FIRM CHARACTERISTICS AND WORKING CAPITAL FINANCING ADOPTED BY NON-FINANCIAL FIRMS LISTED AT NAIROBI SECURITIES EXCHANGE, KENYA

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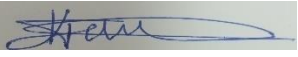
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A RESEARCH PROJECT SUBMITTED TO THE SCHOOL OF BUSINESS IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE AWARD OF THE DEGREE OF MASTER OF BUSINESS ADMINISTRATION (FINANCE OPTION) OF KENYATTA UNIVERSITY

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DECLARATION

This research project is my original work and has not been submitted for a degree or other award in any other university.

Signature…   Date… 26/04/2022

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Declaration by Supervisor

I confirm that the work in this project was done by the candidate under my supervision.

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DEDICATION

Dedicated to my father Mr. George Gitonga, mother, Susan Nyambura and my younger brother, Solomon Gitonga for their prayers and encouragement during my study.

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I thank God for good health during my writing. I also thank Dr. Daniel Makori for the academic support he granted to me during my research project writing. Lastly, I appreciate the entire Kenyatta University staff for the support they showed to me during my research project development.

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OPERATIONAL DEFINITION OF TERMS

Asset Tangibility   The ability to change an investment portfolio to cash with a slight loss in value. The measure of asset tangibility in the study entailed the ratio of fixed assets to total assets.

Firm Characteristics   The study used firm size, asset tangibility, profitability, leverage as the measure of the firm characteristics.

Firm Leverage   The extent of using the fixed income in an organization. Leverage was measured by the ratio between total debt and shareholder's equity.

Firm Size   Indicates how big an institution is in terms of assets, sales, customer base, among others. Firm size was measured using the natural logarithm of total assets.

Profitability   The profitability was measured using returns on assets (ROA).

Working Capital Financing   Include the planning of the proportion between the current asses and current liabilities needed in an organization. Working capital financing was measured as a ratio between short term debts and working capital ratio.

ABBREVIATIONS AND ACRONYMS

CBK   Central Bank of Kenya

EAPCC   East African Portland Cement Company

FGLS   Feasible Generalized Least Squares

LLC   Levi Lechun

ROA   Returns on Assets

ROE   Return on Equity

VIF   Variance Inflation Factors

WCR   Working Capital Requirement

ABSTRACT

The working capital requirement is critical to any organization. However, the working capital of numerous non-financial firms listed at NSE has been negative. Some scholars have established that firm characteristics can affect the working capital requirements. Thus, the study examined the influence of firm characteristics on working capital financing by explicitly examining the influence of firm size, asset tangibility, profitability and leverage on working capital financing. Five theories, namely, Baumol design, pecking order theory, trade-off concept, economies of scale theory and profit maximization theory, informed the study. The study employed an explanatory research design. The target population were all the 45 non-financial firms listed at NSE. The study carried out a census of all the firms. The research collected secondary panel data. The study period was between 2015 and 2019. The data was presented in Table and graphs. The results from the model fitness showed that firm size (log of total assets), asset tangibility, profitability (ROA) and leverage explain 64.70% of the variations in the working capital financing of the non-financial firms. The correlation results showed that firm size measured through the log of total assets, asset tangibility and profitability were positively associated with working capital financing. In contrast, leverage was found to be negatively associated with working capital financing. The regression results showed that firm size, asset tangibility and profitability have a significant positive effect on working capital financing. However, the regression results revealed that leverage has a significant negative effect on working capital financing. Therefore, the study recommended that the non-financial firms listed at NSE look for strategies that increase their assets. Enormous firms are expected to be more financially stable with more investments, thus reducing borrowing. In addition, it is recommended that firms should look for ways to increase asset tangibility. The firms can invest in more assets such as plant and equipment, buildings, computer equipment, software, furniture, land, machinery, and vehicles. This could be the foundation for increasing the revenue base in the long run. Moreover, it is recommended that the non-financial firms listed at NSE look for strategies to reduce the leverage levels. High leverage means increasing the borrowing, thus reducing the working capital. External funding of the operations, such as debts, should be used if all the other internal financing options are exhausted. Areas for further research was that since the study was only done in non-financial firms, another study can be conducted with the financial firms. This is key for the results comparison of the current study and those from future studies. The conducting of another study will further identify more research gaps for future studies.

CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

The working capital requirement is critical in an organization because it shows whether it can meet short-term obligations. The proficiency in working capital among many firms in the World has been a challenge (Arene & Okpukpara, 2014; Begbies, 2018; Njuguna, 2018). Companies all over the World support that working capital is one of the internal constituents that influence performance. The Working capital can enable the organizations to meet the daily operations of the activities with easiness (Wahome, Memba & Muturi, 2015). Globally, Quayyum (2016) established that working capital has been negative to some companies in Bangladesh, with the most affected being the non-financial and about 24% of these non-financial firms have ceased operations due to financial constraints of meeting the short-term debts. In Italy, Pozzoli and Paolone (2017) indicated that more than 13% of the manufacturing sector are financially distressed and cannot produce optimal cash flows from their functions to cater for their short-term debts. Further, Raheman and Nasr (2017) established that negative working capital among some of the manufacturing firms in Pakistan had been an obstacle that has prevented some of those manufacturing firms from expanding. The firm becomes unable to meet its short-term debts from the current assets.

In Africa, the creditworthiness of several countries such as Gabon, Mozambique, Nigeria, South Africa and Zambia experienced total and unfavorable outlooks in 2017 (IMF, 2018). Bassey, Arene and Okpukpara (2014) revealed that about 41% of agro-allied firms in Nigeria rely much on debts to finance their operations, leading to closure risks. A study by Andani and Al-hassan (2016) indicates that working capital determines more than 60% of the survival of the listed firms in the Ghana Stock Exchange. Also, Kasozi (2017) established that working capital in more than 37% of the listed manufacturing firms in South Africa is negative. This implies that companies borrow more than they get from the operations of the activities. In Ghana, Korankye and Adarquah (2014) reported that working capital has been ineffective to most non-financial firms compared to financial firms. The Cash outflow exceeds the cash inflow in most cases. However, the working capital is frequently negative due to inadequate cash inflows.

In Kenya, Wahome, Memba and Muturi (2015) revealed that negative working capital is mostly found in the non-financial firms listed and about 21% of the firms are unable to balance between the cash outflow and cash inflow which leads to loss-making. Likewise, Kaguri (2016) indicated that most non-financial firms borrow a lot of resources from financial institutions despite, in some cases, those borrowing being expensive. As a result of expensive financing, the companies report negative working capital. Moreover, Chesang (2017) established that around 19% of the non-financial firms listed on the Nairobi Stock Exchange tend to report negative working capital. Most sustainable businesses have positive working capital because it signifies that the cash inflow exceeds the cash outflow (Nabyama, 2018; Onchangwa, 2019; Ooko, Githui & Omurwa, 2018). Based on this background, it is evident that most non-financial firms have challenges in maintaining positive working capital. This formed the rationale to conduct the study among the non-financial firms rather than the financial firms.

1.1.1 Firm Characteristics

Firm characteristics can include firm size, asset tangibility, profitability, leverage, sales growth, asset growth and turnover. The study used firm size, asset tangibility, profitability, leverage as the measure of the firm characteristics. The justification of using firm size, asset tangibility, profitability, leverage as the measure of the firm characteristics is because they have been used in previous studies (Lourenco & Oliveira, 2017; Chesang, 2017; Quayyum, 2014; Raheman & Nasr, 2017; Muriu, 2016; Saarani & Shahadan, 2018; Eysimkele & Koori, 2019; Chesang, 2017; Nduta, 2015).

The firm size can be defined by its total assets, sales, the marketplace value of equity and market share (Ooko, Githui & Omurwa, 2018). In some cases, small companies are afraid to take debt to fund their functions and this makes the more dominant companies have higher debt levels than smaller companies (Abbas, 2016; Nyang'oro, 2016; Koksal & Orman, 2015). The natural logarithm of assets was certainly utilized to measure the firm size. The justification of using the log of total assets to measure company size was because it has been used before by other scholars like Ooko, Githui and Omurwa, (2018), Wahome, Memba and Muturi (2015), Lourenco and Oliveira (2017), Chesang (2017) to name a few.

The asset tangibility, according to Mwaura (2015) refers to the ability to swiftly transform an investment portfolio to cash money with little or no loss in value. Asset tangibility describes the business's capacity to satisfy its cash responsibilities within a particular duration (Raheman & Nasr, 2017). The profitability of the organization determines its possibility of sustainability. Organizations develop strategies that facilitate the maximization of profits. Profitability can be defined as the differences between revenue and costs of production (Nyang'oro, 2016).

The profitability can be determined using ratios such as ROA, ROE and profit margin (Memba & Muturi 2015; Nyang'oro, 2016; Ooko, Githui & Omurwa, 2018; Kinyua & Muriu, 2017). Some of the scholars like Serrasqueiro, Matias and Salsa (2016), Kinyua and Muriu (2017), Saarani and Shahadan (2018) and Andani and Al-hassan (2016) established that ROA is a better measure of profitability. Thus, the research certainly adopted ROA to determine profitability. Leverage was determined by the ratio between total debt and shareholder's equity.

