EFFECT OF FINANCIAL LEVERAGE ON FINANCIAL PERFORMANCE OF NON-FINANCIAL FIRMS LISTED IN THE NSE, KENYA.

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ABSTRACT

Global average contribution of listed non-financial firms to Gross National Product stands at 50% whereas contribution of non-financial firms listed in Nairobi Securities Exchange (NSE) remains at 13.4% between 2012 and 2018. These firms have faced numerous challenges ranging from declining after tax profits, delisting or suspension at 21.3% from NSE and increasing debt levels from Ksh. 36bn to Ksh. 278bn between 2012 and 2018 indicating that financial leverage also remains a challenge. The purpose of this study was to analyze financial leverage and financial performance relationship of non-financial firms listed in NSE, Kenya. The study was anchored on trade-off and Signaling theories. The study used a correlation research design. The target population was 47 non-financial firms listed at NSE between 2012 and 2018 where 28 firms were purposively sampled and pooled for 7 years to obtain 196 firm year observations. Results show financial leverage is a significant positive predictor of performance (ROE), $\beta = 0.1418$ ($P = 0.0430$) and Tobin's Q, $\beta = 0.0220$ ($p = 0.0071$) meaning a change in financial leverage leads to a significant increase in ROE and Tobin's Q of 0.1418 and 0.0220, respectively. The study concludes that financial leverage significantly and positively affects firm performance. The study recommends that the management should enhance financial leverage in making leverage choice decisions. Findings may be useful to academia as a basis of further research in finance.

KEY WORDS: Financial Leverage; Firm Performance; Tobin's Q, Return on Equity

INTRODUCTION

Firm's financial performance relates to the process by which limited resources at organization's disposal are utilized effectively and efficiently in attaining the general objective of the enterprise for both present and future opportunities. However, financial leverage on the other hand is a measure of how much firms use equity and debt to finance their assets. Financial leverage measures firm's exposure to the financial risk. A high level of financial leverage allows shareholders to obtain a high return on equity, but they are also exposed to a higher risk of significant loss, if the return on assets is lower. The financial leverage employed by a firm is intended to earn more on the fixed charges funds than their relative costs (Pandey, 2010) and as such high leverage would result in high profitability on the basis of the signaling theory. According to Van Horne (2002), the change in capital structure that is caused by an increase or decrease in the ratio of debt to equity is referred to as financial leverage.

Financial leverage is a measure of how much firms use equity and debt to finance its assets. A company can finance its investments by debt and equity. The company may also use preference capital. The rate of interest on debt is fixed irrespective of the company's rate of return on assets. The financial leverage employed by a company is intended to earn more on the fixed charges funds than their costs. As debt increases, financial leverage increases. The landmark studies of Modigliani and Miller (1958; 1963) about Capital structures irrelevance and tax shield advantage paved way for the development of other theories. According to Van Horne (2002), the change in capital structure that is caused by an increase or decrease in the ratio of debt to equity is referred to as financial leverage. Debt leverage is measured by the ratio of total debt to equity (debt/equity ratio). It shows the degree to which a business is utilizing borrowed money. Companies that are highly leveraged may be at risk of bankruptcy if they are unable to make payments on their debt; they may also be unable to find new lenders in the future. Leverage is not always bad, however; it can increase the shareholders' return on their investment and make good use of the tax advantages associated with borrowing.

The role of financial leverage in magnifying the return of the shareholders' is based on the assumptions that the fixed- charges funds (such as the loan from financial institutions and other sources or debentures) can be obtained at a cost lower than the firm's rate of return on net assets (RONA or ROI). Damouri, *et al,* (2013) states that leverage ratios contribute in measuring the risk of using equity costs. They adds that there are various measures known for the capital structure among which the most important are book value based measures, market value based measures and semi- market value based measures (adjusted market value). Financial leverage affects profit after tax or earnings per share.

Objective of the Study

To establish the effect of financial leverage on financial performance of non-financial firms listed in the NSE.

Hypothesis of the Study

H_0: Financial leverage has no effect on financial performance of non-financial firms listed in the NSE.

