

**THE RELATIONSHIP BETWEEN WORKING CAPITAL MANAGEMENT POLICIES
AND FINANCIAL PERFORMANCE OF OIL MARKETING FIRMS IN KENYA**

BY

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DECLARATION

This research project is my original work and has never been presented in any other University or College for award of degree or diploma or certificate.

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DEDICATION

To my sisters Helen and Charity for always being there for me, with encouragement and moral support. To my brothers Steve and Charles for your love, ideas and proof-reading my work. To Sam for the moral support especially during this research project.

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ABSTRACT

This was study on the relationship between working capital management policies and financial performance of oil marketing firms in Kenya. The study was inspired by the fact that working capital in any firm is extremely critical and requires conscious balance between the components on the working capital namely cash, receivables, payables and inventory.

The objectives of the study were to establish the working capital management policies among oil marketing firms in Kenya and to examine the relationship between working capital management and profitability in oil marketing firms in Kenya.

The study highlighted what other studies found out on the three common working capital management policies namely aggressive, conservative and moderate policies. The research design was causal research trying to establish the relationship between policies applied with the profitability of the oil marketing firms.

The design came up with a regression model with the dependent variable being the net operating income with independent variables including Average collection period, inventory turnover period, average payment period, current ratio, debt ratio and natural logarithm of sales. The population for the study focused on the oil marketing firms who are members of Petroleum Institute of East Africa, analyzing financial statements for the 4 years from the year 2006 to 2009.

The analysis includes statistics like mean, correlation, regression analysis, ANOVA and coefficients statistics. Analysis of the questionnaire was done and the findings represented in tables, graphs and pie charts. The study found out that the identified independent variables affect the performance by 56.7%, and that the oil marketers reviewed apply aggressive working capital policy.

LIST OF TABLES

Table 4.1 Mean	26
Table 4.2 Correlation Statistics.....	27
Table 4.3 Model Summary	28
Table 4.4 ANOVA.....	29
Table 4.5 Coefficients.....	30
Table 4.6 Excluded Variables	31
Table 4.7 Method of forecasting cash.....	32
Table 4.8 Frequency of preparation of forecasting statement.....	32
Table 4.9 Methods of managing foreign currency cash requirements.....	33
Table 4.10 Decision in granting credit.....	34
Table 4.11 Bad Debts Level.....	36
Table 4.12 Monitoring sales account receivable.....	37
Table 4.13 Lead time for products ex-KPRL and under OTS	39
Table 4.14 Methods of determining stock levels	41
Table 4.15 Policy on payment of invoices.....	42

LIST OT FIGURES

Figure 1. Pie Chart showing methods of preparing forecast statement	32
Figure 2. Histogram showing Frequency of the forecast statement.....	33
Figure 3. Pie chart showing methods of managing foreign currency cash requirements	34
Figure 4 Histogram showing decision in granting credit.....	35
Figure 5. Histogram showing Bad Debt Level	37
Figure 6. Pie chart showing methods of monitoring sales account receivable	38
Figure 7. Pie chart showing use of discounting/factoring of trade receivable invoices	39
Figure 8. Histogram showing Lead times for purchases ex KPRL and under OTS	40
Figure 9. Pie chart showing the basis of placing inventory orders	41
Figure 10. Histogram showing methods used to determine inventory level to be maintained.....	42
Figure 11. Histogram showing policy on payment of payables and accruals.....	43

ABBREVIATIONS

WCM- Working capital management

OPEC- Organization of Petroleum Exporting Countries

ROI- Return on investment

JSE- Johannesburg Stock Exchange

NOCK- National Oil Corporation Of Kenya

PIEA- Petroleum Institute of East Africa

NOP- Net Operating Profitability

SPSS- Statistical package for social sciences (SPSS)

ANOVA-Analysis of Variance tests

KPRL-Kenya Petroleum Refineries Limited

OTS-Open Tender System

LPG-Liquid Petroleum Gas

KPC-Kenya Pipeline Company Limited

CFA-Collateral Financing Arrangement

HCV-Hydo Carbon Volumes

TABLE OF CONTENTS

DECLARATION	i
DEDICATION	ii
ACKNOWLEDGEMENTS	iii
ABSTRACT	iv
LIST OF TABLES	v
LIST OT FIGURES	vi
ABBREVIATIONS.....	vii
CHAPTER ONE:	1
1.0 INTRODUCTION.....	1
1.1 Background of the Study	1
1.2 Statement of the problem	3
1.3 Objectives.....	4
1.4 Significance of the Study	5
CHAPTER TWO:	6
2.0 LITERATURE REVIEW.....	6
2.1 Introduction	6
2.2 Working capital management policies	6
2.3 Review of theories.....	10
2.4 Empirical Studies	12
2.5 Conclusion.....	19
CHAPTER THREE.....	20
3.0 RESEARCH METHODOLOGY.....	20
3.1 Introduction	20

3.2 Research Design.....	20
3.3 Population.....	20
3.4 Sample Design and Sample size.....	21
3.5 Data Collection.....	21
3.5.1 Data Reliability (Pre- test).....	22
3.6 Data analysis	24
CHAPTER FOUR: DATA ANALYSIS AND FINDINGS.....	26
4.1 Introduction.....	26
4.2 Summary Statistics of data.....	26
CHAPTER FIVE: SUMMARY, CONCLUSIONS AND RECOMMENDATIONS.....	49
5.1 Summary	49
5.2 Conclusions.....	51
5.3 Policy Recommendations.....	51
5.4 Limitations of the Study	53
5.5 Recommendation for Further Study.....	54
APPENDICES.....	62
Appendix I: Questionnaire	62
Appendix II: List of Corporate Oil Marketing Companies in Kenya registered with PIEA.....	66

CHAPTER ONE:

1.0 INTRODUCTION

1.1 Background of the Study

Working capital management (WCM) is the management of short-term financing requirements of a firm. This includes maintaining optimum balance of working capital components – receivables, inventory and payables – and using the cash efficiently for day-to-day operations. Optimization of working capital balance means minimizing the working capital requirements and realizing maximum possible revenues. Efficient WCM increases firms' free cash flow, which in turn increases the firms' growth opportunities and return to shareholders (Ganesam, 2007). Working capital management is a very important component of corporate finance because it directly affects the liquidity and profitability of the company. It deals with current assets and current liabilities.

The Oil industry is characterized by high intensive working capital requirements and high competition because of volumes involved and the uncertainty of the global oil market and pricing, and also the volatility of the currency market, which make the WCM crucial to bring attractive earnings to shareholders. The subject of this analysis is about the variation in WCM measures and how a WCM component impacts WCM efficiency in the oil industry. The analysis will be done to get insight into how efficiently WCM is managed in oil industry and to find the approach the oil marketing firms more inclined to in improving WCM efficiency.

The management of working capital by managing the proportions of the WCM components is important to the financial health of businesses from all industries. To reduce accounts receivable, a firm may have strict collections policies and limited sales credits to its customers. This would increase cash inflow. However the strict collection policies and lesser sales credits would lead to

lost sales thus reducing the profits. Maximizing account payables by having longer credits from the suppliers also has the chance of getting poor quality materials from supplier that would ultimately affect the profitability. Minimizing inventory may lead to lost sales by stock-outs. The working capital management should aim at having balanced optimal proportions of the WCM components to achieve maximum profit and cash flow. Efficiency of working capital management is based on the principle of speeding up cash collections as quickly as possible and slowing down cash disbursements as slowly as possible. This working management principal based on the traditional concepts of operating cycle, cash conversion cycle, weighted cash conversion cycle, and net trade cycle. The operating cycle of a firm is the length of time between the acquisition of raw materials and the collections of receivables associated with the sales of finished goods. Although the operating cycle considers financial flows comes from receivables and inventory, it ignores the financial flows coming from account payables, in this regards, Richards and Loughlin (1980) suggested the cash conversion cycle which considers all relevant cash flows comes from the operations.

The ultimate objective of any firm is to maximize the profit. But, preserving liquidity of the firm is an important objective too. The problem is that increasing profits at the cost of liquidity can bring serious problems to the firm. Therefore, there must be a trade- off between these two objectives of the firms. Working Capital Management has its effect on liquidity as well on profitability of the firm (Raheman and Nasr 2007). The trade-off between profitability and risk is the key to working capital management (Dash and Hanuman 2007). Working capital management is important because of its effects on the firm's profitability and risk, and consequently its value (Smith, 1980).

In Kenya, there are about 23 oil marketing companies registered at Petroleum Institute of East Africa and a growing number of smaller distribution companies (commonly known as the independents) that have sprung up since the liberalisation of the petroleum sector in 1994. The major oil companies were the first to establish in Kenya and included Shell, Total, BP, Chevron, Mobil, Agip and Esso. They have major capital investments. After liberalization in 1994 competition opened competitive pressure that has seen poor companies' profitability, shakeouts,

outright insolvencies, or deliberate withdrawal from the market place. Several of the major multinationals which have pulled out including Agip, BP, Mobil, Esso, Chevron and more recent development of planned pullout by Kenya Shell which is withdrawing from the African market.

1.2 Statement of the problem

Many researchers have studied financial ratios as a part of working capital management; however, very few of them have discussed the working capital policies in specific. Some earlier work by Gupta (1969) and Gupta and Huefner (1972) examined the differences in financial ratio averages between industries. Johnson (1970) extended this work by finding cross-sectional stability of ratio groupings for both retailers and primary manufacturers.

Working capital management is important because of its effects on the firm's profitability and risk, and consequently its value (Smith, 1980). Investments in current assets represent a very significant portion of total assets. Working capital management is critical to all firms but particularly to small ones because they do not have access to long term financing yet they must finance the current assets. Additionally, there is a risk –return trade off; in that the optimal level calls for a balance between profitability and solvency by minimizing the total costs of liquidity and cost of illiquidity; the working capital management's objectives being enhancing profitability and liquidity (Pandey 1997).

On one hand, maintaining high inventory levels reduces the cost of possible interruptions in the production process, loss of business due to the scarcity of products, reduces supply costs, and protects against price fluctuations, among other advantages (Blinder and Manccini, 1991). On the other, granting trade credit favors the firm's sales in various ways. Trade credit can act as an effective price cut (Brennan, Maksimovic and Zechner, 1988; Petersen and Rajan, 1997), incentivizes customers to acquire merchandise at times of low demand (Emery, 1984); allows customers to check that the merchandise they receive is as agreed (quantity and quality) and to ensure that the services contracted are carried out and helps firms to strengthen long-term relationships with their customers (Smith, 1987).

The financial strategies of oil companies have been challenged in different ways by the rise and volatility of oil prices over the last five years. Rising oil prices helped OPEC countries increase their gross domestic product from US\$856 billion in 2000 to US\$1.7 trillion in 2006. As cash continues to flow freely into OPEC oil companies, many have accelerated their capital spending programs and are focused on developing strategies that could help secure a competitive return on their various investments, both upstream and downstream, and at home and abroad.

Most previous studies focus on developed market (Peel and Wilson, 1996; Shin and Soenon, 1998; Deloof, 2003). Thus investigating this issue could provide additional insights and perhaps different evidence on the working capital management in emerging capital market like Kenya. Most of the studies done cover the firms listed in various stock exchanges hence covering a number of industries. Only a few of the studies cover a single industry, hence the study covering the Oil industry in Kenya would add value to the body of knowledge. Additionally, these studies have concentrated on large firms operating within well developed money and capital markets of developed economies. Findings from these studies become difficult to generalize for the developing markets and especially the Sub Saharan Africa.

In Kenya, Ngaba, (1990) studied on working capital management practices in Kenyan secondary schools, a case of kikuyu division, Kiambu district. Nyakundi,(2003) did a survey of working capital management policies among public companies in Kenya. Kithii, (2008) carried out a study on the relationship between working capital management and profitability of listed companies in the Nairobi Stock Exchange. It is evident that no study has been done on working capital management policies and financial performance on oil marketing firms in Kenya. The current study seeks to fill this gap by surveying the relationship between working capital management and financial performance of oil marketing firms in Kenya.

1.3 Objectives

The objectives of this study were:

- i. To establish the working capital management policies among oil marketing firms in Kenya.

- ii. To examine the relationship between working capital management and liquidity and profitability in oil marketing firms in Kenya.

1.4 Significance of the Study

To Oil Marketing Companies

The study findings will benefit Management and Staff of oil marketing companies under study, by gaining insight into how their companies can effectively manage their working capital to enhance their financial performance. The management can gain the best policies for application.

To academics

The research will provide valuable information regarding the petroleum sector. Being upcoming entrepreneurs the academicians will be furnished with relevant information regarding working capital management. It will contribute to the general body of knowledge and form a basis for further research. The Petroleum Institute of East Africa would also use the findings to enhance its curriculum.

To regulatory bodies

Regulatory bodies like the Energy Regulation Commission and the Ministry of Energy can use the study to improve on the framework for regulation of oil marketers in Kenya. The results of this study would also assist policy-makers to implement new sets of policies regarding the working capital management in the oil industry. With recent pending Bills in Parliament on oil price controls, the new directive from the Ministry of Energy for the Kenya's oil parastatal (NOCK) to procure 30% of national consumption as a strategic stocks, the study will provide useful insights in the viability of such national policies.

CHAPTER TWO:

2.0 LITERATURE REVIEW

2.1 Introduction

This chapter looked at the various literatures done on working capital management. The literature covered the theoretical and empirical literature on working capital management and its effect on financial performance.

2.2 Working capital management policies

Financing of current assets from current liabilities particularly in the form of interest free credit from suppliers is a less expensive source of financing than equity or long-term debt capital (Van Vorne 1995). The type of working capital policy operated will be dictated by such factors as the growth rate of the company, its size, nature of its industry whether it is manufacturing or non-manufacturing and by the risk altitude of the firm's management. Pandey and Parera (1997) provided an empirical evidence of working capital management policies and practices of the private sector manufacturing companies in Sri Lanka. They found that most companies in Sri Lanka have informal working capital policy and company size has an influence on the overall working capital policy (formal or informal) and approach (conservative, moderate or aggressive).

Anand (2001), asserted that an individual company's investment in working capital will be related to the type of industry it operates in and the essential working capital policy each individual company adopts. Working capital investments decisions concern how much of the firms limited resources should be invested in working capital. Financing decisions relate to how investment in working capital is to be financed. What may be considered an acceptable level of working capital for one industry or line of business may be unacceptable (e.g. too much or too low) in another, because of different operating or business characteristics across industries. Working capital requirements are also likely to change over time in response to changes in the nature of a company's operation (Block and Hilt 1992). Broadly, there are three distinct types of working capital policy, which a company can adopt: - An aggressive policy, moderate policy and a conservative policy.