1.1.2 Working Capital Financing

The working capital is essential for everyday operations (Njeri, Namusonge & Mugambi, 2017). As Mwangi, Makau and Kosimbei (2014) indicated, the motivation behind the working capital policy is to ensure that the organization can continue with its tasks and have sufficient income for daily actions (Mwangi, Makau & Kosimbei, 2014). The effective management of the working capital can enhance smooth functions of the operations. Successful capital administration is an everyday undertaking that guarantees that the firm has abundant assets to continue with its capacities (Sanghani, 2014).

The firms need precise amounts of working funds to manage change in a company (Kasozi, 2017). Companies tend to get the working capital from borrowing and internal earnings (Sharma & Kumar, 2016). Short-term funding is an integral part of working capital strategies. Working capital is the only investment a company makes without anticipating a specified return (Quayyum, 2014). According to Shrivastava, Kumar and Kumar (2017), Singhania and Mehta (2017), Njuguna (2018) and Vaghfi, Moghaddam and Khoshrou (2014), the components of working capital management contain cash management, accounts payable management and receivables management.

1.1.3 Nairobi Securities Exchange

Nairobi Securities Exchange comprises companies categorized under eleven sectors (Mwangi, Makau & Kosimbei, 2014). The NSE is open for trading from Monday to Friday and closed on Saturday and during public holidays. NSE develops a trading facility for debt, equity, and other asset categories available to investors throughout the country (Nyang'oro, 2016). It acts as a communication network giving investors an equal chance to participate in the trading system and meet the worldwide requirements set for financial exchange markets. However, many firms have been delisted due to low working capital to finance other obligations, thus the rationale of the current study (Waichahi, & Machoka, 2019; Kinyua & Muriu, 2017). There are 45 non-financial companies listed on the NSE.

Management of the working capital to some of the non-financial firms listed in NSE has been wanting (Nyang'oro, 2016; Ooko, Githui & Omurwa, 2018; Kinyua & Muriu, 2017). For instance, Uchumi Supermarkets was unable to meet its short-term requirements of paying its suppliers, employees and led to empty shelves and bankruptcy (Oyugi, 2017). Besides, Kenya Airways 2015 financial report showed that it financed all its working capital with short-term debt and led to a liquidity crisis when its revenues fell significantly and the management had to convert some of the short-term debt to long term to reduce their default risk (Kiiru, Kirori & Omurwa, 2019). Financial performance remains a major challenge to most non-financial companies listed at NSE (Wayongah & Ochieng, 2019). Conducting this research was based on this background.

1.2 Statement of the Problem

The working capital is key to the success or failure of an organization (Njeri, Namusonge & Mugambi, 2017; Lazaridis & Tryfonidis, 2016). However, the working capital of numerous non-financial firms listed at NSE has been negative. For instance, in 2019, Kenya Airways reported negative working capital of Ksh. 42.155 billion (Deloitte, 2020). Moreover, the current liabilities of East African Portland Cement Company in 2018 outstripped current assets by Ksh 6.0799 billion (EAPCC, 2019). Furthermore, the current liabilities of Kenya Power and Lighting Company in 2019 exceeded the current assets by Ksh 70. 969,861 billion implying negative working capital (Auditor General, 2019). Moreover, East African Cables reported a negative working capital of 49.3532 million in 2019 (East African Cables, 2020). These cases present an

overview of what might be happening to the other firms. Therefore, the research was worthy of being conducted to look at the influence of company characteristics on working capital financing adopted by firms.

There seem to be inconsistent findings on the impact of company characteristics (firm size, asset tangibility, profitability and leverage) on working capital financing. Some studies (Wahome, Memba & Muturi 2015; Nyang'oro, 2016; Koksal & Orman, 2015; Ooko, Githui & Omurwa, 2018; Panigrahi, 2014; Hossain & Hossain, 2015; Bassey, Arene & Okpukpara, 2014; Kaguri, 2016; Kinyua & Muriu, 2017; Chang, Batmunkh, Wong & Jargalsaikhan, 2019; Chesang, 2017; Minnema & Andersson, 2018) found a positive impact of company characteristics (firm size, asset tangibility, profitably and leverage) on Working Capital Financing. On the contrary, Lourenco and Oliveira (2017), Abbas (2016), Alipour, Mohammadi and Derakhshan (2015), Serrasqueiro, Matias and Salsa (2016), Saarani and Shahadan (2018), Andani and Al-hassan (2016), Eysimkele and Koori (2019) found a negative relationship between company characteristics (firm size, asset tangibility, profitably and leverage) and working capital financing.

Moreover, Eysimkele and Koori (2019) presented a conceptual gap since the study was concentrated on debt financing and the measurement of debt financing were bank loans and overdrafts, while the current focused on firm size, asset tangibility, profitability and leverage. Additionally, Bassey, Arene and Okpukpara (2014) presented a methodological gap considering the data was collected between 2005 and 2010. The current study collected data from 2015 to 2019 to reflect the current situation of the companies. Moreover, Minnema and Andersson (2018) presented a methodological gap because the study collected the data up to 2016. Therefore, the current study was worthy of being conducted.

1.3 Objectives of the Study

1.3.1 General Objective

To investigate the influence of firm characteristics on working capital financing adopted by non-financial firms listed at NSE.

1.3.2 Specific Objectives

i. To examine the influence of firm size on working capital financing adopted by non-financial firms listed at NSE.

ii. To establish the influence of asset tangibility on working capital financing adopted by non-financial firms listed at NSE.

iii. To determine the influence of profitability on working capital financing adopted by non-financial firms listed at NSE.

iv. To establish the influence of leverage on working capital financing adopted by non-financial firms listed at NSE.

1.4 Research Hypotheses

i. H_{01}: Firm size has no significant influence on working capital financing adopted by non-financial firms listed at NSE.

ii. H_{02}: Asset tangibility has no significant influence on working capital financing adopted by non-financial firms listed at NSE.

iii. H_{03}: Profitability has no significant influence on working capital financing adopted by non-financial firms listed at NSE.

iv. H_{04}: Leverage has no significant influence on working capital financing adopted by non-financial firms listed at NSE.

1.5 Significance of the Study

The management of the firms can utilize the study findings in developing strategies on issues of the financing of the operations. Moreover, the financial firms can benefit from the study findings in making the strategies that ensure the working capital is adequate to finance the operations. The research findings may provide the government, particularly the National Treasury, with ideologies to formulate effective policy-making structures that would support firms. The study's findings may also be significant to the Capital Markets Authority of Kenya and other organizations, which are directly associated with listed firms, to come up with policy mechanisms for effective regulation of listed companies. The research is also important to the literature in general.

1.6 Scope of the Study

The objective scope was to determine the influence of firm characteristics on working capital financing. The geographical scope was Nairobi County. The study was only conducted on listed non-financial firms. The secondary data was collected between 2015 and 2019. The basis for choosing the period between 2015 and 2019 is that most non-financial firms listed at NSE were active within this period.

1.7 Limitations of the Study

The researcher encountered the difficulty of getting relevant financial statements. Also, the permission to log in to the NSE website and those from firms might was difficult. However, researcher personally visited the firm's offices and also those of NSE. The researcher guaranteed the confidentiality of data given by the firms and a copy of findings to be made available if they need it. Also, the researcher requested an official letter from Kenyatta University and NACOSTI. A copy of those letters was issued to the firms to show the intention of conducting the research.

1.8 Organization of the Study

The research was organized into five chapters; chapter one covered the introduction, chapter two literature review, chapter three research methodology. Further, chapter four focused majorly on how data was analysed, presented and discussed. Finally, chapter five provided a summary, conclusion and recommendations of the study. References and appendices appeared at the end of the research project.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

The chapter included theoretical and empirical review. Besides, the summary of the literature is presented. The last section of the chapter included the conceptual framework.

2.2 Theoretical Review

Five theories, namely; Baumol design, pecking order theory, trade-off concept, economies of scale theory and profit maximization theory informed the study.

2.2.1 Baumol Model

Jack Baumol set up Baumol Model in 1952. The model assists firms with distinguishing the ideal size of money that an organization needs to maintain optimum operations. The model states that organizations need to have some cash to use and are certain about it (Moraes and Nagano, 2014). The organizations go for cheap sources of funding that are not a burden to pay back (Alvarez, & Lippi, 2017). The model notes that money management and inventory management are faced with the same issues. The model imagines that the company can forecast cash demands with confidence and that cash outflows are the same over some period.

Consistency in incomes is an inconsistency of reality in that it is almost difficult to have a reliable capital stream as monetary requests vary after some time (Premachandra, 2004). It further acknowledges that the possible cost of holding real money is seen and consistent and unequivocally, the specific trade cost is upheld. The congruity of this theory is that it is a functioning capital framework and addresses the asset substance of an association, which is exceptionally crucial in the association operations (Miller, 1966). The model was relevant in the present research and expected to inform variable working capital financing. Working capital financing is all about determining the amount of capital needed in the short run to meet the operations. The risk and costs of borrowing need to be examined before choosing the financing strategy to adopt. Thus, the model was deemed appropriate in the study.

2.2.2 Pecking Order Theory

Myers and Majluf established the Pecking Theory in 1984. The theory assumes that companies like to fund internally through retained incomes instead of outside funding (Frank & Goyal, 2003). Consequently, if they should use outside funding, debt funding is much more liked over equity (Chen & Chen, 2011). As per the theory, organizations have a hierarchy with regards to raising assets. They like interior funding, which contains held profit, instead of outside finance sources, including obligation and newly delivered value shares. If the internal funding is deficient, the organization look for external sources to finance its operations. The concept recommends the external sources of fundings be the last resort. The operations' internal funding is easily altered depending on the availing circumstances.

