope reports that the firm has sales in two or more industries, which are defined at the two-digit SIC code level and that the firm's most important segment accounts for less than 90% of total sales. This 90% cut-off leads to a classification similar to the one companies are required to follow in the United States. In several cases, the segment description in the financial statements differs from the industry SIC code assigned by Worldscope. Whenever this occurs, we correct the SIC code to reflect the industry segment description.

One concern is that not all firms in the sample present consolidated financial statements. As we discuss later, this discrepancy in reporting affects the valuation measures, but it is not clear that it creates a bias in the findings. We repeat all of the tests, using only firms that report consolidated financial statements, and the results remain qualitatively unchanged. Because we believe that using firms that do not have consolidated statements does not bias the findings, we have not removed them from all the analyses in the paper. La Porta, Lopez-de-Silanes, Shleifer, and Vishny (2002) face a similar problem in their analysis. They also choose to keep non-consolidating firms in their sample because it does not change their results.

Table I provides details on the sample selection procedure for the seven countries in the sample. The major stock exchanges we use are Hong Kong, Bombay, Jakarta, Kuala Lumpur, Singapore, Seoul, and Bangkok, respectively. We begin by eliminating firms that are not listed on these exchanges. To maintain consistency with studies on US data, we then exclude firms whose primary business is financial services, or that have diversified into financial services. These firms are excluded because we cannot construct meaningful ratios of their market value to their sales level.³ Finally, we eliminate firms for which Worldscope does not provide a sales breakdown, even though they operate in more than one industry. We note that these firms are not different from those included in the sample in terms of sales, profitability, and total assets. The final sample consists of 1,195 firms.

India has the largest representation (264 companies), followed by South Korea (190), and Hong Kong (188). The last row of the table shows the number of diversified firms in each country in the final sample. South Korea has the highest rate of diversification (39%) and Thailand has the lowest rate (10%). The rate of diversification is understated because we eliminate firms that have diversified into financial services or that lack data on segment sales. If we include such firms in the computation, then Malaysia becomes the most diversified country. Using this classification, 47% of all Malaysian companies are diversified, compared to only 18% of the Thai companies (not reported in the table). There is a broad representation of industries in each country. Indonesia has the smallest number of industries (30) and Malaysia the largest (53). The average number of industries is 41.

The rate of diversification in five of the seven countries is substantially higher than the rate for US companies. Using the Compustat Industrial Segment database, we find that at the end of 1995, only 22% of US firms were operating in more than one 2-digit SIC code industry. On the other hand, the firms in the sample do not appear to be more diversified than firms in Germany, Japan, and the United Kingdom. Lins and Servaes (1999) report a rate of diversification of 36% to 40% for firms in these three developed markets.

Table II presents some descriptive statistics for the firms in the sample. Diversified firms are larger than single-segment firms. The median diversified firm has total assets of \$249 million, compared to \$160 million for single-segment firms. Diversified firms also have more debt than single-segment firms: the median is 34.4%, compared to 31.4%. These debt levels

³We have repeated the analyses after including firms with operations in financial services. This does not affect the results. However, we do not feel comfortable including these firms in the main analysis, because the definition of "sales" in financial services is ambiguous. As such, it is difficult to interpret market-to-sales ratios.

Table I. Sample Selection Procedure for 1995

We restrict this emerging markets sample to countries that have at least 100 firms listed on *Worldscope*. It does not contain Brazil, Greece, South Africa, and Taiwan because *Worldscope* reports sales per segment for only a small fraction of the diversified firms in these countries. Some countries report a March, 1996 fiscal year end. The major stock exchanges are Hong Kong, Bombay, Jakarta, Kuala Lumpur, Singapore, Seoul, and Bangkok, respectively. The percentage of diversified firms for each country is based on the final sample.

	Hong Kong	India	Indonesia	Malaysia	Singapore	S. Korea	Thailand
<i>No. of Firms Listed on Worldscope</i>	353	307	124	385	216	243	263
Subtract:							
a. Firms Not Listed on the Major Stock Exchange of a Country	< 14 >	< 27 >	< 4 >	< 16 >	< 12 >	< 7 >	< 11 >
b. Firms Whose Primary Business is Financial Services	< 92 >	< 8 >	< 26 >	< 75 >	< 44 >	< 45 >	< 65 >
<i>Remaining Firms</i>	247	272	94	294	160	191	187
Subtract:							
a. Firms Diversified in the Financial Services Industry	< 50 >	< 1 >	< 2 >	< 71 >	< 30 >	--	< 8 >
b. Firms Classified as Diversified that Do Not Report Sales by Segment	< 9 >	< 7 >	< 9 >	< 37 >	< 9 >	< 1 >	< 16 >
<i>Final Sample</i>	188	264	83	186	121	190	163
<i>No. of Diversified Firms (%)</i>	54 (29%)	78 (30%)	17 (20%)	67 (36%)	40 (33%)	75 (39%)	17 (10%)

Table II. Summary Statistics for Single-Segment and Diversified Firms in Emerging Markets

We classify a firm as diversified if it operates in two or more segments where a segment is defined as a two-digit SIC code industry. Total assets are converted into US dollars using the exchange rate reported by Worldscope. The leverage ratio is defined as book value of debt divided by total assets. "Diversified Geographically" is a dummy variable set equal to one if the firm has foreign sales and zero otherwise. The *p*-value of the *t*-test and medians test of equality of means and medians appear in parentheses.

	Single-Segment Firms		Diversified Firms		Difference (<i>p</i> -value)	
	Mean	Median	Mean	Median	Mean	Median
No. of Segments	1	1	2.54	2	1.54 (0.00)***	1.00 (0.00)***
Total Assets (\$million)	680	160	855	249	175 (0.18)**	89 (0.00)***
Leverage Ratio	0.309	0.314	0.338	0.344	0.029 (0.02)**	0.030 (0.02)**
Operating Income / Sales	0.163	0.143	0.145	0.120	-0.018 (0.04)**	-0.023 (0.02)**
Capital Expenditures / Sales	0.197	0.089	0.159	0.076	-0.038 (0.05)**	-0.013 (0.14)
Diversified Geographically	0.199	0	0.233	0	0.0337 (0.19)	0.000 (0.19)

***Significant at the 0.01 level.

**Significant at the 0.05 level.

*Significant at the 0.10 level.

are consistent with the US evidence provided by Berger and Ofek (1995) and support Lewellen's (1971) conjecture that diversified firms have a higher debt capacity. Diversified firms are also less profitable and have lower capital expenditures than single-segment firms. These results should be interpreted with caution, because we have made no industry adjustments.

We also examine whether there are differences in geographic diversification across the two groups. We obtain data on foreign sales from *Worldscope* and create a geographic diversification dummy equal to one if the firm obtains some of its sales from abroad, and zero otherwise. There is no significant difference between the two sets of firms in terms of geographic diversification.

We use the method proposed by Berger and Ofek (1995) to determine whether diversified firms are more valuable than single-segment firms. Using only single-segment firms, we compute the median market-to-sales ratio in each two-digit SIC code industry for each country. (*Worldscope* only reports segment sales consistently for the countries that comprise the sample. Therefore, we cannot verify whether the results also hold if we use imputed market-to-book ratios or P/E ratios as alternative valuation measures.) Then, we multiply the level of sales in each segment of a diversified firm by its corresponding industry median market-to-sales ratio. Each segment of a diversified firm is matched with an average of 7.81 single-segment firms (median=4).⁴ To obtain the imputed value of the diversified firm, we sum the segment sales level times the corresponding market-to-sales ratio across all segments.

To determine whether diversified firms trade at a discount or premium, we compute the log of the ratio of the actual market value to the imputed market value. This measure is called the excess value of a firm. As in Berger and Ofek (1995), we eliminate firms for which the imputed value is more than four times its actual value or less than one fourth of its actual value from the sample. We remove 23 diversified firms from the sample after applying these cut-offs. To correctly compare single-segment and diversified firms, we also compute the excess value measure for firms that operate in only one segment.

