EFFECTS OF MACRO ECONOMIC FORCES ON PERFORMANCE OF CONSTRUCTION AND ALLIED COMPANIES LISTED AT THE NAIROBI SECURITIES EXCHANGE (2004 TO 2013)

BY
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A Project Report Submitted to the Chandaria School of Business in Partial Fulfillment of the Requirement for the Degree of Masters of Business Administration (MBA)

UNITED STATES INTERNATIONAL UNIVERSITY

SUMMER 2015
DECLARATION
I, the undersigned, declare that this is my original work and has not been submitted to any other college, institution or university other than the United States International University in Nairobi for academic credit.

Signed: __________________________ Date: __________________________
Mariam Makori (Id No: 631874)

This project has been presented for examination with my approval as the University supervisor.

Signed: __________________________ Date: __________________________
Prof. Amos Njuguna

Signed: __________________________ Date: __________________________
Dean, Chandaria School of Business
ABSTRACT
The purpose of the study was to determine the influence of macroeconomic forces on performance of construction and allied companies listed at the NSE between the years 2004 to 2013. The study specifically sought to investigate the: effect of GDP growth on performance of construction and allied enterprises in Kenya, effect of exchange rate volatility on performance of construction and allied enterprises in Kenya and effect of inflation on performance of construction and allied enterprises in Kenya.

This study was guided by the explanatory research design. Explanatory research implies that the research in question is intended to explain, rather than simply to describe, the phenomena studied. The population relevant to the study was five construction and allied companies listed at the NSE. Secondary data on GDP growth, inflation rates and exchange rates volatility was sourced from the Central Bank of Kenya and the World Bank database. Annual individual company financial performance measures of return on assets (ROA) and Tobin’s Q ratio was sourced from the individual five companies’ financial reports.

The collected data was analyzed using descriptive and inferential statistics to test the significance and direction of relationships between the study variables. Specifically, Correlation analyses show the association between study variables and multiple regression analysis shows the strength, directions and significance of the relationships. Correlation analyses establish statistically significant weak negative associations between; exchange rate volatility and GDP growth rate and GDP growth rate and Inflation rate. There is also a statistically significant weak positive association between exchange rate volatility and Inflation rate.

Regression analysis results suggest that the relationships between performance proxied by ROA and the predictor macroeconomic variables are not statistically significant. Multiple regression analyses establish weak positive relationships between performance proxied by (ROA) and GDP growth rate, inflation rate and exchange rate volatility.

The study findings suggest a weak positive none statistically significant relationship between performance measured by firm’s Tobin’s Q ratio and the GDP growth rate. This confirms that when there is economic growth in a country, firm performance is equally boosted with good returns to the capital owners.
The study establishes a weak positive relationship between performance proxied by the Tobins Q ratio and Inflation rate. Though high levels of inflation are not suitable for overall economic performance, the beneficiaries of general increase in price levels of commodities are the producers which also include the manufacturers. Commodity price increases improves the profitability of the manufacturers.

The study findings imply that there is a weak negative relationship between firm performance measured as Tobin’s Q ratio and Exchange rate volatility experienced in the economy. Since the manufacturers often import their inputs before processing, exchange rate risks may be detrimental to their performance as they have to incur transaction exposure losses or costs to manage such exposures.

In efforts to improve the overall firm performance and subsequently economic performance, Government should put in place efforts for improved and sustainable economic growth which enhances employment creation and stimulates the general demand for manufactured goods. Though, inflation characterized by sustainable increase in price levels is conducive for profit maximization, government policy should be focused on maintaining inflation at reasonable levels that do not disturb the optimal levels of domestic commodities consumption by encouraging importation of cheaper commodities and subsequently stifle domestic manufacturing. Since frequent fluctuations in exchange rates negatively affect manufacturing firm performance on account of their foreign currency denominated transactions, firms should introduce contractual and non-contractual techniques for managing their exposures. Government policy can also be directed towards limiting exchange rate fluctuations through government fiscal and monetary policy intervention mechanisms.

The study recommends further research incorporating other macroeconomic forces that include money supply, interest rates, balance of payments and government fiscal policy. The studies with lagged predictor variables to account for the effect of time should control for the influence of hedging alternatives on firm performance as well as other firm specific attributes.
ACKNOWLEDGEMENT
I extend my deep felt gratitude to all the people who offered their support and assistance. Particularly, I express thanks to my supervisor Prof. Amos Njuguna for the patience and providing a lot of assistance and guidance throughout the research period. Appreciation also goes to my loving family for their unreserved understanding and support throughout the many hours I was undertaking the study. I won’t fail to remember to recognize the Reference of other authors for their work which helped me a lot in developing the study. Lastly, I thank the ever living God for providing the health, ability, resources and energy to make this research report become a reality.
DEDICATION

This work is dedicated to my family and workplace colleagues.
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CHAPTER ONE
1.0 INTRODUCTION
1.1 Background of the Study
All firms work within complex environments which are characterized by a relatively more dynamic, uncertain, and complex environment. Goll and Rasheed (2004) explain that firms depend upon their environments for both survival and success, and thus environment scanning and acquisition of information about events taking place outside the firm can be used to respond effectively to changes in the environment.

While arguing that organizational environments represent one of the major contingencies faced by the firm, Goll and Rasheed (2004) opine that various research studies explore environmental influences on organizational strategies, structures, processes and overall outcome.

As explained by Osoro and Ogeto (2014), the state of a country's economy affects the performance of its organizations. Whenever the economy is performing well, the expectation of investors and shareholders is that firms would perform well and thus overall increase in wealth. The performance of an economy is judged by the stability in macroeconomic variables like; exchange rate, inflation rate, consumer price index, Gross Domestic Product, stock market index and interest rates. Policy makers expect that these variables would remain favorable and stable to sustain business growth at both the macro and micro levels of the economy. It is also the wish of existing and potential investors that the macroeconomic factors remain favorable so as not to threaten the returns of their investments or securities.

Macroeconomic variables include economic growth represented by gross domestic product (GDP), interest rate, exchange rate and 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).

Eichengreen and Luengnaruemitchai (2004) posit that macroeconomic factors greatly influence economic growth. The macroeconomic factors deal with the structure,
performance, behavior and decision-making of the overall economy, rather than the
individual markets. Such Macroeconomic elements are therefore the main signposts
signaling the existing trends in the economy. In predicting profitability of firms,
Barrows and Naka (1994), Forbes (2000) and Bhattacharjee et al. (2002) found ample
evidence that the macroeconomic variables significantly explained the performance of
the company.

Influence of macroeconomic environment on domestic firm performance is explained
by Javorcik (2004) in the observation that attracting foreign direct investment is high
on the agenda of developing and transition economies policy makers because of the
expectations that FDI inflows would bring the desirable capital, new technologies,
marketing techniques and management skills.