Contingent upon the internal sources makes the associations significantly more beneficial and performing (Byoun & Rhim, 2005). Non-monetary organizations need to use the best financing decisions to improve Working Capital Funding. Consequently, if firms need to use outside financing, the debt is generally suitable and value to be utilized if the wide range of various financing decisions are depleted. The dependence of the internal sources of fundings facilitates the independence of the organizations. Internal sourcing is factored to be one of the critical assets of the organizations. Thus, the theory was considered to be relevant in the current study.

2.2.3 Trade-off Theory

The advocates of trade-off theory were Modigliani and Miller in 1958. According to the theory, the funding choices are dependent on the risks of the debts. The idea indicates that organizations would by and considerable support utilizing momentary obligation since it savors the experience of an expense advantage over enduring financing. Simultaneously, it has significant dangers that cause high monetary trouble costs (Dierker, Lee & Seo, 2019). The theory shows that momentary obligation is commonly more affordable than durable financing since moneylenders join a higher risk to a significantly longer subsidizing period, subsequently prompting a higher inclining yield bend.

According to Ai, Frank and Sanati (2020), short-term debt has a couple of commitments, which decrease loan style and tracking expenses. It additionally sends out favorable signals to the market regarding the quality of the company's investments. For most cases, the liquidity of a firm is

essential in projecting more about the future. The liquidity ratio is established as a ratio between existing assets and present liabilities (short-term debts). This adaptability saves the organization from paying interest on inactive capital.

The concept is relevant to the current research. This concept discusses the relationship between liquidity and funding of working capital approaches. According to Dereeper and Trinh (2015), fixed resources offer greater security than present resources. This recommends that organizations with high levels of current resources in their resource structure probably forestall obligation because of its high default danger and utilize much greater value to back their functioning capital requests. The hypothesis, for that reason, anticipates an adverse relationship between liquidity and funding of working capital demands.

2.2.4 Economies of Scale Theory

Marshall developed the economies of scale theory in the 1890s. The theory assumes that the availability of external economies to firms increases with the scale of industry output. Investors prefer companies with massive assets and are confident that their returns are guaranteed (Matějová, Plaček, Krápek, Půček & Ochrana, 2014). There is a favorable effect between firm size and returns (Wicker, Breuer, Lamprecht & Fischer, 2014). The stocks of larger companies often pay good dividends to investors to capture some of their investment returns. Larger firms are expected to have more reliable information concerning their performance, increasing investor confidence and lowering moral hazards (Bejan, Almerbati, & Lorente, 2017).

Further, the theory establishes that large firms can spread risk, thus producing a higher income (Struk, 2015). Larger firms can venture into areas that are not attractive to smaller firms, thus expanding their revenue base and gaining monopoly status. Furthermore, the larger firms have greater access to funding, thus enhancing their performance by investing in modern technologies, hiring qualified staff and investing further, which became advantageous to the investors by earning the dividends (Toutkoushian & Lee, 2018). Besides, firm size enables the company to conduct research and development efforts to remain competitive and attract more investors (Callaghan 2019). Hence, the theory is significant to the present research and informed the variable of firm size.

2.2.5 Profit Maximization Theory

The theory assumes that it is easier for a profit-making organization to access more funding's from institutions and investors. There is a guarantee that profit-making organizations can repay debts on time through diversification and expansion of their operations (Young & Makhija, 2014). Every organization develops mechanisms and strategies that strengthen the magnitude of profitability. The business's profitability motivates the company to expand its operations and production (Day, Aigner & Smith, 2001). Institutions are mandated to develop mechanisms and strategies that enhance profit maximization, facilitating a competitive advantage. More profitable businesses can get funding from various sources since they seem proficient in repaying. One of the factors that determine the financing strategies of companies is the degree of profitability (Abbas, 2016).

The theory reports that the only reason why some of the companies perform better than others is because of the strategies been developed to expand their profitability (Jafar, Muda, Zainal & Yasin, 2010). A higher profitability level facilitates an easy expansion of the business to other regions. Companies are mandated to develop mechanisms that enhance profit maximization, facilitating a competitive advantage (Divya & Jayanthi 2020). A profitable business has a positive impact on society in the form of employment creation. The only way a business can remain positive in the minds of people in society is through its contribution to socio-economic empowerment.

Most of the performing business engages in sponsoring the events, which increases their visibility to the people (Luo, Tan, & Xia, 2014). The theory shows that profit maximization is among the motivating factors of conducting business. The higher the profits, the more sustainable the business and thus, the owners are willing to expand the operations even to other regions (Jahn & Brühl, 2018). More profitable companies can get funding from multiple sources since they seem capable of repaying. One of the constituents that determine the financing strategies of companies is the extent of the profitability. Hence, the theory is essential to the research and informed the variable profitability.

2.3 Empirical Literature Review

The empirical review is presented based on the research objectives.

2.3.1 Firm Size and Working Capital Financing

Wahome (2018) sought to examine the impact of company size on capital financing decisions of Insurance firms in Kenya. The research population included all the registered insurance companies that have actually functioned in the recent past. The analysis was done utilizing the statistical package (EVIEWS version 8). The research concluded that firm size is positively and significantly related to the capital structure. However, research was conducted in a financial institution (insurance) and, therefore, a contextual gap.

Moreover, Abbas (2016) mentioned that company size does not determine the working capital requirement. The exploration noted that the company size is not factored to be vital in determining the operational capital requirement in some cases. Other segments such as strategies adopted can influence the working capital requirements. Nevertheless, the research was performed in Norway and thus presents a contextual gap.

Further, Nyang'oro (2016) revealed that company size is positively and significantly related to working capital demands. Research offers a methodological gap since the research was conducted between 2003 and 2012. A lot of advancements concerning the operations of the companies listed at NSE have changed from 2012 to 2019. Moreover, Lourenco and Oliveira (2017) focused on determining whether the size of the company can affect the working capital requirement. The outcome of the exploration indicated that the size of the company has a negative effect on working capital requirements.

2.3.2 Asset Tangibility and Working Capital Financing

Chauhan, Gaurav and Pradip Banerjee (2018) indicated that tangible assets are vital in ensuring the firms have an adequate resource for the smooth operation of the activities. It was indicated that a positive relationship was found to exist between asset tangibility and the working capital requirement. Nevertheless, the research was focused on small and medium-sized firms and, therefore, a contextual gap.

Singh and Kumar (2017) evaluated the determinants of the structure of the resource of listed manufacturing firms in India. Results revealed a considerable favorable relationship between asset tangibility on the capital framework. From this outcome, it was concluded that companies with more current assets in their asset framework would certainly have much less collateral, which

lending institutions need for debt issuance. Therefore, companies with even more present assets contrasted to short-term liabilities certainly have a favorable capital structure. The research concluded that asset tangibility is significant in identifying the capital framework among manufacturing companies in India. However, the research was conducted in India and, therefore, a contextual gap.

Relating to intangible resources, Afrifa and Tingbani (2018) looked at the association between tangible resources and the capital system of small and medium-sized enterprises. The review's results found that substantial resources are in various ways connected with the capital system. The study wrapped up those resources in organizations are vital in influencing the capital structure that are adopted by the organization to be used. However, the exploration zeroed in on small and medium-sized enterprises and, subsequently, a contextual gap. In addition, Olatunji and Buyide (2020) noticed that asset tangibility is related to working capital financing.

2.3.3 Profitability and Working Capital Financing

Chang, Batmunkh, Wong and Jargalsaikhan (2019) performed research on the effect of profitability on working capital demands. The outcomes of the research discovered a negative connection in between profitability and equity. Nonetheless, the research noted that productivity was favorably related to debts, especially the short-term debts. The research concluded that companies need to fund the majority of their operations utilizing short-term debts because it has a favorable effect on profitability. Therefore, profitability is positively related to working capital demands. Nonetheless, the research was performed in Four Asian Tiger economies, hence provides a contextual void.

Serrasqueiro, Matias and Salsa (2016) sought to examine the impact of profitability on debts from the Portuguese companies. The sample size was 2,329 small enterprises. Research was conducted from 2007 to 2011. The outcomes exposed a considerable unfavorable relationship between profitability and debts. It indicates that as profitability rises, companies tend to use more equity to fund their functions. Nevertheless, the research was carried out in Portugal and thus a contextual gap.

Saarani and Shahadan (2018) evaluated the effect of that profitability on working capital requirement of companies in Malaysia. The research included SMEs. Panel data analysis was

utilized to estimate the design. The outcomes revealed that profitability is an essential variable is identifying the short-term debt of both SMEs. The outcomes show that more successful companies often tend to adopt more conservative approach for financing their working capital requirement. Kinyua and Muriu (2017) established that a positive and significant relationships exist between profitability and working capital requirement. Nevertheless, the research was just focused to farming companies leaving out various other non-financial companies, therefore, a contextual gap is present.