THEORETICAL REVIEW

The theoretical base of trade-off theory was laid down by Myers (1984). Other researchers who also contributed to the theory include; Fisher *et al*. (1989), Kim and Sorensen (1986). These proponents of trade-off theory suggests that, the firm will borrow up to the point where the marginal value of tax shields on additional debt is just offset by the increase in the present value of possible cost of financial distress. In a perfect market, there is the generalized assumption that there is free entry and exit of firms, ease of raising funds and no transaction cost to the firm.

According to Trade off theory, benefits and costs are associated with debt and firms should follow a targeted debt ratio where benefits are maximum against minimum loss (Graham, 2000; Kim and Sorensen, 1986). Trade off theory posits that companies determine their capital structure based on the benefits and costs of debt, and increase their leverage ratio to the point where the marginal costs and benefits of debt are equal (Fama and French, 2002). The reasoning behind Trade off theory therefore advocates for a positive relationship between financial leverage and financial performance since debt enables firms to lower their tax expense and agency problems.

EMPIRICAL LITERATURE REVIEW

Previous studies on financial leverage and financial performance relationship can be traced from the studies of (Gleason *et al.*, 2000; Enekwe *et al*., 2014; Ojo, 2012; Abor, 2005; Onaolapo and Kajola, 2010) who found a significant negative relationship between leverage and firms' performance. These studies used single sector, cross- sectional data, convenient sampling and time series, employed ex-post facto research design, Least Squares (OLS and correlation to study operating leverage and performance relationship of listed firms. Majority of the above studies have been conducted in developed countries where capital markets are well-developed. However, in Kenya, Maina and Ismail (2014); Mule and Mukras (2015); Nyatete *et al*., (2018) uses various panel data procedures, descriptive, regression and correlation to study all listed firms at NSE and found negative relationships between leverage and performance. All these studies included financial sector firms whose leverages are highly regulated by the central bank therefore, the nature of the data limits the generalization of the findings to other firms in the economy.

In contrast to the above views, some studies have found positive relationships between financial leverage and financial performance, (Rehman *et al*., 2013; Berger & Bonaccorsi di Patti, 2006; Akbarian, 2013; Amjed, 2007). These studies used dynamic panel data techniques, single sectors and single accounting measures, correlation analysis and cross- sectional data. Akbarian (2013) uses the omission sampling method and multiple regression but does not incorporate, time series component while, Berger and Bonaccorsi (2006) used parametric measures but ignores cross-sectional aspects of the data. All these studies used either single set of accounting or market based measures of performance and failed to employ panel methodology.

Literature on the relationship between financial leverage and financial performance shows a diversity of results. Some studies found positive relationships while others found negative relationships. Previous studies conducted in Kenya have attempted to link financial leverage and financial performance focusing on all listed firms however, no studies have attempted to determine the relationship between financial leverage and financial performance of non-financial firms listed in NSE using ROE and Tobins Q as measures of performance and panel methodology. Use of panel methodology accounts for individual heterogeneity which cannot be detected using purely cross - sectional or time series data which is the focus of the present study. Besides that non-financial firms' leverages are not regulated by the Central bank.

METHODOLOGY

The present research used quantitative paradigm and since the cause and effect relationship between quantitative variables was sought, a correlational research design was adapted. The study was carried out in the Nairobi Securities Exchange (NSE) in Nairobi City, the capital city of Kenya. The population of the study comprised all non-financial firms listed at NSE Kenya from 2012 to 2018 from which 28 firms out of a total of 47 non- financial firms were purposively sampled for use in the study. Data on the analysis of financial leverage and performance was extracted from financial reports of listed companies and summaries provided by the NSE. The experts opined that the data items adequately and sufficiently represented the content for each construct. The findings revealed a unit test for Financial leverage; Adjusted t*= -14.5720, p= 0.0000, Tobin's Q= -7.6823, p= 0.0000, and ROE Adjusted t* =-14.6934, p=0.000 implying that all the panels contained unit root. All other

tests of assumptions of panel regression indicated that there were no violations of the model requirements. Data was analyzed using panel regression model as indicated.

