NORTH-HOLLAND

International Review of Financial Analysis
9 (2000) 315–326

IRFA
INTERNATIONAL REVIEW OF
Financial Analysis

Corporate diversification, ownership structure, and firm value The Singapore evidence

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Abstract

We provide international evidence on the level and value of corporate diversification using a sample of 145 Singapore firms. We find that the level of diversification is positively related to firm size and negatively related to the equity ownership of outside blockholders. However, we find no evidence that insider ownership has a significant impact on the level of diversification. We find significant value loss from diversification only for those firms with low managerial ownership, suggesting that value-reducing diversification stems from agency problems. Outside block ownership does not have a significant impact on the value of diversification. Thus, while outside blockholders may act as a deterrent on the level of diversification, there is no evidence that they can effectively reduce the agency problems for those firms with low managerial ownership.

Keywords: Corporate diversification; Ownership structure; Firm value

1. Introduction

Corporate diversification has both benefits and costs. Firms can benefit from diversification through the creation of internal capital markets (Williamson, 1970),[1] higher debt capacity (Lewellen, 1971; Shleifer & Vishny, 1992) and economies of scope (Teece,

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[1] The potential benefit of internal capital markets is greater when the information asymmetry between the firm and potential investors is larger (Myers & Majluf, 1984).

1057-5219/00/$ – see front matter
PII: S1057-5219(00)00032-6

1980). The costs of diversification stem mainly from agency problems. Managers may diversify to protect their human capital (Amihud & Lev, 1981), to increase their private benefits (Jensen, 1986; Morck et al., 1990), or to entrench themselves (Shleifer & Vishny, 1989). Within a diversified firm, managers may have easy access to capital through cross-subsidization (Meyer et al., 1992), which may lead to over-investment (Jensen, 1986; Stulz, 1990; Berger & Ofek, 1995).

Recent literature shows that corporate diversification strategies are associated with significant value loss and that increasing corporate focus is value-enhancing. Examples of these studies include Lang and Stulz (1994), Liebeskind and Opler (1994), Berger and Ofek (1995, 1996), Comment and Jarrell (1995), John and Ofek (1995), Servaes (1996), and Denis et al. (1997).[2] The evidence in these studies suggests that the costs of diversification outweigh the benefits. Given the extensive evidence that diversification is associated with a reduction in firm value, why do firms remain diversified? Denis et al. (1997) test an agency cost explanation for this by relating the level of, and value loss from, diversification to the ownership structure of the firm.[3] They find that higher managerial and blockholder ownership are associated with reduced levels of diversification, but not with more valuable diversification.[4] They argue that the recent trend toward increased corporate focus is attributable to market disciplinary forces.

The existing literature on corporate diversification bases mainly on US data, which may reflect the US corporate behavior and capital market environment. Very little is known about corporate diversification and its value outside the US, especially in the emerging markets, where the capital markets are less developed. To contribute to the literature, we examine the level and value of corporate diversification for a sample of Singapore firms. Singapore provides an interesting setting to examine corporate diversification because it has a small and open economy. Singapore firms may need to diversify because of the small size of the market. Further, Singapore's capital markets are not as developed as those in the US and other developed economies.[5] The lack of depth in the capital markets suggests that there may be beneficial effects from diversification due to a more efficient internal capital market. Finally,

[2] The recent spate of research on corporate diversification is in response to a trend in the US toward corporate focus in the 1980s. Bhide (1990) suggests that information asymmetries may have become less of a problem in the 1980s because of economic, technological, and regulatory changes. The costs of diversification may have started to outweigh the benefits in the 1980s. Morck et al. (1990) provide empirical support for this argument. They find that the markets react negatively to unrelated acquisitions during the 1980s but not during the 1970s. However, a recent study by Servaes (1996) finds no evidence that diversified companies were valued at a premium over single-segment firms during the 1960s and 1970s.

[3] The agency cost hypothesis is that managers derive private benefits from diversification that exceed their private costs.

