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Abstract

Decisions on financing of working capital requirement are very important because of their impact on profitability and liquidity of a firm. The firm therefore has to maintain an optimal strategy for financing working capital requirement that will enable it to maximize its value. The optimal strategy varies across firms and it depends on firm characteristics. The main aim of this study was to investigate the relationship between firm characteristics and financing of working capital requirement of non-financial firms listed at the Nairobi Securities Exchange. The specific objectives were to establish the effect of firm size, profitability, current assets and sales growth on financing of working capital requirement of non-financial firms listed at the Nairobi Securities Exchange. The study adopted a panel research design. The target population was 38 Nairobi Securities Exchange listed non-financial firms as at 31st December 2016 and 27 of these firms formed the accessible population for this study. The sample consisted of all the members of the accessible population and the sample period was from 2010-2016. Secondary data extracted from the published annual financial statements were used to compute the relevant measures of the variables and the data was analyzed using Eviews software. Panel diagnostics tests were done on the data to test for normality, stationarity, multicollinearity and to determine whether to adopt a fixed effects or a random effects panel regression model. Based on the results of the diagnostic tests, a fixed effects panel regression model was used to estimate the effect of explanatory variables on the dependent variable at 5% significance level. From the results of the estimation model, firm size was found to have a positive and significant effect on the financing of working capital

requirement of non-financial firms listed at the Nairobi Securities Exchange while profitability and current assets had a significant and a negative effect. The results also established that the relationship between sales growth and financing of working capital requirement of Nairobi Securities Exchange listed non-financial firms was positive and insignificant. From the findings, it was concluded that firm size, profitability and current assets have a significant impact on financing of working capital requirement of non-financial firms listed at the Nairobi Securities Exchange. The study therefore recommends that as Nairobi Securities Exchange listed non-financial firms increase in size, they should use more short-term debt to finance their working capital requirement. It is also recommended that highly profitable firms and those with huge amounts of current assets in their asset structure should use less short-term debt to finance their working capital requirement. Finally, Nairobi Securities Exchange listed non-financial firms do not need to consider sales growth as an important factor when making decisions on financing of working capital requirement. The results of this study will assist firms in making decisions on the optimal working capital requirement financing strategy that maximizes the value of the firm.

Keywords: *Firm Size, Profitability, Current Assets, Sales Growth, Financing Of WCR, Non-Financial Firms, NSE*

1.0 Introduction

1.1 Background of the Study

The objective of financial management is to ensure firms maximize profits at the lowest possible risk (Watson & Head, 2016). Finance managers will therefore, be concerned by issues that affect the profitability and risk of a company. Since working capital management was highlighted by Smith (1980) as having significant impact on profitability and risk, it has been considered as one of the important areas of financial management that is responsible for the success or failure of a company (Al Dalayeen, 2017). Working capital management consists of two main components. The first component involves determining working capital requirement (WCR), where, WCR is defined as the difference between current assets and accounts payable (Dincergok, 2018; Panda & Nanda, 2018; Banos-Caballero, Garcia-Teruel & Martinez-Solano, 2016). The second component relates to financing of WCR, which involves determining optimal proportions of short-term debt and long-term financing (long-term debt and equity) required to finance WCR (Oseifuah, 2016). This study focused on financing of WCR.

Decisions on financing of WCR generally involve determining the proportion of WCR that will be financed by short-term debt (Panda & Nanda, 2018). A firm is said to be adopting an aggressive strategy for financing WCR if a high proportion of its WCR is financed by short-term debt while a firm that finances a small proportion of its WCR with short-term debt is said to be adopting a conservative strategy for financing WCR. An aggressive strategy for financing WCR leads to lower financing costs but at the expense of a higher liquidity risk. On other the hand, a conservative strategy for financing WCR attracts a higher financing cost but benefits from a lower liquidity risk. It is therefore important for firms to determine an optimal strategy for financing WCR that balances profitability and risk in a manner that maximizes the value of the firm.

Developments at the global, regional and local level highlight the importance of having an optimal strategy for financing WCR. In the United States of America (USA), Moody's report on the retail sector (Moody's, 2017a) show that 13% of firms in the retail sector are financially distressed and may not be able to generate enough cash flows from their operations to settle their short-term debts.

In addition, due to rising interest rates and tighter credit markets they face the risk of not being able to refinance the maturing short-term debt and this can lead to bankruptcy. A similar situation is also manifested in the United Kingdom (UK) where a report by Begbies(2018)², a leading insolvency firm, reveal that about 500,000 firms were in a state of financial distress as at end of 2017 due to unsustainable levels of short-term debt in relation to their operating cash flows, and this has exposed them to high default risk (Begbies, 2018). Firms can solve these problems by maintaining an optimal strategy for financing WCR that takes into account the uncertainty of cash flows arising from working capital items.

In Africa, the creditworthiness of a number of countries like Nigeria, South Africa, Gabon, Mozambique and Zambia faced an overall negative outlook in 2017 and this trend was expected to continue until mid-2019 (Moody's, 2017b). This is due to slow economic growth and high political risk. The implication of this is that countries will struggle to borrow cheaply from developed markets and may be forced to borrow more from the local market. This will lead to a lack of liquidity in the market thus making it difficult for firms to get loans to finance their operations. Firms in these countries will therefore need to design an optimal strategy for financing WCR that minimizes the need to frequently seek financing from financial institutions. In addition, PWC working capital survey show that African firms are increasing their use of short-term financing despite a deterioration in the time it takes to convert inventories and accounts receivable into cash (PWC, 2017). They argue that firms need to find an optimal balance between their WCR and short-term debt before the borrowing reaches unsustainable levels.

In Kenya, a number of companies have been faced with huge losses and serious liquidity problems largely caused by poor strategies for financing WCR. Kenya Airways recorded the worst ever loss of Kenya Shillings (Ksh) 26 billion in 2015 and had to seek a bail out from Government to fund their operations (The Senate, 2015). According to the Senate report (The Senate, 2015), other than corporate governance issues, the leading cause of their problems was the accumulation of too much short-term debt than their operating revenues could sustain. They have since taken measures to reduce their short-term debt exposure to optimal levels by converting 72% of their United States Dollar (USD) 484 million debt to equity (Aglionby, 2017).

Other examples of Kenyan firms faced with serious liquidity problems are Uchumi and Nakumatt who are among the leading retailers in Kenya. Nakumatt went into administration in January 2018 due to its inability to meet short-term obligations to bankers, suppliers and landlords (Fayo, 2018). According to a report by Cytonn investments (Cytonn, 2018), their main problem was the unsustainable use of short-term debt to finance their operations. As at December 2017, they owed creditors Ksh. 19 billion yet their total assets was only Ksh. 5 billion. Uchumi Supermarket was ranked as the third worst performing firm at the Nairobi Securities Exchange (NSE) in 2017 (Otieno, 2017). They also had to seek a Ksh. 1.8 billion bailout from government so as to enable them pay suppliers, staff salaries and other short-term debts (Njanja, 2018). Similar to Nakumatt, their liquidity problems have been largely caused by too much use of short-term financing to fund their operations (State Department of Trade, 2017).

