FACTORS AFFECTING CASHFLOW OF MANUFACTURING FIRMS LISTED AT THE NAIROBI SECURITIES EXCHANGE.

BY

DAMARIS MUTINDI MUSEMBI

MASTER OF FINANCE AND INVESTMENT

KCA UNIVERSITY

2019

FACTORS AFFECTING CASHFLOW OF MANUFACTURING FIRMS LISTED AT THE NAIROBI SECURITIES EXCHANGE.

BY

DAMARIS MUTINDI MUSEMBI

A DISERTATION SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTSFOR THE AWARD OF THE DEGREE OF MASTER OF FINANCE AND INVESTMENT

KCA UNIVERSITY

SEPTEMBER 2019

DECLARATION

I declare that this dissertation is my original work and has not been previously published or submitted elsewhere for the award of a Master's degree. I also declare that this contains no material written or published by other people except where due reference is made and author duly acknowledged.

Student Name: _____ Reg.No_____

Sign_____ Date_____

I do hereby confirm that I have examined the master's proposal of

Damaris Mutindi Musembi

And have approved it for examination.

Sign_____Date_____

Name of Supervisor____Fred Sporta_Ochongo_____

ABSTRACT

Cash flow is the life blood of any business. Firms with inadequate cash flow experience difficulties in growing their business as they struggle to fund their basic operations. A firm has to invest either in working capital, assets or in other ways but if it lacks cash flows it's not in a position to do so. Manufacturing firms require a lot of cash flows to run their operations. These manufacturing firms require a lot of machines for production as well as a lot of cash to buy raw materials. Also, a huge amount of cash is paid out as salaries and wages as the manufacturing sector is labor intensive. Manufacturing firms are faced with many challenges especially in managing their cash flows. Therefore, the researcher in this study sought to establish the factors that affect cash flow in manufacturing firms in Kenya. The study was guided by the following specific objectives, to establish how investments affect cash flow in manufacturing firms listed in the Nairobi stock exchange, to find out how inventory controls affect cash flow in manufacturing firms listed in the Nairobi stock exchange, to determine how profitability affect cash flow in manufacturing firms listed in the Nairobi stock exchange. The researcher used descriptive research design to describe the factors affecting cash flow in manufacturing firms listed in the Nairobi stock exchange. A firm should be able to generate enough cash flows from its operations. If a firm is not able to cover its current liabilities with cash generated from operations, it will have cash challenges in financing its operations. A cash flow ratio of one show that the firm has healthy cash flows and a ratio of less than one shows that the firm does not have enough cash flows to finance its operations. The study covered a period of five years from 2012 to 2017.The methodology for the study was descriptive research design. The study employed population census as the listed firms were very few for the researcher to employ sampling. The listed firms were nine. Secondary data was used in the study. The data was extracted from published financial statements which included statement of financial position, statement of cash flows and statement of comprehensive income. Data was analyzed using STATA software and panel data analysis methods were used. Analyzed data was presented using figures and tables. The study findings revealed that there is a positive relationship between cash flows and investments as measured by net capital expenditure, profitability as measured by return on assets. There is a negative relationship between cash flows and inventory control as measured by inventory turnover. The study also established that there is a positive relationship between cash flows and profitability of a firm as measured by return on Assets (ROA). cash flows in all the firms have the same trend expect for Eveready East African ltd. The study concluded that manufacturing firms should exercise inventory control, invest wisely and also manage profitability of assets to ensure that the firm has enough cash flows to fund its operations.

Key words: Cash flows, cash flow ratio, Manufacturing firms, Investments, Profitability, inventory control, inventory turnover, Return on Assets.

ACKNOWLEDGEMENT

I take this opportunity to express my sincere appreciation to everyone who helped me in writing this dissertation. I appreciate my dissertation supervisor Dr. Fred Sporta, my children who always prayed for me, my best friend Mercy and all other friends who were of help to me. I really thank my family for the advice, financial support and encouragement they gave to me as I progressed with this dissertation. I also acknowledge my class mate Mr.Tiberious for the encouragement and help he gave me when I got stuck. I thank the Almighty God for giving me strength and good health at the time of doing this research.

TABLE OF CONTENTS

DEDICATION

This dissertation is dedicated to my family particularly to my Dear Husband, my children Sharon, Paul and Stephen. My brother Nathan and my loving Mother who always prayed for me as I perused my studies. Not forgetting my mother in law and my Friend Eunice who always believed in me and supported me in all ways. I appreciate my family for their support and encouragement as I would not have been able to complete this dissertation without their support. Special thanks to my class mate and friend Mr.Wesonga as I would always consult him for advice when I am stuck.

LIST OF TABLES.

LIST OF FIGURES

ACRONYMS AND ABBRIVIATIONS

AGOA	African Growth and Opportunity Act .
COMMESA	Common market for eastern and southern Africa
EAC	East African Community
GDP	Gross domestic product
GOK	Government of Kenya
KAM	Kenya Association of manufacturers
OCF	Operating cash flows
PTA	Preferential trade Area
ROA	Return on assets
ROI	Return on Investment
SME	Small and medium sized Enterprises
VAT	Value Added Tax

OPERATIONAL DEFINATION OF TERMS.

The study adopted the following definition for key terms.

Cash flow - These refers to cash inflows and cash outflows in a business. Cash flow is the net difference between the amount of cash available at the beginning of a period referred in accounting terms as opening balance and the amount at the end of that period referred as closing balance. It's the net difference between cash inflows and cash out flows.

Inventory control – Inventory control refers to the practices established by a firm to help in ensuring that the firm has optimum levels of stock at any given time. The measures put in place help in managing stocks efficiently and thus avoid unnecessary costs associated with under or overstocking. (Swaleh& Were, 2014).

Inventory turnover Ratio –This is a ratio which identifies the number of times a firm replenishes its stocks in a year. If the ratio is high, it's an indication that the firm is operating well in selling their stocks. It's an indication that the management is efficient and effective in their operations.

Investments – Investments refers to the net capital expenditure in the current year. It's the difference between capital expenditure in the present year and capital expenditure in the previous year. It's mainly capital Commitment of funds with expectation to gain from the funds in the future.

Manufacturing and Allied firms -These are corporations that obtain raw materials as inputs and through certain processes transform them into finished products for final use or for further production of goods and services. (Kenya association of manufacturers ,2011)

Nairobi stock exchange –The Nairobi stock exchange is a corporation that engages in listing of companies for trading of shares to raise capital. It's regulated by the capital market Authority.

Profitability- This is the expected return from a firm's assets or investments. It's the ability of a firm to make profit from its operation by using the available resources.

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

1.1.1 Cash flow

Most of the manufacturing firms in Kenya being small in size have been experiencing cash flow fluctuations and sometimes they record negative cash flows. The fluctuations have been associated with several factors which include but not limited to investments, inventory control and profitability of assets. Most of these manufacturing firms are not in a position to cover their current liabilities as a result of cash flow challenges (Quinn , 2011)

Cash flow is defined as the net difference between cash inflows and cash outflows in a firm. If a firm has Positive net cashflow, it's an indication that the liquid assets of a firm are increasing. This means that the firm is able to pay its liabilities, pay dividends to shareholders, invest more in the business, fund its operations on time and also set aside reserves for future use if the firm has financial challenges. If the firms liquid assets are decreasing, the firm will have negative cash flows an indication that the firm will experience cash flow challenges. The importance of cash flow in any kind of business cannot be overlooked as without enough cash flows a business will collapse as it will not be able to fund its operations.

Management of cash flow is the process of controlling how cash is used to ensure that it's used in the right way to optimize returns. It involves control of company funds to increase returns by ensuring maximum investment and reduction in finance costs. It entails proper use of cash by investing it in productive activities than having idle cash. Managing cash efficiently involves the planning of how much cash to retain by considering the costs and benefits of having too much cash or having less or no cash. Cash management according to Atrill(2012) is the timely acquisition of information relating to a company's cash flow which may include

among other factors capital balances as well as receipts and disbursements. Managing cash effectively involves providing cash resources on time to ensure that the operations of the firm are run smoothly. Cash is a corporate asset and should be managed using basic tools and techniques to safe guard it. Good cash management practices are important to the success of each company, ether it has enough cash or it has cash crisis.Muinde (2013) argued that manufacturing firms contribute to economic growth, create employment as well as help in eradicating poverty. Despite the role they play experience a lot of challenges especially in managing their cash flows.

A study by Sunday and Burani (2013) showed that the main problem in managing cash flow in manufacturing firms is that the owners do not record as well as bank their sales. This is caused by the fact that they do not have management skills. Similarly, lack of proper cash records contributes to the owner not being able to account, use and manage cash well. The owner is not able to do monthly reconciliation of the cash book as the records are not well kept. These reconciliations are important aspect of managing cash flows. This can help the owner to detect if there is any cash problem and correct it in time. Internal controls relating to cash are very important in cash management. Only few business owners have the knowledge of internal controls and their importance.

To have proper internal controls on cash and segregation of duties should be practiced by the owner in relation to cash handling. Despite all this, other key element relating to the practice of cash management is the ability of the person who is assigned the task of preparing the budgets of the enterprise. He should have the knowledge and experience for him to be able to prepare realistic budgets. Most Enterprises assign the task of doing the budget to managers or the owner who may not have the right skills. The managers or the owner will have to establish if the prepared budget meets the needs of the business by reviewing it. Internal controls are of great importance as they can be used to help identify strength of the enterprise as well as

opportunities. According to a study by Abanis et al. (2013), the person who prepares the budget in an enterprise is very important. This is because well prepared budgets can have an influence of the cash management practices in an enterprise. According to a study done by Avika andHari, 2014; Abanis et al., (2013) in Uganda and South Africa, manufacturing firms are poor in managing their cash flows. Most of the manufacturing firms lacks an appropriate strategy to guide them as well as the cash management skills are poor. Efficiency in cash management can have a great influence on the expansion and growth of operations in the business. In efficient cash management can have a negative effect on the operations of the business or even bring the operations of the business to a standstill. According to a study by Healya,Guptaa,Gregorioua and Wilson (2014), evidence relating to the financing of small businesses showed that manufacturing firms that do not generate adequate operating cash flows (OCF) are likely to be declared bankrupt.

Difficulties in managing cash flow start to occur when the importance of managing cash is assumed by the management. The owner focus on other management issues and ignores the management of cash with the assumption that it's not key to the success of the business. The operations of the business will be directly affected by poor management of cash. Management of cash gives businesses an idea if they are making loss or profit. If a business is not practicing cash management, it might end up making huge losses without its knowledge or even be unable to pay its financial obligations.

1.1.2 Factors Affecting cash flow

Most businesses state "cash is king", but they do not have clear methods of projecting the amount of cash they will need for a specified period of time.

Investment can be described as the current commitment of financial resources so that greater returns are achieved in the future. Various studies from different researchers have established that a relationship exists between Investments and cash flows. Jonathan and Katharina (2016)

established that investments affect cash flow as investing includes usage of funds. Whited and Erickson (2012) studied on the relationship between investments and cash flow. He concluded that cash flow and investments are have a negative relationship. Almeida, (2010) conducted a study to establish how investments and cash flows are related for unbalanced panel of surviving firms between 1980 to 1999.They established that a negative relationship exists between investments and cash flow.

In a study by Marketwire (2013), he surveyed small business in different sectors and established that 73% of the manufacturing firms he surveyed lacked inventory systems. This meant that the stock levels they held were not optimum and thus affecting the cash flows of the enterprise. Inventory control and management plays a key role towards cash management.

A study done in Toronto and involving 575 SMEs established that most manufacturing firms did not have enough knowledge on inventory control measures and were thus not maintaining inventory records, they were using simple and basic control measures. Approximately 32% of this manufacturing firms surveyed used manual ways of tracking inventory which simply involved using a pen and a paper and others had no inventory controls or records at all.

Similarly, Kinciad (2008) in his study established that most entrepreneurs lacked the knowledge of inventory control procedures and thus did not implement them. They claimed to keep the inventory records in their head and not keep record, and this information helped them to classify their stock into fast- and slow-moving categories. These manufacturing firms' owners ignored the importance of inventory control measures and thus did not implement them. It was also established that, most of the owners did not know inventory control strategies to implement as well as how to monitor them. According to Thogori and Gathenya (2014) most of the manufacturing firms in Kenya have poor inventory management methods which in turn have effects on the performance of the firms. Marketwire (2013) emphasized on the importance of manufacturing firms to have well-kept books of account as well as having bank accounts.

He established that most of the manufacturing firms lacked bank to track various business transactions. Bank accounts help to establish how a business is profitable, help to conduct a business in a professional way and also help to establish how legitimate the business is.

Thus, many manufacturing firms will be in a position to keep track of their cash transaction by examining cash inflows and outflows of the business. Another important factor affecting cash flow is management bad debts. Kew and Watson (2012) described irrecoverable or bad debt to be as a result of insolvency of the debtor or as a result of the incurring charges that are more than the amount owed to collect the debt and thus in the long run end up making huge loses. The authors highlighted two various ways through which Bad debts can affect manufacturing firms. Creditors are not paid their money on time or not paid at all and also debtors do not pay their debts owed to the business thus leading to poor cash flows. All in all, bad debts negatively affect the cash flows of the firm and thus they should be avoided.

Most manufacturing firms have limited sources of income and thus mostly depend on income from sales This is the only income that is used to pay expenses and fund the daily operations of the enterprise.

In a study by manning and Pollack (2011), they identified that the rate at which manufacturing firms write off bad debts is increasing as a result of most customers not honoring their debts. They highlighted that as the economy keeps on growing, the expectation is that cash flow of manufacturing firms improves and continue to grow. No income is obtained from goods sold on credit and there after turned into bad debts. Inventory cost and other related costs need to be covered, Manning and Pollack (2011). Profitability is measured as a return on a firm's asset.

Owino, (2014) studied on the effect of cash flow management on the profitability of manufacturing companies operating in the County of Nairobi. The objectives were to investigate the effect of using current assets on profitability, the relationship between cash receivables and profitability, and the effect of managing incurred cost on profitability of

manufacturing companies at Nairobi County. The study adopted four (4)manufacturing companies located in the county of Nairobi. The study used multiple regression models to analyze the panel data from financial statements. The study applied sample size of four manufacturing companies which was too small to come up with appropriate findings.

Njuguna (2013) analyzed the effect of cash flows on performance of medium business in Nyeri. The study aimed at to investigate how cash balances, sensitivity of investment, company size and account receivables affect profitability. The study sampled 13 medium businesses. The study failed to apply operating cash flows, and financing cash flows which are main activities in cash flows statements

1.1.3 Overview of manufacturing firms.

Manufacturing firms are defined as corporations that obtain raw materials as inputs and through certain processes transform them into finished products for final use or for further production of goods. In a report by Kenya Association of Manufacturers (2007), the manufacturing sector plays a key role in the overall performance of the economy in the country. This sector accounts for over 60% of income to the government through taxes and had an estimated output of over Kshs.502 billion in 2005.A large scale manufacturing firm is a corporation which has employed more than one hundred employees, KAM, (2011). Currently Kenya has six hundred and twenty-seven (627) large scale manufacturing firms. Manufacturing sector is one of the key pillars that the government identified to support development of the economy in vision 2030.The sector is expected to be powerful and aggressive in supporting creation of jobs, supporting national growth and in earning foreign exchange for the country as well as facilitating foreign investment. (GoK, 2007). The manufacturing sector is key in creation of goods and services by creating demand and supply and also in offering opportunity for entrepreneurial growth.

Most of the manufacturing firms in Kenya fall in the category of small and medium sized enterprises (SMES) and thus have inadequate capital, cash flow challenges as well as technological challenges in their operations. The lack of enough capital forces and cash flow challenges forces them to manage their cash flows well as the industry is cash intensive and lack of this limited resource may make the firms to down size or shut down its operations. To manage the cash flows well, these firms need to identify the factors that affect cash flows either in a positive or in a negative way. This can only be done by establishing the relationship between cash flows and the factors affecting it.