[4] Servaes (1996) finds that insider ownership was negatively related to diversification during the 1960s, but when the diversification discount declined, firms with high insider ownership were the first to diversify. He argues that insider ownership was an effective deterrent to diversification when it was costly to shareholders. However, when the cost to shareholders was negligible, the firms with high ownership were the first to diversify, possibly because insiders wanted to lower their exposure to firm-specific risk.

[5] Singapore corporations traditionally rely on equity and bank debt to finance investments. The corporate bond market in Singapore is very small and illiquid although there are recent efforts to develop this market.

ownership structure in Singapore firms and its effect on corporate diversification may be different from those in the US.[6]

Our results show that larger firms are more diversified than smaller firms. This is consistent with the findings in Denis et al. (1997). We find that the level of diversification is negatively related to outside blockholder ownership, but is unrelated to insider ownership. In contrast, Denis et al. (1997) find that both managerial and outside block ownership are effective deterrent to corporate diversification. Further, we show that for the full sample, multi-segment firms have lower firm value than single-segment firms. However, when we partition the sample into two sub-samples of firms with high and low managerial ownership, respectively, we find that the value loss from diversification is significant only for firms with low managerial ownership, but not for firms with high managerial ownership. Our findings are consistent with the notion that agency problems are more severe for firms with low managerial ownership. These results are in contrast to the evidence in Denis et al. (1997) who find that managerial ownership has no impact on the value of diversification. Finally, we find that outside block ownership does not have a significant impact on firm value, which is consistent with the results in Denis et al. (1997). Our results suggest that outside blockholders do not effectively mitigate the agency problems for firms with low insider ownership, although there is some evidence suggesting that they provide a deterrent on the *level* of diversification.

The remainder of the paper is organized as follows. The next section describes the data and sample characteristics. Section 3 presents our findings on the determinants of the level of corporate diversification. Section 4 reports the results of the cross-sectional regressions relating firm value to diversification measure, ownership structure, and other control variables. Concluding remarks are summarized in the final section.

2. Data description

The Statement of Accounting Standard Number 23 issued by the Institute of Certified Public Accountants of Singapore requires publicly listed companies that are incorporated in Singapore to disclose segment information in their financial statements. The segment information includes sales or other operating revenues, assets, and results for both industry and geographical segments.[7] This segment information forms the basis of our study. We collect segment, ownership and financial data from available financial statements for the 1995 fiscal year.[8] Stock information is obtained from the Stock Exchange of Singapore (SES). We exclude firms with reported segments in the financial services industry. Our final sample comprises 145 firms with complete data. We include firms from both the Main Trading Board

[6] Singapore firms tend to have higher ownership concentration than do US firms. Further, the market for corporate control is not as developed as that in the US, and hence the disciplinary role of outside blockholders may not be obvious.

[7] The examination of geographical segments is outside the scope of this study.

[8] Due to data limitation, we are unable to examine the robustness of our results over time as Denis et al. (1997) did.

and the Second Trading Board (called the Stock Exchange of Singapore Dealing and Automated Quotation system or SESDAQ). SESDAQ is for the listing of younger firms.[9]

Panel A of Table 1 summarises the firm characteristics and diversification measures for the sample firms. The mean (median) book value of total assets, sales, and market value of equity are US$578 millions (US$179 millions), US$260 millions (US$107 millions), and US$452 millions (US$144 millions), respectively. The average firm size in terms of book value of total assets is about one-third of the size of US firms in Denis et al. (1997). Following Lang and Stulz (1994) and Servaes (1996), we use Tobin's q as a measure of firm value. The mean (median) Tobin's q, estimated as (book value of total assets minus book value of equity plus market value of equity) divided by book value of total assets, is 1.52 (1.31).[10] The mean (median) insider ownership, measured as the total percentage holdings of directors, is 14% (2.4%), which compares with 11.7% (6.4%) for US firms in Denis et al. (1997). The mean (median) dollar value of managerial ownership is US$26 millions (US$2.6 millions). The mean (median) outside block ownership, measured as the total percentage holdings of shareholders with 5% or more interests in the firm's common equity, is 45% (48%).

