



FINANCIAL LEVERAGE AND FINANCIAL PERFORMANCE OF NON-FINANCIAL FIRMS IN NAIROBI SECURITIES EXCHANGE, KENYA

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Abstract: Globally non-financial firms listed at New York Stock Exchange (NYSE) and Philippines securities exchange contributed more than 50% to the national gross domestic product (GDP) to the respective economies according to global competitiveness report of 2010-2015 however, non-financial firms listed in Nairobi Securities Exchange (NSE) contributed 31.4% of GDP for the same period. These firms have faced numerous challenges ranging from declining after tax profits, increasing debt levels which has oscillated from 20.84% in 2002 to 77.04% in 2016 indicating that financial leverage also remains a major challenge. Moreover, some of them have suffered suspension and delisting according to statistics from NSE. Further statistics from NSE also indicate that, while market capitalization of non-financial firms at NSE increased from KES 989.69 billion in December 2010 to KES 2778.6 billion in December 2016, 39% of these firms reported corresponding falling after-tax profits. Listed financial firms on the other hand have delivered an average operating profit margin of 42% more than double the average 19% from non-financial firms between 2010 and 2016. On the contrary, non-financial firms listed at NYSE have recorded increased after tax profits of 67% with market capitalization of more than KES.1600 trillion for the same period. An analysis of financial leverage and financial performance of non-financial firms in (NSE) using Business Performance Composite Index proxy of performance and panel methodology was sought. The study therefore sought to establish the effect of financial leverage on financial performance of non-financial firms. The study was anchored on Economic, trade-off and Signaling theories. Population consisted of all the forty non-financial firms listed at NSE where purposive sampling was used. The study was based on correlational research design. Secondary data from 2010 - 2016 was obtained from financial reports using data collection sheet. The data was subjected to unit root test to check on stationarity. The data was analyzed using panel correlation and fixed effects multiple regression analysis by pooling the data of 28 firms over 7 years period to get 196 data points. The findings reveals that financial leverage has a positive significant effect (Coef= .0461153, $p < 0.05$) on firms' performance and accounts for 3.42% variance. Findings form this study may be helpful to shareholders in making prudent investment decisions; Management in formulation of policies; and academia as a basis of further research in finance and capital structure decisions.

Keywords: *Financial Leverage; Firm Performance; Business Performance Composite Index*

INTRODUCTION

Firm financial performance is reflected by firm profitability that is affected by leverage and higher profitability usually provides more internal financing and hence a lower level of debt by the firm (Abor, 2005). 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.

Statistics from NSE indicate that, financial firms have delivered an average operating profit margins of 42% more than double the average 19% from non-financial firms between 2010 and 2016. Financial firms have also dominated on net profit margins at 30% on average against 13% for non-financial firms during the same period. Total debt has also increased at a faster rate, from KES 36bn to KES 278bn in the same period. Consequently, net debt position has increased to KES 85bn in 2016 from KES 42bn in 2010 NSE (2017). Generally, financial leverage and firm size have been recognized in the literature as fundamental variables in explaining organizational performance. In the year 2016, listed firms contributed about 31.4% of the GDP. Despite their immense contribution to the economy, non-financial firms listed at the NSE continue to face numerous challenges ranging from declining profits, increasing debt levels, suspension and delisting. Statistics indicate that while market capitalization at NSE increased from KES 989.69 billion in December 2010 to KES 2778.6 billion in December 2016, 39 per cent have recorded falling after-tax profits for the same period (NSE, 2017). On the contrary, non-financial firms listed at New York Stock Exchange have recorded increased after tax profits of 67% with market capitalization of more than KES.1600 trillion for the last seven years (NYSE, 2017).

Reviewed literature also indicates that financial leverage still remains a major challenge in the management of most non-financial firms listed at NSE (Kenya Economic Survey, 2016). Records at the NSE reveal that in the period 2002 - 2016, financial leverage has oscillated from 20.84% to 77.04% (NSE Handbook, 2017). Financial leverage is a measure of how much firms use equity and debt to finance their assets (Pandey, 2010). 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. Therefore, 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 (Pandey, 2010). The primary motive of a company in using financial leverage is to magnify the shareholders' return under favorable economic conditions. Therefore, the role of financial leverage in magnifying the return of the shareholders' is based on the assumption that the fixed- charges funds can be obtained at a cost lower than the firm's rate of return on net assets. Damouri, *et al.*, (2013) states that leverage ratios contribute in measuring the risk of using equity costs. Therefore, Shareholders and lenders want management to choose the mix of securities that maximizes firm value having invested heavily in the listed firms financially. Besides that, these stakeholders expect such companies to perform to the expected standards.

