

Full Length Research Paper

Large shareholders, capital structure and diversification of Malaysian public listed manufacturing firms

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The study examines the interaction effects of large shareholders, capital structure and diversification on a firm's value. The findings show that diversification is non-linearly related to a firm's value. At the lower levels of diversifications, increased diversification is found to improve firm value. However, as the number of diversifications increased, it induces a negative impact on the differences in Tobin's Q value. The evidence shows that the interaction terms for diversification and excessive leverage enhance firms' performance suggesting the benefits of diversification in this economy. Further analysis reveals that regardless of the large shareholder-controlling stake, the presence of large shareholders appears to reduce the positive effects of diversification and leverage.

Keywords: Large shareholders, capital structure, ownership structure, diversification, Malaysia

INTRODUCTION

An efficient diversification could facilitate an effective internal capital market that reduces transaction costs, especially in a capital constraint economy (Khanna and Palepu, 2000). Despite this, the benefits of diversification are not always observable. The agency problem is generally agreed as one of the causes of diversification discounts (Denis, Denis and Sarin, 1999; Amihud and Lev, 1999; Li, 2009), however, the mechanism that causes the agency discount is still ambiguous a priori. Generally, anecdotal evidence suggests that over diversifying and excessive leverage leads to poor company performance in East Asian economies. However, due to limited domestic markets, firms in these economies more often than not diversify to expand their business bases. The country specific causes of diversification discounts in developing countries such as Malaysia are still yet to be established.

Three perspectives lead to the hypotheses in this paper. First, Claessens, Djankov, Fan and Lang (2003)

concluded that diversification in Malaysia is inefficient and accountable for the misallocation of capital objectives. Diversification could arise from controlling owners intending to enhance their private interests via empire building and unscrupulous investments (Jensen, 1986). The recent East Asian financial crisis literature also cites that capital investment in these economies is associated with higher leverage (Claessens, Djankov and Lang, 1998). Nonetheless, we are uncertain of the causal relationship between leverage, diversification and ownership structures which lead to the detriment of a firm's value. Secondly, Stein (1997) shows that diversification eases the problem of information asymmetry and facilitates firms' access to external capital markets. Therefore, a diversified firm is able to incur excess external capital that reduces underinvestment and enhances its performance. Peyer (2001) substantiates this proposition that multiple segment firms which access to external capital markets perform better than single segment firms. This implies that excess leverage in diversified firms could enhance performance.

Thirdly, along with the second argument, the finance literature also asserts that diversification creates the co-insurance effect that increases debt capacity (Levellen,

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1971). This can be achieved as different cash flows from various segments of businesses could offset each others variances, reduce default risks thereby increasing a firm's ability to obtain additional debt. Nonetheless, Mansi and Reed (2002) reveal that increased leverage as a result of diversification leads to negative firm performance. Likewise, Guo (2005) shows that high leverage and risky investments cause diversification discounts. On a similar note, Lins and Servaes (1999) point out that in Japan, diversification is not harmful to shareholders unless the firms belong to a keiretsu (where there is a main bank in each keiretsu organization). In summary, the findings imply that the ease of access to debt financing causes diversification discounts.

In view of the aforementioned, the real causes of diversification discounts are therefore not unambiguous. Firstly, Claessens et al. (2003) do not consider leverage when addressing diversification in their East Asia cross-country analysis. Therefore, the sub benefit of the diversification- coinsurance effect (leverage) is not taken into account. Secondly, diversification creates internal capital markets (Li, 2010) which reduce transaction costs in an inefficient external capital market. Therefore, an efficient diversification could lead to better firm performance (Li and Kami, 2008). The evidence is provided by Khanna and Palepu (2000) who used India as their sample in an emerging economy, found that as the number of diversifications increases, firm value improves. Third, diversification induces higher debt capacity that positively enhances firm value (Lee, Peng, and Lee, 2008). However, the East Asia crisis literature concedes that high leverage partially contributed to the crisis. Lastly, agency problem in reducing the positive effects of diversification is uncertain especially in emerging economies where diversification is tended to increase firms' business bases.