The introduction of the law on interest rate capping in Kenya is also expected to influence the optimal strategy for financing WCR. According to a report by Central Bank of Kenya (CBK), the introduction of this law has led to a number of borrowers especially the small and less established firms to be ignored by the banks (Central Bank of Kenya, 2018). Such firms will be forced to use more equity to finance their WCR. Most empirical studies on financing of WCR assume that firms are homogeneous such that there is one optimal strategy that is suitable for all of them. There are

studies which consider aggressive strategy for financing WCR to be the optimal strategy that all firms should adopt (Adam, Quansah & Kawor, 2017; Kaur & Singh, 2014; Mwangi, Muathe & Kosimbei, 2014). Others are of the view that a conservative strategy for financing WCR is the ideal strategy for all firms (Thakur and Muktadir-Al-Mukit, 2017; Charitou, Lois & Christoforou, 2016; Kioko, 2015; & Toby, 2014). The main limitation with these studies is the assumption of homogeneity among firms. In reality, firms are generally heterogeneous and are not expected to have one optimal strategy for financing WCR. This heterogeneity suggests the need to consider individual firm characteristics in determining the optimal strategy for financing WCR.

NSE was founded in 1954 and is the largest securities exchange in East and Central Africa with a market capitalization of USD 20 billion (Nairobi Securities Exchange, 2017). The NSE currently has 65 listed firms spread across 13 sectors. These sectors are; Agricultural, Automobiles and Accessories, Banking, Commercial and Services, Construction and Allied, Energy and Petroleum, Insurance, Investment, Investment services, Manufacturing and Allied, Telecommunication and Technology, Real Estate Investment Trust and Exchange Traded Funds (Nairobi Securities Exchange, 2018a). The NSE firms therefore provide a good representation of the Kenyan economy and this enhances the generalizability of studies conducted on NSE listed firms.

NSE plays a vital role in the growth of the Kenyan economy by encouraging savings and investments by the public and also enabling companies to access cost-effective capital to fund their activities (Nairobi Securities Exchange, 2018b). NSE provides opportunities for large and small investors to save and invest in the listed firms in exchange for a return in the form of capital gains and dividends. It also provides an avenue where firms can easily access large amounts of long-term funds to finance big projects that are key to economic growth.

For the NSE to be able to achieve its mandate, the listed firms must be able to generate sufficient value for its investors, that is, they must focus on profitability and risk. This will encourage more investors to participate in the securities market and in turn attract more firms seeking to raise capital from the NSE. The consequence of this will be increased economic growth. Having an optimal strategy for financing WCR is therefore important to listed firms because of its contribution to profitability and risk which in turn affects the value of the firm.

1.2 Problem Statement

Decisions relating to financing of WCR are very important because of their impact on profitability and risk (Panda & Nanda, 2018). In the recent past, a number of NSE listed non-financial firms such as Kenya Airways and Uchumi have been faced with serious liquidity problems arising from poor strategies for financing WCR, and this has led to poor performances and a high risk of bankruptcy. These problems highlight the need for firms to maintain an optimal strategy for financing WCR. The question then arises, "What is the optimal strategy for financing WCR?" Several studies assume that firms are homogeneous such that one optimal strategy for financing WCR can apply to all of them. However, in reality firms are generally heterogeneous and it is expected that firm characteristics will influence the financing of WCR.

Most studies relating firm characteristics to financing of WCR have looked at the firm level factors influencing short-term debt. However, in these studies the dependent variable used is the ratio of short-term debt to total assets. This is not a reflection of WCR financing which is measured by proportion of WCR financed by short-term debt. The measure also leads to an inclusion of firms with negative WCR that do not need to finance their working capital. In addition, the results have

been ambiguous and conflicting which leads to inconclusive results on the relationship between firm characteristics and financing of WCR. To address these limitations, recent studies have focused on the relationship between firm characteristics and financing of WCR (Dincergok, 2018, Panda & Nanda, 2018, Banos-Caballero *et al.*, 2016). However, such studies are limited and have focused on only two aspects of firm characteristics, that is, financial flexibility and price-cost margin. This creates a need for additional studies that focus on other aspects of firm characteristics so as to provide more insights on this relationship. This study attempted to address this knowledge gap by studying the relationship between firm characteristics and financing of WCR of non-financial firms listed at the NSE.

1.3 Objectives of the Study

- i. To establish the effect of firm size on financing of WCR of non-financial firms listed at the NSE.
- ii. To establish the effect of profitability on financing of WCR of non-financial firms listed at the NSE.
- iii. To establish the effect of current assets on financing of WCR of non-financial firms listed at the NSE.
- iv. To establish the effect of sales growth on financing of WCR of non-financial firms listed at the NSE.

1.4 Hypotheses of the Study

H₀₁: Firm size has no statistically significant effect on financing of WCR of non-financial firms listed at the NSE.

H₀₂: Profitability has no statistically significant effect on financing of WCR of non-financial firms listed at the NSE.

H₀₃: Current Assets have no statistically significant effect on financing of WCR of non-financial firms listed at the NSE.

H₀₄: Sales growth has no statistically significant effect on financing of WCR of non-financial firms listed at the NSE.

2.0 Literature Review

2.1 Theoretical Framework

2.1.1 Matching Theory

According to this theory a firm's financing decision is determined by the life of the asset (Stohs & Mauer, 1996), that is, the maturity of the financing source should be matched with the life of the asset. The justification for this approach is that since financing is sourced to fund assets, it makes sense to align its maturity with the life of the asset.

This theory implies that short-term assets should be funded by short-term financing while long-term assets should be funded by long-term financing. If the firm uses short-term financing to fund long-term assets, it will be exposed to a high refinancing and interest rate risk which can lead to

bankruptcy. On the other hand, the use of long-term financing to fund short-term assets leads to higher interest rates and less flexibility which in turn contributes to a higher financing cost (Stohs & Mauer, 1996).

Short-term assets within the context of working capital management refers to temporary WCR while short-term financing is the short-term debt. Long-term assets consists of permanent WCR while long-term financing is made up of long-term debt and equity (Watson & Head, 2016). Permanent WCR is considered long-term in nature because it is the minimum amount that must be continuously invested in operations. Temporary WCR will therefore be funded by short-term debt while permanent WCR will be funded by long-term financing.

This theory explains the impact of current assets on financing of WCR (Fosberg, 2012). If a firm has small amounts of current assets, it is likely that it will be operating around its minimum capacity. When a firm is at this level it is expected to be operating mostly with permanent WCR which financed by long-term financing. As the current assets increase, the amount of temporary WCR increases and so too is the amount of short-term debt financing WCR. A positive relationship is therefore expected between current assets and financing of WCR.

2.1.2 Trade-off Theory

According to this theory, the amount of short-term debt and long-term financing that will be used to finance WCR is guided by the risk-return trade-off (Pandey, 2015). Firms would generally prefer to use short-term debt since it enjoys a cost advantage over long-term financing but at the same time it has significant risks which can cause high financial distress costs (Jun & Jen, 2003). The firm should therefore balance the risk and rewards of short-term debt by using it up to an optimal point where its benefits are maximized.

This theory can be used to explain the implication of firm size on financing of WCR. According to Castanias (1983), large firms tend to have a lower risk of failure due to the fact that they are highly diversified, therefore, they have low cash flow uncertainty. They also tend to have easier access to the capital markets since lenders tend to have more faith in them. This makes it easier for them to frequently renew their short-term debt. The implication is that large firms will have a low liquidity risk which enables them to use more short-term debt to finance their WCR and take advantage of the lower financing cost.

Another variable explained by this theory is the relationship between profitability and financing of WCR. Profitability is one of the measures used by lenders to measure the financial strength of a company (Pandey, 2015). Highly profitable companies tend to be in a stronger financial position than less profitable companies. This implies that they have a lower risk of defaulting on their obligations. Many lenders will therefore be willing to lend to such firms because of their low liquidity risk (Rajan & Zingales, 1995). A positive relationship is therefore expected between profitability and financing of WCR.