$$ROE_{it} = \alpha + \beta_1 DER_{it} + \varepsilon_{it} \quad \text{..... (3.1)}$$

$$ROE_{it} = \alpha + \beta_1 DER_{it} + \beta_2 TANG_{it} + \beta_3 FAGE_{it} + \varepsilon_{it} \quad \text{..... (3.2)}$$

$$TOBIN'SQ_{it} = \alpha + \beta_1 DER_{it} + \varepsilon_{it} \quad \text{..... (3.3)}$$

$$TOBIN'SQ_{it} = \alpha + \beta_1 DER_{it} + \beta_2 TANG_{it} + \beta_3 FAGE_{it} + \varepsilon_{it} \quad \text{..... (3.4)}$$

Firm performance = f (Leverage)
Model 1 is a panel regression of the dependent variable and independent variable.
Equation (1 and 2) measures whether financial leverage determine financial performance

FINDINGS AND DISCUSSIONS

The first measure of firm's performance used was Return on Equity (ROE). In the first case, analysis was carried out with financial leverage as the only predictor. The findings on the effect of financial leverage on performance (ROE) using fixed effects model are presented as shown in Table 1.

Table 1: Effect of Financial leverage on Firm Financial Performance using ROE

Fixed-effects (within) regression			**Number of observation = 196**		
Group variable: ID			**Number of groups = 28**		
R-sq: within	= 0.2930				
	= 0.3340		F(1,167)	= 4.51	
Between					
Overall	= 0.2999		Prob > F	= 0.0430	
		(Std. Err. adjusted for 28 clusters in ID)			
ROE	Coefficient	Std. Err.	T	P>|t|	[95% Conf. interval]
FL	.141829	.0667728	2.12	0.043	.0048226 .2788355
Cons	.044019	.0780121	0.56	0.577	-.1160486 .2040866
sigma_u	.13609483				
sigma_e	.1956882				
Rho	.32599813	(fraction of variance due to u_i)			

Source: Field Data, 2018

The results on the effect of financial leverage on performance using ROE as the financial measure are presented as shown in Table 1. The findings shows that financial leverage accounts for 29.99% overall variation in financial performance (R square overall=0.2999). An observation of between variance (which is the variance between the firms) indicated that the variance was 33.4% (R square between=0.334) while the variance within each of the company accounted for by financial leverage was 29.30% (R square within=0.2930) These findings were significant as indicated by F value and probability values (F(1,27)=4.51, Prob>F=0.0430. This indicates that the findings were significant

at a p value less than 5% (p<.05). Therefore financial leverage accounts for a significant percentage change in Return on equity of the firms.

An observation of the model coefficient values from the findings presented in table 1 indicates that financial leverage has a unique positive contribution to return on equity of the firms under study (Coefficient=.141829). These findings were as well significant (P>|t|=0.043). The intra-class correlations (rho) also revealed that there was 32.59% variance due to differences across the panels.

Further analysis of the effect of financial leverage on return on equity of the firms while controlling for the effect of age of the firms and asset tangibility were also carried out. The findings are presented as shown in Table 2

Table 2: Effect of Financial leverage on Firm Financial Performance using ROE while controlling for Firm Age and Asset Tangibility

Fixed-effects (within) regression			**Number of observations = 196**		
Group variable: ID			**Number of groups = 28**		
R-sq: within	= 0.2958		Observations per group: min = 7		
	= 0.0886		F(3,165)	= 23.11	
Between					
Overall	= 0.1575		Prob > F	= 0.000	
corr(u_i, Xb) = -0.5035					
			(Std. Err. adjusted for 28 clusters in ID)		
ROE	Coefficient	Std. Err.	T	P>|t|	[95% Conf. interval]
FL	.1421925	.0171252	8.30	0.000	.1083798 .1760052
AT	.0564232	.0884075	0.64	0.524	-.1181326 .2309791
Firm age	-.0038924	.0070319	-0.55	0.581	-.0177766 .0099918
Cons	.2423416	.4169935	0.58	0.562	-.5809894 1.065673
Sigma_u	.19547753				
Sigma_e	.1964718				
Rho	.49746329	(fraction of variance due to u_i)			
F test that all u_i=0:			F(27, 165) = 3.15		Prob > F = 0.0000