Focusing on other key macroeconomic variable such as inflation, Taylor (2000) show
that the low inflation observed in many countries reduces the pricing power of firms.
Low inflation is associated with less persistent changes in costs and prices in the
economy. Nucci and Pozzolo (2001) illustrate that depreciation of exchange rates
positively affects firm investment through the revenue channel and negatively affects
firm investment through cost channel.

The Kenyan manufacturing sector is considered as one of the key segments of the
economy. In the Kenyan vision 2030 blue print, one of the key pillars of the attainment of
the objectives of the strategy is the need for the manufacturing sector to grow at the rate
of 8 per cent over a period of 20 years. This can only be achieved if there is growth in the
profits of the sector and this will depend upon identifying all the variables that can
influence profit of a firm including the management of working capital. The inability of a
firm to meet its obligations will lead to the disruption of its manufacturing process by
actions such as labor strikes and blacklisting by suppliers (Outlook, 2011).

Kenya manufacturing sector is the fourth biggest sector after agriculture, transport and
communications and whole sale and retail trade. It contributes about 18 per cent of
Kenya’s GDP serving both the local market and exports to the East and Central Africa
region. The sector employs about 2.3 Million in both Formal and informal sectors.
Although initially developed under the import substitution policy, Kenya’s manufacturing sector is now export based in line with the country’s policy of emerging as a mid-sized economy in the year 2030. The sector is loosely classified into twelve (12) sub-categories based on the raw materials the companies import and or the products they manufacture. The individual firm members are organized under the membership of Kenya Association of Manufacturers (KAM) to give them a platform for negotiating common position with the relevant government authorities (Business Intelligence, 2011).

The Mars Group (2011) explains that under the economic pillar of the Kenya vision 2030, manufacturing is one of the key sectors expected to deliver the envisaged 10 per cent economic growth rate per annum, by increasing and sustaining its contribution to Gross Domestic Product (GDP) by at least 10 percent per annum. The sector will also support the country’s social development agenda through creation of jobs, generation of foreign exchange, and attracting local and foreign investment. However, the performance of the sector has been affected by low capital injection, use of obsolete technologies and high costs of doing business which is attributed to poor state of physical infrastructure, limited access to finance, limited research and development, poor institutional framework, and inadequate managerial, technical and entrepreneuria skills. This has as a result led to the limited local and Foreign Direct investment (FDI) in the country and the high outflow of investment to the neighboring countries.

Key challenges facing the sector include high cost of production which is ever increasing due to poor infrastructure, regulation, tax administration and burden of government. There is also shrinking demand for locally manufactured goods due to rising poverty levels and reduced exports from general economic slump after the recent global recession. Other challenges includes security issues with recent cases of terror attacks, arbitrary charges levied by regulatory and local authorities, inadequate government support for local produce esp. procurement of local supplies, weak linkages with local supplies for example in agriculture, inadequate/weak negotiation skills in regional trade agreement and high costs of securing financial facilities with commercial banks. However opportunity for growth exists with the roll out of common tariff under the newly integrated EAC customs union as a result of Kenya’s manufacturing sector being the largest in the region (Outlook, 2011).
Another Key sector of Kenya’s economy is the construction industry. According to Mbiti (2008), the construction industry of Kenya provides the physical infrastructure necessary for the country’s economy, in way of buildings and civil engineering structures of various standards. The technology of building in Kenya is mainly reinforced concrete in urban areas, and mainly timber-and-earth in rural areas. For the country as a whole, building technology is currently a mixture of indigenous and non-indigenous technologies. Grass thatch, un-treated timber posts and mud are some of the indigenous construction materials, while cement, steel, dressed stone, treated timber, glass, metal sheets, plastics, paints and iron mongery are some of the non-indigenous building materials. Floor areas and heights of buildings are quite diverse, with more high-rise buildings in the urban areas than in the rural areas.

According to Richard, Devinney, Yip and Johnson (2009), organizational performance entail external measures of ultimate performance capturing three areas: First, financial performance such as profits, return on assets (ROA), return on investment capital (ROIC), return on equity (ROE), cash flow; Secondly, market performance such as sales, market share; and thirdly shareholder return such as total shareholder return, economic value added. Barney (2002) opines that the concept of performance of an organization can be equated to value creation. This value may relate to a positive change in the financial state of an organization based on the financial outcome resulting from improved return on investments (ROI) due to the outcome of better application of raw material, labour, capital and proper management of the resources.

The subject of financial performance has received significant attention from scholars in the various areas of business and strategic management. It has also been the primary concern of business practitioners in all types of organizations since financial performance has implications to organization’s health and ultimately its survival. High performance reflects management effectiveness and efficiency in making use of company’s resources and this in turn contributes to the country’s economy at large (Naser and Mokhtar, 2004). Padachi (2006) explain that a well designed and implemented financial management is expected to contribute positively to the creation of a firm’s value. The dilemma in
financial management according to Lazardis (2006) is to achieve desired tradeoff between liquidity, solvency and profitability.

A firm’s financial performance, in the view of the shareholder, is measured by how better off the shareholder is at the end of a period, than he was at the beginning and this can be determined using ratios derived from financial statements; mainly the balance sheet and income statement, or using data on stock market prices (Berger and Patti, 2002). These ratios give an indication of whether the firm is achieving the owners’ objectives of making them wealthier, and can be used to compare a firm’s ratios with other firms or to find trends of performance over time. Charreaux (1997) in Severin (2002), states that an adequate performance measure ought to give an account of all the consequences of investments, on the wealth of shareholders. The main objective of shareholders in investing in a business, is to increase their wealth. Thus the measurement of performance of the business must give an indication of how wealthier the shareholder, has become as a result of the investment over a specific time.

Firm performance measurement is derived from a wide spectrum of disciplines, including accounting, economics, human resource management, marketing, operations management, psychology, strategic management, and sociology (Hubbard, 2009). Performance measurement systems (PMSs) are recognized as a crucial element for improving business performance. Financial measures of performance commonly used include: Return on assets (ROA), Return on investments (ROI), Return on sales (ROS), Cash flow and market share. Developed in 1990s, the balanced score card (BSC) focuses on both financial and non-financial parameters such as, internal business processes, customer, learning and growth (Kaplan and Norton, 1992).

Mjos (2002) note that creation of new products, reduction in organizational costs, increase in overall revenue, improvement of customer service and improvement of work productivity are some of the objective measures to assess performance.

Tangen (2003) opine that there have been various measures of financial performance. For example return on sales reveals how much a company earns in relation to its sales, return on assets determines an organization’s ability to make use of its assets and return on equity reveals what return investors take for their investments. The advantages of financial measures are the easiness of calculation and that definitions are agreed worldwide. Traditionally, the success of a manufacturing system or company has been evaluated by the use of financial measures.