Panel A of Table 1 also reports summary statistics for the diversification measures. The fraction of multi-segment firms in the sample is 0.68. Following Lang and Stulz (1994), Comment and Jarrell (1995), Denis et al. (1997) and others, we compute three measures of diversification: the number of segments, asset-based Herfindahl index and revenue-based Herfindahl index. The asset-based (revenue-based) Herfindahl index is computed as the sum of the squares of each segment's assets (revenue) as a proportion of total assets (revenue) for the firm. The mean (median) number of segments is 2.7 (2.0) with a minimum of 1 and a maximum of 8. The mean (median) asset-based and revenue-based Herfindahl indices are 0.69 (0.69) and 0.73 (0.76), respectively. These diversification measures are comparable with those reported for US firms in Denis et al. (1997).

Panel B of Table 1 shows the industry classification of the sample firms based on the industry classification of the SES. As can be seen, the SES industry classification is very broad. Unlike in the US, SES does not use SIC codes to classify listed firms. Companies also do not use SIC codes to classify their lines of business. Because of this data limitation, we are unable to compute industry-adjusted (or "pure-play") Tobin's q (Lang & Stulz, 1994) or excess value (Berger & Ofek, 1995 and others).

Table 2 provides correlations between Tobin's q, diversification measures, and ownership variables. Consistent with the findings in Lang and Stulz (1994) and others, our results show a negative correlation between Tobin's q and the degree of diversification.[11] This evidence

[9] Though not reported, we do not find any significant difference between firms listed on the Main Board and those on SESDAQ in terms of their level and value of diversification. We test this by including a dummy variable for the SESDAQ firms in our regression models.

[10] This measure of Tobin's q is widely used in the literature. See, for example, Chung and Pruitt (1994), Perfect and Wiles (1994), Collins et al. (1995), Gaver and Gaver (1995); Kim et al. (1995), Roden and Lewellen (1995), Agrawal and Knoeber (1996), Kang and Stulz (1996), and Chen and Ho (1997).

[11] The mean (median) q for 1-, 2-, 3-, 4-, and 5-or-more-segment firms are 1.75 (1.42), 1.63 (1.44), 1.39 (1.27), 1.29 (1.16), and 1.39 (1.28), respectively, with the numbers of observations being 47, 26, 22, 35, and 15, respectively. The results indicate a near monotonic negative relation between q and the level of diversification.

Table 1
Descriptive statistics

Panel A: Firm characteristics and diversification measures

	Mean	Median	Minimum	Maximum
Book value of assets	814.6	252.0	15.1	15,850.7
	(577.7)	(178.7)	(10.7)	(11,241.6)
Sales	365.9	151.1	1.7	6,889.9
	(259.5)	(107.2)	(1.2)	(4,886.5)
Market value of equity	637.5	202.5	8.8	10,324.9
	(452.1)	(143.6)	(6.2)	(7,322.6)
Tobin's *q*	1.52	1.31	0.55	6.69
Insider ownership (%)	14.0	2.4	0.0	80.7
Dollar value of insider ownership	37.0	3.6	0.0	706.2
	(26.2)	(2.6)	(0.0)	(500.9)
Outside block ownership (%)	44.8	48.2	0.0	91.5
Fraction of multi-segment firms	0.68	n.a.	n.a.	n.a.
Number of segments	2.70	2.0	1.0	8.0
Asset-based Herfindahl index	0.69	0.69	0.17	1.0
Revenue-based Herfindahl index	0.73	0.76	0.20	1.0

Panel B: Sample firms by SES industry classification

Industry	Number of firms
Main Board	
Industrial and commercial	94
Hotel	13
Property	11
SESDAQ	27
Total	145