2.2.1 A conservative working capital policy

As far as investment is concerned, a conservative working policy is the 'play it safe' philosophy. At its most conservative, the policy will attempt to provide sufficient long-term financing to cover and all anticipated eventualities. A conservative policy implies relatively high investment in current assets in relation to sales, the current assets to sales ratio will be comparatively high and assets turnover ratio will be low. In a conservative approach stock and cash, levels will generally be kept high to avoid stock out and illiquidity costs. There is also likely to be a sizeable investment in short-term bank deposits and other short-term liquids investments (Copeland and Weston 1988).

Deloof (2003) stated that at one extreme a company finances all its current asset requirements with long-term funds, including its peak temporary requirements. In operating a conservative policy short term funding may only be called upon as a fall back or emergency source of funding. The investment in current assets is divided into permanent current assets and temporary current assets. The investment in permanent current assets represents the core, or minimum level of investment in current assets required on a continuous basis. In addition to permanent current assets, the business may need to invest in temporary current assets, to accommodate fluctuations in its business cycle.

At its most extreme the conservative working capital, policy assumes, somewhat unrealistically, the absence of any spontaneous funding from current liabilities such as trade creditors. Spontaneous funding is the type of funding which occurs virtually automatically when a company acquires goods and services from its suppliers on credit (Copeland and Weston 1988).

Deloof (2003) stated that since the conservative policy relies on long term, financing it also makes it a more expensive policy to follow than one, which allows for an element of short-term financing. However, it is also the low risk working capital policy as the company is not dependent upon access to short-term funds and is not therefore exposed to the volatility of short-term interest rates or to unexpected changes in general economic conditions. In contrast, long-

term financing although generally expensive is more certain and stable with regard to the term of the finance, its costs and its conditions. The firm pays a price for certainty and stability. Long-term source of finance such as equity and long term loans are more certain and stable and consequently they tend to be more expensive.

More short-term finance is frequently repayable on demand by the lender, and renewal or “roll over” of short-term financing is by no means guaranteed. In fact, on occasions, it may only be possible at the expense of accepting higher interest rates and tougher borrowing conditions. All factors increase the variability associated with short-term finance and increases the firm’s risks of experiencing liquidity difficulties (Gitman 1997).

2.2.2 An Aggressive Working Capital Policy

Gitman (1997) contributed that an aggressive policy relies on minimum investment in current assets and is highly dependent on access to short-term financing. He stated that with an aggressive policy, total investment in current assets will be kept to a minimum. The current assets to sales ratio will be much lower and the current assets turnover rates much higher in comparison to a conservative policy. The study contributed that an aggressive working capital policy will use long-term finance to fund its investment in permanent fixed assets and also a substantial part of its permanent current assets; short-term financing will be used to fund temporary current assets needs and part of the permanent current assets requirements. Gitman (1997) also made an observation that if conservative and moderate policies were to be compared, an aggressive policy will achieve higher returns but will also carry high risk due to its higher dependency on short-term finance.

In order to validate the results of Soenen (1993) on a large sample and with a longer time period, Jose et al. (1996) examined the relationship between aggressive working capital management and profitability of the US firms using Cash Conversion Cycle as a measure of working capital management, where a shorter Cash Conversion Cycle represents the aggressiveness of working capital management. The results indicated a significant negative relationship between the Cash Conversion Cycle and profitability, indicating that more aggressive working capital management is associated with higher profitability

2.2.3 A Moderate Working Capital Policy

Gitman (1997) stated that a moderate or balanced capital falls midway between the aggressive and conservative policies. With a moderate policy, the level of investment in current assets is neither lean nor excessive. Following a moderate policy, long-term funds are used to finance the investment in fixed assets and the permanent components of current assets investment. Temporary or seasonal current assets are financed by short-term sources of finance. The moderate policy is less risky than the aggressive but more risky than the conservative policy. The company only resorts to short-term financing when seasonal and other temporary demands require it. Returns under a moderate policy are corresponding higher than under a conservative policy but lower than under an aggressive policy.

Weinraub and Visscher (1998) in their study on industry practice relating to aggressive and conservative working capital policies, they studied a number of companies ranging from 15 to 33 in each industry, with a total of 216 in the final sample. The data set included quarterly levels of current liabilities, current assets, and total assets for companies in ten different industries between 1984 and 1993. The study concluded that there was a high and significant negative correlation between industry asset and liability policies. In general, it appears that when relatively aggressive working capital asset policies are followed they are balanced by relatively conservative working capital financial policies. They we found a negative relationship between the profitability measures of firms and degree of aggressiveness of working capital investment and financing policies.

Bhattacharya (2001) the type of policy relates to the firms general approach to the investing and financing of its working capital needs. Aggressive and conservative policies tend to represent the opposite ends of spectrum of working capital policy options. The policies differ in their attitudes to both the investment in and the financing of current assets. The more conservative in altitude the policy, the greater the level of investment in current assets and the greater the firms reliance on long-term capital (in the form of debt or equity) to finance the investment in current assets

.Conversely, the more aggressive the working capital policy the lower the level of investment in current assets and the less is the firms reliance on long term capital to finance current assets.

2.3 Review of theories

2.3.1 Working Capital Management Theories

2.3.1.1 The Operating Cycle Theory

The operating cycle theory looks explicitly at one side of working capital that of current asset accounts and therefore gives income statement measures of firm's operating activities, that is, about production, distribution and collection. Receivables, for instance, are directly affected by the credit collection policy of the firm and the frequency of converting these receivables into cash matters in the working capital management. By granting the customers more liberal credit policy, the profitability will be increased but at the same time liquidity will be sacrificed. The same analysis goes for other components of current asset account. However, the operating cycle theory tends to be deceptive in that it suggests that current liabilities are not important in the course of firm's operation. Our understanding of payables as the sources of financing the firm's activities can be assailed as a result. Given this inadequacy of the operating cycle theory, it is essential to infuse current liabilities in the picture to enhance our analysis and understanding. Although the operating cycle considers financial flows comes from receivables and inventory, it ignores the financial flows coming from account payables, in this regards, Richards and Loughlin (1980) suggested the cash conversion cycle which considers all relevant cash flows comes from the operations.

2.3.1.2 The Cash Conversion Cycle Theory

The theory integrates both sides of working capital. In their seminal paper, Richards and Laughlin (1980) devised this method of working capital as part of a broader framework of analysis known as the working capital cycle. It claims that the method is superior to other forms of working capital analysis that rely on ratio analysis or a decomposition of working capital as

claimed above. The Cash Conversion Cycle is calculated by subtracting the payables deferral period ($360/\text{annual payables turnover}$) from the sum of the inventory conversion period ($360/\text{annual inventory turnover}$) and the receivables conversion period ($360/\text{annual receivables turnover}$). More recently, the number of days per year that appears in the denominator as 360 has been replaced by 365 to improve accuracy. Since, each of these three components is denominated by some number of days, the Cash Conversion Cycle is also expressed as a number of days. It has been interpreted as a time interval between the cash outlays that arise during the production of output and the cash inflows that result from the sale of the output and the collection of the accounts receivable

2.3.1.3 The Net Trade Cycle Theory

The net trade cycle is basically equal to the cash conversion cycle where the three components of the cash conversion cycle (receivables, inventory, and payables) are articulated as a percentage of sales, this makes the net trade cycle easier to calculate and less complex comparing with the cash conversion cycle and the weighted cash conversion cycle. Soenen (1993) investigated the relationship between the net trade cycle-as a measure of working capital and return on investment in the US firms. The results of chi-square test indicated a negative relationship between the length of net trade cycle and return on assets. Furthermore, this inverse relationship was found different across industries depending on the type of industry. A significant relationship for about half of the industries studied indicated that results might vary from industry to industry. A further study* by Shin and Soenen (1998) argued that the net trade cycle is a better working capital efficiency measure comparing with the cash conversion cycle and the weighted cash conversion cycle because it indicates the number of "day sales" the company has to finance its working capital and the working capital manager can easily estimate the financing needs of working capital expressed as the function of the expected sales growth. The reason for using NTC is because it can be an easy device to estimate for additional financing needs with regard to working capital expressed as a function of the projected sales growth. This relationship can be examined using correlation and regression analysis, by industry and working capital

intensity. Using a compustat sample of 58,985 firm years covering the period 1975-1994, in all cases, they found, a strong negative relation between the length of the firm's net-trade cycle and its profitability. In addition, shorter net-trade cycle are associated with higher risk-adjusted stock returns. In other words, Shin and Soenen (1998) suggest that one possible way the firm to create shareholder value is by reducing firm's net-trade cycle.

Although the operating cycle, the cash conversion cycle, the weighted cash conversion cycle, and the net trade cycle are powerful measures of working capital management and firm's liquidity comparing with the static traditional ratios such as the current ratio and the quick ratio that are inadequate and misleading in the evaluation of firm's liquidity, these cycles do not consider the optimal levels of receivables, inventories, and payables.

2.4 Empirical Studies

Many researchers have studied working capital from different views and in different environments, on components of working capital, working capital management practices and policies, effects of working capital management on profitability and liquidity among other aspects relating to working capital.

Van Horne (1977) described working capital management as the administration of current assets in the name of cash, marketable securities, receivables and inventories. Granting trade credit favors the firm's sales in various ways. Trade credit can act as an effective price cut (Brennan et al., 1988; Petersen and Rajan, 1997). It is an incentive for customers to acquire merchandise at times of low demand (Emery, 1984). It allows customers to check that the merchandise they receive is as agreed (quantity and quality) and to ensure that the services contracted are carried out (Smith, 1980). However, firms that invest heavily in inventory and trade credit can suffer reduced profitability. In addition, larger inventory reduces the risk of a stock-out. Trade credit may stimulate sales because it allows customers to assess product quality before paying (Michael et al., 1993; Deloof and Jegers, 1996). Because suppliers may have significant cost advantages

over financial institutions in providing credit to their customers, it can also be an inexpensive source of credit for customers (Petersen and Rajan, 1997). Another component of working capital is accounts payable. Delaying payments to suppliers allows a firm to assess the quality of the products bought and can be an inexpensive and flexible source of financing for the firm.

On one hand, maintaining high inventory levels reduces the cost of possible interruptions in the production process, loss of business due to the scarcity of products, reduces supply costs, and protects against price fluctuations, among other advantages (Blinder and Manccini, 1991). On the other, granting trade credit favors the firm's sales in various ways. Trade credit can act as an effective price cut (Brennan, Maksimovic and Zechner, 1988; Petersen and Rajan, 1997), incentivizes customers to acquire merchandise at times of low demand (Emery, 1987), allows customers to check that the merchandise they receive is as agreed (quantity and quality) and to ensure that the services contracted are carried out (Smith, 1987), and helps firms to strengthen long-term relationships with their customers (Ng, Smith and Smith, 1999). However, firms that invest heavily in inventory and trade credit can suffer reduced profitability. Thus, the greater the investment in current assets, the lower the risk, but also the lower the profitability obtained.

Trade credit is a spontaneous source of financing that reduces the amount required to finance the sums tied up in the inventory and customer accounts. But we should bear in mind that financing from suppliers can have a very high implicit cost if early payment discounts are available. In fact the opportunity cost may exceed 20%, depending on the discount percentage and the discount period granted (Wilner, 2000). Since, money is also locked up in working capital, the greater the investment in current assets, the lower the risk, but also the lower the profitability obtained. In this respect, previous studies have analyzed the high cost of trade credit and found that firms finance themselves with seller credit when they do not have other more economic sources of financing available (Petersen and Rajan, 1994, 1997).

By minimizing the amount of funds tied up in current assets, firms are able to reduce financing costs and/or increase the funds available for expansion. Moyer, Mcguigan and Kretlow (2005) found that working capital consists of a large portion of a firm's total investment in assets, 40 percent in manufacturing and 50% - 60% in retailing and wholesale industries respectively.

Scherr (1989,) claimed that by implementing best practices in working capital , companies can strengthen strong cash flow levels, improve profitability, budgeting and forecasting process, predictability and manageability of results, heighten risk visibility and reduce reaction time.. Cote and Latham, (1999) argued the management of receivables, inventory and accounts payable have tremendous impact on cash flows, which in turn affect the profitability of firms.

Each of the working capital items (i.e., cash, receivables and inventories) helps in the management of firms in its own particular way. Moyer, Macguigan and Kretlow (2005) found that cash is used to keep the firm liquid so that it is able to pay its obligations when they are due for payment and therefore it protects the firm from bankruptcy, receivables are used to attract customers and increase sales. Scherr, (1989) stated that the different types of inventories are used to satisfy different purposes. For example, raw materials are used to make production scheduling easier, to take advantage of price changes and quantity discounts, and to hedge against supply shortages. Work-in-process serves to make the production process smoother and more efficient: they provide a buffer between the various production processes. Finished goods provide immediate services to customers and to stabilize production by separating production and sales activities.

Working capital management is very important for firms in transition to privatization or firms that are recently privatized. These firms have no culture of private business management and they have no experience of business to business co-operation, which mostly affects working capital. Tewolde (2002) claimed that there is also a far reaching effect on the management when firms are strictly regulated and owned by the government. If government owns business firms, the benefits and costs of working capital management might be considered to be of a lesser importance because taxpayer's money can be used to pay for their losses.

The importance of managing working capital is magnified when it refers to firms in developing economies. McComick, (1999) claimed that firms in the developing economies have many problems such as being small in size (in terms of volume of investment and sales) and lack of resources. Because of their small size, firms may quickly be exposed to problems of production capacity to satisfy the demand they may have for their products and this makes inventory management more relevant. Fishazion, Von Eije and Lutz (2001) found that both human and

financial resources of the firms in developing economies are also very limited to manage working capital investments and short-term debt. Proper working capital management is particularly important for the firms in developing countries in order to solve these problems.

According to Denzil and Antony (1998) p.86, effective working capital management lies the heart of a successful company playing a critical role in the shareholders wealth and the realization of benefits from capital investment. In fact, poor working capital management is one of the more common reasons for corporate failure. It's essential that company managers have an understanding of this key area of corporate finance.

Eljelly (2004) elucidated that efficient liquidity management involves planning and controlling current assets and current liabilities in such a manner that eliminates the risk of inability to meet due short-term obligations and avoids excessive investment in these assets. The relation between profitability and liquidity was examined, as measured by current ratio and cash gap (cash conversion cycle) on a sample of joint stock companies in Saudi Arabia using correlation and regression analysis. The study found that the cash conversion cycle was of more importance as a measure of liquidity than the current ratio that affects profitability. The size variable was found to have significant effect on profitability at the industry level. The results were stable and had important implications for liquidity management in various Saudi companies. The study concluded two things; first, that there was a negative relationship between profitability and liquidity indicators such as current ratio and cash gap in the Saudi sample examined and secondly that there was great variation among industries with respect to the significant measure of liquidity.