Various researchers have used different measures to capture organizational performance including net income, Sales (Dollinger, 1994), Return on Investments (ROI), Return on sales (ROS), and a combination of ROI and ROS (Pegels and Yang, 2000) and market to book value of the equity as well as profitability and market share/growth (Entrialgo, et al. 2000). Anthony (1990) utilized various performance measures such as average return on sales (ROS), average return on assets (ROA), and average growth in unit sales and further proposed that ROS was the best performance discriminator. Singh and Gu (1994) selected ROA, ROE, and net profit margin (NPM) as the measures of performance to determine the relationship between diversification and financial performance in the restaurant industry. Jogaratnam (1995) used sales level, ROS, market share, cash flow, sales growth rate, and net profit as performance measurements.

Some other researchers have approached the topic of performance measurement differently. Kish (1992) and Cho (1994) insisted that cash measures were the best predictors or measures for financial analysis. Kish (1992) found that the ratios dealing with cash flow problems are the best indicators to predict business failure in the food service industry. Cho (1994) pointed out that cash based measures reflect the real demand side of customer’s buying behaviors. The choice of measurement depends on what the measurer is interested in and what the measurement is for (Banker, Chang and Majumdar, 1996). Gill (1990) measures a firms’ financial performance by its
liquidity which is the amount of cash a company can put its hands on quickly to settle its debts. Liquidity funds consist of cash, short term investment for which there is a ready market, short term fixed deposits, trade debtors and bills of exchange receivable.

Liquidity measures the ability of the business to meet financial obligations as they come due, without disrupting the normal, ongoing operations of the business. Liquidity can be analyzed both structurally and operationally. Structural liquidity refers to balance sheet measures of the relationships between assets and liabilities and operational liquidity refers to cash flow measures. Solvency measures the amount of borrowed capital used by the business relative the amount of owner’s equity capital invested in the business. In other words, solvency measures provide an indication of the business’ ability to repay all indebtedness if all of the assets were sold. Solvency measures also provide an indication of the business’s ability to withstand risks by providing information about the operation’s ability to continue operating after a major financial adversity (Harrington and Wilson, 1999).

Profitability indicates and measures the extent to which a business generates a profit from the factors of production: labor, management and capital. Profitability analysis focuses on the relationship between revenues and expenses and on the level of profits relative to the size of investment in the business. Four commonly used measures of profitability are; return on assets (ROA), return on equity (ROE), operating profit margin and net margin (income) (Hansen and Mowen, 2005). Repayment capacity measures the ability to repay debt from both operation and non-operation income. It evaluates the capacity of the business to service additional debt or to invest in additional capital after meeting all other cash commitments. Measures of repayment capacity are developed around an accrual net income figure. The short-term ability to generate a positive cash flow margin does not guarantee long-term survivability (Jelic and Briston, 2001).

Kale (2014) explains the importance of firm profitability in an economy in the propositions that; first the profits to the firm mean income to the shareholders and hence spillover effects and multiplier effects for individual, households and the
economy in general. Secondly the corporate taxes that the government will earn will enable the implementation of infrastructure projects and social welfare programs. Thirdly when firms are profitable it means they can attract more investors and hence raising large capital for bigger and high returns projects. Finally profitable firms are able to employ more people hence creating employment which ultimately lead poverty reduction.

1.2 Statement of the Problem
Firm’s performance is the measurement of what has been attained by the firm, which is an indicator of the good conditions for a period of time. The objectives of measuring performance are to obtain very useful information about flow of funds, the uses of firm finances, their efficiency and effectiveness. Besides, the managers are able to make best decisions from the information on firm’s performance (Almajali et al, 2012). Previous studies by Brown and Ball (1997), Gonedes (1993), Magee (1974), Venkatraman and Ramanujam (1996) argued that corporate profits are affected by macroeconomic events. While Cameron and Whetten (1983) argue that the company profits are influenced by the organizational effectiveness. Macroeconomic factors such as interest rates in the market, the regulatory frameworks, the exchange rates and level of competition have an impact on the financial performance of any firm.

In the US manufacturing industry, Gertler and Girchrist (1991) established that monetary policy has a relatively larger impact on performance of small manufacturing firms especially due to the direct impact on monetary policy and the indirect impact working through the overall decline in economic activity. Forbes (2002) investigate how major depreciations of currencies affect different attributes of firm performance and indicate that in the year after currency depreciation, firms have higher growth in market capitalization but lower growth in net income which are both significant. Firms with higher levels of foreign sales have better performance after currency depreciation. The study establishes that firms with higher debt ratios have lower net income growth and large firms have worse performance as compared to the smaller firms.
Baum, Caglayan, Ozkan and Talavera (2004) investigate the effects of macroeconomic volatility on non-financial firm’s cash holding behavior and confirm that cash holdings of large firms, high-growth firms, financially constrained firms and capital-intensive firms are more sensitive to variations in macroeconomic volatility than are those of smaller or more slowly growing firms, those which are labor-intensive or those which do not face financial constraints. This finding supports the proposition that macroeconomic uncertainty is a significant determinant of firms’ cash holding behavior, with the size of its impact differing substantially across firm classifications.

Hansen and Warnerfelt (1989) integrated two sample models of firm performance, one from the economic paradigm and one from the organizational paradigm. The study results confirm the importance and independence of both sets of factors in explaining firm performance. The results suggest that organizational factors explain about twice as much variance in firm profit rates as economic factors. Hawawini, Subramanian and verdin (2003) revisit the question of whether firm’s performance is driven primarily by industry or firm specific factors. The study uncovers an important phenomenon that may in large part be responsible for the strong firm effect. Only for a few dominant value creators (leaders) and destroyers (losers) do firm-specific assets matter more than industry factors. For most firms, i.e. for those that are not notable leaders or losers in their industry, the industry effect turns out to be more important for performance than firm-specific factors. These conflicting findings by Hansen and Warnerfelt (1989) and Hawawini, et al. (2003) lead to further curiosity on the exact relationships between macroeconomic factors and performance of enterprises and if the relationships are affected by firm specific characteristics.

In Kenya, significance of firm characteristics on organizational performance is established by various scholars. Kale (2014) and Siro (2013) establish the significance of capital structure, Kaguri (2013) establish the significance of size, diversification, leverage, liquidity and age, Aduda (2012) establish the significance of executive compensation and Ongore and Kobonyo (2011) show significant relationships between ownership forms, managerial discretion and firm performance. In the Kenyan manufacturing sector, various studies have attempted to explore the determinants of
firm performance. Lundvall and Battese (2005) find that firm size has a positive and significant effect in technical efficiency in wood and textile sectors. Firm age is insignificant in all sectors except for textiles industry. Nkrunziza (2005) models firm survival in Kenya with emphasis of effect of credit on firm resilience in a challenging economic environment. The study finds that older firms appear to have resisted failure better than younger ones, but there is no evidence that large firms had higher survival rates. The studies by Lundvall and Battese (2005) and Nkrunziza (2005) investigate the effect of firm specific factors (size and age) on firm performance but doesn't address the effects of the macroeconomic variables.