This paper contributes to the literature by integrating the issues of diversification, leverage and agency problem in a single framework. In the light that large concentrated shareholder is prevalent in this economy (Claessens and Fan, 2002), we therefore focus on the influences of the largest controlling shareholder in employing diversification on firm performance. The presence of large shareholders being board members should enhance monitoring and governing other directors from unscrupulous investments (Jensen and Meckling, 1976). However, in contrast to dispersed ownership structure firms in the developed countries, where shareholders have already diversified their portfolio risk, large shareholder controlled firms in developing countries diversify to realize pecuniary and non-pecuniary returns as compensation for bearing greater firm-specific risks. Their presence could accelerate exploitation process especially through unnecessary investment (Lins and Sarvaes, 2002). Therefore, we conjecture that:

H₁: Large shareholders induce diversification which negatively affects firm performance.

Two schools of thought address the reasons why large shareholders incur higher leverage to diversify. Firstly, Bebchuck's (1999) model shows that a large controlling shareholder is driven to enhance personal interest especially in a rent-seeking prevailing economy. In order to enhance the controlling owner's private interest, the controlling owner incurs higher debt so that his or her controlling interest is not diluted. Secondly, Grossman and Hart (1982) argue that a controlling owner employs higher debt to create "asset substitution" opportunity, where the risk of unscrupulous investment is transferred to debt holders who bear the utmost risk if a project fails, whereas controlling owners gain the utmost if a project thrives. Thus, this drives large shareholders to undertake inefficient and non-value maximizing investments such as diversifications. The hypothesis is given as follows:

H₂: Diversification induces higher leverage and affects firms' performance.

Lastly, we assess whether diversification per se induces higher leverage could positively affect performance as suggested in Lewellen (1971) and whether large shareholders could reduce the positive effects, with the following hypothesis:

H₃: Diversification induces higher leverage and positively affects performance. However the presence of large shareholders could reduce the positive effect.

METHODOLOGY

Tobin's q has been widely used as proxy for a firm's performance and value projection. Various proxies for the measure have been developed, for example the Lewellen and Badrinath (1997) and Chung and Pruitt (1994) models. For the current study, Chung and Pruitts' model was used as it is simpler and requires only basic financial and accounting information as compared to other models that requires complex calculations. Unlike most studies which treated dependent variable stagnantly, we apply changes in Tobin's Q as the dependent variable so that it captures the positive (premiums) or negative (discount) changes in firm value as the result of factors such as ownership structure, leverage and diversification. All other independent variables are valued at year t-1 to avoid endogenous problem.

In contrast to previous ownership structure studies which examine director ownership and large shareholders separately, we create an interaction term of large shareholders on director ownership so that the influences of large shareholders on insider directors could be captured. We measure the ownership structure (OS) variable as the interaction term of the largest shareholder (LARGE) and director ownership. (LARGE as dummy=1, if he is a director; otherwise 0). When LARGE equals 1, the continuous variable of the interaction term reflects the influence of large shareholders on director ownership. The zero value of the interaction term (when LARGE=0) implies that the largest shareholder is unable to exert influence on the board of directors.

A multiple segment firm is defined as a firm where no single segment contains sales of more than 90%. The number of segments (SEGNUM) is counted accordingly from KLSE on disc, over various years. We also create a dummy variable (DIVER) equal to 1, for multiple segment firms, otherwise it is equal to 0. Leverage (DE) is defined as debt over equity. The excessive leverage (DED)

variable is set equal to 1 if the value above each industrial median is at 3 –digit Malaysia Standard Industrial Classification (MSIC), otherwise it equals 0.

Based on a lag year of (t-1), the above model allows us to address the first and second hypotheses. When the dummy for DED and DIVER equals 1, we could address the second hypothesis on the presumption that controlling owner incurs higher leverage for diversification. This reflects that if the controlling owner intends to enhance his private interest, the agency problem could simultaneously lead to excessive debt and diversification.

In order to address the third hypothesis, we use diversification variables and other variables at year (t-1), whereas leverage (DE) and its proxy (DED) are valued at the same level year, (t). The significance of the interaction term between excessive leverage and diversification and its impact on firm value is suggestive of diversification (at t-1) has caused excess leverage (at t) which could

positively affect firm value. In addition, the inclusion of the ownership variable (OS at t-1) into the aforementioned interaction term we postulate that it could adversely affect firm value.