Deloof (2003) carried a study on whether Working Capital Management Affect Profitability of Belgian Firms, where he studied 1,009 large Belgian nonfinancial firms for the 1992–1996 period. Using correlation and regression tests he found a significant negative relationship between gross operating income and the number of days accounts receivable, inventories and accounts payable of Belgian firms. On basis of these results he suggested that managers could

create value for their shareholders by reducing the number of days' accounts receivable and inventories to a reasonable minimum. The negative relationship between accounts payable and profitability is consistent with the view that less profitable firms wait longer to pay their bills. Similarly, Teruel and Solano (2005) suggested that managers can create value by reducing their firms' number of days' accounts receivable and inventories. Similarly, shortening the CCC also improves the firms' profitability.

Ghosh and Maji (2003) in this paper made an attempt to examine the efficiency of working capital management of the Indian cement companies during 1992 – 1993 to 2001 – 2002. For measuring the efficiency of working capital management, performance, utilization, and overall efficiency indices were calculated instead of using some common working capital management ratios. Setting industry norms as target-efficiency levels of the individual firms, this paper also tested the speed of achieving that target level of efficiency by an individual firm during the period of study. Findings of the study indicated that the Indian Cement Industry as a whole did not perform remarkably well during this period.

Shin and Soenen (1998) specifically analyze the relation between the cash conversion cycle and profitability for a sample of firms listed on the US stock exchange during the period 1974-1994. Their results showed that reducing the cash conversion cycle to a reasonable extent increases firms' profitability. They highlighted that efficient Working Capital Management (WCM) was very important for creating value for the shareholders. The way working capital was managed had a significant impact on both profitability and liquidity. The relationship between the length of Net Trading Cycle, corporate profitability and risk adjusted stock return was examined using correlation and regression analysis, by industry and capital intensity. They found a strong negative relationship between lengths of the firm's Net Trading Cycle and its profitability. In addition, shorter net trade cycles were associated with higher risk adjusted stock returns.

Smith and Begemann (1997) emphasized that those who promoted working capital theory shared that profitability and liquidity comprised the salient goals of working capital management. The problem arose because the maximization of the firm's returns could seriously threaten its

liquidity, and the pursuit of liquidity had a tendency to dilute returns. This article evaluated the association between traditional and alternative working capital measures and return on investment (ROI), specifically in industrial firms listed on the Johannesburg Stock Exchange (JSE). The problem under investigation was to establish whether the more recently developed alternative working capital concepts showed improved association with return on investment to that of traditional working capital ratios or not. Results indicated that there were no significant differences amongst the years with respect to the independent variables. The results of their stepwise regression corroborated that total current liabilities divided by funds flow accounted for most of the variability in Return on Investment (ROI). The statistical test results showed that a traditional working capital leverage ratio, current liabilities divided by funds flow, displayed the greatest associations with return on investment. Well known liquidity concepts such as the current and quick ratios registered insignificant.

Filbeck and Krueger (2005) highlighted the importance of efficient working capital management by analyzing the working capital management policies of 32 non-financial industries in USA. According to their findings significant differences exist between industries in working capital practices over time. Moreover, these working capital practices, themselves, change significantly within industries over time. Similar studies were conducted by Gombola and Ketz (1983), Soenen (1993), Maxwell et al. (1998), and Long et al. (1993).

Padachi (2006) emphasized that the management of working capital is important to the financial health of businesses of all sizes. This importance is hinged on many reasons, first, the amounts invested in working capital are often high in proportion to the total assets employed and so it is vital that these amounts are used in an efficient way. Second, the management of working capital directly affects the liquidity and the profitability of the corporate firm and consequently it is net worth (Smith, 1980). Working capital management therefore aims at maintaining a balance between liquidity and profitability while conducting the day-to-day operations of a business concern. According to Pass and Pike (1984), the main objectives of working capital management is to increase profitability and ensure liquidity to meet short term obligations.

The effects of working capital management on corporate performance have been a focus of substantial amount of empirical research for many years (Shin and Soenen, 1998; Deloof, 2003; Lazaridis and Tryfonidis, 2006; Filbeck and Krueger, 2005). Previous research findings related to working capital management practices indicated that if working capital management could be significantly improved in businesses, then few firms would fail, thus supporting the view that working capital management practices are extremely important for businesses (Peel and Wilson, 1996). According to Denzil and Antony (1998), effective working capital management lies the heart of a successful company playing a critical role in the shareholders wealth and the realization of benefits from capital investment. In fact, poor working capital management is one of the more common reasons for corporate failure. It's essential that company managers have an understanding of this key area of corporate finance.

Gupta (1969) and Gupta and Huefner (1972) examined the differences in financial ratio averages among industries. The conclusion of both the studies was that differences do exist in mean profitability, activity, leverage and liquidity ratios among industry groups. Johnson (1970) extended this work by finding cross-sectional stability of ratio groupings for both retailers and primary manufacturers. Pinches et al. (1973) used factor analysis to develop seven classifications of ratios and found that the classifications were stable over the 1951-1969 time period.

Another aspect of working capital management has been analyzed by Lamberson (1995) who studied how small firms respond to changes in economic activities by changing their working capital requirements and level of current assets and liabilities. Current ratio, current assets to total assets ratio and inventory to total assets ratio were used as a measure of working capital requirement, while the index of annual average coincident economic indicator was used as a measure of economic activity. Contrary to the expectations, the study found that there is a very small relationship between changes in economic conditions and changes in working capital.

2.5 Conclusion

Working capital management is an important part in a firm's financial management decision. The ability of the firm to continuously operate in longer periods is dependent on how it deals with investment in working capital management. The optimal working capital management could be achieved by a firm that manages the trade off between profitability and liquidity.

Best-in-class companies understand the company- and industry-specific drivers behind each component of operative working capital, and focus on optimizing the most promising ones. During this process, they consider the entire value chain to reveal the root causes of tied-up cash and take into account all interdependencies between the respective components. They apply a holistic approach in which they do not randomly reduce costs but consider all tradeoffs with costs and capital employed to optimize the company value. By applying the appropriate levers for each component, obstacles that slow cash flow can be removed and overall company processes can be improved.

CHAPTER THREE

3.0 RESEARCH METHODOLOGY

3.1 Introduction

This chapter was concerned with the various steps that will facilitate execution of the study to satisfy the study objectives. These steps include; research design, population of interest, data collection instruments and procedures and data analysis.

3.2 Research Design

Research design is the plan and structure of investigation so conceived as to obtain answers to research questions. The plan is the overall scheme or program of the research (Robson, 2002). The research design for this study will be a causal study. A causal research is used to explore relationships between variables. The main purpose of a causal research is therefore to determine reasons or causes for current status of the phenomenon under the study (Mugenda and Mugenda, 1999). It reveals the cause-and-effect relationships among variables; hence this design will be suited in surveying the relationship between working capital management and financial performance of oil marketing firms in Kenya.

Raheman and Nasr (2007) in their study on the relationship between working capital management practices and its effects on profitability of 94 Pakistani firms listed on Karachi stock Exchange for a period of six years from 1999 – 2004 applied the causal design. The causal study applied statistical techniques in investigating the relationship between working capital management and profitability. Thus, causal research design is preferred in this study as it will reveal the relationship between working capital management policies and financial performance measured in terms of profitability and liquidity.

3.3 Population

“A population is an entire group of individuals, events or objects having common characteristics that conform to a given specification.” (Mugenda & Mugenda, 2003: 9). According to Saunders (2003) the population is the full set of cases from which a sample is taken.

The population of the research will consist of all oil marketing firms in Kenya that are registered with Petroleum Institute of East Africa (PIEA) within Nairobi area and its environs. There are 59 registered oil marketers operating in Kenya (Appendix II).

3.4 Sample Design and Sample size

“Sampling is the process of selecting a number of individuals for a study in such a way that the individual selected represents the large group from which they are selected.” (Mugenda & Mugenda, 2003: 260). According to Chandran (2003) a sample is a small proportion of an entire population; a selection from the population. Sampling procedure may be defined as a systematic process of individuals for a study to represent the larger group from which they are selected (Cooper and Schindler, (2003), Robson (2002).

Gay (1983) suggests that for correlation research, 30 cases or more are required. Since this study involved correlation analysis to identify the relationship between working capital management in the oil industry in Kenya to performance, the entire population was part of the research as its less than 30.

3.5 Data Collection

Data collection is gathering empirical evidence in order to gain new insights about a situation and answer questions that prompt undertaking of the research (Flick, 1998). Primary and secondary data are the types of data collected. Primary data is defined as first hand information received from a respondent. Data that has been already collected and passed through the statistical process is secondary data (Chandran, 2003).

The study used both primary and secondary data and a questionnaire will be the key instrument for primary data collection. Questionnaire was used since it is easier to administer, analyze and economical in terms of time and money. Mugenda and Mugenda (1999) noted that a questionnaire is one of the best tools of collecting primary data. Questionnaires provide a high degree of data standardization and adoption of generalized information amongst any population. They are useful in a descriptive study where there is need to quickly and easily get information from people in a non-threatening way (Davies, 1997; Patton, 1990). A structured questionnaire will contain both open and closed ended questions. The researcher will further use “drop and

pick method” to administer the questionnaire to the sampled firms managing owner. Follow ups will be made to ensure collections of the questionnaires in time, as well as assist respondents in case of any difficulty encountered in completion of questionnaires.

Secondary data was obtained from financial statements. These included; the latest published annual reports, Profits after tax, Current assets, Current liabilities, fixed assets and Long term debt and equity of the institutions to be surveyed. Secondary data was used to test the performance of the oil companies in relation to their policies in working capital management.

3.5.1 Data Reliability (Pre- test)

Pre-testing is the administration of the data collection instrument with a small set of respondents from the population for the full scale survey (Mugenda & Mugenda 2003). If problems occur in the pre-test, it is likely that similar problems will arise in full-scale administration. The purpose of pre-testing is to identify problems with the data collection instrument and find possible solutions (Krueger, 1988). It is not possible to anticipate all of the problems that will be encountered during data collection. Terminology used in questionnaires or interviews may not be understood by respondents and information to be retrieved from documents may not be readily available. Reducing error to acceptable levels requires the pre-testing of data collection instruments (Baxter et al, 2001).

If pre-testing indicates that there is a low likelihood of obtaining sufficiently sound, consistent and relevant data. Troublesome items should be dropped or other techniques for data collection should be pursued. Pre-testing should be conducted in circumstances that are as similar as possible to actual data collection and on population members as similar as possible to those that will be sampled. Careful notes should be taken on the problems encountered and possible solutions should be identified (Robson 2002). The instruments were therefore tested on a sample of 4 middle level managers who work for Total Limited and Kenolkobil Limited and the findings tested.

Operational definition of variables

Operational definition refers to measurement of variable. It is the description of the operation that will be used in measuring the variable (Mugenda & Mugenda 2003). In this study, performance measures include profitability and liquidity.

This study examined the effect of different variables of working capital management including the Average collection period, Inventory turnover in days, Average payment period, Cash conversion cycle as independent variables. Average Collection Period (ACP) was used as proxy for the Collection Policy is an independent variable. It was calculated by dividing account receivable by sales and multiplying the result by 365 (number of days in a year). Inventory turnover in days (ITID) was used as proxy for the Inventory Policy and also as an independent variable. It was calculated by dividing inventory by cost of goods sold and multiplying with 365 days. Average Payment Period (APP) was used as proxy for the Payment Policy and also an independent variable. It was calculated by dividing accounts payable by purchases and multiplying the result by 365. The Cash Conversion Cycle (CCC) was used as a comprehensive measure of working capital management, as another independent variable, and was measured by adding Average Collection Period with Inventory Turnover in Days and deducting Average Payment Period.

Net Operating Profitability (NOP) was used as a measure of Profitability of the firm as dependant variable. It is defined as Operating Income plus depreciation, and divided by total assets minus financial assets. Fixed financial assets are the shares in other firms, intended to contribute to the activities of the firm holding them by establishing a lasting and specific relationship and loans that were granted for the same purpose. With countries like Rwanda, Uganda, and Burundi among others being landlocked, there is a possibility that most companies have subsidiaries in those countries hence a likelihood of financial assets forming a significant part of their total assets. Same approach was applied by Raheman & Nasr (2007) and Deloof (2003).

3.6 Data analysis

The whole process which starts immediately after data collection and ends at the point of interpretation and processing data is data analysis (Cooper & Schindler, 2003). Chandran (2004), defines statistics as a discipline that provides the tools of analysis in research and one which refers to facts, information or data and to a system of data collection and analysis. Mugenda (2003) points out it as a process of bringing order, structure and meaning the mass information collected. Therefore, editing, coding, classifying and tabulating are the processing steps to be used to process the collected data for a better and efficient analysis.

Raw data from the completed questionnaires was coded to facilitate statistical analysis. Descriptive statistics and inferential statistical techniques was used to analyze the data. Descriptive statistics such as means standard deviation and frequency distribution enabled the researcher to meaningfully describe the distribution of measurements. The use of descriptive statistics also indicates what number and percentage of respondents consider different factors determining the performance of the oil marketing firms in Kenya. The statistical package for social sciences (SPSS) *Version 17* was used. Multiple Regression Models was framed based on Cross Sectional Pooled data from the annual reports and other financial statements to assess the impact of working capital policies on the industry's Profitability criteria.

The general form of our model was:

$$NOP_{it} = \beta_0 + \sum_{\text{all}}^n \beta_i X_{it} + \varepsilon \quad (\text{Eq. 1.1})$$

NOP_{it} : Net Operating Profitability of firm i at time t ; $i = 1, 2, \dots, 23$ firms.

β_0 : The intercept of equation

β_i : Coefficients of X_{it} variables

X_{it} : The different independent variables for working capital Management of firm i at time t

t : Time = 1, 2, ..., 4 years.

ε : The error term

Specifically, when we shall convert the above general least squares model into our specified variables it becomes:

$$NOP_{it} = \beta_0 + \beta_1 (ACP_{it}) + \beta_2 (ITID_{it}) + \beta_3 (APP_{it}) + \beta_4 (CCC_{it}) + \beta_5 (CR_{it}) + \beta_6 (DR_{it}) + \beta_7 (LOS_{it}) + \beta_8 (FATA_{it}) + \varepsilon \quad (\text{Eq. 1.2})$$

Where:

- NOP : Net Operating Profitability
 ACP : Average Collection Period
 ITID : Inventory Turnover in Days'
 APP : Average Payment Period
 CCC : Cash Conversion Cycle
 CR : Current Ratio
 DR : Debt Ratio
 LOS : Natural logarithm of Sales
 FATA: Financial Assets to Total Assets
 ε : The error term.