The manufacturing firms are labor intensive and require a lot of cash in terms of purchasing raw materials and also in purchasing production machines. Manufacturers cannot survive competition in the industry without having enough cash flows to enable them meet production targets on time as well as adopting latest technology to reduce their production costs. Enough cash flows can only be achieved through proper cash flow management as lack of enough cash flows is a major cause of failure of manufacturing firms. (Al-Issa and Zayed, 2007).

The manufacturing sector is a key element for Kenya's economic development and growth as it currently employs approximately three hundred thousand people, representing thirteen percentage of the total working population in Kenya. But as from 1960s, the large-scale manufacturing subsector has been declining with a stagnant growth of ten percent.

These firms experience a number of difficulties include high labor costs, limited access to the market, and lack of enough cash flows. Manufacturing firms are important and play a key role in the world economy. Their importance is more evident in developing countries which have employment challenges as well as distribution problems, Tambunan (2008). These firms have great importance in the Kenyan economy as they play a very vital role by contributing to a large extent to the growth of the overall economy. Economic development and competitiveness of Kenya can be improved through the manufacturing sector as the sector has high growth

potential. In contributing to the gross domestic product in Kenya (GDP), it is the third sector after Agriculture and horticulture. Its contribution is on average 10 % of Kenya's Gross Domestic Product, 12.5 % of Kenya's exports and 13 % to employment creation. (GoK, 2012). Over the years the sector has experienced a lot of fluctuations as a result of financial challenges resulting to the lowest real GDP growth rate. In 2008, the real GDP growth rate was 1.7% and in 2009 the growth rate was 2.6%. (East African Community Facts and Figures, 2010). This decline in growth was attributed to financial constraints, lack of domestic market as well as outdated technology. The real Gross Domestic Product rate of growth increased to 5.6 percent in 2010 recording an improvement in the manufacturing sector performance (East Africa Community Facts and Figures, 2011).

The Jua kali sector is an important component of the manufacturing industry which comprises of small-scale entrepreneurs who mostly produce consumer goods and services. The government has recognized the key role played by the manufacturing sector in the long-term economic development. In the government's Vision 2030 planning document, the manufacturing sector is expected to contribute 10 percent annually to Kenya's GDP.

A research by Fatoki (2011) established that the failure rate of manufacturing firms to be between 70% and 80% in South Africa. In reference to this survey, it was noted that poor management of cash flow and inventory were ranked among the top reasons contributing to the failure of manufacturing businesses. Over the years, the economic development of many countries across the globe depends on manufacturing sector thus making them an important aspect of economic development, (Taiwo et al 2013).

Due to their diversified nature, most manufacturing firms offer employment opportunities to unemployed youths. Despite this, lack of cash flow has proven to be the major cause of most manufacturing firm's failure due to mismanagement and embezzlement of funds which affects operating costs and capital expenditure, (Brigham and Ehhardt 2010). Understanding financial

management is paramount when managing financial cash flow transaction in the long run. Some of the challenges manufacturing firms face include lack management training and experience, lack of education and skills, outdated technology, lack of market information, lack of viable market opportunities, undeveloped infra structure and lack of innovation in the Enterprise.

According to a study by Mong (2011), approximately 28% of SMEs exercise the practice of cash budget preparation. Cash flow planning through cash budgets is a very key factor to consider as it gives direction to the managers on how to collect and use cash to ensure smooth running of the business. Trade receivables if not well managed can cause cash flow challenges in manufacturing firms. This refers to credit sales advanced to customers and still outstanding. Long credit periods advanced to customers have negative effect on cash flow. Trade payables refer to purchases on credit advanced to the firm. Lack of credit from the suppliers or short-term credit terms will have a negative impact on the cash flow as trade payables involve cash outflow.

In a study by (Ojode 2014), the researcher established that profitability and cash flows have a negative relationship which implied that holding more cash flows will increase profitability and vice versa. Profitability is measured as return on assets. Choice of inventory accounting method, inventory cost, nature of your stocks and the level of stocks to hold helps in determining the existing relationship between cash flows and inventory. Poor inventory control can result into cash flow difficulties while good inventory control measures can lead to healthy cash flows.

Inventory controls refers to the inventory management policies in place to control movement of stock as well as the amount of inventory to be held. Holding too much stock can affect cash flow in a business and also holding less stock is also a disadvantage to the business.

A study by Whited and Erickson (2012) showed that lack of viable investment opportunities can drain the cash flow of a firm. In Kenya we had limited scholarly studies relating to manufacturing firms as well as in developing countries.

Handschuh and Loesch (2011) noted that overall heathy economy is related to the health of small businesses and most manufacturing firms fall in this category. From this perspective, it's important to understand the nature of manufacturing firms not only to improve them but also to improve the overall economy. Despite the various efforts by the government to increase manufacturing level in the country, more and more firms are closing down as a result of different reasons. Some of the reasons include lack of enough cash flows, in adequate capital, poor management strategies well as high indirect costs of doing business. (World Bank, 2007). Local manufacturing firms are also faced with high tax levels which are paid in form of corporation taxes. Another serious obstacle is lack of modern technology. Manufacturing firms in Kenya usually are unable to access credit for expansion as most of them are small and medium in size and lack assets to use as collateral. Corruption is also another challenge facing manufacturing firms in Kenya where firms are made to make informal payments to make things done. (World Bank 2007).

There is lack of enough cash flows that can be used for expansion in most of the manufacturing firms in Kenya and thus they exist as small and medium enterprises (SME). Despite efforts made by the government, development partners and other stakeholders to promote manufacturing firms through technical and financial assistance, a number of constraints still continue to inhibit the performance and realization of the sector's full potential. As such an investigation to these factors hindering the performance of these enterprises is thus vital. Having highlighted how manufacturing firms are important in improving Kenyan economy and the challenges they are facing as most of them are managed in the informal way, a need arises to do a study on the factors affecting cash flow in manufacturing firms in Kenya

1.1.4. Manufacturing firms listed in Nairobi stock exchange.

The Nairobi stock exchange is an institution registered under the capital market authority and it's important in economic development. The institution was started in the early 1920s when Kenya was still under British control. A true stock exchange was created in 1954 when NSE was recognized by London stock exchange to be an oversea stock exchange. The main obligation of the Nairobi Stock Exchange is to regulate the stock market by ensuring trading of securities at low cost by uniting investors and borrowers. the listed firms are required to provide their periodic performance reports by the capital markets Authority which is their regulator. NSE also provides information to general public on investment matters.

The manufacturing sector in Kenya is considered to have high growth potential. The gross contribution to Gross Domestic Product having rose from 13 percent in 2002 to 15.7 percent in the year 2007. Due to political stability experienced in Kenya, investors are attracted to it in large numbers especially in the manufacturing sector and thus the sector keeps on growing. (G.O.K. 2012). Currently the Nairobi stock exchange has listed nine (9) firms as manufacturing and allied firms. The listed firms are not the leading firms in Kenya. Listing of the firms means that the firms need to trade with its shares to raise more capital and also as a way of advertising themselves. The firms include Mumias sugar limited, B.O.C limited, Carbacid investment Limited, British American Tobacco limited, Eveready limited, and Kenya orchard limited, and Flame tree Group, Unga group and East African Breweries limited.

1.2Statement of the Problem

Management of cash flows is very key to a business especially in manufacturing firms that are cash intensive. This is because they require a lot of inputs as raw materials and a variety of light and heavy machines and without enough cash flows these cannot be achieved. Most of the manufacturing firms in Kenya being small in size have been experiencing cash flow

fluctuations and sometimes they record negative cash flows. The fluctuations in cash flows have been associated with several factors which include but not limited to investments, inventory control and profitability of assets. Most of these manufacturing firms are not in a position to cover their current liabilities as a result of cash flow challenges (Quinn, 2011)

Cash flow management activities in manufacturing firms listed in Nairobi securities exchange has an increasing Challenge to financial performance. This has been evidenced by the decrease in performance of manufacturing firms listed at the Nairobi securities exchange as attributed by cash flows issues, (Athanase, 2015).

A recent report by the World Bank (2014) recognizes the importance of financial management practices towards economic development in both developing and developed countries. The study shows that through proper financial management practices, managers are in a position to make sound decisions on the financial position of an enterprise and their capability of achieving long term financial goals. Cash management practices are a key tool of ensuring that organizations profitability is stable while ensuring they do not become insolvent, World Bank (2014) In Kenya, the cases of cashflow management are highlighted by various studies and reports. A report by the Kenya Economic Survey (2016) availed that manufacturing firms have lower performance levels compared to organizations in other sectors with a slow growth rate of 4.3% per year. The main issues underlining their performance is uncertainty and lack of knowledge of cash flow management that under mines financial literacy. However, Harash et al (2014) asserted mismatch in any cash flow management practices hinders capability of manufacturing firms to achieve positive results. A study by Zulu (2014) indicated that the failure rate of manufacturing firms in south Africa lies between 70% and 80% as a result of cash flow problems.

Studies by Ngugi and Waweru (2014) on the effects of financial innovation in relation to how manufacturing firms perform revealed that financial innovation has an effect on how they

perform. This happens if a firm is fast enough to embrace new financial innovations in the market. Another study by Kinyanjui, Kiragu, and Kamau (2017) on cash management on financial performance revealed that inappropriate skills to manage, plan and control cash flows leads to slow financial growth as the business may lack cash for expansion. Though the studies tackled importance of financial management, the studies failed to indicate the factors that affect cash flow. Most of the studies conducted locally and internationally most address the relationship between cash flows and firm's performance.

The Main reason to conduct this study is to examine factors that affect cash flow in manufacturing firms leading to the high failure rate giving attention to manufacturing firms listed in the Nairobi stock exchange to address the identified gaps. This paper seeks to establish the factors that affect cash flow in manufacturing firms by establishing how investments, inventory control and profitability relate to cash flows. Firms listed in the Nairobi stock exchange were considered in this study.

1.3 Objectives of the Study

1.3.1 General Objective

To identify the factors affecting cash flow of manufacturing firms listed at the Nairobi securities exchange.

1.3.2 Specific Objectives.

i. To establish how investments affect cashflow of manufacturing firms listed at the Nairobi securities exchange.
ii. To find out how inventory controls affect cashflow of manufacturing firms listed at the Nairobi securities exchange.
iii. To determine how profitability affects cash flow of manufacturing firms listed in the Nairobi securities exchange.

1.4 Research Questions

i. How do investments affect cash flow of manufacturing firms listed at the Nairobi securities exchange?

ii. How does inventory control affect cashflow of manufacturing firms listed at the Nairobi securities exchange?

iii. Is there any relationship between profitability and cash flows of manufacturing firms listed at the Nairobi securities exchange?

1.5 Justification of the Study

Lack of enough cash flows in a firm can affect its operations leading to poor performance. In extreme cases the firms can be closed down as no cash is available to fund daily operations of the firm. Managing of Cashflow is of great importance for almost all businesses as good cash flow management leads to increased financial strength of the business as well as financial survival. Every business should have in place proper cash management practices to meet the business needs. Manufacturing firms are of great importance in economic growth mostly in growing countries as well as in well-established countries. The failure rate of these firms is increasing on daily basis as a result of cash flow problems among others. A business that has enough cash flows is able to invest and fund its operations on time. This leads to smooth running of the business. Cash flow management is important to a business in determining its sustainability, helping in planning for the future and also helps in establishing the profitability of the business. Through cash flow management a business is able to plan for its future unforeseen happenings.

In choosing the independent variables, the researcher considered the nature of manufacturing firms compared to other firms especially service providing firms. Manufacturing firms are

labor intensive and thus require machines and equipment to assist in production of goods thus the choice of investment as an independent variable. These firms have a lot of stock in the form of raw materials, work in progress as well as finished products. These levels of inventory needed to be investigated to establish if they affect cash flows. By increasing investments, the volume of assets Also increase and thus the return from them should be considered to establish if they are profitable or not.

This study is motivated by the fact that manufacturing firms are cash intensive and do not have enough support in cash flow management as well as lack enough knowledge on how to manage cash flows. More motivation on this study is that only few previous studies have been conducted on factors affecting cash flow among manufacturing firms thus, the need for further research to fill the identified gap.

1.6 Significance of the Study

1.6.1 Manufacturing firms' managers

The study will give the owners and managers of manufacturing firms' insight on how to improve their cash flows by giving much attention to the factors that affect cash flows.. This will help them to formulate cash flow management strategies focusing on increasing the cashflow generated by the business.

1.6.2 County Government and policy makers.

This study is important to the county government and other policymakers to enhance the performance of manufacturing firms through grants and protection of the local manufacturing firms. The county government will know the importance attached to manufacturing firms in generation of revenue and employment creation. Policy makers will be in a position to utilize information as input in policy formulation.

1.6.3 Other Researchers

This study will be used by other researchers as a reference document while doing their research. More studies can be based on this research and thus other researchers may criticize the sections of this research that have not been addressed in full using the provided information.

1.7 Scope of the Study

This study sought to establish how investments, inventory control and profitability affect cash flow among manufacturing firms listed in the Nairobi securities exchange in Kenya. This study used descriptive research plan. The study included9 manufacturing and allied firms listed in the Nairobi stock exchange. The manufacturing sector requires a lot of cash to fund the purchase of raw materials. Without cash flow the operations of the enterprises will be at stand still. Secondary data was extracted from financial statements which included statement of financial position, statement of financial position and statement of cash flows and the extracted data was analyzed using STATA software version 12.0. The researcher used listed manufacturing and allied firms in this study because these firms are required by the capital market Authority which is their regulator to publish their annual financial statements. As a result, it will be easier to get the financial statements from the company's website as well as from the capital Market Authority website. These manufacturing firms require a lot of cash to fund their operations as the manufacturing sector is cash intensive. Most of the manufacturing firms are categorized as micro, small and medium sized Enterprises and thus may not have proper books of account as well as audited financial statements. Also, the owners and managers of these manufacturing firms may be reluctant to give out accurate information about their cash flows as the information is sensitive.

CHAPTER TWO
LITERATURE REVIEW

2.1 INTRODUCTION

In this chapter, the study focuses on empirical review, the theoretical aspect, and the conceptual framework explaining the relationship between the variables i.e. the dependent and independent variables. It discusses various theories that relate to cash flow. Empirical review of literature in relation to this topic and conceptual frame work are also analyzed.

2.2 Theoretical frame work

2.2.1 Trade-off Theory

This theory was put forward by Ditmar et al, (2003). According to this theory, in order to maximize the wealth of shareholders, Enterprises put into consideration the benefits and costs of holding cash. Cash flow management practices are aimed at ensuring that the firm has enough cash to fund its operations as well as for investment purposes. According to the tradeoff theory, firms only hold an optimum level of liquidity so that a balance exists between the costs and benefits of holding cash Islam, (2012) Some of the costs associated to holding cash include low returns as a result of liquidity premium and to some extend tax disadvantage. Benefits associated with holding cash include reduced transaction costs in raising funds or in selling of assets to raise funds to settle obligations.

If sources of finances are expensive or unavailable, an enterprise can use its liquid assets available to make investments or to fund its operational activities. Cash inflows and cash outflows should be maintained at optimal levels. The theory is of great concern in this study because any cash flow management practice is to ensure that the business is liquid enough to fund its operations. In managing cash flows, the managers need to know the factors which are affecting cash flows so as to control them. As Highlighted above, the owner gets to know which are the best practices to exercise so that he can maintain optimum levels of cash. In a study by

Joseph (2016) on the impact of cash management practices on the performance of SMEs, he used this theory and emphasized on the importance of maintaining optimal cash flows to ensure smooth running of the business. Frank (2014) in his study on cash flow and corporate performance used this theory to emphasize on the importance of cash flow on the performance of corporates. He established that mismanagement of cash flows hindered the growth of manufacturing Firms in Nigeria. The benefits and costs of holding cash should be considered and necessary actions taken early in advance. Lack of cash to fund operations on time has its cost and having too much idle cash also has its disadvantages.