The control variables consist of industrial market competition (CR45) at 5-digit MSIC. Industrial competition is documented in the literature as exerting competition pressure on ownership and performance. Intangibl assets (INTAN) which is normalized by fixed assets represents the growth opportunities and may influence the dependent variable. Export orientation (EXPORT)-, export divided by total industrial output, is included to capture the international trade impacts on firm value. Firm theory variables which directly affect firm value are (i) cash flow- (CASH)-proxy as profit before taxation plus depreciation and deflated by sales and (ii) risk-(STD) measured as standard deviation of the firm’s weekly share price movement, from 1994 to 2000. To examine these variables, we postulate our base model as follows;

$$\Delta \text{ V a l u e} = \alpha_{i,t-1} + \sum_{i=1}^3 (\gamma_1 + \gamma_3 \text{ D I V E R }_{i,t-1} + \gamma_5 \text{ D E D }_{i,t-1}) (\text{O S})_{i,t-1} + \sum_{i=1}^3 (\gamma_2 + \gamma_4 \text{ D I V E R }_{i,t-1} + \gamma_6 \text{ D E D }_{i,t-1}) (\text{O S}^2)_{i,t-1} + \gamma_J \text{ S e g n u m }_{t-1} + \gamma_K (\text{D E})_{t-1} + \gamma_M (\text{S e g n u m} \times \text{D E D})_{t-1} + \gamma_N (\sum_{i=1}^n \text{C o n t. V a r.})_{i,t-1}$$

Where Δ value = The difference in Tobin’s Q value between year t and t-1. Tobin’s Q is measured by a firm’s market value plus total debt divided by book assets.

OS = Ownership structure. Dummy variable of large shareholder as director (LARGE) interact with director ownership (Dir). LARGE equals 1, if large shareholder is also a director, otherwise equals 0.

Segnum = Number of segments for diversification.

DIVER= Diversification. Measured in dummy values as multi-segment equals 1, otherwise=0.

DE =Debt/equity

DED= Dummy of excess leverage above each industrial leverage median for 3-digit Malaysia Standard Industries Code (MSIC). DED=1, otherwise=0

Cont. Var= Control Variables

Sample selection and descriptive statistics

We select public listed manufacturing firms as our subject of study as these contributed around 41% of all listed firms in Bursa Malaysia in 2000. The firms are also highly weighted in terms of capital as compared to other segments in the economy. We collected 185 unbalanced sample firms from both consumer product and industrial product segments which have their segmental reporting in the KLSE on disc for the sample period from 1994 to 2000.

We show the descriptive statistics in Table 1. The changes in performance- Δ TOBQ reflect a fair distribution of –4.45 to 4.28. Director ownership seems to be large with total accumulated equity interest mean of 35%. The maximum value in leverage is 5.00 indicating high leverage in this economy. The maximum number of diversifications is 7. With the exception of ownership structure variables-LARGE and DIR, other main variables applied in the model appear to positively influence the dependent variable. This also highlights the possibilities of ownership structure in exerting detrimental effects on a firm’s performance through mechanisms such as leverage and diversification.

Table 2 shows that single segment firms perform significantly

better than multiple segment firms. Ownership variables are not deemed to be different among single segment and multiple segment firms. Large total asset firms (LOGTA) are also significantly associated with multiple segment firms. Corroborating the earlier hypotheses, leverage is also higher in multiple segment firms, which indicates the possibilities of efficient internal capital markets and co-insurance effects. However, we are uncertain of the real causes of the diversification discount. The regression analysis in the next section, with interaction terms, shed some light on our understanding.

RESULTS OF THE REGRESSION ANALYSIS

To address the first and second hypotheses, all independent variables in the first model are valued at year t-1 (Table 3, model 1). The findings show that diversification follows a non-linear relationship. In contrast to Khanna and Palepu (2000), a low level of diversification (SEGNUM) is found to improve firm value (with a positive coefficient of 0.09836). However, as the number of diversifications increased (SEGNUM²), it induces a negative impact on the differences in Tobin’s Q value.

The interaction term of OS x Diver shows a positive value, but as the controlling interest of large shareholders increased (OS² x Diver), the coefficient sign turned negative. Therefore, in addressing the first hypothesis, we signify that as controlling shareholders increase their shareholding, diversification causes negative firm value. Interestingly, the interaction term of (SEGNUM x DED)_{t-1} is found to exert 0.75% improvement in the firm value at a low p<0.10 level. This provides support to hypothesis 2 and Stein’s (1997) proposition that excess external capital enhances diversified firm performance.