Given that no specific study known to the researcher has attempted to investigate the effects of various macroeconomic indicators on performance of construction and allied companies in Kenya, This study prompts questions as: What are the effects of GDP growth on performance of construction and allied companies in Kenya? What are the effects of inflation of performance of construction and allied companies in Kenya? What are the effects of exchange rate volatility on performance of construction and allied companies in Kenya?

1.3 Purpose of the Study
The purpose of this study was to investigate the effect of macro-economic factors on financial performance of construction and allied companies in Kenya.

1.4 Research Questions
The study was guided by three specific questions as:
1.4.1 What are the effects of GDP growth on performance of construction and allied companies in Kenya?
1.4.2 What are the effects of inflation on performance of construction and allied companies in Kenya?
1.4.3 What are the effects of exchange rate volatility on performance of construction and allied companies in Kenya?
1.5 Justification of the Study

1.5.1 Management of Companies
One reason why the influence of macroeconomic uncertainty on firm profitability is vital is the implication of results for performance forecasting and measurement, risk management and resource allocation decisions. Company managers formulate strategies that maximize on opportunities and optimal risk management options on the basis of the research findings. Management is vitally concerned with future earnings prediction for planning, budgetary and control purposes while auditors benefit from profit forecasts in their analytical reviews of clients financial statements.

1.5.2 Investors and Market Analysts
The application of information on macroeconomic basics helps financial market traders and money market analysts to manage better their investments and portfolios. Financial and Investment analysts advice clients on diverse issues of securities valuation that are relevant including new investment opportunities, new issue valuation and takeover valuation initiatives. The effect of the macro environment on profitability and subsequently firm value is of significance in investment analysis and decision making.

1.5.3 Academicians and Researchers
This study acts as a source of reference and information to other researchers to develop on the topic of macro economy and micro performance. In addition, the study directs the attention of researchers and academics on probing the macroeconomics and corporate performance nexus.

1.6 Scope and Limitation of the Study
The scope of the study was limited to thirteen manufacturing companies listed at the Nairobi securities exchange who are members of the Kenya association of manufacturers (KAM). The macroeconomic data included the GDP, Inflation and exchange rates volatility all provided by the Central Bank of Kenya and the World Bank database for a ten year period (2004 to 2013). Financial performance was based on the company profits for a period of 10 years (2004-2013) and on the return on assets (ROA) and Tobins Q ratio.
The researcher expected to meet challenges on collecting all the secondary data considering that not all the manufacturing enterprises and the regulatory authorities had in place all the financial statement data in their respective databases. The Central Bank database could also not be complete with macroeconomic data. To overcome the challenge, the researcher consulted other possible reputable institutions that have data for closing any possible gaps including the Central Bureau of Statistics, Nairobi Securities Exchange, World Bank indicators and IMF statistics.

1.7 Definition of Terms

1.7.1 Inflation
Inflation is the persistent tendency for the general price level to rise. (Samuelson and Nordhaus, 2005).

1.7.2 Interest rate
Interest rate is the cost of borrowing and they reflect the market rates prevailing at the time of obtaining a loan (Hardwick et al, 2000).

1.7.3 Gross Domestic Product
Gross domestic product is the measure of the market value of total output or all final goods and services produced in a country during a year. (Ramesh Tharoor, 1995).

1.7.4 Economic growth
Economic growth is a sustained (long term) increase in a country’s productive capacity or Output (Hardwick et al., 2000).

1.7.5 Fiscal policy
Fiscal policy reflects the change in the level of government spending or taxation that may have implications for the government’s borrowing needs (Samuelson and Nordhaus 2005).
1.7.6 Aggregate Demand
Aggregate demand is the sum of demands for goods and services by consumers, businesses, the government and foreign residents (Samuelson and Nordhaus 2005).

1.7.7 Investment
Investment is the production of goods and services which are not for current consumption (Hardwick et al, 2000).

1.7.8 Saving
Savings is that part of disposable income which is not spent in the current period (Hardwick et al., 2000).

1.7.9 Money Supply
Quantity of money in an economy. It’s the levels of monetary aggregates in general and money stock in particular (Ogunmuyiwa and Ekone, 2010).

1.7.10 Macroeconomics
Macroeconomics is the study of the interrelationship among diverse economic sectors. It studies the overall aspects and workings of a national economy, including income, output.

1.8 Chapter Summary
This chapter presents the background information on the macroeconomic factors in relation to performance of enterprises in Kenya. The first introductory chapter is divided into seven different sections. Section one gives the detailed background of the macroeconomic variables and effects on corporate earnings and delves on corporate performance and the Kenyan manufacturing and construction and allied sectors. The second section describes the statement problem in the context of performance of enterprises with a focus on macroeconomics performance nexus for enterprises in Kenya. Section three defines the general and specific objectives of this research; section four highlights research questions. Section five describes the significance of the study, section six provides the scope of the study and section seven provides working definitions of specific terms used in the project. Chapter two deals with literature review based on the research objectives and relationships between the study
variables. Chapter three discusses the research methodology pursued in the study and outlines the research design adopted, the study population, data collection techniques and procedures and data analysis methods. Chapter four is a presentation of the results and findings from the data analysis in form of graphs and tables. Chapter five concludes the study with a summary of the findings, discussions, and conclusions there from and recommendations based on the study findings. In the next chapter (Chapter two), literature the supports the study is reviewed.
CHAPTER TWO
2.0 LITERATURE REVIEW
2.1 Introduction
This chapter is a review of literature as guided by the research objectives with the first section exploring the macroeconomic variables and firm performance nexus. The second section examines the inflation and firm’s performance relationships. The third section explores how exchange rate affects the firm’s profitability. Finally, the chapter is concluded by a chapter summary.

2.2 Effect of Gross Domestic Product on Organizational Profitability
2.2.1 GDP as a Macroeconomic Variable
Learner (2009) defines Gross Domestic Product (GDP) as the market value of goods and services produced within a selected country (geographic area) in a defined interval of time (often a year). This has become the standard by which we measure the size and health of a country. Big and/or growing are good. Small and/or shrinking are bad.

Tharoor (2002) observed that GDP can be dissected into four different components. The largest component of GDP is consumption. It consists of the household sector's purchases of currently produced goods and services. The next component of GDP is investment which has three subcomponents as; Business fixed investment (purchases of newly produced plant and equipment), residential construction investment (building of single and multifamily housing units), and inventory investment (change in business inventories). The third component of GDP is the Government purchases of goods and services. This is the share of the current output of goods and services bought by the federal, state, and local governments. The final component of GDP is net exports, which equals total (gross) exports minus imports.

2.2.2 Profit as a Measure of Firm’s Performance
A firm’s performance is measured by profitability. Profitability is defined in term of traditional financial ratios such as Return on Assets. There are two ratios that are commonly used to describe firm profitability: the return on equity (ROE) and the return on assets (ROA). ROA indicates how effectively a firm manages its assets to
generate income. It indicates income earned on each unit of assets. The problem of ROA is that it excludes off-balance sheet items of the firm creating a positive bias in evaluating organization performance. ROE measures the return to shareholders on a unit of their capital. The drawback of ROE is that firms with lower level of capital will generate a higher ratio. Golin (2001) concludes that ROA is the key measure of profitability for firms.

