

## Debt and Ownership Concentration as Corporate Governance Mechanisms: Evidence from the Largest Australian Firms

Hamizah Hassan

Faculty of Business and Management, Universiti Teknologi MARA, 40450 Shah  
Alam, Selangor, Malaysia

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**Abstract:** The aim of this study is to investigate on the effectiveness of debt and ownership concentration as corporate governance mechanisms. Using the largest 100 Australian firms from 1993-2008, we employ two-way fixed effects estimation. Our findings show that debt does play a role as an effective disciplinary mechanism even though there is a possibility of expropriation on small shareholders by large shareholders through their concentrated ownership. Furthermore, there is a tendency of exploiting debt by ownership concentration in its expropriation acts. Other finding reveals that these two corporate governance mechanisms should be utilised as a group rather than in isolation in order to get the effective outcome. In conclusion, it is suggested that small shareholders in the largest Australian firms still need more protection as there is a tendency that they might be exploited by the large shareholders and firms should considered in utilising both debt and ownership concentration as a group since the interaction between these two corporate governance mechanisms is more effective.

**Key words:** Debt, ownership concentration, large shareholders, firm value, corporate governance

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### INTRODUCTION

Large blockholders have large and direct incentives to monitor managers actively (Berger *et al.*, 1997). However, whether large shareholders contribute to the solution of agency problems or whether they aggravate them remains questionable as there are inconclusive findings from previous research (Sanchez-Ballesta and Garcia-Meca, 2007). For instance, Lv and Li (2013) found that large shareholders do expropriate their minority shareholders' interests. Research on corporate ownership mostly focuses on insider or managerial ownership as a proxy rather than on large shareholders (Holderness, 2009) where the impact on firm value and debt might be different between these two types of ownership structure as large shareholders are assumed to have little affiliation to the firm's management, hence they might have different interests (Demsetz and Villalonga, 2001).

Large shareholders through their concentration of ownership might expropriate small shareholders, which might influence firm capital structure decisions. As a result of an expropriation, ownership concentration might prefer a low debt level in order to maximise the cash flow right or to avoid the disciplinary role of debt and thus it can divert the free cash flow for perquisites (Jensen, 1986). On the other hand, expropriation might cause ownership concentration to increase the debt level in order to increase their voting power, to prevent any

takeover attempt or as a fake signaling mechanism to external investors that they are willing to be bonded with the fixed obligation of debt (Du and Dai, 2005) and thus, do not intend to expropriate. In their conclusions, Faccio *et al.* (2003) argued that the role of debt as a potential disciplining mechanism is weakened if firms have a concentrated ownership structure. Hence, it is an objective of this study to investigate whether a disciplining effect of debt exists in the sample firms with concentrated ownership by large shareholders. Furthermore, it attempts to examine whether ownership concentration monitors managers in mitigating agency problem and/or expropriate its small shareholders and if the latter does occur how it might affect firm debt selection. In addition, the present study also examine whether the disciplining effect of debt (if any) is different in high and low ownership concentration and to examine the interaction effect between these corporate governance mechanisms.

Research setting is one of the important factors that contribute the literature. The enormous majority of previous empirical work has used either samples of the US or the UK firms. As such, this study is expected to provide new empirical insights by empirically testing our hypotheses in the Australian context. Investors' protection is found to be stronger in common law countries compared to civil law countries (La Porta *et al.*, 1998). Lopez-de-Foronda *et al.* (2007) concluded that

ownership structure (in the form of managerial ownership) and capital structure are the most effective control devices in common law countries. A good legal system in terms of corporate governance, shareholder protection and a monitoring mechanism in common law countries are important determinants on making profit from corporate investment (Inci *et al.*, 2009). More recently, it has been found that improved investor protection has resulted a positive effect on financial performance (Li *et al.*, 2012). Hence, as Australia is one of the common law countries, this study investigate whether debt and ownership concentration are effective corporate governance mechanisms in Australia.

Our results show that ownership concentration does expropriate its small shareholders at a high level and tends to exploit debt in its expropriation act. However, debt still plays a role as an effective disciplinary mechanism. In addition, we find that the interaction between ownership concentration and debt enhances firm value. In other words, firms should consider in utilising these corporate governance mechanisms as a group rather than utilising them in isolation.

