

**THE EFFECT OF MACROECONOMIC VARIABLES ON PROFITABILITY
OF SMALL AND MICRO ENTERPRISES INDUSTRY IN NAIROBI
COUNTY**

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DECLARATION

I declare that this is my original work and has not been presented in any other institution for any other award prior to this declaration.

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DEDICATION

I dedicate this work to my family and friends for their continued support and Rafode-Rural Agency for Development.

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LIST OF ABBREVIATION

ANOVA	:	Analysis of Variance
GDP	:	Gross Domestic Production
ROA	:	Return on Assets
SME	:	Small and Micro Enterprises

ABSTRACT

SME industry is vital for creation employment to a significant proportion of the population as well as elimination of social problems. The Kenya Economic Survey report shows that the SME sector contributed 89.7% of new jobs created in year in Kenya 2013. In 2012 the SME industry contributed over 80% of the countries employment with majority of new jobs being created in that sector and contributes about 70% to the country's GDP. Therefore, enhanced profitability of SME industry leads to additional job creation and economic growth. Conducive macroeconomic environment promotes the profitability of SMEs which propels them to a stage where they can access financing for sustained growth. High-lending rates tend to discourage companies from financing projects through loans from commercial banks and thus they resort to a rather less expensive financing which includes informal financing which is said to be more limiting and indirectly more expensive. Inflation on the other hand leads to decline in the units sold by informal sector firms while increasing their turnover in nominal terms. The effect of these macro economic variables on profitability of small and micro enterprises industry remains unknown with no study in Kenya done on the same. The study sought to determine the effect of macroeconomic variables on profitability of small and micro enterprises industry in Nairobi. The study adopted a descriptive design. The total population was all small and micro enterprises in Nairobi County. A sample of 100 SMEs in Nairobi County was selected using a stratified random sampling technique. The study used secondary data to determine the effect of macroeconomic variables on profitability of small and micro enterprises. Secondary data collection was obtained for five years relating SMEs profitability and macroeconomic variables for years 2009 to 2013. The study found that interest rates and inflation rates have significant effect on profitability of small and micro enterprises industry in Nairobi County and that exchange rates are also negatively related to SMEs profitability even though the effect if not statistically significant. The study also found that GDP growth had strong positive relationship with SMEs profitability where growth in real GDP leads to higher SMEs industry profitability. The study also found that macroeconomic variables combined had strong relationship with profitability of profitability SMEs. Macroeconomic variables could account for 85% of the changes in profitability of SMEs industry. The study recommended that Central Bank of Kenya to formulate policies to stabilize macroeconomic variables.

CHAPTER ONE

INTRODUCTION

1.1 Background of Study

Macroeconomic environment constitutes one of the major pillars for growth of enterprises in a country and poverty reduction. Every government in the world aims at pursuing not only a cautious policy to maintain macroeconomic variables stability, and to promote a favourable context for private investment and growth, but also to ensure the availability of adequate budgetary resources to priority sectors in order to fight against poverty in direct support to economic growth (Maghyereh, 2002). The basic aim of each country is conceiving an adequate economic concept and thereafter implementation of suitable economic measures which will result in acceptable macroeconomic variables for a given country at a given moment in time (Vladimir, 2010).

The effects of instable macroeconomic variables in a country are detrimental and include financial crisis, collapse of businesses and negative economic growth. Specifics and differences which exist between economies indicate that a different macroeconomic influence on the economy performance differently. Macroeconomic variables which are included in the economic growth, interest rates, inflation and exchange rates represent the basic indicator of economic activity in any country (Vladimir, 2010).

The state of a country's economy affects the performance of its organizations. Whenever the economy is performing well the general expectation of most investors and shareholders is that companies would perform well and thus overall growth in wealth. The economic performance is judged by the stability in macroeconomic variables, such as its exchange rate, rate of inflation, consumer price index, Gross Domestic Product, stock market index and interest rates. It is the expectation of policy makers at both the macro and micro levels in an economy that these variables would remain stable and favourable to sustain business growth. Moreover, it is the wish of potential and existing investors that these macroeconomic elements remain favourable so as not to threaten the returns of their securities (Osoro and Ogeto, 2014).

Macroeconomic variables are as a result of macroeconomic policies adopted by a country. Macroeconomic policies impact significantly on the relative profitability small and micro enterprises, economy activity growth, inflation, employment, and unemployment, as well as on income distribution among various economic agents. They influence household decisions on what to consume and where to invest through market transactions involving the exchange of goods and services and factors of production (land, labour and capital). Macroeconomic policies negatively affect the SMEs and the poor population in two ways: i) in the short-term, they may reduce the real income and consumption of certain population groups in the economy, especially the poor; and ii) in the long-term, disadvantaged groups may not benefit from changes in the distribution of income induced by the implementation of adjustment policies (Demery and Addison, 1997).

The Kenyan economy has been characterized with fluctuations in macroeconomic variables such as interest rates, inflation rates and the exchange rate. This has been the main focus of professional investors and investment advisers in the last decade. While, there are myriads of studies on the effects of such fluctuation in the performance of firms in other sectors especially the banking industries, there is paucity of studies on the effects of these factors in non financial institutions like SMEs. The neglect of this sector is particularly surprising since it is one of the key sectors identified in the achievement of the vision 2030 goals in Kenya (Osoro & Ogeto, 2014).

1.1.1 Macroeconomic Variables

Macroeconomic factors are derived from macroeconomics. Macroeconomics is the study of the overall aspects and workings of a national economy, such as income, output, and the interrelationship among diverse economic sectors. Macroeconomic factors include economic growth captured by gross domestic product (GDP), interest rates, exchange rates and the inflation rate (Achillah, 2011). Macroeconomic variables refer to variables that affect national income, output, consumption, unemployment, inflation, savings, investment, international trade and are independent from the income levels (Bhattacharyay, 2013). They are factors that greatly influence the economic growth. They deal with the performance, structure, behaviour, and decision-making of an economy as a whole, rather than individual markets. These Macroeconomic variables are indicators or main signposts signalling the current trends in the economy. Some of the macroeconomic variables include gross domestic product (GDP), unemployment and inflation (Eichengreen and Luengnaruemitchai, 2004).

High level of interest rates tends to make financing expensive for small and micro enterprises. Where interest rates are high, SMEs financing will be high due to expensive loans advanced and high risk that the purchasing power of long-term fixed rate assets will be eroded. GDP per capita which is the developmental stage of the economy is expected to have a positive relationship with SMEs financial performance, exchange rates negative while inflation negative effect on profitability in real terms. Underdeveloped countries have a volatile investment macroeconomic environment, domination of government in commercial activities, weak creditors' rights, lack of transparency and poor corporate governance (Adelegan and Radzewicz, 2009).

Macroeconomic variables affect the nature and the direction of the economy in which a firm operates. Each firm must consider economic trends in the segment that affects its industry because the relative affluence of various market segments affects consumption patterns. On both national and international level, managers must consider the general availability of credit, the level of disposable income, and the propensity of people to spend. Prime interest rates, inflation rates, and trends in the growth of gross national product are other economic factors it must consider (Pearce and Robinson, 2011).

1.1.2 Profitability of Small and Micro Enterprises Industry

Profitability refers to firm's ability to generate new resources from day to day operations over a given period of time. Industry profitability refers to the aggregate profitability of all firms in the industry (Pash and Fatima, 1998). Corporate profitability is a measure of corporate performance measure divided into two major types: traditional measures based on accounting/financial data which reflect a firm's

past performance; and market-based measures which include stock market prices. A firm's finances and operations are integrally connected. Studies have shown that the concept of corporate performance is multidimensional in nature. Within corporate performance, the focus has always been on the financial side, hence it is traditionally defined in financial terms. In addition, investors, shareholders and other stakeholders are interested in to get information about the firms' performance conditions frequently. Financial information (return on investments, return on equity, growth of sales, profitability) is the most extensively explicit and valid information among the other performance dimensions (Venkatraman and Ramanujam 1986).

Profitability is necessary for firm survival in the long run in a competitive environment, but not a precondition for growth. Long-term profitability derives from the relations between cost and revenue. A low-profit firm will lack the finance for expansion, but a high-profit business may have funds for further investments leading to expansion. A business proprietor may trade profitability today against profitability tomorrow. Sequential investment projects may require initially lower profits in order to obtain higher future pay-offs from greater market penetration. The management's time preference is likely to determine the inter-temporal profit trade-off (Foreman, Gerry, and Morgan, 2006).

Profitability is a measure of firms' financial performance where the latter refers to the degree to which financial objectives being or has been accomplished. It is the process of measuring the results of a firm's policies and operations in monetary terms. It is used to measure firm's overall financial health over a given period of time and can also be used to compare similar firms across the same industry or to compare

industries or sectors in aggregation. Profitability is measured mostly by traditional financial ratios that include Return on Assets (ROA), Return on Capital (ROC) and Return on Equity (ROE) among others (Venkatraman and Ramanujam, 1986).