In his study Enyew (2016) on factors affecting cash holding of manufacturing share companies in Ethiopia used this theory to emphasize on the importance of holding optimal cash balances in manufacturing firms. He noted that firms that do not hold optimum cash flows have problems in financing their operations and thus may incur additional costs in trying to raise additional funds externally or in liquidating the current assets they have. Ogundipe et al. (2012) in their study on **c**ash holding and firm characteristics for firms in the Nigerian emerging market recognized the importance of this theory. They highlighted that in holding optimum cash flows costs and benefits exists and a tradeoff should exist between the two. Firms with enough cash flows can take advantage of profitable business opportunities while firms which lack cash flows or have negative cash flows can miss profitable opportunities.

2.2.2 Pecking Order Theory

The theory was authored by Majluf and Myers (1986). It suggests that each firm has a certain order to follow when financing investments. They will prefer to use cheap source of funds first and then other sources later. Existences of asymmetric information in financial markets led to the emergence of this theory. Owners and managers have more and better information about an enterprise than third parties and external investors. This theory is based on two assumptions. According to informational asymmetry, outside investors have less information compared to

managers. So, when managers issue new equity as a way of financing new projects the outside investors interpret it as a signal that the firm is not doing well. This affects the share price negatively.

Secondly, this theory assumes that the firm manager act in the best interest of the shareholders and thus maximize the value of shares. The managers can ignore projects with Positive Net present values if accepting them makes the firm to issue undervalued equity at high costs to new share orders which would disadvantage the existing shareholders. In a study by Sebastian (2010), he analyzed the solvency and liquidity of a Dutch firm to establish the effects of this on financial decisions. He established that solvency and liquidity of an enterprise come together through hedging, leverage channels and information. The hedging channels and information helps firms to regularly pay dividends by as they increase the equity-value of firms. They also help to reduce the volatility of cash flow. A firm with negative cash flows may not be able to meet its cash requirements. This may be caused by lack of information about the market as well as poor management of the firm. Leary and Roberts (2010) point out those firms routinely issue equity when they should not do so. In a study by Akumu, (2014) on the effect of free cash flow on profitability of firms listed on the Nairobi securities exchange recognized the importance of this theory. having a lot of free cash flows in a business may affect the firm in a negative way as mangers take advantage of this and misuse the cash. Only optimum cash levels should be held.

In a study by Sila, (2018) on the relationship between free cash flows and profitability of firms listed in the Nairobi securities exchange used the pecking order theory. The researcher supported this theory by highlighting that costly financing sources should only be used after the cheap sources of finances have been exploited. This theory was used by Peng (2005) in his study to establish the nature of relationship between cash flow and investment of companies listed in the TWSE. The researcher concluded that free cash flows influence investments in

these firms. Oluoch (2016) used this theory in his study to establish the impact of cash flow management on the performance of Small and medium sized enterprises in Kenya. He established that for SMEs to perform well, they should use their cash flows in a certain order. This is by funding the most important activities first.Fama& French (2004) in their study on the effects of cash flow on profitability of firms listed in the Nairobi securities exchange used this theory and established that firms finance new investments in a certain order.

They prefer to use retained earnings first, followed by debt and finally through newly issued equity. Kinyanjui,(2013) in his study on the relationship between free cash flows and investments of firms quoted at the Nairobi securities exchange used this theory and emphasized on the importance of having an order in financing investments. This order is important as unnecessary costs associated with sources of finance are avoided. This theory is important to this study because if cash flow is not managed and utilized well a firm will have difficulties in financing its operations and investments. Any factor that affects cash flow should be monitored. This theory is important as it provides highlights on the order to follow in utilizing cash flows in firms. Cash flows being a limited and important resource should be utilized in order of importance to grow the firm.

Pawlina and Renneboog (2005) conducted a study to establish the relationship between investments and cash flow in British public companies. The study established that free cash flows and investments have a positive relationship. This means that having free cash flows in these firms led to increase in investments.

2.2.3 Free cash flow theory

This theory was authored by Jensen (2011). According to this theory, firm owners like to hold high levels of cash to increase the total assets of the firm in their control. The managers also try to have control over the investments of the firm as well as its financing decisions. If free cash flows are not well monitored, over investment can occur. (Sara Anjum 2013).

Furthermore, Sara Anjum (2013) noted that firms well established with the banks and operating in countries with investor protection hold low levels of cash. The above conditions lead to agency costs and desecrating managers in managing liquidity.

Having too much cash at hand may lead to misuse of business funds. Adnan and Afza (2010) stated the importance of maintain optimum levels of liquid asset to ensure that the operations of the firm are run smoothly. Zhou, et al (2012) used this theory in his study to establish how free cash flows affect the performance of listed real estate companies in china. The researcher established that free cash flows have a negative relationship with firm performance. Sila, (2018) in his study on relationship between free cash flows and profitability of firms listed in the Nairobi securities exchange used the free cash flow theory .The researcher noted that managers may misuse free cash flows by not investing them well and also by using them for their personal gain. In this study the researcher concluded that free cash flows have a negative effect on investments.

(Sadaf Ambreen, 2016) used this theory in his study to study the relationship between cash flows and performance of firms. The researcher criticized this theory by arguing that free cash flows bring conflict of interest between management and stakeholders thus not advisable to keep free cash flows in a firm.Grullon and Michaely (2004) conducted a study to establish why companies repurchased their shares and supported the theory of free cash flows in that if a company has free cash flows it will invest more and increase the volume of its assets. The goal of share repurchasing is to consume free cash. In a study by Akumu, (2014) on the effect of free cash flow on profitability of firms listed on the Nairobi securities exchange recognized the importance of this theory. Having a lot of free cash flows in a business may affect the firm in a negative way as mangers take advantage of this and misuse the cash. Only optimum cash levels should be held. Cheng, (2014) in his study on Value Investing: Profit, Dividend, and Free Cash Flow used the free cash flow theory and criticized it on the basis that if a

firm has free cash flows the managers tend to use the cash to their personal gain. Particularly, inappropriate use of free cash flow and overinvestment can reduce the marginal efficiency of investment. If Firms seek to increase company value they can use earning distribution or repurchase shares to pay shareholders instead of retaining free cash flows in the firm. Cash flows of large companies strongly influence investments as the ownership in large companies is dispersed.

This theory was criticized by Darek (2012) as firms do not only hold cash flows to increase total assets. Increasing cash flows does not mean there is an increase in the volume of assets under the control of the firm managers. Increase in cash flows may lead to increased pay to employees as pay is related to growth in a positive way. Assets can be increased by investing cash flows and not from cash receipts from the market. Hau,(2017) in his study to establish the relationship between Free cash flow and firm performance used this theory and established if a firm has free cash flows ,its performance will improve as the firm has enough cash for investment as well as to fund its operations. This study was conducted on sectoral levels for Vietnamese listed firms. Having free cash flows in a firm is not only important to the investors of the firm but also to the shareholders of the firm.

This theory is important to the study because cash flow management ensures that cash is used in the right way and only optimum levels of cash are maintained. The theory is relevant to this study in that it focuses on maintaining optimum cash flows and investing excess cash.

2.3 Empirical review

2.3. Investments and cash flow

A number of empirical studies have been conducted to address financial constraints of a firm with the aim of establishing the relationship between availability of funds and investment decisions of a firm. Availability of internally generated funds should not have an effect on

investment decisions as perfect capital markets ensures that external and internal funds sources are substitutable. (Hardy et al. 2012).Jonathan and Katharina (2016) conducted a study to establish investment cashflow sensitivities. The main objective of the study was to establish if a link exists between cash flows and investments. They studied on United States firms from 1971 to 2009. They used both cross sectional and time series data in their study. From the sample of firm, investment regression using ordinary least squares showed that additional dollar of cash flow had an effect on working capital, investments and cash holdings. The research findings revealed that cash flows and investments are strongly linked when the investment opportunities for the firm are controlled.

Letenah, (2014) conducted a research on investment cash flow sensitivity as a measure of financial constraints. The study was conducted to explain the conflicting evidence on investment cash flow sensitivities by using proxies for both internal financial constraint and external financial constraint measures. Secondary data extracted from the financial statements was used. The study concluded that firms of all category have a positive and significant investment cash flow Sensitivity. Imtiaz (2017) carried out a research on the relationship between investments and cash flow. The main objective of the study was to establish the relationship between investments and cash flows under high and low investment opportunities. The researcher used 167 non-financial manufacturing firms in Pakistan. Secondary data was used in this study, which ranged between 2004- 2013 to investigate the relationship of cash flow, sales and investment a panel regression model was used. The research revealed that in high investment opportunities firms, there exists a significant positive relationship between cash flow and investments. In low investment opportunities firms; the relationship between cash flow and investments is positive but insignificant. The research concluded that high investment opportunities firms rely on internally generated cash flows unlike low investment opportunities firms which distribute their earnings as dividends. Richard (2014) studied on

investment cash flow sensitivity under management optisim. The objective of the study was to test the investment cash flow sensitivity among panel data of industrial firms in America between 1999 to 2010.Q model of investment was used in the analysis. The research revealed that there is a positive and significant co efficient of investment to cash flow for the full sample. For fully constrained groups, sensitivity exists and is stronger.

Whited and Erickson (2012) carried out a study to determine the link between investments and cash flow. The general objective of the study was to identify if a relationship exists between investments and cash flows in manufacturing firms. He compared 1,317 manufacturing firms. Secondary panel data was used in this study. It was established from the research findings that cash flows and investments have a significant relationship. Kinyanjui (2103) conducted a study on the relationship between free cash flows and investments of firms quoted on the Nairobi securities exchange. The main objective of the study was to establish the relationship between free cash flows and investments among firms listed in the Nairobi securities exchange. The research used descriptive research design.

A sample of thirty companies was used. Secondary data was extracted from audited and covered a period of five years from 2009-2013. The findings from the research showed that that there is significant positive relationship between Free Cash flows and investments. Firms use pecking order theory in financing their investments. They start by using retained earnings since there is no flotation costs associated with it. After exhausting retained earnings, the firm uses debt financing as its cheaper compared to external equity and finally the firm uses external equity to help spread risks among the different stake holders. Investments have a relationship with cash flows as a change in investments has an impact on cash flows.

2.3.2 Inventory controls and cash flows

Inventory controls ensures that stock is well managed. Ineffective inventory control measures affect cash flow in manufacturing firms. Mwangi, (2016) conducted a study on the effect of

inventory control on cash flows of Kenya breweries limited and beer distribution firms in Nairobi county. The study sought to examine effect of inventory control on cash flows of Kenya Breweries Limited and beer distribution firms in Nairobi County. Descriptive research design was employed in this study. The study population included six Kenya Breweries Limited beer distribution firms in Nairobi County and a study carried out a census of all the firms. Secondary data, which was collected using a data collection sheet from six firms for a period of 10 years from the years from 2006-2015 was used. Data was analyzed using statistical package for social sciences. Ordinary least squares in the form of regression analysis was also used. The study established significant positive relationship between inventory control and cash flows of Kenya Breweries Beer distribution firms in Nairobi County. The study concluded that inventory control significantly influences firm cash flows of Kenya Breweries beer distribution firms in Nairobi County, Kenya.

Gao,(2014) conducted a study to establish the relationship between inventory control and cash flow. In his study he considered manufacturing firms and concluded that there is a significant negative relationship between inventory control and cash flows. As the firms increased inventory control as measured by inventory turnover cash flows decreased.Agu (2013) conducted a study on the impact of proper inventory control onthe operating cash flows of organizations in Nigeria. A sample of 248 respondents was used in the study and data was collected using oral interviews and questionnaire. The study findings established a significant negative relationship between inventory management and cash flows in an organization. The study concluded that good management of Inventories is key to generating cash flows in an organization. The growth and success of an organization is only achieved if a firm has enough cash flows.Alshattarat, (2010) conducted a study to establish the relationship between inventory and operating cash flow in manufacturing firms. The study used descriptive research design. Data collection was done through administering questionnaires. The findings of the

study revealed that inventory control systems have a significant negative influence on cash flows of manufacturing firms.

Thongori, (2015) examined the impact of inventory control on cash flows in relation to food processing firms in Kenya. The objective of the study was to establish the effects of inventory control on the cash flow of food processing firms. A questionnaire was used as a data collection tool and a sample of 110 respondents was used. The research findings revealed that a negative significant relationship existed between inventory control and cash flows. The study recommended that inventory control should be well planned. Good management of cost control such as carrying cost and ordering cost should be exercised. All these costs affect cash flow and thus inventory controls have an effect on cash flows.

According to Etale and Bingilar(2016) conducted a study to establish the impact of inventory control on cash flows of firms in the Nigeria stock exchange. The study used secondary data which was extracted from annual financial statements and reports of selected brewing firms listed in the Nigeria stock exchange. The study covered a period of 10 years from 2005 to 2014. Data was analyzed using multiple regressing method and the finding showed that good inventory control has a negative effect on the cash flows of the brewing firms in Nigeria. The recommendation from the study is that brewing companies should practice proper inventory control measures which may include used of modern technology and also qualified and trained staff.

Marketwire (2013) conducted a research on effects of inventory control on cash flows of manufacturing firms. He surveyed 575 manufacturing firms. Data was collected using a questionnaire. The researcher found that most small businesses lacked inventory control measure, approximately 73% of the surveyed small and medium sized Enterprises. This makes the firms to hold high stock levels which in turn affects their cash flows negatively. How inventory is managed directly affects cash flow. Local and global studies on inventory control

measures mainly focus on large scale enterprise in the manufacturing sector and mainly focus on the effect of cash flow on firm performance and thus fail to identify the factors that affect cash flow. Poor inventory controls have a significant negative effect on cash flows.

2.3.3Profitability and cash flows

Profitability refers to the return from assets in a firm. Low return means that the acquired assets are not productive enough. If investments are not profitable enough, cash flows will be affected as cash flow from investments will be minimal. A study on the relationship between cash flow and profitability of small and medium enterprise in Nairobi was conducted by Guda (2013) for the period 2008 –2012. A descriptive study was applied in this study using primary data obtained from individual small and medium enterprise firms. The data was organized into a panel, analyzed using a fixed effect regression model to obtain coefficients of the variables. The study revealed that there is a significant positive relationship between profitability and cash flow.

In his study, Mehtari (2016) studied on the relationship between cash flow from operations and profitability of firm in TSE. The study Objectives were to establish the relationship between operational cash flows and profitability of the firm. The researcher used correlations analysis to establish the relation between the variables. The research population included 19 companies quoted in USA. Profitability was measured as return on investment and cash flow was measured as dividend per share. The study concluded that firms with more liabilities, low total assets, equity and low retained earnings have better cash flow performance (measured by cash dividend). This implied that there is a positive relationship between cash flows and profitability. The study recommended that firms should have efficient operating cash flow management.

Parsian (2013) conducted a study on the relationship between operating cash flow and profitability for firms list in Tehran stock exchange. The objective of the study was to study

the relationship between cash flow components and profitably growth. Forty-two (42) firms sampled from Tehran stock exchange were used in the study and multiple regression models were used in the study. The research findings showed that there is a significant positive relationship between operating cash flow components and profitability. The general implication was that there is a relationship positive relationship between cash flow and profitability.

In his study Damian (2013), studied on how operating cash flows and profitability relate. He analyzed small and medium enterprise in Nairobi County. The study objective was to establish the relationship between operating cash flows and profitability. Primary data used in the study was obtained from individual small and medium enterprise located in Nairobi County. The study used time series data and regression models were used. The conclusion from the study was that there is a positive relationship between operating cash flow and profitability.