#### **Literature review**

**Debt as a corporate governance mechanism:** Theoretically, Stulz (1990) and Harris and Raviv (1990) found that debt was positively correlated with firm value. This finding was supported by Berger *et al.* (1997) who stated that many corporate governance theories conclude that capital structure can play a role as a disciplinary mechanism and thus it can be used to reduce agency costs and as a result increase firm value. It has been empirically proven by Simerly and Li (2000), Berger and Patti (2006) and Ahmed and Wadud (2011), among others, that there is a positive relationship between debt and firm performance. However, the use of debt not only serves to align the interests of managers and shareholders and/or large and small shareholders but it may also increase the agency cost of debt as a result of conflict of interest between shareholders and debt holders (Jensen and Meckling, 1976). In this case, debt will negatively affect firm value (McConnell and Servaes, 1995). As such, we argue that there is a non-linear relationship between debt and firm value.

**Ownership concentration as a corporate governance mechanism:** As been highlighted before, in investigating the relationship between ownership structure and firm value, several previous studies have focused on insider or managerial ownership as a proxy for the ownership

structure. Among others are Morck *et al.* (1988), McConnell and Servaes (1990), McConnell and Servaes (1995) and Short and Keasey (1999) who found a non-linear relationship between insider ownership and firm performance. Joh (2003) found non-linear associations between ownership concentration and profitability by using two types of specification: linear, quadratic and cubic regressions and piecewise linear splines of 0-5, 5-25 and 25-100%. This finding contradicts those of Morck *et al.* (1988) and McConnell and Servaes (1990) but is consistent with that of Gedajlovic and Shapiro (1998) whose study found a negative relationship between ownership concentration and profitability when ownership concentration is at its lowest level which is below 5%. This suggests that due to the poor corporate governance system in Korea, entrenched controlling shareholders and managers can still harm firm value even when just holding a small percentage of ownership. In addition, they also tend to expropriate firm resources at this low level of ownership concentration.

Sanchez-Ballesta and Garcia-Meca (2007) conducted a meta-analysis study and found a non-linear relationship between ownership concentration and firm performance when the latter was proxied with a market-based valuation such as Tobin's Q. The study supports the monitoring and expropriation hypotheses where ownership concentration might be an effective monitoring mechanism at a low level but not when the level is too high, when the market will react negatively due to the expectation of expropriation on minority shareholders. This is supported by Mazzola *et al.* (2013) who use family ownership as a proxy for large shareholders. They found an inverse U-shaped relation between family ownership and firm performance in privately held family firms in Italy. More recently, Hassan *et al.* (2014) also found an inverse U-shaped relationship between ownership concentration and firm value in non-financial public listed Malaysian firms. In investigating the non-linearity between employee ownership and firm performance, Guedri and Hollandts (2008) found a positive relationship between largest shareholder and firm performance, whilst a negative relationship between the shareholders who owned at least 5% of a firm's stock and firm performance.

Henry (2008) found a non-linear relationship between external ownership and firm value and found that institutional ownership was to be positively related to firm value. Furthermore, he found that both of the ownership structures are substitute mechanisms to the internal governance structure in enhancing firm value. Hence, we argue that there is a non-linear relationship between ownership concentration and firm value.

**Debt and ownership concentration as corporate governance mechanisms:** Berger *et al.* (1997) found that entrenched managers did have an impact on their capital structure decisions. Based on this finding, we argue that if large shareholders expropriate minority shareholders through their concentrated ownership, it may influence firm capital structure decisions as well. Besides insider owners, external blockholders also have power over the decisions regarding a firm's resources allocation (Brailsford *et al.*, 2002). In their study, they found a significantly positive relationship between external block ownership and debt, suggesting that large shareholders are active monitors. However, they do not include the quadratic and cubic functions of external block ownership and so ignore the possibility of the non-linearity of ownership concentration on debt. Hu and Izumida (2008) found a significant U-shaped association between ownership and debt thus, they concluded that ownership concentration do have an influence on firm debt financing decisions regardless of whether they expropriate minority shareholders or they act as an effective monitoring mechanism. As such, we argue that there is a non-linear relationship between ownership concentration and debt.

De Miguel *et al.* (2005), Pindado and de la Torre (2006), Arslan and Karan (2006) and Setia-Atmaja *et al.* (2009) found that there is an interaction between ownership concentration and debt. Ward *et al.* (2009) suggested that corporate governance mechanisms should be utilised as a governance bundle instead of in isolation. Therefore, we argue that there is an interaction effect between ownership concentration and debt.

## **MATERIALS AND METHODS**

**Sample:** The data used for this study consists of the largest 100 Australian firms by year-end market capitalisation for the period 1993-2008. All the listed firms with their year-end market capitalisation throughout this period were obtained from Fin analysis and data analysis provided by Aspect Huntley. In accordance with the usual practice, firms in the financial sector are excluded from the study as well as non-Australian firms that may have different ownership structures (Mulherin, 2005).