2.3.4 Leverage and Working Capital Financing

Sensini (2020) sought to determine the impact of the leverage on working capital requirements among SMEs in Italy and concluded that leverage is positively to the working capital requirements. However, the study focused to leverage only and thus a conceptual gap. Furthermore, Altaf and Ahmad (2019) sought to determine the impact of capital leverage on working capital requirements among the Indian machinery industry. Secondary data was collected from the firms. The results revealed there is a significant positive relationship between financial leverage and working capital requirements. Nevertheless, research was conducted in India and thus presents a contextual gap. Moreover, Minnema and Andersson (2018) reported the relationship between leverage and the working capital requirements is negative. However, the study was conducted in Sweden and thus a contextual gap. Further, it was found by Aziidah (2017) that leverage has a negative relationship with the capital structure.

Onchangwa (2019) determined the impact of leverage on working capital financial strategies. The research indicated financial leverage was negatively related to working capital financial strategies. The study concluded that financial leverage is fundamental and they define financial stability. However, the findings of the research cannot be used to give inferences concerning current research because it did sampling and not all the firms were included in the study as in the case with the current research. Therefore, the study presents a methodological gap. In addition, Makau (2019) stated that leverage negatively and significantly related to capital structure.

2.4 Summary of Literature and Research Gaps

There is scanty information to make inferences from prior researches. There seem to be inconsistent findings on the impact of company characteristics (firm size, asset tangibility,

profitably and leverage) on Working Capital Financing. Some studies (Wahome, Memba & Muturi 2015; Nyang'oro, 2016; Ooko, Githui & Omurwa, 2018; Kaguri, 2016; Kinyua & Muriu, 2017; Chang, Batmunkh, Wong & Jargalsaikhan, 2019; Chesang, 2017; Minnema & Andersson, 2018) found a positive effect of firm characteristics (firm size, asset tangibility, profitably and leverage) on Working Capital Financing. On the contrast, Lourenco and Oliveira (2017), Abbas (2016), Serrasqueiro, Matias and Salsa (2016), Saarani and Shahadan (2018), Andani and Al-hassan (2016), Eysimkele and Koori (2019) found unfavorable relationship between company characteristics (firm size, asset tangibility, profitably and leverage) and Working Capital Financing. Therefore, the current study was worth been conducted. The previous studies cannot be satisfactory to give the inferences. Therefore, a knowledge gap existed that needed to be ascertained. The summary of literature and study gaps is as shown in Table 2.1

Table 2.1: Summary of Literature and Research Gaps

Author	Focus	Methodology	Findings	Gaps	Addressing the Gaps
Onchangwa (2019)	Effect of leverage on working capital financial strategies	The study employed a quantitative research design	Financial leverage is negatively related to working capital financial strategies	The study did sample of the firms	The study did a census approach.
Chang, Batmunkh, Wong & argalsaikhan (2019)	Effect of profitability on working capital requirements	The study applied a correlation and regression analysis	Profitability is positively related to debts, notably the short-term debts	The study was conducted in Four Asian Tiger economies, thus presents a contextual gap	Case study was non-financial firms
Minnema & Andersson (2018)	Effect of leverage on working capital requirements	The target population included 130	Negative relationship exists	The study was performed in Sweden and thus presents a contextual gap.	The study was performed in Kenya
Minnema & Andersson (2018)	Effect of Leverage on capital structure	Data collected between 2012 and 2016	Leverage had a positive effect on capital structure.	Methodological gap.	The data was conducted up to 2019 to give the current overview
Lourenco & Oliveira (2017	Impact of firm size on working capital	6,184 sample	Negative relationship exists	The study was focused to firm size only	The study used different variables

Serrasqueiro, Matias & Salsa (2016)	Effect of profitability on debts from the Portuguese firms	The sample size was 2,329 small firms	Negative relationship exists	Study was performed in Portugal	The study was conducted in Kenya
Abbas (2016)	Determined factors influencing the capital structure decisions	The research utilized an unbalanced panel data set	Firm size does not determine the working capital requirement	The study was carried out in Norway	The study was conducted in Kenya

Source: Empirical Literature (2016-2020)

2.5 Conceptual Framework

The framework is presented in Figure 2.1.

Independent Variables

```
┌─────────────────────────────────┐
│ Firm size                       │
│ • Natural log of total assets   │──────┐
├─────────────────────────────────┤      │         Dependent Variable
│ Asset Tangibility               │      │
│ • Fixed asset to total asset    │──────┤   ┌──────────────────────────────┐
├─────────────────────────────────┤      ├──▶│ Working capital financing    │
│ Profitability                   │      │   │ • Short-term debt/WCR        │
│ • Return on Assets              │──────┤   └──────────────────────────────┘
├─────────────────────────────────┤      │
│ Leverage                        │      │
│ • Total debt/shareholder's equity│─────┘
└─────────────────────────────────┘
```
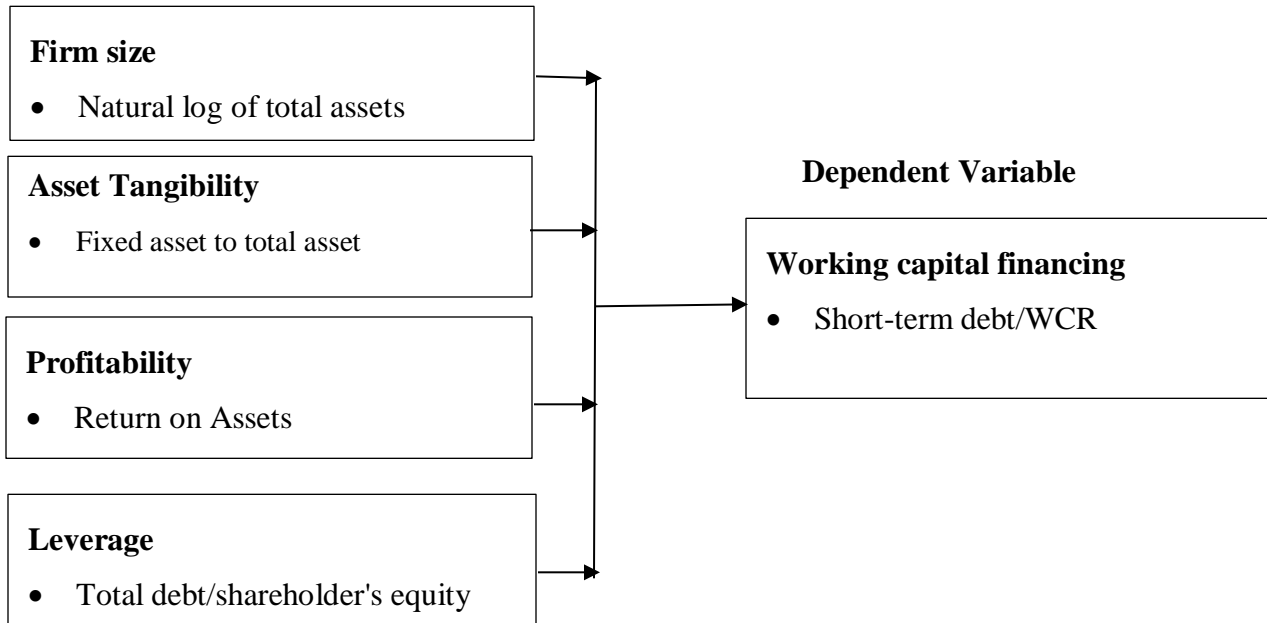
Figure 2.1: Conceptual Framework
Researcher (2022)

The independent variables consist of firm size, asset tangibility, profitability and leverage. The measures of company size were the natural logarithm of overall assets and asset tangibility was measured as a ratio between the fixed asset and overall asset. Moreover, profitability was evaluated by return on assets and leverage using ratio between total debt and shareholder's equity. The dependent variable in the research was working capital financing and was measured as a ratio between short term debts and working capital ratio.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

The chapter presented the study design, target population, sampling design and sample size, data collection instruments, data collection procedure, data analysis and discussion, design specification, diagnostic tests, and the moral factors considered that guided the research.

3.2 Research Design

The study used explanatory research design. The researcher applied the design to determine the pattern and the relationship between variables. The researcher examined the relationship between firm characteristics and working capital financing, thus making the explanatory design suitable. To show the connection between variables, the researcher tested the hypotheses.

3.3 Target Population

The study included all the eight categories of firms as summarized in Table 3.1. Including all aspects of non-financial firms facilitated collecting comprehensive data concerning the entire firms for the analysis and recommendations.

Table 3.1: Target Population

Sector	Number of Firms	Percentage
Agriculture	6	13
Automobile	1	3
Commercial Service	12	27
Construction and Allied	5	11
Energy and Petroleum	5	11
Investment Services	6	13
Manufacturing and Allied	10	22
Total	**45**	**100**

Source: NSE (2021)

3.4 Sampling Design and Sample Size

The researcher conducted a census. Census is conducted where targeted population is little and manageable (Charman *et al*., 2015). The target population of non-financial firms was 45. These 45 firms are few and manageable; hence, the census was appropriate. The advantage of conducting a

census is that the researcher can get detailed information on all the population (Hasan, 2017). Besides, the researcher gets a more comprehensive understanding of the population in general. Conducting a census in the current study enabled the researcher to get detailed data for analysis to make a precise conclusion.