2.2.3 Effect of GDP on Investment
The macroeconomic theories of John Maynard Keynes pointed out the importance of the forces of aggregate demand in determining business cycles. The lesson of Keynesian economics is that changes (shocks) in aggregate demand can have powerful impact on the overall level of output, employment and prices in the short run. Upward and downward movements in output, inflation, interest rates and employment form the business cycle that characterizes all market economies. Aggregate demand changes as consumers, businesses, or government change total spending relative to the economy’s productive capacity (Samuelson and Nordhaus, 2005). Black (2006) argued that the link to macroeconomic conditions is that when GDP growth is falling and stock prices are falling, investment in high-book-to-market firms becomes riskier and expected returns increase (current prices fall by more than is explained by the market risk premium alone).

2.2.4 Effect of GDP on the Market Segments
Austin (2000) further observed that economic factors concern the nature and direction of the economy in which a firm operates. According to the author, consumption patterns are affected by the relative prosperity of diverse market segments and each firm must consider the economic trends in the segment that affects its industry of operation. Further, at both national and international levels, decision makers must consider the general availability and accessibility of credit, the levels of disposable income and the propensity of people to spend. Other economic factors that they should consider include the inflation rates, prime interest rates and trends in the growth of the Gross National Product (GNP).
Linder (2001) verbal theory, which already contained in a nutshell some of the insights of monopolistically competitive models of international trade, combined aspects of the composition of demand and scale economies in production to explain patterns of international specialization. Linder argued that individuals with different income levels tend to consume different bundles of goods, with richer consumers expressing a latent demand for some new goods. Since under increasing returns to scale efficiency requires that production be concentrated in one location and since there is always a cost of producing far from demand, these new goods are introduced in the countries where there is a sufficiently large representative demand for them, namely in the developed regions of the world.

Once a new variety of a good has been introduced in a given market, domestic producers may find it convenient to export it to other countries. However, for most goods the only potential trading partners are other developed economies, where consumers are rich enough to be able to afford new product varieties. Poor countries can import only a limited number of product varieties from developed economies. This line of reasoning leads to the well-known Linder hypothesis: all else, including total GDP, equal, one would expect the volume of trade to be larger between rich and similar economies than between poor and dissimilar ones (Landes, 1969).

Davis (2007) predicts that the volume of trade should be large between countries with large and similar market size, as measured by GDP. In addition, the study argues that there is no difference between the demand structure of a small and rich country on the one hand and of a very populous and poor country on the other, provided that they have similar GDP. According to Davis study, per capita income can have effects on the volume and composition of trade only if it is related in some way to factor endowments and therefore to the supply side of the economy.

2.2.5 Effect of GDP on Consumer Purchasing Power

Austin (2000) stated that within an industry, those companies that are able to gain preferential access to scarce domestic capital or to tap external resources will gain competitive advantage. At consumer level, low incomes mean low effective demand and price purchasing power is severely constrained. At low income levels, the largest
percentage of the budget will go to food purchases, as income rises, food expenditures will grow in absolute terms but take up a smaller share of the total family expenditure. This implies that consumers and supplier credit must play a significant role in marketing programs. The extremity and pervasiveness of poverty in less developed countries places a special Social Responsibility on the business as a vehicle for creating economic progress that will help alleviate this deprivation.

2.2.6 Effect of GDP on Per Capita Income

Davis (2007) argues that the level and the distribution of per capita income seem to have important implications for the structure of aggregate demand and thus for the pattern of industrialization and international trade. At a micro level, Jackson (2004) finds empirical evidence that the variety of goods consumed increases with income. One of the first attempts to explain the implications of per capita income for the composition of demand and for the volume of trade between countries at different stages of economic development was made by Linder (2001).

Helpman and Krugman (2005) analyses this possibility, by assuming that higher levels of per capita income correspond to greater capital abundance. They find that we should expect the share of intra-industry trade in total trade to be higher in trade flows between countries with similar per capita income levels. Further, Ramezzana (2000) study assumes that each variety of the manufactured good can be consumed only in indivisible amounts, which makes the level and the distribution of per capita income crucial for aggregate demand and is what drives our results. The study establishes that where there are two closed economies with the same GDP, the economy with higher per capita income will experience the introduction of a larger quantity of product varieties. Considering an integrated world divided into two countries with identical GDP and technologies, but with different population size and thus different per capita income levels. It is shown that, for a given world average level of per capita income and keeping all else equal, as the difference in the two countries' per capita income increases, the number of products actually traded in equilibrium decreases and also the bilateral volume of trade decreases. This implies that the volume of trade between the developing and developed country is smaller than the volume of trade between a developed country and another developed country. Given the degree of inequality
between the two countries, as the average level of per capita income in the world, and thus in each country, increases, so does the volume of bilateral trade. This argument suggest that the quantity of developed country trade to each other become larger than the quantity of trade between two developing economies that trade with each other. This hints to a possibly profitable application on a firm’s financial performance.

2.2.7 Effect of GDP on Firm’s Profitability
In Kambhampati (2005) study about firms in Turkey analyzes profit persistence and its determinants. The study indicates that there is persistence of industrial profitability in Turkey however institutional barriers reduce them. In this regard, Kambhampati (2005) report concludes that the country risk, external debt, exports and foreign investment have a statistically significant influence, with a negative coefficient, on the persistence of firm profitability at the country level, which indicates that there are country factors that explain a relevant part of firms’ capabilities to sustain their profitability. This result supports the idea that the geographical location of firms influences their performance. There are however many country specific factors that relate to the effect of GDP on a firm’s profitability that were not captured in the study.

In another study conducted by Alexiou and Sofoklis (2009) on the determinants of Bank profitability on Greek Banking Sector, it was established that economic growth should enhance bank profits through increased demand for household and business loans. Such loans generate good returns to commercial banks, resulting in higher profits. Another equally significant motive why profits increase with economic growth is that fewer loan defaults occur during periods of strong economic growth. Interest rate movements are assumed to correlate with Greek banks’ profits. In general, banks rely heavily on short-term deposits as a source of funds. The interest paid on the deposits varies in accordance with the interest rates set by the European Central Bank, which in turn are closely linked to inflationary expectations (Bourke, 1989; Molyneux and Thornton, 1992). Finally, other macroeconomic indicators that are believed to affect profitability like private consumption and capital investment are also considered.
Demirguc-Kunt and Huizinga (2000) and Bikker and Hu (2002) also attempted to identify possible cyclical movements in bank profitability; the extent to which bank profits are correlated with the business cycle. Their findings suggest that such correlation exists, although the variables used were not direct measures of the business cycle. A direct measure of the business cycle, namely cyclical output, was used by Athanasoglou et al. (2005) for the Greek banking industry. Studies conducted in Africa by Jefferis and Okeahalam (2000) examined the effect of macroeconomic factors on stock markets in South Africa, Zimbabwe, and Botswana. They found that stock prices have a positive long-run relationship with real GDP, and real exchange rate in South Africa and Zimbabwe and a short-run relationship with exchange rate and interest rates in Botswana.