Annualized turnover of stocks traded on the NYSE is now estimated to be over 100%, which means that on average an NYSE-listed non-financial company experiences trading volume each year exceeding the total number of its issued and outstanding shares with more than 50% contribution to the national GDP. Philippines on the other hand non-financial firms especially manufacturing sector grew by 8% percent on average for the last seven years (Second, after China in the region). Philippines was also the fastest growing economy in the world in 2010 with a GDP growth of 7.3% driven by the growing business process outsourcing and overseas remittances.

Research Objective

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

Research Hypothesis

H₀: Financial leverage has no effect on financial performance of non-financial firms listed in the NSE

RESEARCH METHODOLOGY

A correlational research design was proposed for this study. Nairobi Securities Exchange (NSE) which is located in Nairobi, where sixty five (65) firms are listed happens to be the single major open capital market in the country. Nairobi Securities Exchange (NSE) is a market that deals in exchange of securities by the publicly quoted firms. The securities market has developed over the years with 65 firms being listed by the close of 2016 (NSE, 2016). It has also automated its trading system to improve its efficiency. The study was restricted to non-financial firms which are listed at the NSE. All information required for this study was therefore easily available hence the preferred area of study.

The population of the study comprised all firms listed at NSE Kenya from 2010 to 2016. The financial firms were excluded from the study because they are highly regulated by Central Bank of Kenya and other regulatory bodies. Therefore, their leverages are highly regulated. As at June 2016, there were forty (40) non-financial firms quoted at NSE (NSE Handbook, 2017). The time frame considered for this study envisages to capture period after the 2007/2008 financial crisis originating in the developed world. Besides that, it also captured the period within which the revision of corporate governance rules with guidelines issued in 2002 by Capital Markets Authority (CMA) were revised (in 2010) and enforced after the financial crisis.

The study sample was all non-financial firms listed at the NSE. Given the small number of firms in the study frame, census approach was used. Non-financial firms listed at NSE were targeted because of the availability of financial and non-financial information published annually as required by the companies Act and Capital Markets Authority. In this study therefore, the researcher used purposive sampling technique where 28 firms were studied. The data was collected for the seven year period from 2010 to 2016 from the 28 firms which would result in a sample of 196 firm year observations. This is consistent with Lai (2010) who asserted that at least 20 firms in any sector in a year are adequate to provide sufficient observations for estimation purposes.

The study used secondary data since the nature of the data is quantitative. Secondary data was extracted from published and audited annual reports deposited with the CMA as required by law and NSE publications on financial reports of different non-financial firms. Data on the relationship between financial leverage and performance of listed non-financial firms was extracted from financial reports of listed companies and summaries provided by the NSE. Use of secondary data extracted from published and audited annual reports deposited with the CMA as required by law and NSE publications on financial reports of different non-financial firms is considered to be reliable since such accounts are prepared based on International Accounting Standards (IAS) and International Financial Reporting Standards (IFRS) adopted globally.

Before empirical estimations were conducted, linearity, normality of residuals, stationarity and homoscedasticity tests were checked. The data series was also subjected to unit root tests using the Levin, Lin, Chu (LLU) and Im, Pesaran, Shin (IPS) methodologies to establish their stationarity conditions. Non-Stationary will affect the behavior of a series and hence resulting to spurious regression. Skewness and Kurtosis was performed to test normality of residuals where both values were expected to lie between ± 1.96 .

Validity refers to the extent to which a construct or a set of measures correctly represents the concept of the study, and the degree to which it is free from systematic or non-random error. (Nunally, 1978). For the current

study, expert’s opinion was sought from experts in the School of Business and Economics, Accounting and Finance department of Maseno University. This helped in checking face, construct and content validity.

To measure a firm's performance, many management researchers prefer accounting- based variables namely ROE, ROA and ROS. The idea behind these measures is perhaps to evaluate managerial performance - how well is a firm's management using the assets to generate accounting returns of investment, assets or sales. However, since these measures are used for investigating a firm's performance in terms of profitability; however, this study applied these measures as one proxy variable so-called business performance composite index (BPCI), which is the mean value of ROE, ROA and ROS: $(ROE+ROA+ROS)/3$. Hence performance in this study was analyzed using Business Performance Composite Index (BPCI).