3.5 Data Collection Instruments

This research used secondary panel data. This is type of data already available in the public domain and anyone can have access to it (Greener, 2008). The advantage of using this type of data is that it reduces the hurdles of data biases. It is difficult to manipulate the data since it has already been written down and any changes require authorization. The researcher collected the data using secondary data collection sheet as shown in appendix II. The researcher used five years- period ranging between 2015 and 2019. The basis for choosing the period between 2015 and 2019 was that most firms were active within this period. The period was also adequate to provide reliable inferences. The researcher ensured the data collected for the analysis is audited to make it reliable for the study. Also, the data was obtained from authorized bodies such as NSE and CBK.

3.5.1 Validity of the Instruments

This study ensured content validity is maintained by using variables that have been used by previous scholars. Some of such scholar like Wahome, Memba and Muturi (2015), Lourenco and Oliveira (2017), Nyang'oro (2016), Ooko, Githui and Omurwa (2018) Panigrahi (2014), Bassey, Arene and Okpukpara (2014), Handoo and Sharma (2014), Kaguri (2016), Kinyua and Muriu (2017), Saarani and Shahadan (2018), Chang, Batmunkh, Wong and Jargalsaikhan (2019), Chesang (2017), Nduta (2015), Omukaga (2017), Eysimkele and Koori (2019) measured firm characteristics using firm size, asset tangibility , profitability and leverage. Besides, the measures of these variables were based on those that have been used before in other studies.

3.6 Data Collection Procedure

A clearance from the supervisor to collect the data was obtained first. Afterwards, permission was sought from Kenyatta University postgraduate office and finally NACOSTI. The rationale of getting authorization from different groups was to justify the reason for conducting the study. The researcher collected the secondary data. The data was gathered from websites of the firms NSE, CBK and KNBS. The researcher targeted all 45 non-financial firms. The current study used data

period spanning 2015 to 2020. Annual audited financial reports were used due to ease of availability and the fact that they are reliable. The law requires NSE registered firms to file their financial reports with the Capital Market Authority and the Nairobi Securities Exchange. The researcher collected the data from the said sources. However, in some cases, the information from the firms contained errors and exaggerations from the management, such as the over estimation of figures to attract financing. The researcher ensured the data was verified and audited for accuracy from the authentication bodies such as Capital Market Authority and the Nairobi Securities Exchange. The researcher also presented a letter of data collection to enable them to know the significance of the study not only to the firm but also to the entire country

3.7 Data Analysis and Presentation

It is a procedure for obtaining raw data and transforming it into information helpful for users (Albright, Winston & Zappe, 2010). The data was analyzed through descriptive and inferential statistics. Descriptive statistics is important since it generates basic information about variables in a dataset and also shows potential relationships between variables (Kaushik & Mathur, 2014). The inferential statistics allowed to draw conclusions based on extrapolations and determined whether the hypotheses are supported or not by the results of any study (Allua & Thompson, 2009). Thus, the inferential statistics in the study included panel regression analysis and correlation analysis. STATA version 14.1 was used to generate a quantitative report. The data was presented in tables.

3.7.1 Model Specification

The research used multiple regression under the panel data framework. The panel model is;

$$(Y)it = \alpha_i + \sum_{t=1}^{\infty} \beta iXit + \mu it \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (i)$$

Where;

(Y) $_{it}$ = Working Capital Financing

X_{it} = Value for independent variables

β_i = Beta coefficients to be determined,

α_i = Alpha coefficient of representing constant term,

μ= Error term.

Expanding the equation (i), by including the independent variables of this study the results in equation (ii)

$$Y_{it}=\beta_0+ \beta_1X_{it} +\beta_2X_{2it} + \beta_3X_{3it}+ \beta_4X_{4it}+\varepsilon\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots(ii)$$

Where:

Y_{it} =Working Capital Financing

X_{1it} =Size of firm

X_{2it} = Asset Tangibility

X_{3it} =Profitability; X_{4it} =Leverage

ε =Error term

Table 3.2 presents the measurement of variables.

3.7.2 Operationalization and Measurement of Variables

The operationalization and measurement of variables are presented in Table 3.2

Table 3.2: Operationalization and Measurement of Variables

Variable	Type	Measurement	Measurement Scale
Firm size		Natural log of total assets	Ratio
Asset Tangibility		Tangible fixed Assets/Total Assets	Ratio
Profitability		ROA=Net Income/Total Assets	Ratio
	Independent variables		
Leverage		Total debt/shareholder's equity	Ratio
Working capital financing		Short-term debt/WCR WCR = Current Assets – Accounts Payable	Ratio
	Dependent variable		

Source: Researcher (2022)

3.8 Diagnostic Tests

The study conducted the following diagnostics tests.

3.8.1 Normality Test

A normality test was conducted to determine if the data set was well-modeled by a normal distribution. To check if the data was normally distributed, skewness and normality tests was conducted. Ghasemi and Zahediasl (2012) indicate that if the p-value is greater than 0.05, the data is normal, otherwise not.

3.8.2 Multicollinearity Test

Multicollinearity was assessed by using the variance inflation factors (VIF). The VIF values less than 10 indicate the absence of multicollinearity between the variables. The study of Jagpal (1982) indicates that VIF values less than 10 imply no multicollinearity.

3.8.3 Panel Unit Root Test

Levi lechun (LLC) tests were used to test whether the variables are stationary or not. The stationarity test examines whether the mean and variance of the observation concerning the study variables change over time. If the p-value is less than 0.05, the variables are stationary.

3.8.4 Heteroscedasticity Test

The heteroskedasticity in data occurs when the variance of the residuals in a given data is unequal (Halunga, Orme & Yamagata, 2017). The presence of heteroskedasticity in the data can result in spurious results. The Breusch-Pagan/Godfrey test was used. The null hypothesis was that there is no heteroskedasticity in the data.

3.8.5 Autocorrelation Test

The Wooldridge test was used for autocorrelation. The test notably examines whether the residuals are serially correlated over time or not. The null hypothesis of the study was that residuals are not autocorrelated.

3.8.6 Hausman Test

It is significant to determine whether to run a fixed-effects model or a random-effects model when dealing with a panel data. To determine which of these two models is appropriate, both fixed and

random effects were estimated. The null hypothesis is that the random model is the most preferred model to be adopted in a study. Ahn and Moon (2014) indicate that the most preferred model is random.

3.9 Ethical Considerations

Firms were certainly familiarized that the data offered is only to be utilized for the research and not shared with any unapproved individual or organization. The information is certainly be kept as personal as possible. In addition, the researcher adhered to the policies, principles and code of conduct guiding the company. The firms were certainly not forced to share out the details that is so delicate

CHAPTER FOUR

RESEARCH FINDINGS AND DISCUSSION

4.1 Introduction

The study results are demonstrated in sub-sections. Each of the subsections was comprehensively discussed. Descriptive statistics, correlation analysis, diagnostics tests and regression analysis were included in the study. Each subsection is comprehensively examined to bring out their importance in the study. The section commenced with the discussion of the descriptive statistics as presented below.

4.2 Descriptive Statistics

The study results presented in Table 4.1 depicts the descriptive statistics of firm size, asset tangibility, profitability, leverage and working capital financing.

Table 4.1 Descriptive Statistics

Variable	Observation	Mean	Standard deviation	Minimum	Maximum
Working Capital Financing	225	.1699432	1.094949	-6.44482	8.089778
Firm Size	225	9.932223	1.552628	7.305357	11.26642
Asset Tangibility	225	0.130642	0.0953917	0.4063204	0.832684
Profitability	225	0.087141	1.163299	-9.01826	8.986891
Leverage	225	0.189029	0.051316	0.08788	0.290375

Source: Study Data (2022)

The rationale of having descriptive statistics is to describe what the data is all about without making any conclusions extending beyond the immediate data alone. The study results presented in Table 4.1 indicate that the mean of working capital financing measured through the short-term debt divided by the working capital requirement (current assets minus accounts payable) was found to be .1699432 with a minimum of -6.44482 and a maximum of 8.089778. The negative value (-

25

6.44482) implies that accounts payable to some firms exceeded the current assets. This signified that some of the firms are facing liquidity. Moreover, the mean of the log of the total assets was found to be 9.932223 (Ksh. 8,555,058,823) with a minimum of 7.305357 (Ksh. 20,200,262) and a maximum of 11.26642 (Ksh.184,680,057,034). The rationale for using the logarithm was that the values of the total assets were large. The results imply that all the non-financial firms have enormous assets that are important and can help to generate revenue.

The study found that the mean of the asset tangibility was 0.130642, with the minimum being 0.4063204 and a maximum of 0.832684. The results imply that non-financial firms meet their cash obligations as the asset tangibility was found to be positive. Moreover, most non-financial firms have more current assets than fixed assets because the mean score was found to be 0. 4063204. Thus, non-financial firms are more interested in having more current assets to finance their day-to-day activities. Moreover, it was found that the minimum return on assets was 0.087141, with the minimum being -9.01826 and a maximum of 8.986891. The study results imply that some non-financial firms have been reporting losses. Further, the study found that the minimum leverage among the firms was 0.189029, with the minimum being 0.08788 and a maximum of 0.290375. The results imply that some non-financial firms use debt to undertake investment or projects.

4.3 Correlation Analysis

The study results presented in Table 4.2 show the association between firm characteristics (firm size, asset tangibility, profitability, leverage) and working capital financing.

