

**DETERMINANTS OF LIQUIDITY RISK IN MANUFACTURING
COMPANIES LISTED AT NAIROBI SECURITIES EXCHANGE**

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DECLARATION

I hereby declare that this research project is my original work and has not been submitted for a degree in any other university or college for examination/academic purposes.

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LIST OF ABBREVIATIONS

CBK:	Central Bank of Kenya
CDA:	Central Depository Agents
CMA:	Capital Markets Authority
IPOs:	Initial public Offers
NSE:	Nairobi Securities Exchange
RMPs:	Risk Management Practices

ABSTRACT

To maintain high financial performance, many manufacturing companies both local and international have adopted risk management strategy with the objective of reducing losses. Due to globalization, many companies have fallen victims of economic factors which make the risk management strategy impossible to implement. When a company does not identify areas that affect liquidity and manage it well, it can fall into cash shortages and as a result become unable to settle its obligations when they fall due. Because of these reasons firms have come up with strategies to improve their liquidity position. The factors that affect liquidity risk include the inflation rates, exchange rates, technology innovation and unhealthy competition involved within the manufacturing industry. The research project sought to find out the determinants of liquidity risk in the manufacturing companies. The study was anchored on the liquidity risk management theories which include the Baumol's model of cash management, the Miller-Orr model and the cash conversion cycle model. The researcher used a descriptive research in the study. For this research, the study population was the entire collection of listed manufacturing firms at the Nairobi Securities Exchange from 2011 to 2015. The study used census-sampling method. The data for the study was secondary data from company's financial statements of manufacturing companies listed at Nairobi Securities Exchange. For analysis, the statistical package for social scientists (SPSS) program was used to generate both descriptive and inferential statistics. The study found that liquidity risk has relative strong positive correlation with inventory turnover and a relatively weak positive correlation with inflation. In addition, the study found that liquidity risk has relative strong negative correlation with debtor turnover and company size. The study reached a conclusion that for the success of operations and survival, manufacturing companies listed in the NSE should not compromise efficient and effective inventory turnover. The study recommended that the management of the manufacturing firms listed in the NSE should strive to achieve and maintain an optimal debtor's turnover, company size and rate of inflation.

CHAPTER ONE: INTRODUCTION

1.1 Background to the Study

Liquidity risk has been a significant indicator of financial performance over the past. It has often been taken as an independent variable in many studies in relation to the performance of firms. As unforeseen factors led to the depletion of funding sources many companies' found themselves with inadequate funds to cover the tasks as they fell due. Severe cases have led to the closure of some companies. Liquidity risk is forward looking and it is affected by the possibility that after sometime, a firm will not find it easy to deal with its obligation; this has thus led to the interest to identify the indicators of liquidity risk in a bid to save companies from illiquidity.

The study was anchored on the liquidity risk management theories which include the Baumol's model of cash management which assumes that cash flows are certain and cash balances are held at specified levels. The theory is mostly applicable in cash management to help cash managers meet cash needs. The Miller-Orr model is similar to Baumol's but assumes that cash flows fluctuate and market securities can be liquidated in time of need. The Cash Conversion Cycle by Richard & Laughlin in 1980, provides a different view of managing cash flows aside from the traditional views of current ratio and quick ratio. They propose that a firm can control its liquidity by looking at the length of time it takes to convert its input resources to cash, namely, inventory, receivables and payables.

The research project sought to find out the determinants of liquidity risk in the manufacturing companies. Manufacturing companies play an important role in the economy of a nation. It is through industrialization that many economies have prospered. For that matter, their existence and prosperity are very important, any

measures to ensure they remain afloat, should, therefore, be undertaken at all costs. The basic core business of the manufacturing companies is to remain profitable and manufacture very high standard goods, settle their current liabilities and non-current liabilities when they fall due. (Mathuva, 2010). To maintain high financial performance, many manufacturing companies both local and international have adopted risk management strategy with the objective of reducing losses. Due to globalization, many companies have fallen victims of economic factors which make the risk management strategy impossible to implement. The factors include the inflation rates, exchange rates, technology innovation and unhealthy competition involved within the manufacturing industry (Felice & Hall, 2013).

1.1.1 Liquidity Risk

Liquidity risk is the probability that company will not be in financial capability to settle down its current obligation on due date. According to (Felice & Hall, 2013), it is said to be the outcome if a manufacturing company is unable to pay its liabilities without incurring any additional charges and penalties. The risk has a significant effect on the company's performance and asset base hence becomes a key factor to consider when making investment plans. If the company fails to minimize its spending, the current liabilities will not be settled when they fall due, additional charges will be attached to the obligation hence reduce the company's credit score to the fund providers and suppliers, (Mathuva, 2010).

Liquidity risk can be either market liquidity or funding liquidity risk. Funding liquidity refers to the incapability to deal with the obligations when they fall due. According to Mathias & Kleopatra (2009), funding liquidity occurs over a period of time while funding liquidity risk is forecasting concept. On the other hand, market

liquidity risk is the inability of a company to sell assets quickly to get enough money to finance its obligations.

Liquidity risk in manufacturing firms is measured using liquidity ratios such as current ratio, quick ratio and cash conversion cycle. Current ratio is equal to current assets divided by the current liabilities. The quick ratio on the other hand quick ratio is equal to current assets minus inventories divided by current liabilities. It can also be calculated as cash and cash equivalents plus marketable securities plus accounts receivable then divided by current liabilities.

The market liquidity risk is defined as the probability that an asset will be sold at its market value or approximately the market value, (Kesimli & Gunay, 2011). Market liquidity risk can be measured using three methods. First, bid- ask spread; this refers to how much one can lose by trading an asset immediately. Second, by using the market depth method, which refers to how much traders can trade at current bid or ask price without moving prices. Finally, through market resilience, that is, time it takes for prices that have fallen to bounce back.

1.1.2 Determinants of Liquidity Risk

Liquidity risk can be factor of many variables both internal and external Internal factors include liquidity level, size of company, and size of debt ratio, operational risks and innovative risks. Liquidity level refers to the ratio of current assets to current liabilities. Size of company refers to asset base of a company. Inventory turnover refers to the number of times inventory is sold or used. Operational risks those losses associated with failed procedures, policies or systems and finally innovation risks are those associated with failure to implement strategies that would gain a company market share. On the other hand, external factors include political such as instabilities

in the country, legal such as change of laws e.g. tax laws or new laws, social changes e.g. change of preferences, economic factors such as inflation and technological changes (Wojcik-Mazur, 2012).

In the event that the above factors occur they can affect a company's liquidity. For example, if a company policies and procedures fail, production will be affected and hence their revenue, thus affecting its cash flows. Similarly, failure to implement proper strategies will also affect production or new technologies that render a company's products obsolete. However, these factors are dependent on each other and occurrence of liquidity risk is because of mismatch in cash flow, thus creating a liquidity gap. (Wojcik-Mazur, 2012). Therefore, in this study we will focus on those determinants that are quantifiable and are faced frequently by a firm, namely, debtor's turnover, size of company, inflation and inventory turnover.