In his study Rehaman (2017) studied on the relationship between cash flow from investment activities on profitability in Pakistan firm. The main objective of the study was to examine the relationship between cash flow from investments and profitability in Pakistan firms. The sample size included 23 firms sampled from Pakistan listed firms. Descriptive statistics were used and the conclusion was that there is significant positive relationship between cash flow from investment activities and profitability.Manyo (2013) conducted a study to establish the relationship between operating cash flows and profitability of manufacturing firms in Nigeria. The study population included 12 Manufacturing firms listed in the Nigeria stock exchange. Correlation analysis was employed in the study to analyze the relationship between the variables. The study found that there is a positive relationship between operating cash flows and profitability.

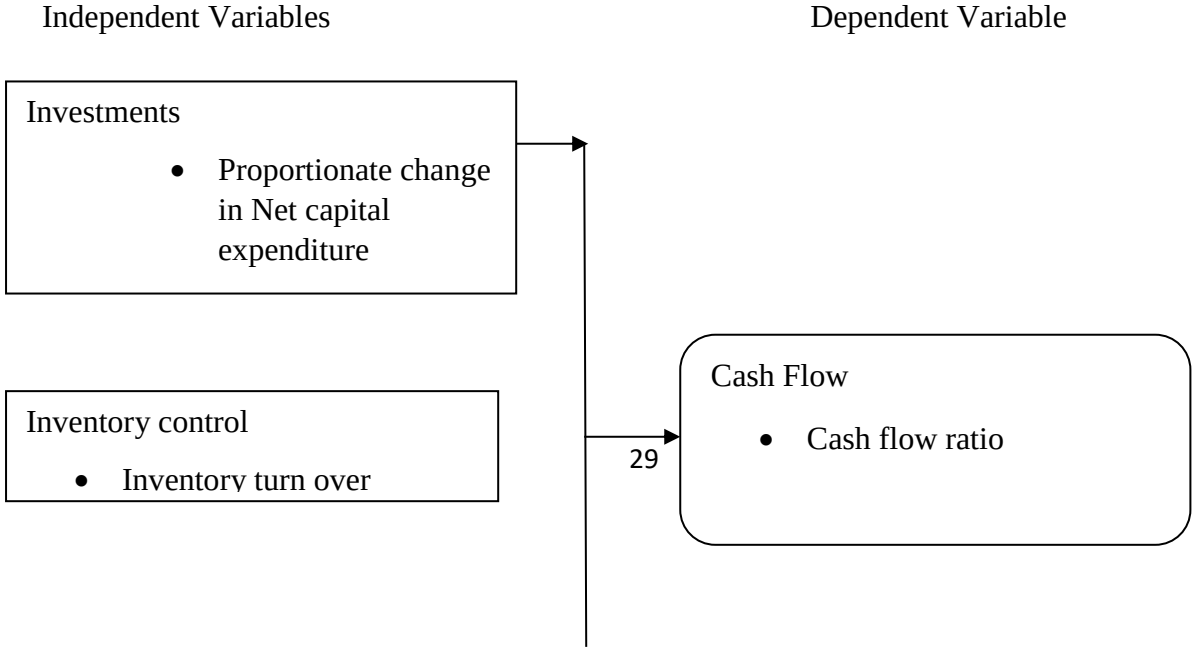
Asif (2015) carried out a study to establish how investment cash flows affect profitability. The population of the study included firms listed in the Karachi stock exchange. The general

objective of the study was to establish the relationship between investment cash flows and profitability. The sample size included 37 listed firms in the Karachi stock exchange and the study used descriptive analysis. The study concluded that investment cash flows are an important component of a firm's profitability and thus a positive relationship exists between the two. Investments are crucial to the long-term survival of the firm.

In his study, Akoto (2013) investigated on the relationship between cash flows and profitability. The study population included manufacturing firms listed in the Ghana stock exchange. The main objective of the study was to establish the effect of investment on profitability of manufacturing firms listed in the Ghana stock exchange and the study used 21 listed firms. Multiple regressions were used to study the relationship between profitability and cashflows. The study findings showed that there is a relationship between cash flows and profitability.

2.4 Conceptual frame work

A concept is a general idea or an abstract derived from specific instances. (Kombo & Tromp, 2009) and unlike a theory a concept can be understood by the reader without being discussed. (Durham & Stokes, 2015). According to ((shapira, 2011), a conceptual framework is a structure that represents empirical observations in a meaningful format.



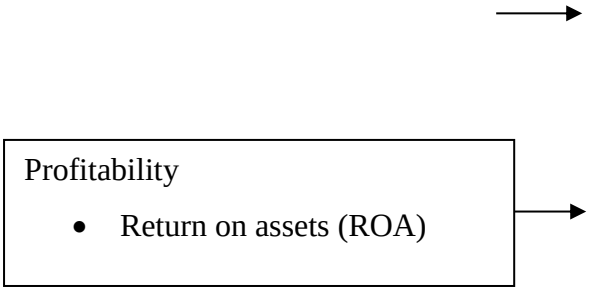


Figure 2.1

Source: Author (2019)

2.5 Operationalization of variables.

Operationalization of variables refers to the process of defining and describing the study variables into measurable factors. The process helps in defining fuzzy concepts and allows them to be measured, empirically and quantitatively (Ardelt, 2004).

Various independent variables affecting cash flow were identified during the Literature review. They include investments, inventory control and profitability. Cash flow refers to the funds inflows and outflows in a firm. Cash flow is measured as income before extraordinary items plus depreciation. It is measured using the cash flow ratio. A ratio of 1 indicates that a company is able to pay its current liabilities from cash flow generated from operations and vice versa. Cash flow from operations was extracted from the statement of cash flows while current liabilities figures are extracted from the statement of financial position.

$$\text{Cash flow ratio} = \frac{\text{cash flow from operations}}{\text{Current liabilities}}$$

Investment as an independent variable in this study referred to the commitment of fund with the aim of getting more returns in the future. Investments were measured as the net capital expenditure in the current year.

$$\text{Net capital expenditure} = \frac{\text{Current year capital expenditure - Previous year capital expenditure}}{\text{Previous year capital expenditure}}$$

Profitability as an independent variable was measured using Return on Assets (ROA).

Return on assets= Operating income before interest and tax /Total assets.

Inventory control refers to the measures put in place to ensure that inventory is well managed. Their effectiveness can be measured through inventory turnover.

$$\text{Inventory turnover} = \frac{\text{Cost of goods sold}}{\text{Average inventory}}$$

Table 2.4 Operationalization of variables.

Variable	Measurement	Formula
Cash flow	Cash flow ratio	Cash flow from operations/Current liabilities
Investment	Proportionate change	Current year capital expenditure - previous year capital expenditure. /Previous year capital expenditure
Inventory control	Inventory turn over	Cost of goods sold/Average inventory
Profitability	Return on assets (ROA	Operating income before interest and taxes/Total Assets

2.6 Summary of Variables

2.6.1Investments

In the context of this study, investment refers to the net capital expenditure in a given year. The net capital expenditure in a given year was calculated by getting the proportionate change in capital expenditure by getting the difference between current year capital expenditure and previous year capital expenditure expressed as a fraction of the previous year capital expenditure. Without investing a firm may not survive for long as machines and equipment's depreciate in value and thus become costly to maintain and operate them. For the firms to survive in the industry which is competitive in nature, they have to keep on improving their machines and also use latest technology to gain a competitive advantage.

Most manufacturing firms are small in size and thus have a high growth potential and thus the relationship between cash flows and investments is high in them. This calls for manufacturing firms to acquire new machines and equipment to increase efficiency and cut cost in their production operations. The manufacturing firms are important to the growth of the economy, mostly in growing economies as well as developed countries. Investments are a source of cash to the business but over investment leads to cash flow problems. The growth of manufacturing firms relies on the firm's ability to invest especially in acquiring machines and equipment's which aid in production of goods and services thus grow in size. Manufacturing firms are crucial in creating jobs and enhancing growth in the economy yet entrepreneurs in developing countries face obstacles from starting and growing their businesses because they lack techniques for investment decisions. Different empirical studies carried out by different researchers have showed that a relationship exists between cash flow and investments. Firms with viable investments report positive and excess returns. A positive relationship exists between increasing capital expenditure and the level of cash flow. The power of this relation increases for firms with profitable capital expenditure opportunities.

2.6.2 Inventory control and cash flows.

Inventory is a current asset to a firm and refers to both finished products as well as unfished products. If inventory is not well managed, a lot of working capital will be tied up and thus the firm will face challenges in financing its operations as a lot of cash is not available for use for tied up in inventories. It has been seen that in most of the cases unnecessary funds are tied up with inventories, which is one of the important elements of current assets (Ashok, 2013). Inventory controls refers to measures that are put in place to ensure that the right levels of stock are maintained (Anene 2014). Economic order quantity theory states that only optimal levels of stock should be held. (Agu and Achebe 2013). Purchasing more stock involves cash outflow. We have deterministic and probabilistic models of inventory control and management. These models help in determining the optimum levels of inventories to be maintained. If inventory controls are not well-set different challenges will face the firm as holding too much or little inventory will have an impact on cash flow. If inventories are held for long they may become obsolete and thus their value decreases which in turn will have a negative effect on cash flows.

Jaber, (2009) established that a firm, which ignores the control of inventories, faces serious challenges relating to poor profitability and may fail to survive in the long run. By practicing proper inventory control, a firm can manage the levels of inventories to a reasonable degree. Inventory is a major component of working capital. To a large extent, the success or failure of a business depends upon its inventory control measures. Proper control of inventory not only solves the problem of lack of enough cash flows but also increases profitability of the firm.

The efficiency of Inventory controls can be measured through inventory turnover ratio or inventory conversion period. Inventory conversion period refers to the number of days a firm takes to convert its finished products into sales. The inventory turnover ratio measures the number of times a company sells its inventory during the year. A high inventory turnover ratio

indicates how best the firm is operating economically in selling its products. Inventory turnover is a measure of management's ability to use resources effectively and efficiently. Different studies have established that measures put in place to control inventory have an impact on cash flows of a firm.

2.6.3 Profitability and cash flows

Profitability of a firm refers to the average return on assets. Profit is a financial gain that is achieved when the amount of cash generated from the core activities of the business is more than expenses, costs and taxes. In some cases, the profit is distributed among the is a measure of evaluating the overall efficiency of the business. Thus, profitability may be regarded as a relative term owner. It is the ability of a given instrument to earn a return from its use. It indicates how well management of an enterprise generates earnings by using the resources at its disposal.

Akumu (2014) in his study established that a positive relationship exists between profitability and free cash flows. If a company does not have enough cash flows it’s not in a position to invest in profitable activities and thus low profits will be recorded. Businesses with adequate cash flows and high profitability of its assets are always successful in its operations. Manufacturing firms should try to generate enough cash flows by increasing the profitability of their assets. Cash flow is different from profit in that cash flow key to the operations of a business unlike profit. A firm may make a lot of profit but have negative cashflow because the amount of profit portrayed in the statement of comprehensive income is not the same amount of cash available to the business for use. A business cannot run its operations well without enough cash flows and these calls for proper cash flow management practices. By analyzing the cash flows of a firm, one is able to know the main business activities of the firm and if the business is profitable and sustainable. A business may be profitable but if it does not have

enough cash flows it may not survive especially if the competition is high like in the manufacturing sector.

*2.7*Summary of the Literature Review

In this chapter, the researcher highlighted and discussed theoretical literature as well as empirical review relating to factors affecting cash flow in manufacturing firms listed in the Nairobi securities Exchange. The findings from the literature review show that investments, inventory control and profitability have a relationship with cash flows and thus mismanagement of them can affect the cash flow levels of manufacturing firms. Also, the researcher constructed and presented the conceptual framework of the study.

Manufacturing firms find themselves not able to sufficiently fund their operations due to cash flow challenges. This may be due to poor or lack of viable investment opportunities, low profitability of acquired assets as well as poor management of inventories among other causes. These manufacturing firms may fail to identify the growth potential they have as a result of insufficient cash flows. This happens because the owners and managers concentrate on ensuring that the firm survives and thus ignores the necessary activities to grow the firm. This study will assist in highlighting some of the factors that clarify the above statement in Kenya. The users of firm's financial statements such as investors, creditors and banks have an expectation that the financial statements are a reflection of the companies' economic reality. Owners and managers of these manufacturing firms may prefer to use the financial statements or financial information to trainor even to coach their staff especially management and sales staff. The study focuses on cash flow management by identifying the factors affecting the management of cash flows manufacturing firms listed in the Nairobi stock exchange. However, major literatures from various authors have focused on general about cash flow problems.

Therefore, there was need to fill the gaps by realigning various studies to match the study being carried out.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter provides the details of the targeted population, research plan to use, data sampling plan, how to collect data and how-to analysis collected data. Research method to be used by a researcher is of great importance. This is because scholars and other researchers consider the method that was used to define the quality of qualitative reports (Kirkman, Hammerer and De Lacey 2016). Poor research methods lead to poor research reports.

3.2 Research Design

A research design is described as the outlined plan showing how the whole research process will be carried out. It shows how the activities to be carried out in the study will be organized. (Mugenda&Mugenda 2003). Polit, Beck, and Owen (2003) defines a research design to be an overall plan for obtaining answers to the research questions in a given study and for solving some of the challenges a researcher faces during the research process. The research design used in this study was descriptive research design. According to Shields, Rangarajan and Patricia 2013, descriptive research design defines the characteristics of the population being studied. This research design creates a profile of events, people and problems. Descriptive research design is done so that one is in a position to describe the characteristics of a given variable.Muthuva (2016) highlighted that by use of descriptive research design ,a researcher is able to obtain information relating to variables under the study as well as explain the relationship between the variables. This research design was used by Kinyanjui (2013) in his study to establish the relationship between free cash flows and investments. Also, Mutile

(2018) used this research design in his study on the relationship between cash flows and profitability of firms listed in the Nairobi stock exchange.

3.3 Target Population

Target population refers to the entire group of individuals or objects to which researchers are interested in generalizing the conclusions (Johnson, 2012).Schreiber and Schreiber(2014) refers to the target population as the group of actors most negatively affected by the problem that initiatives are attempting to overcome, they are the intended direct recipients and in some cases indirect recipients of an initiatives

According to Mugenda&Mugenda (2003) target population is defined to be the specific population on which information is to be generated .It's a well explained set of variables like people or group of items on which investigations will be carried on to gather more important information on them. Dawson (2009) described target population to be the total population in a study to which the researcher applies the research conclusions. He further stated that a target population is a universe of the study as all members of a real or hypothetical set of people or events to which an investigation wishes to generalize results. The target population for this study was nine firms listed as Manufacturing and Allied in the Nairobi stock exchange as per Capital Market Authority 2018 report.(Appendix IV).

3.4 Sampling frame and sampling design.

In this study the researchers sampling frame for the target population was all the 9 listed firms in the Nairobi securities exchange which is regulated by the capital markets Authority as at June 2019. Lavrakas (2014) defined a sampling frame to be a list of target population where a sample is derived from and that a sampling frame comprises of a finite population. Kothari (2010) defined a sampling frame to be a list that includes all the names of elements in a universe. A sample is a list of selected participants from a population (Polit& Beck, 2010).

Kothari (2004) defined a sampling frame as a structured plan used to obtain a study sample from a given target population. The plan shows the technique and the procedure the researcher will use in his study in selecting items for the sample which should be a representative of the entire target population. A Census of the listed manufacturing firms in the Nairobi stock exchange was considered in this study. This is because the target population was small and thus easy to use census than sampling. All the manufacturing firms listed as manufacturing and Allied under the capital market authority as at June 2019were analyzed.

3.5 Data Collection

Miles, Huberman and Johnny (2014) described data collection in a study to be the process of collecting and measuring information relating to study variables to enable the researcher to formulate relevant questions and project the outcome. Secondary data analysis is more preferred in a Quantitative research to primary data analysis. The analysis of secondary data from existing research is increasingly being used unlike primary data analysis. Secondary data has much clearer categorization because it avoids confusion. (Johnston (2014).