The correlation analysis is done to analyze the association between the working capital management efficiency and profitability and liquidity. To examine the relationship among these variables, Pearson correlation coefficients are calculated.

CHAPTER FOUR: DATA ANALYSIS AND FINDINGS

4.1 Introduction

This chapter presents analysis and findings of the research. The findings are represented in graphs and tables and are grouped according to the various oil companies. The financial information analysed comprised of 4 years from the year 2006 to 2009.

4.2 Summary Statistics of data

This section illustrates the summary of statistics of the companies involved in the study.

Table 4. 1Mean

Company	Net Operating Profit	Average Collection Period	Inventory Turnover	Average Payment Period	Cash Conversion Cycle	Current Ratio	Debt Ratio	Natural Logarithm of sales
Kenya Shell	182132.75	26.13	45.34	42.44	29.03	1.43	285.75	17.61
Kenol Kobil	43865.50	26.13	25.42	31.15	20.41	1.29	84.75	18.13
Dalbit Petroleum	202052.50	103.50	15.82	52.50	66.82	1.43	286.17	15.73
Libya Oil	811416.50	20.75	40.75	8.25	53.25	2.27	339.35	16.91
Riva Petroleum	8497.25	15.50	18.50	12.25	21.75	1.25	116.79	13.97
Global Petroleum	11215.25	23.00	129.75	11.25	141.50	1.85	8333.05	13.68
National Oil	253877.75	24.00	68.00	16.75	75.25	1.35	401.99	16.19
Total Kenya	1216746.50	58.82	61.93	45.53	75.22	1.20	115.36	17.38
Hashi Energy	124904.00	22.00	56.00	87.50	-9.50	1.00	1160.08	15.20
Galana Oil	165077.00	6.75	17.75	16.75	7.75	1.32	521.85	15.11

From the mean financial figures, we can see that Total Kenya is the most profitable, while Galana Oil has the shortest collection period. On the same note we can see that Dalbit Petroleum has the shortest period to turn over its inventory, while Hashi Energy has the longest payment period and therefore making its cash conversion cycle negative. On the other hand, Libya Oil has the highest current ratio while Global Petroleum has the highest debt ratio. In terms of sales revenue, KenolKobil takes the lead followed by Kenya Shell.

4.3 Correlation Statistics

Table 4.3 summarizes the correlation between the variables under study.

Table 4. 2 Correlation Statistics

	Average Collection Period	Inventory Turnover	Average Payment Period	Cash Conversion Cycle	Current Ratio	Debt Ratio	Natural Logarithm of sales	Net Operating Profit
Average Collection Period	1	-.162	.393	.292	-.086	-.147	.178	.268
Inventory Turnover	-.162	1	-.105	.742	.282	.846	-.288	.041
Average Payment Period	.393	-.105	1	-.400	-.600	-.223	.178	.023
Cash Conversion Cycle	.292	.742	-.400	1	.508	.698	-.214	.192
Current Ratio	-.086	.282	-.600	.508	1	.365	-.007	.216
Debt Ratio	-.147	.846	-.223	.698	.365	1	-.567	-.283
Natural Logarithm of sales	.178	-.288	.178	-.214	-.007	-.567	1	.467
Net Operating Profit	.268	.041	.023	.192	.216	-.283	.467	1

From the correlation statistics we can see that average collection period correlates highly with average payment period while inventory turnover correlates highly with debt ratio. On the other hand average payment period correlates highly but negatively with current ratio and cash conversion cycle correlates highly with inventory turnover. Natural logarithm of sales correlates highly but negatively with debt ratio while net operating profit correlates highly with natural logarithm of sales. Inventory turnover is also highly correlated to debt ratio.

4.4 Regression Analysis

Regression tests carried out are illustrated in the tables that follow.

Table 4.3 Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.759	.576	-.271	446248.4805614

a Predictors: (Constant), Natural Logarithm of sales, Current Ratio, Average Collection Period, Inventory Turnover, Average Payment Period, Debt Ratio

The coefficient of determination (R square) measures the proportion of variability in a data set that is accounted for by a statistical model. In this case it can be seen that there is very strong relationship between financial performance and working capital management policies. It can be seen that, working capital policies determined by; the natural logarithm of sales, current ratio, Average Collection Period, Inventory Turnover, Average Payment Period and Debt Ratio explains 57.6% of financial performance determined by net operating profit. Adjusted R squared attempts to correct R squared to more closely reflect the goodness of fit of the model in the population but since we used only one model, we can only rely on R square. Standard error is a measure of variability and as such measures the variability that a constant would be expected to show during sampling.

Table 4.4 ANOVA

	Sum of Squares	df	Mean Square	F	Sig.
Regression	812970573551.169	6	135495095591.861	.680	0.686
Residual	597413119210.081	3	199137706403.360		
Total	1410383692761.250	9			

a Predictors: (Constant), Natural Logarithm of sales, Current Ratio, Average Collection Period, Inventory Turnover, Average Payment Period, Debt Ratio

b Dependent Variable: Net Operating Profit

Analysis of variance (ANOVA) is a method of testing the null hypothesis that several group means are equal in the population, by comparing the sample variance estimated from the group means to that estimated within the groups. Sum of squares measures the variability of a data set. Given our regression model on the sum of squares, is larger than residual, we can conclude that our model accounts for most of the variation on the dependent model, which is Net operating profit.

Table 4.5 Coefficients

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	-747003.078	2075065.548		-.360	.743
Average Collection Period	4203.999	6009.493	.300	.700	.535
Inventory Turnover	12430.750	9333.234	1.084	1.332	.275
Average Payment Period	-567.898	8523.547	-.036	-.067	.951
Current Ratio	429912.849	590818.395	.395	.728	.519
Debt Ratio	-205.091	155.487	-1.315	-1.319	.279
Natural Logarithm of sales	-2842.927	143314.087	-.011	-.020	.985

a Dependent Variable: Net Operating Profit

The unstandardized coefficients are the coefficients of the estimated regression model. With this information, we can be able to write the following equation:

$$NOP_{it} = -747003.078 + 4203.999 (ACP_{it}) + 12430.750 (ITID_{it}) - 567.898 (APP_{it}) + 429912.849 (CR_{it}) - 205.091 (DR_{it}) - 2842.927 (LOS_{it}) + 2833220$$

(Eq. 1.3)

Often the independent variables are measures in different units. The standardized coefficients or betas are an attempt to make the regression coefficients more comparable.

The t-test determines the strength of the relationship, in which case we see that debt ratio, inventory turnover and current ratio relationships with net operating profits ranking the strongest.

Table 4.6 Excluded Variables

	Beta In	t	Sig.	Partial Correlation
Cash Conversion Cycle	-3982.889	-.363	.751	-.249

a Predictors in the Model: (Constant), Natural Logarithm of sales, Current Ratio, Average Collection Period, Inventory Turnover, Average Payment Period, Debt Ratio

b Dependent Variable: Net Operating Profit

Cash conversation cycle, is excluded from the variables mainly because it is derived by the other three variables namely, average collection period, inventory turnover in days and average payment period. Rewriting equation 1.3 with the cash conversion cycle now included comes up to:

$$NOP_{it} = -747003.078 + 4203.999 (ACP_{it}) + 12430.750 (ITID_{it}) - 567.898 (APP_{it}) - 3982.889 (CCC_{it}) + 429912.849 (CR_{it}) - 205.091 (DR_{it}) - 2842.927 (LOS_{it}) + 2833220 \quad (Eq. 1.4)$$

4.5 Analysis of Questionnaire

In addition to collecting financial information, the questionnaires were sent to the respective oil companies seeking more information on their working capital policies.

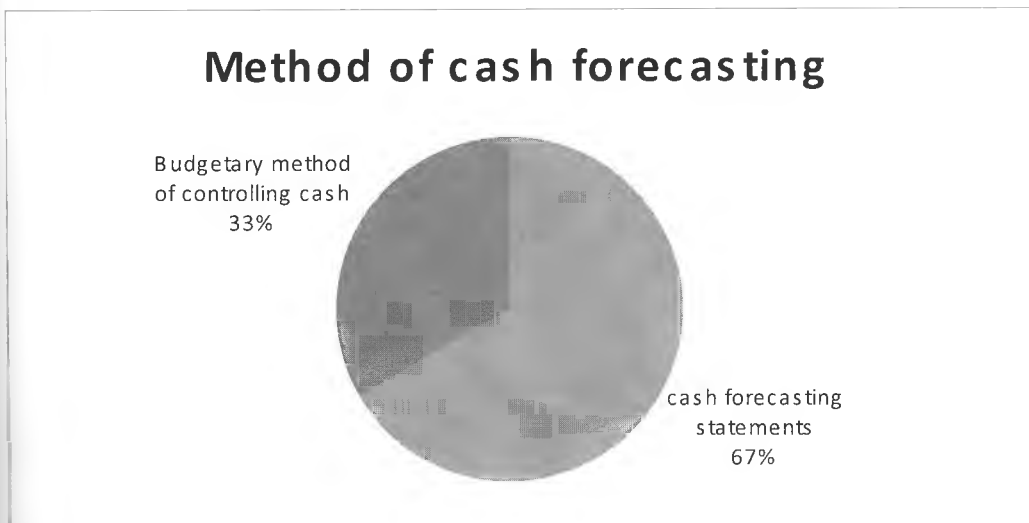
4.5.1 Cash Management

All companies under survey were found to have a fixed level of liquidity.

Table 4.7 Method of forecasting cash

Method	Frequency	Percentage
By preparation of cash forecasting statements	10	67.67
Budgetary method of controlling cash	5	33.33
Total	15	100.0

Figure 1. Pie Chart showing methods of preparing forecast statement

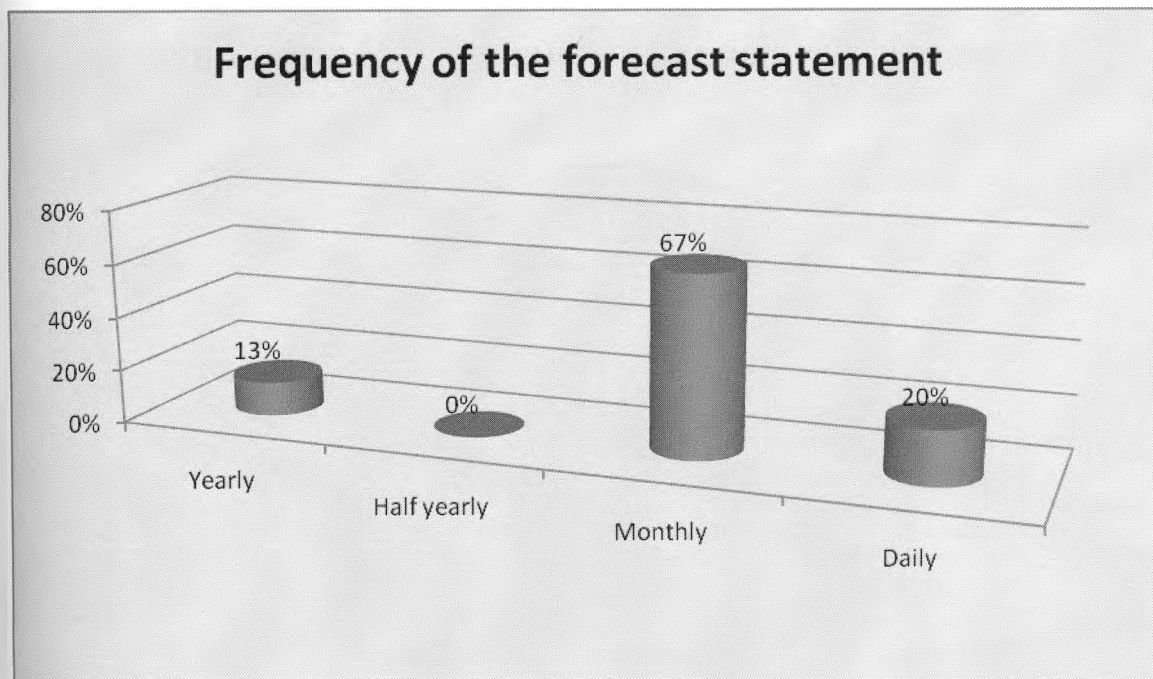


It was also noted that most companies comprising of 67% forecasted cash by preparation of cash forecasting statements, while 33% followed budgetary method of controlling cash.

Table 4.8 Frequency of preparation of forecasting statement

Frequency of the statement	Frequency	Percentage
Yearly	2	13
Half yearly	0	0
Monthly	10	67
Daily	3	20
Total	15	100.0

Figure 2. Histogram showing Frequency of the forecast statement



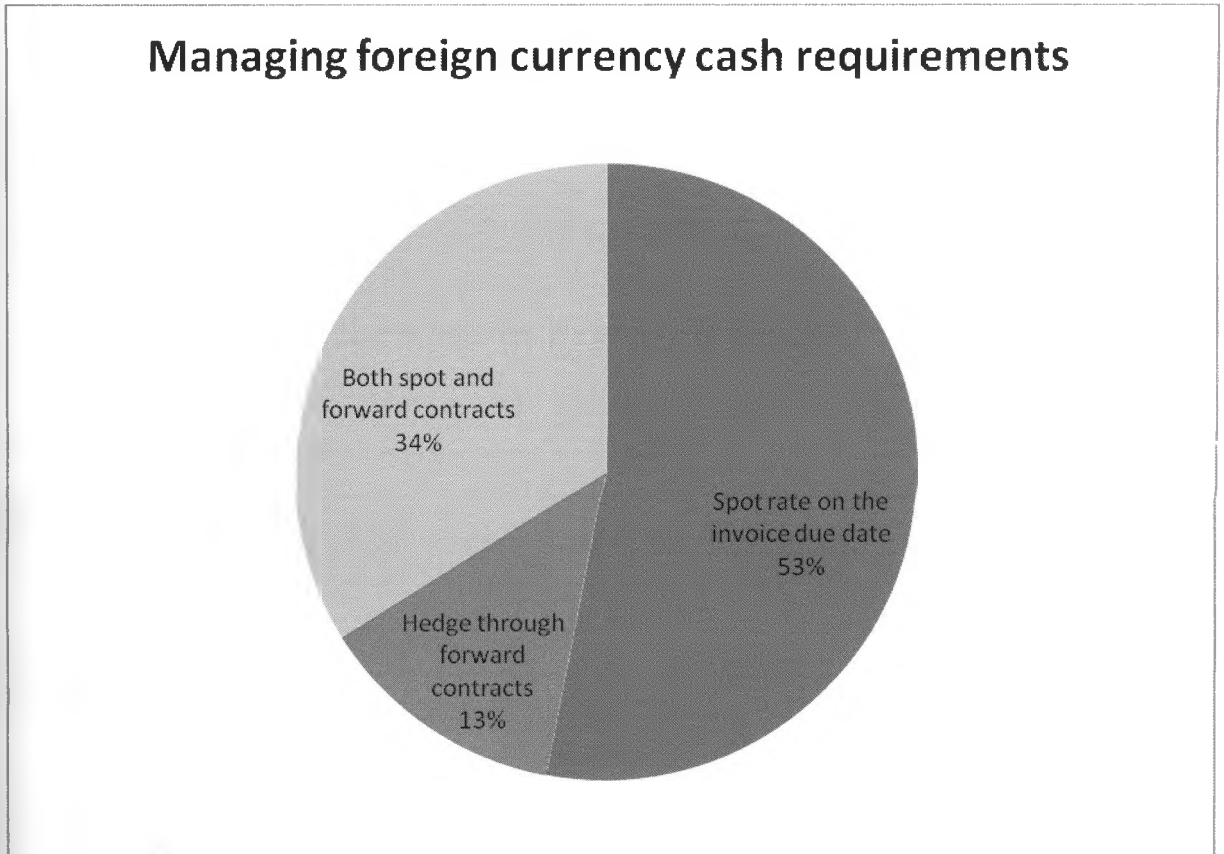
It was found out that for those with a cash forecasting statement, 67% did it on a monthly basis, 20% on a monthly basis and 13% on yearly basis, as per the above histogram.