In some cases (13.35% of the segments of diversified firms), we do not have data on single-segment firms in a particular industry for a particular country either because *Worldscope* does not list such firms or they do not exist. In these cases, we use Campbell's (1996) classification of industry groups to obtain the median market-to-sales ratio. This procedure minimizes the loss of observations. We note that we still lose nine firms, because no firms operate in the broad industry groups within a given country. Sensitivity tests indicate that the results remain unchanged when we exclude diversified companies if there are no single-segment firms operating in one or more of their segments.

III. Valuation Results

Panel A of Table III presents summary statistics on the excess value measure, which we use for the primary analysis of the valuation of diversified firms in the sample. By construction, the median excess value for single-segment firms is zero. The mean is slightly negative. For diversified firms, both the mean and median excess value numbers are negative and significantly different from zero. The mean discount is 6.5% and the median is 8.6%.

⁴The average (median) number of matching single-segment firms per country, per diversified firm segment is: Hong Kong, 5.53 (3); India, 17.88 (7); Indonesia, 3.63 (3); Malaysia, 5.28 (4); Singapore, 3.09 (1); South Korea, 5 (3); Thailand, 5.51 (3). There are no significant differences across countries in the number of matching firms, except that we have more matching firms in India.

Table III. Valuation Difference Between Diversified Firms and Single-Segment Firms in Emerging Markets

Panel A reports summary statistics on the excess value measure. Panel B reports estimated coefficients for the following regression model:

$$\text{Excess Value} = a + b_1 (\text{Diversification Dummy}) + b_2 (\text{Log of Total Assets}) + b_3 (\text{Capital Expenditures to Sales}) + b_4 (\text{Geographic Diversification}) + b_5 (\text{Operating Income to Sales}) + e$$

Panel C reports estimated coefficients for the following regression models:

$$\text{Excess Profitability} = a + b_1 (\text{Diversification Dummy}) + b_2 (\text{Log of Total Assets}) + e$$

$$\text{Excess Value} = a + b_1 (\text{Excess Profitability}) + b_2 (\text{Diversification Dummy}) + b_3 (\text{Log of Total Assets}) + b_4 (\text{Capital Expenditures to Sales}) + b_5 (\text{Geographic Diversification}) + e$$

Excess value is computed as the log of the ratio of the actual market value to the imputed market value. The diversification dummy is an indicator variable set equal to one if the firm operates in two or more segments. A segment is defined as a two-digit SIC code industry. Geographic diversification is an indicator variable set equal to one if the firm has foreign sales and zero otherwise. The imputed market value is computed by assigning to each segment of a diversified firm the median market-to-sales ratio of single-segment firms operating in that industry. We compute medians separately for each country. Firms with extreme excess values (actual/imputed value > 4 or actual/imputed value < 0.25) are eliminated from the sample. If no single-segment firms are available, we use broad industry groups as defined by Campbell (1996). We convert assets to US dollars, using the exchange rate provided by Worldscope. Excess profitability is computed as the actual profitability minus the imputed profitability of the firm. Firms are excluded from regressions 2 through 4 in Panel B and regression 2 in Panel C if they do not report data on capital expenditures or have a ratio of capital expenditures to sales above 0.5. Firms are also removed from Panel C if their excess profitability is below -0.4 or above 0.4. In Panel A, the *p*-values of *t*-tests and sign rank tests of equality of the diversification discount to zero appear in parentheses. In Panels B and C, the *p*-values of the *t*-tests of equality of the regression coefficients to zero appear in parentheses.

Panel A. Summary Statistics on Excess Value

	Mean	Median	Standard Deviation	N
Single-Segment Firms	-0.0084	0	0.4892	771
Diversified Firms	-0.0645**	-0.0855**	0.5984	311

Panel B. Valuation Regression

	(1)	(2)	(3)	(4)
Intercept	-0.417*** (0.00)	-0.383*** (0.00)	-0.393*** (0.00)	-0.394*** (0.00)
Diversification Dummy	-0.077** (0.03)	-0.070** (0.05)	-0.071** (0.05)	-0.059* (0.08)
Log of Total Assets	0.034*** (0.00)	0.020* (0.06)	0.021* (0.06)	0.015 (0.17)
Capital Expenditures to Sales		0.957*** (0.00)	0.977*** (0.00)	0.806*** (0.00)
Geographic Diversification			0.029 (0.46)	0.056 (0.15)
Operating Income to Sales				0.793*** (0.00)
Adj. R ²	0.01	0.04	0.04	0.07
No. of Observations	1081	1009	1009	1009

***Significant at the 0.01 level.

**Significant at the 0.05 level.

*Significant at the 0.10 level.

Table III. Valuation Difference Between Diversified Firms and Single-Segment Firms in Emerging Markets (Continued)

	Dependent Variable	
	Excess Profitability	Excess Value
	(1)	(2)
Intercept	-0.093*** (0.00)	-0.214*** (0.00)
Excess Profitability		1.552*** (0.00)
Diversification Dummy	-0.010* (0.09)	-0.064*** (0.06)
Log of Total Assets	0.008*** (0.00)	0.008 (0.47)
Capital Expenditures to Sales		0.743*** (0.00)
Geographic Diversification		0.038 (0.31)
Adj. R ²	0.02	0.11
No. of Observations	1072	1001

***Significant at the 0.01 level.
*Significant at the 0.10 level.

In Panel B of Table III, we report on several specifications of the following cross-sectional regression model:

$$\text{Excess value} = a + b_1 (\text{Diversification dummy}) + b_2 (\text{Log of total assets}) + b_3 (\text{Capital expenditures to sales}) + b_4 (\text{Geographic diversification}) + b_5 (\text{Operating income to sales}) + e \quad (1)$$

Because size and excess value may be correlated (Morck et al. 1988), we include firm size, which we measure by total assets converted to US dollars, as a control variable in all the models. Also, we control for growth opportunities by using the ratio of capital expenditures and sales as a proxy and for profitability in some specifications. In addition, we include a geographic diversification dummy, which we set equal to one if the firm derives some of its sales from abroad, and zero otherwise.⁵ We control for geographic diversification because Errunza and Senbet (1981, 1984) and Morck and Yeung (1991) find evidence of a positive relation between internationalization and firm value, while Denis et al. (2002) find evidence that international diversification leads to a decrease in firm value. We do not include country dummies in the regressions because we compute the excess value measures within each country. Thus, if there are differences across countries in market-to-sales ratios because of institutional differences, then these will be normalized as part of the excess value computations. When we re-estimate all the models with country fixed effects or country random effects, the results remain unchanged.

Regression 1 presents the basic model for the sample. The results show a diversification

⁵Using the percentage of foreign sales or setting the dummy variable equal to one if more than 10% of sales are foreign yields very similar results.

discount of 7.7%, significant at the 3% level.⁶ In model 2, we control for growth prospects by including the ratio of capital expenditures and sales. We exclude firms that do not report data on capital expenditures and firms with a ratio of capital expenditures to sales above 0.5 from both these models. The coefficient on growth opportunities is positive and significant, but its inclusion has only a small impact on the magnitude of the diversification dummy. We continue to find that diversification reduces shareholder value by about 7%.

Model 3 controls for international sales. As in Errunza and Senbet (1981, 1984), there is a positive relation between firm value and geographic diversification. However, the coefficient is not significantly different from zero.

In model 4, we include profitability, which is measured as operating income divided by sales. We continue to find a diversification discount after controlling for profitability, but the discount is attenuated at 5.9%. One reason why the discount is smaller when we control for profitability is that diversified firms might be less profitable than single-segment firms. Thus, by controlling for profitability, we might be removing part of the difference between the two groups of firms. Controlling for profitability in these models would lead to a downward bias in the diversification dummy because it only measures the difference in valuation not explained by differences in profitability.

To investigate this possibility, we compare the industry-adjusted profitability of diversified firms to that of single-segment firms. Our approach is similar to that of the valuation analysis. We start by computing the implied profitability of diversified firms. We assume that each segment is as profitable as the median single-segment firm in its industry. We subtract the implied profitability from the actual profitability to compute excess profitability. Firms with excess profitability above 40% or below -40% are dropped from the analysis to avoid problems with outliers.

