FINANCIAL LEVERAGE AND PERFORMANCE OF LISTED FIRMS IN A FRONTIER MARKET: PANEL EVIDENCE FROM KENYA

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Abstract

This paper investigates the relationship between financial leverage and the financial performance of listed firm in Kenya. We use annual data for the period 2007 – 2011. Using various panel procedures, the study finds reasonably strong evidence that financial leverage significantly, and negatively, affects the performance of listed firms in Kenya (ROA, β = -.0438, p = .0350) and Tobin's Q, β = -.5144, p = .0124). However, financial leverage negative but insignificant effect on ROE, β = -.0176, p = .5765). Unit root test results indicate: all the variables are integrated of order zero (p = .000). Second, because the performance of firms depends on other things than just their financial leverage, we control for the effects of those other variables by including them in our models. In this respect, the findings suggest that asset tangibility (β = .2302, p = .0215) and ownership concentration (β = -.0057 (p = .0353) are important determinants of performance measured in terms of Tobin's Q. The study concludes that; that financial leverage is an important negative predictor of financial performance measured in terms of ROA and Tobin's Q; ownership concentration is a pertinent negative predictor of financial performance measured in terms of Tobin's Q and asset tangibility is a significant positive predictor of performance measured in terms of ROE and Tobin's Q.

Keywords: Financial leverage, Tobin's Q, Return on Assets, Return on Equity, Panel data, frontier market, Kenya

Introduction

Corporate Finance literature offers five theories that explain firms' financial leverage choices. The first school of thought is the trade-off theory, which argues for the existence of an optimal capital structure, by

incorporating various imperfections to capital markets ignored by the Modigliani and Miller (1958) hypotheses, but retaining the assumptions of market efficiency and symmetric information. Thus, although increasing financial leverage might enable a firm to increase its value by profiting from tax shields on debt (Modigliani and Miller, 1963), higher financial leverage might lead to higher expected direct and indirect financial distress costs, which decrease the firm's value (Ross *et al.,* 2002). According to the trade-off theory, therefore, the optimum financing mix coincides with the level of financial leverage at which the benefits and costs of debt financing are exactly balanced. The trade-off theory of leverage assumes that there are benefits to leverage within capital structure used until an optimal capital structure is attained. The theory recognizes that (tax benefit) debt interest is tax deductible. This reduces the tax liability thus increasing tax shield. A high proportion of debt in a company makes it very risky for investors to invest in it. This make to demand investors a high premium on stock or high dividend. The theory assumes that a firm has an optimum capital structure based on trade-off between costs and benefits of using debt. This theory does not explain the conservative nature of firms when using debt finance, why leverage is consistence in most countries yet they have divergent taxation systems (Popescu, 2009).

Firm's optimal debt ratio is determined by a trade-off between the bankruptcy cost and tax advantage of borrowing and it is achieved at the point when the marginal present value of the tax on additional debt is equal to the increase in the present value of financial distress costs (Owalobi and Anyang, 2013).

The second school of thought explaining firms' capital structure choice is the pecking order hypothesis. Invoking agency theory, signaling hypothesis and information asymmetry, the pecking order hypothesis argues that firms have a preference order for different types of finance, reflecting their ease of availability or relative costs (Myers and Majluf, 1984). The pecking order hypothesis does not emphasize target leverage; rather, current leverage reflects firm's historical profitability and the need for additional investment funds at some point in time. This theory explains why internal finance is more popular than external finance and why debt is considered the best option for firms. Debt finance is considered attractive, cheap and more profitable as it is considered flexible.

Pecking theory is based on information asymmetry. If managers have more information than other parties then information costs rises. Thus firms will prefer issuing shares when they are overvalued or last resort. Managers will use pecking order by first using internally generated funds. If more funds is required then go for cheap debt (capital with fixed interest) before

equity (capital with variable interest rate) in financing the firms activities. Myers and Majluf (1984) as cited in Popescu (2009).