1.1.3 Macroeconomic Variables and Profitability of Small and Micro Enterprises Industry

Macroeconomic stability is the cornerstone of any successful effort to increase private sector development, economic growth and growth of any industry. Cross-country regressions using a large sample of countries suggest that growth, investment, and productivity are positively correlated with macroeconomic stability (Easterly and Kraay, 1999). Although it is difficult to prove the direction of causation, these results confirm that macroeconomic variables instability has generally been associated with poor growth and low SMEs industry profitability. Without macroeconomic stability, domestic and foreign investors will stay away and resources will be diverted elsewhere. In fact, econometric evidence of investment behaviour indicates that in addition to conventional factors (past growth of economic activity, real interest rates, and private sector credit), private investment is significantly and negatively influenced by uncertainty and macroeconomic instability (Ramey and Ramey, 1995).

Pash and Fatima (1998) identified the following macro-economic factors as significant in explaining firm performance (profitability) and subsequent the returns to investors as surprises in inflation, surprises in GDP as indicated by an industrial production index, surprises in interest and exchange rates and investor confidence due to changes in default premium in corporate bonds and surprise shifts in the interest rates. Economic growth, in the world or in a particular region or country, depends to a large extent on the nature and quality of economic policy. For example, if there is a

good environment for households and firms to save and invest in the developing world, firms' profitability and economic growth is generally observed. Where sound macroeconomic policies have been stable and sustained, they have accelerated economic activities and growth (Yohane, 2004).

Different macroeconomic variables are expected to affect SMEs industry profitability differently. According to Cowley (2007) interest rate, which is the price the borrower pays for the use of money borrowed from the lender or financial institution can affect firms' profitability in both negatively and positively. Interest rate risk is the exposure of the firm's financial position due to fluctuations in interest rates. Excessive interest rate fluctuation can pose significant threats to a firm's earnings and capital base changes and increase its operating expenses. Changes of interest rates may also affect the underlying value of assets, liabilities and present value of future cash flows.

The inflation rate which refers to the change in the general level of prices in the economy over a given period of time have a significant effect in the purchasing power of money and the cost of production mostly in the manufacturing sector. The effects of inflation are viewed in two perspectives: effect on the aggregate demand and effect on the cost of production. During period of high inflation consumers with fixed income have a low purchasing power due to the reduced value of money hence reduced demand for products. Equally inflation increases the cost production hence reducing profitability (Osoro & Ogeto, 2014). Pandey (2009) argues that if capital markets were perfect the investments of equal risk should offer equal return in different countries. This is due to the process arbitrage that will see movement of funds from one country to another continuously until equilibrium is achieved.

If the real rates of return are the same in two countries, then, as per the fisher effect, the nominal rates of interest would adjust exactly for the change in the inflation rates. Vong and Chan (2009) argue that available empirical evidence on the relationship between inflation and profitability is inconclusive and hence requires further research.

GDP growth implies increased economic activity in a country leading to higher SME industry profitability. An economy with stable economic growth translates to constant and predicable demand and firm profitability. A stable exchange rate environment offers predictable costs of operation to SMEs and minimizes exchange losses incurred by the firms. This promotes industry's profitability through reduced foreign exchange loss and stable costs of production (Vladimir, 2010).

1.1.4 Small and Micro Enterprises Industry in Kenya

Micro enterprises refer to firms which employ less than five full time workers while small firms refer to those employing between 5 and 49 workers (GoK, 2005). Small and micro enterprises constitute to the majority of businesses in Nairobi County and create the highest number of new jobs per year. In 2009, SME industry created 79.9% new jobs out of 543.3 thousand new jobs created in Kenya. In the same year, the industry contributed 59% percent of total GDP (GoK, 2009).

The Kenya Economic Survey (2010) notes that the SME industry generated 87.6 percent of the total jobs generated in 2009 (GoK, 2010). According to the Economic Survey (RoK, 2012), the SME industry contributed 79.8% of new jobs created in that year 2011 with 89.7% of new jobs created in 2013 (GoK, 2013). As a result of the role of SME industry in employment creation, the Kenya's development plans since independence have put special emphasis on the contribution of the industry in the

creation of employment in the country (GoK, 2009). According to the Sessional paper No.2 of 2005 (GoK, 2005), SMEs have high mortality rates with most of them not surviving to see beyond their third anniversaries.

Beyond creation of employment, small and micro enterprises industry stimulate entrepreneurship and innovation. Indeed, in many developing countries as well as developed countries, small enterprises have become focal point of growth and self-employment (Lukacs, 2005). In the European Union, SME industry account for roughly two thirds of employment while in Pakistan it employs nearly 80 per cent of the non-agricultural labour force contributing about 40 per cent of annual GDP (Bashir, 2008).

In low-income countries, it is estimated that SME industry account for more than 60 per cent of the GDP and provide over 70 per cent of employment opportunities (Lukacs, 2005). However, Lukacs noted that a significant number of small and micro enterprises in these countries are stuck in low productivity levels, poor quality products, and serving small, localized markets. He further pointed out that lack of technological dynamism had led to their stagnation and little or no transition to medium or large enterprises.

1.2 Research Problem

SME industry is considered as one of the major contributors to the economy by providing income and employment to a significant proportion of the population. The Kenya Economic Survey report shows that the SME sector contributed 89.7% of new jobs created in year in Kenya 2013 (GoK, 2014). In 2012 the SME industry contributed over 80% of the countries employment with majority of new jobs being created in that sector (430,000 out of 503,000 new jobs created in 2011) and contributes about 70% to the country's GDP (RoK, 2012). Therefore, enhanced profitability of SME industry leads to additional job creation and economic growth.

Macro economic variables include the gross domestic product (GDP) growth rate, rate of inflation, the exchange rate, fiscal position and the debt position; they reflect the macroeconomic environment in a country (Asaolu and Ogunmuyiwa, 2010). Conducive macroeconomic environment promotes the profitability of SMEs which propels them to a stage where they can access financing for sustained growth. High-lending rates tend to discourage companies from financing projects through loans from commercial banks and thus they resort to a rather less expensive financing which includes informal financing which is said to be more limiting and indirectly more expensive (Maghyereh, 2002). Inflation on the other hand, which is defined as the decline in the purchasing power of money leads to decline in the units sold by informal sector firms while increasing their turnover in nominal terms. The effect of these macro economic variables on profitability of small and micro enterprises industry remains unknown.

Several studies have been done in regard to the macro economic variables in Kenya. Oriwo (2012) studied the relationship between macro economic variables and stock market performance in Kenya. The study found that macroeconomic environment had effect in the stock market performance, which in return influenced the foreign investor's decisions in the local investments. Osoro and Ogeto (2014) studied the macroeconomic fluctuations effects on the financial performance of listed manufacturing firms in Kenya. None of the studies reviewed had studied the effect of macroeconomic variables on profitability of small and micro enterprises industry despite the industry's importance in job creation where they created 89.7% of new jobs in 2013 (GoK, 2014).

This study therefore sought to find out the impact of macroeconomic variables on profitability of SME industry in Nairobi. It bridged the gap that exists in literature by answering the question what is the effect of macroeconomic variables on profitability of small and micro enterprises industry in Nairobi County?

1.3 Objective of the Study

To determine the effect of macroeconomic variables on profitability of small and micro enterprises industry in Nairobi.

1.4 Value of the study

The study is of importance to SME managers, the government, policy formulators, researchers and academicians. The management of firms is charged with the responsibility of deploying capital with an objective of maximizing shareholders wealth. This study can significantly benefit them by providing information on how changes in macroeconomic variables can affect the performance of their firms and hence they will be able to maximize shareholders value.

On prospective investors, the study will enlighten them on how investment decisions are affected by changes in the macro economy and therefore this study would significantly shed some leading lights on the part of prospective investors on the investment opportunities and the influence of macroeconomic variables on their investment decisions.

The government plays a significant role in creating an enabling environment for operation of businesses. This study would be an eye opener to the government on how certain monetary and fiscal policies influence industry performance and hence contribute in improvement of macroeconomic policy making. It is anticipated that the findings would influence effective formulation of economic policies by government statutory bodies and Central Bank of Kenya thus guiding the operations the direction of macroeconomic variables.

To academic and researchers the study has provided a platform for quality discussion and debates amongst academicians, policy makers, and professionals and provides a basis for further research regarding macroeconomic variables and SMEs industry profitability.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

The chapter focuses on theoretical and empirical literature. The chapter starts with section 2.2 on theoretical review, section 2.3 on the macroeconomic determinants of financial performance, section 2.4 on empirical review, and ends with section 2.5 on chapter summary.

2.2 Theoretical Review

The study was guided by theories that which presented a set of arguments that required further research. These theories included the deflation and liquidity theory.