The first variable of interest is ownership concentration. This study defines ownership concentration as the total percentage of ordinary shares owned by the largest shareholders. Previous studies used data on the total percentage of the largest shareholders as

a proxy for ownership concentration. Demsetz and Lehn (1985) used the largest five and largest twenty, Demsetz and Villalonga (2001) used the largest five and Hu and Izumida (2008) used the largest five and largest ten. This study uses data on the total percentage of ordinary shares owned by a firm's largest shareholder (OC1) and the largest five shareholders (OC5) which are extracted from the list of the 20 largest shareholders. For the most recent years (2006-2008), twenty largest shareholders data are obtained from the OSIRIS database and for the remaining years the data are hand-collected from the annual reports downloaded from OSIRIS, Aspect Huntley, Connect-4, the firms' websites and state library of victoria archive.

This study uses Debt ratio (D) as a proxy for debt, as the second variable of interest. Debt ratio is defined as book value of total debt scaled by book value of total assets. Data on total debt and total assets was downloaded from DataStream. Any missing data was hand-collected from annual reports, using the same definitions used in DataStream. Some of the previous studies that used this variable are Berger *et al.* (1997), Jiraporn and Gleason (2007), Driffield *et al.* (2007) and Lemmon *et al.* (2008).

For the third variable of interest, this study follows Hu and Izumida (2008) and uses Tobin's Q (Q) to proxy firm value. Tobin's Q is measured as the sum of year-end market capitalisation and book value of total debt and book value of preferred shares scaled by book value total assets. Total assets are used as the denominator, replacing the original denominator of replacement cost, due to no data on replacement cost being found in Australian firms (Setia-Atmaja, 2009; Setia-Atmaja *et al.*, 2009). Since, this study investigates whether ownership concentration plays a role as an effective monitoring mechanism or expropriate its small shareholders, market-based valuation will be a better proxy rather than accounting-based valuation, as the expropriation effect will not be captured in the latter type of valuation (Sanchez-Ballesta and Garcia-Meca, 2007). Year-end market capitalisation data was obtained from Aspect Huntley. Total debt, preferred shares and total assets were downloaded from DataStream. Any missing data was resolved using the same procedure described previously. All control variables were also downloaded from DataStream. Investment, firm size, firm age, change in assets turnover, profitability and lagged profitability were used as control variables. The descriptions of the control variables are shown in Table 1.

Table 1: Control variables

Control variables	Description
Investment (INV)	Capital expenditure scaled by book value total assets
Firm Size (SI)	The natural logarithm of book value total assets
Firm age (AGE)	The natural logarithm of the number of years since the firm's incorporation
Change in Assets Turnover (AT)	Sales scaled by assets change; where it is defined as current value of sales/book value total assets - lagged value of sales/book value total assets
Profitability (ROA)	Earnings before interest and tax scaled by book value total assets
Lagged (Profitability) (ROA(-1))	Previous year's profitability

Table 2: Descriptive statistics

Variables	Mean	SD	Min.	Max.
OC1 (%)	23.57	16.45	1.660	96.82
OC5 (%)	50.65	18.88	3.820	99.71
Debt ratio	0.24	0.19	0.000	2.20
Tobin's Q	2.27	3.82	0.260	59.63
Return on assets	0.09	0.15	-1.620	1.02
Investment	0.07	0.08	0.000	0.59
Change in assets turnover	0.95	1.00	-0.002	9.39
Firm size	13.53	1.81	7.550	18.67
Firm actual age	38.56	34.35	0.000	171.00

Table 2 presents the descriptive statistics. The mean value of ownership by the largest shareholder (OC1) is 23.57% which is considered high for a shareholder. Setia-Atmaja (2009) stated that by holding 20% of the voting rights, it is adequate for a shareholder to control a firm effectively. As for the largest five shareholders (OC5), the mean is 50.65%. This verifies that half of the total percentage of shares is already in the largest five shareholders' hands. Thus, it suggests that ownership in Australian firms are fairly concentrated (Setia-Atmaja *et al.*, 2009). Further, the means of debt ratio and Tobin's Q are 0.24 and 2.27, respectively.

**Model development and methodology:** In order to investigate whether debt serves as a disciplinary mechanism and/or it increases the agency cost of debt and monitoring and/or expropriation effects of ownership concentration exist in the largest Australian firms, the following equations are estimated:

$$Q_{it} = \lambda_0 + \lambda_1 D_{it} + \lambda_2 D_{it}^2 + \lambda_3 D_{it}^3 + \lambda_4 OC_{it} + \lambda_5 INV_{it} + \lambda_6 SI_{it} + \lambda_7 AGE_{it} + \lambda_8 AT_{it} + \lambda_9 ROA_{it} + \omega_i + \eta_i + \varepsilon_{it} \quad (1)$$

$$Q_{it} = \lambda_0 + \lambda_1 OC_{it} + \lambda_2 OC_{it}^2 + \lambda_3 OC_{it}^3 + \lambda_4 D_{it} + \lambda_5 INV_{it} + \lambda_6 SI_{it} + \lambda_7 AGE_{it} + \lambda_8 AT_{it} + \lambda_9 ROA_{it} + \omega_i + \eta_i + \varepsilon_{it} \quad (2)$$