The third theory is irrelevancy theory. The theory was put forward by Modigliani and Miller in 1958. It is based on the following assumptions: No transactions cost, no taxes, no bankruptcy cost, equity in borrowing cost for investors, equity in access to information and no effect of debt on earnings before interest and tax. The theory indicates that in a perfect market, it does not matter the capital structure mix used by the firm the value of the firm remain constant. If a firm uses cheaper debt then this increases the risk of the firm consequently the stock holders will demand higher dividend to compensate them for the high risk in their investments MM theorized that market value of a firm is determined its ability to earn and the risk of its underlying assets. Thus the weighted average cost of capital should remain constant. MM argued that the value of a firm is not affected by capital structure but by the earning ability of the assets. The assumptions made do not hold in the real world hence other researchers have come up with various theories to fill the gap in real life situation (Abor, 2007).

The fourth theory is Market timing theory fronted by Baker and Wurgler (2002) article relating to capital structure to past market to book ratio. According to this theory firms prefer equity when they perceive that its relative cost is low otherwise debt finance would be appropriate. Firms time their equity issues, they issue new stock when the stock price is perceived to be overvalued and buy back own shares when they are undervalued.

Fifth theory is free cash flow theory which postulates that managers are forced to pay excess cash to investors as dividend to equity holders and interest to debt holders. High debt ratio discipline managers and prohibits them not to invest in projects with negative NPVs making the firm profitable. Jensen (1976) argues that increasing leverage instills discipline in managers as they will be cautious not to make the firm insolvent (Owadabi and Anyang, 2013).

Other theoretical works (Khan, 2012, NSE Handbook, 2011 and Pandey, 2006) link financial leverage to performance of firms both positively and negatively. They recognize that the use of financial leverage is like a 'double - edged sword' because it can either magnify the firm's potential gains or losses (Pandey, 2006 and Khan, 2012). Records at the Nairobi Securities Exchange indicate that in the period 2006-2011, listed companies' debt levels oscillated between 22.64 % and 76.2 % (NSE Handbook, 2011) implying that financial leverage of Kenya's listed firms greatly varies.

Empirical evidence on the relationship between financial leverage and the financial performance of firms has been the subject of several studies since the seminal work of Jensen and Meckling (1976). However, the evidence on these relationships has been mixed. Some researchers find a

positive relationship between financial leverage and firms' financial performance (Taub, 1975; Roden and Lewellen, 1999; Champion, 1999; Ghosh and Jain, 2000; Hadlock and James, 2002 and Berger and Bonaccorsi, 2006). These researchers generally argue that financial leverage has a positive effect on a firm's returns on equity provided that the firm's earnings power exceeds its interest cost of debt (Hutchinson, 1995) and that the level of leverage a firm should commit itself to depends on the flexibility with which the firm can adjust its debt usage should earnings power fall below its average interest cost (Hadlock and James, 2002). In an interesting study of the banking sector, Berger and Bonaccorsi (2006) demonstrate that high leverage ratio is related to higher profit efficiency. Other studies report negative relationship between leverage and financial performance (Vitor and Badu, 2012; Majumdar and Chhiber, 1999; Gleason et al., 2000; and Simerly and Li, 2000; Hammes, 2003; Mesquita and Lara, 2003; Zeitun and Tian, 2007).

Although most of the extant financial leverage studies have been carried out in developed financial markets, some studies have examined the relationship between financial leverage and financial performance of firms in developing countries. Hung *et al.* (2002) find that while high gearing is positively related to assets, it's negatively related to profit margins in Hong Kong's property markets. Kyereboah-Coleman (2007) finds that a high debt level is positively related to performance of micro-finance institutions in sub-Saharan Africa. Contrarily, country-specific studies in Africa appear to consistently report a negative relationship between financial leverage and firm value (Abor (2005) for Ghana, Abor (2007) for South Africa and Ghana, Amidu (2007) for Ghana, and Onaolapo and Kajola (2010) for Nigeria) and Odongo *et al.* (2014) for Kenya. However, Ebaid (2009) finds a weak-to-no-effect of capital structure on firm performance for Egypt.

The foregoing evidence raises a fundamental question: is financial leverage associated with poor firm performance in Kenya? Our research is an attempt to seek answers to this question. We attempt to establish if there is a clear linkage between financial leverage and the performance of firms listed on the Nairobi Securities Exchange. Performance is measured in terms of return on equity, return on assets and Tobin's Q and use a panel empirical strategy. Our findings support the view that financial leverage has a significant (negative) impact on performance of firms listed in Kenya. The control variables included in the analysis also present interesting results.