In this study, the researcher used Secondary panel data as it was easier to collect it for past years and also it's more reliable than primary data. The data was easily available from the company's websites as well as the capital market Authority website. Panel data has more variability and there is less collinearity between the study variables as compared to time series and cross-sectional data. Panel data limits heterogeneity and identifies effects that cannot be highlighted in pure time series and cross-sectional data and thus can be used to study complicated issues of changing nature. (Baltagi, 2005; Greene, 2002; Gujarati, 2012).

The data was extracted from financial statements which included statement of financial position, statement of cash flows and statement of comprehensive income for the five years

under the study. The collected data covered a period of 5 years from 2013 to 2017.The data was collected through the use of data collection sheet.

3.6 Diagnostic test

Diagnostic test should be performed to establish if the model chosen is a good one. (Gujarat 2003). In order to establish the nature of the panel data and the best model to analyze the data, various diagnostic tests were carried out. The researcher used the linear regression model to examine the mean, standard deviation, minimum and maximum of the collected data. To study the trend between and within the firms, the researcher used exploratory data analysis. This analysis helped the researcher to establish the trend cash flows followed in the individual firms as well as the overall trend of cash flows in the different firms.

The diagnostic tests carried out included:

3.6.1 Test for Radom Effects

The breusch –Pagan LM test was used to test for random effects. This test was necessary as it helped to determine whether to use a simple linear regression model (POLS model) or a random effect model in analyzing the data. The chi test is used to check for model fitness and if the p value is less than 5%, then the model is ok.

3.6.2 Test for fixed effects.

The researcher examined the presence of fixed effects. Presence of time related fixed effects would require the researcher to include dummies in his model or to fit a two-way random effects model. The researcher used the F-test to examine the presence of fixed effects. The test pharm test was run on STATA to establish the presence of fixed effects. The F-test was used to see if the model is significant. If $P < 0.05$ then the model is ok.

3.6.3 Multi collinearity test

In studying the relationship between the independent variables the researcher performed a collinearity test.Variance Inflation Factor test was carries out to examine the strength of the relationship between the independent variables under the study. High mean inflation factor greater than 5 shows that the data has multicollinearity.

3.6.4 Test for Serial correlation.

Serial correlation occurs when the error terms for regression variables are correlated in successive time periods. Wooldridge test for serial correlation was used to test the presence of serial correlation in the data. The null hypothesis is that there is no serial correlation in the micro panels and the Alternative hypothesis is that there is first order serial correlation. If the P value of the test is less than 0.05, the null hypothesis is rejected and the alternative hypothesis is accepted.

3.6.5 Heteroscedasticity test.

Presence of heteroscedasticity inflates the standard errors once it's present in a data set. The modified Wald test for group wise heteroscedasticity was used in this study. The null hypothesis for the test is that there is a constant variance across the error terms across the entities and the alternative hypothesis is that the error terms do not have a constant variance across entities.

3.7Data processing and Analysis

The researcher adopted both quantitative and qualitative methods of analyzing data. According to Cooper & Schindler (2003), analysis of data is a long and continues process initiated immediately after data has been collected and stops when the data is processed and interpreted. Data processing includes editing, coding, classification, tabulation and graphical presentation, Blumberg, Donald Cooper and Schindler (2014).The researcher extracted secondary data and

the data was analyzed quantitatively through a mathematical and regression equations and this was solved by using a statistical tool(STATA). According to Olweny (2012) multiple regression techniques give both quantitative and qualitative result that is conclusive and clear. STATA analyzed descriptive statistics and multiple linear regression analysis between dependent variables (cash flow) and independent variables which included investments, inventory control and profitability.

The research used panel data model of the form.

$Y_{it} = \beta_0 + \beta_1 X_{1it} + \beta_2 X_{2it} + \beta_3 X_{3iti} + \varepsilon_{it}$

Where: Y =Cash flow

X_1=investments (Net proportionate change in capital Expenditure)

X_2=Inventory control (inventory turnover)

X_3=Profitability (return on assets).

β_0= Constant co- efficient of change.

β_1,-β_3 = regression co efficient of change of the independent variables.

ε=Error term.

3.8 Test of significance.

To test significance of regression model, the study used the F-statistics while the p – statistics will be used to test significance of regression coefficients. Both statistical tests were tested at 95% confidence interval.

CHAPTER FOUR
DATA ANALYSIS, PRESENTATIONAND INTERPRETENTION

4.1 Introduction

In this study the researcher sought to establish the factors affecting cash flow in manufacturing firms listed in the Nairobi stock exchange. The study considered investments, inventory control and profitability to establish if there is any significant relationship between them and cash flow. This chapter presents findings from the analysis of panel data of nine Manufacturing and allied firms listed in the Nairobi Stock Exchange Between the years 2013 to 2017.The researcher used secondary data which was extracted form published financial statements which included the statement of financial position, statement of comprehensive income and statement of cash flows. The researcher starts with discussion of descriptive data analysis and exploratory analysis of extracted panel data. The exploratory analysis includes both within the independent firm and within the firms. The results of diagnostics tests conducted are also discussed. The diagnostic tests included the Breusch- Pagan LM test to test for Radom effects, test for fixed effects, multicollinearity test for testing correlation between the independent variable, Wooldridge test for serial correlation and modified wald test for testing heteroscedasticity .after analysis of the data was done it was noted that the data had serial correlation of first order and heteroscedasticity and thus a praiswinsten panel regression model with corrected standard errors was fitted to produce robust results in the presence of them. This was done to determine the relationship between the independent variable and cash flow in manufacturing firms listed in the Nairobi stock exchange. The findings of the study as shown in the fitted model were also discussed.

4.2 Descriptive analysis of study variables.

The researcher examined the descriptive pattern of the independent and the dependent variable and the study findings were summarized as shown in table 4.1 and table 4.2 below.

The descriptive statistics for the independent variables were analyzed as follows.

Table 4.1 Descriptive statistics for the study variables.

```
. xtsum cashflow investments inventorycontrol profitability

Variable          |      Mean   Std. Dev.       Min        Max    |    Observations
------------------+-----------------------------------------------+----------------
cashflow overall  |  .2048889   .2701315       -.44        .84    |     N =      45
         between  |             .2331911      -.132       .668    |     n =       9
         within   |             .1534157  -.1211111   .7668889    |     T =       5
                  |                                               |
invest~s overall  |  .0002222   .2967206       -.97        .51    |     N =      45
         between  |             .1849823      -.406        .26    |     n =       9
         within   |             .2386115  -.7697778   .6462222    |     T =       5
                  |                                               |
invent~l overall  |  5.086667    2.33646       1.66         12    |     N =      45
         between  |             1.591723      3.302      7.436    |     n =       9
         within   |             1.776454   2.750667   13.09067    |     T =       5
                  |                                               |
profit~y overall  |  .0415556   .3288614       -.89        .46    |     N =      45
         between  |               .27249      -.638       .348    |     n =       9
         within   |             .2016162  -.5144445   .3675556    |     T =       5

.
```

Cash flow which was the dependent variable and was measured as a ratio (operating cash flows to current liabilities) had a mean of 0. 205.This implied that the manufacturing firms could only cover 20.5% of their current liabilities during the period under the study. The firms did not generate enough cash flows during this period and its evident that they had cash flow challenges especially Eveready East Africa ltd. The mean of cash flow was -0.44 which implied that some of the firms generated negative cash flows thus having a challenge to fund their current liabilities. The maximum was 0.8 which was close to one which is the standard ratio meaning

that firms with this ratio tried to fund their operations but was not able to generate enough cash flows. This report is in agreement with the KAM,(2011) report which revealed that most of the manufacturing firms are stagnant of failing due to lack of enough cash flows.

Investments had an overall mean of 0.002 and a variation of 0.296, a minimum of -0.97 and a maximum of 0.51.The variation between the firms were 0.184, a minimum of -0.406 and a maximum of 0.26.Investment variation within the firms was 0.239 with a minimum of - 0.770 and a maximum of 0.65.This showed that on average , some of the firms increased their capital expenditure in terms of getting new machines and equipment up to 51% while other firms decreased their capital expenditure by disposing some of their equipment up to 97%.The increase in capital expenditure had a significant positive relationship on cash flows. This conclusion is in agreement with Jonathan and Katharina,(2016) ,Zahid, (2017) and wale,(2014) who concluded in their studies that a positive relationship exists between investments and cash flow.

Inventory control overall mean was 5.068 and a variation of 2.336, a minimum of 1.66 and a maximum of 12. The between firm variation of inventory control was 1.592 with a minimum of 3.302 and a maximum of 7. 436.The within firm variation was 1.776 with a minimum of 2.750 and a maximum of 13. 096.From this analysis it was established that most of the firms replenished their firms on Average five times in a year. This implied that the firms held a lot of stocks which tied up their cash flows thus causing cash flow challenges in the firms. The overall minimum of the firms was 1.66 which implied that the some of the firms replenished their firms twice a year. This could have been a reason why most of the firms experienced cash flow challenges. The overall maximum was 12 implying that some of the firms were efficient in replenishing their stocks. This finding are in agreement with Mwangi, (2014) who concluded in his study that a relationship exists between inventory control and cash flows.

Profitability overall mean was 0.042 and a variation of 0.329,a minimum of -0.89 and a maximum of 0.46.The between firm variation was 0.272 with a minimum of -0.638 and a maximum of 0.348.The within firm variation was 0.201 with a minimum of -0.514 and a maximum of 0.367.The implication of the overall mean is that the firms had a mean cash flow ratio of 0.2.The overall mean of 0.042 implied that the profitability of the assets was on average 4.2 % .In some of the firms the return on assets was as high as 46% which was the maximum during the period under study. Some of the firms did not utilize their assets well and thus ended up making loses up to 89% which was the minimum for the firms on average.

Table 4.2 Descriptive statistics for the dependent variable.

```
. xtsum cashflow
```

Variable		Mean	Std. Dev.	Min	Max	Observations	
cashflow	overall	.2048889	.2701315	-.44	.84	N =	45
	between		.2331911	-.132	.668	n =	9
	within		.1534157	-.1211111	.7668889	T =	5

.

From the study findings it was established that on average all the firms had a cash flow ratio of 0.20 with an overall variation of 0.27, over a minimum of -0.44 and a maximum of 0.84.The standard deviation between firms was 0.23 with a minimum of -0.13 and a maximum of 0.68.The within firm variation of cash flow (standard deviation) was 0.15 with a minimum of -0.12 and a maximum of 0.77. Cash flow which was the dependent variable and was measured as a ratio (operating cash flows to current liabilities) had a mean of 0.205.This implied that the manufacturing firms could only cover 20.5% of their current liabilities during the period under the study. The firms did not generate enough cash flows during this period and its evident that they had cash flow challenges especially Eveready East Africa ltd. The mean of cash flow was

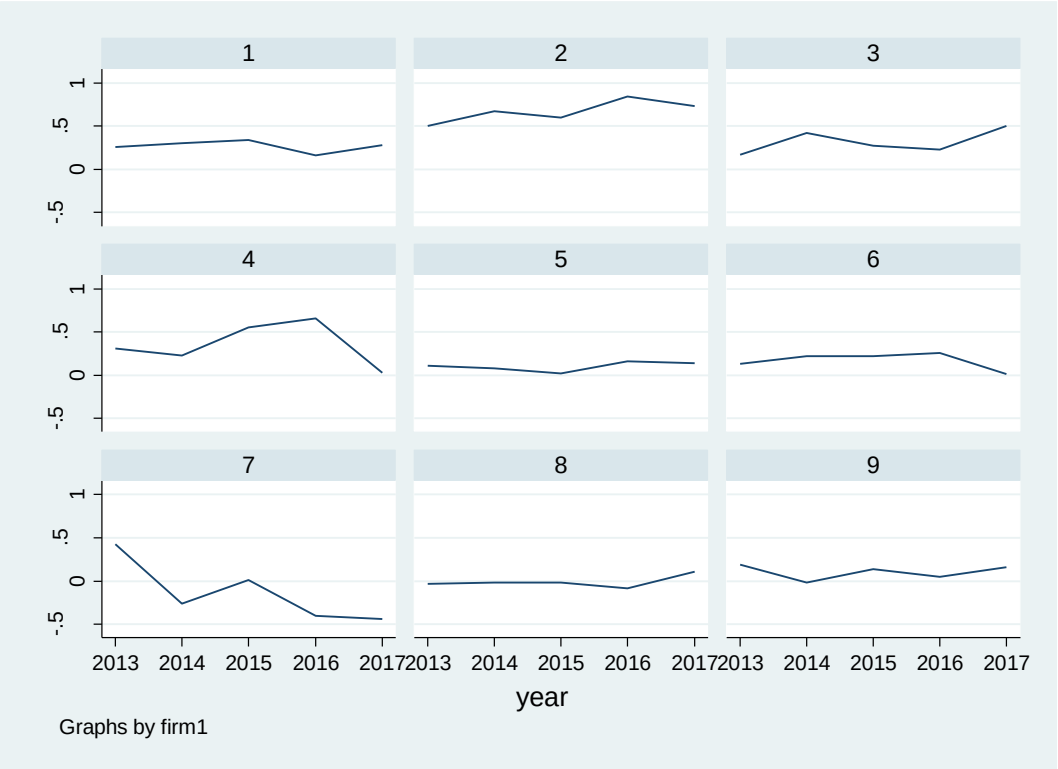
-0.44 which implied that some of the firms generated negative cash flows thus having a challenge to fund their current liabilities. The maximum was 0.8 which was close to one which is the standard ratio meaning that firms with this ratio tried to fund their operations but was not able to generate enough cash flows. This report is in agreement with the KAM,(2011) report which revealed that most of the manufacturing firms are stagnant of failing due to lack of enough cash flows.

4.3 Exploratory data analysis.

Heterogeneity was examined across the listed firms for five years using exploratory data analysis. This analysis was essential in the determination of whether to use the panel data models or simply to use pooled data regression models. The analysis was done using graphs to examine the general trend of cash flows within and across manufacturing firms listed in the Nairobi stock exchange. Growth plots were used to study the within firm behavior of cashflow. Figure 4.1 below shows the empirical growth of cash flow over a period of five years under the study. From the growth plot, it was revealed that for most of the firms' cash flows did not change much during the period under study. However there are two firms in which cash flows behaves differently from the others i.e. 4 and 7. These two outliers did not suggest the existence of significant time related fixed effects.

Figure 4.1 Growth plots-Trend plots for the dependent Variable.

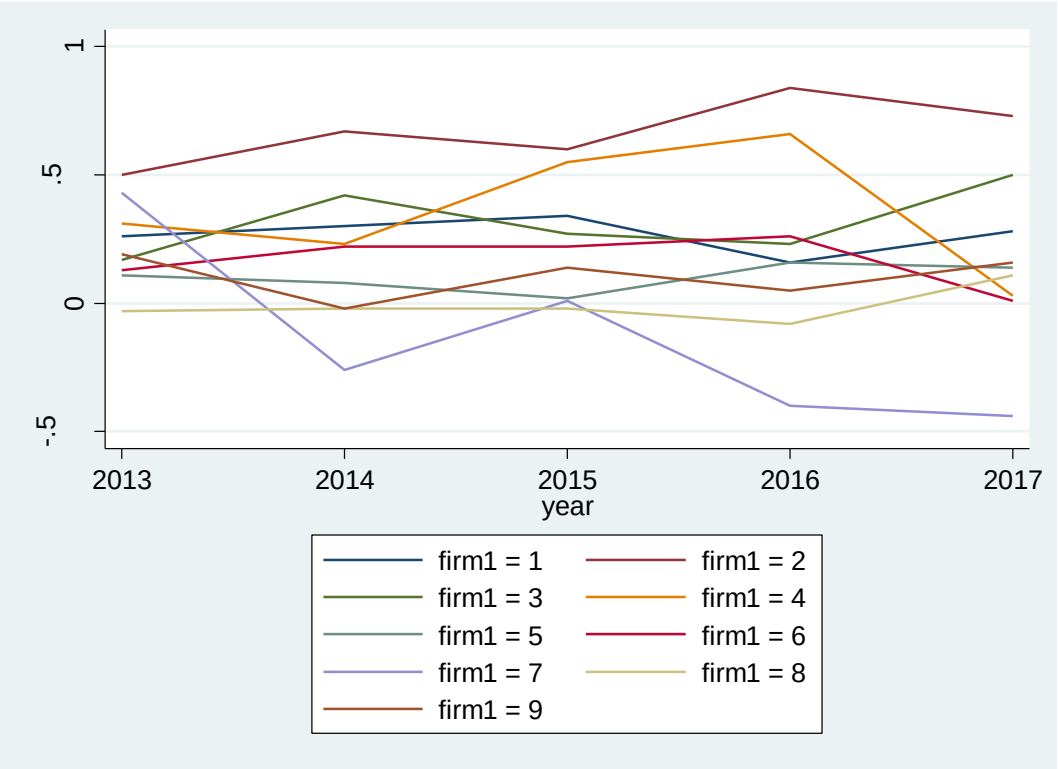
Within individual firms behaviour of cash flows over time.