To further investigate on the tendency of exploiting debt in the expropriation acts (if any) on small shareholders by large shareholders through their concentrated ownership, the following model is estimated:

$$D_{it} = \lambda_0 + \lambda_1 OC_{it} + \lambda_2 OC_{it}^2 + \lambda_3 Q_{it} + \lambda_4 INV_{it} + \lambda_5 SI_{it} + \lambda_6 AT_{it} + \lambda_7 ROA(-1)_{it} + \omega_i + \eta_i + \varepsilon_{it} \quad (3)$$

To test whether the disciplining effect of debt (if any) is different in high and low ownership concentration and to examine the interaction effect between these two variables, the data is split in two sub-samples based on the median level of ownership concentration (high ownership concentration: C1 ≥ 17% and C5 ≥ 49%; low ownership concentration: C1 < 17% and C5 < 49%). The following model is estimated:

$$Q_{it} = \lambda_0 + \lambda_1 D_{it} + \lambda_2 (D \times OC)_{it} + \lambda_3 OC_{it} + \lambda_4 INV_{it} + \lambda_5 SI_{it} + \lambda_6 AGE_{it} + \lambda_7 AT_{it} + \lambda_8 ROA_{it} + \omega_i + \eta_i + \varepsilon \quad (4)$$

In Model 1, the specification tries to fit a cubic debt (D, D<sup>2</sup> and D<sup>3</sup>) curve to the data. Debt might have a positive effect on firm value if it serves as a disciplinary device in mitigating ownership concentration's perquisite of free cash flow. As such, debt can also play a role as an effective monitoring mechanism (Jensen, 1986). On the other hand, if debt is seen to increase the agency cost of debt, it will result a negative effect on firm value (Jensen and Meckling, 1976). In Model 2, the specification tries to fit a cubic ownership concentration (OC, OC<sup>2</sup> and OC<sup>3</sup>) curve to the data. Ownership concentration might have dual effects on firm value, either serving as an effective monitoring mechanism on managers (Jensen and Meckling, 1976; Shleifer and Vishny, 1986) or tending to expropriate on small shareholders (Shleifer and Vishny, 1997). The former will result in a positive effect on firm value while the latter will have a negative impact. Further, in Model 4, a linear function of debt, ownership concentration and the interaction of these two variables are included. The individual effects of both debt and ownership concentration will determine the interaction effects of these variables on firm value.

The control variables included in Models 1, 2 and 4 are investment, size, age, change in assets turnover and profitability. Investment could also represent the production capability of a firm. Hence, investors might

anticipate good future prospects for the firm, thus enhancing firm value (Hu and Izumida, 2008). Size might negatively affect firm value as if size is too large, there is a possibility that the firm has a high agency cost and difficulties in monitoring which would reduce firm value (Himmelberg *et al.*, 1999). Age is expected to have a negative effect on firm value as young firms are seen to have better growth prospects (Ritter, 1991). Firm value can be positively influenced by change in assets turnover as high turnover of assets indicates that the firm is efficient in generating income (Thomsen *et al.*, 2006). Similarly, profitability is also expected to have a positive effect on firm value.

In Model 3, the specification tries to fit a quadratic ownership concentration (OC and OC<sup>2</sup>) curve to the data. If ownership concentration expropriates the small shareholders, it will result either positive or negative effect on debt. On the one hand, a positive effect on debt can be a signal that ownership concentration tends to expropriate the small shareholders in order to maintain the large shareholders' percentage of ownership in the firm or it can be a defensive tactic against a takeover attempt. On the other hand, a negative effect on debt due to the intention to use free cash flow for its perquisite, as the disciplinary effect of debt become weaker (Jensen, 1986). Firm value can negatively affect debt due to the agency cost of debt and the firm wanting to mitigate the underinvestment problem (Myers, 1977).

The control variables that are included in Model 3 are investment, size, change in assets turnover and lagged profitability. Investment can have dual effects on debt through its impact on firm value (Hu and Izumida, 2008) where if the firm has an internal excess of funds, debt will negatively influenced by investment. On the other hand, if the firm faces a shortage of internal funds, investments will positively affect debt. Firm size and debt are expected to be positively related as a larger firm has a lower probability of financial distress due to the tendency to be more diversified (Setia-Atmaja *et al.*, 2009). Change in assets turnover can positively affect debt due to the effectiveness of a firm's assets in generating income that could influence the need for external finance (Thomsen *et al.*, 2006). A firm that has made a good profit in the previous year might easily get access to the capital market, thus debt should be positively influenced by the previous year's profitability.