Table 1. Descriptive statistics.

Variable	Mean	Median	Maximum	Minimum	Std. Dev.	Obs.	Correlation
ΔTOBQ	-0.17	-0.07	4.28	-4.45	0.57	851	1
DIR	35	39	85	0	1.25	745	-0.0728**
LARGE	23	18.7	1	0	0.49	906	-0.1061***
DE	1.03	0.43	5	0	1.2	914	0.1638***
DED	0.5	1	1	0	0.5	914	0.0612**
CR45	0.41	0.35	1	0	0.26	973	0.0538**
INTAN	0.2	0.01	20.28	0	1.12	864	0.0063
EXPORT	0.62	0.39	18.19	0.01	0.98	928	-0.0029
CASH	0.06	0.1	1.53	-14	0.52	972	-0.3767***
STD	7.81	6.79	29.63	-0.09	3	828	0.0630**
LOGTA	12.24	11.91	16.57	8.81	1.28	936	0.108**
SEGNUM	2.43	2	7	1	1.43	960	0.09**
DIVER	0.45	0	1	0	0.5	960	0.01

*Significant at the 10% level. **Significant at the 5% level. ***Significant at the 1% level, Obs. Observe.

Table 2. Analysis by segment.

Diversification		TOBQ	LARGE	DIR	LOGTA	DE
Single segment	N	635	618	500	649	650
	Mean	2.430	0.361	35.401	5.240	0.260
	Median	2.240	0.354	38.705	5.100	0.200
Multi segment	N	426	419	353	428	421
	Mean	1.860	0.357	35.636	5.490	0.320
	Median	1.450	0.379	38.670	5.370	0.310
ANOVA	(t-value)	(35.84)***	(0.179)	(0.018)	(29.05)***	(9.90)***

***Significant at the 1% level.

Further investigation by comparing single segment and multiple segment firms (DIVER) found negative effects from the agency problem (Table 3, model 1). In a single segment firm (where Diver= 0), the degree of controlling large shareholders in applying excessive leverage $(OS \times DED)_{t-1}$ to cause deterioration in firm value is found to be inconclusive. In a multiple segment firm (where Diver=1), the negative influences of 0.038% $(OS \times DED \times DIVER)_{t-1}$, is found to be larger than single segment firms. The finding is however inconclusive, implying that large shareholders incur higher leverage and diversification which negatively affects performance, is not substantiated.

Model 2 shows the robustness of the results. The leverage (DE) and its dummy (DED) are valued at the same level year, while other variables are valued at lag year (t-1). All coefficient signs are found to be consistent as in the first model. The presence of relatively large shareholder as director (OS^2) is also found to contribute to diversification discounts.

The coefficient of the interaction term $(SEGNUM_{t-1} \times DED_t)$ is found to enhance 8.54% ($p < 0.10$) improvement in firm value which further confirms Stein's (1997) theory. The value appears to be higher as compared to the first model, which further confirms the co-insurance effect. This explains why diversification induces excessive leverage which enhances firm value. The finding supports Lewellen (1971) and Peyer (2001) but is inconsistent with Mansi and Reed (2002) who argued that leverage causes diversification discounts.

Again, in single segment firms (where Diver=0), the interaction term of $(OS_{t-1} \times DED_t)$ is negative but insignificant. It shows that controlling large shareholders do not deliberately increase high leverage to cause adverse effects on firm value.

Nonetheless, in multiple segment firms, the negative coefficient of interaction term of $(OS_{t-1} \times DED_t) \times (DIVER)_{t-1}$ confirms that the agency problem reduces the total positive effects of interaction terms of higher diversification (at year t-1) and higher leverage in the

Table 3. Regression analysis of unbalanced panel data in estimating firm value as a function of the director ownership.