Stock prices are also negatively related to interest rates in South Africa. Osei (2006) also finds that there is a long-run causal link between macroeconomic fundamental and stock returns in Ghana. Again Salifu et al. (2007) found significant exchange rate exposure to firms on the Ghana Stock Exchange. Because the literature suggests that the GDP growth affect the bank’s profitability, this study sets out to advance that knowledge in explaining the effect of GDP on the firm’s profitability based on construction and allied firms listed at the NSE. This adds to the knowledge of GDP performance nexus in a different context.

2.3 Effect of Inflation on Organizational Profitability

2.3.1 Inflation as a Macroeconomic Variable

This section analyses the role of inflation on the firm’s financial performance. Inflation can be referred to as the persistent or continuing increase in a nation’s general price level (Caprio and Summers, 2003). Caprio and Summers (2003) explains that inflation is notably one of the macro-economic variables that affect interest rates charged on loans offered by banks. Inflation is defined as the sustained increase in general level of prices of goods and services in an economy. There are various types of inflation and Basky and Delong (2001) explain that the long term inflation occurs when the money supply (currency and check writing deposits) grows at a faster rate than the output of goods and services. When there is more money available than is needed to accommodate normal growth in output, consumers and
businesses want to purchase more goods and services than can be produced with current resources (labor, materials, and manufacturing facilities) causing upward pressure on prices. This is often described as too much money chasing too few goods.

2.3.2 Effect of Inflation on Financial Development

The evidence, based on the time-series variation indicates that inflation is detrimental to financial development. High inflation rates have a clear detrimental effect to the economic growth and income inequality in a country. Therefore, low and stable inflation, and all that it encompasses, is a necessary first step to achieve a deeper and more active financial sector with all its attached benefits (Bittencourt, 2008).

Bittencourt findings were analyzed using panel time-series Analysis that is an important tool of analysis and does not suffer from the usual criticism applied to cross-sectional data and analysis that imply that since a period of high inflation is normally followed by a period of low inflation, high inflation detrimental effects would be cancelled by low inflation (Bruno and Easterly, 2008).

On the empirical side, Haslag and Koo (2009), and Boyd and Levine (2001), using cross-sectional and panel international data from the 1960s to early 1990s, report that moderate inflation has a negative impact on financial development. Moreover, both studies and evidence of nonlinearities, i.e. after a particular threshold, 15 percent per year in Boyd and Levine (2001) inflation presents only smaller marginal negative effects on financial development. The intuition is that the damage on financial development is done at rates of inflation lower than the proposed threshold. Furthermore, Dehesa and Druck (2007) used a panel of 120 countries between 1997 and 2004 to report that lower inflation increases the amount of credit in their sample. Finally, Zoli (2007) reports that in a panel of emerging European countries between 1995 and 2006 inflation presents detrimental effects to financial development (Singh, 2006).

Bittencourt (2008) study that examined the relationship between inflation and financial development in Brazil from 1985 to 2002; the results suggested that inflation clearly reduced financial development in Brazil at the time. The relevance of understanding the macroeconomic determinants of financial development lies in the
fact that a deeper and more active financial sector is of crucial importance for key economic variables such as economic growth and income inequality which is high in the agenda of any brewing firm that aims to determine the effect of macroeconomic variable on the firm’s financial performance.

In a slightly different perspective, Schreft and Smith (2007), Boyd and Smith (2008), Huybens and Smith (2008), and Huybens and Smith (2009), explore the idea that economies with higher rates of inflation do not approach or reach the steady state where their capital stocks would be high, financial development traps may arise in such economies. Furthermore, these economies obviously present less efficient financial markets because of the higher interest rates that follow high rates of inflation.

At the same, the Mundell-Tobin effect is reversed in a high inflation environment where according to Acemoglu and Johnson (2003) argues that the detrimental effects of macroeconomic policies, in the role of high inflation in this case, are more likely to be a symptom of weak institutions used by the elite to expropriate the resources of another group in society. Furthermore, Dornbusch (1984) argues that macroeconomic stabilization took so long to take place in, as it is the case with Kenya where the rich have always benefited from high inflation.

The main implication of Bittencourt (2008) study is that for a developing country to have a deeper and more active financial sector with all its attached benefits, the rates of inflation have to be low and consistently under control. Poor macroeconomic performance only brings deleterious effects to a developing economy which can also be restrictive towards the financial performance of a brewery firm. However, for a financial sector to become deeper and more active it is important also to stress the importance of having stronger institutions, which are not easily controlled by small elite individuals.

2.3.3 Effect of Inflation on Real Value of Currency
Inflation reduces the real value of a currency in a country, such that each unit of a currency buys fewer goods. Thus, inflation reduces purchasing power of households.
There are several factors that cause inflation and they include an oversupply of currency whereby a government prints excess money which results to a large amount of money being in circulation in comparison to the small quantity of goods available (Chari and Jagannathan, 2001). Hence the increased demand pushes the prices up since there is too much money chasing a few goods.

2.3.4 Effect of Inflation on Commodity Prices
Over a shorter term, inflation can result from various shocks to the economy’s performance. Energy price shocks are common examples. The price of a critical commodity may rise abruptly and sharply relative to other commodity prices. Since the market does not have time to adjust other prices downward in response to this, a short-term increase in overall prices occurs (Basky and DeLong, 2001).

2.3.5 Effect of Inflation on Production Cost
Rise in production cost is one of the causes of inflation whereby firms increase the prices of their final products (Keeley, 2001). This commonly happens when there is an increase in prices of the raw materials, and firms are forced to increase prices so as to maintain their profit margin or in the event of rising labour cost. According to Stiglitz (2004), inflation can also result from international lending and national debts. In this case companies that have borrowed money have to increase their interest rates in-order to keep up with the debt and similarly a high drop in the currency rate also results to inflation as the import or export difference leads to imports becoming expensive while exports get cheaper.

2.3.6 Effect of Inflation on Savings
Empirical studies conducted by Moore (2006), Choi, Smith, et al. (2006), and Azariadis and Smith (2006) highlight the fact that if inflation is high enough, returns on savings are reduced which leads to a reduction in savings and savers alike, the pool of borrowers is swamped, informational frictions become more severe and therefore credit becomes scarce in such an economy. If a borrower fails to factor inflation as he sets the return he expects to gain from the investment this means he will lose out because the value of his money will have decreased with time. In this case, the lender will require that the borrower covers the inflation loss and in addition he will further
require a profit for the risk of lending the money. Bearing in mind that if the investor went investing his money on other projects that would have profited him or her. This means that financial institutions that lend money during inflation must consider it and this pushes the interest rates up (Kaminsky and Reinhart, 2006).