All the companies involved in the study had established a credit line with a bank. Further to that, in managing foreign currency cash requirements and exposure, 53% used a spot rate on the invoice due date, while 13% hedged through forward contracts while the remaining 33% used these two methods.

Table 4.9 Methods of managing foreign currency cash requirements

Method	Frequency	Percentage
Spot rate on the invoice due date	8	53
Hedge through forward contracts	2	13
Both spot and forward contracts	5	34
Total	15	100.0

Figure 3. Pie chart showing methods of managing foreign currency cash requirements



4.5.4: Receivable Management

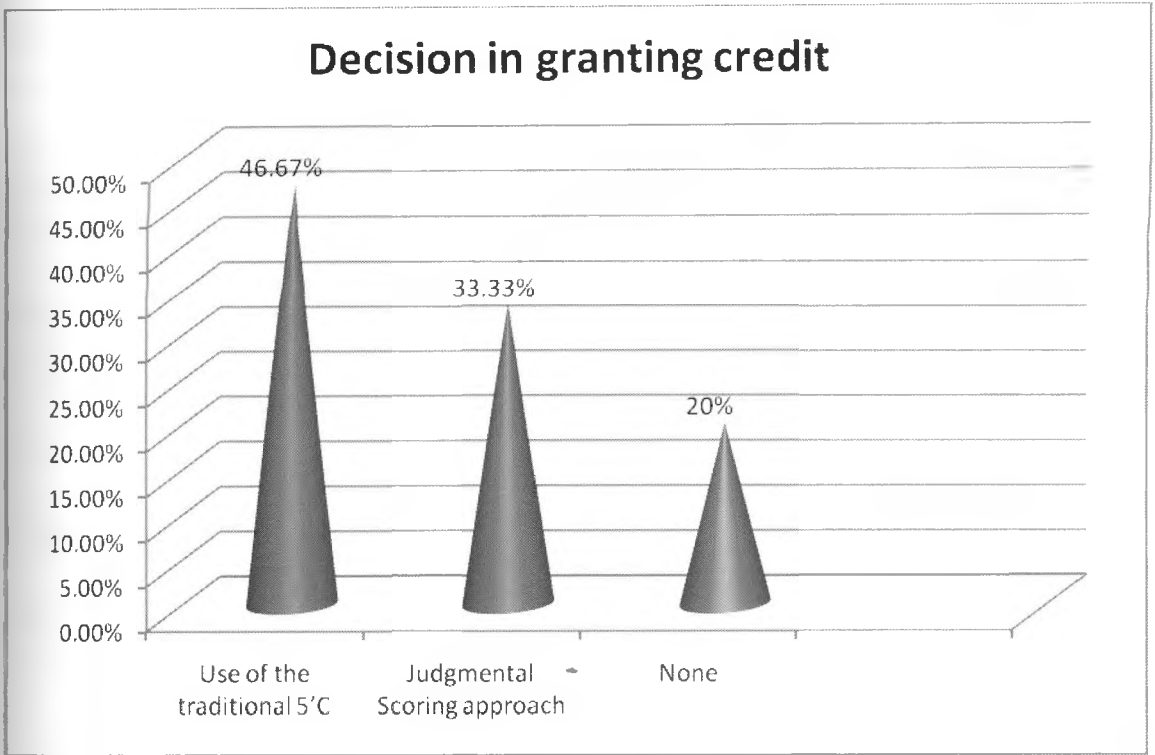
All the oil companies involved in this research sold their products on credit. Table 4.5.1 below shows the decisions was arrived at.

Table 4.10 Decision in granting credit

Decision	Frequency	Percentage
Use of the traditional 5'C	7	46.67
Judgmental Scoring approach	5	33.33
None	3	20
Total	15	100.0

As it can be seen for most of these companies, comprising of 46.7% the decision was arrived by considering the five C' (Character, capacity, capital, collateral, condition), 33.3% used judgmental scoring approach while 20% used none of the listed techniques.

Figure 4 Histogram showing decision in granting credit



In terms of the company's average net period in terms of sales all the companies reported a period between 30 and 60 days. All the companies too used debt collectors to get what was due from debtors.

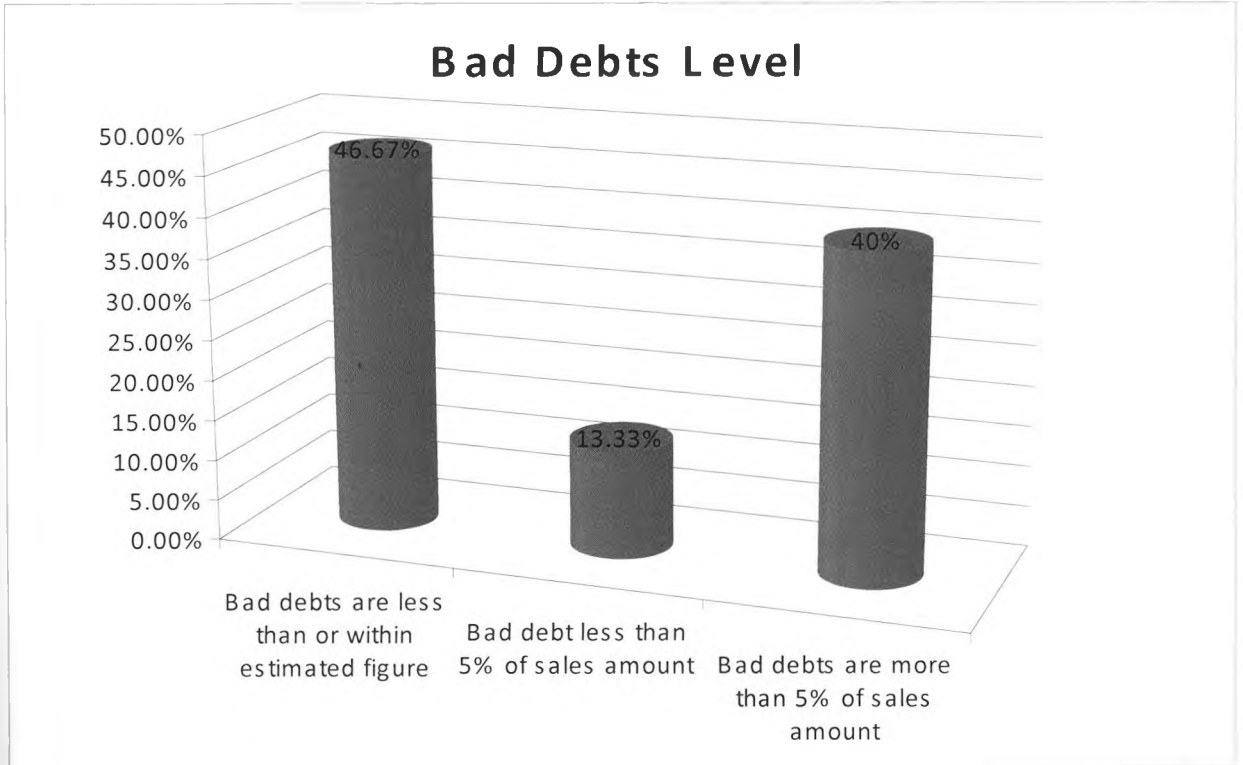
The table below shows, the level of bad debts for the companies involved in the study.

Table 4.11 Bad Debts Level

Decision	Frequency	Percentage
Bad debts are less than or within estimated figure	7	46.67
Bad debt less than 5% of sales amount	2	13.33
Bad debts are more than 5% of sales amount	6	40
Total	15	100.0

The decision was split between bad debts being within estimated figure at 46.7% and it being more than 5% of sales amount while those companies that estimated bad debts to be less than 5% of the sales figure comprising of 13.3% of the total population.

Figure 5. Histogram showing Bad Debt Level



For these oil companies, 67% estimated that it is 50% to 75% of the default amount was recoverable while the remaining 33% estimated that more than 75% of the default amount was recovered.

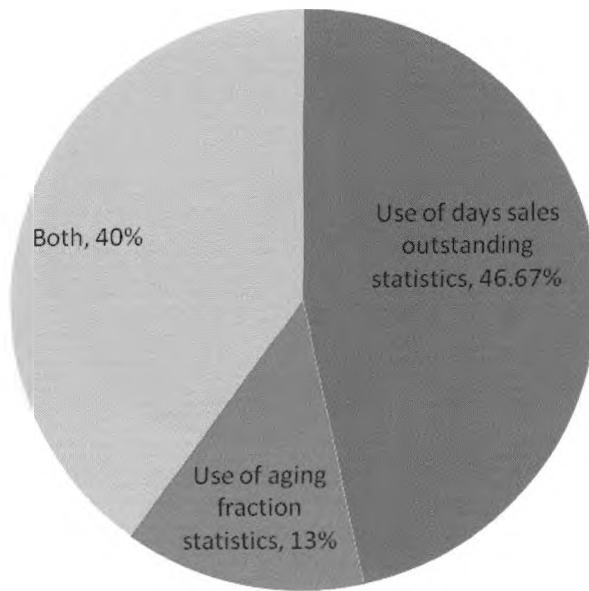
In terms of monitoring sales account receivable, 46.7% of the companies used days sales outstanding statistics, 13% used the aging fraction statistics, while the remaining 40% used both of these methods.

Table 4.12 Monitoring sales account receivable

Decision	Frequency	Percentage
Use of days sales outstanding statistics	7	46.7
Use of aging fraction statistics	2	13.33
Both	6	40
Total	15	100.0

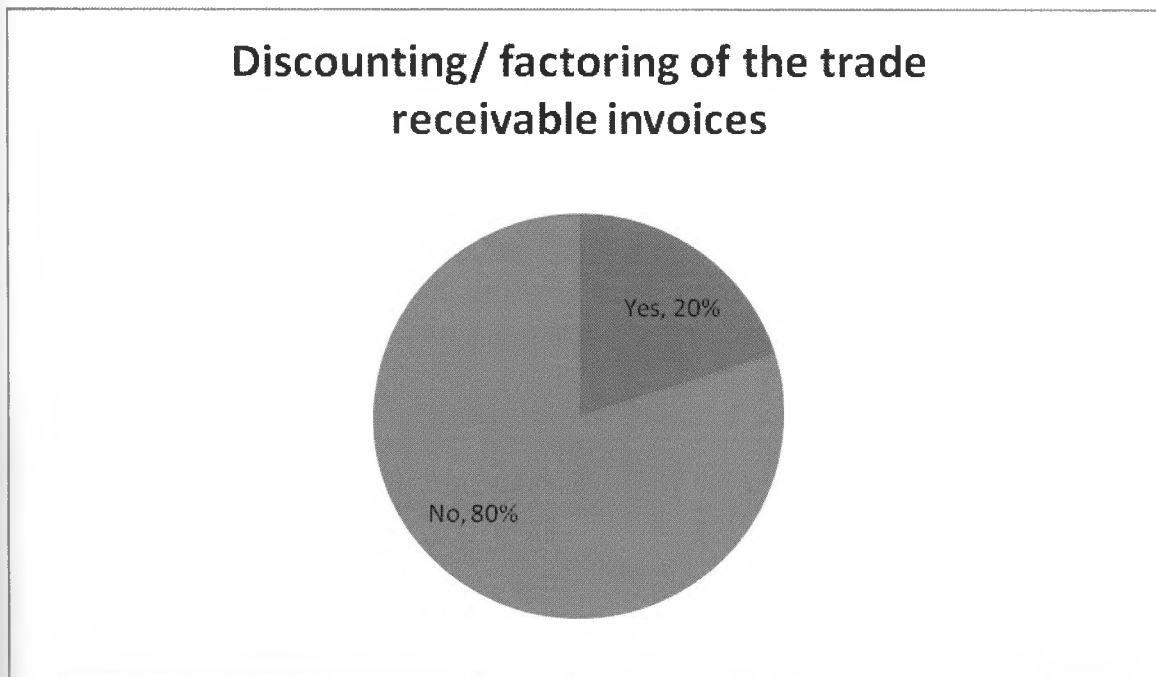
Figure 6. Pie chart showing methods of monitoring sales account receivable

Monitoring sales account receivable



On whether the firms use discounting or factoring of the trade receivable invoices, 20% of the respondents agreed that their companies used invoice discounting as a method of collection from debtors, while the remaining 80% did not use this method.