Company size has previously been defined using various determinants. According to You (1995) size of a firm can be defined by its determinants either technological, transactional or market share. In this study, we define company size by the value of assets the company has. (Vijayakumar & Tamizhselvan, 2010) defined size of a firm using total assets in their study on effect of size on profitability of a firm. Therefore, if the asset the base is large, then the company is said to be big. This means that the companies that are large possess sufficient assets that can cover the liabilities when they fall due. However, asset base is not fixed and can either appreciate or depreciate depending on market forces.

Debtor's turnover is also another factor affecting liquidity risk. Debtors are defined as that debt owed to a company from its normally course of business. (Pike & Cheng, 2001). Debtor's turnover can be described as the time taken to convert debtors into

cash. Debtor's turnover is measured as credit sales over average receivables (opening receivables plus closing receivables divided by 2), (Peter Easton, et al, 2009).

Inventory turnover, inventory plays an important role in cash conversion, (Richard & Laughlin, 1980). The days it takes to convert inventories is reflected on how much cash flow a firm will have. According to Peter Easton, et al (2009), it is measured by taking the cost of goods sold divided by the average inventory (opening inventory plus closing inventory divided by 2). When the number of inventory turnover is high accompanied with a high receivables turnover the firm is able to have enough to settle its debts.

The inflation rate is also a determinant of liquidity risk. Inflation rate refers to the levels at which the general prices of goods are increasing, while purchasing power falls (Felice & Hall, 2013). The inflation rate is measured using a country's annual growth rate in consumer price index. Vodova (2011), inflation negatively affects the efficiency of firms. When the inflation rate is high, it means that manufacturing companies are producing at high production costs because of the rise in raw materials and the consumers are not able to buy their products. This, therefore, exposes firms to reduced cost efficiencies and thus increasing the liquidity levels negatively.

1.1.3 Liquidity Risk and its Determinants

Determinants of liquidity risk affect liquidity risk either positively or negatively. A company's liquidity risk can be affected by the company size in terms of asset base. The bigger the asset base owned by the company the lower the levels of liquidity risk. This means that the company has sufficient assets to liquidate in case of risk. According to Bunda and Desquilbet (2008) size was a determinant of liquidity risk of the bank from emerging economies. Size had a positive effect on liquidity risk. Shen,

Chen, Kuo, and Yeh (2009) using liquidity ratios concluded size was a major determinant of liquidity risk. They found out that there's a positive relationship between the two up to a certain level where it was negatively related.

Debtor's turnover is also another factor affecting liquidity risk. When the debtor's turnover is low it means that the debtors have been well collected. This means that liquidity risk will be low because there is enough cash to cover a firm's liability. When the liabilities are greater than the assets then it means the higher the liquidity risk. Saunders and Cornet (2006) stated that liquidity risk can be measured by liquidity gap.

Inventory turnover, this refers to the number of times inventory is sold or used in a period of time. According to Corey, et al (2013) inventory movement is important in cash conversion. When the turnover is high it means that the company's products are fast moving. Meaning production is increased which in turn translates to increased revenues. This betters a company's cash flow and hence its liquidity. In the event of low inventory turnover then liquidity risk is likely.

The inflation rate is also a determinant of liquidity risk. When the inflation rate is high it negatively affects firms cost efficiency since manufacturing companies are producing at high production costs because of the rise in raw materials and the consumers are not able to buy their products. Grigorian and Manole, (2006) sited inflation leads to inefficiencies due to price. This, therefore, increases liquidity risk levels because they are unable to convert their assets to money or borrow loans because of high interest rates and therefore exposing them to the possibility of not being able to meet its liabilities. Vodova (2011), pointed out that liquidity is negatively related to the inflation rate.

1.1.4 Manufacturing Companies Listed at NSE

These companies convert raw material into finished goods. They are the backbone of industrialization to a company's economy. They contribute a lot to the economy in terms of providing commodities needed by consumers in the economy. The listing of companies at the NSE is charged to the regulating body; CMA. The Nairobi Securities Exchange (NSE) is a capital market in harmony by the Capital Markets Authority (CMA) and its main objective is to facilitate mobilization and the allocation of investment capital to finance a profitable investment. The uniform distribution of the resource across the business industry promotes the general growth of the country. NSE was established in 1953 and it was registered with the Society Act (1954) where it acted as a voluntary association for the stock brokers and charged with the duty of developing the securities market and regulating trading activities. The CMA was established to supervise and regulate the licensing and development of the capital markets in Kenya. However, CMA also proves the Initial Public Offers (IPOs) and a listing of traded securities at the NSE.

The manufacturing companies at the NSE include the, A.Baumann Company Ltd, B.O.C Kenya Ltd, Carbacid Investments Ltd, British American Tobacco Kenya Ltd, East Africa Breweries Ltd, Mumias Sugar Company Ltd, Unga Group Ltd, Kenya Orchards Ltd and the Flame Tree Group Holdings Ltd. Eveready East Africa Ltd According to the NSE (2016), several companies listed in the security market have to be under statutory management due to liquidity issues like Uchumi supermarkets, Imperial Bank and Chase Bank. Manufacturing companies like Mumias Sugar Limited report 2016, the company experiencing financial crisis due to the lack of liquidity despite the government involvement to support the company. The company

is not able to settle down farmer's debts hence loss of raw materials hence significant drop in sugar production.

1.2 Research Problem

Illiquidity is one of the main reasons for liquidation of firms. Managing a firm's liquidity is therefore important and necessary for all businesses. When a company does not identify areas that affect liquidity and manage it well, it can fall into cash shortages and as a result become unable to settle its obligations when they fall due. Because of these reasons firms have come up with strategies to improve their liquidity position (Deloof, 2003). According to Lamberg & Valmig (2009), levels of liquidity should not fall below the minimum required as it will lead to liquidity risk.

Manufacturing companies are key pillars of the distribution of resources hence liquidity risk is a strategic aspect of the financial performance (Attari, 2012). Manufacturing company's liquidity need to be managed properly in order for them to maintain a competitive edge and remain sustainable. Liquidity risk of the manufacturing companies listed in the NSE is based on the company's cash flow statements and the budgets. According to Muriithi (2016), companies affected by the liquidity, delay payments of current liabilities like the supplier's debts which affect the company's credit terms. The strategic plan of the liquidity risk management is determined by the firm characteristics and the performance position within the market environment. The company liquidity risk is affected by the company size in terms of asset base, debtor's turnover, and inventory turnover and inflation rate.

Mugenyah (2015) evaluated the determinants of liquidity risk on commercial banks in Kenya and arrived at the conclusion that capital adequacy had a positive effect on

liquidity risk, while size, liquid asset ratio and leverage had negative effect on liquidity risk. Mwangi (2014) seek to find out relationship between liquidity risk management and performance of commercial banks and found out a negative relationship between the two variables. A study conducted by Maaka (2013) indicated that liquidity risk had significant negative effect on the profitability of the banks in Kenya. Kamau & Njeru (2013), liquidity Risk had a negative effect on profitability of insurance companies in Kenya. Njuguna (2015) was on the effect of liquidity management on profitability of cement manufacturing firms.