Table 4.2: Correlation Results

		Working capital financing	Firm size	Asset t Tangibility	Profitability	Leverage
Working capital financing	Pearson Correlation	1.000				
	Sig. (2-tailed)					
Firm size	Pearson Correlation	. 0.1843	1.000			
	Sig. (2-tailed)	0.006				
Asset t Tangibility	Pearson Correlation	0.6531	-0.0363	1.000		
	Sig. (2-tailed)	0.000	0.000			
Profitability	Pearson Correlation	0.7675	0.0121	0.7383	1.000	
	Sig. (2-tailed)	0.000	0.000	0.000		
Leverage	Pearson Correlation	-0.3218	0.0715	-0.3978	-0.2812	1.000
	Sig. (2-tailed)	0.000	0.000	0.000	0.000	

Table 4.2 shows that firm size, asset tangibility and profitability are positively and significantly associated with working capital financing (r=. 0.1843, p=.006; r=0.6531, P=000; r=0.7675, p=.000) respectively. In contrast, leverage is negatively and significantly associated with working capital financing (r=--0.3218, P=000). The results imply that working capital financing increases as firm size, asset tangibility and profitability increase. In contrast, the working capital financing decreases as the leverage increases. The results are consistent with Nyang'oro's (2016) findings, which revealed that company size is positively related to working capital demands. Further, Saarani and Shahadan (2018) revealed that profitability is an essential variable in identifying the short-term debt of both SMEs. In addition, Kinyua and Muriu (2017) established that positive and significant relationships exist between profitability and working capital requirement. Moreover, Minnema and Andersson (2018) reported the negative relationship between leverage and working capital requirements.

4.4 Diagnostics Tests

Some diagnostics tests were carried out to ensure the regression assumptions were met.

4.4.1 Normality Test

The study findings of the normality test are as depicted below in Table 4.3

Table 4.3: Normality Test

Variable	Observation	Pr(Skewness)	Pr(Kurtosis)	adj chi2(2)	Prob>chi2
Working capital financing	225	0.0033	0.0001	18.57	0.0701
Firm size (Log of total assets)	225	0.0023	0.4012	8.91	0.5960
Asset tangibility	225	0.0025	0.0001	20.01	0.9761
Profitability (ROA)	225	0.076	0.0146	29.96	0.2107
Leverage	225	0.0012	0.6816	9.44	0.0890

Source: Study Data (2022)

The p values of the variables (working capital financing, firm size (log of total assets), asset tangibility, profitability (ROA) and leverage) presented in Table 4.3 were greater than 0.05. Thus, data was normally distributed. Ghasemi and Zahediasl (2012) indicate that if the p-value is greater than 0.05, the data is normal, otherwise not. The significance of the normally distributed data is that it shows that most data points are relatively similar and thus have low possibilities of outliers.

4.4.2 Multicollinearity Test

The results are presented in Table 4.4

Table 4.4: Multicollinearity Test

Variable	VIF
Firm size	1.01
Asset tangibility	2.41
Profitability	2.21
Leverage	1.19

Source: Study Data (2022)

The results presented in Table 4.4 indicate the absence of multicollinearity since the VIF of all the variables were less than 10. The results are consistent with Jagpal's (1982) results, indicating that VIF values less than 10 imply no multicollinearity.

4.4.3 Panel Unit Root Test

Levi lechun (LLC) test was used and the research findings are illustrated in Table 4.5

Table 4.5: Panel Unit Root Test Results

Variable	Statistic(adjusted)	P-value	Comment
Working Capital Financing	7.3244	0.000	Stationary
Firm Size	6.9054	0.000	Stationary
Asset Tangibility	5.7439	0.000	Stationary
Profitability	6.2143	0.000	Stationary
Leverage	6.0063	0.000	Stationary

Source: Study Data (2022)

The p values of the variables (working capital financing, firm size (log of total assets), asset tangibility, profitability (ROA) and leverage) were less than 0.05; hence, the data was stationary, as supported by Pesaran (2007) that p values less than 0.05 indicates data is normal.

4.4.4 Heteroskedasticity Test

The study results of the test are presented in Table 4.6

Table 4.6: Heteroscedasticity Test Results

Breusch-Pagan / Cook-Weisberg test for heteroskedasticity
chi2(5) = 121.25
Prob> chi2 = 0.3851

Source: Study Data (2022)

The P-value was found to be 0.3851, hence, there is no heteroskedasticity in the data. The heteroskedasticity in data occurs when the variance of the residuals in a given data is unequal

(Halunga, Orme & Yamagata, 2017). The presence of heteroskedasticity in the data can result in spurious results.

4.4.5 Autocorrelation Test

The study results of the Autocorrelation Test are presented in Table 4.7

Table 4.7: Autocorrelation Test Results

Wooldridge test
H0: no first-order autocorrelation
Prob> F = 0.9210

Source: Study Data (2022)

The study fails to reject the null hypothesis (p-value is 0.9210); therefore, the residuals are not autocorrelated. Amaral and Anselin (2014) report that if the p-value is greater than 0.05, the residuals are not autocorrelated; otherwise, they are. The role of examining autocorrelation is to determine whether there is a relationship between the observations after some time.

4.4.6 Hausman Test

The study results of the Hausman test is presented below in Table 4.8.

Table 4.8: Hausman Test Results

Column	(b)	(B)
	Random	Fixed
Firm Size	.133851	.1340656
Asset Tangibility	.1937947	.1998338
Profitability	.5775875	.579844
Leverage	-2.041886	-2.056171

chi2(5) = (b-B)'[(V_b-V_B) ^ (-1)] (b-B) = 1.54

Prob>chi2 = 0.8192

Source: Study Data (2022)]

The p-value obtained was 0.8192 and thus, the most appropriate model is random. Ahn and Moon (2014) indicate that the most preferred model is random. Hence the most effective model for the study was the random effect model.

4.5 Regression Analysis

Regression analysis examined the causal relationship between variables. The model fitness, variance analysis and regression coefficients are presented in the section. The results presented in Table 4.9 indicate the model summary.

Table 4.9: Model Summary.

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.804a	0.647	0.641	0.656427

Predictors: Firm size, Asset tangibility, Profitability, Leverage

Source: Study Data (2022)

Based on the study results presented in Table 4.9, firm size (log of total assets), asset tangibility, profitability (ROA) and leverage was found to explain 64.10% of the variations in the working capital financing. The remaining 35.90% of the variations in the working capital financing adopted by non-financial firms listed at NSE can be explained by other variables other than firm size, asset tangibility, profitability and leverage. Wahome (2018) stated that firm size is positively and significantly related to the capital structure. In addition, Chauhan, Gaurav and Pradip Banerjee (2018) indicated a positive relationship between asset tangibility and working capital requirement. Chang, Batmunkh, Wong and Jargalsaikhan (2019) articulated that profitability is positively related to working capital demands. In addition, Onchangwa (2019) noted that financial leverage is negatively related to working capital financial strategies.

The study results presented in Table 4.10 provided the results on the analysis of variance (ANOVA).

Table 4.10: ANOVA Results

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	173.759	4	43.44	100.813	.000b
	Residual	94.797	220	0.431		
	Total	268.557	224			

a Dependent Variable: Working capital financing

b Predictors: Firm size, Asset tangibility, Profitability, Leverage

Source: Study Data (2022)

The results in Table 4.10 indicate that the overall model is statistically significant. The results imply that firm size, asset tangibility, profitability and leverage are good predictors in explaining the working capital financing of the non-financial firms listed at NSE. Chauhan, Gaurav and Pradip Banerjee (2018) indicated that a positive relationship exists between asset tangibility and working capital requirement. Moreover, Olatunji and Buyide (2020) showed that asset tangibility is related to working capital financing. Kinyua and Muriu (2017) established positive and significant relationships between profitability and working capital requirement. Moreover, Minnema and Andersson (2018) reported the negative relationship between leverage and working capital requirements.

The regressions of coefficient results are presented in Table 4.11.

Table 4.11: Regression Coefficients

Variable	Coef.	Std. Err.	z	P>z
Firm Size	0.133851	0.028368	4.720	0.000
Asset Tangibility	0.193795	0.071402	2.710	0.007
Profitability	0.577588	0.056005	10.310	0.000
Leverage	-2.04189	0.933526	2.190	0.029
Constant	-0.84917	0.32775	2.590	0.010

Source: Study Data (2022)

The model is;

Y= -0.84917+0.133851Firm Size +0.193795 Asset Tangibility +0.577588 Profitability -2.04189 Leverage

The results from Table 4.11 shows that firm size (total assets) has significant positive influence on working capital financing (β=0.133851, p=0.000). The results imply that increasing the firm size (total assets) by one unit would increase the working capital financing by 0.133851 units while other factors are constant. The study tested the hypothesis to examine whether firm size has a significant influence on working capital financing adopted by non-financial firms.

H_{01}: Firm size has no significant influence on working capital financing adopted by non-financial firms listed at NSE

The p-value, as presented in Table 4.11, was found to be 0.000; thus, the null hypothesis was rejected. Therefore, firm size has a significant positive influence on working capital financing adopted by non-financial firms listed at NSE. Wahome (2018) stated that firm size has a significant positive influence on capital structure. Further, Nyang'oro (2016) revealed that company size has a significant positive influence on working capital demands. The study results revealed that asset tangibility has a significant positive influence on working capital financing (β=0.193795, p=0.007). The results signify that an increase in asset tangibility by one unit would increase the working capital financing by 0.193795 units keeping other factors constant. The study tested the hypothesis.