Source: Field Data, 2018

Table 2 indicates that the ROE within group variance accounted for by financial leverage after controlling for the effect of asset tangibility and age of the firm was 29.58% (R square within=0.2958). This variance is slightly larger as compared to the variance obtained in Table 1 without controlling for the two variables. It however emerged that the between group variance,

which is 8.86% obtained after controlling for asset tangibility and age of the firms (R square between=0.0886) is lower by a margin of 24.54% (ΔR^2 within=0.2454) implying that asset tangibility and age of the firms largely vary across the firms and therefore when their intervention is eliminated R square between or the variance between the companies reduces. It was however discovered from the intra-class correlations coefficient (rho=.4974) or 49.74% that there was an increased variance across the panels after controlling for the effect of asset tangibility and age. This implies that age and asset tangibility leads to an increase in the differences across the panels.

The model coefficient for financial leverage (Coef=.1421925) was also found to be positive and significant, t(196)=8.30, P>|t|=0.000, implying that financial leverage positively and significantly contributes to return on equity even after controlling for the effect of age of the firms and asset tangibility. This further implies that a unit change in financial leverage leads to an increase in return on equity of firms listed at the Nairobi Securities Exchange of 0.1421925.

Further insights from these findings indicate that variance in ROE after controlling for age of the firm and asset tangibility reduced to 15.75% from 29.99%, indicating a deviation of 14.24% which is a big difference. The firms return on equity is therefore somehow dependent on the firm's assets and age even though the direct dependence is suppressed by financial leverage. Conversely, it can be deduced that financial leverage does not lose its effect on firms return on equity even after eliminating their differences in age and asset tangibility.

Return on equity percentage variance between firms 33.40% before controlling for their differences in assets and age was larger as compared to variance in Return on equity between the firms after controlling for these variables (8.86%). This means that the presence of these factors (Asset tangibility and age) increases the value of Return on equity by a margin of 24.54%. It can also be reported from a different perspective that inclusion of the asset tangibility and age of the firms to the model may increase the difference in the model outcome.

Another important aspect of the firms to observe is the behavior of return on equity within the firms before and after controlling for the intervening aspect of the age and assets. Financial leverage accounts for 29.3% change in firms' return on equity before controlling for asset tangibility and age of the firms. However, this percentage increases to 29.58%, indicating a margin increase of 0.28%. The implication of these findings could be that there is lower variance in return on equity within the firm across the 7 year period without the factoring in age of the firms. However, inclusion of the age and asset tangibility of the firms in the model results into higher variance in return on equity within the firms. Therefore internally, the firms return on equity is more likely to increase when age and asset tangibility are controlled for.

Financial performance was also measured using Tobin's Q, which was regressed against financial leverage. The findings on the effect of financial leverage on Tobin's Q are presented as shown in Table 3.

Table 3: Effect of Financial leverage on Firm Financial Performance using Tobin's Q

Fixed-effects (within) regression			**Number of observation = 196**			
Group variable: ID			**Number of groups = 28**			
R-sq: within	= 0.0426					
Between	= 0.0904		F(1, 167)	= 7.43		
Overall	= 0.0674		Prob > F	Prob > F = 0.0071		
corr(u_i, Xb) = 0.1451						
	clusters in ID)			(Std. Err. adjusted for 28		
Tobin's Q	Coefficient	Std. Err.	T	P>|t|	[95% Conf.	interval]
FL	.0220182	.0080773	2.73	0.007	.0060714	.037965
Cons	.1390787	.0115284	12.06	0.000	.1163185	.161839
sigma_u	.17859765					
sigma_e	.09270644					
Rho	.78774652	(fraction of variance due to u_i)				
F test that all u_i=0:	F(27, 167) =	25.43		Prob > F = 0.0000		

Source: Field Data, 2018

The overall percentage variance in Tobin's Q accounted for by financial leverage was 6.74% (R square =0.0674), while the within and between variance was 4.26% and 9.04% as indicated by 0.0426 and 0.0426 respectively. The overall model was found to be significant, F(1, 167)=7.43, p=.0071. In addition to the findings, an examination of the model coefficient results indicate that financial leverage has a positive significant effect on Tobin's Q (coefficient=.0220182, P>|t|=0.007). This implies that a unit change in financial leverage leads to an increase in Tobin's Q of firms listed at the Nairobi Securities Exchange of 0.0220182. Further implication could be that more borrowing or loans to improve the business leads to an increase in market value of the firms.