Variables	Model 1 DIRLARGE × DED _{t-1}		Model 2 DIRLARGE × DED _t	
C	-0.19285	(-6.8942)***	-0.17136	(-4.5232)***
(OS) _{t-1}	-0.00332	(-4.0571)***	-0.00267	(-1.7477)*
(OS ²) _{t-1}	0.00005	(4.7284)***	0.00005	(2.2177)**
(DE) _{t-1}	-0.01318	(-2.3139)**		
(DE) _t			-0.00027	(-0.1369)
(SEGNUM) _{t-1}	0.09836	(7.5149)***	0.07076	(3.7479)***
(SEGNUM) ² _{t-1}	-0.01119	(-5.9542)***	-0.00786	(-2.9239)***
(OS × DIVER) _{t-1}	0.00405	(3.9206)***	0.00428	(2.4415)**
(OS ² × DIVER) _{t-1}	-0.00006	(-4.1678)***	-0.00006	(-2.5097)**
(SEGNUM × DED) _{t-1}	0.00750	(1.6881)*		
(SEGNUM _{t-1} × DED _t)			0.00854	(1.9577)*
(OS × DED) _{t-1}	-0.00030	(-0.9163)		
(OS × DED × DIVER) _{t-1}	-0.00038	(-1.0423)		
(OS _{t-1} × DED _t)			-0.0004	(-0.6629)
(OS _{t-1} × DED _t) × (DIVER) _{t-1}			-0.00385	(-1.7843)*
(CR45) _{t-1}	0.02216	(1.2117)	0.02803	(1.1139)
(INTAN) _{t-1}	0.00221	(0.7076)	0.09093	(2.1727)**
(EXP) _{t-1}	-0.00760	(-6.2244)***	-0.01102	(-6.5543)***
(CASH) _{t-1}	-0.32996	(-8.1898)***	-0.19524	(-3.0939)***
(STD) _{t-1}	-0.00006	(-0.0757)	-0.00068	(-0.5702)
R ²	0.472		0.4372	
Adjusted R ²	0.455	W=2.063(6)	0.4094	W=9.995(7)
S.E. of regression	0.432	P=0.15	0.4094	P=0.000
F-statistic	28.563	Serial=0.611	15.7285	Serial=0.595
Prob(F-statistic)	0	N=185	0	N=161

ΔTOBQ is the difference of TOBQ between t and t-1. OS (ownership structure) refers to DIRLARGE- DIRECTOR × LARGE where LARGE =1 when a large shareholder is present, otherwise=0. Director is the percentage of share owned by directors DE is the debt over equity ratio. DED is the excessive leverage of the firm when DE is above each industrial median, dummy equals 1, otherwise 0 for each year. SEGNUM is the number of segments. DIVER denotes diversification where multi-segment=1, otherwise = 0. CR45 is the output concentration ratio for four largest firms based on Malaysia Standard Industrial Classification code at 5 digit respectively. INTAN is the intangible asset normalized by fixed asset. EXP= Export based on two digit industrial code; CASH= Free cash flow / Total sales, free cash flow is calculated as profit before taxation plus depreciation. Std is defined as standard deviation of the firms' weekly share price from 1994 to 2000. W- wald test of joint significance of ownership (OS and OS²) and others interaction explanatory variables. Number of parameters in parenthesis. Serial: Ho: No autocorrelation in second order. The value refers to P-value. *Significant at the 10% level. **Significant at the 5% level. ***Significant at the 1% level. t-statistics are in parentheses.

subsequent period (at t). The consequence is the significant negative value of 0.385% changes in firm value. The higher order of OS does not exert any impact. Therefore, regardless of the large shareholder-controlling stake, their presence could be detrimental to the positive impact (internal capital market and co-insurance effects) created by the diversification. The large shareholder possibly expropriates this through tunnelling and insider

trading.

Conclusion

The study examines the interaction effects of large shareholders, capital structure and diversification on a firm's value. Using 185 unbalanced sample firms in the

manufacturing sector, the findings show that diversification is non-linearly related to firm value. Although a relatively large shareholder is found to be accountable for the negative effects of diversification, there is no evidence of excessive leverage for diversification to the detriment of firm value. In fact, the interaction term for diversification and excessive leverage enhances firms' performance signifying the benefits of diversification in this economy. This corroborates Stein's (1997) efficient diversification model and Lewellen (1971) co-insurance effect proposition. Lastly, regardless of the controlling shareholders' interest, the presence of large shareholder appears to reduce the positive value of diversification and leverage. Therefore, the policy should be focused towards large shareholder activities such as insider trading, and tunnelling which could offset the positive effects of diversification and leverage.

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