To determine whether diversified firms are less profitable than single-segment firms, we estimate cross-sectional regression models of excess profitability on firm size and a diversification dummy. Regression 1 in Panel C of Table III reports the result of this analysis. We find that diversified firms are less profitable than single-segment firms. The difference is about one percentage point, significant at the 9% level. The weak significance is actually caused by extreme observations. If we eliminate levels of absolute excess profitability above 20%, there is little change in the size of the coefficient on the diversification dummy, but we see that it does become significant at the 5% level.

In regression 2 of Panel C of Table III, we analyze whether the valuation discount that we found earlier can be explained by differences in industry-adjusted profitability. The following cross-sectional regression is estimated:

$$\begin{aligned} \text{Excess Value} = & a + b_1 (\text{Excess Profitability}) + b_2 (\text{Diversification Dummy}) \\ & + b_3 (\text{Log of Total Assets}) + b_4 (\text{Capital Expenditures to Sales}) \\ & + b_5 (\text{Geographic Diversification}) + e \end{aligned} \quad (2)$$

As expected, there is a significant positive relation between excess value and excess profitability. An increase in excess profitability by one percentage point increases excess value by about 1.6 percentage points. The coefficient on the diversification dummy remains negative and significant. Its size is similar to the model in column 4 of Panel B. This result suggests that lower profitability is only a partial explanation for the discount at which diversified firms trade in emerging markets. Perhaps the market does not fully value profits because shareholders are concerned that these profits will not ultimately accrue to them. La

⁶In unreported models, we use the number of segments and a sales-based Herfindahl-index as alternate measures of diversification. The results confirm those reported in Table III. As in the studies on US data, we do not find that the valuation effect of diversification worsens as the number of segments increases.

Porta, Lopez-de-Silanes, Shleifer, and Vishny (2000) describe how dividend policies can alleviate this concern. Consistent with this argument, we find that diversified firms pay out a smaller fraction of their profits as dividends: the dividend payout ratio is 24.5% for diversified firms and 27.9% for single-segment firms. The difference between the payout ratios is significant at the 5% level. Since we have not made industry adjustments to the payout ratios, this result should be interpreted with caution.

The discount documented in Table III is smaller than that reported for the US by Lang and Stulz (1994) and Berger and Ofek (1995) and for the UK and Japan by Lins and Servaes (1999).⁷ One interpretation of this evidence is that the benefits to diversification are more substantial in emerging markets than in developed markets, but that they are still outweighed by the costs. However, we are reluctant to draw this conclusion, because we do not believe that the difference in coefficients across samples will be significant. The standard errors of our estimates, and the estimates we find in the other papers are simply too large. We verify this by using the univariate statistics in Berger and Ofek (1995). There is no significant difference between their discount and the discount reported in Table III.

As mentioned previously, there is substantial variability across countries in their level of capital market development. In fact, the IFC does not even consider that Hong Kong and Singapore have emerging markets. However, although the Hong Kong economy is well developed, its external capital market is actually smaller than that of several of the other countries in the sample. When we rank the seven countries in the sample according to the ratio of external market capitalization to sales (see La Porta, Lopez-de-Silanes, Shleifer, and Vishny, 1997), Hong Kong ranks below Thailand, India, Singapore, and Malaysia. If we split the sample into the four countries with a small external capital market (South Korea, Indonesia, Hong Kong, and Thailand) and the three countries with a large external capital market (India, Singapore, and Malaysia), we find a significantly smaller discount in countries with larger external capital markets. This finding is opposite to what we would expect if diversification is relatively more beneficial in countries with poorly developed external capital markets. However, because we only have seven countries in the sample, this finding should be interpreted with caution.

IV. Sensitivity Tests

We have concerns about the differences in accounting standards across countries and about potential differences in the accounting treatment of ownership stakes held in other companies by single-segment and diversified firms. Our first concern deals with consolidation rules. As mentioned earlier, some firms present consolidated financial statements. Others include the value of the shares held in other companies as an asset on their balance sheet. These differences affect the computation of the market-to-sales ratio. Firms that present consolidated financial statements include subsidiary sales in their reported sales figures. This is not the case for firms that do not use consolidated statements. Therefore, the valuation measure, the market-to-sales ratio, is higher for firms that do not consolidate. Because this problem occurs in both single-segment firms and diversified firms, it is not obvious that it would bias the findings. Nevertheless, we examine whether the results will hold after we remove firms that do not consolidate from the sample.

⁷See also Kaiser and Stouraitis (2001) for a UK case study on diversification.

In the first three columns of Panel A of Table IV, we tabulate the fraction of companies in each country that report consolidated financial statements using the accounting practices reported by Worldscope. All firms in Hong Kong and Singapore report consolidated financial statements, as do more than half the firms in the other countries. The exception is India. Also, we note that 13% of the companies in the sample do not disclose their method of reporting subsidiary financial information. When we analyze these data separately for single-segment and diversified firms, we find no significant difference between the two groups of firms. Nevertheless, it is possible that the findings are affected by differences in financial reporting, because diversified firms might have more subsidiaries.

This concern is addressed in two ways. First, we re-estimate the models in Table III, but now we include a dummy variable set equal to one if a firm does not consolidate its financial statements. In these regressions, the coefficient on the diversification dummy is virtually unchanged and the non-consolidation dummy is insignificant (results not tabulated). Second, we remove from the sample all firms for which Worldscope does not explicitly report that the firm uses consolidated financial statements (390 firms). We then re-compute excess values by using only firms that use consolidated statements and we re-estimate the regression models. Table IV, Panel B, Column 1, reports the coefficient on the diversification dummy from the basic regression. The discount for firms that consolidate is 9%, which is significant at the 4% level.

Even if firms consolidate financial statements, there is a problem: not all subsidiaries are wholly owned. Since the reported sales figures include total subsidiary sales, but the market value of the firm only reflects the fraction of the subsidiaries actually owned by the firm, this discrepancy reduces the reported market-to-sales ratio. Again, this problem affects both single- and multiple-segment firms. To address this concern, we gather Worldscope data on the minority interest, reported on the liability side of the balance sheet of each firm. Minority interest is the fraction of the book value of the equity of subsidiaries not fully owned. We then eliminate from the sample all firms with a ratio of minority interest to total assets above 10%, above 5%, and above 1%. The analysis is repeated, again re-computing excess values and re-estimating the regression models. The results continue to hold (not reported in a table).

Our second concern relates to the accounting treatment of small ownership positions in other companies. In general, if companies own less than 50% of the shares of other firms, they do not consolidate this position in their financial statements. Instead, they report this ownership stake as an asset on the balance sheet. This reporting also affects the market-to-sales ratio, since firms with ownership stakes in other companies have a higher market value, but do not show a commensurate increase in the sales level. To examine this problem, we gather data from Worldscope on the balance sheet item "investment in associated companies." In Table IV, Panel A, Columns 4 and 5 show the mean and median ratios of investment in associated companies as a fraction of total assets. Overall, the numbers are relatively small. However, we find that the average ratio of investment in associated companies to assets is significantly larger for diversified firms (5.81%) than for single-segment firms (3.29%). Therefore, we re-examine the results after eliminating firms for which this ratio exceeds 10%, 5%, or 1% of total assets. In Table IV, Panel B, Columns 2 through 4 present the findings. Essentially, the results continue to hold. In fact, they actually become stronger when we tighten the reporting requirement.⁸

Several studies that focus on developed markets with a large number of companies use the Berger and Ofek (1995) method for computing excess value. However, that method might be

⁸We also repeat the tests for countries that were originally removed from the sample, either because Worldscope contains less than 100 observations on them, or because few diversified companies break out sales. Repeating the tests for these countries also confirms the presence of a significant diversification discount.