H_{02}: Asset tangibility has no significant influence on working capital financing adopted by non-financial firms listed at NSE.

The null hypothesis was rejected since the p-value was 0.07. Hence, asset tangibility has a significant positive influence on working capital financing adopted by non-financial firms listed at NSE. The results are consistent with Chauhan, Gaurav and Pradip Banerjee (2018), who indicated that asset tangibility significantly influences working capital requirement. Singh and Kumar (2017) revealed that asset tangibility has a significant positive influence on capital structure. Moreover, the results showed that profitability (ROA) has a significant positive influence on working capital financing (β=0.577588, p=0.007). The results imply that increasing profitability by one unit would increase the working capital financing by 0.577588 while other factors are held constant. The study tested the hypothesis.

H₀₃: Profitability has no significant influence on working capital financing adopted by non-financial firms listed at NSE.

Based on the results presented in Table 4.11, the p-value is 0.000 and the null hypothesis is rejected. Thus, profitability has a significant positive influence on working capital financing adopted by non-financial firms listed at NSE. The results are consistent with Chang, Batmunkh, Wong and Jargalsaikhan's (2019) findings, which stated that profitability has a significant positive influence on working capital demands. Saarani and Shahadan (2018) noted that profitability is an essential variable in identifying the short-term debt of both SMEs. Finally, the results indicate that leverage has a significant negative influence on working capital financing (β=-2.04189, p=0.029). The results insinuate that an increase in leverage by one unit would decrease the working capital financing by 2.04189 while other factors are constant. The study tested the hypothesis.

H₀₄: Leverage has no significant influence on working capital financing adopted by non-financial firms listed at NSE.

The null hypothesis is rejected (p-value is 0.029). Therefore, leverage has a significant negative influence on working capital financing adopted by non-financial firms listed at NSE. The results are consistent with the findings of Minnema and Andersson (2018), which reported leverage has a significant negative influence on working capital requirements. Further, it was found by Aziidah (2017) that leverage has a significant negative influence on capital structure. Moreover, Makau (2019) stated that leverage has a significant negative influence on capital structure.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

The chapter summarized key data findings, conclusions drawn and recommendations. Each of the sections is exhaustively examined based on the study results.

5.2 Summary

The study used an explanatory research design. The explanatory research design was used since the study aimed at establishing the relationship of the variables. The target population was 45 non-financial firms listed in the NSE. The researcher conducted a census and thus, all the 45 firms were included in the study. The study collected secondary data. The study used data of the firms for the period between 2015 and 2020. Annual audited financial reports were used due to ease of availability and the fact that they were reliable.

5.2.1 Firm Size and Working Capital Financing

The first objective of the study was to examine the influence of firm size on working capital financing adopted by non-financial firms listed at NSE. The correlation results showed that firm size is positively and significantly associated with working capital financing. Further, the regression results showed that firm size (total assets) has a significant positive influence on working capital financing. The null hypothesis was rejected; therefore, firm size positively influences working capital financing adopted by non-financial firms listed at NSE.

5.2.2 Asset tangibility and Working Capital Financing

Secondly, the study sought to examine the influence of asset tangibility on working capital financing adopted by non-financial firms listed at NSE. The correlation results showed that asset tangibility is positively and significantly associated with working capital financing. Further, the regression results showed that asset tangibility has a significant positive influence on working capital financing. The null hypothesis was thus rejected. Hence, asset tangibility has a significant positive influence on working capital financing adopted by non-financial firms listed at NSE.

5.2.3 Profitability and Working Capital Financing

Thirdly, the influence of profitability on working capital financing adopted by non-financial firms listed at NSE was determined. The correlation results indicated that profitability measured through the return on assets is positively and significantly associated with working capital financing. The regression results showed that profitability (ROA) has a significant positive influence on working capital financing. The null hypothesis was rejected. Thus, profitability has a significant positive influence on working capital financing adopted by non-financial firms listed at NSE.

5.2.4 Leverage and Working Capital Financing

The fourth objective of the study was to establish the influence of leverage on working capital financing adopted by non-financial firms listed at NSE. The correlation results showed that leverage is negatively and significantly associated with working capital financing The regression results indicated that leverage has a significant negative influence on working capital financing. The null hypothesis of the study was rejected.

5.3 Conclusions

Based on correlations results, the study concluded that firm size is positively associated with working capital financing. Further, based on regression results, the study concluded that firm size (total assets) has a significant positive influence on working capital financing. The null hypothesis was rejected; therefore, the study concluded that firm size has a significant positive influence on working capital financing adopted by non-financial firms listed at NSE. Assets of organizations are a source of revenue, such as rent. Thus, more assets are expected to bring more income to the organizations, lowering the borrowing and increasing the working capital. The high working capital signals that a company is shrewdly managed and suggests a higher potential for strong growth. Further, larger firms are expected to be more financially stable with more net incomes, thus reducing borrowing. The reduction of the borrowing implies fewer current liabilities, thus higher working capital due to more current assets than current liabilities.

Based on the correlation results showed that asset tangibility is positively associated with working capital financing. Based on the regression results showed that asset tangibility has a significant positive influence on working capital financing. The null hypothesis was rejected; hence, the study concluded that asset tangibility has a significant positive influence on working capital financing

adopted by non-financial firms listed at NSE. The results thus imply that firms with higher asset tangibility is less borrowing, thus increasing the working capital financing that is determined as the difference between current assets and current liabilities such as debts.

Based on correlations results, the study concluded that profitability measured through the return on assets is positively associated with working capital financing. Based on regression results, the study concluded that profitability (ROA) has a significant positive influence on working capital financing. It was revealed that increase profitability would significantly increase working capital financing by non-financial firms listed at NSE. The null hypothesis was hence rejected. Thus, the study concluded that profitability has a significant positive influence on working capital financing adopted by non-financial firms listed at NSE. The higher the profits, the more sustainable the business will be. Profitable companies are less likely to borrow since they can use retained earnings to finance business operations.

Based on correlations results, the study concluded leverage is negatively associated with working capital financing. Further, based on regression results, the study concluded that leverage has a significant negative influence on working capital financing. The results insinuate that an increase in leverage would significantly decrease working capital financing by non-financial firms listed at NSE. The results imply that an increase in the leverage increases the debts such as current liabilities, thus reducing the working capital because it is a function of the difference between current assets and current liabilities.

5.4 Recommendations

Based on the study findings, it is recommended that the non-financial firms listed at NSE should look for strategies that increase the assets. The study results showed that increasing the firm size (total assets) would significantly increase working capital financing by non-financial firms listed at NSE. Enormous firms are expected to be more financially stable with more investments, thus reducing borrowing. The reduction of the borrowing implies fewer current liabilities, hence higher working capital due to more current assets than current liabilities. The high working capital signals that a company is shrewdly managed and suggests a higher potential for solid growth.

In addition, it is recommended that firms should look for ways to increase asset tangibility. The results showed that an increase in asset tangibility would significantly increase working capital

financing by non-financial firms listed at NSE. The firms with higher asset tangibility is less borrowing. The firms can invest using the assets, thus increasing the revenue base. The investment in assets could be the foundations of increasing the revenue base in the long run. More revenue implies that there are high retained earnings, thus lower borrowing.

Further, it is recommended that the non-financial firms listed at NSE look for approaches to increase profitability levels. The higher the profits, the more sustainable the business will be. Profitable companies are less likely to borrow since they can use retained earnings to finance business operations. The retained earnings from the profitability making are an essential source of capital, enabling institutions to build strong buffers to absorb any loss, thus lowering the possibility of external borrowing. Moreover, it is recommended that the non-financial firms listed at NSE look for strategies that reduce the leverage levels. The study results insinuate that an increase in leverage would significantly increase working capital financing by non-financial firms listed at NSE. High leverage means increasing the borrowing, thus reducing the working capital.

5.5 Areas for Further Research

The study found that firm size (log of total assets), asset tangibility, profitability (ROA) and leverage explain 64.10% of the variations in the working capital financing of the non-financial firms listed at Nairobi Securities Exchange. Thus, another study be conducted to examine the factors that include the remaining 35.90% that could also explain the variations in the working capital financing of the non-financial firms listed at Nairobi Securities Exchange. Moreover, since the study was only done in non-financial firms, another study can be conducted with the financial firms. This is key in comparison with the current research results and further identification of more research gaps.

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APPENDICES

Appendix I: Graduate School Approval Letter

KENYATTA UNIVERSITY
GRADUATE SCHOOL

E-mail: dean.graduate@ku.ac.ke

Website: www.ku.ac.ke

P.O. Box 43844, 00100
NAIROBI, KENYA
Tel. 810901 Ext. 4150

Internal Memo

FROM: Dean, Graduate School

DATE: 21st December, 2021

TO: Gitonga Jason Kirugumi
C/o Accounting and Finance Dept.

REF: D53/PT/CTY/27576/2018

SUBJECT: APPROVAL OF RESEARCH PROJECT PROPOSAL

This is to inform you that Graduate School Board at its meeting of 29th November, 2021 approved your Research Project Proposal for the MBA Degree Entitled, "Firms Characteristics and Working Capital Financing Adopted by Non-Financial Firms Listed at Nairobi Securities Exchange, Kenya".

You may now proceed with your Data Collection; Subject to Clearance with Director General, National Commission for Science, Technology and Innovation.