Most studies have looked at liquidity and liquidity risk as the independent variable. Local studies on determinants of liquidity risk have been on commercial banks. The study aimed to make a contribution on liquidity in the manufacturing sector in Kenya by identifying factors that would make companies face liquidity risk. The study was relevant in Kenyan context because of the important role manufacturing companies are expected play in the growth of the economy. Therefore, the study answered the question: what are the determinants of liquidity risk in manufacturing companies listed on the Nairobi Securities Exchange?

1.3 Research Objective

The research objective is to establish the determinants of liquidity risk in manufacturing companies listed at the Nairobi Securities Exchange.

1.4 Value of the Study

Manufacturing Companies managements run the day to day operation of the company hence it's their responsibility to make sure they remain profitability by ensuring effective liquidity level. The study results will stress significance of liquidity risk management; hence finance managers can make sure their companies remain liquid

enough. This will ensure all the current liabilities are met when they fall due. The trading of securities is conducted at Nairobi Securities Exchange and regulated by the Capital Markets Authority. Both institutions will find the study results useful in predicting whether a manufacturing company is expected to have financial crisis due to poor liquidity management. The NSE and CMA may instruct the affected companies to develop financial strategies which to address the liquidity issues.

The study results will assist in the establishment of a literature review to the future scholars who wish to do more research on the determinants of liquidity risk of companies either in privately owned or nationalized.

Investors rely on investment information which is available at the time of decision making in which the information is retrieved from the company websites and the scholar publications. The study will be of great assistant to the potential investors who are able and willing to invest in the stock at Nairobi Securities Exchange. They will be in a position to make a reliable investment decision based on the findings.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

Chapter focuses on previous studies done on determinants of liquidity risk as well as theories shaping the study. This chapter is organized into theoretical review followed by empirical evidence done on the research and the review summary.

2.2 Theoretical Review

Liquidity risk management theories are due to either the management of liabilities or management of assets. There are three important theories on the management of assets including the Baumol model, Miller-Orr model, and Cash Conversion Cycle model.

2.2.1 Baumol Model of Cash Management

This model was developed by William Baumol in 1952. He proposed a cash management strategy in which firms will be able to meet their transactional demands. Baumol used Economic Order Quantity just like in inventory management to determine the best optimal cash balances. The model assumed that payment occurrence is uniform and the opportunity cost of holding cash is known and does not change over time. That's to mean that firms should be able to determine their cash requirements and always hold cash to that specified level.

Baumol model also assumes that firms invest in interest bearing securities that are to be used to control the cash balances. When the return on investments increase it means that opportunity cost of holding cash is high, thus managers decrease cash balances by buying securities (Baumol,1952). On the other hand, when the cost of liquidating the securities increases managers reduce the sale of securities leading to higher cash balances. Whenever the cash balance levels fall managers can sell interest

bearing securities to meet the demands of the firm and if cash is in excess, cash managers

The model is based on the management of assets whose main emphasis is on liquidity. The policy indicated ensures firms remain liquid at all times by specifying the optimal levels of cash balances. It helps in liquidity management and thus companies can meet their obligation when they fall due and avoid risks and should invest in the securities. He suggested that firms should maintain cash balances at a certain level.

The Baumol Model has been criticized significantly by Miller and Orr (1966). The limitation is that the model assumes that cash inflows and cash outflows are certain. This is not always the case because different firms have different needs at different times due to the circumstances they are facing at that particular time.

2.2.2 Miller-Orr Model

The Miller-Orr model by Miller and Orr (1966) was to answer the shortcomings of Baumol Model. The Model stated that cash flows are uncertain and thus assumes that cash balances randomly fluctuate. This is true of firms because different needs of cash arise at different times. This model provides for this fluctuation by allowing firms to maintain cash balances between an upper and lower limit. It is in three levels including upper limit, point of return and lower limit. The upper limit is equal to lower limit plus three times Z , where Z is the range between the two. Optimal values of upper limit and return point are not just based on opportunity cost but also the degree of likely fluctuations in cash balances. When the upper limit is reached it means that the firm has excess cash and should buy marketable securities in order to return to the point of return and should sell when at the lower limit.

Managing cash is a problem to all firms due to daily inflows and outflows. Liquidity risk is the probability that a firm will not be able to settle its obligation when they fall due. To curb against this risk, a firm need to be liquid. Miller-Orr model advocates for this through its cash management model. Maness & Zietlow (1993) in the event that cash flows of the firm drop to the lower limit, the firm can sell its marketable securities in order to bring back the cash balances to the normal value. This thus ensures that firms maintain positive liquidity levels at all times.

2.2.3 Cash Conversion Cycle Model

Richards & Lauglin (1980) look at the length of time a company takes to convert inventory and receivables into cash. It focuses on three areas of working capital. That is the inventory period, receivables period and payables period. Inventory period refers to the time it takes to convert raw materials into finished goods and the selling them. Receivable collection period refers to the time it takes to convert debtors into cash and payables period refers to the period it takes between purchase of raw materials and the payment for them. Cash conversion cycle is equal to the days of inventory outstanding plus the days of receivables outstanding less the days of payable outstanding.

According to Shin and Soenen (1998) stated that it is important for companies to reduce the cash conversion cycle. Corey, Jones & Campbell (2013), used Cash Conversion Cycle to analyze liquidity. They posit that static measures of measuring liquidity such as current ratio and quick ratio can be misleading if used exclusively. Cash Conversion Cycle according to them can provide a useful complement in assessing company's liquidity. This was demonstrated by the comparison made between two companies, Best Buy and Circuit City during a period of 10 years before

the events that lead Circuit City file for bankruptcy. The model therefore provides a way to help in management of liquidity thus helping firms not to fall into illiquidity.

2.3 Determinants of Liquidity Risk

Determinants of liquidity risk are important factors that assist firms to avoid falling into liquidity risk. The variables used in an attempt to determine liquidity risk is; liquidity levels, company size, inventory turnover and inflation.

2.3.1 Debtor's Turnover

According to the cash conversion cycle, debtors are key players in determining liquidity of a firm. The amount of receivables outstanding means that the liquidity level of the firm will either be high or low. If debtors are collected on time the more cash is available to settle debts as opposed to the money being tied up in uncollected debt. Credit sales are risky but firms cannot do without it.

Moyer (2005) also indicated that account receivables management is very important for liquidity purposes. He stated that keeping the levels of accounts receivables at an optimal balance should be a major object of firm managers. Jackling et al.2004 indicated that credit sales should be properly analyzed as they are risky compared to cash sales.

2.3.2 Company Size

Company size is another determinant. Large companies are seen to be more efficient in managing their cash flows than small firms. This is because they have a large asset base, which means they can liquidate in the event of need and also the fact that they enjoy economies of scale therefore are able to save on costs. This means that they are more liquid than small firms and therefore face a lesser risk.

Company size can be estimated by use of asset base. Many studies have found out a negative link between liquidity risk and size of a firm. Mugenyah (2015) found a negative association between size and liquidity risk of banks. That is to mean that larger firms have less liquidity risk. According to Berger and Bouwman 2009 and Rauch et al. 2008, small firms tend to focus more on the intermediation and transformation activities because they have a small amount in terms of liquidity.