The relationship between current assets and financing of WCR is also explained by this theory. Firms with high levels of assets that can be used as collateral are able to obtain debt cheaply because the collateral provides a guarantee that the debt will be paid, thus lowering their default risk (Titman & Wessels, 1988). According to Achy (2009) fixed assets provide higher quality security than current assets. This implies that firms with high levels of current assets in their asset structure are likely to avoid debt because of its high default risk and use more equity to finance their WCR. The theory therefore expects a negative relationship between current assets and financing of WCR.

2.1.3 Pecking Order Theory

The pecking order theory was initiated by Donaldson (1961) and developed further by Myers and Majluf (1984). According to this theory, firms have a hierarchy when it comes to raising capital. They will prefer internal finance which consists of retained earnings rather than external sources of finance which consists of debt and newly issued equity shares. In the event the internal finance is insufficient the firm will prefer debt capital while newly issued equity capital will be the least preferred source. The theory implies lack of a well-defined optimal capital structure.

This theory mainly explains the impact of profitability on the financing decisions made by managers. According to Myers and Majluf (1984), profitable firms are able to generate more retained earnings which they can use to finance their operations thus reducing their need for debt. The implication is that due to the low levels of debt, a higher proportion of WCR will also be financed by retained earnings which form part of long-term financing. The theory therefore suggests a negative relationship between profitability and financing of WCR.

The influence of sales growth on financing WCR can also be explained by this theory. High growth firms are expected to exhaust their retained earnings and seek additional capital through debt, which is the second best financing option in the pecking order (Cevheroglu-Acar, 2018). The firm can either choose between short-term debt and long-term debt. Short-term debt is considered to have lower information costs due to the fact that its use sends positive signals to the market about a firm's growth prospects (Frank & Goyal, 2003). This situation will lead high growth firms to use more short-term debt to finance their WCR. It is therefore expected that a positive relationship exists between sales growth and financing of WCR.

2.2 Empirical Review

2.2.1 Firm Size and Financing of WCR

Cevheroglu-Acar (2018) examined the implication of firm characteristics offered by financial theories and previous empirical studies on the capital structure of listed non-financial firms in Turkey. The sample consisted of a balanced panel of 111 firms studied over a period of 8 years from 2009-2016. The relationship between the variables were estimated using the panel regression model. Firm size was found to one of the major determinants of debt. A significant positive relationship was observed between firm size and both long-term and short-term debt. In this case, the impact of firm size on financing of WCR is inconclusive because when firm size increases, both short-term and long-term debt are increasing and it is not clear which one will be used more to finance WCR.

Lourenco and Oliveira (2017) studied the determinants of debt for firms in the Santarem district of Portugal. A sample of 6,184 non-financial firms listed in the Iberian balance sheet analysis system (SABI) were investigated for the period 2008 to 2012. The regression model was estimated using generalized least squares method. The results showed that the relationship between firm size and short-term debt depends on the proxy used to measure firm size. Firm size when measured using natural log of assets was significantly and negatively related to both short-term debt and long-term debt. Thus using this measure it is expected that large firms will use more equity to finance their WCR. When natural log of turnover is used as a measure of firm size, the results showed a positive relationship with short-term debt. Hence, this measure predicts that firms with high turnover will use more short-term debt to finance their WCR.

2.2.2 Profitability and Financing of WCR

Kinyua and Muriu (2017) investigated the determinants of capital structure of agricultural firms listed at the NSE. The period of study was from 2010 to 2015. The capital structure determinants were estimated using the panel regression model. The results showed a positive relationship between profitability and short-term debt. This implies that consistent with the trade-off theory, more profitable agricultural firms will use more short-term debt to finance their WCR.

Serrasqueiro, Matias and Salsa (2016) analyzed the determinants of debt for a sample of 2,329 small Portuguese firms. This study covered the period from 2007 to 2011. The relationship between the determinants of debt were estimated using fixed effects panel model. The results revealed a significant negative relationship between profitability and both short-term and long-term debt. This means that as profitability increases, firms tend to use more equity to finance their operations. It is therefore expected that profitability will have a negative relationship with the amount of short-term debt used to finance WCR.

2.2.3 Current Assets and Financing of WCR

Tayem (2018) studied the firm specific factors that influence the debt maturity structure of non-financial firms listed at the Amman Stock Exchange in Jordan. This study covered the period 2005-2013. Using the 2 stage least squares and random effects regression model, the study revealed that asset structure has a significant influence on the amount of short-term debt a firm uses. Firms with a high proportions of fixed assets tend to use less short-term debt while those with high proportions current assets tend to use more short-term debt. This result therefore imply that consistent with the matching theory, a positive relationship is expected between currents assets and financing of WCR.

Bassey, Arene and Okpukpara (2014) analyzed the determinants of capital structure of listed agro firms in Nigeria. The study involved a sample of 28 agro-allied firms listed at the Nigeria Stock Exchange from 2005 to 2010. The firm specific variables affecting short-term debt were estimated using OLS multiple regression model. The results showed a significant positive relationship between fixed asset and both long-term and short-term debt while current assets were expected to have a negative relationship with both types of debt. From this result it was concluded that firms with higher levels of current assets in their asset structure will have less collateral which lenders require for debt issuance. This makes it very expensive to obtain debt compared to equity. It is therefore expected that firms with high levels current assets in their asset structure will use more long-term financing to fund their WCR thus leading to a negative relationship between current assets and financing of WCR.

2.2.4 Sales Growth and Financing of WCR

Ohman and Yazdanfar (2017) investigated the capital structure determinants of SMEs in Sweden. The study analyzed a sample of 15,897 SMEs over a four year period from 2009 to 2012. The estimation methods used were OLS and fixed effects regression model. The results from both the OLS and fixed effects model showed a statistically significant positive relationship between sales growth and both short-term debt and long-term debt. From this result it is not possible to predict

the impact of sales growth on financing of WCR since it is not clear whether an increase in sales growth will lead to use of more short-term debt or long-term debt.

Kuhnhausen and Stieber (2014) evaluated firm, industry and country specific factors determining a firm's capital structure. The analysis covered listed and non-listed non-financial firms in Europe, Japan and USA captured in the ORBIS database. The period of study was from 2003 to 2012. The sample was an unbalanced panel of 1,189,708 firms. The study conducted a series of panel data analysis to determine the most important factors influencing debt ratios. The results showed that sales growth is significantly and positively related to short-term debt. This implies that as per predictions of the pecking order theory firms with high sales growth are expected to finance most of their WCR with short-term debt.