This table presents descriptive statistics for the sample of 145 Singapore firms for the 1995 fiscal year. Tobin's *q* is estimated as (book value of total assets minus book value of equity plus market value of equity)/book value of total assets. Insider ownership is the total percentage holdings of directors. Outside block ownership is the total holdings of shareholders with 5% or more interests in the firm's common equity. Data are obtained from financial statements and the SES. Sample firms are from both the Main Trading Board and the Second Trading Board (called the SESDAQ system) of the SES. All dollar values are expressed in millions. US dollar amounts are shown in parentheses below the Singapore dollar amounts, and the conversion rate used is US$1 = S$1.41.

suggests that, on average, the degree of diversification has a negative impact on firm value. We find no correlation between insider ownership and the level of diversification, but a weak negative correlation between outside block ownership and the level of diversification. In contrast, Denis et al. (1997) find that *both* insider and outside block ownership are negatively related to the level of diversification. A possible reason for the absence of a significant relation between insider ownership and the level of diversification in our sample is that Singapore firms, irrespective of the insider ownership, may have to diversify simply due to the limited domestic market. Finally, we find a significant negative correlation between insider and outside block ownership.

Table 3 presents comparisons between single- and multi-segment firms. We find that single-segment firms have significantly higher Tobin's *q* than do multi-segment firms. The

Table 2
Pearson correlations of Tobin's q, diversification measures and ownership structure

Variables	Number of segments	Asset-based Herfindahl index	Revenue-based Herfindahl index	Insider ownership	Outside block ownership
Tobin's q	−0.218***	0.186**	0.222***	−0.010	0.066
	(0.009)	(0.025)	(0.006)	0.907	0.429
Number of segments		−0.821***	−0.768***	−0.044	−0.151*
		(0.000)	(0.000)	0.597	0.070
Asset-based Herfindahl index			0.840***	0.014	0.111
			(0.000)	0.870	0.184
Revenue-based Herfindahl index				−0.042	0.154*
				0.613	0.064
Insider ownership					−0.627***
					0.000

This table reports Pearson correlations of Tobin's q, diversification measures, insider ownership and outside block ownership for the sample of 145 Singapore firms for the 1995 fiscal year. Tobin's q is estimated as (book value of total assets minus book value of equity plus market value of equity)/book value of total assets. Insider ownership is the total percentage holdings of directors. Outside block ownership is the total holdings of shareholders with 5% or more interests in the firm's common equity. The p-values are in parentheses.

* Two-tailed significance at the 0.10 level.

** Two-tailed significance at the 0.05 level.

*** Two-tailed significance at the 0.01 level.

mean (median) difference in Tobin's q is −0.34 (−0.16). Diversified firms are, on average, valued about 20% less than specialized firms. It is possible that diversified firms operate in low-q industries, whereas single-segment firms operate in high-q industries. However, since the Singapore economy is small and there are usually only a few firms in the same industry, it is unlikely that the 47 single-segment firms in our sample are concentrated in a few high-growth industries. A review of the single-segment firms in the sample provides anecdotal evidence supporting this argument. Hence, though we are unable to adjust for industry effects due to data limitation, such effects, if any, are unlikely to account fully for the large diversification discount that we observe for the sample firms.

Table 3 also shows that single-segment firms are significantly smaller than multi-segment firms. As for insider and outside block ownership, we find no significant difference between the single- and multi-segment firms.

3. Regression analysis of the level of diversification

In this section, we examine the determinants of the level of diversification in the sample firms. The dependent variable is the number of reported business segments. The independent variables are insider ownership, outside block ownership, the logarithm of book value of total assets, logarithm of firm age, R&D intensity as measured by the ratio of R&D expenses to

Table 3
Comparisons of single- and multi-segment firms

	Single-segment firms (N = 47)		Multi-segment firms (N = 98)		Difference	
	Mean	Median	Mean	Median	Mean (p-value)	Mean (p-value)
Tobin's q	1.75	1.42	1.41	1.26	−0.34** (0.04)	−0.16** (0.05)
Book value of assets	498.2	190.8	966.3	299.4	468.1* (0.08)	108.6** (0.04)
Insider ownership (%)	14.5	2.4	13.7	2.2	−0.8 (0.82)	−0.2 (0.63)
Outside block ownership (%)	47.0	50.0	43.7	46.5	−3.3 (0.45)	−3.5 (0.52)