2.2.1 Deflation Theory

The theory was proposed by Fisher (1933), which suggested that fall on inflation rates leads to fall in the level of prices, which leads to greater fall in the net worth of business, reduced profitability hence precipitating bankruptcies which leads the concerns running at a loss to make a reduction in output, in trade and in employment of labour. The cycles cause complicated disturbances in the rates of interest and a fall in the money value. The complicated disturbances described above can be summed as both external and internal forces (macro and micro factors) influencing state of over-indebtedness existing between, debtors or creditors or both which can compound to loan defaults.

According to this theory, if inflationary pressures from the fiscal stance are being transmitted exclusively through the financing channel, then inflationary pressures could be reduced without fiscal adjustment if alternative (sustainable) sources of financing, such as external financing, are available. In practice, however, some fiscal adjustment is typically also necessary because either the amount of alternative finance is insufficient and/or the fiscal stance is also putting upward pressure on prices through the aggregate demand channel. Indeed, evidence shows that successful disinflation episodes have typically been accompanied by sizable and sustained fiscal adjustment. Therefore, countries that wish to target a significantly lower rate of inflation need to ensure that the corresponding fiscal adjustment is adequate (Phillips, 1999).

In relevance to the study, the theory posits that reduced inflation rates will lead to reduced SMEs sales, reduced profitability and can lead to SMEs running to bankruptcy. This is contrary to the expectation that increased inflation reduces purchasing power of money, reduced real sales and increased operation costs and also interest rates in the economy. Authors opposed to this theory argue that inflation rate is the most important macroeconomic variable since it affects all the other variables. Increased inflation rates leads to currency depreciation (affects exchange rates) as explained by purchasing power parity. Due to loss of purchasing power of money and erosion of value of money, economic growth slows down and hence negatively affecting country's GDP growth (Pandey, 2009).

2.2.2 Liquidity Theory

The liquidity theory looks at the interest rate as the token paid for abstinence and inconveniences experienced for having to part with an asset whose liquidity is very high (Phillips, 1999). It views interest rates as a price that equilibrates the desire to hold wealth in the form of cash with the available quantity of cash, and not a reward of savings. Liquidity theory argues that the role of macroeconomic variables is to help mobilize financial resources and ensure the efficient utilization of resources in the promotion of economic growth and development (Ngugi, 2001). In relevance to the study, liquidity theory explains the role of macroeconomic variables which is to create liquidity in the economy which promotes economic activities and leads to increased SMEs profitability.

2.3 Determinants of Small and Micro Enterprises Profitability

Several factors as discussed below were studied as the key determinants of SMEs profitability.

2.3.1 Inflation

Inflation is defined as a persistent increase in general price levels in an economy over time. Inflation effectively reduces the purchasing power of a country's currency. Low or medium levels of inflation in a country can have a positive effect on the business sector, in that it can act as an incentive to production. High levels of inflation however can harm company's profitability by affecting the cost of inputs as well as reducing final demand for its output (Meyers, 2001).

Ultimately the effect of inflation on a firm is determined by the nature of its operations as well as its competitive environment. A firm which experiences an inelastic demand for its products may be able to cushion itself from adverse impact of inflation by transferring the price increases to final consumers, thus leaving its margin untouched. The same could be said of a company operating in a sector with low levels of competition (Meyers, 2001).

From liquidity point of view, inflation is likely to result in an erosion of the real value of any financial claims outstanding as opposed to the nominal value of such claims which may find it with receivables whose real value is diminished, thus inflation harms lenders and tend to benefit borrowers (Myers and Steward, 1984). Platt et al (1995) states that while distressed firms may prefer no growth strategy; external pressures such as inflation may cause their sales to rise exogenously and develops a new sustainable growth rate formula that describes how much growth the firm with no debt capacity can endure.

2.3.2 Interest Rates

Interest rates represent the cost of borrowing capital for a given period borrowing capital for a given period of time. Borrowing is significant source of finance for many firms. However according to Myers and Steward (1984), prevailing interest rates are of much concern to many firms, because of indexing of interest rates to inflation. In some borrowing arrangements, interest rates continue to affect the firm for the whole period that the borrowing arrangement is outstanding. For lending and other financial intermediaries, interest rates represent both a compensation for the loss in the value of loaned capital arising chiefly from inflation as well as profit margin to compensate the lender for the default risk he exposes himself to during the loan period.

Higher interest rates deter prospective borrowers and increase the default risk of a loan portfolio already held, thus high interest rates may adversely affect financial institutions whose chief activity is lending funds. This phenomenon of bad debts was observed in early 1999. Jalilvand and Harris (1984) in a study of U.S Corporation obtained results which suggested that financial decisions are interdependent and firm size, interest rate conditions and stock price levels affect speed of adjustments to capital structure implying that they do influence it.

2.3.3 GDP Growth Rate

The gross domestic product is a measure of the country's overall economic performance. It is the money value of total goods and services produced annually in a country using exclusively the resources of a country (Singh, 1993). Most economies of the world experience cyclic fluctuations characterized by periods of a boom and periods of a recession. According to Athanasoglou, Sophocles, Matthaios (2005) during periods of a boom the demand for credit is high as compared to during periods when the economy is experiencing a recession. During periods of declining GDP growth the demand for credit falls which in turn negatively affects the profitability of a bank. On the other hand a growing economy as expressed by a positive and increasing GDP would lead to an increase in the demand for credit hence leading to growth in profitability. Hence economic growth rate positively affects profitability.

2.3.4 Exchange Rate

Using the flexible exchange rate system, the price of currencies is determined by supply and demand of the currency in the foreign exchange market. Given the frequent changes of supply and demand influenced by numerous external and internal factors, this new system is responsible for currency fluctuations. These fluctuations expose companies to foreign exchange risk (Pandey, 2009). Moreover, economies are getting more and more open with international trading and as a result companies become more exposed to foreign exchange rate fluctuations. Generally, companies are exposed to three types of foreign exchange risk: translation exposure, transaction exposure and economic exposure (Osoro & Ogeto, 2014).

2.4 Empirical Review

A number of studies indicate significant relationships between exchange rate, interest rate, inflation rate and GDP fluctuation variables and the financial performance of a firm in terms of its profitability and security returns. Menike (2006) investigated the effects of exchange rate, interest rate, rate and GDP fluctuation variables on stock prices in emerging Sri Lankan stock market using monthly data. The results indicated that most of the companies reported a higher coefficient of determination which justifies higher explanatory power of exchange rate, interest rate, inflation rate and GDP fluctuation variables in explaining stock prices. Consistent with similar results of the developed as well as emerging market studies, inflation rate and exchange rate react mainly negatively to stock prices in the Colombo Stock Exchange (CSE). The negative effect of Treasury bill rate implied that whenever the interest rate on Treasury securities rise, investors tend to switch out of stocks causing stock prices to fall.

Darfor & Agyapong (2010) studied the effects of macroeconomic variables on commercial banks stock prices. The results of the research indicated that the Ghana Stock Exchange All-share index influenced the level of stock prices of Ghana Commercial Banks (GCB). Both the stock prices of Standard Chartered Bank and Social Security Bank also influenced GCB stock prices positively. However, inflation and exchange rates did not influence the stock prices of GCB significantly.

Olweny and omondi (2011) sought to find out the impact of macroeconomic factors on the performance of the stock market. The results showed evidence that Foreign exchange rate, Interest rate and Inflation rate, affect stock return volatility. On foreign exchange rate, magnitude of volatility as measured by beta was relatively low at 0.209138 and significant since the probability is almost zero, 0.3191. This implies that the impact of foreign exchange on stock returns is relatively low though significant.

Oriwo (2012) studied the relationship between macroeconomic variables and stock market performance in Kenya. The study found that there exist a significant relationship between macroeconomic variables and the stock market performance. This relationship was found to be either positive or negative depending on which variable is being put under consideration. This study recommended that the macroeconomic environment is very important and should closely be monitored to ensure stability.

Nkuah and Gaeten (2013) undertook a study on challenges and determinants in accessing bank credit by SMEs in Ghana. Their findings were that as part of the entrepreneurs' characteristics, male entrepreneurs were most favoured by financial institutions than their female counterparts in credit accessibility. The study also revealed that entrepreneurs within the age category of 31years to 40 years as well as 41 years to 50 years were considered worthier of credit than the other age groups. With regards to a firm's peculiar characteristics and credit accessibility, the study revealed that firms in the service sector were most favoured than those in the production and agricultural sectors due to the volatility of the latter sector and the resultant high tendency of loan default.

Wangombe (2013) studied the role of the family counsel board on the growth of Small and Medium Enterprises in Kenya after exit of the founder: A case of Nairobi CBD family small SMEs. The study found that the family counsel board skills affected the growth of SMEs. The study further found that the family counsel board composition affected the growth of SMEs to a great extent. The board composition affected the growth of SMEs through Idea generation, diversity of opinions, flexibility, speed of decision making, profit margins, increased sales, delegation of duties, restricting outside decisions, and keeping up with competition. Those facets of family counsel board structure affecting growth of SMEs were, firm-level assessment, transformational style, delegation of duties, roles of the CEO and family counsel board flexibility.