Figure 7. Pie chart showing use of discounting/factoring of trade receivable invoices



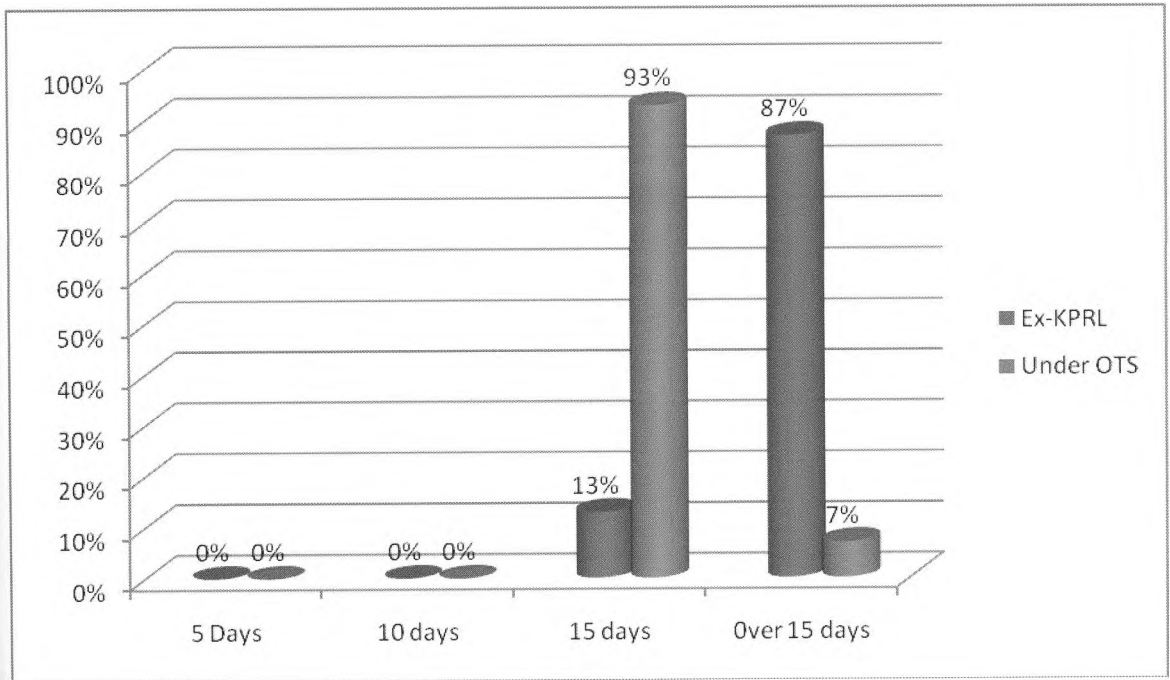
4.5.3: Inventory Management

For majority of the companies comprising of 87% lead time for inventory (for fuel ex KPRL) was over 15 days while that of 13% was 15 days. However for 93% of the companies, their lead time for inventory (for imported white products under OTS and private imports) was over 15 days while for 7% it was 15 days.

Table 4.13 Lead time for products ex-KPRL and under OTS

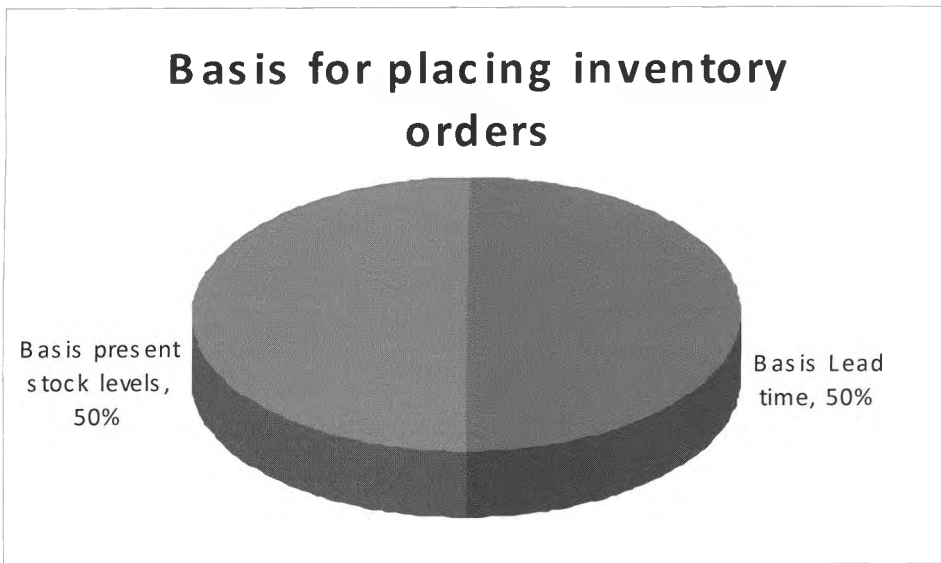
Decision	Frequency-ex-KPRL	Percentage	Frequency-under OTS	Percentage
5 days	0	0	0	0
10 days	0	0	0	0
15 days	2	13	14	93
Over 15 days	13	87	1	7
Total	15	100	15	100.0

Figure 8. Histogram showing Lead times for purchases ex KPRL and under OTS



In terms of placing an inventory order, the results were evenly split with 50% stating that inventory was placed based on the lead-time while for the other 50% they considered the present stock of goods and expected time to obtain the goods.

Figure 9. Pie chart showing the basis of placing inventory



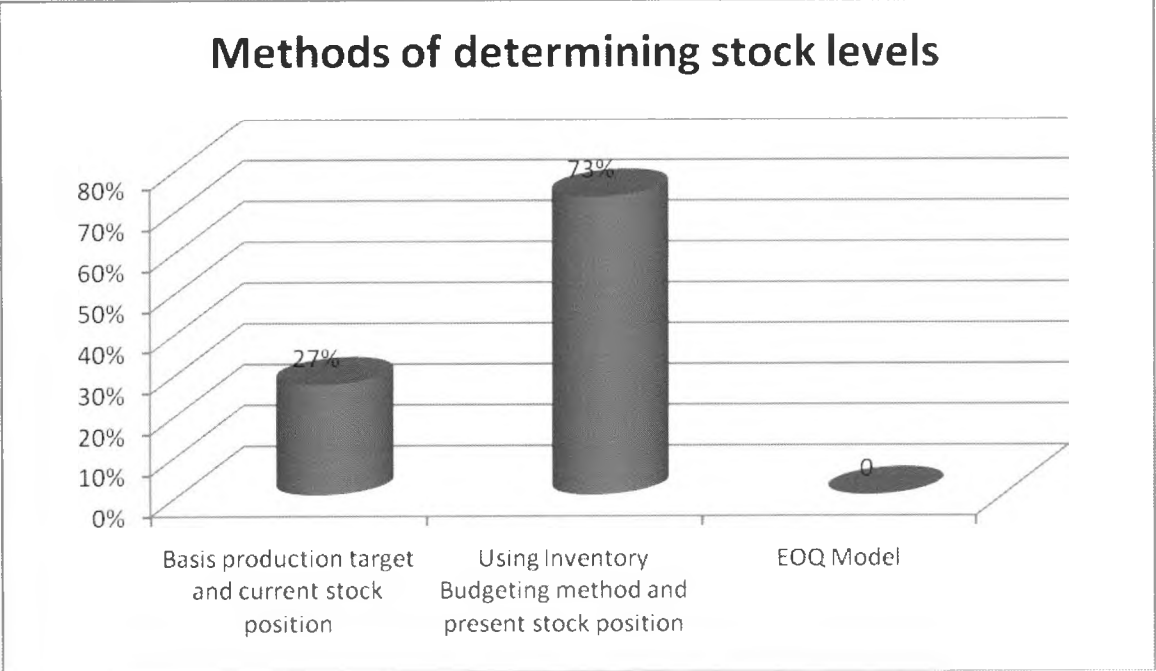
orders

For 27% of the companies surveyed, the company used production target and current position of stock to determine the level of inventory to be maintained while for 73% used inventory Budgeting Method and Present Stock Position.

Table 4.14 Methods of determining stock levels

Decision	Frequency	Percentage
Basis production target and current stock position	4	27
Using Inventory Budgeting method and present stock position	11	73
EOQ Model	0	0
Total	15	100.0

Figure 10. Histogram showing methods used to determine inventory level to be maintained



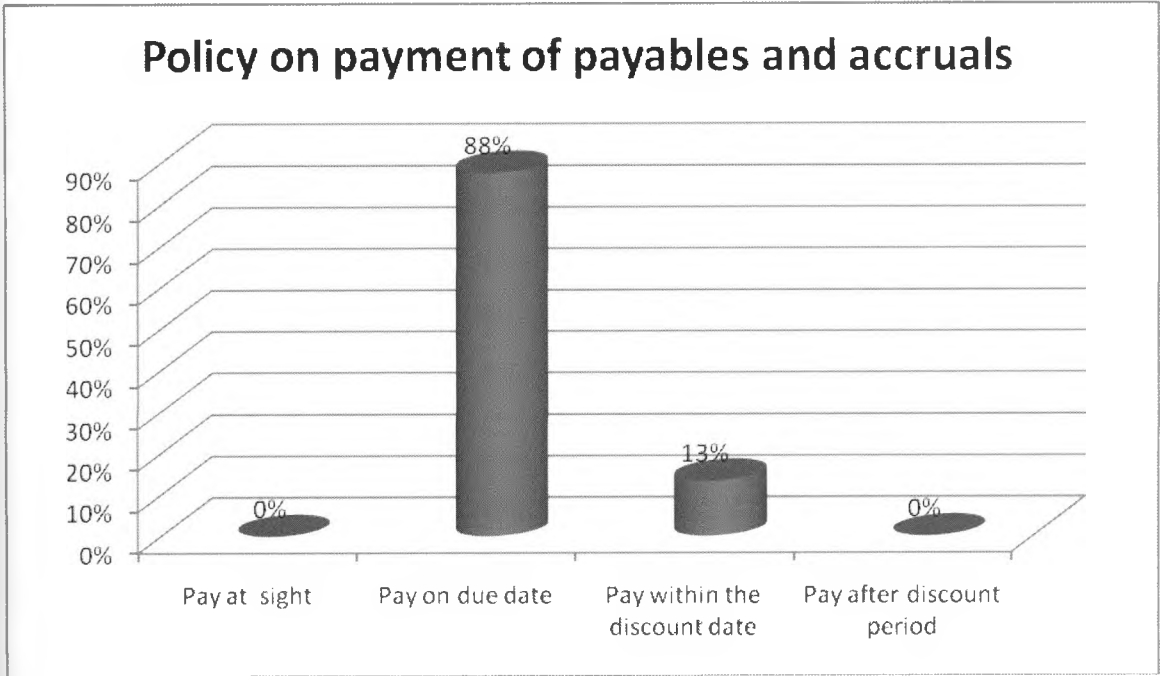
4.5.4 Management of Accruals and Payable

For 87% of the companies surveyed, their policy on payment of invoices was payment on the due date while for 13% paid within the discount date.

Table 4.15 Policy on payment of invoices

Decision	Frequency	Percentage
Pay at sight	0	0
Pay on due date	13	60
Pay within the discount date	2	40
Pay after discount period	0	0
Total	15	100.0

Figure 11. Histogram showing policy on payment of payables and accruals



4.6 Summary of findings and implications

On profitability, Total Kenya Limited takes the lead followed by Oil Libya. Total Kenya also leads in the market share in Kenya after acquiring all Chevron (Caltex) operations during the period under review. The ultimate economies of scale seem to have been realized during this period under the study. Total Kenya does not participate as a importer in OTS. This makes enhances it profitability as the margins for OTS imports are very thin due to competitiveness. Riva Petroleum registered the lowest profitability in the firms under review. This may be contributed by its small size with a very low market share of 0.8% according to the data from PIEA, and it's almost invisible retail network.

KenolKobil registered the highest turnover followed by Kenya Shell Limited. KenolKobil contributes about 24% of the filling stations in the country and in addition, the firm won a number of industry imports for crude and white products under OTS during the period under

review. Kenya Shell registered relatively high turnover from its retail network trailing KenolKobil quite closely.

On Average collection period, Galana registered the lowest period. This is likely due to the numerous OTS import tenders the firm has been winning for white products. The industry practice is that oil marketers pay for the white products faster compared to crude imports since the white products are ready for delivery while crude has to wait for KPRL to run its processing programs to deliver the white/black products. Dalbit registered the highest collection period. This may be explained by the fact that Dalbit has no retail outlet and most of its supplies are for export and to commercial customers who require up to 90 days credit period.

On inventory turnover, Global petroleum registered the highest inventory turnover. This may be explained by the high debt ratio as the firm has to borrow to finance the huge inventory movement. Dalbit appear to have the lowest inventory turnover, which may be explained by its lack of retail network.

Hashi Energy registered the longest average payment period while Oil Libya registered the shortest period. The Long payment period by Hashi may be explained by its size especially in the participation of OTS imports as buyers. More often than not, the industry in general has witnessed delayed payments by the small players and consequent reversal of such transactions with notification to the Ministry of Energy as the facilitator of the OTS imports. Oil Libya on the other hand with its fairly large retail network buys from OTS sellers on both White products and crude, with minimal private imports. Industry practice is that on white products, invoice is due at least a day before the product is discharged from the vessel. Crude invoices are due 20days from bill of lading date which in most cases its a few days before arrival of the product. Thus, the payment period dictated by the industry is rather short, and Oil Libya with its minimal private imports ends up with a shorter payment product.

On current ratio, Libya oil registers the highest and Hash Energy with the lowest. Its evident that other than Oil Libya, all other Oil Marketers do not satisfy the rule of thumb of 2:1 for current ratio. This may be explained by the fact that Oil Libya has relatively large own tanks and thus most of its products are stored in own tanks, unlike other marketers whose products are stored in

KPC under CFA. When products are stored under CFA, the product is held by KPC in the title of the bank financing the product, the bank having issued a product loan to the marketer. Hashi has the lowest current ratio which may be explained by its long average collection period as ascertained above. The opposite holds for Oil Libya which has the shortest payment period.

From the correlation statistics we can see that average collection period correlates highly with average payment period. This may be explained by the firms trying to match the collections to payments. Inventory turnover correlates highly with debt ratio. This is because of huge funding requirements to finance inventories in the industry. A large part of debt is contributed by short term borrowings which emanate from product loans to finance product imports. On the other hand average payment period correlates highly but negatively with current ratio. High average payment period implies higher current liabilities hence lower current ratio and vice versa; just as expected. Cash conversion cycle correlates highly with inventory turnover. Generally, oil markers hold huge volumes of stock especially with minimum stocks which they are required to hold by KPC called *linefill* and the minimum HCV volumes that they must maintain at KPRL at any one given time. Hence, the ability to move stocks increases the cash conversion cycle.

Natural logarithm of sales correlates highly but negatively with debt ratio. This implies that high sales proceeds are utilized to reduce the borrowing levels as most of the borrowings are short term in nature to finance stock levels. Hence, the higher the turnover, the lower the short term borrowings hence lower debt ratio. Finally, net operating profit correlates highly with natural logarithm of sales. This implies that the industry is margin oriented and it can take advantage of economies of scale, hence, pushing more sales volumes contributes positively to the net operating profits.