Return on assets (ROA) is a ratio which seeks to measure the amount of profit generated from the entire assets of the firm. It is expressed as:

$$\frac{\text{Profit Before Tax}}{\text{Total Assets}} \dots\dots\dots \text{Eq. 3.1}$$

Return on Sales (ROS) is a financial ratio that calculates how efficiently a company is at generating profits from its revenue or is a ratio which seeks to measure the amount of profit generated from the entire sales of the firm. It is expressed as:

$$\frac{\text{Operating Profit Before Tax}}{\text{Net Sales}} \dots\dots\dots \text{Eq. 3.2}$$

The equation does not take into account non-operating activities like taxes and financing structure. For example, income tax expense and interest expense were included in the equation because they are not considered operating expenses.

Return on equity (ROE) is the amount of net income returned as a percentage of shareholders equity. Return on equity measures a corporation's profitability by revealing how much profit a company generates with the money shareholders have invested. ROE is expressed as a percentage and calculated as:

$$\frac{\text{Net Income}}{\text{Shareholders' Equity}} \dots\dots\dots \text{Eq. 3.3}$$

Leverage is defined as a ratio of interest bearing debt to total assets; it shows the extent to which the firm depends on debt financing. Financial economic theories predict positive relationship between leverage and performance. For example MM II predicts positive relationship in the presence of tax shield.

The data was analyzed by use of quantitative approaches such as descriptive statistics, panel multiple regression analysis by pooling the data of 28 firms over 7 years period to get 196 observation points. The purpose of descriptive statistics is to enable the researcher to meaningfully describe a distribution of scores or measurements using a few indices or statistics (Mugenda & Mugenda, 2005). In this study, mean, median and standard deviation were used in analyzing the descriptive statistics. Pearson's analysis was used to determine the direction and strength of the bi-variate relationships between financial leverage and financial performance.

Model Specification

A panel regression model was used in this study by pooling the data of 28 firms over 7 year period to get 196 observations of each variable. Its equation is differentiated from simple cross sectional or time series equation

by adding the subscripts (i,t) with each variable. The panel regression model of this study or the Econometric model of the research is expressed as follows:

Firm performance = f (Leverage)

Model 1 is developed to study the relationship between financial leverage and performance.

$$TOBIN'S Q_{it} = \alpha + \beta_1(DER)_{it} + \beta_2(TANG)_{it} + \beta_3(FAGE)_{it} + \varepsilon_{it} \dots\dots\dots (3.2)$$

Firm performance = f (Leverage)

The model is a panel regression of the dependent variable and independent variable. It measures whether financial leverage determine financial performance.

BPCI_{it} = (Business Performance Composite Index) is the measure of Performance of firm *i* during time *t*;

DER_{it} = leverage which is the independent variable which was measured using total debt of firm *i* during time *t*;

β₁, β₂, β₃, β₄, β₅, β₆ = the intercept/regression coefficients for model 1, 2 and 3

FS_{it} = firm size which is a moderator variable. This variable was measured by ratio of sales to total assets of firm *i* during time *t*;

α = the slope of the regression; it measures the unit change in *y* associated with a unit change in *x*

TANG_{it} = Asset Tangibility of Firm *i* during time *t*.

FAGE_{it} = Firm Age of Firm *i* during time *t*.

ε_{it} = the error term within a confidence interval of 5% at time *t*

FINDINGS AND DISCUSSIONS

The main objective of the study was to establish the effect of financial leverage on financial performance of non-financial firms listed in the NSE. There were a total of 28 firms studied over a 7 year period between 2010 and 2016. The findings on the effect of financial leverage on performance are presented as shown in Table 1.

Table 1: Effect of Financial leverage on Firm Performance

	Using BPCI; no of Grps=28, ave=7		
	FE	RE	OLS
R-sq: within	0.0871	0.0871	
Between	0.0046	0.0046	
R ² overall	0.0342	0.0342	0.0342
corr(u _i , Xb)	-0.2153		
corr(u _i , X)		0 (assumed)	
Wald χ ² (1)		13.98	
Prob > χ ²		0.0002	
FL coef	.0461153	.0390652	.0257989
Cons	.1447194	.1529562	.1684555