This table reports comparisons of mean and median Tobin's q, book value of assets (in Singapore millions), insider ownership and outside block ownership for single- and multi-segment firms. Tobin's q is estimated as (book value of total assets minus book value of equity plus market value of equity)/book value of total assets. Insider ownership is the total percentage holdings of directors. Outside block ownership is the total percentage holdings of shareholders with 5% or more interests in the firm's common equity. Equality of means is tested using a standard t-test. Equality of medians is tested using a rank-sum test. The p-values are in parentheses.

* Two-tailed significance at the 0.10 level.

** Two-tailed significance at the 0.05 level.

sales.[12] We use the log of book value of total assets to control for any firm size effects. R&D intensity is used to proxy for firm-specific knowledge. We examine four regression models, as shown in Table 4. Model 1 examines the linear impact of insider ownership on the level of diversification, after controlling for firm size, firm age, and R&D intensity. As managers' ownership stakes increase, they are less likely to pursue value-reducing policies because they will bear a greater fraction of the costs. Thus, if diversification reduces shareholder wealth, the predicted sign for the insider ownership variable will be negative. In Model 2, we include the impact of outside block ownership, and if outside blockholders provide effective monitoring, the predicted sign for this variable will also be negative. Models 3 and 4 include a squared term for the insider ownership to allow for any nonlinear relation between diversification and insider ownership. Amihud and Lev (1981) suggest that as managers own more of the firm's equity they will be more likely to diversify to reduce their personal risk exposure. In Model 4, we include industry dummies to control for any industry effects.

The results of the regressions suggest that insider ownership does not have a significant effect on the level of diversification.[13] In contrast, the results show that outside block

[12] Due to data limitation, we do not include two other variables examined in Denis et al. (1997), i.e., a founder dummy and the number of analysts following the firm. Denis et al. (1997) use the number of analysts following the firm to proxy for information asymmetry. Previous literature (e.g., see Hertzel & Smith, 1993; Kang & Stulz, 1996) suggests that firm size, which we have included in our regression models, can also be a proxy for information asymmetry.

[13] To check whether our results are influenced by model specifications, we re-estimate the regression models using a dummy variable that equals 1 if insider ownership is equal or less than the sample median (2.4%) and 0 otherwise. Our results are similar. The insider dummy variable is not statistically significant.

Table 4
Cross-sectional regressions of the level of diversification

Independent variables	Model 1	Model 2	Model 3	Model 4
Intercept	−1.401	−0.037	−0.333	−0.511
	(−1.13)	(−0.03)	(−0.23)	(−0.33)
Insider ownership	0.003	−0.009	0.008	0.008
	(0.50)	(−1.04)	(0.35)	(0.33)
(Insider ownership)^2			−0.000	−0.000
			(−0.79)	(−0.75)
Outside block ownership		−0.014**	−0.014**	−0.014**
		(−2.22)	(−2.07)	(−1.98)
Log (assets)	0.299***	0.252**	0.269**	0.286**
	(2.88)	(2.42)	(2.52)	(2.50)
Log (firm age)	0.177	0.189	0.181	0.159
	(1.40)	(1.52)	(1.44)	(1.21)
R&D/sales	−19.97	−19.66	−19.23	−19.01
	(−0.98)	(−0.98)	(−0.95)	(−0.94)
Industry dummies	no	no	no	yes
Adjusted R^2	0.094	0.119	0.116	0.108
F-value	4.74***	4.88***	4.16***	3.19***

The dependent variable is the number of reported business segments. Insider ownership is the total percentage holdings of directors. Outside block ownership is the total percentage holdings of shareholders with 5% or more interests in the firm's common equity. Log (assets) is the logarithm of the firm's book value of total assets. Log (firm age) is the logarithm of the number of years that the firm has been listed on the SES. Industry dummies are based on industry classifications of the SES. The number of observations is 145.