2.3.3 Inventory Turnover

Inventory turnover is measured cost of sales over average inventory. This means that production of a firm is high and more of the goods are sold. This shows that companies with high turnover have less liquidity risk. Inventory is also part of cash conversion cycle. Cash conversion cash includes inventory turnover plus receivables turnover minus payables turnover. He indicated that cash conversion is a better measure of liquidity thus the current ratio. If the stock turnover is high, liquidity risk will be low.

A study conducted by Eljelly (2004) indicated that cash conversion cycle has a negative effect on liquidity and was a better measure than current ratio. Corey, Jones and Campbell (2013), also indicated that it is important to include inventory in the analysis of liquidity because it is more accurate than the static measures

2.3.4 The Rate of Inflation

According to Felice and Hall (2013), the inflation rate is the level at which the commodities general prices rise, while at the same time the purchasing power reducing. One of the most effective methods for measuring the inflation rate of a given nation is to measure the countries growth rate by consumer price index. Inflation affects cost of production making firms costs go up and the sales to reduce

due to the reducing purchasing power of consumers. Companies also use their liquid assets to offset their high costs. Inflation therefore exposes firms to liquidity risks.

2.4 Empirical Studies

Priya (2013) researched on relationship between liquidity management and profitability of manufacturing companies in Sri Lanka for period of 5 years from 2008 to 2012. The study used explanatory studies. Correlation and regression model showed that there is a significant relationship between the two variables. The study found out that there is a negative relationship between liquidity and profitability of manufacturing firms.

Ben-Caleb (2013) carried out a study on liquidity management and profitability of manufacturing companies in Nigeria. Representative of 30 manufacturing companies listed at Nigeria Stock Exchange were used. Study covered a 5 year period (2006-2010). Quantitative study was applied. Correlation analysis showed that liquidity ratios (current ratio and quick ratio) are positively link to profitability, while cash conversion cycle had a negative relationship. The finding was that liquidity has a small impact on profitability of manufacturing firms in Nigeria.

Bunia and Khan (2011) conducted a study to establish efficiency liquidity management of Indian Steel companies. Using descriptive study, a sample of 230 companies was used. It analyzed data for a period of 9 years from 2002 to 2010. It found out that there's a small association between the indicators of liquidity and profitability.

Amidu and Abor (2006) researched on liquidity risk determinants in Ghana's financial institutions. Three measurements were analyzed and they included analog firms/peer group analysis, statistical technique, and scenario analysis. The approaches

were tested against effective management controls. The study findings indicated that firms' size has a significant influence on liquidity risk.

A study by Singh (2008) on working capital and profitability of manufacturing companies in Europe used a sample of 100 manufacturing companies using cross-sectional study and descriptive studies and found out that there was a positive association between working capital aspects and performance of manufacturing firms in Europe.

Njuguna (2015) conducted a study on the effect of liquidity management on profitability of cement manufacturing companies in Kenya. The study used descriptive approach. A representative of 7 companies was used for a period of 10 years from 2005-2014. It found out through regression analysis that there is a positive correlation between liquidity and profitability and correlation showed that there is a small positive link between the two variables.

A study conducted by Mwangi (2014) on effects of liquidity risk management on financial performance of commercial banks. The data was on all commercial banks between 2010 and 2013. Analysis was done using descriptive analysis and regression and found out that liquidity risk management had a negative effect on financial performance of banks.

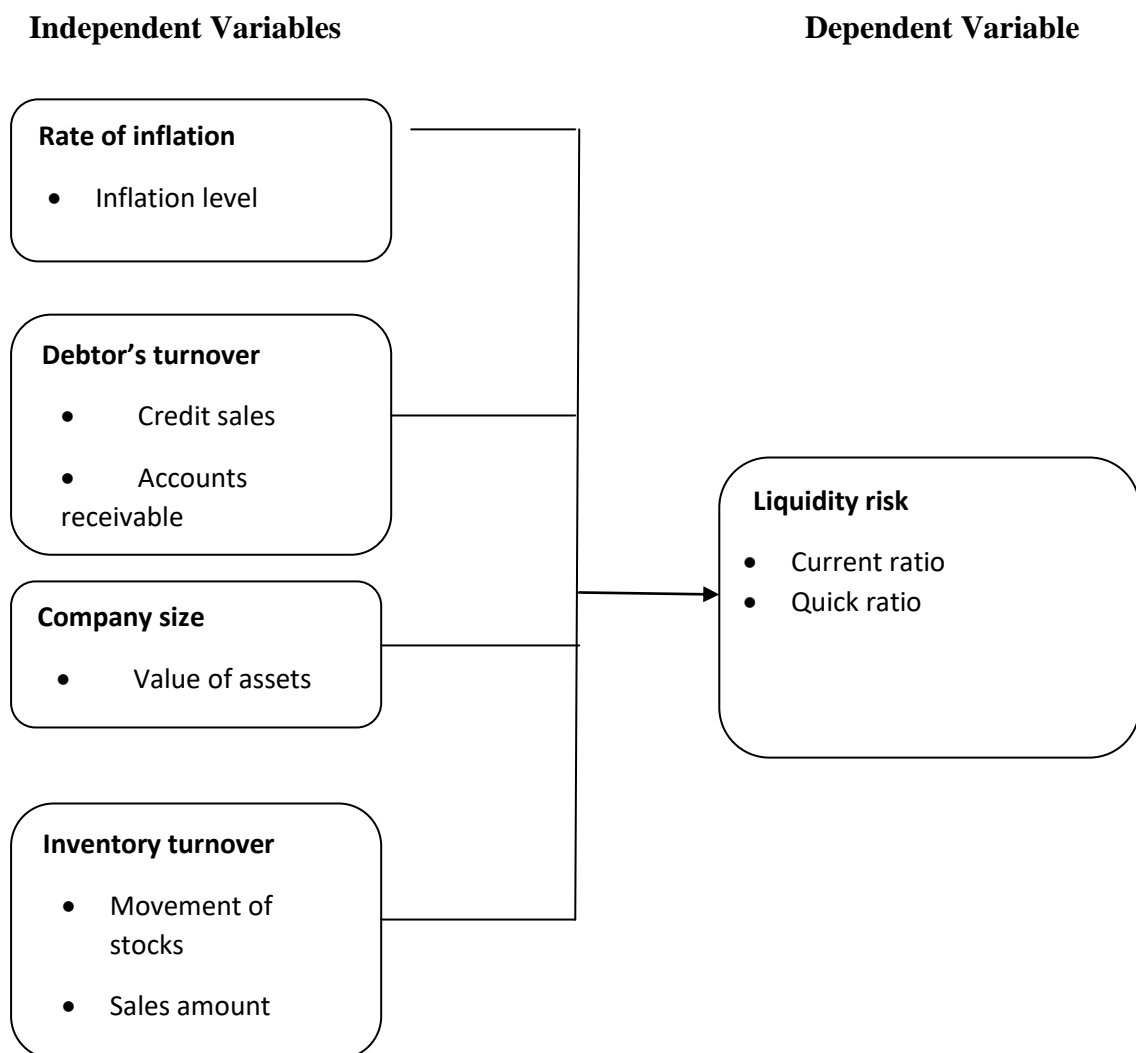
Kamau & Njeru (2013), conducted a study on some of the effects of Liquidity Risk on Financial Performance of Insurance Companies Listed at the Nairobi Securities Exchange which established that the risk had a negative effect on the profitability of insurance companies in Kenya.