Table IV. Sensitivity Tests

Panel A presents the fraction of firms in the sample that report consolidated financial statements and the level of investment in associated companies divided by total assets. Panel B reports the coefficient on the diversification dummy from the following regression model for several subsamples:

$$\text{Excess Value} = a + b_1 (\text{Diversification Dummy}) + b_2 (\text{Log of Total Assets}) \\ + b_3 (\text{Capital Expenditures-to-Sales}) + b_4 (\text{Geographic Diversification}) + e$$

Panel C contains the results from the following regression model:

$$\text{Tobin's } Q = b_1 (\text{Diversification Dummy}) + b_2 (\text{Log of Total Assets}) \\ + b_3 (\text{Capital Expenditures-to-Sales}) + b_4 (\text{Geographic Diversification}) + \\ \text{Country Dummies} + \text{Industry Dummies} + e$$

Excess value is computed as the log of the ratio of the actual market value to the imputed market value. Diversification dummy is an indicator variable set equal to one if the firm operates in two or more segments. A segment is defined as a two-digit SIC code industry. The imputed market value is computed by assigning to each segment of a diversified firm the median market-to-sales ratio of single-segment firms operating in that industry. We compute medians separately for each country. Firms with extreme excess values (actual/imputed value > 4 or actual/imputed value < 0.25) are eliminated from the sample. If no single-segment firms are available, then we use broad industry groups as defined by Campbell (1996). Assets are converted to US dollars, using the exchange rate provided by Worldscope. Investment in associated companies / assets is the level of investment in other companies divided by total assets. Firms that do not report data on capital expenditures and firms with a ratio of capital expenditures to sales above 0.5 are excluded from the analysis. Geographic diversification is an indicator variable set equal to one if the firm has sales outside its home country, and zero otherwise. We compute Tobin's Q as the market value of equity plus the book value of debt all divided by total assets. The p -value of the t -test of equality of each coefficient to zero appears in parentheses.

Panel A. Percentage of Firms That Consolidate and Percentage Investment in Other Companies

	Report Consolidated Financial Statements (1)	Do Not Report Consolidated Financial Statements (2)	Subsidiary Reporting Practice is Not Disclosed (3)	Investment in Associated Companies / Assets (%)	
				Mean	Median
				(4)	(5)
Hong Kong	100	0	0	5.50	1.52
India	0.4	60.7	38.9	1.65	0.02
Indonesia	73.9	14.5	11.6	2.10	0
Malaysia	95.2	0	4.8	5.28	0.54
Singapore	100	0	0	5.41	1.94
South Korea	59.7	39.2	1.1	3.10	1.83
Thailand	73.7	2.0	24.3	4.62	0.79
Total	65.2	21.4	13.4	3.87	0.92

Panel B. Subsets Based on Consolidation and Investment in Associated Companies

	Firms That Consolidate (1)	Inv. in Assoc. Companies / Assets < 10%	Inv. in Assoc. Companies / Assets < 5%	Inv. in Assoc. Companies / Assets < 1%
		(2)	(3)	(4)
		Diversification Dummy	-0.090** (0.04)	-0.072** (0.05)
No. of Observations	666	897	781	493

**Significant at the 0.05 level.

Table IV. Sensitivity Tests (Continued)

<i>Panel C. Analysis Using Raw Tobin's Q as a Valuation Measure</i>	
	Dependent Variable is Tobin's Q
Diversification Dummy	-0.157*** (0.01)
Log of Total Assets	-0.016 (0.41)
Capital Expenditures to Sales	0.112 (0.72)
Geographic Diversification	-0.056 (0.50)
Adj. R ²	0.26
No. of Observations	1120

***Significant at the 0.01 level.

less appropriate for emerging markets in which fewer matching firms are available. To alleviate this concern, we estimate models with Tobin's Q (which we measure as the sum of market equity and book debt divided by book assets) as the dependent variable. The explanatory variables are the same ones used earlier in Table III. We also include industry dummies, which are set equal to one if the firm's primary SIC code is in that industry, and zero otherwise, and country dummies. To avoid problems with outliers, we remove observations with Q ratios in the top 1% or bottom 1% of the sample. Table IV, Panel C, reports these results. The coefficients on the country dummies or industry dummies are not reported. There is a diversification discount of 15.7% in this specification. The discount is significant at the 1% level and twice as large as that obtained using the imputed value technique. We find an even larger discount when we use the raw market-to-sales ratio as the dependent variable in the same regressions (not tabulated).

IV. Explaining the Diversification Discount

This section examines whether the valuation of diversified firms is related to industrial group membership and ownership structure.

A. Industrial Group Membership

Khanna and Palepu (1997, 2000) and Perotti and Gelfer (2001) show that industrial groups are common in emerging markets. Although there is no clearcut definition of what constitutes an industrial group, firms that belong to groups generally have some level of cross-shareholdings and interlocking directorships. In some countries, such as Japan, group firms also obtain part of their financing from group banks, but this is not a common feature across all countries.

Although our analysis has focused on diversification at the firm level, it is possible that diversification only benefits firms that do not belong to industrial groups. For firms that have a group affiliation, firm level diversification might not be beneficial, because some of the benefits of internal capital markets are already captured by the group structure.

Several sources are used to determine whether the sample firms belong to industrial groups. These sources include group web sites, stock exchange manuals, and brokerage reports. For

some countries, we contact financial analysts who follow firms in the respective countries which enables us to assign group membership. We describe the data sources on group membership in more detail in the Appendix.

Table V, Panel A, reports summary statistics on group membership. Fifty-eight percent of the firms in the sample belong to industrial groups. India has the lowest fraction of group membership (41%) and Singapore the highest (85%).

The fraction of group and non-group firms that are diversified are also reported. There is no consistent pattern across countries in the diversification level of group and non-group firms. Overall, group firms are more likely to be diversified (31.5%) compared to non-group firms (25.8%). The difference is significant at the 3% level. This finding is surprising, and casts further doubt on the motives for diversification in these countries. If group membership already provides for better access to capital and if firms diversify to create an internal capital market, then we would expect less diversification for group firms, not more.

To study whether diversification is beneficial for independent firms, we employ the same valuation method as in Section II, except that, to construct industry benchmarks, only single-segment firms that do not belong to industrial groups are used.⁹ The drawback of this approach is that we have few industry-matched firms left in most industries, which adds noise to the measures. One-third of the sample firms (31.4%, to be exact) operate in one segment and do not belong to an industrial group. The average segment of a diversified firm has 4.55 matching firms (median is two firms). We must use broad industry groups to match 26% of the segments. However, if there is an independent group effect, it would be inappropriate to also use single-segment firms that belong to groups in the benchmark computations.

We re-estimate the basic regression models by using these newly computed excess values, but also include a group dummy and the interaction between the group dummy and the diversification dummy. Table V, Panel B, contains the results of this analysis. Column 1 presents the valuation regression. The coefficient on the diversification dummy is insignificant. However, the interaction between the group member dummy and the diversification dummy is large and significant at the 9% level. This finding indicates that, unless the firm belongs to an industrial group, diversification is not harmful for shareholders. This evidence supports the argument that group members can experience the benefits of an internal capital market without having to diversify. If they do diversify, then it is more likely to be in the interest of the managers or controlling shareholders, not the minority shareholders. For firms that are not group members, the costs and benefits of diversification cancel each other out. These results also support the evidence on industrial groups in Japan (see Lins and Servaes, 1999).

In Table V, Column 2, we examine whether the valuation results also translate into differences in profitability. Excess profitability is computed as in Table III, but only non-group single-segment firms are used to construct industry benchmarks. The coefficients on the diversification dummy, the group dummy, and their interaction are not significant. This result is not surprising, since profitability is more volatile than value. Therefore, the loss of precision using only single-segment firms that do not belong to groups affects our ability to draw inferences. For completeness, regression 3 repeats regression 1, but includes excess profitability as an explanatory variable. We find a strong relation between profitability and value, but none of the other coefficients are significant. However, when we compare diversified firms that are not members of industrial groups to diversified firms that are, there is a significant

⁹We obtain similar results if we employ all single-segment firms to construct excess value measures.