FL: Std. err.	.0164937		.0098389	
Cons; Std. err.		.024639	.0165269	
FL: t/z	8.77	3.74	2.62	
Cons: t/z		6.21	10.19	
Df;	F(1,167)= 15.92		F(1, 194) = 6.88	
Prob > F	0.0001			
P> t /P> z	0.000	0.000	0.009	
Con;P> t /P> z			0.000	
F: [95% Conf. Interval]	.0233003	.0185893	.0063939	.045204
	.0689304	.0595411		
Cons: [95% Conf. Interval]	.1121565	.1046646	.1358601	
	.1772824	.2012478	.2010509	
F test that all u _i =0	F(27, 167) = 5.10			
	Prob > F = 0.0000		Prob > F = 0.0094	

Using pooled OLS regression model, the findings revealed an R square value of 0.0342, which is 3.42%, which was significant. The findings also indicates that the coefficients of the financial leverage was 0.0242031 which was positive and significant, except that the later was higher and more significant. This confirms that financial leverage has a positive effect on financial performance of the firms.

Further findings on the effect of financial leverage using fixed effects model which entails the least square dummy variable model and the within regression model were carried out. First, the fixed effect (least square dummy variable) model was considered. This is because we cannot assume a constant intercept α for all the companies and years; rather we have to consider the one way or two way error components models; if errors are assumed to be fixed, we have fixed effects model.

Therefore the fixed effects was considered under heterogeneous intercepts and homogeneous slopes, as well as heterogeneous intercepts and slopes. In the initial case, the study assumed that cross section and time heterogeneity applied only to intercepts, and not slopes. That means that we have separate intercepts for each company and each year but the same slope for all the companies and years. Therefore in fixed effects panel regression models considered were: constant slope coefficient with varying intercepts for companies, constant slope coefficient with varying intercept over time, varying coefficients for both intercept and slope over time as well as companies, and finally, all coefficients for slopes and intercepts vary over companies and time. The last case is the random coefficient model, which is a panel data in which group specific heterogeneity is introduced by assuming that each group has its own parameter vector, which is drawn from a population common to all panels.

As the findings indicate, there were a total of 28 firms over a period of 7 years. In total, financial leverage accounted for 8.71% variance of BPCI within group. This implies that the variation within each of the company accounted for by financial leverage was 8.71%, (R squared =0.0871), which was significant at 0.05, as indicated by the F value, Prob > F = 0.0001, and the findings were not by chance, F(1,167) =15.92. However, the between group variance accounted for by financial leverage was very small, 0.46%, as indicated by an R squared value of 0.0046 whereas the overall variance was 0.342 as indicated by an R squared value of 0.0342, which is 3.42% variance. The F value findings also reflect the poolability test that there is no zero company heterogeneity. It can also be noted from the findings that the correlation between the error component and the

explanatory variable (financial leverage) is not equal to zero as indicated by a 0.2153 value. Further findings on the model coefficients were presented. The findings indicates that financial leverage model coefficient is significant ($P > |t| = 0.000$) and positive ($\beta = .0461153$). This implies that financial leverage has a positive effect on financial performance such that as the firm's financial leverage increases, performance also increases.

The findings on the random effects model revealed that financial leverage also accounts for 8.71% within group variance in financial performance ($R^2 = 0.0871$), and 0.46% between group variance in performance ($R^2 = 0.0046$). Therefore the between group variance accounted for by financial leverage as well as the within group and the overall variance were the same as those of the fixed effect. An examination of the Wald test, $Wald \chi^2(1) = 13.98$, with the $Prob > \chi^2 = 0.0002$, indicates that the overall model is significant. The random model coefficient results indicates a positive coefficient ($\beta = .0390652$), which is also significant $p = 0.000$ implying that a positive change in financial leverage leads to a positive change or growth in financial performance of the companies.

These findings agree with the findings from the 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 as well as Akbarian (2013) who 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. Negative relationship is encountered where mostly ROA and ROE are used independently, implying that a combination of the three measures of financial performance approximately forms a better function of financial leverage. Therefore the study concluded that financial leverage has a positive significant influence on financial performance of non-financial firms in Nairobi, listed in NSE.

CONCLUSIONS

Financial leverage has a positive and significant effect on financial performance of firms. The company coefficient variations in the effects also contribute to a significant variance in financial performance contrary to the insignificant time variation effects. Firms whose leverage is high tend to perform better within since they have a lot of cash to promote their business. There is also difference across the companies' performance which however does not vary across the years.

RECOMMENDATION

Firms need to acquire favorable financial leverages in order to improve their performance. High financial leverage impacts on the performance of the firms and therefore they need to increase their financial leverage as well.

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