2.3 Research Gap

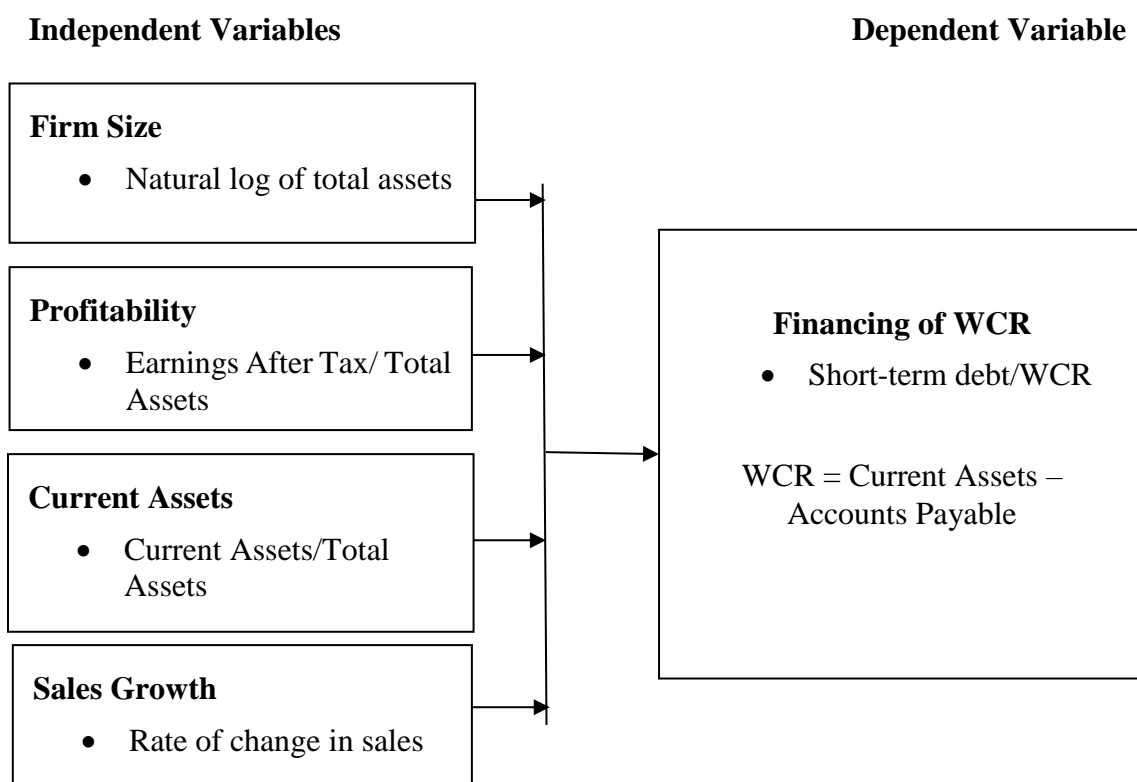
From the results of the empirical review, the studies have focused on the firm specific factors that influence short-term debt and dependent variable used in these studies is the ratio of short-term debt to total assets. This is not considered a measure of WCR financing which is measured by the proportion of WCR financed by short-term debt. The measure of short-term debt to total assets ratio can provide misleading results on the WCR financing strategy a firm is adopting. For example, two companies with the same amount of short-term debt and total assets will be considered to be having the same WCR financing strategy yet if one of them has low portions of current assets in its asset structure then they are not expected to have the same strategy for financing WCR.

Another limitation with previous empirical literature is the assumption that all firms with short-term debt have a WCR that must be financed, therefore, their analysis of WCR financing includes all firms with short-term debt. In reality there are firms with a negative WCR who do not require financing yet they have short-term debt which is used for financing fixed assets. Such firms need to be excluded from the analysis. In addition the results from the various empirical studies provide ambiguous and conflicting results on how firm characteristics of firm size, profitability, current assets and sales growth influence the financing of WCR.

Studies done that specifically focus on firm characteristics and financing of WCR are virtually few and have only focused on financial flexibility and price-cost margin (Dincergok, 2018; Panda & Nanda, 2018; Banos-Caballero, *et al.*, 2016). To provide further insights in this area, there is need for additional studies that focus on other aspects of firm characteristics. This study attempted to contribute to this knowledge gap by studying how the firm characteristics of firm size, profitability, current assets and sales growth influence the financing of WCR of non-financial firms listed at the NSE.

2.4 Conceptual Framework

A conceptual framework is the researcher's synthesis of literature on how a phenomenon is explained. It is a map in written or graphical form that shows the logical relationship of ideas in a research (Creswell, 2014). Figure 1 presents the conceptual framework of the study. As shown in Figure 1, the study had four independent variables and one dependent variable. The independent variables were firm size, profitability, current assets and sales growth. Each independent variable had a relationship with the dependent variable which is Financing of WCR.



Source: Adapted from, Ohman and Yazdanfar (2017); and Kwenda and Holden (2014)

Figure 1: Conceptual Framework

3.0 Research Methodology

This study adopted a panel research design. This is a type of quantitative research that involves studying the same cross-sectional units across a given time period (Kumar, 2014). This study involved a research on the influence of firm characteristics on financing of WCR. According to Flick (2015), for studies on cause and effect relationships such as this, a panel research design provides the best results.

The target population for this study comprised of all non-financial firms listed at the NSE as at 31st December 2016. There were 38 non-financial firms listed at the NSE as at that time. However, consistent with Banos-Caballero, *et al.* (2016), firms with negative WCR were omitted since they do not have a need to finance their working capital. In addition, firms with missing observations were excluded so as to achieve a balanced panel and therefore minimize the inconsistencies and biasness caused by having an unbalanced panel (Laird, 1988). This is consistent with studies done by Kwenda and Holden (2014) and Kuhnhausen & Stieber, 2014. Based on these two criteria, this study arrived at an accessible population of 27 NSE listed non-financial firms. This figure represents 71% of the target population. This is considered a sufficient representative of the target population since according to Gay, Mills and Airasian (2006), for small populations of less than 1000 units, a minimum threshold of 20% of the target population is deemed appropriate. The study focused on a seven year period from 2010 to 2016.

Panel least squares regression model was used to estimate the relationship between the explanatory variables and the dependent variable. This model was considered appropriate because of the panel nature of the data (Abu Mouamer, 2011). The statistical significance of each regression coefficient was tested using the t-test while the joint significance of the coefficients was tested using the F-test. The tests were done at 5% significance level which is considered a rule of thumb by most statisticians (Engel & Schutt, 2014). The strength of the relationship, that is, the proportion of the dependent variable explained by the between the independent variables was also tested using the adjusted coefficient of determination (Adjusted R^2). The diagnostic tests conducted in this study were; Hausman test, Normality test, Stationarity test and Multicollinearity test. The tests for cross-section dependence and autocorrelation were not done since they are considered to be a major problem only when dealing with large macro panels with long time series of over 20 years (Torres-Reyna, 2007).

Consistent with the conceptual framework, the empirical model is formulated as follows;

$$WCF_{it} = \alpha + \beta_1 SIZE_{it} + \beta_2 ROA_{it} + \beta_3 CA_{it} + \beta_4 SG_{it} + \varepsilon_{it}$$

Where;

WCF_{it} = Financing of WCR for firm i at time t

α = Intercept term.

$\beta_1, \beta_2, \beta_3, \beta_4$ = Regression coefficients of the variables

$SIZE_{it}$ = Size of firm i at time t

ROA_{it} = Profitability of firm i at time t

CA_{it} = Current Assets of firm i at time t

SG_{it} = Sales growth of firm i at time t

ε_{it} = Error term

4.0 Results and Discussion

This section deals with analysis and presentation of data on the relationship between firm characteristics and financing of WCR. It starts by covering the descriptive statistics and the panel diagnostic tests. This is followed by specification and estimation of the model, and finally, a discussion and interpretation of the research findings.

4.1 Descriptive Statistics

This section provides a summary of the data obtained for each of the variables in this study. The descriptive statistics employed were; mean, median, maximum and minimum values, standard deviation, skewness, kurtosis, and the results of the Jarque-Bera test for normality as shown in Table 1.