2.3.7 Effect of Inflation on Welfare Cost
Makin (2003) stated that it has long been recognized that inflation imposes economic welfare costs. When inflation is perfectly anticipated these costs, including so-called ‘shoe leather costs’ and ‘menu costs’, are thought to be fairly low. However, unanticipated inflation has a more deleterious effect because it arbitrarily redistributes wealth between debtors and creditors. This wealth transfer arises because unexpectedly higher or lower inflation creates a discrepancy between ex ante and ex post real interest rates. The existence of biased inflation expectations is a necessary precondition for this real interest rate discrepancy and for sustained income transfers.

2.3.8 Effect of Inflation on the Organization Profitability
Inflation is often cited to be a significant determinant of bank profitability. First analyzed by Revel (1999), the effect of inflation on bank profitability depends on whether banks operating expenses increased faster than the inflation rate. Therefore, the impact of inflation is contingent on the overall macroeconomic stability that allows the correct predicting of inflation. According to Perry (1992) the relationship between inflation and performance depends on whether the inflation is anticipated by financial institutions’ management. By correctly predicting inflation and adjusting interest rates, managers can raise revenues faster than costs. Among studies that find a significant positive relationship between inflation and financial institutions earnings are those conducted by Molyneux & Thorton (1992) and Bourke (1989).

A widely used proxy for the effect of the macroeconomic environment on financial institutions profitability is inflation. Revell (1999) introduces the issue, noting that the effect of inflation depends on whether banks’ wages and other operating expenses increase at a faster rate than inflation. The question is how mature an economy is so that future inflation can be accurately forecast and thus banks can accordingly manage their operating costs. As such, the relationship between the inflation rate and
profitability is ambiguous and depends on whether or not inflation is anticipated. An inflation rate fully anticipated by the bank’s management implies that banks can appropriately adjust interest rates in order to increase their revenues faster than their costs and thus acquire higher profits. On the contrary, unanticipated inflation could lead to improper adjustment of interest rates and hence to the possibility that costs could increase faster than revenues. Bourke (1989), Molyneux and Thornton (1992) observe a positive relationship between inflation and bank performance. Therefore, most studies confirm that inflation has a positive effect on the financial institution’s performance; however, the current study questions the same effect on construction and allied companies in a developing economy.

2.4 Effect of Exchange Rates on Organizational Profitability

2.4.1 Exchange Rates as a Macroeconomic Variable
According to Calvo (2006), Exchange rate is the value or price of a foreign nation’s currency in terms of the home nation’s currency. A study by Clarida (1997) gives an example that an exporter could respond to the relative cost advantage provided by currency depreciation by keeping local currency prices constant and lowering foreign currency prices for their products, hoping to make an increase in sales volume. Another firm could also respond by keeping foreign currency prices of their products constant and raising local currency prices, so that export sales remain fairly constant but net income increases.

2.4.2 Effect of Exchange Rate on Market Capitalization
Forbes (2002) evaluated firm performance based on immediate impact of currency depreciations on net income and sales together with the expected longer-term impact measured by changes in market capitalization and asset value. The study further investigates how individual firm characteristics like output type, foreign sales exposure, debt outstanding, production structure, size, and profitability influence the impact of currency depreciations on firm performance.

Forbes (2000) establish that in the year after currency depreciations, firms have significantly higher market capitalization growth measured in US dollars and significantly lower net income growth measured in local currency. With the
depreciations, Organizations with greater foreign sales exposure experienced better and significant performance. Organizations with higher debt ratios tended to have lower net income growth after currency depreciations. Forbes (2000) finds no robust relationship between debt levels of firms and the other performance variables. The study notes that larger firms often had worse performance than smaller firms but the significance and robustness of the findings fluctuate across specifications. The study reckons that there is no consistent relationship between a firm’s profitability and currency depreciations.

One problem with using market capitalization as a measure of long-term firm performance is on the assumption of market efficiency. The studies assume that markets efficiently reflect new information associated with the currency depreciation. This assumption may not be fully satisfied in all markets and situations, especially during crises and in less liquid emerging markets like the developing country markets. The changes in firm asset value are also expected to provide additional information on the expected longer-term impact of currency depreciations on organizational performance. Organizations that are expected to benefit from currency depreciations in the long run are more likely to increase their assets by purchasing additional machines and even additional plants.

### 2.4.3 Effect of Exchange Rate on Stock Returns

Forbes (2000) tested for the importance of different factors in explaining how exchange rate movements affect stock returns in a sample of over 10,000 companies located around the world during the Asian and Russian crises. Results suggest that trade linkages are important determinants of how these crises affected individual companies’ stock returns. On examining how exchange rate movements affected output prices, the findings indicated that in certain situations the exchange movements was wholly absorbed in a firm’s price-cost margins and had no impact on product prices (Klein, Schuh and Triest, 2000). Dornbusch (1987) develops these ideas in several simple models, and numerous studies have found evidence of pricing-to-market in specific industries. Goldberg and Knetter (1997) is an excellent survey of the empirical literature on this subject. They conclude that the impact of exchange-rate movements on local currency prices of foreign products varies widely by
industry, and that for products shipped to the U.S, the average price response is about one-half the exchange-rate movement (Allayannis and Ihrig, 2000).

2.5 Chapter Summary
This chapter provided literature on relationships between macroeconomic variables and firm performance. The first section provided literature review on GDP and organizational profitability. The second section examined literature on inflation and organizational profitability. The third section explored literature on exchange rate and organizational profitability. The fourth section presented literature on firm specific factors and organizational profitability. In the next chapter (Chapter three), a discussion of the study methodology is presented.
CHAPTER THREE
3.0 RESEARCH METHODOLOGY
3.1 Introduction
This chapter highlights the methods and procedures used in conducting the study. It involves a blueprint for the collection, measurement and analysis of data. The chapter is organized as follows: the research design, population and sample, data collection methods, sampling design and sample size, research procedures, data analysis methods and lastly the chapter summary.

3.2 Research Design
The type of research design that was employed in this study is explanatory in nature. Maxwell and Mittapalli (2000) explain that the term explanatory research implies that the research in question is intended to explain, rather than simply to describe, the phenomena studied. Traditionally, the research denoted by the term explanatory research has been quantitative in nature and has typically tested prior hypotheses by measuring relationships between variables and the data are analyzed using statistical techniques.

The explanatory research design was used based on secondary data to quantitatively model the relationships using statistical techniques. In this study, the dependent variable considered is financial performance (ROA and Tobins Q) while the independent variables are the Macroeconomic variables (GDP growth, Inflation and exchange rates volatility) in Kenya which are related in causal modeling.

3.3 Population and Sampling Design
3.3.1 Population
As explained by Cooper and Schindler (2003), a population is the total collection of elements whereby references for a study have to be made. The target population of the study is all construction and allied firms listed at the NSE in Kenya. By 2014, there were 5 construction and allied companies listed at the Nairobi securities exchange (NSE) which the study targeted.
3.3.2 Sampling Design

3.3.2.1 Sampling Frame

Sampling frame presents a systematic list of subjects, elements, traits, firms or objects to be studied. From the study’s population, the required number of subjects, respondents, elements; construction and allied firms listed at the NSE in this case was selected in order to make a sample.