Source: Researcher (2019)

Overlain plot of cash flow was also done and an observation of the plot showed that the slopes were non-significantly different among the firms except for two firms, one with a y intercept not similar to the other firms and the other behaving differently from the others. The overlain plot of cash flow is shown in figure 4.2 below.

Figure 4.2Overlain plots for the dependent variable over time (cash flow).



Source: Researcher (2019)

Further observation of the overlain cash flow plot indicated slopes being non significantly different among most of the manufacturing firms except one which behaved in a different manner.

4.4Diagnostic Testing

This section reports on results of diagnostic analysis of panel data. The reports specifically includes the existence of time related fixed effects and the suitability of fitting pooled regression model as compared to panel data models. The presence of serial correlation and heteroscedasticity was also examined in the study. An analysis of the data was also done to determine if to use random effects or fixed effects models.

4.4.1 Test for Random Effects.

The researcher started by examining the practicability of fitting a pooled regression model or a panel data model. Breuch-pagan LM test was used to determine if a simple linear regression model was more preferable than random effect model. The Breuch-Pagan LM test was also used to check for random effects and thus helped in choosing between POLS model and Random effect model.

Table 4.3. Random effect model results.

```
. xtreg cashflow investments inventorycontrol profitability,re

Random-effects GLS regression                   Number of obs      =        45
Group variable: firm1                           Number of groups   =         9

R-sq:  within  = 0.3319                         Obs per group: min =         5
       between = 0.7519                                        avg =       5.0
       overall = 0.4574                                        max =         5

                                                Wald chi2(3)       =     24.62
corr(u_i, X)   = 0 (assumed)                    Prob > chi2        =    0.0000
```

cashflow	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
investments	.3394311	.0949355	3.58	0.000	.153361	.5255012
inventorycontrol	-.0409692	.012347	-3.32	0.001	-.0651688	-.0167695
profitability	.2289808	.0990794	2.31	0.021	.0347888	.4231728
_cons	.4036945	.0766842	5.26	0.000	.2533962	.5539928
sigma_u	.1002301					
sigma_e	.14316531					
rho	.32892242	(fraction of variance due to u_i)				

Source: (Researcher 2019)

Table 4.4 chi-square values for the Breusch-Pagan LM test.

```
. xttest0

Breusch and Pagan Lagrangian multiplier test for random effects

        cashflow[firm1,t] = Xb + u[firm1] + e[firm1,t]

        Estimated results:
                         |       Var     sd = sqrt(Var)
                ---------+------------------------------
                cashflow |     .072971       .2701315
                       e |    .0204963       .1431653
                       u |    .0100461       .1002301

        Test:   Var(u) = 0
                             chibar2(01) =    10.18
                          Prob > chibar2 =   0.0007
```

Source (Researcher 2019)

The p value is less than 0.05 thus we reject the null hypothesis that the variance across group is zero. We therefore use random effect model and not POLS model as the p value is 0.0007.

4.4.2 Test for time Fixed Effects

The presence of fixed effects was examined in the study. Such test was necessary because if fixed effects were present, the researcher would account for them by either including dummy variables to capture the effects or fit a two-way random effect model. Table 4.4 below shows the results of the test.

Table 4.5. Test for time fixed effects.

```
. xtreg cashflow investments inventorycontrol profitability i.year, fe

Fixed-effects (within) regression               Number of obs      =        45
Group variable: firm1                           Number of groups   =         9

R-sq:  within  = 0.3758                         Obs per group: min =         5
       between = 0.5112                                        avg =       5.0
       overall = 0.3839                                        max =         5

                                                F(7,29)            =      2.49
corr(u_i, Xb)  = 0.2936                         Prob > F           =    0.0390

------------------------------------------------------------------------------
        cashflow |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-----------------+------------------------------------------------------------
     investments |   .2714679   .0974823     2.78   0.009     .0720941    .4708416
inventorycontrol |   -.039993   .0129371    -3.09   0.004    -.0664524   -.0135337
   profitability |   .0863215   .1255835     0.69   0.497    -.1705256    .3431686

            year |
            2014 |  -.0471698   .0709581    -0.66   0.511    -.1922954    .0979558
            2015 |  -.0443473   .0741414    -0.60   0.554    -.1959834    .1072888
            2016 |    .002661   .0754561     0.04   0.972     -.151664    .1569861
            2017 |  -.0618999   .0704711    -0.88   0.387    -.2060294    .0822296

           _cons |   .4348239   .0823918     5.28   0.000     .2663138    .6033339
-----------------+------------------------------------------------------------
         sigma_u |   .1908828
         sigma_e |  .14929656
             rho |  .62044796   (fraction of variance due to u_i)
------------------------------------------------------------------------------
F test that all u_i=0:     F(8, 29) =     5.61              Prob > F = 0.0002

. testparm i.year

 ( 1)  2014.year = 0
 ( 2)  2015.year = 0
 ( 3)  2016.year = 0
 ( 4)  2017.year = 0

       F(  4,    29) =    0.34
            Prob > F =    0.8512

.
```

Source :(Researcher 2017)

The p value was greater than 0.05 which meant that there were no significant time fixed effects (P >0.05) thus fitting a two-way component model or inclusion of dummies was not appropriate**.** All the dummies for the years were zero. The P value was 0.8512.

4.4.3Testing for multicollinearity

Multicollinearity refers to the relationship between the independent variables. The researcher analyzed the relationship between investments, inventory control and profitability to see if they are highly correlated. Variance inflation factor analysis was used to test the presence of multicollinearity. The mean VIF was 1.05 thus it was concluded that there was absence of strong correlation between two or more independent variables. The variables are within the threshold for multiple regression analysis.

Table 4.6. Collinearity test.

```
. regress cashflow investments inventorycontrol profitability
```

Source	SS	df	MS	Number of obs =	45
				F(3, 41) =	12.06
Model	1.50533034	3	.501776781	Prob > F =	0.0000
Residual	1.70539415	41	.041594979	R-squared =	0.4688
				Adj R-squared =	0.4300
Total	3.21072449	44	.072971011	Root MSE =	.20395

cashflow	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
investments	.4857163	.1071956	4.53	0.000	.2692304	.7022022
inventorycontrol	-.0466324	.0133101	-3.50	0.001	-.0735126	-.0197521
profitability	.3653795	.0961286	3.80	0.000	.1712438	.5595152
_cons	.4268007	.0740092	5.77	0.000	.2773361	.5762652

```
. vif
```

Variable	VIF	1/VIF
investments	1.07	0.934413
profitabil~y	1.06	0.945926
inventoryc~l	1.02	0.977488
Mean VIF	1.05	

Source :(Researcher 2019)

The mean VIF is below 5 which show the absence of multicollinearity.

Table 4.7 Correlation Matrix.

```
. pwcorr  cashflow investments inventorycontrol profitability,sig star(0.05)

             | cashflow invest~s invent~l profit~y
-------------+------------------------------------
    cashflow |   1.0000
             |
             |
 investments |   0.3871*  1.0000
             |   0.0086
             |
inventoryc~l |  -0.3124*  0.1236   1.0000
             |   0.0367   0.4184
             |
profitabil~y |   0.3064* -0.2170   0.0562   1.0000
             |   0.0406   0.1522   0.7141
             |
```

The correlation matrix above shows the absence of multicollinearity. According to (Fied, 2009) a correlation matrix is a conventional check for multicollinearity. The Matrix measures the nature and strength of the relationship between the independent variables under the study. The correlation between investment and cash flow is 0.3871. This shows that the two variables have low correlation. The correlation between inventory control and cash flow is –0.3124 and the correlation between inventory control and investment is 0. 1231.The correlation between profitability and cash flow is 0.3064, profitability and investment is-0.2170, profitability and inventory control is 0.0562. This shows that the study variables are not highly correlated thus suitable for the study. A correlation factor of one show that the study variables are highly correlated and thus not suitable for the study. As the correlation factor approaches to Zero, collinearity reduces.

4.4.4Testing for Serial Correlation

Auto correlation or serial correlation is a situation which occurs if the error terms of the regression variables for successive periods are correlated. Serial correlation distorts the efficiency of regression estimators if resent in a data set. The presence of auto correlation was tested by the researcher by use of the Wooldridge test .The STATA command was xtserial. The null hypothesis for this test was that there was no first order auto correlation in the panels. This hypothesis is rejected if the p value of the test is less than 5%.

Table 4.8Wooldridge test for serial correlation.

```
. xtserial cashflow investments inventorycontrol profitability


Wooldridge test for autocorrelation in panel data
H0: no first order autocorrelation
    F(  1,       8) =      5.693
          Prob > F =      0.0441
```

The p value from the study was less than 0.05 indicating the presence of serial correlation. This implied that a robust model needed to be fitted to correct the problem of serial correlation otherwise the efficiency of the regression estimators could be distorted. The p value was 0.0441.

4.4.5 Test for heteroscedasticity.

The researcher used the modified Wald test for group wise heteroscedasticity to test if heteroscedasticity was present in the data. The results of the test are portrayed in the figure 4.7 below. Presence of heteroscedasticity tends to inflate the standard errors, which increases the probability of committing type two errors i.e. Failing to reject a false hypothesis about a

coefficient. Modified Wald test null hypothesis is that data is homoscedastic across entities i.e. Error terms have a constant variance

Table4.9 Modified Wald test for GroupWise Heteroscedasticity.

```
. xtreg cashflow investments inventorycontrol profitability,fe

Fixed-effects (within) regression               Number of obs      =        45
Group variable: firm1                           Number of groups   =         9

R-sq:  within  = 0.3468                         Obs per group: min =         5
       between = 0.5540                                        avg =       5.0
       overall = 0.4627                                        max =         5

                                                F(3,33)            =      5.84
corr(u_i, Xb)  = 0.2948                         Prob > F           =    0.0026

------------------------------------------------------------------------------
    cashflow |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
 investments |    .311671   .0933666     3.34   0.002     .1217153    .5016267
inventorycon~l |   -.051065   .0162168    -3.15   0.003    -.0840582   -.0180717
profitability |   .1193912   .1077563     1.11   0.276    -.0998407    .3386231
       _cons |   .4596201    .085008     5.41   0.000     .2866699    .6325702
-------------+----------------------------------------------------------------
     sigma_u |  .16945588
     sigma_e |  .14317678
         rho |  .58346766   (fraction of variance due to u_i)
------------------------------------------------------------------------------
F test that all u_i=0:     F(8, 33) =     4.99              Prob > F = 0.0004

. xttest3

Modified Wald test for groupwise heteroskedasticity
in fixed effect regression model

H0: sigma(i)^2 = sigma^2 for all i

chi2 (9)  =      117.36
Prob>chi2 =      0.0000
```

The p value was less than 0.005($p< 0.005$) thus indicating the presence of heteroscedasticity in the data set. To correct this robust model must be fitted to consider the effects of heteroscedasticity. The p value for the data was 0. 0000.This implied that the data is heteroskedastic which means that the error terms across the entities are not constant.

4.5Model Fitting: PraisWinsten Panel Regression Model with Corrected Standard Errors.

The data set had serial correlation and heteroscedasticity thus a robust model had to be fitted to correct the same. The linear regression assumptions were violated by the presence of this two. The researcher fitted a PraisWinsten Panel Regression Model with corrected standard errors. This was done to produce robust results in the presence of serial correlation and heteroskedasticity. Figure 4.8 below shows the results after fitting the model.

Table 4.10 PraisWinsten Panel Regression Model with Corrected Standard Errors.

```
. xtpcse cashflow investments inventorycontrol profitability,correlation(ar1) hetonly

Prais-Winsten regression, heteroskedastic panels corrected standard errors

Group variable:   firm1                       Number of obs      =        45
Time variable:    year                        Number of groups   =         9
Panels:           heteroskedastic (balanced)  Obs per group: min =         5
Autocorrelation:  common AR(1)                               avg =         5
                                                             max =         5
Estimated covariances      =         9        R-squared          =    0.4298
Estimated autocorrelations =         1        Wald chi2(3)       =     22.18
Estimated coefficients     =         4        Prob > chi2        =    0.0001

------------------------------------------------------------------------------
             |             Het-corrected
    cashflow |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
 investments |    .428092   .1156557     3.70   0.000     .2014109    .6547731
inventorycon~l|  -.0439795   .0158903    -2.77   0.006    -.075124    -.012835
profitability|    .3185589   .0855904     3.72   0.000     .1508047    .4863131
       _cons |    .4165713   .0910387     4.58   0.000     .2381387    .5950039
-------------+----------------------------------------------------------------
         rho |    .1548155
------------------------------------------------------------------------------
```

Source: Researcher (2019)

The results presented in figure 4.8 above showed that the constant was 0.4165713 and this value was statistically significant at 5% significance level as the P value was 0. 0000.The

implication from these results is that without the influence of the independent variable, the dependent variable will have a value of 0. 4165713.This means that firms will be able to cover 41% of their current liabilities.

The results indicated that investments had a regression coefficient of 0.428092 with a p value of 0. 000.This implied that there was a statistically significant positive relationship between cash flow and investments in manufacturing and allied firms listed in the Nairobi stock exchange. Essentially, 1% increase in investments would result in 42.8092% increase in cash flow.

The co efficient for inventory control was -0.439795 with a p value of 0.006 this implied that 1%decrease in inventory control resulted into 43.9795% decrease in cash flow. This showed that there was a statistically significant negative relationship between cash flows and inventory control at 5% confidence interval. Profitability had a co efficient of 0.3185589 and a p value of 0. 000.This implied that there was a statistically significant positive relationship between profitability and cash flows at 5% confidence level. This is because the P value was less than 0.05.A 1% increase in profitability would result to 31.85589increase in cash flows.

Therefore, the model equation for the study was,

$Y= 0.4165713 + 0.428092X_1 -0.439795X_2 +0.3185589X_3$

Where:

Y= Dependent Variable (Cash Flow)

0.4165713 = Constant (cash flow level when all the independent variables are at Zero)

0.428092 = Co efficient of X1(change in the dependent variable due to a unit change in X1.

X_1 = investments

- 0.439795 = C o efficient of X_2 (change in the dependent variable due to a unit change in X_2)

X_2 = inventory control

0.3185589 = Co efficient of X_3(change in the dependent Variable due to a unit change in X_3.

X_3 = Profitability.

4.6. Discussion of results

4.6.1 Investments and Cash Flows

The results indicated that investments had a regression coefficient of 0.428092 with a p value of 0. 000.This implied that there was a statistically significant positive relationship between cash flow and investments in manufacturing and allied firms listed in the Nairobi stock exchange. From these findings the implication is that investments tend to influence cash flows positively. AS such, manufacturing firms should increase investments which in turn will increase cash significantly. Firms should invest more in manufacturing firms as this improves their efficiency which inturn influences cash flows significantly. This study is in agreement with Kinyanjui (2013) who concluded that there is a significant positive relationship between investments and cash flows. Imtiaz (2017) concluded in his study that there is a positive relationship between cash flow and investment but the relationship is insignificant in low investment firms. Letenah (2014) and Atil(2003) concluded that there is a positive cash flow – investment sensitivity in manufacturing firms. Degryse and De-Jong (2005) carried out a study to establish the relationship between cash flow and investment and established a positive relationship between cash flow and investment for both types of manufacturing organizations having low and high investment opportunities.