Table 1: Descriptive Statistics

	WCF	SIZE	ROA	CA	SG
Mean	0.366415	6.928840	0.059316	0.452671	0.079702
Median	0.236893	6.928905	0.047188	0.404656	0.053085
Maximum	1.348705	8.576568	0.472758	0.915545	1.186948
Minimum	0.000000	4.700723	-0.503196	0.059677	-0.507985
Std. Dev.	0.386300	0.796009	0.101897	0.215848	0.202566
Skewness	0.574544	-0.354105	-0.510026	0.181704	1.580158
Kurtosis	1.894694	3.485204	9.018617	1.978930	9.749737
Jarque-Bera	20.01908	5.803753	293.4560	9.250359	437.4290
Probability	0.000045	0.054920	0.000000	0.009802	0.000000
Sum	69.25239	1309.551	11.21075	85.55475	15.06360
Sum Sq. Dev.	28.05478	119.1226	1.952018	8.759000	7.714164

Table 1 shows that the minimum and maximum values of the WCF series were 0.0000 and 1.3487 respectively. This implies that there were firms who financed all their WCR with long-term financing while others financed all of their WCR with short-term debt. However a mean and a median of 0.3664 and 0.2369 respectively infer that most of the non-financial firms financed their WCR with large proportions of long-term financing. A standard deviation of 0.3863 show variations in the WCF during the study period. The Jarque-Bera test had a probability value of 0.000045 which imply that at 5% significance level the null hypothesis of normality of the data is rejected and the data is considered to be significantly different from normal. However the data has a degree of skewness of 0.5745 and Kurtosis of 1.8947 which according to Kline (2011) is considered to be approximately normal. Kline (2011) suggests that skewness and kurtosis values that lie within a range of ≤ 3 and ≤ 10 respectively are considered to be approximately normal. This data can therefore be subjected to parametric statistical analysis.

The maximum and minimum values for SIZE series was 8.5766 and 4.7007 respectively while the mean and the median was 6.9288 and 6.9289 respectively. The Jarque-Bera test had a probability of 0.05492 which at 5% significance level imply that the data was not significantly different from normal and can be subjected to parametric tests. This fact is also supported by an almost equal value for the mean and the median. A standard deviation of 0.7960 shows variabilities in firm size during the measurement period.

The maximum and the minimum values of the ROA series were 0.4728 and -0.5032 respectively. This shows a huge range between the most profitable NSE listed non-financial firm and the least profitable ones. In addition some firms reported a negative return on investment for their shareholders. The mean and the median is at 0.05933 and 0.04719 respectively, which suggests that most firms averaged a return on investment of about 5% during the study period. This compared with the maximum value of 0.4728 show that highly profitable non-financial firms are generally outliers and most firms are faced with low profitability, which could be due to low economic growth. The standard deviation of 0.1019 confirm the variation in profitability of the firms during the study period. The Jarque-Bera test for normality showed a probability value of 0.0000 which results into a rejection of the null hypothesis of normality and a conclusion that the data is significantly different from normal at 5% significance level. However, a skewness value of -0.5100 and Kurtosis of 9.01862 falls below the minimum threshold for approximate normality set by Kline (2011) which is ≤ 3 and ≤ 10 for skewness and kurtosis respectively. This implies that ROA data series can be subjected to parametric statistical analysis

The maximum and minimum values for the CA series were 0.9155 and 0.05968 respectively. This shows that there were some firms whose asset structure consisted almost entirely of current assets while others had almost all their assets being fixed. This variation is shown by the standard deviation of 0.2158. Given the mean of 0.4527 and a median of 0.4047 most firms appeared to have almost equal proportion of both current assets and fixed assets with the latter being slightly more. The Jarque-Bera test with a probability of 0.009802 suggested that the data was significantly different from normal but since the Skewness and Kurtosis of 0.1817 and 1.9790 respectively falls within the range of ≤ 3 and ≤ 10 respectively then the data is approximately normal as suggested by Kline (2011) and can be subjected to parametric tests.

Lastly, Table 1 shows that the maximum sales growth was 1.1869 while the minimum was -0.5080. The mean growth rate was 0.07970 with most firms managing a growth rate of 0.05309 for the seven year period as shown by the median. The low sales growth could perhaps explain the low levels of profitability as seen from figure 4.3, where the median ROA is 4.7188%. A standard deviation of 0.2026 is further evidence of variability of sales growth during the study period. The Jarque-Bera test suggests that the data is significantly different from normal but the degree of skewness and kurtosis is within the acceptable normality range of ≤ 3 and ≤ 10 set by Kline (2011) for skewness and kurtosis respectively which allows for parametric tests to be done on this data.

4.2 Panel Diagnostic Tests

Panel diagnostic tests were done to check for any violations of the assumptions underlying the panel regression model and to select the appropriate estimation model based on the results of the diagnostic tests. The main objective of these tests is to avoid spurious regression results.

4.2.1 Hausman Test

This test was done to determine whether a random or fixed effects model is suitable for the data. It tests the null hypothesis of a random effects model against an alternative hypothesis of a fixed effects model.

Table 2: Hausman Test

Correlated Random Effects - Hausman Test

Test cross-section random effects

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	12.461751	4	0.0142

The Hausman test in Table 2 reveals a chi-square value of 12.4618 with a p-value of 0.0142 which is statistically significant at 5% significance level. The researcher therefore, rejected the null hypothesis of a random effects model and adopted a fixed effects model.

4.2.2 Normality Test

This is a test of the normality of the residuals obtained from the fixed effects panel regression model.

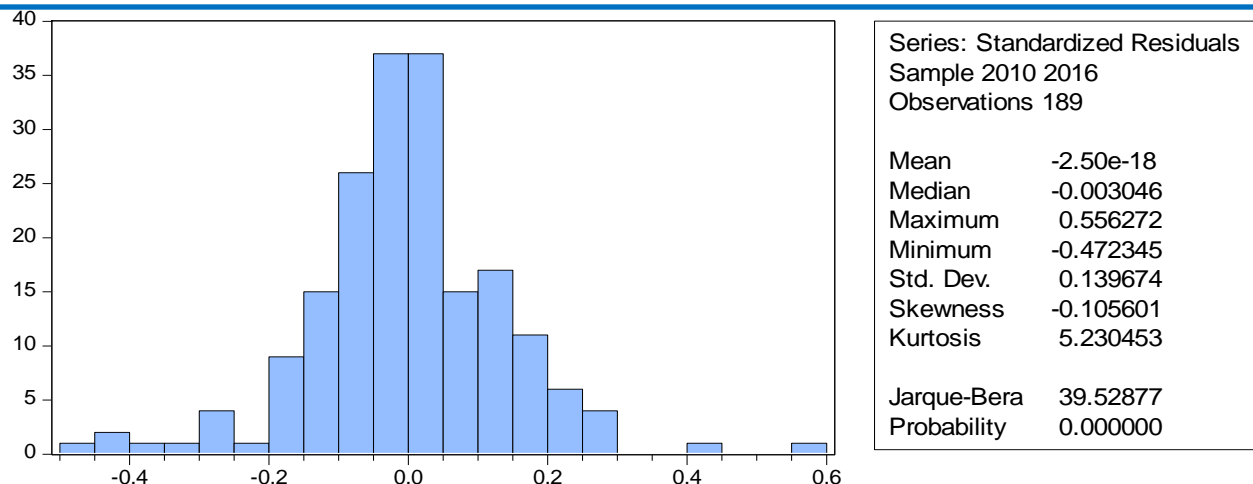


Figure 2: Residuals Normality Test

Figure 2 shows that the Jarque-Bera test for normality had a p-value of 0.0000 which is significant at 5% significance level. In this case the null hypothesis of normality is rejected and the residues are considered to be significantly different from normal. However, according to Kline (2011), if the data has a skewness of ≤ 3 and kurtosis of ≤ 10 then it is considered to be approximately normal. In this case the skewness of -0.1056 and kurtosis of 5.2304 falls within the range of approximate normality, therefore, the data can be considered not to be violating the normality assumption and is appropriate for linear regression.