** Two-tailed significance at the 0.05 level.

*** Two-tailed significance at the 0.01 level.

ownership has a significantly negative relation with the level of diversification, suggesting that outside blockholders provide effective monitoring on managers' diversification efforts. Consistent with the preliminary analysis in the previous section, our results show that firm size is significantly positively related to the level of diversification. Finally, firm age and R&D intensity have no role in explaining the level of corporate diversification.[14]

4. Cross-sectional regressions of firm value

In this section, we examine the impact of ownership structure on the firm value of single- versus multi-segment firms. Our dependent variable is Tobin's q.[15] As shown in Table 5, we run two models for the full sample, Model 1 without a squared term for insider ownership and Model 2 with such a term. We then estimate Model 2 for two sub-samples, one comprising firms with insider ownership less than or equal to the sample median (2.4%), and the other comprising firms with insider ownership greater than the sample median. We also include

[14] The insignificance of R&D intensity is not surprising because Singapore firms do not engage much in R&D activities, as compared to firms in the US.

[15] As explained earlier, we cannot use excess value as in Berger and Ofek (1995) because of data limitation.

Table 5
Cross-sectional regressions of Tobin's q

	Full sample		Insider ownership	
Independent variables	Model 1	Model 2	≤ Sample median	> Sample median
Intercept	3.531***	3.391***	3.433***	4.031***
	(5.24)	(4.87)	(3.05)	(4.83)
Multi-segment dummy	−0.268**	−0.278**	−0.543**	−0.172
	(−2.00)	(−2.06)	(−2.31)	(−1.17)
Log (assets)	−0.159***	−0.152***	−0.127*	−0.235***
	(−3.34)	(−3.12)	(−1.65)	(−3.88)
EBIT/sales	0.173	0.176	0.200	0.390
	(1.24)	(1.26)	(1.17)	(1.02)
Dividend dummy	0.026	0.027	−0.107	0.172
	(0.13)	(0.13)	(−0.30)	(0.74)
R&D/sales	−7.592	−7.483	−15.10	10.04
	(−0.76)	(−0.75)	(−1.28)	(0.26)
Total debt/assets	0.430	0.444	0.637	0.473
	(1.14)	(1.17)	(1.07)	(1.02)
Insider ownership	−0.003	0.005	−0.855	0.026**
	(−0.86)	(0.43)	(−1.54)	(2.08)
(Insider ownership)^2		−0.000	0.240	−0.001**
		(−0.80)	(0.89)	(−2.56)
Outside block ownership	−0.000	0.000	0.003	−0.005
	(−0.10)	(0.01)	(0.53)	(−1.43)
Adjusted R^2	0.082	0.079	0.117	0.189
F-value	2.60***	2.34**	2.06**	2.84***
N	145	145	73	72

The dependent variable is Tobin's q, estimated as (book value of total assets minus book value of equity plus market value of equity)/book value of total assets. Multi-segment dummy equals 1 if the firm operates in two or more business segments and 0 otherwise. Log (assets) is the logarithm of the firm's book value of total assets. EBIT/sales is earnings before interest and tax divided by sales. Dividend dummy equals 1 if the firm pays a dividend and 0 otherwise. Total debt/assets equals the firm's book value of total debts divided by its book value of total assets. Insider ownership is the total percentage holdings of directors. Outside block ownership is the total percentage holdings of shareholders with 5% or more interests in the firm's common equity. The sample median insider ownership is 2.4%. The t-values are in parentheses.

* Two-tailed significance at the 0.10 level.