Osoro and Ogeto (2014) investigated the effect of macroeconomic fluctuations on the financial performance of listed manufacturing firms in Kenya. The study found is evidence that foreign exchange, interest rate and inflation rate have significant effects on the performance of the firms in the construction and manufacturing sectors. The effect of macroeconomic factors on the performance of the agricultural sector was however insignificant at 95% confidence level the effects of macroeconomic factors were inconclusive and thus required further research. The study recommended that the government to come up with strategies and policies to protect the construction, manufacturing and agricultural sectors due to their immense contribution to the economy of the country by formulating policies aimed at controlling the effects of rapid fluctuations of the macro economic factors and their effects on the various sectors.

2.5 Summary of Literature Review

There is a paucity of knowledge in the existing empirical literature regarding the effects of exchange rate, interest rate, inflation rate and GDP fluctuations on the performance of the small and micro enterprises in Nairobi. Previous studies on the effects of exchange rate, interest rate, inflation rate and GDP on the performance of a firm have concentrated on the banking industry and the stock exchange market. The nature and extent of the effects macroeconomic variables are unique from one country or industry to another.

The deflation theory proposes that low inflation rates leads to reduced SME profitability and SMEs bankruptcy. This is contrary to the expectation that increased inflation reduces purchasing power of money, reduced real sales and increased operation costs and also interest rates in the economy. Authors opposed to this theory argue that inflation rate is the most important macroeconomic variable since it affects all the other variables. Liquidity theory on the other hand explains the role of macroeconomic variables which is to create liquidity in the economy which promotes economic activities and leads to increased SMEs profitability. None of the studies reviewed had studied the effect of macroeconomic variables on profitability of small and micro enterprises despite their importance in job creation where they created 89.7% of new jobs in 2013 (GoK, 2013).

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter details the research methodology employed in carrying out the study. It provides a description of the entire methodological approach employed in the study, which involved the research design, population of study, sampling and sample size, data collection and data analysis technique.

3.2 Research Design

This study adopted a descriptive design. According to Cooper and Schindler (2003) descriptive studies are more formalized and typically structured with clearly stated hypotheses or investigative questions. It serves a variety of research objectives such as descriptions of phenomenon or characteristics associated with a subject population, estimates of proportions of a population that have these characteristics and discovery of associations among different variables.

Research design is a roadmap of how one goes about answering the research questions. Mugenda and Mugenda (2003) define this as simply the framework or blue print for the research, Orodho (2003) define the research design as a framework for the collection and analysis of data that is suited to the research question. Orodho (2003) defines research design as the scheme, outline or plan that is used to generate answers to the research problem.

3.3 Target Population

Population refers to the entire group of people or things of interest that the researcher wishes to investigate, Sekaran (2010). Mugenda and Mugenda, (2003) defines population as an entire group of individual or objects having common observable characteristic. Data available from the Ministry of Trade and Ministry of Industrialization, (2011) reveal that there are a total of 4,560 small, micro and medium sized enterprises in Nairobi County 2500 SMEs in Manufacturing, 1500 Trading and 560 in the service industry (GoK, 2012). The total population will be all the 4,560 small and micro enterprises in Nairobi County.

3.4 Sample Frame and Sampling Techniques

The sampling frame describes the list of all population units from which the sample was selected. It is a physical representation of the target population and comprises all the units that are potential members of a sample (Cooper & Schindler, 2003). The sample was selected using a stratified random sampling technique where the SMEs were categorised based on the industry from which 100 SMEs from Nairobi County were randomly sampled to represent the industry. The selection on SMEs from each stratum was based on the proportion of SMEs in the stratum to total SMEs in Nairobi.

3.5 Data Collection

Data collection is the means by which information is obtained from the selected subjects of an investigation (Creswell, 2003). The study used secondary data to determine the effect of macroeconomic variables on profitability of small and micro enterprises. Secondary data collection was used in obtaining five years SMEs profitability and macroeconomic variables for the same years. Macroeconomic

variables data was obtained from Central Bank of Kenya publications and Kenya National Bureau of Statistics. Macroeconomic data collected was including five year Gross Domestic Product measured as the real GDP, annual inflation rate and general interest Rates. SMEs profitability was obtained from the SMEs financial statements, annual accounts and other financial records.

3.5.1 Data Validity and Reliability

Reliability is the consistency of a set of measurement items while validity indicates that the instrument is testing what it should. Reliability is the consistency of your measurement, or the degree to which an instrument measures the same way each time it is used under the same condition with the same subjects. In short, it is the probability of your measurement. A measure is considered reliable if a person's score on the same test given twice is similar. It is important to remember that reliability is not measured, it is estimated.

Reliability does not, however, imply validity because while a scale may be measuring something consistently, it may not necessarily be what it is supposed to be measuring. The researcher will use the most common internal consistency measure known as Cronbach's alpha (α). It indicated the extent to which a set of test items can be treated as measuring a single latent variable. The recommended value of 0.7 will be used as a cut-off of reliabilities (Cronbach, 1951).

3.6 Data Analysis

Before data processing, data preparation was done by arranging the data in an analyzable form. Data collected was analyzed using descriptive statistics. Tables and other graphical presentations as appropriate were used to present the data collected for ease of understanding and analysis. This generated quantitative reports through tabulations, percentages, and measure of central tendency. Data analysis was done with the aid of SPSS version 21.

3.6.1 Analytical Model

Multiple regressions are most appropriate for studies involving two or more independent variables. This study used the following model of multiple linear regressions where SME industry profitability was regressed against GDP rate, inflation, interest rate and exchange rate.

$$P_t = \alpha + \beta_1 GDP_t + \beta_2 INFL_t + \beta_3 INT_t + \beta_4 ER_t + \varepsilon$$

Where;

P_t = SME Industry Profitability as Measured by Average Annual Return on Assets of Sampled Firms

α = Coefficient of regression.

β_t = Regression Coefficients

GDP_t = Annual GDP rate

INF_t = Annual inflation rate

INT_t = Annual Average Interest Rates

$\beta_4 ER_t$ = Annual Average Exchange Rate of Kenya Shillings against the United States Dollar

ε = is the error term

3.6.2 Test of Significance

Inferential statistics such non parametric test which include analysis of variance (ANOVA) was used to test the significance of the overall model at 95% level of significance. Coefficient of correlation (R) was used to determine the magnitude of the relationship between the dependent and independent variables. Coefficient of determination (R^2) was also be used to show the percentage for which each independent variable and all independent variables combined were explaining the change in the dependent variable.

CHAPTER FOUR

DATA ANALYSIS, RESULTS AND DISCUSSIONS

4.1 Introduction

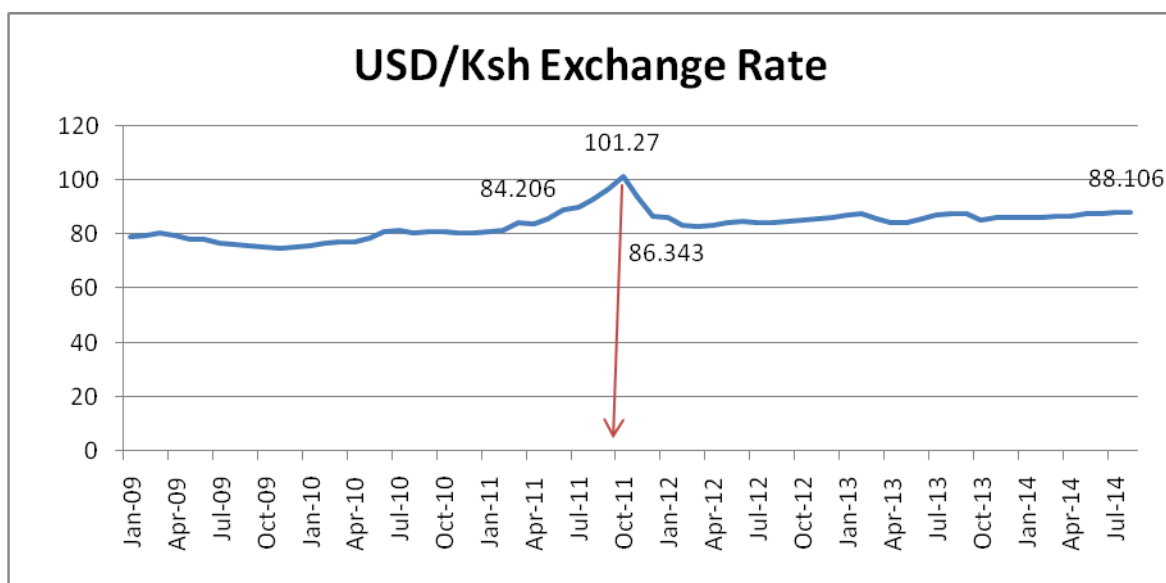
The chapter presents the results of data analysis, discussions and interpretations. The research employed used secondary data to determine the extent to which macroeconomic factors such as inflation, interest rate, gross domestic product and exchange rate are affect profitability of SMEs industry in Kenya. The chapter contains section 4.2 on descriptive statistics, section 4.3 on analytical model and section 4.4 on discussion and interpretation of the findings.