4.6.2 Inventory control and cash flows

The co efficient for inventory control was -0.439795 with a p value of 0.006. This showed that there was a statistically significant negative relationship between cash flows and

inventory control at 5% confidence interval. Decreasing inventory control as measured by inventory turnover would decrease cash flows by 43.98%. There is a significant negative relationship between inventory control and cash flows in manufacturing firms listed in the Nairobi securities Exchange for the period covered by the study. This study is in agreement with Lydia (2014) who concluded that there is a negative relationship between inventory control and cash flows.Ashok (2013) in his study concluded that there is negative relationship between cash flows and inventory.

4.6.3 Profitability and Cash Flows

Profitability had a co efficient of 0.3185589 and a p value of 0. 000.This implied that there was a statistically significant positive relationship between profitability and cash flows at 5% confidence level. This is because the P value was less than 0.05The results showed a significant positive relationship between cash flows and profitability. The positive co efficient showed that an increase in profit has a positive effect on cash flows. This study is in agreement Parsian,(2013) who concluded in his study that there is a positive relationship between cash flows and profitability in firms listed in the Nairobi stock exchange.Akoto (2013) in his study conclude that there exists a positive relationship between cash flows and profitability. There is a negative relationship between cash flows and profitability. In his study, Asif (2015) studied on the relationship between cash flow from operations and profitability of a firm. He concluded that there is a positive relationship between cash flows and profitability.Manyo, (2013) in his study also concluded that a positive relationship exists between cash flow and profitability.

CHAPTER FIVE
SUMMARY, CONCLUSION AND RECOMMENDATIONS.

5.1 Introduction

In this study the researcher sought to establish if investments, inventory control and profitability have any effect on cash flows generated from operations. The researcher in this chapter presents the study summary in line with the study background, methodology, descriptive and panel data regression. Several conclusions in relation to the research objectives and hypothesis were also presented in this chapter as well as policy implications and recommendations made to beneficiaries of this study. Finally, the researcher in this chapter highlights the limitations of the study and suggests areas for further research.

5.2 Summary of findings.

Cash flows had a similar trend in almost all the firms except in one firm for the period covered by the study as showed in the growth plot. The researcher established that a relationship exists between investments, inventory control, profitability and cash flows. There was a statistically significant positive relationship between investments and cash flows. From these findings the implication is that investments tend to influence cash flows positively. As such, manufacturing firms should increase investments which in turn will increase cash flows. By acquiring enough machines and equipment for production can increase the output of the firm which in turn increases cash flow from operations. There is a significant negative relationship between inventory control and cash flows in manufacturing firms listed in the Nairobi Stock Exchange for the period covered by the study. This implied that poor inventory control as measured by inventory turnover lead to decrease in cash flow. The results showed that a significant positive relationship exists between cash flows and profitability. The

positive co efficient showed that an increase in profit as measured by return on assets had a positive effect on cash flows during the period under the study.

5.3 Conclusions

The general objective of the study was to establish the factors that affect cash flow in manufacturing firms listed in the Nairobi stock exchange. The specific objective of the study was to establish if investments, inventory control and profitability had any effect on cash flows. The results showed that investments, inventory control and profitability had a relationship with cash flows which was significant in the period the study covered. Investments and profitability have a significant positive relationship with cash flows which meant that by increasing investments and profitability of assets, the firms would end up increasing their cash flows. Keeping high levels of inventory had a negative relationship with cash flows and the conclusion was that keeping high levels of stock would lead to cash flow challenges in the manufacturing firms as a lot of cash is held up in the stocks.

5.4 Recommendations

From the study findings, the following will be recommended. Manufacturing firms should consider increasing investments in terms of capital expenditure to acquire more machines and equipment as firms with high investments have a high cash flow investment sensitivity. This is because the production efficiency of manufacturing firms increases when a firm has enough machines and equipment which in turn increases cash flows. Inventory control measures put in place should be reviewed regularly to ensure that they are efficient and effective in managing inventory as there is a negative relationship between cash flow and inventory control. If high levels of inventory are maintained by a firm may lead to cash flow challenges as a lot of cash is held in these stocks. Only optimum levels of stock should be maintained. Firms should acquire the right assets to ensure that they are profitable enough to the business as the profitability of assets affects cash flows in a positive way. As the profitability of these firms

decreases, it may affect the cash flow of these firms negatively. Other firms not listed in the Nairobi stock exchange can also use these recommendations as the operations are similar. This study is also an addition to the existing literature and thus other scholars can use it to further their knowledge. The study would be used to give further insight to the field of research and give answers to research questions not covered in this study.

5.5 Areas for further study

The research gaps arising from this study form the basis for further research by different researchers. There is a need to consider carrying out a similar study that will consider other factors which affect cash flows like trade payables, trade receivables and budgets as very little literature exists on this. Little literature Exists on the factors affecting cash flows in manufacturing firms. Lot of emphasizes has been put on the importance of cash flows but the factors which affect cash flow have not been discussed conclusively thus need to conduct more research in this area.

5.6 Limitations of the study.

This study sought to establish the factors that affect cash flow in manufacturing firms listed in the Nairobi securities exchange**.** This study was surrounded by Various limitations. There are very many factors which affect cash flow but only three variables were considered in this study. Considering all the variables in one study would have been unrealistic and thus selecting the variables to consider was a challenge. This study only focused on manufacturing firms listed in the Nairobi stock exchange in Kenya and may not be applicable in other sectors in Kenya or in other countries. Time and cost constrain also limited this study. Large panels of data would require more time to extract the data as well as more resources would be used. Only nine firms were considered in this study but in reality, we have very many manufacturing firms in Kenya but have not been listed. These firms could not have been used in this study as getting financial information from them would have been a challenge.

REFERENCES

Abanis, T., Sunday, A., Burani, A., &Eliabu, B. (2013). Financial management practices in small and medium enterprises in selected districts in Western Uganda. Financial Management, 4(2), 29-42.account-1950.html (August 18, 2013). Accounting Knowledge, 5(23): 333-347) Accounting Knowledge, 5(23): 333-347)

Afzal, T., & Adnan, S. M. (2007, August). Determinants of corporate cash holdings: A case study of Pakistan. In Proceedings of Singapore Economic Review Conference (SERC) (Vol. 1, pp. 589-609).

Agency Cost on the Performance of Listed Firms on NSE. *International Journal of Social*

Agricultural Companies Listed on The Nairobi Security Exchange, United States

Agricultural Companies Listed on The Nairobi Security Exchange, United States International University Africa, *Project Report Submitted to The Chandaria School of Business in Partial Fulfillment of The Requirement for The Degree of Masters in Business Administration (MBA)*

Agu, O. A. (2013). Effect of inventory management on organizational cashflows. In Information and Knowledge Management (Vol. 3, No. 8, pp. 92-100).

Ahmad, N. N. (2016). Cash management practices in micro and small businesses in Malaysia. Journal of Education and Social Sciences, 4, 331-335.

Akoto, R. K, Awunyo, V and Angmor, P. L. (2013). Working capital management and profitability.

Akumu, O.C (2015) Effect of free cash flows on profitability of firms listed in the Nairobi securities Exchange (MBA, UON)

Al-Issa, A. and Zayed, T. (2007). Project Cash Flow Factors-contractors Perspective. Construction Research Congress (CRC) Conference, ASCE Bahamas, May 5-8.

Almeida, H.; M. Campello; and A. Galvao.(2010) Measurement Error in Investment equations. Review of Financial Studies, 23 (2010), 3279–3328.

Alshattarat, (2010) Working capital management, operating cashflow and corporate performance. International journal of strategic management,Vol 10(1).

Alti, A. (2003). How sensitive is investment to cash flow when financing is frictionless? *The journal of finance*, vol. 58, no. 2, pp. 707-722.

Amoako, G. K. (2013). Accounting practices of SMEs: A case study of Kumasi Metropolis in Ghana. International Journal of Business and Management, 8(24), 73.

Amoako, K. O., Marfo, E. O., Gyau, K. E., &Asamoah, F. O. (2013). Cash Budget an Imperative Element of Effective Financial Management. Canadian Social Science, 9(5), 188-191.

Amoako, K. O., Marfo, E. O., Gyau, K. E., &Asamoah, F. O. (2013).Cash Budgetan Imperative Element of Effective Financial Management. Canadian Social Science, 9(5), 188-191.

Ardelt, M. (2004). Wisdom as Expert Knowledge System: A Critical Review of a contemporary Operationalization of an Ancient Concept. Human Development, 1(47), 257–285. http://doi.org/10.1159/000079154

Arif, Arizti, P., Brumby, J., Manning, N., Senderowitsch, R., & Thomas, T. (2010). Results, performance budgeting and trust in government. World Bank. Articles/winning-good-customers-losing-bad-debt.aspx (November 13, 2012).

Ashok K.P. (2013, July). Relationship between Inventory Management and Profitability: *An empirical analysis of Indian Cement Companies*. Asia Pacific Journal of Marketing & Management Review.

Athanase I.M. (2015)Analysis Of Financial Performance And Financial Risk . *Journal of Economics Finance and Administrative Science*, *19*(36), 11-18. doi: 10.1016/j.jefas.2014.04.001

Atrill, P., &McLaney, E. (2012). Management Accounting for Decision Makers 7th edition.

Baltagi, B. H. (2005). Panel data methods.

Ben Mohamed, E., Fairchild, R., &Bouri, A. (2014). Investment cash flow sensitivity under managerial optimism: New evidence from NYSE panel data firms. *Journal of Economics Finance and Administrative Science*, *19*(36), 11-18. doi: 10.1016/j.jefas.2014.04.001

Bernard, A. B., Jensen, J. B., Redding, S. J., & Schott, P. K. (2007). Firms in International Trade. *Journal of Economic Perspectives*, *21*(3), 105-130. doi:10.1257/jep.21.3.105

Bigsten,A.,P. Kimuyu and M. Soderbom, 2010. "Chapter 10: The Manufacturing Sector," Oxford University Press and Central Bank of Kenya.

Blake, D., MacMinn, R., Li, J. S., & Hardy, M. (2014). Longevity Risk and Capital Markets: The 2012–2013 Update. *North American Actuarial Journal*, *18*(1), 1-13. doi:10.1080/10920277.2014.883233

Blake, D., MacMinn, R., Li, J. S., & Hardy, M. (2014). Longevity Risk and Capital Markets: The 2012–2013 Update. *North American Actuarial Journal*, *18*(1), 1-13. doi:10.1080/10920277.2014.883233

Blumberg, B., Cooper, D., & Schindler, P. (2014). Business Research Methods (12th ed.). Boston: McGraw-Hill Higher Education

Bowen, M., Morara, M., &Mureithi, M. (2009). Management of business challenges among small and micro enterprises in Nairobi-Kenya. KCA journal of business management, 2(1).

Brigham, E. F., Ehrhardt, M. C., Nason, R. R., &Gessaroli, J. (2016). Financial Managment: Theory And Practice, Canadian Edition. Nelson Education.

Cheng M,(2014), A Study of Value Investing: Profit, Dividend, and Free Cash Flow, international Review of Management and Business Research Vol. 3 Issue 4.

Current Ratio on Dividend Payout Ratio: Evidence from Tehran Stock Exchange, *Journal of finance.*

Damian, O.G. (2013) The relationship between Cash flows and Profitability of Small and medium sized Enterprises.

Darek, K., (2012) Liquidity gaps in financing the SME sector in an emerging market:

Degryse, H. &. (2005). Investment and Internal Finance: Asymmetric Information or Managerial Discretion?

Dittmar, A., Mahrt-Smith, J., &Servaes, H. (2003). International Corporate Governance and Corporate Cash Holdings. *The Journal of Financial and Quantitative Analysis*, *38*(1), 111.doi:10.2307/4126766

Donald, R. C., & Pamela, S. S. (2003). Business research methods. Tata Mac Graw Hills, New Delhi.

Durham, S., & Stokes, P. (2015). Conceptual frameworks and terminology in doctoral nursing research. Nurse Researcher, 23(2), 8–12.

East African Community Facts and Figures (2011). March Issue

Enyew A. (2016), The factors affecting cash holding decisions of manufacturing share companies in Ethiopia, International Journal of Advanced Research in Management and Social Sciences, Vol 5, No 3.

Erickson, T., & Whited, T. M. (2011). Treating Measurement Error in Tobin'sq. *Review of Financial Studies*, *25*(4), 1286-1329. doi:10.1093/rfs/hhr120

Etale, L. M., &Bingilar, P. F. (2016). The Effect of Inventory Cost Management on Profitability: A Study of Listed Brewery Companies in Nigeria. International Journal of Economics, Commerce and Management, 4(6), 446-455.

Fabozzi, F. J. & Markowitz, H. M. (2006). The Theory and Practice of investment. London: Wiley

Fama, F. & French, R. (2004). Financing decisions: Who issues stock, Journal of Financial Economics,1(2);1-5

Fatoki, O. (2014). The causes of the failure of new small and medium enterprises in South Africa. Mediterranean Journal of Social Sciences, 5(20), 922.

firms. International Journal of Current Research5(12): 3767-3772.00

Frank, B. P. (2014). Cash flow and corporate performance: A study of selected food and beverages companies in Nigeria. European Journal of Accounting Auditing and Finance Research Vol.2 (.7),77-87, September 2014

from Firms Listed on Karachi Stock Exchange. *International Journal of Business and Management; 2(10) 201-215*

from Firms Listed on Karachi Stock Exchange. International Journal of Business and

Gao. X, (2014). Corporate Cash and Inventory Management, Implications for Measuring Market Competition. Second Draft: December 2014.

Government of Kenya (2012) Appraisal of the Proposed SMEs Policy in Kenya. Government press.

Greene, W. H. (2002). Econometric Analysis. (R. Banister,Ed.) (Fifth Edit). Upper saddle river, New Jersey: Pearson Education LTD.

Grullon, G., &Michaely, R. (2004). The information content of share repurchase programs. The Journal of Finance,59(2), 651-680.

Guda, D. O. (2013). The Relationship between Cash Flow and Profitability of Small and Medium Enterprises in Nairobi Country. A Research Project Submitted for the Award of Degree of Masters of Business Administration, University of Nairobi

Gujarati, D. (2012). Basic econometrics. New York: McGraw-Hill.

Hammarberg, K., Kirkman, M., & de Lacey, S. (2016). Qualitative research methods: when to use them and how to judge them. Human reproduction, 31(3), 498-501.

Handschuh, M., &Loesch, H. (2011). Optimal Growth–Does it exist and if so how to Realize it. Mannheim Business School lecture.

Harash, E., Al-Timimi, S., &Alsaadi, J. (2014). The influence of finance on performance of small and medium enterprises (SMES). Technology, 4(3), 161-167.

Hau.L.L,(2017),Free cash flow and firm performance: Evidence from sectoral levelsfor Vietnamese listed firms. International Journal of Advanced Engineering, Management and Science (IJAEMS) [Vol-3, Issue-4, Apr-2017] https://dx.doi.org/10.24001/ijaems.3.4.2ISSN: 2454-1311

International Journal of Industrial Organization, , 125-147.

Islam S. (2012), Manufacturing Firms' Cash Holding Determinants: Evidence from Bangladesh, International Journal of Business and Management, Vol. 7, No. 6; March 2012

Jabber, M.Y., (2009). Inventory Management: Non-classical View. Boca Raton: CRC Press.