Finally, in all models, *i* and *t* denote firm and year respectively. Firm-specific effects  $\eta_i$  and time-specific effects  $\omega_t$  are used to control the unobservable heterogeneity and the effects of macroeconomics changes, respectively whilst  $\varepsilon_{it}$  is the random disturbance. This study employs the two-way fixed effects estimation to control for the heterogeneity across firms and over time; thus it eliminates the unobserved heterogeneity.

## RESULTS AND DISCUSSION

Table 3 presents the results for Models 1-3. Panel A encloses the regression estimates obtained for Model 1, Panel B shows the results for Model 2 and Panel C presents the results for Model 3. The findings in Model 1 show that debt ratio has a non-linear relationship with Tobin's Q. This suggests that first, at a low level of debt, firm value decreases as debt increases. Second, firm value increases together with the increment of debt at a high debt level. Third, firm value decreases again as debt increases when the latter is at its highest level. This suggests that at the lowest level, debt is not an effective disciplinary mechanism where ownership concentration might expropriate small shareholders which destroy the value of the firm. When debt level increases, it can play a role as an effective disciplinary device in mitigating ownership concentration's perquisite on free cash flow, thus enhance firm value. However, if debt level is too high, it might destroy back firm value due to the higher agency cost of debt.

Table 3: Results for Models 1-3

Variable	Panel A		Panel B		Panel C	
	Q	Q	Q	Q	D	D
D	-3.78*** [-2.77]	-3.71*** [-2.74]	0.85 [1.29]	0.89 [1.38]	-	-
D <sup>2</sup>	6.82*** [2.65]	6.73*** [2.63]	-	-	-	-
D <sup>3</sup>	-1.79* [-1.81]	-1.76* [-1.79]	-	-	-	-
OC1	-0.00 [-0.90]	-	-0.03 [-0.71]	-	0.00** [2.33]	-
OC1 <sup>2</sup>	-	-	0.00 [0.63]	-	-0.00*** [-2.70]	-
OC1 <sup>3</sup>	-	-	-0.00 [-0.62]	-	-	-
OC5	-	-0.00 [-0.76]	-	-0.10 [-1.04]	-	0.00** [2.06]
OC5 <sup>2</sup>	-	-	-	0.00 [0.98]	-	-0.00** [-2.12]
OC5 <sup>3</sup>	-	-	-	-0.00 [-0.93]	-	-
Q	-	-	-	-	0.00 [0.40]	0.00 [0.44]
INV	1.53* [1.76]	1.52* [1.74]	1.36 [1.34]	1.37 [1.37]	0.17 [1.25]	0.17 [1.27]
SI	-0.45*** [-3.38]	-0.45*** [-3.35]	-0.58*** [-4.09]	-0.56*** [-4.33]	0.03*** [3.37]	0.03*** [3.06]
AGE	-0.03 [-0.19]	-0.04 [-0.22]	0.08 [0.46]	0.08 [0.37]	-	-
AT	0.08 [0.87]	0.08 [0.88]	0.12 [1.63]	0.11 [1.42]	-0.01 [-1.43]	-0.01 [-1.18]
ROA	1.88* [1.93]	1.89* [1.94]	1.87* [1.77]	1.93* [1.85]	-	-
ROA(-1)	-	-	-	-	0.04 [0.87]	0.05 [0.91]
N (firm-years)	1,248	1,248	1,248	1,248	1,248	1,248
R <sup>2</sup>	0.13	0.13	0.10	0.11	0.40	0.39

Robust t-statistics in parentheses; \*\*\*, \*\*, \*p<0.01, 0.05, <0.1

In Model 2, the coefficients of OC1 and OC5 also show that they have a non-linear relationship with Tobin's Q. Consistent with Joh (2003), the results suggest that ownership concentration can still expropriate minority shareholder, thus harm firm value even at a low level. However, there is no evidence of the significant coefficients that we do not find conclusive evidence to support these arguments.