4.2.3 Stationarity Test

Unit root test was conducted to establish whether the variables were stationary or non-stationary. The purpose of this is to avoid spurious regression results being obtained by using non-stationary series. Results in Table 3 indicated that all variables were stationary (i.e. absence of unit roots) at 5% level of significance.

Table 3: Unit root Results

Variable name	Statistic ADF Value	P-Value	Comment
WCFS	-3.53932	0.0002	Stationary
SIZE	-11.2251	0.0000	Stationary
ROA	-18.1673	0.0000	Stationary
CA	-4.89591	0.0000	Stationary
SG	-15.1234	0.0000	Stationary

4.2.4 Multicollinearity Test

The test for multicollinearity was done to check for the degree of correlation between the independent variables. This assessment was done using the VIF test on Eviews, where, VIF values were generated for each independent variable and compared with the critical VIF value of 10 as

suggested by O'Brien (2007). If the generated VIF value is greater than the critical value of 10, the variable is considered to be suffering from a problem of multicollinearity.

Table 4: Multicollinearity Test

Variance Inflation Factors

Sample: 2010 2016

Included observations: 189

Variable	VIF
SIZE	1.067856
ROA	1.087209
CA	1.108231
SG	1.131551

From Table 4, it can be seen that the VIF values for all the variables was less than 10 thus implying that no variable had a problem of multicollinearity.

4.3 Model Specification and Output

From the panel diagnostic test done, a fixed effects panel regression model was found to be the most suitable estimation model and it is specified as;

$$WCF_{it} = C + \beta_1 SIZE_{it} + \beta_2 ROA_{it} + \beta_3 CA_{it} + \beta_4 SG_{it} + \alpha_i + \mu_{it}$$

Where,

C = Regression intercept

$\beta_1, \beta_2, \beta_3, \beta_4$ = Regression coefficients of the variables

WCF_{it} = Financing of WCR of firm i at time t

$SIZE_{it}$ = Size of firm i at time t

ROA_{it} = Profitability of firm i at time t

CA_{it} = Current Assets of firm i at time t

SG_{it} = Sales growth of firm i at time t

α_i = Unknown intercepts for each of the firms ($i=1$ to 27, number of firms in the sample)

μ_{it} = Error term for firm i at time t

The model was estimated on the Eviews software and the results are shown in Table 5.

Table 5: Panel Least Squares Regression Output

Dependent Variable: WCF

Sample: 2010 2016

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-1.195228	0.824727	-1.449242	0.1493
SIZE	0.281396	0.116800	2.409215	0.0171
ROA	-0.312795	0.155539	-2.011039	0.0460
CA	-0.822691	0.194598	-4.227650	0.0000
SG	0.035854	0.062333	0.575203	0.5660
Effects Specification				
Cross-section fixed (dummy variables)				
R-squared	0.869267	Mean dependent var	0.366415	
Adjusted R-squared	0.844444	S.D. dependent var	0.386300	
S.E. of regression	0.152359	Akaike info criterion	-0.776267	
Sum squared resid	3.667685	Schwarz criterion	-0.244552	
F-statistic	35.01901	Durbin-Watson stat	1.639228	
Prob(F-statistic)	0.000000			

4.4 Research Findings and Discussion

This section discusses the results of the regression output shown in Table 5. It involves explaining the relationship between the variables based on the research findings and also discussing the overall validity of the model.

4.4.1 Firm Size and Financing of WCR

The first objective of this study was to establish the effect of firm size on financing of WCR of non-financial firms listed at the NSE. From the results presented in Table 5 firm size (SIZE) had a positive coefficient of 0.2814 and t-statistic of 2.4092. The calculated p-value of 0.0171 was lower than the critical p-value of 0.05 which imply that at 5% significance level the relationship is statistically significant. It was therefore concluded that firm size has a significant positive effect on the financing of WCR of non-financial firms listed at the NSE. From the results, it is expected that consistent with the trade-off theory, larger NSE listed non-financial firms will use more short-term debt to finance their WCR. This finding is consistent with empirical studies done by Cevheroglu-Acar (2018); Nyang'oro (2016); and Koksai and Orman (2015) who found a positive relationship between firm size and short-term debt and therefore an expectation of a similar relationship with financing of WCR. The result differs from that of Lourenco and Oliveira (2017) who while using log of assets as a measure of firm size, found a negative relationship with short-term debt thus an expectation of a negative relationship between firm size and financing of WCR.

4.4.2 Profitability and Financing of WCR

The second objective of this study was to establish the influence of profitability (ROA) on financing of WCR of non-financial firms listed at the NSE. The results from Table 5 showed that ROA had a negative coefficient of -0.3128 and a t-statistic of -2.0110. The p-value of 0.046 suggests that the relationship is statistically significant at 5% significant level since the value is lower than the critical p-value of 0.05. The study therefore concluded that a significant negative relationship exists between profitability and financing of WCR of non-financial firms listed at the NSE. This relationship follows the pecking-order theory where it is expected that more profitable firms will use less short-term debt to finance their WCR. These findings are consistent with most studies done on the relationship between profitability and short-term debt (Serrasqueiro, *et al.*, 2016; Alipour, *et al.*, 2015; Saarani & Shahadan, 2013; Andani & Al-hassan, 2012). These studies found that more profitable firms tend to use less short-term debt and it is also expected that they will use less short-term debt to finance their WCR. However, this result was contradicted by Kinyua and Muriu (2017) who found a positive relationship between profitability and short-term debt of Agricultural firms listed at the NSE.

4.4.3 Current Assets and Financing of WCR

The relationship between current assets (CA) and financing of WCR was the third objective of this study. Table 5 shows that the variable CA had a coefficient of -0.8227 and a t-statistic of -4.2277. A p-value of 0.0000 was less than the critical p-value of 0.05, which showed that the coefficient was significantly different from zero at 5% significance level. From the results, a significant negative relationship is expected between current assets and financing of WCR of non-financial firms listed at the NSE. These findings are consistent with the expectations of the trade-off theory where an inverse relationship is expected between current assets and financing of WCR. The results were consistent with studies done by Bassey, *et al.* (2014) and Handoo and Sharma (2014) whose findings suggest a negative relationship between current assets and short-term debt thus implying that a negative relationship is also expected with financing of WCR. The findings contradicts studies done by Tayem (2018), Kazmierska-Jozwiak, *et al.* (2017) and Hossain and Hossain (2015) who suggested a positive relationship between current assets and short-term debt, therefore, implying a positive relationship between current assets and financing of WCR.

4.4.4 Sales Growth and Financing of WCR

The fourth objective of this study was to establish the relationship between sales growth (SG) and financing of WCR. From Table 5, sales growth (SG) had a positive coefficient of 0.03585 with a t-statistic of 0.5752. The p-value was 0.5660 which is higher than the critical value of 0.05. This implies that at 5% significance level, the coefficient is not significantly different from zero, therefore, the study did not reject the null hypothesis that sales growth did not have a statistically significant effect on financing of WCR of non-financial firms listed at the NSE. Despite the finding not being significant, the direction of the relationship is consistent with the pecking order theory which suggests a positive relationship between sales growth and financing of WCR. The positive relationship arrived at in this result is consistent with that of majority of the studies that relate sales growth to short-term debt (Ohman & Yazdanfar, 2017; Kuhnhausen & Stieber, 2014; Kwenda & Holden, 2014; Garcia-Teruel & Martinez-Solano, 2007). These studies show that high growth firms tend to use more short-term debt thus implying that most of it will also be used to finance WCR. The point of divergence is that the studies have found a statistically significant relationship.