Table V. Industrial Group Structure and the Value of Diversification

Panel A presents summary statistics by country on the fraction of sample firms that are members of industrial groups. Panel B contains the results from the following regression models:

Regressions 1 and 3:

$$\text{Excess Value} = a + b_1 (\text{Excess Profitability}) + b_2 (\text{Diversification Dummy}) + b_3 (\text{Group Dummy}) \\ + b_4 (\text{Diversification} * \text{Group Dummy}) + b_5 (\text{Log of Total Assets}) \\ + b_6 (\text{Capital Expenditures to Sales}) + b_7 (\text{Geographic Diversification}) + e$$

Regression 2:

$$\text{Excess Profitability} = a + b_1 (\text{Diversification Dummy}) + b_2 (\text{Group Dummy}) + b_3 (\text{Diversification} * \text{Group Dummy}) \\ + b_4 (\text{Log of Total Assets}) + b_5 (\text{Geographic Diversification}) + e$$

Data on group membership are obtained from group web sites, stock exchange reports, brokerage reports, and financial analysts. Excess profitability is computed as the actual profitability minus the imputed profitability of the firm. Excess value is computed as the log of the ratio of the actual market value and the imputed market value of the firm. Diversification dummy is an indicator variable set equal to one if the firm operates in two or more segments. A segment is defined as a two-digit SIC code industry. Group dummy is an indicator variable set equal to one when the firm is part of an industrial group. Firms with excess profitability above 40% or below -40% and firms with a ratio of capital expenditures to sales above 0.5 are excluded. Geographic diversification is an indicator variable set equal to one if the firm has foreign sales. The *p*-value of the *t*-test of equality of each coefficient to zero appears in parentheses.

Panel A. Summary Statistics on Group Membership and Diversification

	Percentage of Firms that are Members of Industrial Groups	Percentage of Group Firms that are Diversified	Percentage of Non-Group Firms that are Diversified
Hong Kong	49.2	33.9	25.4
India	40.6	23.7	32.4
Indonesia	41.7	25.7	16.3
Malaysia	62.7	35.3	37.7
Singapore	85.0	33.3	27.8
South Korea	71.8	43.7	30.2
Thailand	57.3	12.7	7.1
Total	57.7	31.5	25.8

Panel B. Regression of Value on Diversification Dummy, Group Dummy, and Interaction Term

	Dependent Variable		
	Excess Value (1)	Excess Profitability (2)	Excess Value (3)
Intercept	-0.250* (0.10)	-0.111*** (0.00)	-0.056 (0.71)
Excess Profitability			1.642*** (0.00)
Diversification Dummy	0.026 (0.69)	0.007 (0.55)	-0.0167 (0.80)
Group Dummy	-0.031 (0.48)	0.012 (0.12)	-0.067 (0.11)
Diversification*Group Dummy	-0.144* (0.09)	-0.017 (0.25)	-0.083 (0.32)
Log of Total Assets	0.011 (0.41)	0.009*** (0.00)	-0.003 (0.80)
Capital Expenditures to Sales	0.810*** (0.00)		0.006*** (0.00)
Geographic Diversification	0.066 (0.15)		0.074* (0.09)
Adj. R ²	0.03	0.02	0.11
No. of Observations	915	892	891

***Significant at the 0.01 level.

*Significant at the 0.10 level.

difference in value of 15% (p -value=0.04). Fifteen percent is the sum of the coefficients on the group dummy, -0.067 , and the interaction between the diversification dummy and the group dummy, -0.083 .

B. Ownership Structure and Corporate Governance

We now analyze whether the valuation of diversified companies in emerging markets is related to their ownership structure. According to the expropriation hypothesis, diversified firms trade at a discount, because the managers do not operate diversified firms with the best interests of shareholders in mind. Conversely, the convergence-of-interests hypothesis predicts that managers who are owners are less likely to squander corporate wealth with poor diversification choices. Thus, ownership concentration has the potential to be both beneficial and detrimental to diversified firm value.

Since protection for minority shareholders is weak in many emerging markets (La Porta et al. 1997, 1998, 1999, 2002), it could be easier for insiders to run the diversified firm for their personal interest. Corruption and lack of contract enforcement could enhance this effect. Rather than maximizing firm value, entrenched insiders can safely choose to run a diversified firm like their own personal fiefdom, dispensing patronage in the form of jobs and favors. We label such agency problems "crony capitalism." Because the market for corporate control is virtually nonexistent in many developing markets, the disciplining of management must come from internal monitoring mechanisms. To see if such monitoring is effective, we investigate whether the size of the diversification discount depends on the ownership structure of the firms in the sample.

In emerging markets, the distinction between managers and other large shareholders is less clearcut because of pyramid ownership structures. Pyramid structures enable the management group to obtain some or all of its control rights indirectly via stakes held by other companies. Thus, making a detailed identification of these indirect holdings is important for assessing managerial agency problems. We obtain data on the direct ownership structure from *The Guide to Asian Companies* (1996) for companies from Hong Kong, Indonesia, Malaysia, Singapore, and Thailand and from *Worldscope* for South Korean firms. We lack detailed ownership data for India, and, therefore, remove it from the sample. Because *Worldscope* only identifies those shareholders with ownership stakes of at least 5% of a firm's stock, this cut-off is applied for all of the ownership data.

To determine indirect holdings, we trace out the ownership and control of the direct blockholders of the sample firms. To do so, we use all available sources, including country and regional handbooks and firm-level searches on Lexis-Nexis.¹⁰ Whenever the managers of the firms in the sample or their family members are also the largest shareholders of the firms that own shares in the companies, we add these shareholdings to managerial ownership. We make the same adjustment if the managers of the firms in the sample or their family members are part of the management of the large shareholders. Thus, "management group control rights ownership" refers to the sum of direct ownership and indirect control held by managers and their families.

This information is also used to determine what fraction of the cash flow rights is controlled by management. For example, suppose Company A is a firm in our sample. If the management of Company A controls 50% of a Company B that owns 50% of the shares of Company A, then we compute cash flow rights ownership as 25% (50% of 50%) and control rights ownership as 50%. Where managers hold their equity stakes directly, control rights and cash flow rights are equal.

Unfortunately, we cannot always determine the cash flow rights associated with a given control

¹⁰See Lins (2001) for a detailed appendix that lists ownership sources.

stake. For instance, Worldscope might list a nominee account as a primary shareholder in a firm, and we can identify that management is the beneficiary of that stake (and thus assign control to management), but we cannot find details of the actual cash flow rights held by management in the nominee account. Therefore, we use two definitions of cash flow rights ownership. The first definition assumes that all control rights held indirectly translate into full cash flow rights for those cases in which we cannot trace cash flow ownership. The second definition assumes that control rights do not translate into cash flow rights at all. All our findings hold for both definitions.

We also gather data on control exercised by other large shareholders. We classify ownership by persons who are not managers (or family members) as individual ownership. Corporate ownership is defined as the ownership position of companies not affiliated with management. Institutional ownership is defined as ownership by pension funds, mutual funds, insurance companies, and direct ownership by banks. Government ownership comprises direct and indirect ownership by all agencies and companies that we can identify as being state-controlled (e.g., Temasek Holdings in Singapore). Because we do not account for ownership below the 5% threshold, the reported ownership levels could be underestimated overall.

Table VI summarizes the ownership structure for the firms in the sample. The table lists mean and median levels of ownership for each category and the percentage of firms for which ownership in that category equals 5% or more. For management ownership, both control rights ownership and cash flow ownership are listed using the most conservative definition of cash flow ownership. We also compute ownership concentration, which is the sum of the control rights held by all types of blockholders. Ownership concentration is above 50% in four of the six countries and averages more than 60% in Indonesia and Singapore. However, South Korea has an ownership concentration of only 25%. Control rights ownership by the management group far exceeds that of any other ownership category and comprises more than half of the total ownership concentration. Across the six-country sample, mean management group control rights ownership is 25.3%; 70% of the firms have management ownership at or above the 5% level. At 13.2%, cash flow ownership by the management group is about half of control rights ownership.