The coefficient of determination (R square) measures the proportion of variability in a data set that is accounted for by a statistical model. In this case it can be seen that there is a very strong relationship between financial performance and working capital management policies. It can be seen that, working capital policies determined by; the natural logarithm of sales, current ratio, Average Collection Period, Inventory Turnover, Average Payment Period and Debt Ratio explains 57.6% of financial performance determined by net operating profit. This implies that we can rely on the regression model as the variables tested explain more than 50% of the

financial performance. Adjusted R squared attempts to correct R squared to more closely reflect the goodness of fit of the model in the population but since we used only one model, we can only rely on R square. Standard error is a measure of variability and as such measures the variability that a constant would be expected to show during sampling.

Analysis of variance (ANOVA) is a method of testing the null hypothesis that several group means are equal in the population, by comparing the sample variance estimated from the group means to that estimated within the groups. Sum of squares measures the variability of a data set. Given our regression model on the sum of squares (812970573551.169), is larger than residual (597413119210.081), we can conclude that our model accounts for most of the variation on the dependent model, which is Net operating profit.

From Table 4.4.3, the unstandardized coefficients are the coefficients of the estimated regression model. Hence, we can be we have the following equation:

$$NOP_{it} = -747003.078 + 4203.999 (ACP_{it}) + 12430.750 (ITID_{it}) - 567.898 (APP_{it}) + 429912.849 (CR_{it}) - 205.091 (DR_{it}) - 2842.927 (LOS_{it}) + 2833220$$

(Eq. 1.3)

This implies that we can apply the regression model to estimate the net operating income for a given oil marketer in a given period of time holding all other non financial or qualitative factors like management capability, systematic risk factors in the industry and the global economy at large, political factors, influences by OPEC and other contingent drivers of global oil prices among others constant.

Often the independent variables are measures in different units. The standardized coefficients or betas are an attempt to make the regression coefficients more comparable.

The t-test determines the strength of the relationship, in which case we see that debt ratio, inventory turnover and current ratio relationships with net operating profits ranking the strongest. This implies that they are relatively large contributors to the net operating income equation and thus cannot be ignored in our model, else would distort the resulting net operating income.

On the qualitative data from the questionnaires, it's notable that all firms under review have an optimal level liquidity. This implies that the firms are conscious of how critical working capital management is to the firm. All firms under review prepare cash forecast statements as a tool of cash management, 67% using forecasting method and 33% using budgetary method. Such statements are prepared monthly by 67% of the firms while 20% prepare the report daily, showing the firms are keen on cash management as part of working capital management.

All firms under review have credit line with their banks. This implies that the industry is working capital intensive and thus short term borrowing to finance the huge stock holdings is pertinent to the operations. On foreign currency exposure, only 13% apply hedging through forward contracts. This implies that this is an area that the industry should focus more as part of cash management to take advantage of the hedging products and derivatives been offered by the banking industry in Kenya. For the purpose of this study, from the review of KenolKobil's performance in 2008, financing costs which was largely foreign exchange loss affected the firm's performance, as opposed to Total Kenya which had minimal foreign exchange loss in their books.

On receivables management, it was noted that all firms under this review trade on credit. 46.67% relied on the use of the common 5Cs method while 33.33% used judgmental scoring approach. The industry applies more of traditional methods as opposed to the upcoming intelligent business solutions in the global market in credit worthiness analysis. All the firms also seem to extending credit period of between 30-60days to their customers. This implies that the firms are most of the credit customers are commercial customers who require credit period and due to competitiveness in the market, this credit period seem like the industry norm. All the firms use debt collectors to collect their debt to enable them concentrate on their core business. On management of bad debt levels, the 46.67% of the firms control their bad debts to within the estimated levels while 40% of the firms stated that their bad debts are less than 5% of the sales amount. This implies that the

industry seems to be in good control of their debt collection and bad debt levels are well controlled. Out of the amount classified as bad debt, 46.46% of the firms recover between 50-75% while 33% of the firms recover more than 75% of the default amount. This is quite a commendable recovery rate.

Of all the firms under review, only 20% use factoring and/or invoice discounting and factoring. This implies that this innovative source of short term financing has not been quite explored by the industry. It may be contributed by the lack of innovation and custom made solutions by the financial institutions and legal framework towards such short term financing.

The lead time for products supplied from the refinery was over 15days for 87% of the firms while 15days for products imported as finished product delivered through from KPC was 93% of the firms. This implies that the firms would prefer to import already processed products as opposed to processing the products at KPRL. This may be caused by the inefficiencies experienced by the industry on the part of KPRL and the general petroleum infrastructure in the country. There seem to be half –half split between the firms which place their orders based on the anticipated lead time and ones who place the order based present stock and expected time to receive the products. On the stock levels to be maintained, 73% of the firms apply inventory budgeting method versus present stock position while 27% determine stock level based on the supply target volumes versus current stock level. None of the firms apply the EOQ model or any other scientific method to determine the stock levels to be maintained. This implies that the management heavily relies on experience earned with time and more of speculation, which at times may go terribly off the expected path causing heavy losses.

Under the firms in review, 87% of the firms pay on the due date while 13% pay within the discount period. This may be due to the short credit period largely dictated by the industry where imports on products under the OTS are governed by stringent OTS rule of payment, currently; 20days after bill of lading date, which in most cases the 20days lapse while the vessel is still high-seas. Failure to pay on the due date attracts a punitive penalty calculated on per day basis. Private imports are mostly on cash before discharge, which means payment is due before accessing the product.

CHAPTER FIVE: SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Summary

This was a study on the relationship between working capital management policies and financial performance of oil marketing firms in Kenya. The study was inspired by the fact that working capital in any firm is extremely critical and requires conscious balance between the components on the working capital namely cash, receivables, payables and inventory. The topic on working capital has not yet been widely studied in Kenya and more so on the oil industry, which is very heavy working capital intensive.

The objectives of the study were to establish the working capital management policies among oil marketing firms in Kenya and to examine the relationship between working capital management and profitability in oil marketing firms in Kenya.

The study is expected to add value to the various groups starting with the oil marketing firms, academicians with special attention to PIEA who may benefit from the findings and see how it can enhance in syllabus. The regulatory bodies like the Energy Regulatory Board, the Ministry of Energy and also the petroleum lobby groups like PIEA, The Supply Co-Ordinating Committee among others are bound to benefit from the findings of the study.

The study reviewed various studies done on working capital management done in Kenya and globally. The study highlighted what other studies found out on the three common working capital management policies namely aggressive, conservative and moderate policies. The study also reviewed studies which were highlighting various capital management theories like the Operating Cycle Theory, The cash Conversion Theory and the Net Trade Cycle theory. The study further reviewed studies on working capital management policies and how it affects firm's profitability, how the firm's management can enhance the shareholder's value by maintaining optimum levels of working capital.

On research methodology, the research design was causal research trying to establish the relationship between policies applied with the profitability of the oil marketing firms. The design

came up with a regression model with the depend variable being the net operating income with independent variables including Average collection period, inventory turnover period, average payment period, current ratio, debt ratio and natural logarithm of sales.

The population for the study focused on the oil marketing firms who are members of Petroleum Institute of East Africa. There are 25 members, two of which are not marketers but are key players in the oil industry. Firstly, is KPRL which is the country's refinery. KPRL receives and processes crude on behalf of the oil marketers at a fee. The refinery and marketers are governed by a Processing Agreement providing legal and operational framework on the refining of the oil products. Secondly, is KPC whose main obligation, is to store and transport the refined products, both from the refinery and from direct imports of finished products to the designated KPC depots in the country for the marketers to access the products. Such depots include Mombasa Joint Depot, Nairobi Joint Depot, Nakuru Oil Terminal, Eldoret and Kisumu Oil Terminals. The marketers and KPC are governed by a Storage and Transportation Agreement covering storage and transportation of products for both local use and transit. The 2 firms have been excluded from the study as they are not oil marketers but service providers to the oil marketers.

In order to meet the objective of establishing the working capital management policies applied by the oil marketing firms, the study used a well structured questionnaire which was in general was assessing the cash management policies, inventory management, receivables management and payables management policies of the firms under review.

To meet objective of examining the relationship between working capital management and profitability in oil marketing firms in Kenya, the study sought the financial statements of the firms under review.

The data collected was analyzed using SPSS version 17. The financial information analyzed comprised of 4 years from the year 2006 to 2009 for the oil marketing firms under review. The analysis includes statistics like mean, correlation, regression analysis, ANOVA and coefficients statistics. Analysis of the questionnaire was done and the findings represented in tables, graphs and pie charts.

5.2 Conclusions

The management of working capital is important for several reasons. If a company is to operate efficiently, receivables and inventories must be tightly monitored and controlled. More fundamental, however, is the effect that working capital decisions have on the company's risk, return, and share price. Having an adequate level of working capital is therefore vitally important for the survival of any business. Like the oil required to keep a motorcar engine continually working smoothly and efficiently, working capital is required to keep the business engine constantly lubricated by making sure that production lines do not stop due to lack of raw materials, that inventories do not build up because production continues unchanged when sales dip, that customers pay on time and that enough cash is on hand to make payments when they are due. Obviously without good working capital management, no firm can be efficient and profitable.

For the oil companies surveyed, it has been seen that all of them have huge investment in inventory and high levels of borrowings hence low net investment in current assets. Generally, most borrowing are short term emanating from product loans where the advances are issued by the banks, the product being the collateral. The firms heavily depend on the short term borrowings to finance the large stock levels thus low dependence on long term funding. Oil is basically a fast moving product and thus, not ideal to fund with long term funds. This structured short term financing solution is an innovation by the financial institutions globally supporting the energy sector due to its nature of high requirements of working capital. This clearly shows an aggressive working capital management policy in the oil industry in Kenya.

The findings clearly indicate that working capital accounts for a large percentage of net operating profit as indicated by the regression model derived and the coefficients arrived at on the coefficients analysis.

5.3 Policy Recommendations

The Oil industry is a key driver in any economy today. The Kenyan economy is heavily influenced by the oil prices which are left to the industry players with no government intervention. Among the components determining the inflation rate in Kenya is the fuel prices. Generally, inflation rate is positively correlated to oil pump prices in Kenya.

With the recent attempts by the Ministry of Energy persuading the oil marketers to reduce the pump prices without much avail, the government is now looking into an option of influencing the prices through its fully owned oil marketer, NOCK. Recently, the government announced its plans of allocating 30% quota of all oil supply to NOCK. This move is being severely opposed the lobby groups like PIEA and Supply Co-Ordinator. It is notable oil marketers require an enormous investment in working capital. Before the government can implement such a policy, it is advisable to look into how NOCK will effectively manage its working capital in regards to the cash requirements, Accounts Payable management, and Accounts Receivable management and above all inventory management. Identifying the best working capital policy for such a working capital-intensive organization is critical to its profitability and attainment of the government's goal of delivering low pump prices to the Kenyan people.

I would therefore recommend a study be done on working capital management on NOCK operations and suitable working capital policy be formulated before the allocation of 30% supply quota is done, to ensure that the government's noble intentions and objectives are achieved.

Having identified that the oil industry requires a huge investment on working capital, the financial institutions ought to come up with realistic and affordable innovative solutions to provide the short term financing to the industry. This would call for consultations between the regulatory bodies, the lobby groups, the financial institutions with the guidance of the Central Bank of Kenya in drawing up policies and regulatory framework to govern such products/solutions.

Additionally, the financial institutions should play a role in designing hedging products to help the industry hedge against the downside of oil prices and currency movements. This would enhance the oil marketing firms in their working capital management.

5.4 Limitations of the Study

Care must be taken to generalize the results of this study as there were some limitations. The use of regression analysis also means that there is an assumption of linearity with the various models which may not be the case. Additionally, the regression model is only applicable if all factors are held constant which may not be the case as the environment keeps on changing. The model does not consider non-qualitative factors like management quality which may change, systematic risk factors which may change with time, influences by lobby groups and OPEC members among others.

The model's independent variables explain only 56.7% of the dependent variable, the net operating income. This means that there is a 43.6% that is unexplained and thus there could be other significant variables which are excluded from the model. Thus care should be taken as application of the regression model unilaterally may give misleading results.

It is notable that out of the population of 23 firms, only two of them are listed in the Nairobi Stock Exchange, and thus acquiring of financial data was a challenge and limited. The data acquired was for a maximum of 4 years as opposed to the proposed 6 years review period. Out of the 23 firms which were meant to be respondents, only 65% responded with some of having incomplete extracts of the financial data. 21 of these firms being privately owned companies; some of them declined giving out financial data trying to protect the firms' information.

5.5 Recommendation for Further Study

The current research focused on the Oil companies in Kenya. This excludes other industries, and future studies should consider other sectors such as the financial sector or manufacturing companies and benchmark with these companies.

A similar study would still be recommended in the next 3 or 4 years. With the increasing number of players in the oil industry in Kenya and large multinationals exiting the African market in general, the industry is likely to experience huge changes. With the deepening and widening of the capital market in Kenya, there is a possibility of more firms in the oil industry to be listed in the Nairobi Stock exchange and this would promote validity of the data and accessibility of such data.

Energy and commodities structured financing is gaining attention and growing at a rapid rate where global financial institutions are coming up with innovative products to accommodate the growing needs of the global energy and commodities trade. Kenya is not likely to be left behind in the near future. Thus, a research on the financial innovation in the oil industry with special focus on working capital financing needs and the impact of such innovation on the firms' performance would be recommended.

REFERENCES

- Anand, M. 2001. "Working Capital performance of corporate India: An empirical survey", *Management & Accounting Research*, Vol. 4(4), pp. 35-65
- Berle, A.A. and Means, G.C. (1932). *The Modern Corporation and Private Property*. The Macmillan Company, New York, NY.
- Blinder, A. S. and Maccini, L. J. (1991). "The Resurgence of Inventory Research: What Have We Learned?", *Journal of Economic Survey* 5, 291-328.
- Bhattacharya, H. 2001. *Working Capital Management: Strategies and Techniques*, Prentice Hall, New Delhi.
- Brennan, M., Maksimovic, V and Zechner, J. (1988). "Vendor financing", *Journal of Finance* 43, 1127-1141.
- Brigham, E. F. and Ehrhardt, M. C. (2004), *Financial Management: Theory and Practice*, 11th Edition, South-Western College Publishing, New York.
- Carpenter, M. D. and Johnson, K H (1983). "The Association Between Working Capital Policy and Operating Risk", *Financial Review*, Vol. 18, No. 3, p. 106.
- Chittenden, F., P. Poutziouris and N. Michaelas, 1998. Financial Management and Working Capital Practices in UK SMEs. *Manchester Business School, Manchester*.
- Chandran, C. (2004). *Research Methods with Illustrations from Christian Ministries*. Starbright Services Ltd.
- Cooper, R. & Schindler, P. (2003). *Business Research Methods*. Tata McGraw Hill.
- Copeland, T.E and Weston, J.F (1988.) *Financial Theory and Corporate Policy* (Addison Wesley Publishing Company,) 2nd Edition
- Deloof, M and Jegers, M. 1996. "Trade credit, product Quality, and Intra Group Trade:

Some European Evidence”, *Financial Management*, Vol 25 No 3 pp. 33-43

Deloof, M. 2003. “Does Working Capital Management Affects Profitability of Belgian Firms?”, *Journal of Business Finance & Accounting*, Vol 30 No 3 & 4 pp. 573 - 587

Eljelly, A.M.A., 2004. Liquidity-profitability tradeoff: An Empirical Investigation In An Emerging Market. *Int. J. Commerce Manage.*, 14: 48-61.