Econometric methodology

To reveal the effect of financial leverage on firm's performance, the estimation procedure used by Wellalage and Locke (2012) and Berger *et al.* (1997) is adopted and modified as:

$$ROE_{it} = \beta_{01} + \beta_{11}LEV_{it} + \beta_{12}OWNC_{it} + \beta_{13}TANG_{it} + \varepsilon_{it} \quad (1)$$
$$ROA_{it} = \beta_{02} + \beta_{21}LEV_{it} + \beta_{22}OWNC_{it} + \beta_{23}TANG_{it} + \varepsilon_{it} \quad (2)$$
$$TOBIN'S\ Q_{it} = \beta_{03} + \beta_{31}LEV_{it} + \beta_{32}OWNC_{it} + \beta_{33}TANG_{it}$$
$$+ \varepsilon_{it} \quad (3)$$
$$\varepsilon_{it} \sim N\ (0, \sigma^2) \quad (4)$$

Where ROE_{it} -ratio of net earnings divided to equity in book value for firm i in period t representing financial performance of firms listed at the Nairobi Securities Exchange, ROA_{it} is the ratio of pre-tax profits to total assets for firm i in period t. This represents financial performance of firms listed at the Nairobi Securities Exchange, $TOBIN'S\ Q_{it}$ is the ratio of market capitalization to book value of assets for firm i in period t. This too represents financial performance of firms listed at the Nairobi Securities Exchange. LEV_{it} is the ratio of total debt to total capital for firm i in period t, representing financial leverage of firms listed at the Nairobi Securities Exchange. $OWNC_{it}$ is the percentage of shares held by the five greatest shareholders of firm i in period t, representing the ownership concentration of firms listed at the Nairobi Securities Exchange. $TANG_{it}$ refers to asset tangibility defined as the ratio of the fixed tangible assets divided by the total assets for firm i in period t. ε_{it} are the error terms while $_{it}$ i and t represent listed firm and time respectively (I =1…N) and (t = 1….T).

The choice of three performance measures is motivated by the fact that these indicators have different interpretations regarding firm's performance as proposed by Mesquita and Lara (2002). According to Cole and Mehran (1998) for a study of this nature to have a firm foundation and in line with previous studies (Ongore, 2011, Heracleas, 2001 and Laffont and Triole, 1991), it is necessary to choose measures of performance that are quantifiable, expressive and comparable. This study therefore uses the three measures of performance because they met these three attributes. These variables include: Tobin's Q, Return on Equity (ROE), and Return on Assets (ROA).

Data and unit root tests
Data
This study examines the relationship between financial leverage and firm performance of publicly quoted companies at the Nairobi Securities Exchange using data for the period 2007 through 2011. Observations are sampled at annual intervals because financial leverage revisions often require the ratification of company shareholders, who typically meet on an annual basis in Kenya. Year 2007 is important in several respects. First, it coincided with the beginning of the 2007/2008 global recession and financial turmoil originating in the developed world that had since spread to developing countries and the Kenya's listed firms had not been immune to the secondary

effects of this crisis. Second, the year also coincided with an important event in Kenya's history: the change of political leadership from the NARC, to a coalition government for the first time since the country's political independence after disputed 2007-08 general elections. Third, 2007 also marked the end of the second decade of Kenya's economic reforms. Thus, the performance of firms was expected to reflect the better economic risk and sovereign risk environments as well as improved access to funding because economic reforms would make a wider range of financing instruments available to businesses. The listed companies were analyzed as a panel of the entire stock market. The performance and financial leverage data are collected from firms' audited financial statements contained in NSE handbooks.

The Nairobi Securities Exchange had fifty eight listed firms at the end of 2012. However, several of the firms were listed after 2007 and hence did not have a time series long enough to enable us include them in the analysis. Some firms were left out due to non-availability of data. The final sample consisted of 47 listed firms for a period 2007 through 2011 which resulted in a sample of 235 firm year observations. A step by step analysis was done by first showing the descriptive statistics of the data used in the estimation.