4.4.5 Overall Validity of the Model

Table 5 shows that the model was a good fit for the data. The adjusted R-squared of 0.8444 shows that 84.44% of the variation in the dependent variable would be explained by changes in the explanatory variables. Thus the model had a high explanatory power. The model had an F-statistic of 35.0190 with a p-value of 0.0000 showing that the model as a whole was significant and that at least one coefficient was different from zero. The Durbin-Watson statistic of 1.6392 was within the acceptable range of 1.5 to 2.5 (Field, 2009) for the absence or near absence of the problem of serial correlation in the data.

5.0 Conclusion

From the findings of the study, firm size, profitability and current assets were found to be important aspects of firm characteristics that influence financing of WCR of non-financial firms listed at the NSE. A significant positive relationship between firm size and financing of WCR imply that in accordance with the trade-off theory large firms face lower risks due to their diversity and low cash flow uncertainties, therefore, they can use more short-term debt to finance their WCR and take advantage of its lower cost.

A significant negative relationship between profitability and financing of WCR shows that in accordance with the pecking order theory NSE listed non-financial firms find retained earnings to be the cheapest financing source and will tend to first utilize it to finance their WCR before seeking other sources of financing. More profitable firms are therefore expected to be more conservative and use less debt to finance their WCR.

Current assets was also considered to be an important variable because of its significant negative effect on financing of WCR of non-financial firms listed at the NSE. This inverse relationship is in line with predictions of the trade-off theory and there could be two possible reasons for this. First, Most firms were facing uncertainties regarding cash flows generated from current assets and to manage this risk, firms with high levels of current assets opted for more long-term financing. Secondly, firms with high levels of current assets do not have enough fixed assets that they can use as collateral for debt and are therefore forced to use more equity (which is a form of long-term financing) to finance their WCR.

The insignificant relationship between sales growth and financing of WCR imply that the NSE listed non-financial firms do not consider it to be an important aspect in making decisions on financing of WCR.

6.0 Recommendation

From the significant positive relationship between firm size and financing of WCR, this study recommends that larger non-financial firms listed at the NSE should take advantage of their lower default risk that arises from their diversity and goodwill from lenders and use more short-term debt to finance their WCR. This will lead to lower financing costs which will improve profitability. For smaller firms it will be prudent to adopt a more conservative strategy for financing WCR because the higher cash flow uncertainty and refinancing risk that they face outweighs the benefits that can be derived from using more short-term debt to finance WCR.

The significant negative relationship between profitability and financing of WCR implies that according to the pecking order theory, retained earnings offer the cheapest source of financing. It is therefore recommended that firms should take measures to improve their profitability by growing their revenues and minimizing their expenses so as to enable them generate sufficient internal resources that they can use to finance their WCR.

From the significant negative relationship between current assets and financing of WCR, this study recommends that NSE listed non-financial firms with high levels of current assets should consider using more equity to finance their WCR since their lack of collateral makes it very expensive and risky to acquire any type of debt. Firms with lower levels of current assets (which implies high levels of fixed assets) should use more short-term debt to finance its WCR since they have more fixed assets that they can use as collateral to get cheaper short-term debt.

7.0 References

- Abu Mouamer, F.M. (2011). The determinants of capital structure of Palestine listed companies. *The Journal of Risk Finance*, 12(3), 226-241.
- Achy, L. (2009). Corporate capital structure choices in MENA: Empirical evidence from non-listed firms in Morocco. *Middle East Development Journal*, 1(2), 255-273.
- Adam, A.M., Quansah, E., & Kawor, S. (2017). Working Capital Management Policies and Returns of Listed Manufacturing Firms in Ghana. *Scientific Annals of Economics and Business*, 64(2), 255-269.
- Aglionby, J. (2017). Kenya Airways restructures in debt-for-equity swap. *Financial Times*. Retrieved from:
<https://www.ft.com/content/e1d9d7b2-c880-11e7-aa33-c63fdc9b8c6c>
- Al Dalayeen, B. (2017). Working Capital Management and Profitability of Real Estate Industry in Jordan: An Empirical Study. *Journal of Applied Finance and Banking*, 7(2), 49-57.
- Alipour, M., Mohammadi, M.F.S., & Derakhshan, H. (2015). Determinants of Capital Structure: An empirical study of firms in Iran. *International Journal of law and management*, 57(1), 53-83.
- Andani, A., & Al-hassan, S. (2012). The determinants of the financing decisions of listed and non-listed firms in Ghana. *Asian Economic and Financial Review*, 2(7), 751-771.
- Baltagi, B.H., Bratberg, E., & Holmas, T.H. (2005). A panel data study of physicians labor supply: the case of Norway. *Health Economics*, 14(10), 1035-1045.
- Banos-caballero, S., Garcia-Teruel, P.J., & Martinez-Solano, P. (2016). Financing of working capital requirement, financial flexibility and SME performance. *Journal of Business Economics and Management*, 17(6), 1189-1204.

- Bassey, N. E., Arene, C. J., & Okpukpara, B. C. (2014). Determinants of capital structure of listed agro firms in Nigeria. *Economic Affairs*, 59(1), 35-47.
- Begbies T. (2018). *Half a million UK businesses start 2018 in significant financial distress*. Retrieved from:
<https://www.begbies-traynorgroup.com/news/business-health-statistics/half-a-million-uk-businesses-start-2018-in-significant-financial-distress>.
- Bera, A.K., & Jarque, C.M. (1982). Model specification tests: A simultaneous approach. *Journal of econometrics*, 20(1), 59-82.
- Castanias, R. (1983). Bankruptcy Risk and Optimal Capital Structure. *The Journal of Finance*, 38(5), 1617-1635.
- Central Bank of Kenya (2018). *The Impact of Interest Rates Capping on the Kenyan Economy*. Retrieved from:
https://www.centralbank.go.ke/wp-content/uploads/2018/03/Interest-Rate-Caps_-March-2018.pdf.
- Cevheroglu-Acar, M.G. (2018). Determinants of Capital Structure: Empirical Evidence from Turkey. *Journal of Management and Sustainability*, 8(1), 31-45.
- Creswell, J.W. (2014). *Research design: Qualitative, quantitative and mixed methods approaches* (2nd ed.). London, United Kingdom: SAGE Publications.
- Cytonn (2018). *Restructuring an Insolvent Business - Case study of Nakumatt Holdings & Cytonn Weekly #12/2018*. Retrieved from:
<https://cytonn.com/uploads/downloads/restructuring-an-insolvent-business-case-study-of-nakumatt-holdings-cytonn-weekly-12-2018.pdf>
- Dincergok, B. (2018). Financing of Working Capital Requirement and Profitability: Evidence from Borsa Istanbul Chemical, Petroleum, Rubber, and Plastic Sector. In Soner Gokten (Ed.), *Financial Management from an Emerging Market Perspective* (pp.175-187). London, United Kingdom: IntechOpen.
- Donaldson, G. (1961). Corporate Debt Capacity: A study of Corporate Debt Policy and the determination of Corporate Debt Capacity. *Economics*, 113(2), 387-432.
- Engel, R.J., & Schutt, R.K. (2014). *Fundamentals of Social Work Research* (2nd ed.). Thousand Oaks, CA:SAGE Publications.
- Fayo, G. (2018). Reprieve for struggling Nakumatt as court allows administrator to take over. *Business Daily*. Retrieved from:
<https://www.businessdailyafrica.com/corporate/companies/Reprieve-for-struggling-Nakumatt-as-court-allows-administrator/4003102-4273204-cvooth/index.html>