Mean (nonaffiliated) corporate ownership is 12.9%. Almost 40% of the firms have corporate ownership greater than or equal to 5%. Ownership by institutions, individuals, and governments comprises a relatively small part of the average firm's ownership structure. Overall, the statistics in Table VI support the La Porta et al. (1999) findings that large blockholders dominate the ownership structures of less-developed economies and also support the ownership statistics presented by Claessens, Djankov, and Lang (2000).

To determine whether the diversification effect relates to managerial agency problems, we construct tests that incorporate the level of management control and cash flow rights and the difference between them. First, we re-estimate the regression models of excess value on the diversification dummy, size, industry-adjusted profitability, capital spending, and geographic diversification, but we then include indicator variables for different management group ownership and control levels, and interactions between those indicators and the diversification dummy. Theory provides little guidance as to the proper breakpoints for dividing ownership into different categories. Morck et al. (1988) use 5% and 25% ownership as their breakpoints, but they note that they choose these points to fit the data. We use breakpoints that are five percentage points higher. Ten percent is used as a first cut-off point because few firms have managerial control below 5%. A regression on such a small sample would not be very informative. We use 30% as the second cut-off point to keep the control range in the second group at 20 percentage points, as do Morck et al (1988).

Panels A and B of Table VII present the results of this analysis. We estimate the full regression model, but, for the sake of brevity, we report only the overall effect of diversification

Table VI. Ownership Structure: Summary Statistics

We obtain ownership data for Hong Kong, Indonesia, Malaysia, Singapore, and Thailand from *The Guide to Asian Companies* (1996) and data for South Korea from Worldscope. Sufficient ownership data are not available for India. The management control rights ownership category aggregates direct ownership of voting shares held by officers and directors (and their families) and indirect control obtained through their ownership or control of other companies or nominee accounts in the firm's ownership structure. Management cash flow ownership is the sum of direct and indirect cash flow ownership. When we cannot determine the indirect cash flow ownership, we set it equal to zero. Individual ownership is classified as ownership by persons who are not members of the management group or their families. Corporate ownership refers to the ownership positions of other companies, such as holding companies and investment companies, that are not affiliated with the management group or their families. Institutional ownership refers to ownership by banks, insurance companies, pension funds, and mutual funds. Government ownership refers to all agencies and companies that we can identify as being state controlled. Total ownership concentration aggregates ownership across all blockholder categories. The first number in each cell is the mean, the second number is the median, and the third number is the percentage of firms for which ownership in each category equals 5% or more.

Country	Total	Hong Kong	Indonesia	Malaysia	Singapore	South Korea	Thailand
	Mean Median %>5	Mean Median %>5	Mean Median %>5	Mean Median %>5	Mean Median %>5	Mean Median %>5	Mean Median %>5
Management Group Control Rights	25.32 22.30 70	38.00 42.35 78	20.73 5.00 51	26.73 27.60 72	33.68 35.60 71	15.00 13.45 76	18.32 12.00 62
Management Group Cash Flow Rights	13.20 0.00 46	27.46 27.45 63	11.14 0.00 33	6.19 0.00 32	11.87 0.00 41	10.9 8.25 61	13.65 5.60 51
Individual Ownership	1.05 0.00 6	0.37 0.00 3	3.84 0.00 11	0.56 0.00 5	0.49 0.00 3	1.01 0.00 7	1.38 0.00 9
Corporate Ownership	12.93 0.00 38	13.43 0.00 32	35.43 41.6 70	10.42 0.00 35	10.14 0.00 33	4.43 0.00 25	16.30 5.50 51
Institutional Ownership	3.15 0.00 23	1.03 0.00 5	2.30 0.00 14	5.71 0.00 42	8.70 5.60 55	2.26 0.00 22	0.58 0.00 5
Government Ownership	4.04 0.00 15	0.44 0.00 1	3.26 0.00 7	8.80 0.00 35	8.08 0.00 14	2.06 0.00 21	3.30 0.00 7
Total Ownership Concentration	46.49 48.60 97	53.30 54.95 99	65.54 68.10 99	52.22 53.30 98	61.10 62.70 98	24.77 22.45 97	39.91 39.80 93

Table VII. The Effect of Management Group Ownership on the Value of Diversification

The following cross-sectional models are estimated in Panels A and B:

$$\begin{aligned} \text{Excess Value} = & a + b_1 (\text{Excess Profitability}) + b_2 (\text{Log of Total Assets}) + b_3 (\text{Capital Expenditures-to-Sales}) \\ & + b_4 (\text{Geographic Diversification}) + b_5 (\text{Diversification Dummy}) + b_6 (\text{Ownership 10-30\%}) \\ & + b_7 (\text{Ownership} > 30\%) + b_8 (\text{Diversified and Ownership 10-30\%}) + b_9 (\text{Diversified and} \\ & \text{Ownership} > 30\%) + e \end{aligned}$$

The following cross-sectional model is estimated in Panel C:

$$\begin{aligned} \text{Excess Value} = & a + b_1 (\text{Excess Profitability}) + b_2 (\text{Log of Total Assets}) + b_3 (\text{Capital Expenditures-to-Sales}) \\ & + b_4 (\text{Geographic Diversification}) + b_5 (\text{Diversification Dummy}) + b_6 (\text{Dummy if Control} \\ & \text{Rights} - \text{Cash Flow Rights} > 0 \text{ but} < 25 \text{ Percentage Points}) + b_7 (\text{Dummy if Control Rights} \\ & - \text{Cash Flow Rights} > 25 \text{ Percentage Points}) + b_8 (\text{Diversified and Control Rights} - \text{Cash} \\ & \text{Flow Rights} > 0 \text{ but} < 25 \text{ Percentage Points}) + b_9 (\text{Diversified and Control Rights} - \text{Cash} \\ & \text{Flow Rights} > 25 \text{ Percentage Points}) + e \end{aligned}$$

In Panel A, ownership refers to control rights. In Panel B, ownership refers to cash flow rights. The ownership measures are indicator variables set equal to one if reported ownership falls within the range listed. The management group control rights category aggregates direct ownership of voting shares held by officers and directors (and their families) and indirect control obtained through their ownership or control of other companies or nominee accounts in the firm's ownership structure. Excess value is computed as the log of the ratio of the actual market value and the imputed market value of the firm. Excess profitability is computed as the actual profitability minus the imputed profitability of the firm. Diversification dummy is an indicator variable set equal to one if the firm operates in two or more segments. A segment is defined as a two-digit SIC code industry. Geographic diversification is an indicator variable set equal to one if the firm has foreign sales, and zero otherwise. "Number of Firms in Total" refers to the total number of firms with ownership in a particular range. Firms with a ratio of capital expenditures-to-sales above 0.50 and firms with excess profitability above 40% or below -40% are excluded from the analysis. We report the overall effect of diversification on firm value, which is the sum of the coefficient on the diversification dummy and the interaction between the ownership categories and the diversification dummy. The *p*-value of the *t*-test of equality of these coefficients to zero appears in parentheses.

Panel A. Management Group Control Rights Ownership

	Management Group Control Rights Ownership Range		
	<10%	10% - 30%	>30%
Effect of Diversification	0.041 (0.70)	-0.163** (0.03)	-0.084 (0.16)
No. of Firms in Total	294	189	299
No. (%) of Diversified Firms	78 (26.5)	58 (30.7)	91 (30.4)

Panel B. Management Group Cash Flow Rights Ownership

	Management Group Cash Flow Ownership Range		
	<10%	10% - 30%	>30%
Effect of Diversification	-0.004 (0.93)	-0.249*** (0.00)	-0.036 (0.70)
No. of Firms in Total	474	162	146
No. (%) of Diversified Firms	145 (20.5)	49 (30.3)	33 (22.6)

***Significant at the 0.01 level.

**Significant at the 0.05 level.

Table VII. The Effect of Management Group Ownership on the Value of Diversification (Continued)

<i>Panel C. The Separation of Management Group Control Rights and Cash Flow Rights</i>			
	Difference Between Management Group Control Rights and Cash Flow Rights Ownership		
	0%	0%-25%	>25%
Effect of Diversification	-0.03	-0.056	-0.157**
	(0.54)	(0.59)	(0.04)
No. of Firms in Total	521	97	164
No. (%) of Diversified Firms	137 (26.2)	29 (29.9)	61 (37.1)

**Significant at the 0.05 level.

for different management ownership and control categories. This overall effect is the sum of the coefficient on the diversification dummy and the interaction between the ownership category dummy and the diversification dummy.