4.2 Descriptive Statistics

4.2.1 Exchange Rates Trend Analysis

As shown in figure 4.1 below, exchange rate of Kenya shilling versus the United States dollar volatility has been minimal. However, in October 2011, Kenya shilling depreciated and hit the highest rate in history at Ksh. 101.27. The Central bank was able to contain the same to reach Ksh. 86.67 in December 2011. However, thereafter, the Kenya shilling has continued to depreciate with the same remains relatively volatile.

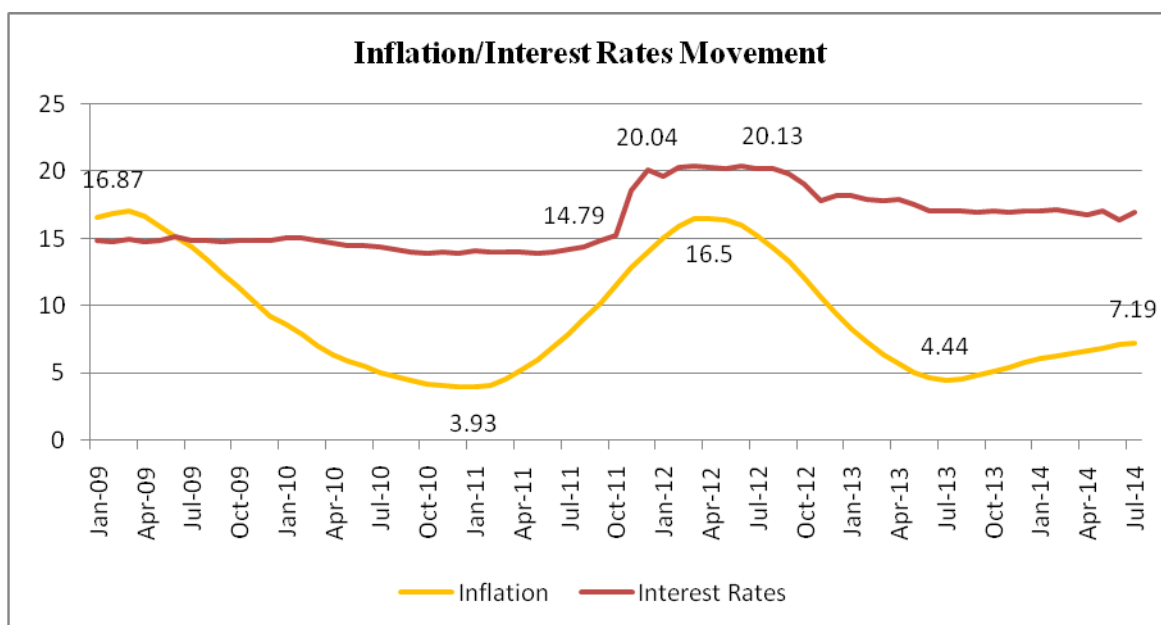
Figure 4.1: Exchange Rate Trend Analysis



4.2.2 Inflation/Interest Rate Trend Analysis

The inflation and interest rate movement for the period January 2009 to July 2014 are shown in figure 4.2 below. The figure shows that inflation rates have been very volatile over the period dropping from 16.87% in January 2009 to 3.93% in January 2011 to 16.5 in April 2012 to 4.44% in January 2013 and closing at 7.9% in July 2014. Interest rates on the other hand remained stable from January 2009 to July 2011 and raising from 14.79% in July 2011 to 20.04% in October 2011. Thereafter, the interest rates have been declining.

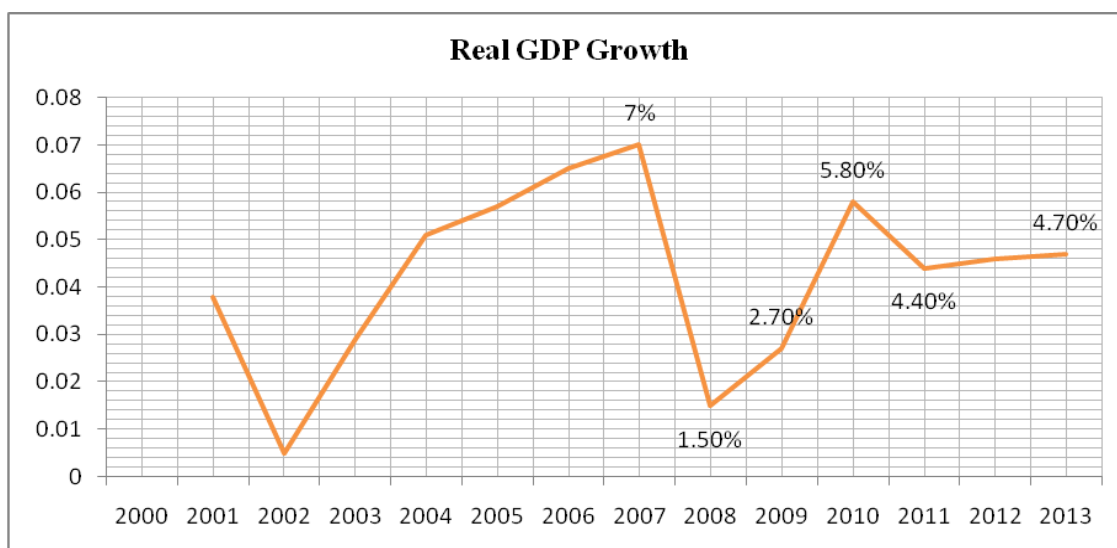
Figure 4.2: Inflation/Interest Rates Movements



4.2.3 Gross Domestic Product (GDP) Trend Analysis

As shown in figure 4.2 below, real GDP continued to grow at a high rate between 2002 and 2007 and declined from 7% in 2007 to 1.5% in 2008. Thereafter, GDP continued to rise from 2.7% to 5.8% in 2010, decline to 4.4% in 2011, continued to rise to 4.7% in 2013.

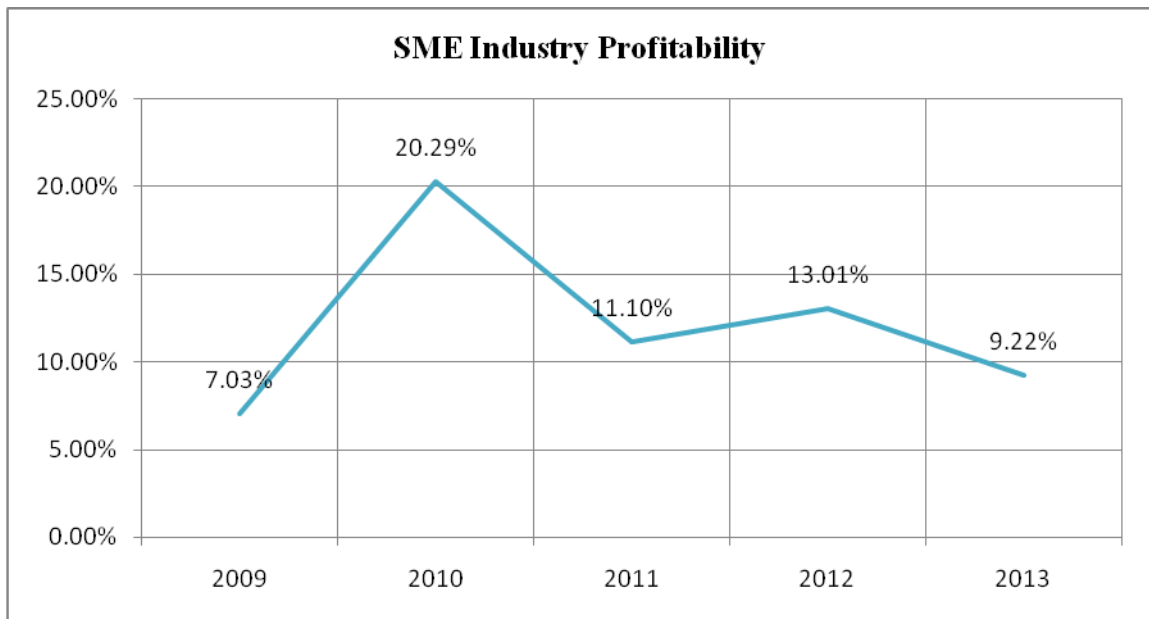
Figure 4.3: Real GDP Movement



4.2.4 Small and Micro Enterprises Profitability Trend Analysis

As shown in figure 4.4 below, SMEs profitability increased from 7.03 in 2009 to 20.29% in 2010, reduced to 11.10% of 2011, increased to 13.01 in 2012 and decreased to 9.22% in 2013.