Maina (2013) carried out a research on association between working capital and financial performance of manufacturing companies listed at the NSE. The study used both quantitative study and descriptive study. A sample of all the manufacturing companies listed was used for a period of 5 years from 2007 to the year 2011. The study found out that inventory turnover and cash conversion had a negative relationship to performance while current ratio had a positive relationship.

Mugenyah (2015) conducted a study on determinants of liquidity risk on commercial banks in Kenya. The researcher used descriptive study. The target population was all commercial banks. Data analyzed was for 5 years between the years of 2010 to 2014. The study results indicated that capital adequacy a positive to liquidity risk, while on the others leverage, size, ownership type and liquid asset base had a negative relationship.

2.5 Conceptual Framework

Conceptual framework shows the expected relationship between the variables. In this case the independent variables are rate of inflation, company size, debtor's turnover and inventory turnover. The dependent variable is liquidity risk. Based on the theoretical and empirical review the below shows the interaction between the variables.



2.6 Summary of Literature Review

Liquidity risk management is important in risk management of financial services. Preferably, a firm that's well managed should have ways, which are well stated out for the identification, measurement, monitoring, and the mitigation of all the risk associated. Additionally, firm whose system is well managed helps the firm in prompt recognition of some sources of liquidity risk hence aiding in loss avoidance. From the review, liquidity tends to expose a given firm into losses whenever a firm is unable maintain an effective balance between liabilities and assets. Therefore, it is key for businesses to manage liquidity and the implementation of financial management practices. The evidence has indicated that there's a direct relation whether positive or negative between liquidity risk, and factors contributing to the risk.

However, majority of the studies both internationally and locally have concentrated highly on the liquidity management financial institution and a few on manufacturing firms and that ban. It is therefore important to try and establish what factors impact on liquidity and how manufacturing companies can control these factors and avoid illiquidity and in worst case scenarios a collapse of the companies. Therefore, this study is geared towards the establishment of determinants of liquidity risk in manufacturing companies.

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction

This section will represent research methodology used. Some of the areas that this section will discuss include the research design, the population, methods of data collection, procedures of research, data analysis and summary chapter.

3.2 Research Design

According to Wilson (2010), the primary role of research design is to produce a plan that guides the process of the research when conducting a study. Additionally, Blumberg (2005) indicated that one of essential parts of research design is the time-based plan constitutes longitudinal and crosses sectional research design. Therefore, a research design can be described using Cooper and Schindler (2008) description which indicated that a research design is, “a blue print that can be used for collecting, measuring and analyzing of data” even though the process involves wide-ranging concepts. In the study, the research design will be used to set the scope of the study by specifying if the study should be descriptive, explanatory (or causal) or predictive. The researcher will used descriptive research in the study. Descriptive study sought to come up with answers for the different questions including who, what, when, where and sometimes, how. This type of research is used where the researcher needs to describe and define the subject through creation of a profile of the subject.

3.3 Population

There is no straightforward definition of the term population; definitions depend on the question under research and the context of the study. According to Wilson (2010), a population is essential for the establishment of the types of cases that compose the population of interest such as individuals, firms, households and the like. Therefore,

using this view, a population can therefore be described as a clearly defined group of individuals sampled and which indicates the whole set of cases from where the sample was drawn from. Consistently, Cooper and Schindler (2011) defined it as a total collection of elements, about which some statistical inferences are made”. For this research, the study population was the entire collection of listed manufacturing firms at the Nairobi Securities Exchange from 2011 to 2015.

3.4 Sample Design

The study will used census-sampling method. According to Mugenda and Mugenda (2003), a census can be defined as a research of everyone, every element, or everything, in a given population. It is known as a complete account, which means a complete count. For this study, the sample size will be all the 10 companies.

3.5 Data Collection

The data was secondary data from company’s financial statements of manufacturing companies listed at Nairobi Securities Exchange. This approach helped the researcher to gain knowledge about the determinants of liquidity risk and of a manufacturing firm in Kenya. The study required historical financial data for corporate reports by accessing data which was available in the public which according to the researcher it was the most effective method of ensuring the data is accurate. The independent variables including the liquidity level, capital, adequacy, and company size and inflation rate will be the main determinants.

3.6 Data Analysis

After the collection of data, the researcher edited the data, coded and analyzed the data using descriptive statistics method by the use of a statistical package for social scientists (SPSS) program. To ensure effectiveness in the study (Sekaran and Bougie,

2010) states that information needs to be accurate, complete, and suitable for further analysis. The researcher ensured this was done by recording and arranging the data there after described the data and drew conclusions (Saunders, 2009) by use of descriptive methods. According to Lind (2008), researchers can apply as many concepts of descriptive statistics as they wish to explain data. Some of the most common methods that the researchers can use include frequency distributions, polygons, histograms,

Pearson Coefficient of Correlation is a common method among researchers. This was used to identify the strength and direction between two variables in a linear relationship. Liquidity risk which was the dependent variable was measured using liquidity ratios. The independent variables was measured as follows; company size was the value of the company assets, inventory turnover by cost of sales divided by the average stock while inflation was the annual growth rate in consumer price index.

The regression equation was as follows:

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \epsilon$$

Where;

Y = is **Liquidity risk**, was measured using the liquidity ratios: current assets divided by current liabilities

X_1 = **Debtor turnover** = Credit sales / Average receivables

X_2 = **Company size** = Value of assets (asset - accumulated depreciation)

X_3 = **Inventory turnover** = Cost of sale / Average inventory

X_4 = **Inflation rate** = Country's annual growth rate in consumer price index.

β = Coefficient of the independent variables X_1 , X_2 , X_3 and X_4 .

ε = Error factor (contains factors rather than X_1 , X_2 , X_3 and X_4 that affect Y).

During the analysis, the coefficient of determination, R^2 , was used to describe the any variation in Y as explained by X while the F-test was used to determine the significance of regression at 5% significance level.

CHAPTER FOUR: DATA ANALYSIS, RESULTS AND DISCUSSION

4.1 Introduction

This chapter outlines the analysis and presentation of the study findings. The chapter contains the descriptive statistics, the correlations analysis, multiple regression and analysis of variance for test of significance. The chapter also presents the discussions and interpretation of the findings of the study. The research used secondary data obtained from financials of nine (9) manufacturing firms listed at the NSE. The tenth company A. Baumann was recently delisted.