- Fosberg, R. H. (2012). Determinants of short-term debt financing. *Research in Business and Economics Journal*, 6, 1-11.
- Field, A. (2009). *Discovering Statistics using SPSS*, (3rd ed.). London, United Kingdom: Sage Publications.
- Frank, M.Z., Goyal, V.K. (2003). Testing the pecking order theory of capital structure. *Journal of financial economics*, 67, 217-248.
- Kaur, H.V., & Singh, S. (2014). Impact of Investment and Financing Policies on Profitability and Risk. *Advances in Business-Related Scientific Research Journal*, 5(2), 183-197.
- Kazmierska-Jozwiak, B., Marszałek, J., & Sekuła, P. (2017). Determinants of Long-Term and Short-Term Debt Financing: Evidence from Poland. In Procházka D. (Ed), *New Trends in Finance and Accounting*. Proceedings of the 17th Annual Conference on Finance and Accounting (pp. 723-732). Prague, Czech Republic.
- Kinyua, J.B., & Muriu, P.W. (2017). Determinants of Capital Structure of Agricultural Firms in Kenya. *European Scientific Journal*, 13(7), 277-299.
- Kioko, C.W. (2015). The Effect of Aggressive Working Capital Policy on Profitability of Non-financial firms listed at Nairobi Securities Exchange. *International Journal of Commerce & Business Studies*, 3(4), 15-24.
- Kline, R.B. (2011). *Principles and Practice of Structural Equation Modeling* (3rd ed.). New York, NY: The Guilford Press.
- Kuhnhausen, F. and Stieber, H.W. (2014). *Determinants of Capital Structure in Non-Financial Companies*, Munich Discussion Paper, No.2014-38, Department of Economics, University of Munich.
- Kumar, R. (2014). *Research Methodology* (4th ed.). New Delhi, India: SAGE Publications.
- Kwenda, F., & Holden, M. (2014). A Dynamic Perspective On Determinants Of Short-Term Debt Financing: Evidence From South African Listed Firms. *The Journal of Applied Business Research*, 30(1), 183-196.
- Lourenco, A.J.D.S.M., & Oliveira, E.C. (2017). Determinants of debt: Empirical evidence on firms in the district of Santarem in Portugal. *Contaduria y Administracion*, 62(2), 625-643.
- Moody's (2017a). *Number of distressed US retailers triples since the Great Recession; debt levels up*. Retrieved from:
https://www.moodys.com/research/Moodys-Number-of-distressed-US-retailers-triples-since-the-Great--PR_362722

- Moody's (2017b). *Liquidity stress, low growth and political risk drive negative outlook for Sub-Saharan African sovereigns*. Retrieved from:
https://www.moodys.com/research/Moodys-Liquidity-stress-low-growth-and-political-risk-drive-negative--PR_360437
- Mwangi, L.W., Muathe, S.M., & Kosimbei, G. (2014). Effects of Working Capital Management on Performance of Non-Financial Companies Listed in NSE, Kenya. *European Journal of Business and Management*, 6(11), 195-205.
- Myers, S. C., & Majluf, N.S. (1984). Corporate financing and investment decisions when firms have information that investors do not have. *Journal of Financial Economics*, 13(2), 187–221.
- Nairobi Securities Exchange. (2017). *NSE Annual Report-2016*. Retrieved from:
<https://www.nse.co.ke/investor-relations/financial-reports-and-results/category/46-nse-annual-reports.html>.
- Njanja, A. (2018). Uchumi goes broke again after bailout cash runs out. *Business Daily*. Retrieved from:
<https://www.businessdailyafrica.com/news/Uchumi-goes-broke-again-after-bailout-cash-runs-out/539546-4364506-oh28uiz/index.html>
- Nunes, P. M., & Serrasqueiro, Z. (2017). Short-term debt and long-term debt determinants in small and medium-sized hospitality firms. *Tourism Economics*, 23(3), 543-560.
- Nyang'oro, O. (2016). *Determinants of Capital Structure of Listed Firms in Kenya and the Impact of Corporate Tax*. AERC Research Paper 329, African Economic Research Consortium, Nairobi.
- O'Brien, R.M. (2007). A caution regarding rules of Thumb for Variance Inflation Factors. *Quality & Quantity*, 41, 673-690.
- Ohman, P., & Yazdanfar, D. (2017). Short-and long-term debt determinants in Swedish SMEs. *Review of Accounting and Finance*, 16(1), 106-124.
- Olingo, A. (2015). Kenya National Carrier in deep cash crisis, goes for short-term loans. *The East African*. Retrieved from:
<http://www.theeastafrican.co.ke/news/Kenya-Airways-in-deep-cash-crisis--goes-for-short-term-loans/2558-2675692-wrdwog/index.html>
- Padachi, K., Howorth C., Narasimhan M.S., & Durbarry, R. (2010). Working Capital Structure and Financing Pattern of Mauritian SMEs. *Oxford Business & Economics Conference Program*. June 28-29, 2010; St. Hugh's College, Oxford University; Oxford, UK.

- Panda, A.K., & Nanda, S. (2018). Working capital financing and corporate profitability of Indian manufacturing firms. *Management Decision*, 56(2), 441-457.
- Pandey, I. M. (2015). *Financial Management* (11th ed.). New Delhi, India: Vikas Publishing House.
- PWC (2017). *Pressure in the system: working capital study 2017/18*. Retrieved from: <https://www.pwc.com/gx/en/working-capital-management-services/assets/working-capital-opportunity-2017-2018.pdf>
- Rajan, R.G., & Zingales, L. (1995). What do we know about Capital Structure? Some evidence from international data. *The Journal of Finance*, 50(5), 1421-1460.
- Serrasqueiro, Z., Matias, F., and Salsa, L. (2016). Determinants of Capital Structure: New evidence from Portuguese small firms. *Dos Algarves: A multidisciplinary e-journal*, 28, 13-28.
- Smith, K. (1980). Profitability versus liquidity tradeoffs in working capital management. In K.V. Smith (Ed.), *Readings on the management of working capital* (pp.549-562). St Paul, MN: West Publishing Company.
- Stohs, M.H., & Mauer, D.C. (1996). The Determinants of Corporate Debt Maturity Structure. *The Journal of Business*, 69(3), 279-312.
- Tayem, G. (2018). The Determinants of Debt Maturity: The Case of Jordan. *Academy of Accounting and Financial Studies Journal*, 22(1), 1-13.
- Thakur, O. A., & MuktaDir-Al-Mukit, D. (2017). Working Capital Financing Policy and Profitability: Empirical Study on Bangladeshi Listed Firms. *British Journal of Economics, Management and Trade*, 17(1), 1-6.
- The Senate. (2015). *Report of the select committee on the inquiry into the affairs of Kenya Airways Limited and its subsidiaries*. Retrieved from: <http://www.parliament.go.ke/the-senate/committees/committee-reports>
- Titman, S., & Wessels, R. (1988). The Determinants of Capital Structure Choice. *The Journal of Finance*, 43(1), 1-19.
- Toby, A. (2014). Working Capital Management Policy and Corporate Profitability of Nigerian Quoted Companies: A Sectoral Analysis. *International Journal of Financial Management*, 3(1), 9-20.
- Watson, D., & Head, A. (2016). *Corporate Finance: Principles and Practice* (7th ed.). London, United Kingdom: Pearson.