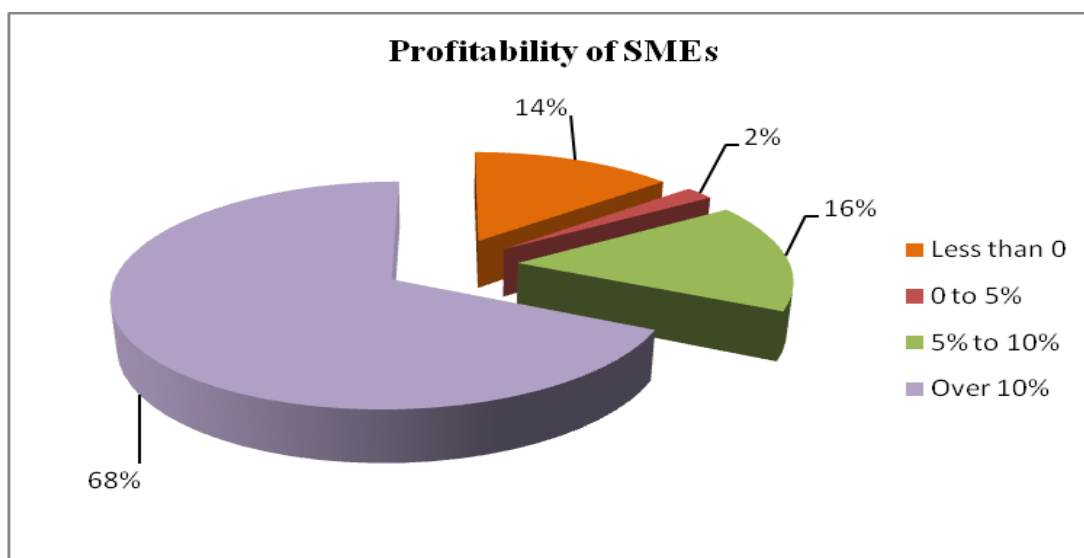
Figure 4.4: SMEs Profitability trend Analysis



4.2.5 Small and Micro Enterprises Profitability

As shown in figure 4.5 below, 68% of the studied SMEs had return on assets of over 10%, 16% ROA of 5-10%, 14% negative ROA and 2% ROA of 0 to 5%. Notably, 84% of SMEs had positive ROA implying that SMEs in Nairobi County are profitable.

Figure 4.5: SMEs Profitability



4.3 Correlation Analysis

As shown in table 4.1 below, exchange rates are negatively related to SMEs industry profitability as shown by coefficient of correlation (R) of -0.16. However, the effect of exchange rates on SMEs industry profitability is not significant as shown by p value of 0.7953 which is bigger than 0.05. Inflation is negatively related to SMEs industry profitability. This is shown by the coefficient of correlation of -0.427. The coefficient of determination of 0.18 implies that inflation accounts up to 18% of the changes in SMEs industry. The effect of inflation rates on SMEs industry profitability is significant as shown by p value of 0.0047 which is less than 0.05.

Interest rates are negatively related to SMEs industry profitability. This is shown by the coefficient of correlation of -0.153. The coefficient of determination of 0.02 implies that interest rates accounts up to 2% of the changes in SMEs industry. The effect of interest rates on SMEs industry profitability is significant as shown by p value of 0.0081 which is less than 0.05.

Real GDP growth rates are positively related to SMEs industry profitability. This is shown by the coefficient of correlation of 0.8574 which shows a strong relationship between GDP growth rate and SMEs profitability. The coefficient of determination of 0.7351 implies that GDP growth rate accounts up to 73% of the changes in SMEs industry.

Table 4.1: Correlation Analysis

		ROA	Exchange Rate	Inflation Rates	Interest Rates	GDP
ROA	Pearson Correlation	1				
Exchange Rate	Pearson Correlation	-0.1615	1			
Inflation Rates	Pearson Correlation	-0.4270	-0.2996	1		
Interest Rates	Pearson Correlation	-0.1533	0.3951	0.3731	1	
GDP	Pearson Correlation	0.8574	0.2589	-0.6905	0.0818	1

4.4 Regression Analysis

The coefficient of correlation of 0.9237 in table 4.2 below shows a strong positive relationship between the dependent and independent variables. The coefficient of determination of 0.85 implies that the model obtained accounts for up to 85% of the changes in profitability of SMEs industry.

Table 4.2: Macroeconomic variables model summary

R	R Square	Adjusted R Square	Std. Error of the Estimate
0.9237	0.8532	0.7532	0.00291

As shown in table 4.3 below, the effect of macroeconomic variables on SMEs industry profitability is significant as shown by p value of 0.0000 which is less than 0.05.

Table 4.3: Macroeconomic Variables model ANOVA

	Sum of Squares	df	Mean Square	F	P Value
Regression	102.82	4	25.7038	0.0371	0.0000
Residual	0.00	0			
Total	102.82	4			

The model coefficient are shown in table 4.4 below, the coefficients are significant as shown by p values are less than 0.05. The model coefficients show that GDP growth is the single factor with positive and highest effect on SMEs industry profitability. Interest rates have the highest effect of SMEs profitability, followed by inflation and finally exchange rates. The model developed is $P = 6.49 + 6.3GDP - 0.76INFL - 1.03INT - 0.15ER$;where; P is SME industry profitability as measured by average annual return on assets, GDP is annual GDP rate, INF_t is the annual inflation rate, INT is annual average interest rates, ER is annual average exchange rate of Kenya shillings against the United States Dollar.

Table 4.4: Macroeconomic model coefficients

	Unstandardized Coefficients	Standardized Coefficients	t	P Value
Constant	6.4866015			0.0225
Real GDP	6.2943607	1.384168	3.655621	0.0084
Exchange Rates	-0.152617	-0.14415	0.546736	0.0017
Inflation Rates	-0.757019	-0.655014	0.9265	0.0026
Interest Rates	-1.035285	-0.45404	0.2175	0.0017

4.5 Discussion of Research Findings

The study sought to determine the effect of macroeconomic variables on profitability of small and micro enterprises industry in Nairobi using secondary data. The study found that interest rates, inflation rates and exchange rates are negatively related to SMEs profitability while GDP growth has strong positive relationship with SMEs profitability. Exchange rates are negatively related to SMEs industry profitability as shown by coefficient of correlation (R) of -0.16.

The coefficient of determination of 0.026 implies that exchange rates movement explains 2.6% of SMEs industry profitability. The effect of exchange rates on SMEs industry profitability is not significant as shown by p value of 0.7953 which is bigger than 0.005. This could be explained by the fact that most of the studied firms did not have a lot of foreign currency dominated currencies and/or were not relying heavily on imported raw materials.

Inflation was also found to be negatively related to SMEs industry profitability. This was shown by the coefficient of correlation of -0.427. The coefficient of determination of 0.18 implied that inflation accounted up to 18% of the changes in SMEs industry. The effect of inflation rates on SMEs industry profitability was found to be significant as shown by p value of 0.0047 which is less than 0.005. Interest rates were also negatively related to SMEs industry profitability as shown by the coefficient of correlation of -0.153. The coefficient of determination of 0.02 implied that interest rates accounted up to 2% of the changes in SMEs industry. The effect of interest rates on SMEs industry profitability was significant as shown by p value of 0.0081 which is less than 0.005.

Real GDP growth rates were positively related to SMEs industry profitability as shown by coefficient of correlation of 0.8574 which showed a strong relationship between GDP growth rate and SMEs profitability. The coefficient of determination of 0.7351 implies that GDP growth rate accounts up to 73% of the changes in SMEs industry. The effect of GDP growth rates on SMEs industry profitability was significant as shown by p value of 0.0132 which is less than 0.005.

The effect of macroeconomic variables combined had a strong relationship with profitability as shown by coefficient of correlation of 0.9237. The coefficient of determination of 0.85 implied that the model obtained accounted for up to 85% of the changes in profitability of SMEs industry. The effect of macroeconomic variables on SMEs industry profitability was found to be significant as shown by p value of 0.0000 which is less than 0.005. The model coefficients showed that GDP growth was the single factor with positive and highest effect on SMEs industry profitability. Interest

rates had the highest effect of SMEs profitability, followed by inflation and finally exchange rates. The model developed from the study was $P = 6.49 + 6.3GDP - 0.76INFL - 1.03INT - 0.15ER$ where P is SME industry profitability as measured by average annual return on assets, GDP is annual GDP rate, INF is the annual inflation rate, INT is annual average interest rates, ER is annual average exchange rate of Kenya shillings against the United States Dollar.