Table 1: Descriptive Statistics for variables used in the Study

Statistics	OWNC	LEV	TOBINSQ	ROE	ROA	TANG
Mean	65.286	0.258	1.319	0.165	0.165	0.556
Median	69.405	0.223	0.861	0.143	0.121	0.57
Maximum	96.310	0.794	7.791	0.693	0.709	0.999
Minimum	11.040	0.000	0.061	-0.238	-0.62	0.048
Std. Dev.	17.292	0.172	1.346	0.12	0.172	0.243
Skewness	-0.892	0.881	2.028	1.045	0.448	0.17
Observations	235	235	235	235	235	235

Source: Field Data, 2014

The table shows the descriptive statistics for variables used in the study. The variables are defined thus: Tobin's Q = (Market value of equity + Book value of debt) ÷ Book value of assets; ROA = pre-tax profits ÷ total assets of the company; ROE = Net earnings ÷ equity in book value; Asset Tangibility is defined as the ratio of fixed assets to total assets. Financial Leverage = total debt ÷ total capital for a firm; Ownership concentration = summation of amount of ownership of five greatest shareholders of a company relative to the total shareholding.

Table 1 displays the descriptive statistics for the variables used in the study. The statistics show that the mean value for return on equity (ROE) is 16.5 % with a positive skewness, indicating that most of the firms are

"clustered" on the right side of the distribution. In line with previous studies (Xu and Wang, 1997), ROE is the ratio of net earnings after tax divided by equity in book value and it measures the earnings generated by shareholders' equity for a period of time, usually one accounting year. The values compare favorably to those obtained by previous studies (Maniagi *et al.,* 2013) who obtain an average ROE of 17.759 %. This implies that on average, shareholders of firms listed at the NSE earn a return on their investment of 16.5 % and the highest return and lowest returns (loses) on equity are 69.3 % and -23.8 % respectively during the period 2007 to 2011. Consequently, this means that listed companies generate Kshs16.5 profit on every Kshs 100 invested by their shareholders during the same period.

The mean return on assets invested (ROA) is 16.5 %, also with positive skewness. In tandem with previous studies (Laffont and Triole, 1991, Cole and Mehran, 1998 and Heracleas, 2001), ROA is the ratio of pre-tax profits to total assets. It measures how much profit a firm can achieve using one unit of assets and it helps to evaluate the result of managerial decisions on the use of assets with which they have been entrusted by the shareholders of the company (Brigham and Houston, 2001). These values compare unfavorably with those obtained by Maniagi *et al.* (2013) who found a mean ROA of 9.836 % and a maximum and minimum ROA of 92.990% and -8.000% respectively for a sample of non-financial listed firms in Kenya. This means that firms listed at the NSE earn a Kshs 16.5 profit on every Kshs 100 they own in their respective companies. This can be attributable to high profit margins, a rapid turnover of assets, or a combination of both.

Tobin's Q, a measure that combines market performance with book values, shows a high mean value of 1.319. This may indicate that most of the firms are overvalued relative to their book values. In line with previous studies (Morck *et al.,* 1988), Tobin's Q is operationalized as the ratio of market capitalization to book value of assets. Copeland *et al.* (2005) provides a framework for interpreting Q ratio. A low Q (between 0 and 1) means that the cost to replace a firm's assets is greater than the value of the stock implying that the stock is undervalued. Conversely, a high Q (greater than 1) implies that the firm's stock is more expensive than the replacement cost of its assets indicating that the stock is overvalued (Copeland *et al.,* 2005). The average Tobin's Q ratio of 1.319 which is greater than 1(q >1) implying that listed firms' stock is more expensive than the replacement cost of its assets. Moreover, the firms' market capitalizations supersede their book value of assets by close to 32 per cent. The highest and lowest Tobin's Qs are 7.791 and 0.061 respectively. This shows that firms listed at the NSE had wide variation in market values relative to book values. The mean Tobin's Q compares favorably with that obtained by Andres (2008) of 1.599.

Consequently, this means that equities (stocks) of firms listed at the NSE are overvalued since average Tobin's Q is greater than 1.