4.2 Descriptive Statistics

Descriptive statistics comprises of the minimum and maximum values, the mean, the standard deviation, skewness and kurtosis. The results are displayed in table 4.1below;

Table 4.1: Descriptive Statistics

	Descriptive Statistics						
	N	Minimum	Maximum	Mean	Std. Deviation	Skewness	Kurtosis
Liquidity Risk	45	.19	10.09	2.0780	1.93427	2.933	9.121
Debtor	45	.02	382.96	20.7087	64.74412	4.544	23.20
Turnover							0
Company size	45	21005.00	43058789.00	7938912	12571988.24107	1.789	2.078
				.6000			
Inventory	45	1.60	14.93	5.7362	3.39567	.704	-.321
Turnover							
Inflation Rate	45	3.00	19.00	8.6000	5.52433	1.177	-.010
Valid N (list	45						
wise)							

Source: Findings, 2017

The findings reveal that the mean of liquidity risk as measured by current ratio was 2.078 and a standard deviation of 1.93427. This means that all the manufacturing firms are able to meet their short term obligations when they fall due following the thumb rule of 2:1. The data for liquidity risk was also found to be positively skewed and had a positive kurtosis value. From its skewness we can infer that it has a much longer right tail than the left tail and from its kurtosis value we can say that the distribution has a sharp peak compared to normal distribution.

Debtor turnover had a mean for period under consideration of 20.70 and a standard deviation of 64.74. Meaning the firms were able to offer credit facilities and collect their receivables on an average of 20.7 times. The findings also show that the lowest debtor turnover value in the period was 0.02 while the highest debtor turnover value stood at 382.96. The data for debtor turnover was also found to be positively skewed and had a positive kurtosis value. From its skewness we can infer that it has a much longer right tail than the left tail and from its kurtosis value we can say that the distribution has a sharp peak compared to normal distribution.

The company size for period under consideration had a mean in thousands of Kenya Shillings 7938912.6. The findings show that the lowest recorded value of company size in the period was 21005(in thousands) while the highest value stood at 43058789 (in thousands). Meaning each of the firms has sufficient assets that can be liquidated in case of a risk. The data of company size also appears to have the most significant departure from its mean as indicated by a standard deviation of 12571988.24. The data for debtor turnover was also found to be positively skewed and had a positive kurtosis value. From its skewness we can infer that it has a much longer right tail than the left tail and from its kurtosis value we can say that the distribution has a sharp peak compared to normal distribution.

Inventory turnover characteristics are also represented in Table 4.1. The findings show that the mean of inventory turnover for period under consideration was 5.73. The findings show that the lowest recorded inventory turnover value in the period was 1.6 while the highest value stood at 14.93. The data of inventory turnover value also appears to have a considerable departure from its mean as indicated by a standard deviation of 3.4. The data for debtor turnover was also found to be positively skewed and had a negative kurtosis value. From its skewness we can infer that it has a much longer right tail than the left tail and from its kurtosis value we can infer that the distribution has lighter tails and a flatter peak than the normal distribution. This means that the sell all their inventory.

The findings show that the lowest recorded inflation rate value in the period was 3 while the highest value stood at 19. Inflation rate data also has a substantial departure from its mean as indicated by a standard deviation of 5.52. The average inflation rate over the period was 8.6. The data for debtor turnover was also found to be positively skewed and had a negative kurtosis value. From its skewness we can infer that it has a much longer right tail than the left tail and from its kurtosis value we can infer that the distribution has lighter tails and a flatter peak than the normal distribution.

4.3 Correlation Analysis

Correlation analysis was carried to establish nature and strength of the association between the variables of the research. Table 4.2 shows the obtained correlation analysis results. Pearson's correlations analysis was conducted at 95% confidence interval and 5% confidence level 2-tailed. The table below indicates the correlation matrix between the independent and dependent variables.

Table 4.2: Correlation Matrix

		Correlations				
		Liquidity Risk	Debtor Turnover	Company Size	Inventory Turnover	Inflation Rate
Liquidity Risk	Pearson	1				
	Correlation					
	Sig. (2-tailed)					
	N	45				
Debtor Turnover	Pearson	-.121	1			
	Correlation					
	Sig. (2-tailed)	.430				
	N	45	45			
Company Size	Pearson	-.325*	.019	1		
	Correlation					
	Sig. (2-tailed)	.029	.899			
	N	45	45	45		
Inventory Turnover	Pearson	.354*	-.254	-.149	1	
	Correlation					
	Sig. (2-tailed)	.017	.093	.329		
	N	45	45	45	45	
Inflation Rate	Pearson	.092	.162	-.038	-.062	1
	Correlation					
	Sig. (2-tailed)	.549	.287	.805	.687	
	N	45	45	45	45	45

*, Correlation is significant at the 0.05 level (2-tailed).

Source: Findings, 2017

From the correlation matrix we can deduce that liquidity risk has relative strong negative correlation with debtor turnover and company size as shown by the correlation coefficient of -0.121 and -0.325 respectively. Meaning the higher the number of times it takes to convert debtors into cash the lower the liquidity risk. Similarly, the larger the company size the lower the liquidity risk. Further, liquidity risk has relative positive correlation with inventory turnover as shown by the correlation coefficient of 0.549. However, liquidity risk has relative weak positive correlation with inflation rate as shown by the correlation coefficient of 0.092. This means that the shorter the period of converting inventory into sales the lower the liquidity risk. Likewise, if the inflation rate is low the liquidity risk will also be low.

Accordingly, we can infer from the matrix that there is relatively weak positive correlation between company size and debtor's turnover as shown by the correlation coefficient of 0.019. In addition, the matrix reveals that company size is weakly but

negatively correlated with inventory turnover and inflation rate as shown by the correlation coefficient of -0.149 and -0.038 respectively. Inventory turnover and debtor turnover were found have a relative negative correlation as shown by the correlation coefficient -0.254.

4.4 Regression Analysis and Hypothesis Testing

In addition, multiple regression analysis was used so as to test relationship among variables. The statistical package for social sciences (SPSS Version 21) was applied to code, enter and compute the measurements of the multiple regressions for the study.

The summary of the model provides information about regression line's ability to account for the total variation in the dependent variable. The table below demonstrates how observed Y-values are highly dispersed around the regression line.

Table 4.3: Model Summary

Model Summary^b				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.463 ^a	.214	.136	1.79826
a. Predictors: (Constant), Inflation Rate, Company Size, Inventory Turnover, Debtor Turnover				
b. Dependent Variable: Liquidity Risk				

Source: Findings, 2017

The coefficient of determination explained the extent to which changes in the dependent variable are explained by the change in the independent variables. The findings show that the independent variables had a relative influence on the dependent variable as shown by adjusted R square=0.136. The output indicates that the strength of association between the variables is relatively low. The independent variable studied, explained only 13.6% of the variations in the dependent variable. This

therefore means that other factors not studied in this research contribute almost 86.4% of the variation in liquidity risk.

Analysis of Variance (ANOVA) consists of information about levels of variability within a regression model. It forms a basis for tests of significance of the model.

Table 4.4: ANOVA

		ANOVA ^a				
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	35.272	4	8.818	2.727	.043 ^b
	Residual	129.350	40	3.234		
	Total	164.622	44			

a. Dependent Variable: Liquidity Risk

b. Predictors: (Constant), Inflation Rate, Company Size, Inventory Turnover, Debtor Turnover

Source: Findings, 2017

Based on the results in table 4.4 above the significance value is 0.043 (which is less than 0.05) indicates that the overall model is statistically significance in predicting liquidity risk. A P-value < 0.05 shows that the overall model was a good fit.