The study also sought to establish the effect of financial leverage on Tobin's Q after controlling for the effect of age of the firm and asset tangibility. Age of the firm is important towards firm's acquisition of financial leverage since older firms could be regarded as more established as compared to younger firms. Therefore older firms are more likely to acquire more or large financial leverage as compared to younger firms which are not fully established. It is not however clear how asset tangibility could inhibit the firm's market value when financial leverage is introduced. Perhaps, firms with large assets could be said to hold more value compared to the firms with small asset and therefore financial institutions could prefer larger asset firms because they hold high tangible assets that they can use as collateral while borrowing external debt. Therefore age of the firm and asset tangibility were controlled for while regressing Tobin's Q against financial leverage. The findings are presented as shown in Table 4.

Table 4: Effect of Financial leverage on Firm Financial Performance using Tobin's Q while Controlling for Asset Tangibility and Firm Age

Fixed-effects (within) regression			**Number of observations = 196**		
Group variable: ID			**Number of groups = 28**		
R-sq: within	= 0.0493		Observations per group: min = 7		
	= 0.0078		F(3,165)	=	2.85
Between					
Overall	= 0.0108		Prob > F	=	0.0391
corr(u_i, Xb) = -0.2520					
			(Std. Err. adjusted for 28 clusters in ID)		
Tobin's Q	Coefficient	Std. Err.	T	P>|t|	[95% Conf. interval]
FL	.021866	.0081011	2.70	0.008	.0058708 .0378611
AT	-.0352451	.0418213	-0.84	0.401	-.117819 .0473288
Firm age	-.0020366	.0033265	-0.61	0.541	-.0086045 .0045314
Cons	.2798362	.1972594	1.42	0.158	-.1096417 .6693141
Sigma_u	.18951602				
Sigma_e	.09294126				
Rho	.80612288	(fraction of variance due to u_i)			
F test that all u_i=0:		F(27, 165) =	23.21		Prob > F = 0.0000

Source: Field Data, 2018

The findings in Table 4 are the results of the regression of the effect of financial leverage on performance based on Tobin's Q after controlling for the intervening effect of asset tangibility and age of the firm. The results shows that financial leverage accounted for an overall variance of 1.08% in financial performance (Tobin's Q) (R square overall=0.0108). The overall model was found to be significant, F(3, 165)=2.85, Prob > F 0.0391. This also implies that the model was well fit, except that the percentage variance was small. Examining the model coefficient results, it is clear that financial leverage had a positive effect (coefficient=.021866) on financial performance (Tobin's Q) which was significant, P>|t|=0.008. Asset tangibility or the firm's size of the assets as well as age of the firm did not have a significant effect on Tobin's Q since the results on the model coefficients of these two variables were not significant at 0.05 threshold value. The implication of these findings is that a unit change in financial leverage leads to an increase in Tobin's Q of firms listed at the Nairobi Securities Exchange of 0.021866. Thus after controlling for the age and asset tangibility of the firms, financial leverage leads to a reduction in firms market value.

A comparison of these findings indicates that variance in Tobin's Q accounted by financial leverage before controlling for age of the firm and asset tangibility was higher 6.74% as compared to after 1.08%. This implies that the negative deviation or negative margin was 5.66%, obtained by subtracting the variance after from the variance before. This implies that removing the effect of the age and asset tangibility of the firm leaves financial leverage with little effect on performance. The market value of the firms may therefore be said to be interfered by the assets and age of the firm.