The financial leverage ratio show that the average firm listed on the NSE employs only 0.258 Kenyan Shilling of long-term debt for every Shilling of total capital employed. Clearly, Kenyan firms either prefer to finance their long-term activities through equity or find themselves in that situation courtesy of uncontrollable reasons such as unavailability of diversified long-term financing sources in the capital market (see Gwatidzo and Ojah, 2014). In tandem with previous studies (Maniagi *et al.,* 2013, Wanjeri, 2012 and Vitor and Badu, 2012) financial leverage is measured in term of the ratio of total long-term debt to total capital in the firm. This value is comparable to the mean financial leverage of 22.64 % obtained by Maniagi *et al.* (2013) and is 1.63 times lower than mean financial leverage obtained by Wanjeri (2012). However, it is 9.7 times higher than mean financial leverage obtained by Vitor and Badu (2012) in Turkey. This implies that out of the total capital base (100 %); about 26 % is financed using borrowed money (debt) while 74 % is financed using equity and other sources. This indicates that on average Kenya's listed firms do not heavily rely on debts to finance their activities implying that these firms could be financing their activities through retained earnings and other sources. The range between the highest and lowest financial leverage implies that some firms were highly financially leveraged while others were all-equity financed.

About 55.6 % of all assets are tangible. This result is consistent with previous studies that identified asset tangibility as a firm-specific driver of performance (Kakani and Kaul, 2001, Agustinus and Rachmadi, 2008 and Murillo, 2007).

Ownership concentration ratio indicates that 64.286 % of total shareholding belongs to the top five shareholders. This value is 1.344 times higher than mean ownership concentration obtained by Isik and Soykan (2013) of 48.57 %. This means that of the total shareholding of firms listed at the NSE, top five shareholders stake is 64.286 % and only 35.714 % of the total shareholding belongs to dispersed ownership implying that shares of firms listed at the NSE are closely held.

Unit root tests

Before empirical estimations are conducted, the data series are subjected to unit root tests to establish their stationarity conditions, that is, their orders of integration. Where a series is found to be non-stationary at levels, it is differenced until it became stationary (Gujarati, 2007, Baltagi, 2001). To test for unit roots two common methodologies, that is, the Levin, Lin, Chu (LLC) and Im, Pesaran, Shin (IPS) were employed. Table 2:

provides a summary of the panel unit root test results. The results indicate that all variables are integrated of order zero, that is, are stationary at levels. Given that all variables were integrated of order zero, there was therefore no need to test for cointegration in the series.

Table 2: Summary of Panel Unit Root Test Results on Study Variables

Variable	Levin, Lin, Chu (LLC)	Im, Pesaran, Shin (IPS)	Conclusion
Financial Leverage (LEV)	-36.009 (0.000)***	-10.068 (0.000)***	I(0)
Ownership Concentration (OWNC)	-24.566 (0.000)***	-4.861 (0.000)***	I(0)
Tobin's Q	-153.376 (0.000)***	-27.165 (0.000)***	I(0)
Return on Equity (ROE)	-9.391 (0.000)***	-2.221 (0.000) ***	I(0)
Return on Assets (ROA)	-42.944 (0.000)***	-9.729 (0.000) ***	I(0)
Tangibility (TANG	-28.793 (0.000)***	-5.426 (0.000) ***	I(0)
Note: P values in parentheses, *** represent significance at 1 %.			
Source: Field Data, 2014			

Empirical results and discussions
Bivariate Association between Financial Leverage and
Performance of Listed Firms

In order to assess the effect of financial leverage on performance, Pearson's correlation analysis is performed. It is a measure of strength of association between two variables. Correlation coefficients are used to determine the magnitude and direction of associations. Their values range from -1 (perfect negative correlation) to +1 (perfect positive correlation). The nearer the values are to these two values, the stronger the relationship. The more the coefficients are close to 0, the less the relationship; at 0, there is no relationship (Danthine *et al.*, 2005 and Maddala, 2008). The result presents how financial leverage associate with the dependent variables constructs namely ROE, ROA and Tobin's Q.