** Two-tailed significance at the 0.05 level.

*** Two-tailed significance at the 0.01 level.

insider ownership and insider ownership squared in the sub-samples because insider ownership may affect q within the insider ownership ranges. Outside block ownership is included in all models. We use a multi-segment dummy, which equals 1 if the firm operates in two or more business segments and 0 otherwise, to measure the differential impact on firm value between single- and multi-segment firms. Other independent variables include the logarithm of book value of total assets (a proxy for firm size),[16] the ratio of earnings before interest and

[16] The results are similar when we use logarithm of market value of equity as a proxy for firm size.

tax divided by sales (a proxy for profitability), a dividend dummy that equals 1 if the firm pays a dividend and 0 otherwise, the ratio of R&D expenses to sales (a proxy for growth opportunities), and the ratio of book value of total debt divided by book value of total assets.[17] Following Lang and Stulz (1994) and Servaes (1996), we include the dividend dummy to capture access to capital market. Single-segment firms may have high-q because they are unable to exhaust projects with high net present values due to their inability to procure the necessary financing. A dividend-paying firm is less likely to be capital-constrained because it could simply reduce or cut the dividend to finance the investment.[18] Based on this argument, the predicted sign for the dividend dummy should be negative when the average q of single-segment firms is greater than one.

Table 5 shows that the multi-segment dummy is significantly negative in the full sample and in the sub-sample comprising firms with low insider ownership, but not significant in the sub-sample of firms with high insider ownership. The results suggest that the multi-segment dummy only explains the cross-sectional variation in Tobin's q across firms with low insider ownership, but not across firms with high insider ownership. This evidence is consistent with the notion that managers who have less ownership stakes in their firms are more likely to pursue value-reducing diversification because the private benefits may outweigh the value loss from diversification. Insider ownership and insider ownership squared are both insignificant in the full sample and the sub-sample of firms with insider ownership less than or equal to the sample median. However, we find a significant curvilinear relation between q and insider ownership for the sub-sample of firms with insider ownership greater than the sample median. This curvilinear relation is consistent with the findings in McConnell and Servaes (1990). Outside block ownership is not significant in any of the models. Thus, while outside blockholders may have a deterrent effect on the level of diversification, they have little impact on firm value. Finally, we find that firm size is significantly negatively related to q while all the other control variables are not significant.

5. Concluding remarks

The effect of diversification on firm value has been extensively researched in the US. However, there is a lack of international evidence in this growing area of research. Evidence based on US data may reflect the corporate and capital market environment in the US. In this study, we extend the literature by studying the level and value of diversification for a sample of Singapore firms. Singapore capital markets are small and less developed

[17] We also run regressions with the log of firm age as an additional independent variable but do not report the results because the variable is not significant in any of the models and the coefficients on the other variables are not affected. Because of data limitation, we do not include two variables used in Denis et al. (1997): advertising expenses divided by sales and a founder dummy. Singapore firms do not disclose advertising expenses and founder director in their financial statements.

[18] The use of a dividend dummy to capture a firm's ability to access financial markets was first used in Fazzari et al. (1988).

relative to those in the US. Thus, Singapore firms may find it beneficial to create an internal capital market through diversification. Despite the differences between the Singapore and the US markets, we find results similar to those in the US that diversified firms are valued less than single-segment firms. However, we find that multi-segment firms are valued less than single-segment firms only for those firms with low insider ownership. This evidence is consistent with the agency cost explanation that managers with lower ownership stakes in their firms have more incentives to pursue value-reducing diversification than those with larger stakes because the private benefits may outweigh the value loss from diversification. An implication for this finding is that Singapore managers should be given more stakes in their firms. A recent study by Yeo et al. (1999) shows that executive share option plans in Singapore do not have much incentive effects. One of the reasons for this is that the number of options that can be offered under ESOPs is limited to the equivalent of 5% of the firm's capital. Recently, the Singapore Government recognized this problem and relaxed the rule to allow companies to issues more shares under ESOPs. Our study provides a further justification for Singapore firms to issue more shares to their managers since our evidence shows that outside blockholders do not effectively mitigate the agency problems in firms with low managerial ownership.

Acknowledgments

The authors wish to thank seminar participants at the 1998 PACAP/FMA Finance Conference for helpful comments and suggestions, and to Edgar Chia, Lai Ling Lee, and Yoke Seng Loke for research assistance. Any remaining errors are the authors'.

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