The results are striking. In Panel A, which is based on control rights ownership, we find no evidence that diversification affects firm value if management control is below 10% (coefficient=0.041, p -value=0.7). Conversely, in the 10% to 30% concentration range, we find a significant diversification discount of 16%. For management ownership concentration above 30%, the discount is 8.4%, but it is significant at only the 16% level.

In general, these results continue to hold for alternative ownership ranges within 10 percentage points of the 10% and 30% cut-offs. The diversification discount (if any) in the low and high management group control ranges is never significant at the 10% level, but the diversification discount in the intermediate control range is always significant at the 5% level or better. Only the excess values in the intermediate ownership category are significantly different from zero. We also examine whether the effect of diversification is significantly different across ownership ranges. The discount in the 10% to 30% range is significantly larger than in the <10% range (p -value = 0.05).

Panel B displays the results for cash flow rights ownership. The results are similar. This is not surprising since control rights and cash flow rights are highly correlated ($\rho=0.63$). However, we note that the discount in the >30% range is much smaller than in Panel A, where we subdivide the sample according to control rights. In fact, we find that the discount in the 10% to 30% management control range is significantly different from both the <10% range (p -value=0.01) and the >30% range (p -value=0.10).

These results suggest that expropriation of minority shareholders might be at the heart of the value loss associated with diversification. At low levels of control, there is less of an opportunity for management to expropriate minority shareholders. When control becomes more concentrated, insiders become more entrenched, and the opportunity for minority shareholder expropriation increases. In this ownership range, since they bear a relatively small fraction of the cash flow consequences of their actions, insiders can use the diversified firm structure to allocate jobs and favors and generally run the firm to suit their personal interests. At high levels of ownership concentration, the interests of insiders and other shareholders are more closely aligned, and there is less incentive for insiders to destroy shareholder wealth. Because the regressions control for industry-adjusted profitability, these results support our earlier argument that shareholders might be worried about access to the company's profits.

To further assess the expropriation story, we perform a second test. In this test, we examine

whether the diversification discount relates to the difference between management control rights ownership and cash flow rights ownership. If controlling shareholders use diversification strategies to expropriate minority shareholders, this effect should be more severe when controlling shareholders do not suffer the cash flow consequences of their actions.

To examine whether this is the case, we estimate the basic regression model, but now we include dummy variables to capture the difference between management control rights and cash flow rights. We also interact these dummies with the diversification dummy. Firms are divided into three categories: those with no difference between management control and cash flow rights, those where the difference is less than 25 percentage points, and those where the difference is equal to or larger than 25 percentage points.

The results are reported in Panel C of Table VII. Again, for the sake of brevity, we focus on the effect of diversification within each category. Our results support the conjecture. When there is no difference between control and cash flow rights held by management, we find a discount of 3%, which is not significant. When the difference is limited to less than 25 percentage points, the discount is only 5.6%, which is still not significantly different from zero. Only when the management group's control rights exceed their cash flow rights by 25 percentage points or more do we find a significant difference of 15.7%. These results provide further support for the expropriation hypothesis. We also estimate this model using alternative breakpoints and find that the discount becomes significant once the difference reaches 20 percentage points. However, we must also note that the discounts in the three subgroups are not significantly different from each other at conventional levels. The p -value for the difference between the 0% group and >25% group is 0.15.

The discussion above relates the value loss associated with diversification to management group ownership concentration and the difference between their control rights and cash flow rights. However, we could argue that when there is room for minority shareholder expropriation, it does not necessarily have to happen through diversification. We do not disagree with this argument, but it might be easier to engage in "crony capitalism" when there is a diversified structure. Indeed, firms with management group ownership concentration below 10% are less likely to be diversified (p -value < 0.1), even after we control for size, profitability, and growth opportunities. Firms with no difference between management cash flow and control right ownership are also less likely to be diversified than are firms in which the difference exceeds 25 percentage points. However, further research is required to analyze this possibility in more detail.

Another concern is that the discount in the intermediate ownership range that we see in Panels A and B is so large that one might doubt that this is really the effect of "crony capitalism." Why would large shareholders be willing to forgo substantial amounts of wealth simply to allocate favors? However, it is important to keep in mind that crony capitalism includes favorable dealings with other companies owned by the large shareholders. In addition, Panel C illustrates that when diversification has the most negative impact on firm value, managers do not bear most of the cash flow consequences of their actions.

As a robustness check, we verify that the results are not driven by observations from just one country. We also estimate robust regression models, which verify that outliers in ownership and excess value are not driving the results. We verify that the results on group membership continue to hold when we control for ownership structure.

Despite our best efforts, it is possible that some stakes we identify as held by other companies, institutions, or individuals are actually linked to the management group. To assess whether this misclassification may affect the results, we analyze whether the pattern in the valuation of diversified firms that we just uncovered also holds when we focus on

total ownership concentration. We find a similar pattern in valuation across the three total ownership categories. Again, the discount is significant only in the 10% to 30% ownership category (not reported in a table).¹¹

It is interesting to contrast the findings with the results presented for US firms by Denis, Denis, and Sarin (1997) and Anderson, Bates, Bizjak, and Lemmon (2000). They find little evidence that the diversification discount depends on a firm's ownership structure. We believe that this is the case because minority shareholders in the US enjoy much stronger legal protection, which makes it more difficult to use a diversified structure to transfer wealth to controlling shareholders.¹²

VI. Conclusion

We examine the value of corporate diversification in seven emerging markets. Diversified firms trade at a discount of approximately 7%, compared to single-segment firms. We also study whether we can link the characteristics of firms to the diversification discount.

Diversified firms are less profitable than focused firms, but this result only explains part of the discount. When we divide the sample into firms that are members of industrial groups and firms that are independent, we find that the discount is concentrated in group member firms. Since some of the benefits of diversification can be captured through a group structure, there are fewer reasons for group members to diversify on their own. Therefore, a choice to diversify is more likely to be related to agency problems.

To further examine the agency cost argument, we study the relation between the diversification discount and ownership concentration. We investigate the direct and indirect stakes held by a firm's management group and find that the discount is confined to firms with management group ownership concentration in the 10% to 30% range and to firms where there is a substantial difference between the control rights and cash flow rights held by management. These results support the "crony capitalism" hypothesis, under which entrenched insiders use the diversified firm structure to expropriate minority shareholders for their own purposes.

The results do not support the hypothesis that greater information asymmetry and market imperfections found in emerging markets increase the net benefits of corporate diversification. Instead, it appears that the opportunity to expropriate small shareholders in a diversified firm structure leads to a reduction in value. ■

¹¹We have also examined whether the other ownership categories have an independent impact on the valuation effects of diversification, but find no significant effects.

¹²It is unlikely that the findings regarding industrial group membership and ownership structure can be explained by reverse causality, because both ownership structure and industrial group membership are stable over time. Therefore, it is unlikely that diversified firms that trade at a discount decide to join an industrial group or that diversified firms that trade at a discount decide to separate ownership rights from control rights. On the other hand, it is possible that causality is reversed for the diversification result; that is, a firm might perform poorly before it decides to diversify. Since we only have one year of data, it is not possible to verify this conjecture.