Table 3: Correlations of Financial Leverage with Performance Constructs for Listed Firms

Correlation				
Probability	LEV	ROA	ROE	TOBIN'S Q
1. LEV	1.0000			
	-----			
2. ROA	-0.3047***	1.0000		
	(0.0000)	-----		
3. ROE	-0.1583***	0.2480	1.0000	
	(0.0099)	(0.0741)	-----	
4. TOBIN'S Q	-0.3494***	0.1287	0.0927	1.0000
	(0.0000)	(0.0542)	(0.3574)	-----

Source: Field Data, 2014

From Table 3, the association between financial leverage and return on equity, r = -.158 (p = .009) is weak though significant at 99 % confidence level. The association between financial leverage and return on assets, r = -.305 (p = .000) and is equally weak though highly significant and lastly, the association between financial leverage and Tobin's Q, r = -.349 (p = .000) and is also weak though significant. Given that ROE, ROA and Tobin's Q are constructs of financial performance, the directions of association are consistent with literature (Maniagi *et al.,* 2013, Odongo *et al.,* 2014, Gicheha, 2012, San and Heng, 2011, Bokpin *et al.*, 2010, Onaolapo and Kajola, 2010, Omran and Pointon, 2009, Shah and Khan, 2007). These studies propose that negative association between financial leverage and performance is feasible and therefore acceptable. However, the results are at variance with the findings of Deesomsak *et al.* (2004) who find a negative but insignificant association between financial leverage and performance among Malaysian firms.

The correlation coefficients of these associations however, are small (r < -.50) indicating that some other variables might be influencing the associations between the variables (Maddala, 2005). As a result, further analysis permitting all variables that influence financial performance at once is necessary.

Bivariate results between financial leverage and financial performance constructs show that financial leverage has significant negative association with ROE, ROA and Tobin's Q. The magnitudes of associations are however small than expected.

Multivariate Relationships between Financial Leverage and Performance of Listed Firms

Panel regression analysis, a multivariate analysis technique is used to estimate equations 3.2, 3.3 and 3.5 respectively. Table 4.4 presents the panel multiple regression results on the effect of financial leverage on performance of listed firms.

The results indicate that financial leverage is a significant negative predictor of performance measured in terms of return on assets (ROA), β = -.0438 (p = .0350) and Tobin's Q, β = -.5144 (p = .0124). These values are statistically significant since the p-values are less than 0.05. It can be inferred from these values that a unit change in financial leverage leads to a decrease in return on assets and Tobin's Q of firms listed at the Nairobi Securities Exchange of 0.0438 and 0.5144, respectively, all things being fixed. Therefore, the alternative hypothesis that financial leverage has effect on performance of firms listed at the Nairobi Securities Exchange is accepted. Moreover, financial leverage predicts performance measured in terms of return on equity, β = -.0176 (p = .5765) negatively but insignificantly. These

results concur with the previous studies (Gleason *et al.*, 2000, Upneja and Dalbor, 2001, Deesomsak *et al.,* 2004 and San and Heng, 2011) who report negative association between financial leverage and financial performance. However, Asian studies (Deesomsak *et al.,* 2004 and San and Heng, 2011) document negative and insignificant relationship between financial leverage and performance. Also, these findings are at variance with those of Maniagi *et al.,* 2013, Gicheha, 2012, and Wanjeri, 2012 who report both positive and negative relationship between financial leverage and performance for non-financial listed firms. Due to agency conflicts between various stakeholders, listed firms seem to have employed financial leverage levels which have negatively affected the performance of these firms.

The results indicate that ownership concentration is a significant negative predictor of performance measured in terms of Tobin's Q, β = -.0057 (p = .0353). This value is statistically significant since the p-values are less than 0.05. It can be inferred from this value that a unit change in ownership concentration leads to a decrease in Tobin's Q of firms listed at the Nairobi Securities Exchange of 0.0057, all things being fixed. Moreover, ownership concentration predicts performance measured in terms of return on equity, β = -.0005 (p = .4206) and ROA, β = -.0002 (p = .5965) negatively but insignificantly. These results concur with the previous studies (Ongore, 2011, Wiwattanakantang, 2001 and Gonenc, 2006) who report a negative relationship between ownership concentration and performance. The findings are however at variance with other previous studies (Uadiale, 2010, Mandaci and Gumus, 2010 and Chen *et al.,* 2005) who found that ownership concentration had a positive and significant relationship with company performance.