A regression coefficient is a key output of regression analysis. It is interpreted as the proportion of the variance in the dependent variable that is predictable from the independent variable. The results are as shown in the table;

Table 4.5: Regression Coefficients

		Coefficients ^a				
Model		Unstandardized		Standardized	t	Sig.
		Coefficients		Coefficients		
		B	Std. Error	Beta		
1	(Constant)	1.120	.759		1.476	.148
	Debtor Turnover	-.002	.004	-.056	-.379	.707
	Company Size	-4.226E-008	.000	-.275	-1.936	.060
	Inventory Turnover	.174	.083	.306	2.085	.043
	Inflation Rate	.038	.050	.109	.768	.447

a. Dependent Variable: Liquidity Risk

Source: Findings, 2017

From the regression coefficients table, the regression equation established was thus:

$$Y = 1.12 - 0.002X_1 - 4.226E-008X_2 + 0.174X_3 + 0.38X_4$$

Based on the generated model, taking all factors (debtor turnover, company size, and inventory turnover and inflation rate) constant at zero, the liquidity risk was 1.12. The data findings analyzed also shows that taking all other independent variables at zero, a unit increase in debtor turnover will lead to a -0.002X1decrease in liquidity risk; a unit increase in company size will lead to a -4.226E-008 decrease in liquidity risk; a unit increase in inventory turnover will lead to a 0.174 increase in liquidity risk while a unit increase in inflation rate will lead an increase in 0.38 increase in liquidity risk. According to the model, only the inventory turnover was significant as its P- value was less than 0.05.

4.5 Discussion of Research Findings

The findings from our research indicated that a unit increase in debtor turnover will lead to a -0.002 decrease in liquidity risk out debtor turnover. Despite debt turnover causing a decrease in liquidity risk of companies it has an insignificant effect since its p-value (0.707) is greater than 0.05. Our findings are in disagreement with the cash conversion cycle which argues that debtors are key players in determining liquidity of a firm. The amount of receivables outstanding means that the liquidity level of the firm will either be high or low. If debtors are collected on time the more cash is available to settle debts as opposed to the money being tied up in uncollected debt. Credit sales are risky but firms cannot do without it.

Additionally, our findings were in disagreement with Moyer (2005) who indicated that account receivables management is very important for liquidity purposes. He stated that keeping the levels of accounts receivables at an optimal balance should be a major object of firm managers. Jackling et al.2004 indicated that credit sales should be properly analyzed as they are risky compared to cash sales. Therefore, from our research debtor turnover has insignificant effect on the liquidity risk in manufacturing companies listed in the Nairobi security exchange.

Company size is another determinant and large companies are seen to be more efficient in managing their cash flows than small firms. Our research findings showed that a unit increase in company size will lead to a -4.226E-008 decrease in liquidity risk. Regardless of company size having a negative effect and being in agreement with the Mugenyah (2015) study that found a negative association between size and liquidity risk of banks, this effect is insignificant in that the p-value (0.060) is slightly greater than the 0.05 level of significant. That is to mean that larger firms have less

liquidity risk which is insignificant in the case of manufacturing companies listed in the Nairobi security exchange.

The findings of this research were that a unit increase in inventory turnover will lead to a 0.174 increase in liquidity risk. Additionally, the model showed that the inventory turnover was significant as its P- value was less than 0.05. Inventory turnover is measured cost of sales over average inventory. Our findings meant that companies with high inventory turnover have less liquidity risk. Inventory is also part of cash conversion cycle. The findings were in agreement with the Cash conversion cycle that when the stock turnover is high, liquidity risk will be low.

Additionally, our research conquered in full with Corey, Jones and Campbell (2013), who indicated that it is important to include inventory in the analysis of liquidity because it is more accurate than the static measures.

The research found out that a unit increase in inflation rate will lead to 0.38 increase in liquidity risk. Moreover, the rate of inflation according the research was found to be insignificant since the p-value (0.447) was greater than the 0.05 level of significance. The research was in agreement with Felice and Hall (2013), who found out that the inflation rate is the level at which the commodities general prices rise, while at the same time the purchasing power reducing. One of the most effective methods for measuring the inflation rate of a given nation is to measure the countries growth rate by consumer price index. Inflation affects cost of production making firms costs go up and the sales to reduce due to the reducing purchasing power of consumers. Companies also use their liquid assets to offset their high costs. Inflation therefore exposes firms to liquidity risks.

CHAPTER FIVE: SUMMARY, CONCLUSION AND RECOMMENDATION

5.1 Introduction

The chapter gives summary of main findings of the study as well as conclusions, limitations of the study and recommendations for future research. Data on debtor's turnover, company size, inventory turnover, the rate of inflation and liquidity risk for manufacturing companies listed in the NSE were collected. The research involved the use of regression analysis of liquidity risk as the dependent variable while debtor's turnover, company size, inventory turnover, and the rate of inflation were the independent variables.

5.2 Summary of Findings

From the correlation matrix we can deduce that liquidity risk has relative strong negative correlation with debtor turnover and company size as shown by the correlation coefficient of -0.121 and -0.325 respectively. Further, liquidity risk has relative strong positive correlation with inventory turnover as shown by the correlation coefficient of 0.549. However, liquidity risk has relative weak positive correlation with inflation rate as shown by the correlation coefficient of 0.092. Furthermore, the findings show that the independent variables had a relative influence on the dependent variable as shown by an adjusted R square=0.136. The output indicates that the strength of association between the variables is relatively low. The independent variable studied, explained only 13.6% of the variations in the dependent variable. This therefore means that other factors not studied in this research contribute almost 86.4% of the variation in liquidity risk.

Based on the generated model, taking all factors (debtor turnover, company size, and inventory turnover and inflation rate) constant at zero, the liquidity risk was 1.12. The findings from our research indicated that a unit increase in debtor turnover will lead to

a -0.002 decrease in liquidity risk out debtor turnover. Despite debt turnover causing a decrease in liquidity risk of companies it has an insignificant effect since its p-value (0.707) is greater than 0.05. Moreover, our research findings showed that a unit increase in company size will lead to a -4.226E-008 decrease in liquidity risk. Regardless of company size having a negative effect and being in agreement with the Mugenyah (2015) study that found a negative association between size and liquidity risk of banks, this effect is insignificant in that the p-value (0.060) is slightly greater than the 0.05 level of significant.

The findings of this research were that a unit increase in inventory turnover will lead to a 0.174 increase in liquidity risk. Additionally, the model showed that the inventory turnover was significant as its P- value was less than 0.05. The research found out that a unit increase in inflation rate will lead to 0.38 increase in liquidity risk. Moreover, the rate of inflation according the research was found to be insignificant since the p-value (0.447) was greater than the 0.05 level of significance.

5.3 Conclusion

The data analysis results in chapter four indicated that debtor's turnover, company size, inventory turnover, and rate of inflation are determinants of liquidity risk of the manufacturing companies listed in the NSE. Despite all of them having an effect, only inventory turnover had a significant effect on the liquidity risk. The relationship between inventory turnover and liquidity risk is positive implying that an increase in inventory turnover leads to an increase in the liquidity risk of manufacturing companies listed in the NSE. Considering the findings of this study, the following conclusions can be drawn.