In order to further investigate on the tendency of exploiting debt in the expropriation acts on small shareholders by large shareholders through their concentrated ownership, Model 3 is estimated. Model 3 shows that OC1 and OC5 have a non-linear relationship with debt ratio. First, this indicates that at a low level of ownership concentration, debt increases as ownership concentration increases. Second, debt then decreases as ownership concentration increases at its higher level. This suggests that large shareholders do expropriate the small shareholders and tend to exploit debt in their expropriation acts. At a small percentage of ownership concentration, large shareholders employ high debt level in order to avoid issuing new equity so that they can maintain the percentage of ownership that they own in the firm. Furthermore, by increasing the debt level, they can make the firm to be less attractive to be taken over. However, as the percentage of ownership concentration is getting higher, large shareholders feel more secured that they do not need to exploit debt in their expropriation acts anymore. Hence, as the ownership concentration level increases, debt decreases. In addition, ownership concentration tends to reduce the firms' debt level due to its disciplinary function. As such, large shareholders can use the free cash flow due to the lower debt level for their perquisites.

Results for Model 4 are shown in Table 4 where Panel A is the high ownership concentration sub-samples and Panel B is the low ownership concentration sub-samples. The coefficients of debt and ownership concentration are negative regardless of high or low ownership concentration. However, the significance of these variables is only found in the regression where high ownership concentration is proxied by OC5. It supports the hypothesis that when ownership concentration is high, they expropriate small shareholders and debt does not function as an effective disciplinary device, thus they are negatively related to firm value. Furthermore, the finding reveals that in high ownership concentration proxied both by OC1 and OC5, debt and ownership concentration can effectively play a role as a disciplinary mechanism and monitoring mechanism respectively, when these two variables interact. As a result of this interaction which suggests that these two

Table 4: Results for model 4

Variables	Panel A		Panel B	
	High OC1	High OC5	Low OC1	Low OC5
	Q	Q	Q	Q
D	-1.00 [-1.09]	-6.82* [-1.71]	-2.62 [-1.65]	-2.59 [-1.48]
OC1	-0.012 [-1.38]		-0.057 [-1.03]	
OC5		-0.032* [-1.76]		-0.020 [-0.86]
OC1*D	0.055** [2.21]		0.18 [1.24]	
OC5*D		0.11* [1.80]		0.053 [1.00]
INV	0.78 [0.86]	0.83 [0.90]	-0.060 [-0.14]	-0.082 [-0.15]
SI	-0.49*** [-3.75]	-0.43*** [-3.99]	-0.33** [-2.47]	-0.43*** [-3.57]
AGE	0.074 [0.40]	0.13 [0.58]	0.16 [1.03]	0.16 [1.19]
AT	0.17*** [2.91]	0.20*** [2.90]	-0.14 [-0.78]	-0.054 [-0.26]
ROA	0.070 [0.075]	0.18 [0.20]	1.59** [2.29]	1.35 [1.63]
N (firm-years)	491	495	477	505
R <sup>2</sup>	0.46	0.49	0.44	0.33

Robust t-statistics in parentheses; \*\*\*, \*\*, \*p<0.01, <0.05, <0.1

variables are complementing governance mechanisms, it enhances firm value. This finding supports the argument by Ward *et al.* (2009) that corporate governance mechanisms should be utilised as a group rather than in isolation in order to get the effective outcome. In addition, Ho (2005) also suggests that the interrelation of corporate governance characteristics that requires them to be studied as a group.

As for control variables, firm value is positively influenced by but it is only significant in Model 1, not in Model 2. This suggests that investors anticipate a good prospect of firm in future, only when debt effectively plays a role as a disciplinary mechanism. As in Model 2, since ownership concentration does not significantly influence firm value due to the possibility of expropriation on its small shareholders, investors seem do not reacted to the good level of investment. Since, the study uses largest 100 firms, size is found to have a negative association with firm value which supports the hypothesis that if size is too large, there is a possibility that firm is having high agency cost and difficult to monitor. On the other hand, size is found to have a positive and significant effect on debt which is consistent with De Miguel *et al.* (2005) which suggests that larger firms employ higher debt level because of lower probability that they are facing with financial distress. The effect of change in assets turnover on firm value is positive in high ownership concentration which is consistent with Thomsen *et al.* (2006) which suggests

that at a high level of ownership concentration, large shareholders will ensure firms are experiencing high sales volume that will increase firm value. Change in assets turnover is found to have a negatively significant effect on debt before the introduction of the codes, which suggests that firm does not rely on debt financing even though it experiences high sales volume. This supports the main finding before that ownership concentration might exploits debt as an expropriation mechanism. As expected, profitability is positively influence firm value.

### CONCLUSION

There are no extensive studies that have been conducted pertaining to the non-linearity of debt and ownership concentration and firm value in Australia. Besides, majority of previous studies are focusing on insider ownership rather than external large shareholders as a proxy for the ownership structure. There is also a lack of evidence on the tendency of exploiting debt in the expropriation acts of ownership concentration.