Appendix: Sources Used to Determine Group Membership

Country	Source
All Countries	Web search for all companies. Many business groups have web sites that contain details on group companies.
India	Umesh Agrawal, PricewaterhouseCoopers Indian Industry Information Research and Analysis (INFAC) database
Malaysia	Kuala Lumpur Stock Exchange
Singapore	Teck-Hoon Low, IndoCarr Securities

References

- Anderson, R.C., T.W. Bates, J.M. Bizjak, and M.L. Lemmon, 2000, "Corporate Governance and Firm Diversification," *Financial Management* 29, 5-22.
- Berger, P. and E. Ofek, 1995, "Diversification's Effect on Firm Value," *Journal of Financial Economics* 37, 39-65.
- Berger, P. and E. Ofek, 1996, "Bustup Takeovers of Value-Destroying Diversified Firms," *Journal of Finance* 51, 1175-1200.
- Campa, J.M. and S. Kedia, 2002, "Explaining the Diversification Discount," *Journal of Finance* (Forthcoming).
- Campbell, J.Y., 1996, "Understanding Risk and Return," *Journal of Political Economy* 104, 298-345.
- Claessens, S., S. Djankov, and L.H.P. Lang, 2000, "The Separation of Ownership and Control in East Asian Corporations," *Journal of Financial Economics* 58, 81-112.
- Claessens, S., S. Djankov, J.P.H. Fan, and L.H.P. Lang, 1998, "Diversification and Efficiency of Investment by East Asian Corporations," World Bank Working Paper.
- Claessens, S., S. Djankov, J.P.H. Fan, and L.H.P. Lang, 1999, "The Rationale for Groups: Evidence from East Asia," World Bank Working Paper.
- Denis, D.J., D.K. Denis, and A. Sarin, 1997, "Agency Problems, Equity Ownership, and Corporate Diversification," *Journal of Finance* 52, 135-160.
- Denis, D.J., D.K. Denis, and K. Yost, 2002, "Global Diversification, Industrial Diversification, and Firm Value," *Journal of Finance* (Forthcoming).
- The Economist*, 1996-1997, various issues.
- The Economist Intelligence Unit, *Country Reports*, 1996-1998.
- Edinburgh Financial Publishing (Asia) Ltd, 1996, *The Guide to Asian Companies*, Hong Kong.
- Errunza, V. and L. Senbet, 1981, "The Effects of International Operations on the Market Value of the Firm: Theory and Evidence," *Journal of Finance* 36, 401-417.
- Errunza, V. and L. Senbet, 1984, "International Corporate Diversification, Market Valuation and Size-Adjusted Evidence," *Journal of Finance* 39, 727-745.
- Fauver, L., J. Houston, and A. Naranjo, 2001, "Capital Market Development, Legal Systems and the Value of Corporate Diversification: A Cross-Country Analysis," University of Florida Working Paper.
- Graham, J.R., M.L. Lemmon, and J. Wolf, 2002, "Does Corporate Diversification Destroy Value?," *Journal of Finance* (Forthcoming).

- Houston, J., C. James, and D. Marcus, 1997, "Capital Market Frictions and the Role of Internal Capital Markets in Banking," *Journal of Financial Economics* 46, 135-164.
- Hubbard, R.G. and D. Palia, 1999, "A Re-Examination of the Conglomerate Merger Wave in the 1960s: An Internal Capital Markets View," *Journal of Finance* 54, 1131-1152.
- Hyland, D. and Diltz, D., 2002, "Why Firms Diversify: An Empirical Examination," *Financial Management* 31, 51-81.
- International Monetary Fund, 1996, 1997, *Statistical Handbook*, Washington D.C.
- International Finance Corporation, 1997, *Emerging Stock Markets Factbook*, Washington D.C.
- Jensen, M.C. and W.H. Meckling, 1976, "Theory of the Firm: Managerial Behavior, Agency Costs, and Ownership Structure," *Journal of Financial Economics* 3, 305-360.
- Jensen, M.C., 1986, "Agency Costs of Free Cash Flow, Corporate Finance, and Takeovers," *American Economic Review* 76, 323-329.
- Kaiser, K.M.J. and A. Stouraitis, 2001, "Reversing Corporate Diversification and the Use of the Proceeds from Asset Sales: The Case of Thorn EMI," *Financial Management* 30, 63-102.
- Khanna, T. and K. Palepu, 1997, "Why Focused Strategies May be Wrong for Emerging Markets," *Harvard Business Review*, July-August, 41-51.
- Khanna, T. and K. Palepu, 2000, "Is Group Affiliation Profitable in Emerging Markets? An Analysis of Diversified Indian Business Groups," *Journal of Finance* 55, 867-891.
- La Porta, R., F. Lopez-de-Silanes, and A. Shleifer, 1999, "Corporate Ownership Around the World," *Journal of Finance* 54, 471-517.
- La Porta, R., F. Lopez-de-Silanes, A. Shleifer, and R.W. Vishny, 1997, "Legal Determinants of External Finance," *Journal of Finance* 52, 1131-1150.
- La Porta, R., F. Lopez-de-Silanes, A. Shleifer, and R.W. Vishny, 1998, "Law and Finance," *Journal of Political Economy* 106, 1115-1155.
- La Porta, R., F. Lopez-de-Silanes, A. Shleifer, and R.W. Vishny, 2000, "Agency Problems and Dividend Policies around the World," *Journal of Finance* 55, 1-33.
- La Porta, R., F. Lopez-de-Silanes, A. Shleifer, and R.W. Vishny, 2002, "Investor Protection and Corporate Valuation," *Journal of Finance* (Forthcoming).
- Lamont, O., 1997, "Cash Flow and Investment: Evidence from Internal Capital Markets," *Journal of Finance* 52, 83-109.
- Lang, L.H.P. and R.M. Stulz, 1994, "Tobin's q, Corporate Diversification and Firm Performance," *Journal of Political Economy* 102, 1248-1280.
- Lewellen, W.G., 1971, "A Pure Financial Rationale for the Conglomerate Merger," *Journal of Finance* 26, 521-537.
- Lins, K. and H. Servaes, 1999, "International Evidence on the Value of Corporate Diversification," *Journal of Finance* 54, 2215-2239.
- Lins, K., 2001, "Equity Ownership and Firm Value in Emerging Markets," University of Utah Working Paper (November).
- Matsusaka, J.G., 1993, "Takeover Motives During the Conglomerate Merger Wave," *RAND Journal of Economics* 24, 357-379.
- Maksimovic, V. and G. Phillips, 2002, "Do Conglomerate Firms Allocate Resources Inefficiently Across Industries?," *Journal of Finance* (Forthcoming).

- Morck, R., A. Shleifer, and R.W. Vishny, 1988, "Management Ownership and Market Valuation: An Empirical Analysis," *Journal of Financial Economics* 20, 293-315.
- Morck, R. and B. Yeung, 1991, "Why Investors Value Multinationality," *Journal of Business* 64, 165-187.
- Perotti, E.C. and S. Gelfer, 2001, "Red Barons or Robber Barons? Governance and Investment in Russian Financial-Industrial Groups," *European Economic Review* 45, 1601-1617.
- Rajan, R., H. Servaes, and L. Zingales, 2000, "The Cost of Diversity: The Diversification Discount and Inefficient Investment," *Journal of Finance* 55, 35-80.
- Scharfstein, D.S., 1998, "The Dark Side of Internal Capital Markets II: Evidence from Diversified Conglomerates," MIT Sloan School of Management Working Paper.
- Servaes, H., 1996, "The Value of Diversification During the Conglomerate Merger Wave," *Journal of Finance* 51, 1201-1255.
- Shin, H.H. and R.M. Stulz, 1998, "Are Internal Capital Markets Efficient?," *Quarterly Journal of Economics* 113, 531-553.
- Stein, J.C., 1997, "Internal Capital Markets and the Competition for Corporate Resources," *Journal of Finance* 52, 111-133.
- Stulz, R.M., 1990, "Managerial Discretion and Optimal Financing Policies," *Journal of Financial Economics* 26, 3-27.
- Villalonga, B., 2000, "Does Diversification Cause the 'Diversification Discount'?" University of California, Los Angeles Working Paper (June).
- Williamson, O.E., 1975. *Markets and Hierarchies: Analysis and Antitrust Implications*, Collier Macmillan Publishers, Inc, New York, NY.