Elliot, B. and Elliot, J (2002). *Financial Accounting and Reporting*. 12th ed. London: Prentice Hall/Financial Times

Emery, G.W. (1984), ‘A Pure Financial Explanation for Trade Credit’, *Journal of Financial and Quantitative Analysis*, Vol. 9, No. 3, pp. 271–85.

Filbeck G and T Krueger (2005). Industry Related Differences in Working Capital Management. *Mid-American Journal of Business* 20(2): 11-18.

Flick, U. (1998). *An Introduction to Qualitative Research*. London: Sage Publications Inc.

Ganesan, V. (2007). An Analysis Of Working Capital Management Efficiency In Telecommunication Equipment Industry Graduate Student, *Emba Program, Rivier College Rivier Academic Journal*, Volume 3, Number 2,

Gardner, M. J. Mills D L and Pope, R. A. (1986), “Working Capital Policy and Operating Risk: An Empirical Analysis”, *Financial Review*, Vol. 21, No. 3, p. 31.

Gay, L.R 1983. *Educational Research: Competences for analysis and application*. Charles E. Mairill Publishing Company A.Bell & Howell Company Collumbus, Toronto, London.

Gentry, A., Vaidyanathan, R., Wai L., 1990, A Weighted Cash Conversion Cycle, *Financial Management* 19 (No. 1, Spring), 90-99.

Ghosh, S. K. and Maji, S. G. 2003. “Working Capital Management Efficiency: A study on The Indian Cement Industry”, *The Institute of Cost and Works Accountants of India*

Gitman, L. A. (2005), *Principles of Managerial Finance*, 11th Edition, Addison Wesley .

Publishers, New York.

Gombola, M. J. and Ketz, J. E. (1983), "Financial Ratio Patterns in Retail and Manufacturing Organizations", *Financial Management*, Vol. 12, No. 2, pp. 45-56.

Gupta, M. C. (1969), "The Effects of Size, Growth and Industry on the Financial Structure of Manufacturing Companies", *Journal of Finance*, Vol. 24, No. 3, pp. 517-529.

Gupta, M. C. and Huefner, R. J. (1972), "A Cluster Analysis Study of Financial Ratios and Industry Characteristics", *Journal of Accounting Research*, Vol. 10, No. 1, pp. 77-95.

Hall, C. (2002), "'Total' Working Capital Management", *AFP Exchange*, Vol. 22, No. 6, pp. 26-32.

Jensen, M., & Meckling, W. (1976). Theory of the firm: Managerial Behavior, Agency Costs And Ownership Structure. *Journal of Financial Economics*, 3(4), 305-360.

Jensen, M. and Ruback, R. (1983). The Market For Corporate Control: The Scientific Evidence. *Journal of Financial Economics*, 11, pp. 5-50.

Johnson, C. G. (1970), "Ratio Analysis and the Prediction of Firm Failure: Comment", *Journal of Finance*, Vol. 25, No. 5, pp. 1166-1168.

Johnson, R. and L. Soenen, 2003. *Indicators of successful companies*. Eur. Manage. J., 21: 364-369.

Jose, M. L., Lancaster, C. and Stevens, J. L. (1996), "Corporate Returns and Cash Conversion Cycle", *Journal of Economics and Finance*, Vol. 20, No. 1, pp. 33-46.

Kithii, J. N. (2008). The Relationship Between Working Capital Management And Profitability Of Listed Companies In The Nairobi Stock Exchange. *MBA University Of Nairobi*

Lamberson, M. (1995), "Changes in Working Capital of Small Firms in Relation to Changes in Economic Activity", *Mid-American Journal of Business*, Vol. 10, No. 2, pp. 45-50.

Lazaridis, I. and Tryfonidis, D. (2006), "Relationship between Working Capital Management and Profitability of Listed Companies in the Athens Stock Exchange", *Journal of Financial Management and Analysis*, Vol. 19, No. 1, pp. 26-35.

Long, M. S., Malitz, I. B. and Ravid, S. A. (1993), "Trade Credit, Quality Guarantees, and Product Marketability", *Financial Management*, Vol. 22, No. 4, pp. 117-127.

Lubatkin, M. and Chatterjee, S. (1994). Extending Modern Portfolio Theory Into The Domain Of Corporate Diversification: Does It Apply? *Academy of Management Journal*, 37, pp. 109-136.

Maxwell, C. E., Gitman, L. J. and Smith, S. A. M. (1998), "Working Capital Management and Financial-Service Consumption Preferences of US and Foreign Firms: A Comparison of 1979 and 1996 Preferences", *Financial Practice and Education*, Vol. 8, No. 2, pp. 46-52.

Michael, I., S. Malitz, B. Lleen and S. Ravid, 1993. Trade Credit, Quality Guarantees And Product Marketability. *Financial Management*. 22: 117-127.

Moyer, R. C., McGuigan, J. R. and Kretlow, W. J. (2005), *Contemporary Financial Management*, 10th Edition, South-Western College Publishing, New York.

Mugenda, M.,O. & Mugenda, G., A (2003). *Research Methods: Quantitative And Qualitative Approaches*. Laba graphics services.

Ngaba, D.K. (1990) Working Capital Management Practices In Kenyan Secondary Schools. The Case Of Kikuyu Division, Kiambu District, MBA *University Of Nairobi*

Ng, C. K., Smith, J. K. and Smith, R. L. (1999). "Evidence on the Determinants of Credit Terms Used in Interfirm Trade", *Journal of Finance* 54, 1109-1129.

Nyakundi, M. (2003) A survey of working capital management policies among public companies in Kenya. *MBA, University Of Nairobi*

Padachi, K., 2006. Trends in working capital management and its impact on firm's performance: An Analysis Of Mauritan Small Manufacturing Firms. *International Review of Business Research Papers* Vo.2 No. 2. October 2006, Pp. 45 -58.

Panday, I.M. 1990. *Financial Management*. New Delhi: Vikash Publications House.

Pandey, I.M. and Parera, K.L.W. (1997). Determinants of Effective Working Capital

Management - A Discriminant Analysis Approach. IIMA Working Paper # 1349.

Research and Publication Department Indian Institute of Management Ahmedabad India.

Peel, M.J. and Wilson, N. (1996). "Working capital and financial management practices in the small firm sector", *International Small Business Journal* 14(2), 52-68

Petersen, M. and R.G. Rajan, 1997. Trade credit: Theory and evidence. *Review of Financial Studies*, 10: 661-691.

Petersen, M.A. and R.G. Rajan, 1994. The Benefits Of Lending Relationships: Evidence From Small Business Data. *Journal of Finance*, 49: 3-37.

Pike, R.H. and Pass, C. 1987. "Management Working Capital: A Neglected Subject", *Management Decision* Vol. 25 No 1

Pinches, G. E. (1992), *Essentials of Financial Management*, 4th Edition, HarperCollins College Publishers, New York.

Pinches, G. E., Mingo, K. A. and Caruthers, J. K. (1973), "The Stability of Financial Patterns in Industrial Organizations", *Journal of Finance*, Vol. 28, No. 3, pp. 389-396.

- Pinegar, M. and Wilbricht, L. (1989). What Managers Think of Capital Structure Theory: A Survey. *Financial Management*, Winter, pp. 82-91.
- Raheman, A. and Nasr, M. (2007). "Working Capital Management And Profitability – Case Of Pakistani Firms" *International Review of Business Research Papers* Vol.3 No.1. March 2007, Pp.279 - 300
- Richards, D. Laughlin, J., (1980), A Cash Conversion Cycle Approach to Liquidity Analysis, *Financial Management* 9, 1, 32-38.
- Robson, C., (2002). *Real World Research* (2nd Ed.). Oxford: Blackwell.
- Saccurato, F., (1994). The Study Of Working Capital. *Business Credit*, 96: 36-37.
- Shin, H.H. and L. Soenen (1998), 'Efficiency of Working Capital and Corporate Profitability', *Financial Practice and Education*, Vol. 8, No. 2, pp. 37–45.
- Smith, J. K. (1987). "Trade Credit and Informational Asymmetry", *Journal of Finance* 42, 863-872.
- Smith, K. (1980), *Profitability versus Liquidity Tradeoffs in Working Capital Management*, in *Readings on the Management of Working Capital*, West Publishing Company, St. Paul, New York.
- Smith, K. (1980). "Profitability Versus Liquidity Tradeoffs in Working Capital Management", in *Readings on the Management of Working Capital*. Ed. K. V. Smith, St. Paul, West Publishing Company, pp. 549-562.
- Smith, M. B. and Begemann, E. (1997), "Measuring Association Between Working Capital and Return on Investment", *South Africa Journal of Business Management*, Vol. 28, No. 1, pp. 1-5.
- Soenen L A (1993), "Cash Conversion Cycle and Corporate Profitability", *Journal of Cash Management*, Vol. 13, No. 4, pp. 53-58.
- Svensson, K. (1997), "Trade Credits in Europe Today: *Credit Cultures*,

- Teruel, P. J. and Solano, P. M. (2005), "Effects of Working Capital Management on SME Profitability", *International Journal of Managerial Finance*, Vol. 3, No. 2, pp. 164-177.
- Vanhorne, J. C. and Wachowicz, J. M. (2004), *Fundamentals of Financial Management*, 12th Edition, Prentice Hall Publishers, New York.
- Weinraub, H. J. and Visscher, S. (1998), "Industry Practice Relating to Aggressive Conservative Working Capital Policies", *Journal of Financial and Strategic Decision*, Vol. 11, No. 2, pp. 11-18.
- Welman, J. C. & Kruger, S. J. (2001), *Research Methodology - For The Business And Administrative Sciences*, Oxford University Press Southern Africa, Cape Town, South Africa.
- Wilner, B., 2000. The Exploitation Of Relationships In Financial Distress: The Case Of Trade Credit. *Journal of Finance*, 55: 153-178.
- Zariyawati, M. A, Annuar, M. N. and Rahim A.S.A." Working Capital Management And Corporate Performance: Case of Malaysia" *Journal of Modern Accounting and Auditing*, Nov. 2009, Vol.5, No.11 (Serial No.54)

APPENDICES

Appendix I: Questionnaire

Part 1: Background Information

1. Name of Company.....

2. Years worked in the company

1-5 years 5-10 Over 10 years

3. Highest qualification attained

Certificate Degree Masters Other

(specify).....

4. Area of specialization

Finance Accounting Other (specify)

Part 2: Cash Management

5. Does your company have a fixed optimum level of liquidity?

Yes No

6. A firm should forecast cash to anticipate cash surplus and shortage, estimate timing of borrowing and lending of funds and have better control over funds. How your company does forecasts its cash.

Preparation of Cash Forecasting Statements

Following Budgetary Method for controlling of cash

7. If the company prepares a cash forecasting statement, how often?

Yearly Basis half yearly basis monthly yearly basis

8. Has the company established a credit line with a Bank?

Yes No

9. How does your company manage the foreign currency cash requirements and exposure?

Buy at spot rate on invoice due date

Hedging through currency forward contracts

Part 3: Receivable Management

10. Do you sell on credit?

Yes No

11. If yes, how do you make the credit granting decision?

Use of the traditional 5'C (Character, capacity, capital, collateral, condition i.e industry norms) method

Judgmental Scoring approach

None

12. What is the company's average net period in terms of sales?

Less than 30 days Between 30 and 60 days

13. How does your company collect credit from its debtors?

Marketing agencies Debt collectors Other (specify)

14. The important policy implication from firm's point of view is that when the buyer defaults, future cash flows to the seller are delayed, and their amount may be reduced relative to payment in non-default. How would you describe your company's bad debts?

Bad debts are less than or within estimated figure

Bad debt less than 5% of sales amount

Bad debts are more than 5% of sales amount

15. What is your company's recovery rate compared to default amount?

Below 50% 50%- 75% More than 75%

16. Which device do you use in monitoring Accounts Receivables?

Days Sales Outstanding Statistics (DSO) (The average collection period)

The Aging Fraction Statistics

Both

17. Does your company use factoring and/or invoice discounting as a method of collection from debtors?

Yes No

Part 4: Inventory Management

18. What is the lead time for inventory in the company (for fuel ex KPRL).

5 days 10 days 15 days over 15 days

19. What is the lead time for inventory in the company (for imported white products under OTS and private imports).

5 days 10 days 15 days over 15 days

17. What is the basis used to place an order for inventory?

Lead-time

considers the present stock of goods and expected time to obtain the goods

18. Which method does the company uses to determine the level of inventory to be maintained?

On the basis of production target and current position of stock

Inventory Budgeting Method and Present Stock Position

EOQ model

Part 5: Management of Accruals and Payable

19. Which policy does the company follow in case of payment of invoices?

Pay at sight of invoice Pay on due date of invoice

Pay within the discount date Pay after the discount period

Thank You

Appendix II: List of Corporate Oil Marketing Companies in Kenya registered with PIEA

Senior Corporate

1. Hashi Energy Ltd
2. Hass Petroleum Ltd
3. KenolKobil Ltd
4. Kenya Shell Limited
5. Libya Oil Kenya Limited
6. National Oil Corporation Of Kenya (NOCK)
7. Total Kenya Limited

Junior Corporate

8. Addax Kenya Limited
9. Bakri International Energy Co. (K) Ltd
10. Boc Gases
11. Dalbit Petroleum Ltd
12. Engen Kenya Limited
13. Galana Oil Kenya Limited
14. Gapco Kenya Limited
15. Global Petroleum Limited
16. Gulf Energy Limited
17. Hunkar Trading Co.Ltd
18. Intoil Limited
19. Jade Petroleum Ltd
20. Mgs International (K) Limited
21. Petro Oil Kenya
22. Riva Petroleum Dealers Ltd
23. Trojan International Ltd