There are several new insights that have been found in this study. It shows that even though there is not sufficient evidence to suggest that ownership concentration has a non-linear association with firm value thus expropriates its minority shareholders, it does suggest that ownership concentration tends to exploit debt in its expropriation acts. However, in the non-linear relationship between debt and firm value, the quadratic function of debt is found to efficiently play a role as a disciplinary mechanism. Further investigation reveals that in the non-linear effect of ownership concentration, there is an evidence to support that at high ownership concentration, large shareholders do expropriate their small shareholders and debt fails to be an effective disciplinary device. In addition, the model reveals that in order to be effective, firm should considered in utilising both debt and ownership concentration as its corporate governance mechanisms.

It is worthwhile to note that the present study does not employ a simultaneous regression model. Thus, there is a possibility that debt and ownership concentration are actually simultaneously determined. We propose this to be an avenue that can be explored in future.

### REFERENCES

- Ahmed, H.A. and I.K.M. Wadud, 2011. Market based performance: Do ownership structures, or firm policy choice matter? *Corporate Ownership Control*, 8: 89-95.
- Arslan, O. and M.B. Karan, 2006. Ownership and control structure as determinants of corporate debt maturity: A panel study of an emerging market. *Corporate Governance: Int. Rev.*, 14: 312-324.
- Berger, A.N. and E.B. Di Patti, 2006. Capital structure and firm performance: A new approach to testing agency theory and an application to the banking industry. *J. Bank. Finance*, 30: 1065-1102.
- Berger, P.G., E. Ofek and D.L. Yermack, 1997. Managerial entrenchment and capital structure decisions. *J. Finance*, 4: 1411-1438.
- Brailsford, T.J., B.R. Oliver and S.L. Pua, 2002. On the relation between ownership structure and capital structure. *Account. Finance*, 42: 1-26.
- De Miguel, A., J. Pindado and C. de la Torre, 2005. How do entrenchment and expropriation phenomena affect control mechanisms? *Corporate Governance: Int. Rev.*, 13: 505-516.
- Demsetz, H. and B. Villalonga, 2001. Ownership structure and corporate performance. *J. Corp. Finance*, 7: 209-233.
- Demsetz, H. and K. Lehn, 1985. The structure of corporate ownership: Causes and consequences. *J. Political Econ.*, 93: 1155-1177.
- Driffield, N., V. Mahambare and S. Pal, 2007. How does ownership structure affect capital structure and firm value? Recent evidence from East Asia. *Econ. Transition*, 15: 535-573.
- Du, J. and Y. Dai, 2005. Ultimate corporate ownership structures and capital structures: Evidence from East Asian economies. *Corporate Governance: Int. Rev.*, 13: 60-71.
- Faccio, M., L.H.P. Lang and L. Young, 2003. Debt and expropriation. Working Paper Series EFMA 2001 Lugano Meetings.
- Gedajlovic, E.R. and D.M. Shapiro, 1998. Management and ownership effects: Evidence from five countries. *Strat. Manage. J.*, 19: 533-553.
- Guedri, Z. and X. Hollandts, 2008. Beyond dichotomy: The curvilinear impact of employee ownership on firm performance. *Corporate Governance: Int. Rev.*, 16: 460-474.
- Harris, M. and A. Raviv, 1990. Capital structure and the informational role of debt. *J. Finance*, 45: 321-349.
- Hassan, H., N. Salamudin, S. Hassan and N. Abdul Karim, 2014. A study on the non-linearity of ownership concentration. Proceedings of the 14th FRAP-Finance, Risk and Accounting Management Perspectives Conference, September 22-24, 2014, Oxford, UK., pp: 335-346.
- Henry, D., 2008. Corporate governance structure and the valuation of Australian firms: Is there value in ticking the boxes? *J. Bus. Finance Account.*, 35: 912-942.