For the survival and success of operations, manufacturing companies listed in the NSE should not compromise efficient and effective inventory turnover. They are expected to maintain optimal inventory turnover in order to satisfy their financial obligations to reduce liquidity risks for the shareholders. Also from the study, we can conclude that debtor's turnover, company size, inventory turnover, and rate of inflation are financial diseases that can easily erode the liquidity risks of manufacturing companies as they affect a firm's attempt to attain low liquidity risks. Therefore, any manufacturing company with the agenda of reducing its liquidity risk must adopt effective inventory turnover management. This will help them in enhancing their investment portfolio and providing a competitive edge in the market.

5.4 Recommendations

From the findings, the study established that debtor's turnover, company size and rate of inflation did not significantly affect the liquidity risk of manufacturing companies listed in the NSE. The study recommended that the management of the manufacturing firms listed in the NSE should strive to achieve and maintain an optimal debtor's turnover, company size and rate of inflation but should not invest much on them since they had no significance.

Additionally, the study found that inventory turnover was the only significant determinant for the liquidity risk of manufacturing companies listed in the NSE. The study recommended that for the success of operations and survival, manufacturing companies listed in the NSE should not compromise efficient and effective inventory turnover. They are expected to maintain optimal inventory turnover in order to satisfy their financial obligations to reduce liquidity risks for the shareholders

Finally, the study found that other factors not studied in this research contributed to almost 86.4% of the variation in liquidity risk. Therefore, the study recommended that managers of the manufacturing companies listed in the NSE should be able to identify and address other factors that may be affecting their liquidity risks other than inventory turnover.

5.5 Limitations of the Study

The objective of this study was to establish the determinants of liquidity risk in manufacturing companies listed at the Nairobi Securities Exchange. The study entirely depended on the published financial data. It was hence subject to all limitations inherent in the condensed published financial statements.

Out of the 61 listed companies at the NSE, only manufacturing companies were included in the study. The 9 selected companies in the sample were those that were active firms over the research period and had complete required data for the study. Nevertheless, the study is affected by limitations like over representation or under representation of particular category of firms in the sample.

Again, the study is based on the data and information relating to specific period in time. This represented a limitation in case one wanted to establish the relationship in a different period. The study focused on the companies listed at the Nairobi Securities Exchange. The study is therefore limited to the profile of companies that are listed at the NSE. Companies listed in other stock/securities exchanges may have different profiles in as far as their financial performance and liquidity is concerned.

Finally, the study did not undertake to establish which other factors apart from those studied above which affected liquidity risk. Other factors that could have played a part

in liquidity risk of manufacturing companies listed, and this appears as a limitation on the findings for the study.

5.6 Suggestions for Further research

Since this study explored the determinants of liquidity risk in manufacturing companies listed at the Nairobi Securities Exchange., the study recommends that; similar studies should be done in other countries for comparison purposes and to allow for generalization of findings on the relationship between inventory turnover and liquidity risk of companies listed at the stock/security exchanges.

This study excluded listed companies in the financial sectors. The study recommends further research for these sectors to confirm if there is indeed a relationship between inventory turnover and liquidity risk of these firms. A study on the relationship between inventory turnover and liquidity risk for companies which are not listed at the NSE is also recommended. This includes the companies in the financial sectors for example, the SACCO's and also nonfinancial companies for example, manufacturing companies. This may help come with recommendations for companies which are not listed at the NSE to better their liquidity risk and inventory turnover management.

Finally, the study did not undertake to establish which other factors apart from the above affected liquidity risk. Other factors that could have played a part in liquidity risk of manufacturing companies listed, over the research period a perfect opportunity for further study.

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APPENDICIES

Appendix I: Manufacturing Firms Listed at the Nairobi Securities Exchange

1. A. Baumann Company Ltd	2. B.O.C Kenya Ltd
3. British Americam Tobacco Kenya Ltd	4. Carbacid Investments Ltd
5. East African Breweries Ltd	6. Eveready East Africa Ltd
7. Flame Tree Group Holdings Ltd	8. Kenya Orchards Ltd
9. Mumias Sugar Company Ltd	10. Unga Group Ltd

Source: Nairobi Securities Exchange

Appendix II: Data Manufacturing Firms (2011-2015)

1	B.O.C Kenya Ltd	Liquidity Risk	Debtor Turnover	Company Size	Inventory Turnover	Inflation Rate
	2011	1.76	1.18	898667.00	3.12	19.00
	2012	1.95	1.13	872339.00	3.11	3.00
	2013	2.13	1.15	1384275.00	3.25	7.00
	2014	2.02	0.62	1079784.00	3.85	6.00
	2015	2.02	0.80	998628.00	3.42	8.00
2	British American Tobacco(K)					
	2011	1.31	382.96	6756340.00	3.23	19.00
	2012	1.18	169.37	8046667.00	2.64	3.00
	2013	1.28	80.55	8454193.00	2.45	7.00
	2014	1.26	110.27	9273858.00	1.78	6.00
	2015	1.50	92.75	9087923.00	1.60	8.00
3	Carbacid Investments Ltd					
	2011	8.84	2.82	1,335,872	5.11	19.00
	2012	4.26	4.81	1,373,428	12.40	3.00
	2013	10.09	4.55	1,312,332	11.64	7.00
	2014	6.30	3.28	1,552,475	9.49	6.00
	2015	4.51	3.54	1,854,036	8.01	8.00
4	East African Breweries Ltd					
	2011	0.89	5.98	33,391,673	5.81	19.00
	2012	0.80	4.41	36,526,543	4.64	3.00
	2013	0.70	3.99	39,962,951	4.09	7.00
	2014	0.72	3.12	43,058,789	3.56	6.00
	2015	1.02	4.42	41,448,623	3.18	8.00
5	Eveready East Africa Ltd					
	2011	1.12	0.48	283,200	1.85	19.00
	2012	1.26	0.38	274,686	1.92	3.00
	2013	1.56	1.65	248,478	2.12	7.00
	2014	1.35	0.24	173,441	1.96	6.00
	2015	1.02	0.48	880,182	2.09	8.00
6	Flame Tree Group Holdings					
	2011	1.47	0.32	174,963	10.38	19.00
	2012	1.64	0.36	183,697	9.95	3.00

	2013	1.06	0.58	185,674	9.87	7.00
	2014	1.55	0.11	248,733	9.66	6.00
	2015	1.64	0.51	318,726	9.58	8.00
7	Kenya Orchards Ltd					
	2011	1.54	0.02	48,505	1.98	19.00
	2012	1.73	0.27	47,254	2.66	3.00
	2013	1.93	0.33	47,785	5.47	7.00
	2014	1.77	0.48	21,005	8.86	6.00
	2015	2.08	0.49	44,619	14.93	8.00
8	Mumias Sugar Company Ltd					
	2011	2.20	1.85	16,664,857	9.64	19.00
	2012	1.25	0.49	20,167,253	7.72	3.00
	2013	0.84	1.39	20,088,453	5.02	7.00
	2014	0.41	5.45	19,209,782	6.83	6.00
	2015	0.19	30.30	17,860,015	7.84	8.00