The study results were consistent with those of Oriwo (2012) who found that the effect of macroeconomic variable could either be positive or negative depending on which variable is being put under consideration. Also, Vladimir (2010) found that a stable exchange rate environment offered predictable costs of operation to SMEs and minimizes exchange losses incurred by the firms and promoting industry's profitability through reduced foreign exchange loss and stable costs of production. In addition, Osoro and Ogeto (2014) found is evidence that foreign exchange, interest rate and inflation rate had significant effects on the performance of the firms in the construction and manufacturing sectors on the performance of the agricultural sector was however insignificant at 95% confidence level. The findings on GDP effect on profitability of SMEs are consistent with those of Vladimir (2010) who concluded that an economy with stable economic growth translated to constant and predicable demand and firm profitability.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter summarizes the study findings in chapter four. Specifically, the chapter contains the conclusions from the study and recommendations drawn from the findings. The chapter finally covers limitations of the study and suggestions for further study in the quest of addressing the research question or achieving the research objective.

5.2 Summary of Findings

This study was conducted with the aim of establishing the effect of selected macroeconomic variables on profitability of small and micro enterprises industry in Nairobi. To achieve the above objective, a regression analysis was conducted whereby SME industry profitability was regressed against four predictor variables; interest rates, inflation rates, exchange rates and GDP growth rate for the period spanning 2009 to 2013. Data for both the dependent and predictor variables were obtained from the Central Bank of Kenya publications and financial statements of sampled SMEs. The two sets of data were then subjected to a regression analysis each predictor individually and combined to determine their effect on profitability.

The study found that interest rates, inflation rates and exchange rates are negatively related to SMEs profitability while GDP growth has strong positive relationship with SMEs profitability. Exchange rates were found to be negatively related to SMEs industry profitability as shown by coefficient of correlation (R) of -0.16. However, the effect of exchange rates on SMEs industry profitability was not significant. This was explained by the fact that most of the studied firms did not have a lot of foreign currency dominated currencies and/or were not relying heavily on imported raw materials.

Inflation was also found to be negatively related to SMEs industry profitability with coefficient of correlation of -0.427. The coefficient of determination of 0.18 implied that inflation accounted up to 18% of the changes in SMEs industry. The effect of inflation rates on SMEs industry profitability was found to be significant at 95% confidence level. Interest rates were also negatively related to SMEs industry profitability as shown by the coefficient of correlation of -0.153. The coefficient of determination of 0.02 implied that interest rates accounted up to 2% of the changes in SMEs industry. The effect of interest rates on SMEs industry profitability was significant at 95% confidence level. Real GDP growth rates were strongly and positively related to SMEs industry profitability as shown by coefficient of correlation of 0.8574. The coefficient of determination of 0.7351 implied that GDP growth rate accounted for up to 73% of the changes in SMEs industry. The effect of GDP growth rates on SMEs industry profitability was significant as shown by p value of 0.0132 which is less than 0.005.

The effect of macroeconomic variables combined had a strong relationship with profitability as shown by coefficient of correlation of 0.9237. The coefficient of determination of 0.85 implied that the model obtained accounted for up to 85% of the changes in profitability of SMEs industry. The model coefficients showed that GDP growth was the single factor with positive and highest effect on SMEs industry profitability. Interest rates had the highest effect of SMEs profitability, followed by inflation and finally exchange rates. The model developed from the study was $P = 6.49 + 6.3GDP - 0.76INFL - 1.03INT - 0.15ER$ where P is SME industry profitability as measured by average annual return on Assets, GDP is annual GDP rate, INF is the annual inflation rate, INT is annual average interest rates, ER is annual average exchange rate of Kenya shillings against the United States Dollar.

5.3 Conclusion

Based on the study findings, the study concludes that macro economic variables affect profitability of SMEs in Nairobi County but the direction of the effect depend on the specific variable. Interest rates and inflation rates have significant negative effect on profitability of small and micro enterprises industry in Nairobi County. This is because high lending rates tend to discourage companies from financing projects through loans from Commercial banks and thus reducing level of their operations. Inflation on the other hand reduces the purchasing power of money consequently reducing SMEs sales. It also increases SMEs costs and firms find it hard to increase their revenues at the same rate as increase in costs.

Exchange rates are also negatively related to SMEs profitability even though the effect is not statistically significant. The insignificant relationship between exchange rates and profitability could be due to the fact that most of the studied firms did not have a lot of foreign currency dominated currencies and/or were not relying heavily on imported raw materials. The negative effect of exchange rates on profitability is as a result of high cost of production and increase in foreign currency losses.

The study also concludes that GDP growth has strong positive relationship with SMEs profitability where growth in real GDP leads to higher SMEs industry profitability. This is because growth in GDP increases consumer purchasing power and hence increased SMEs sales leading to increase in firms' performance. The study also concludes that macroeconomic variables combined have strong relationship with profitability of SMEs. Macroeconomic variables can account for 85% of the changes in profitability of SMEs industry. Finally, the study concludes that exchange rates in Kenya have been on the rise since 2012 which is not healthy for SME industry.

5.4 Recommendations

SME sector is the backbone of Kenyan economy and therefore, measures to ensure that the sector remains profitable are essential. Therefore, from the study findings, there is need for the Central Bank of Kenya to formulate policies to stabilize macroeconomic variables. Specifically, the CBK should formulate policies to ensure that exchange rates are contained since they have been on the rise since 2012 and continue to rise; of which, if they continue to rise, profitability of SME industry will be negatively affected.

Secondly, the study recommends that the government to come up with measures to ensure that economic growth remains stable and on the rise. This is based on the finding that GDP growth is strongly and positively related with profitability of SMEs sector.

Profitability of SME industry in Nairobi was found to be high. As a result, the study recommends that policies to encourage formation of SMEs be put in place measures to ensure that more SMEs are started to create employment and further promote economic growth. Finally, the study recommends that the government to ensure that interest rates and inflation remain low since high inflation and interest rates hinders profitability of SMEs.

5.5 Limitations of the Study

The study used secondary data to make conclusions about the findings. The reliance of the study on secondary data was the key limitation of the study since the accuracy of the information could not be verified. In addition, use of secondary data alone excludes valuable information that can be obtained from primary sources like observation and interviews. Secondly, the study sample was obtained from SMEs in Nairobi County.

Secondly, the study only concentrated on SMEs in Nairobi County. The SMEs in Nairobi County cannot be representative of all SMEs in Kenya nor other localities or Counties. In addition, the sample size of a 100 was small but manageable with the resources available. However, to make better conclusions, increasing the SMEs to more than 10% of the total population would be more representative.

Thirdly, the respondents were reluctant to provide information. This was due to confidentiality fears on the provided information. However, the researcher made efforts to assure the respondents on the confidentiality in use of information provided. Due to strict internal policies on sharing financial information, the researcher had to do follow ups and seek such permission from the SMEs top management.

5.6 Suggestions for Further Research

Since this study only limited itself to the SMEs in Nairobi County and hence the same may not have been representative, the further study is recommended on the effect of macroeconomic variables on profitability of SMEs on other counties. The study can narrow down to a single county multiple counties to ensure optimal representation of all SMEs in Kenya.

This study used a small sample of SMEs to represent the SMEs industry due to inadequate resources and human capacity. With availability of more resources, further research is recommended using a large sample since the study only used 100 SMEs which cannot be representative of all SMEs in Kenya.

Further research can be done on the effect of macroeconomic factors on profitability of SMEs but using both primary and secondary data. Using primary data collected using questionnaires and interviews can provide key information which can lead to better conclusions. The effect for example of the study not finding significant effect of exchange rates on profitability could be as a result of the management of SMEs better managing the same.