In addition, the regression results show that asset tangibility is a positive significant predictor of ROE (β = .0200 (p = .0630) and Tobin's Q (β = .2302 (p = .0215) showing that 1 % increase in asset tangibility is associated with an increase of .0200 %, and .2302% all things being equal. This finding concurs with that of Shen and Rin (2012) and Murillo (2007) who found a positive and significant relationship between asset tangibility and firm's performance. In addition, asset tangibility is a negative insignificant predictor of ROA (β = -.0025 (p = .6030).

Thus use of panel methodology and multiple measures of performance reconciles conflicting results and therefore financial leverage has a significant negative effect on firm's performance as measured in terms of ROA and Tobin's Q and negative insignificant effect on ROE. This implies that as firms use more financial leverage, financial performance in terms of ROE, ROA and Tobin's Q declines.

The Robustness checks for the three models, that is, equations 3.2, 3.3 and 3.4 are done using adjusted R squared. The adjusted R squared is the

adjusted coefficient of determination which shows proportion of variation in the dependent variable explained by the regression model (Gujarati, 2003). The adjusted R^2 for three models, that is, ROE, ROA and Tobin's Q is 0.7732, 0.8852 and 0.8594 respectively which reflect a good fit.

As a result, the hypothesized multiple linear regression models are therefore fitted as shown in equations 1, 2 and 3 with t-statistic values in the parentheses.

$$\hat{ROE} = 1.0657 - 0.0176LEV - 0.0005OWNC + 0.0200TANG \qquad \textbf{(5)}$$
$$\underset{t=1.1192}{} \qquad \underset{t=-0.5595}{} \qquad \underset{t=-0.8071}{} \qquad \underset{t=1.8695}{}$$

$$\hat{ROA} = 0.0602 - 0.0438LEV - 0.0002OWNC - 0.0025TANG \qquad \textbf{(6)}$$
$$\underset{t=1.5639}{} \qquad \underset{t=-2.1226}{} \qquad \underset{t=-0.5303}{} \qquad \underset{t=-0.5209}{}$$

$$\hat{TOBIN'SQ} = 5.1563 - 0.5144LEV - 0.0057OWNC + 0.0023TANG \qquad \textbf{(7)}$$
$$\underset{t=9.9377}{} \qquad \underset{t=-2.5242}{} \qquad \underset{t=-2.1191}{} \qquad \underset{t=2.3179}{}$$

Table 4: Panel Least Squares Multiple Regression Estimation Results on the Effect of Financial Leverage, Ownership Concentration, Selected Control Variables and Performance of Listed Firms

Variable	Return on Equity Model (Equation 2)				Return on Assets Model (Equation 3)				Tobin's Q Model (Equation 4)			
	Coefficient	Std. Error	t-Statistic	Prob.	Coefficient	Std. Error	t-Statistic	Prob.	Coefficient	Std. Error	t-Statistic	Prob.
C	0.0657	0.0587	1.1192	0.2644	0.0602	0.0385	1.5639	0.1194	5.1563	0.5189	9.9377	0.0000
LEV	-0.0176	0.0315	-0.5595	0.5765	-0.0438	0.0206	-2.1226	0.0350**	-0.5144	0.2038	-2.5242	0.0124**
OWNC	-0.0005	0.0006	-0.8071	0.4206	-0.0002	0.0005	-0.5303	0.5965	-0.0057	0.0027	-2.1191	0.0353**
TANG	0.0200	0.0107	1.8695	0.0630*	-0.0025	0.0048	-0.5209	0.6030	0.2302	0.0993	2.3179	0.0215**
Adjusted R^2	0.7732				0.8852				0.8594			
Durbin Watson Stat	1.8000				1.9500				1.8900			

Conclusion

Three conclusions can be drawn based on the preceding evidence. The first conclusion is that financial leverage is an important negative predictor of financial performance measured in terms of ROA and Tobin's Q. This negative prediction based on trade off theory; imply exhaustion of debt tax shield and potential financial distress.

Secondly, it is concluded that ownership concentration is a pertinent negative predictor of financial performance measured in terms of Tobin's Q.

The third conclusion is that asset tangibility is a significant positive predictor of performance measured in terms of ROE and Tobin's Q.

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