As you embark on your data collection, please note that you will be required to submit to Graduate School completed Supervision Tracking and Progress Report forms per semester. The forms are available at the University's Website under Graduate School webpage downloads.

Thank you.

ANNBELL MWANIKI
FOR: DEAN, GRADUATE SCHOOL

c.c.   Chairman, Accounting and Finance Department.

Supervisor:

1. Dr. Daniel Makori
C/o Department of Accounting and Finance
Kenyatta University

AM/cu

Appendix II: NACOSTI Research Permit

REPUBLIC OF KENYA

**NATIONAL COMMISSION FOR
SCIENCE, TECHNOLOGY & INNOVATION**

Ref No: 361240

Date of Issue: 20/January/2022

RESEARCH LICENSE

This is to Certify that Mr.. JASON KIRUGUMI GITONGA of Kenyatta University, has been licensed to conduct research in Nairobi on the topic: FIRM CHARACTERISTICS AND WORKING CAPITAL FINANCING ADOPTED BY NON-FINANCIAL FIRMS LISTED AT NAIROBI SECURITIES EXCHANGE, KENYA for the period ending : 20/January/2023.

License No: NACOSTI/P/22/15291

361240

Applicant Identification Number

Director General
NATIONAL COMMISSION FOR
SCIENCE, TECHNOLOGY &
INNOVATION

Verification QR Code

NOTE: This is a computer generated License. To verify the authenticity of this document,
Scan the QR Code using QR scanner application.

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Appendix III: Data Collection

	Firm	Year	Current Liabilities	Current Assets	Total Assets	Fixed asset	Earnings Before Interest and Tax (EBIT)	Long Term Debts	Shareholder Equity (Total Capital)	Short term debt (Total Current Liabilities)
1	1	2015								
2	1	2016								
3	1	2017								
4	1	2018								
5	1	2019								
6	2	2015								
7	2	2016								
8	2	2017								
9	2	2018								
10	2	2019								
11	3	2015								
12	3	2016								
13	3	2017								
14	3	2018								
15	3	2019								
.	.	.								
.	.	.								
.	.	.								
225	45	2019								

Appendix IV: List of Non-Financial Firms Listed at NSE, Kenya

Agricultural Sector
1. EAAGADS LTD
2. Kakuzi Plc
3. Kapchorua Tea Kenya Plc
4. Limuru Tea Company Plc
5. Sasini Plc
6. Williamson Tea Kenya Plc

Automobile Sector
7. Car and General

Commercial Service Sector
8. Atlas Development Services
9. Deacons (East Africa) PLC
10. Eveready East Africa Limited
11. Express Kenya Ltd
12. Kenya Airways Limited
13. Longhorn Publishers Plc
14. Nation Media Group Plc
15. Sameer Africa Plc
16. Standard Group Plc
17. TPS Eastern Africa Limited
18. Uchumi Supermarket Plc
19. WPP Scangroup Plc

Construction and Allied Sector
20. Athi-River Mining Plc
21. Bamburi Cement Limited
22. Crown Paints Kenya Plc
23. East Africa Portland Cement Company
24. East African Cables Ltd

Energy and Petroleum Sector
25. Kengen Company Plc
26. Kenol Kobil Ltd
27. Kenya Power and Lighting Co. Ltd
28. Total Kenya Ltd
29. Umeme Limited

Investment Services Sector
30. Nairobi Securities Exchange
31. Centum Investment Company Plc
32. Home Afrika Limited
33. Kurwitu Ventures Ltd.
34. Olympia Capital Holdings Limited
35. Transcentury

Manufacturing and Allied Sector
36. BOC Kenya Plc
37. British American Tobacco Kenya Plc
38. Carbacid Investments Plc
39. East African Breweries Ltd.
40. Flame Tree Group Holdings Ltd
41. Kenya Orchards Ltd
42. Mumias Sugar Company Ltd
43. Unga Group Ltd
44. Safaricom Limited
45. Stanlib Fahari I Reit

Source: NSE (2021)

Appendix V: STATA Original Output

Descriptive Statistic

Variable	Obs	Mean	Std. Dev.	Min	Max
Workingcap~g	225	.1699432	1.094949	-6.44482	8.089778
LogTotalAs~s	225	9.932223	1.552628	7.305357	11.26642
AssetTangi~y	225	0.130642	0.0953917	0.4063204	0.832684
ROA	225	0.087141	1.163299	-9.01826	8.986891
LeverageTo~r	225	0.189029	0.051316	-0.08788	0.290375

Correlation

		Workingcap~g	LogTotalAs~s	AssetTangi~y	ROA	LeverageTo~r
Workingcap~g	Pearson Correlation Sig. (2-tailed	1.0000				
LogTotalAs~s	Pearson Correlation Sig. (2-tailed)	0.1843 0.0060	1.0000			
AssetTangi~y	Pearson Correlation Sig. (2-tailed)	0.6531 0.0000	-0.0363 0.0000	1.0000		
ROA	Pearson Correlation Sig. (2-tailed)	0.7675 0.0000	0.0121 0.0000	0.7383 0.0000	1.0000 -	
LeverageTo~r	Pearson Correlation Sig. (2-tailed)	-0.3218 0.0000	0.0715 0.0000	-0.3978 0.0000	0.2812 0.0000	1.0000

Normality Results

Variable	Obs	Pr(Skewness)	Pr(Kurtosis)	adj chi2(2)	Prob>chi2
Workingcap~g	225	0.0033	0.0001	18.57	0.0701
LogTotalAs~s	225	0.0023	0.4012	8.91	0.5960
AssetTangi~y	225	0.0025	0.0001	20.01	0.9761
ROA	225	0.076	0.0146	29.96	0.2107
LeverageTo~r	225	0.0012	0.6816	9.44	0.0890

Multicollinearity

Variable	VIF	1/VIF
AssetTangi~y	2.41	0.414650
ROA	2.21	0.453195
LeverageTo~r	1.19	0.838231
LogTotalAs~s	1.01	0.991620

Panel Unit Root Test

i.   Working Capital Financing

```
                         Statistic        p-value
─────────────────────────────────────────────────────────
Unadjusted t           -11.0942
Adjusted t*             -7.3244          0.0000
─────────────────────────────────────────────────────────
```

ii.   Firm Size

```
                         Statistic        p-value
─────────────────────────────────────────────────────────
 Unadjusted t           -10.4819
 Adjusted t*             -6.9054          0.0000
─────────────────────────────────────────────────────────
```

iii.   Asset Tangibility

```
                         Statistic        p-value
─────────────────────────────────────────────────────────
 Unadjusted t            -9.8092
 Adjusted t*             -5.7439          0.0000
─────────────────────────────────────────────────────────
```

iv.   Profitability

```
                         Statistic        p-value
─────────────────────────────────────────────────────────
 Unadjusted t            -9.8000
 Adjusted t*             -6.2143          0.0000
```

v.   Leverage

```
                         Statistic        p-value
─────────────────────────────────────────────────────────
Unadjusted t           -10.9133
Adjusted t*             -6.0063          0.0000
─────────────────────────────────────────────────────────
```

Heteroscedasticity Test Results

```
H0: sigma(i)^2 = sigma^2 for all i
chi2(5)=        121.25
Prob> chi2 =    0.3851
```

Autocorrelation Test

```
Wooldridge test for autocorrelation in panel data
H0: no first-order autocorrelation
    F( 1,      4) =        0.011
          Prob > F =        0.9210
```

Hausman Test

```
                 ── Coefficients ──
                    (b)            (B)          (b-B)       sqrt(diag(V_b-V_B))
                   fixed          random      Difference          S.E.

LogTotalAs~s      .1340656       .133851        .0002146          .0035988
AssetTangi~y      .1998338       .1937947       .0060391          .0094244
        ROA       .579844        .5775875       .0022566          .0074576
LeverageTo~r     -2.056171      -2.041886      -.0142856          .09528
```

```
                        b = consistent under Ho and Ha; obtained from xtreg
             B = inconsistent under Ha, efficient under Ho; obtained from xtreg

   Test:  Ho:  difference in coefficients not systematic

             chi2(4) = (b-B)'[(V_b-V_B)^(-1)](b-B)
                     =        1.54
         Prob>chi2 =        0.8192
```

Model Summary

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.804[a]	.647	.641	.6564265161

a. Predictors: (Constant), LeverageTotaldebtshareholder, LogTotalAssets, ROA, AssetTangibility

ANOVA   Results

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	173.759	4	43.440	100.813	.000[b]
	Residual	94.797	220	.431		
	Total	268.557	224			

a. Dependent Variable: Workingcapitalfinancing

b. Predictors: (Constant), LeverageTotaldebtshareholder, LogTotalAssets, ROA, AssetTangibility

Regression Coefficients

```
Workingcapitalfinancing       Coef.     Std. Err.      z     P>|z|      [95% Conf. Interval]

        LogTotalAssets       .133851    .0283676     4.72    0.000     .0782516     .1894505
       AssetTangibility     .1937947     .071402     2.71    0.007     .0538493     .3337401
                   ROA      .5775875    .0560052    10.31    0.000     .4678193     .6873556
LeverageTotaldebtshare~r   -2.041886    .9335256    -2.19    0.029    -3.871562    -.212209
                  _cons    -.8491682    .3277497    -2.59    0.010    -1.491546    -.2067906

               sigma_u            0
               sigma_e    .65822904
                   rho            0     (fraction of variance due to u_i)
```