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APPENDICES

Appendix I: SME Profitability

SME	2013	2012	2011	2010	2009	Average ROA
1	4.36%	12.41%	12.16%	-57.98%	7.34%	-4.34%
2	4.36%	13.55%	12.19%	-56.67%	7.34%	-3.84%
3	4.37%	13.51%	12.16%	-55.61%	7.37%	-3.64%
4	4.37%	13.57%	12.20%	-55.45%	7.38%	-3.59%
5	4.38%	13.72%	12.36%	-53.82%	7.37%	-3.20%
6	4.41%	13.71%	12.27%	-53.18%	7.37%	-3.08%
7	4.39%	13.88%	12.27%	-51.27%	7.38%	-2.67%
8	4.39%	13.88%	12.28%	-50.08%	7.33%	-2.44%
9	4.38%	14.50%	12.43%	-50.09%	7.31%	-2.29%
10	4.39%	14.48%	12.47%	-50.09%	7.33%	-2.28%
11	12.05%	12.11%	-10.53%	-17.86%	-6.92%	-2.23%
12	-4.23%	15.42%	-12.47%	3.47%	-7.34%	-1.03%
13	-11.39%	12.76%	10.13%	-19.18%	6.77%	-0.18%
14	-12.13%	12.15%	10.58%	-18.26%	6.93%	-0.15%
15	11.00%	12.96%	9.86%	-26.67%	-6.70%	0.09%
16	-12.10%	12.17%	-10.51%	18.13%	6.93%	2.92%
17	13.33%	12.10%	11.39%	-17.49%	7.17%	5.30%
18	4.23%	14.48%	12.49%	3.50%	7.34%	8.41%
19	4.45%	12.31%	12.03%	6.06%	7.26%	8.42%

SME	2013	2012	2011	2010	2009	Average ROA
20	4.46%	12.31%	12.03%	6.04%	7.28%	8.42%
21	4.46%	12.12%	12.00%	6.73%	7.28%	8.52%
22	2.01%	14.45%	12.42%	6.60%	7.27%	8.55%
23	4.39%	12.33%	12.10%	6.64%	7.33%	8.56%
24	4.40%	12.31%	12.03%	6.88%	7.28%	8.58%
25	4.37%	12.40%	12.15%	6.65%	7.34%	8.58%
26	13.68%	12.07%	11.39%	-0.57%	7.20%	8.75%
27	4.34%	14.62%	12.55%	5.11%	7.34%	8.79%
28	4.35%	14.49%	12.43%	5.91%	7.34%	8.90%
29	4.34%	14.43%	12.43%	7.11%	7.31%	9.12%
30	4.27%	14.86%	12.53%	7.47%	7.34%	9.29%
31	4.33%	14.73%	12.50%	9.16%	7.35%	9.61%
32	12.05%	12.11%	10.53%	7.56%	6.92%	9.83%
33	12.07%	12.16%	10.55%	9.20%	6.89%	10.17%
34	12.04%	12.15%	10.56%	9.36%	6.88%	10.20%
35	2.22%	14.48%	12.45%	15.05%	7.28%	10.30%
36	10.91%	12.69%	9.58%	12.00%	6.68%	10.37%
37	13.86%	12.23%	11.95%	6.85%	7.25%	10.43%
38	4.25%	14.58%	12.53%	13.59%	7.35%	10.46%
39	4.49%	12.14%	11.94%	16.52%	7.28%	10.47%
40	14.08%	12.21%	11.95%	8.54%	7.27%	10.81%
41	13.97%	12.16%	11.97%	8.91%	7.26%	10.85%

SME	2013	2012	2011	2010	2009	Average ROA
42	13.80%	12.25%	11.64%	9.85%	7.25%	10.96%
43	10.86%	12.60%	9.57%	15.76%	6.66%	11.09%
44	10.78%	12.61%	9.47%	16.22%	6.66%	11.15%
45	10.73%	12.57%	9.50%	16.47%	6.68%	11.19%
46	4.27%	14.53%	12.48%	17.49%	7.28%	11.21%
47	11.78%	12.38%	10.54%	17.09%	6.88%	11.73%
48	11.49%	12.59%	10.34%	17.83%	6.79%	11.81%
49	11.49%	12.57%	10.34%	17.81%	6.84%	11.81%
50	11.54%	12.55%	10.49%	17.89%	6.85%	11.86%
51	11.78%	12.38%	10.54%	17.91%	6.88%	11.90%
52	12.04%	12.15%	10.56%	17.94%	6.88%	11.91%
53	12.07%	12.16%	10.55%	17.92%	6.89%	11.92%
54	11.49%	12.73%	10.29%	18.31%	6.77%	11.92%
55	11.78%	12.55%	10.45%	18.09%	6.85%	11.95%
56	11.81%	12.58%	10.48%	18.01%	6.86%	11.95%
57	11.28%	12.62%	9.98%	19.23%	6.71%	11.97%
58	12.06%	12.17%	10.57%	18.16%	6.93%	11.98%
59	11.74%	12.73%	10.45%	18.11%	6.86%	11.98%
60	11.24%	12.52%	9.89%	19.53%	6.71%	11.98%
61	11.40%	12.74%	10.10%	18.91%	6.76%	11.98%
62	11.10%	12.57%	9.89%	19.68%	6.70%	11.99%
63	4.31%	14.61%	12.40%	21.39%	7.29%	12.00%

SME	2013	2012	2011	2010	2009	Average ROA
64	11.84%	12.66%	10.49%	18.19%	6.87%	12.01%
65	11.29%	12.73%	9.97%	19.42%	6.70%	12.02%
66	11.17%	12.52%	9.92%	19.79%	6.71%	12.02%
67	11.40%	12.81%	10.10%	19.10%	6.71%	12.02%
68	11.21%	12.66%	10.00%	19.57%	6.70%	12.03%
69	11.11%	12.62%	9.90%	19.84%	6.70%	12.03%
70	11.14%	12.63%	9.90%	19.96%	6.69%	12.06%
71	11.31%	12.82%	10.11%	19.38%	6.71%	12.07%
72	11.34%	12.79%	10.11%	19.40%	6.69%	12.07%
73	12.37%	12.25%	10.73%	18.23%	7.00%	12.12%
74	12.44%	12.32%	11.01%	17.85%	7.03%	12.13%
75	12.60%	12.23%	10.75%	18.17%	7.01%	12.15%
76	12.54%	12.32%	10.98%	18.15%	7.03%	12.20%
77	12.42%	12.33%	11.01%	18.26%	7.03%	12.21%
78	12.85%	12.26%	11.01%	17.86%	7.10%	12.21%
79	10.88%	12.94%	9.62%	21.29%	6.70%	12.29%
80	13.21%	12.26%	11.04%	17.87%	7.16%	12.30%
81	13.35%	12.19%	11.12%	17.74%	7.17%	12.31%
82	11.05%	12.83%	9.91%	21.13%	6.69%	12.32%
83	13.25%	12.19%	11.34%	17.75%	7.18%	12.34%
84	11.07%	12.92%	9.86%	21.55%	6.70%	12.42%
85	11.01%	12.96%	9.80%	21.87%	6.67%	12.46%

SME	2013	2012	2011	2010	2009	Average ROA
86	10.78%	12.46%	9.49%	23.02%	6.65%	12.48%
87	4.29%	14.71%	12.43%	23.73%	7.30%	12.49%
88	4.26%	14.82%	12.52%	24.67%	7.35%	12.73%
89	13.65%	12.19%	11.54%	19.01%	7.24%	12.73%
90	13.67%	12.22%	11.39%	19.37%	7.24%	12.78%
91	13.65%	12.18%	11.63%	19.21%	7.23%	12.78%
92	10.82%	12.74%	9.59%	24.36%	6.68%	12.84%
93	4.26%	15.17%	12.43%	25.54%	7.32%	12.94%
94	4.27%	14.94%	12.44%	25.88%	7.32%	12.97%
95	10.91%	12.76%	9.59%	25.34%	6.68%	13.05%
96	4.26%	15.45%	12.41%	26.31%	7.34%	13.16%
97	4.26%	15.18%	12.41%	28.82%	7.34%	13.60%
98	10.93%	12.93%	9.77%	27.89%	6.70%	13.64%
99	11.05%	12.95%	9.81%	27.84%	6.69%	13.67%
100	10.99%	12.97%	9.81%	29.50%	6.71%	14.00%

Source: SMEs Financial Statements

Appendix II: Macroeconomic Variables

Macro Economic Variable	Year	Mean	Min	Max	Median	Std Dev
Exchange Rates	2009	77.3520	74.7390	80.2610	77.5000	1.9256
	2010	79.2330	75.7860	81.4260	78.6060	2.0343
	2011	88.8108	81.0290	101.2700	91.1495	6.2430
	2012	84.5283	82.8970	86.3430	84.6200	1.1173
	2013	86.1228	84.1460	87.4930	85.8195	1.1785
	2014	87.0750	86.2140	88.1060	87.1600	0.7369
Inflation Rates	2009	14.1117	9.2400	17.0700	13.1550	2.7446
	2010	5.6142	3.9600	8.6400	6.3000	1.5685
	2011	7.9917	3.9300	14.0200	8.9750	3.5054
	2012	14.2775	9.3800	16.5000	12.9400	2.4197
	2013	5.5625	4.4400	8.2000	6.3200	1.1715
	2014	6.7438	6.0100	7.6700	6.8400	0.5526
Interest Rates	2009	14.8042	14.6700	15.0900	14.8800	0.1072
	2010	14.3592	13.8500	14.9800	14.4150	0.4125
	2011	15.0492	13.8800	20.0400	16.9600	2.0420
	2012	19.6483	17.7800	20.3400	19.0600	0.8769
	2013	17.3092	16.8600	18.1300	17.4950	0.4634
	2014	16.8486	16.3600	17.0600	16.7100	0.2452

Year	2009	2010	2011	2012	2013
GDP	2.7	5.8	4.4	4.6	4.7

Source: Central Bank of Kenya