Johnston, M. (2014). Secondary Data Analysis: A Method of which the Time Has Come. Qualitative and Quantitive Methods in LIbraries, 3(1), 619–626

Joseph, O.O (2016), the impact of cash management practices on performance of SMEs. A survey of SMEs in Eldoret central business District, Journal of Economics and Finance 7(6),1-7

Journal of economics and international finance, 5(9),373-379.

Kew, J. and Watson, A. (2012). Financial Accounting: An introduction. (8thed.) Cape Town: Oxford Universuty Press.

Kincaid, C. (2008). Getting on track for better inventory control. Casual Living 48(10):44.

Kinyanjui, D., Kiragu, D. N. U., &Riro, G. K. (2017). Cash Management Practices on Financial Performance of Small and Medium Enterprises in Nyeri Town, Kenya.

Kinyanjui, M. M. (2014). The Relationship between Free Cash Flows and Investments of Firms Quoted at the Nairobi Securities Exchange. An MBA Research Project submitted to the University of Nairobi.

Kombo, D., & Tromp, D. (2009). Proposal and Thesis Writing. An Introduction Paulines Publications Africa, Don Bosco Printing Press, Nairobi:Paullines .

Kothari, C. R. (2010). Research Methodology. (Jaipur, Ed.) (2nd ed.). NewDehli: New Age International (P) Limited Publishers.

Kothari.(2004). Research Methodology. In Jaipur (Ed.), Research Methodology (1st ed., pp. 637–645). New Delhi: New Age International (P) Limited Publishers

Lavrakas, P. (2014). Encyclopedia of Survey Research Methods Sampling.InP. Lavrakas (Ed.), Encyclopedia of Survey Research Methods Sampling (Vol 1 & 2, pp. 784–785). Los Angeles, United States of America.Sage Publications

Leary, M. T., & Roberts, M. R. (2010). The pecking order, debt capacity, and information asymmetry. Journal of Financial Economics, 95(3), 332-355. doi: 10.1016/j.jfineco.2009.10.009

Lewellen, J., &Lewellen, K. (2016). Investment and Cash Flow: New Evidence. Journal of Financial and Quantitative Analysis, 51(4), 1135-1164. doi:10.1017/s002210901600065xManagement; 2(10) 201-215

Manning, P. and Polack, T. (2011). Winning good customers, losing bad debt [online].available: http://www.bain.com/publications/

Manufacturing Companies in Kenya, Unpublished MBA Research project UON.

Manyo (2013).The effect of accounts receivable on return on assets of selected Nigerian listed firms.

Marketwire. (2013). Why Walmart has the upper hand: Survey suggests 73% of small businesses have no inventory control systems. Archon Systems. [Online]. January 24. Available: http://search.proquest.com/docview/1272343752 (April 3, 2014). Medium Enterprises in Nairobi County. A Research Project, JKUAT

Mehtari, Z. (2016). Analyzing Operating cash flow and dividend payout changes. Journal of accounting knowledge, 5(23): 333-347).

Miles, M., Huberman, M., & Johnny, S. (2014). Qualitative Data Analysis. A Methods Sourcebook. The Journal of Zeitschrift Fur Personal for schung, 28(4), 485–487.

Mong, D. (2011). Follow the cash: Lessons for Capstone business courses. Journal of Business & Economics Research (Online), 9(12), 33.

Mugenda, O., &Mugenda, A. (2003). Research methods: Quantitative and qualitative approaches. 2nd. Nairobi: Nairobi: Act press pp45-49.

Muinde, C. L. E. M. E. N. T. (2013). Relationship between Financial Reporting and Analysis Practices and Financial Performance of Small and Medium Enterprises in Kenya. Academic Thesis, University of Nairobi.

Mungal, A., &Garbharran, H. L. (2014). The perceptions of small businesses in the implementation of cash management techniques.

Muthuva, D. (2016). Determinants of Disclosure Level by Deposit Taking savings and Credit Co-operative Societies in Kenya.Jomo Kenyatta University of Agriculture and Technology.

Mwangi.L, (2016). The effect of inventory management on firm profitability and operating cash flows of Kenya breweries limited, beer distribution firms in Nairobi county.UON repository.

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. doi:10.1016/0304-405x(84)90023-0

Nick, S. (2009). Cash flow ignorance is big problem for firms. Domimion Post, 27 March: 3.

Njuguna, L. &Moronge, M. (2013). Influence of the cash flows and Managerial Behavior of

of Management Science Letters, 4(1):63–70from Poland. International Journal of Emerging Markets 7(3): 335-355

Ogundipe L, Ogundipe S, Ajao S (2012), cash holding and firm characteristics: evidence from Nigerian emerging market, Journal of business, economics and finance, Vol. 1, Issue 2, ISSN: 2146-7943

Ojode, C. A. (2014). Effect of free cash flow on profitability of firms listed on the Nairobi Securities Exchange. A Research Project submitted for the award of Degree of Masters of Business Administration. School of Business, University of Nairobi

Olweny, T. (2012). Dividend Announcement and Firm Value : A Test of Semi Strong Form of Efficiency at the Nairobi Stock Exchange. Canadian Centre Of Science and Education, 8(1), 161–175.

Onduso, E. O. (2013). The effect of budgets on financial performance of manufacturing companies in Nairobi County. New Business Journal, 7, 46-74.

Osano et al (2008).“The determinants of capital structure: evidence from China”. China Economic Review.

Owino Milton (2014) The Effect Of cash flow activities On Profitability Of manufacturing firms in Kenya. Unpublished MBA research project ,UON.

Parsian, H. & Amir, K. (2013). A Study on the Effect of Free Cash Flow and Profitability

Patel, U. (2010). Cash Management at Indian oil Corporation Ltd. Masters in business administration, DR. D.Y. Patil University

Pawlina, G., &Renneboog, L. (2005). Is Investment-Cash Flow Sensitivity Caused by Agency Costs or Asymmetric Information? Evidence from the UK.European Financial Management, 11(4), 483-513

Peng, Y. H. (2005). The Cash Flow and Investment Relationship from Taiwan Listed Firms. Hsuan Chuang Journal of Management, 2(2), 119-133

Perry, G. (2007). For small businesses cash flow is king [online]. Available: http://www.accountingweb.com/topic/cfo/small-businessescash-flow-king(July 12, 2013)

Polit, D. F., & Beck, C. (2010). International Journal of Nursing Studies Generalization in quantitative and qualitative research: Myths and strategies. International Journal of Nursing Studies, 47(11), 1451–1458.

Polit, D. F., Beck, T., & Owen, S. V. (2003). Focus on Research Methods Is the CVI an acceptable Indicator of Content Validity? Appraisal and Recommendations. Research in Nursing & Health, 30(6), 459–467.profitability: evidence from Ghanaian listed manufacturing firms. Journal of economics

profitability: evidence from Ghanania listed manufacturing firms.

Quinn, M. (2011). Forget about profit, cash flow is king. Wall Street Journal, accessed July 15,2012,fromhttp://online.wsj.com/article/SB10001424052970204524604576609740825745286.html

Reheman, A. and Nasr,M. (2017), Cash flow management from operating and profitability: Richardson, S. (2006) "Over-investment of free cash flow" Review of Accounting Studies 11: 159–189

Sadaf Ambreen, J. A. (2016). Impact of free cash flow on profitability of the firms listed in karachi stock exchange. Euro-Asian Journal of Economics and Finance, 4(4).

SalihMemon, D. M., Zahid, I., Shaikh, M., Bashir Shah, A., Khan, A., &Muhammd Shaikh, D. (2017). Relationship Between Investment and Cash Flow Under High and Low Investment Opportunities: Evidence from Pakistani Manufacturing Firms. International journal of management & information technology, 12(1), 3057-3066. doi:10.24297/ijmit. v12i1.6059

Sara Anjum, S. A. (2013). Determinants of Corporate Liquidity - An Analysis of Cash Holdings. IOSR Journal of Business and Management, 7(2), 94-100. doi:10.9790/487x-07294100

Scheiber, L. A., &Scheiber, L. A. (2014). Social capital and the target population. Social Enterprise Journal, 10(2), 121–134Sciences and Entrepreneurship, 1 (7), 397-410.

Sebastian G. (2010). A Theory of Corporate Financial Decisions with Liquidity and Solvency Concerns. Journal of Financial Economics, 99, 365-384

Shapira, Z. (2011). The AntalanticDivide:American and European Approaches to Strategy Research. The Journal of Organization Science, 22(1), 1653–1654

Sila, M.D., (2018). The relationship between free cash flows amd profitability of firms listed in the Nairobi securities exchange. University of Nairobi.

Sitienei, E., &Memba, F. (2015). The effect of inventory management on profitability of cement manufacturing companies in Kenya: A case study of listed cement manufacturing companies in Kenya. International Journal of Management and Commerce Innovations, 3(2), 111-119.

Swaleh, L. A. & Were, S. (2014). Factors Affecting Effective Implementation of Inventory Management Systems in the Public Sector (A Case Study of National Aids Control Council). International Journal of Social Sciences Management and Entrepreneurship, 1(2), 17-32

Taiwo, M., Ayodeji, A., Bako,Y.(2013), Impact of Small and Medium Enterprises on Economic Growth and Development. American Journal of Business and Management,2(1).doi: 10.11634/21679606170644

Tambunan, T. (2008). SME development, economic growth, and government intervention in a developing country, The Indonesian story. Journal of International Entrepreneurship,6(4),147-167.

Thogori, M. N. (2015). The Role of Inventory Management on cash flow of Food Processing Companies: A Case Study of Crown Foods Limited Kenya. European Journal of Business and Social Sciences, 4(4), 64 – 78

Thogori, M., & Gathenya, J. (2014). Role of Inventory Management on Customer Satisfaction among the Manufacturing Firms in Kenya: A Case Study of Delmonte Kenya. International Journal of Academic Research in Business and Social Sciences, 4(1), 108.

V.W., N., &Namusonge, G. (2015). Role of Inventory Management on Competitive Advantage among Manufacturing Firms in Kenya: A Case Study of Unga Group Limited. International Journal of Academic Research in Business and Social Sciences, 5(5). doi:10.6007/ijarbss/v5-i5/1595

Wale, L. E. (2014). Investment cash flow sensitivity as a measure of financing constraints: evidence from selected African countries. Journal of Economics and Behavioral Studies, 6(8), 647.

Waweru, C., &Ngugi, K. (2014). Influence of financial management practices on the performance of micro and small enterprises in Kenya. European Journal of Business Management, 1(11), 141-161.

World Bank (2007). "Kenya: Investment Climate Assessment". Washington D.C: The World Bank.

Zhou, H, Yang, S. and Zhang, M (2012). Relationship between free cash flow and financial performance. Evidence from the Listed Real Estate Companies in China. IPC.SIT. Vol. 36; PP 331-335

APPENDIX I: DATA COLLECTION SHEET

Name of company ……

Date registered/Licensed…….

Physical Address……

Part 1: Investments

	2013	2014	2015	2016	2017
Capital expenditure in current Year					
Capital expenditure in previous year					
Net capital expenditure =current year – previous year capital expenditure					

Part 2: Inventory control

	2013	2014	2015	2016	2017
Average inventory					
Cost of goods sold					
Turn over = cost of goods/average inventory					

Part 3: Profitability

	2013	2014	2015	2016	2017
Operating income before interest and tax					

Total assets					
Profitability=operating income before interest and tax /total Assets					

Part 4: Cash flows

	2013	2014	2015	2016	2017
Operating cash flows					
Current liabilities					
Cash flow ratio= operating cash flows /current liabilities.					

APPENDIX II: LIST OF FIRMS LISTED IN THE NAIROBI STOCK EXCHANGE AS MANUFACTURING AND ALLIED.

1. B.O.C Kenya Ltd Ord 5.00
2. British American Tobacco Kenya Ltd Ord 10.00
3. Carbacid Investments Ltd Ord 5.00

4. East African Breweries Ltd Ord 2.00
5. Mumias Sugar Co. Ltd Ord 2.00
6. Unga Group Ltd Ord 5.00
7. Eveready East Africa Ltd Ord.1.00
8. Kenya Orchards Ltd Ord 5.00
9. Flame Tree Group Holdings Ltd Ord 0.825

APPENDIX III: RAW DATA

Firm	Firm1	Year	Cash flow	Investments	Inventory control	Profitability
BOC Kenya ltd	1	2013	0.26	0.01	3.09	0.16
BOCKenya ltd	1	2014	0.3	-0.22	3.73	0.12
BOCKenya ltd	1	2015	0.34	0.05	3.45	0.21
BOC Kenya ltd	1	2016	0.16	0.02	3.45	0.09
BOC kunya ltd	1	2017	0.28	0.04	3.18	-0.55

British American Tobacco Kenya ltd	2	2013	0.5	0.05	12	0.34
British American Tobacco Kenya ltd	2	2014	0.67	0.1	2.6	0.35
British American Tobacco Kenya ltd	2	2015	0.6	0.02	1.83	0.41
British American Tobacco Kenya ltd	2	2016	0.84	0.05	1.66	0.34
British American Tobacco Kenya ltd	2	2017	0.73	0.01	1.89	0.3
Carbacidinvestmentsltd	3	2013	0.17	-0.09	5.4	0.29
Carbacid investments ltd	3	2014	0.42	0.17	6.8	0.24
Carbacid investments ltd	3	2015	0.27	0.04	6.4	-0.12
Carbacid investments ltd	3	2016	0.23	-0.01	7.86	0.18
Carbacid investments ltd	3	2017	0.5	0.1	4.74	0.14
EastAfricanBreweriesltd	4	2013	0.31	0.08	4.09	-0.32
East African Breweries ltd	4	2014	0.23	0.01	3.62	0.23
East African Breweries ltd	4	2015	0.55	-0.05	3.19	0.28
East African Breweries ltd	4	2016	0.66	0.01	3.41	0.28
East African Breweries ltd	4	2017	0.03	0.05	5.01	0.25
MumiasSugar Co. Ltd	5	2013	0.11	0	5.02	-0.31
Mumias Sugar Co. Ltd	5	2014	0.08	0.04	6.83	0.17
Mumias Sugar Co. Ltd	5	2015	0.02	0.06	7.73	0.34
Mumias Sugar Co. Ltd	5	2016	0.16	0.4	8.5	0.26
Mumias Sugar Co. Ltd	5	2017	0.14	-0.17	6.43	0.15
Unga Groupltd	6	2013	0.13	0.35	5.25	0.25
Unga Group ltd	6	2014	0.22	0.11	5.51	-0.38
Unga Group ltd	6	2015	0.22	0.19	7.39	0.31
Unga Group ltd	6	2016	0.26	-0.29	5.35	0.46
Unga Group ltd	6	2017	0.01	0.26	7.06	0.03
Eveready East African ltd	7	2013	0.43	0.02	2.08	0.11
Eveready East African ltd	7	2014	-0.26	-0.82	2.22	0.13
Eveready East African ltd	7	2015	0.01	0.24	2.11	0.16
Eveready East African ltd	7	2016	-0.4	-0.97	3.64	0.27
Eveready East African ltd	7	2017	-0.44	-0.5	6.46	-0.34

Kenya orchads ltd	8	2013	-0.03	-0.9	5.47	0.01
Kenya orchads ltd	8	2014	-0.02	-0.04	8.86	0.03
Kenya orchads ltd	8	2015	-0.02	-0.03	5.68	0.06
Kenya orchads ltd	8	2016	-0.08	0.06	10.5	0.06
Kenya orchads ltd	8	2017	0.11	0.26	6.67	0.07
Flametreegroupholdingsltd	9	2013	0.19	0.51	3.12	-0.89
Flame tree group holdings ltd	9	2014	-0.02	0.25	4.32	-0.67
Flame tree group holdings ltd	9	2015	0.14	0.23	4.32	-0.54
Flame tree group holdings ltd	9	2016	0.05	0.16	6.42	-0.45
Flame tree group holdings ltd	9	2017	0.16	0.15	4.56	-0.64