- Himmelberg, C.P., R.G. Hubbard and D. Palia, 1999. Understanding the determinants of managerial ownership and the link between ownership and performance. *J. Financial Econ.*, 53: 353-384.
- Ho, C.K., 2005. Corporate governance and corporate competitiveness: An international analysis. *Corporate Governance: Int. Rev.*, 13: 211-253.
- Holderness, C.G., 2009. The myth of diffuse ownership in the United States. *Rev. Financial Stud.*, 22: 1377-1408.
- Hu, Y. and S. Izumida, 2008. Ownership concentration and corporate performance: A causal analysis with Japanese panel data. *Corporate Governance: Int. Rev.*, 16: 342-358.
- Inci, A.C., B.S. Lee and J. Suh, 2009. Capital investment and earnings: International evidence. *Corporate Governance: Int. Rev.*, 17: 526-545.
- Jensen, M.C. and W.H. Meckling, 1976. Theory of the firm: Managerial behavior, agency costs and ownership structure. *J. Financial Econ.*, 3: 305-360.
- Jensen, M.C., 1986. Agency costs of free cash flow, corporate finance and takeovers. *Am. Econ. Rev.*, 76: 323-329.
- Jiraporn, P. and K.C. Gleason, 2007. Capital structure, shareholder rights, and corporate governance. *J. Financial Res.*, 30: 21-33.
- Joh, S.W., 2003. Corporate governance and firm profitability: Evidence from Korea before the economic crisis. *J. Financial Econ.*, 68: 287-322.
- La Porta, R., F. Lopez-de-Silanes, A. Shleifer and R.W. Vishny, 1998. Law and finance. *J. Political Econ.*, 106: 1113-1155.
- Lemmon, M.L., M.R. Roberts and J.F. Zender, 2008. Back to the beginning: Persistence and the cross-section of corporate capital structure. *J. Finance*, 63: 1575-1608.
- Li, Y., A. Hassan, E. Abdirashid, B. Zeller and M. Du, 2012. The impact of investor protection on financial performance of Islamic banks: An empirical analysis. *Corporate Ownership Control*, 9: 50-60.
- Lopez-de-Foronda, O., F.J. Lopez-Iturriaga and M. Santamaria-Mariscal, 2007. Ownership structure, sharing of control and legal framework: International evidence. *Corporate Governance: Int. Rev.*, 15: 1130-1143.
- Lv, H. and W. Li, 2013. Multiple Large Shareholders and Joint Expropriation with Dividend Payments. In: *Entrepreneurship, Finance, Governance and Ethics*, Cressy, R., D. Cumming and C. Mallin (Eds.). Chapter 18, Springer, Netherlands, ISBN: 978-94-007-3866-9, pp: 415-442.
- Mazzola, P., S. Sciascia and F.W. Kellermanns, 2013. Non-linear effects of family sources of power on performance. *J. Bus. Res.*, 66: 568-574.
- McConnell, J.J. and H. Servaes, 1990. Additional evidence on equity ownership and corporate value. *J. Financial Econ.*, 27: 595-612.
- McConnell, J.J. and H. Servaes, 1995. Equity ownership and the two faces of debt. *J. Financial Econ.*, 39: 131-157.
- Morck, R., A. Shleifer and R.W. Vishny, 1988. Management ownership and market valuation: An empirical analysis. *J. Financial Econ.*, 20: 293-315.
- Mulherin, J.H., 2005. Corporations, collective action and corporate governance: One size does not fit all. *Public Choice*, 124: 179-204.
- Myers, S.C., 1977. Determinants of corporate borrowing. *J. Financial Econ.*, 5: 147-175.
- Pindado, J. and C. de la Torre, 2006. The role of investment, financing and dividend decisions in explaining corporate ownership structure: Empirical evidence from Spain. *Eur. Financial Manage.*, 12: 661-687.
- Ritter, J.R., 1991. The long-run performance of initial public offerings. *J. Finance*, 46: 3-27.
- Sanchez-Ballesta, J.P. and E. Garcia-Meca, 2007. A meta-analytic vision of the effect of ownership structure on firm performance. *Corporate Governance: Int. Rev.*, 15: 879-892.
- Setia-Atmaja, L., G.A. Tanewski and M. Skully, 2009. The role of dividends, debt and board structure in the governance of family controlled firms. *J. Bus. Finance Account.*, 36: 863-898.
- Setia-Atmaja, L.Y., 2009. Governance mechanisms and firm value: The impact of ownership concentration and dividends. *Corporate Governance: Int. Rev.*, 17: 694-709.
- Shleifer, A. and R.W. Vishny, 1986. Large shareholders and corporate control. *J. Political Econ.*, 94: 461-488.
- Shleifer, A. and R.W. Vishny, 1997. A survey of corporate governance. *J. Finance*, 52: 737-783.
- Short, H. and K. Keasey, 1999. Managerial ownership and the performance of firms: Evidence from the UK. *J. Corporate Finance*, 5: 79-101.
- Simerly, R.L. and M. Li, 2000. Environmental dynamism, capital structure and performance: A theoretical integration and an empirical test. *Strategic Manage. J.*, 21: 31-49.
- Stulz, R.M., 1990. Managerial discretion and optimal financing policies. *J. Financial Econ.*, 26: 3-27.
- Thomsen, S., T. Pedersen and H.K. Kvist, 2006. Blockholder ownership: Effects on firm value in market and control based governance systems. *J. Corporate Finance*, 12: 246-269.
- Ward, A.J., J.A. Brown and D. Rodriguez, 2009. Governance bundles, firm performance and the substitutability and complementarity of governance mechanisms. *Corporate Governance: Int. Rev.*, 17: 646-660.