Further comparison of the firms' differences in variance of Tobin's Q reveals a higher variance 9.04% without controlling for asset tangibility and age of the firms as compared to 0.78% after controlling for these variables. There is therefore a margin decrease of 8.26% in the firms' performance due to financial leverage when the two variables are controlled for. This implies that controlling for asset tangibility and age of the firm results in smaller differences in the firms' performance based on Tobin's Q. Therefore firms are more likely to differ in their performance when compared across while removing the effect of age and asset tangibility.

Keenly examining the within firms variance in Tobin's Q, there is an increase from 4.26% to 4.93% after controlling for asset tangibility and age of the firms. This means that the market value of the firms is more likely to increase when age and asset tangibility are controlled for. Thus it can be deduced that there are firms that have extremely low market value but share the same financial leverage with firms' whole market value is high emanating from the age and asset tangibility factors. There could thus be the limiting case of assets and age of the firm to their acquisition of financial leverage.

A precise comparison between the two measures was also made before concluding on the overall effect of financial leverage on firm performance. First, it emerged that financial leverage accounted for a bigger variance in firm's return on asset after controlling for age and asset tangibility of the firms as compared to Tobin's Q. the margin difference is extremely large even though there were no clear outline or measure of the significance. Both outcomes (return on asset and Tobin's Q) were significant, implying that financial leverage has a positive effect on firms' performance. Even though both measures of the outcome indicate consistent results in terms of significance, they are slightly different in the context of measurement. Firms' return on asset is accounting measure while Tobin's Q is market based measure.

The results therefore, indicate that financial leverage is a significant positive predictor of performance (ROE), $\beta = 0.1418$ ($P = 0.0430$) and Tobin's Q, $\beta = 0.0220$ ($P = 0.0071$). 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 an increase in return on equity and Tobin's Q of firms listed at the Nairobi Securities Exchange of 0.1418 and 0.0220, respectively. The analysis was to test the null hypothesis (H_O) financial leverage has no effect on financial performance of non-financial firms listed in the NSE. The study rejects the null hypothesis and accept the alternative hypothesis (H_A) financial leverage has effect on financial performance of non-financial firms listed in the NSE. Thus it can be concluded that financial leverage has a positive and significant effect on both the market value of the firm and return on equity, with the predictive ability to increase both values when its units are increased.

These findings agree with those of a Canadian service industry by Gill and Mathur (2011), and those of Abor (2005), but contradict with Majumdar and Chhibber (1999) who found a negative non-significant correlation between financial leverage and profitability in the manufacturing sector. Berger and Bonaccorsi (2006), in the United States also found that higher leverage is associated with better firm financial performance, implying that financial leverage positively influenced financial performance in the studied firms. Rehman (2013) also found a positive relationship between the financial leverage and the financial performance of the companies. Other studies such as Majumdar and Chhibber (1999) and Ojo (2012)), found a negative relationship between financial leverage and the financial performance. Akbarian (2013) also found a negative relationship between firm performance and capital structure. Majority of the findings on the direct relationship between financial leverage and firm performance supports a positive significant relationship, especially using at least more than one measure of firm performance. However regardless of the rare use of Tobin's Q, the findings of the present study can be well concluded both based on the two measures of financial performance. Therefore the study concluded that financial leverage has a positive significant influence on financial performance of non-financial firms listed in NSE.

SUMMARY OF RESEARCH FINDING

The study sought to establish the effect of financial leverage on financial performance of non-financial firms listed in NSE. Using the fixed effects model, the percentage variance in the financial performance explained by financial leverage was higher for ROE as compared to Tobin's Q. In all the cases, financial leverage had a positive significant effect on financial performance of non-financial firms listed in NSE.

CONCLUSIONS AND RECOMMENDATIONS

Based on the summary of finding the study concluded that financial leverage has a positive and significant effect on financial performance, which slightly reduces when the confounding factors, such as the age of the firm and asset tangibility are controlled for. It can thus be concluded that financial leverage has a positive and significant effect on firm performance. Therefore the study recommends that, an appropriate debt- equity mix should be adopted by non-financial firms if they must improve their financial performance, survive and remain competitive.

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