<table>
<thead>
<tr>
<th>Company</th>
<th>Unit of Analysis</th>
<th>Unit of Observation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Athi River Mining (ARM) Limited</td>
<td>1</td>
<td>10</td>
</tr>
<tr>
<td>Bamburi Cement Limited</td>
<td>1</td>
<td>10</td>
</tr>
<tr>
<td>Crown-Berger (Kenya)</td>
<td>1</td>
<td>10</td>
</tr>
<tr>
<td>East African Cables Limited</td>
<td>1</td>
<td>10</td>
</tr>
<tr>
<td>East African Portland Cement Company</td>
<td>1</td>
<td>10</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>5</strong></td>
<td><strong>50</strong></td>
</tr>
</tbody>
</table>

3.3.2.2 Sampling Technique

The study used the census technique which involves studying the whole population as explained by Mugenda and Mugenda (2003). Given the small number of the units of analysis and units of observation, the whole population is studied and the findings are universally representative.

3.3.2.3 Sample Size

Ligthelm and Van Wyk (2005) describe the sample size as a smaller set of the larger population. All the five construction and allied firms were selected as sampling units. The elements for the study comprised data provided by the Central Bank of Kenya and World Bank database on the GDP growth rate, Inflation and exchange rates volatility for a ten year period (2004 to 2013). From each construction and allied firm targeted by the study, 10 years (2004 to 2013) annual performance data was sought from the published financial statements.

3.4 Data Collection Methods

The study relied on secondary data collection methods. Secondary data can be defined as information collected by someone else than the researcher for some other purpose than the research project at hand (Ligthelm and Van Wyk, 2005). The secondary data
was obtained from Central Bank of Kenya records on the GDP growth rates, inflation rates and exchange rates volatility and the respective construction and allied company’s financial performance was sourced from the company financial reports for the period of 10 years between 2004 to 2013. The collected data aimed to investigate the: effect of GDP growth rate on financial performance of construction and allied companies in Kenya, effect of inflation rate on financial performance of construction and allied companies in Kenya, effect of exchange rate volatility on financial performance of construction and allied companies in Kenya.

3.5 Research Procedures
For the secondary data, the researcher tested the reliability of data using standard error. Reliability is the measure of stability and consistency of data of which the instrument measures the concept and helps to assess the goodness of a measure (Mugenda, 1999). Reliability is the stability of measure concerning measuring procedures that yield the same outcome on repeated trials. This was calculated using standard error to establish the correlation of data. The Central Bank of Kenya and World Bank database and the manufacturing firms provided all the data as per the data collection sheets. The data obtained consisted of annual data on the GDP growth rates, inflation rates, exchange rates volatility and the respective companies’ financial performance for the period of 10 years between 2004 and 2013.

3.6 Data Analysis Methods
Descriptive statistics such as frequencies and percentages and augmented with measures of central tendency (means) and dispersion (standard deviation) were used. Pearson Correlations tests were calculated to determine whether there is linear relationship and nature of such relationships. These tests were conducted at 95% level of confidence (α=0.05).

The collected data was analyzed using both qualitative and quantitative approaches. Regression and correlation analysis was found appropriate to determine both the nature and the strength of the relationship between two variables. Hence, the regression and correlation analyses were based on the relationship, or association, between two (or more) variables. One of the quantitative techniques for analyzing
data is using Simple Linear Regression Model. A linear relationship between two variables is captured by the formula $Y = a + bX$, Where:

- $a$: is the intercept
- $b$: is the slope.
- $X$: is an independent variable
- $Y$: is a dependent variable

In correlation analysis, the technique describes the degree to which one variable is linearly related to another. Most often, correlation analysis is used in conjunction with regression analysis to measure how well the regression line explains the variation of the dependent variable. Correlation can also be used by itself, however, to measure the degree of association between two variables.

The coefficient of determination was used to measure the extent, or strength, of the association that exists between two variables, $X$ and $Y$. Because the regression line is developed using a sample of points, this measure is known as the sample coefficient of determination. The sample coefficient of determination is developed from the relationship between two kinds of variations. The variations of the $Y$-values in a data set around the fitted regression line and their own mean. The term variation in both cases is used in its usual statistical sense to mean the sum of a group of squared deviations. Correlation measures the dependability of the relationship (the goodness of fit of the data to that). It is a measure of how well one variable can predict the other (given the context of the data), and determines the precision you can assign to a relationship.

Regression or correlation can be bivariate (between 2 variables, $x$ and $y$) or multivariate, between greater than two variables. Regression is interested in the form of the relationship, whereas correlation is more focused simply on the strength of a relationship. The study adopted both the bivariate and multivariate linear regression models. In all cases, the independent variable(s) and the dependent variable(s) need to be defined.
The following bivariate linear equation was generated for GDP growth rate and performance.

\[ Y' = a + \beta \text{GDP growth} \]  

(i)

The following bivariate linear equation was generated for Inflation and performance.

\[ Y' = a + \beta \text{inf} \]  

(ii)

The following bivariate linear equation was generated for Exchange Rates Volatility and performance.

\[ Y' = a + \beta \text{EUSVol} \]  

(iii)

The following multivariate linear equation was generated for GDP growth rate, Inflation, Exchange Rates Volatility and Performance.

\[ Y' = a + \beta_1 \text{GDP growth} + \beta_2 \text{inf} + \beta_3 \text{EUSVol} + \varepsilon \]  

(i)

Firm performance is captured as return on assets (ROA) and Tobin’s Q ratio in the regression models. Tobin’s Q ratio is a market measure of firm performance calculated as market value of a company divided by the replacement value of the firm’s assets as:

\[ Q \text{ ratio} = \frac{\text{Total market value of firm}}{\text{Total Asset Value}} \]

A low Q (between 0 and 1) means that the cost to replace a firm's assets is greater than the value of its stock. This implies that the stock is undervalued. Conversely, a high Q (greater than 1) implies that a firm's stock is more expensive than the replacement cost of its assets, which implies that the stock is overvalued.

3.7 Chapter Summary
This chapter has provided the various methods and procedures that the researcher adopted while conducting the study in an effort to address the research questions highlighted in the first chapter. The chapter was organized into the following sections: a research design, population and sample, data collection methods, sampling design and sample size, research procedures and data analysis. The next chapter (Chapter four) presents the results and findings of the study after the data analysis.
CHAPTER FOUR

4.0 RESULTS AND FINDINGS

4.1 Introduction

This chapter presents the analysis of data findings on the effects of macroeconomic factors on performance of construction and allied companies listed at the NSE. It shows the descriptive information on the study variables namely; return on assets (ROA), Tobins Q ratio, GDP growth rate, Inflation rate and exchange rate volatility. It presents a comparison of the individual firm performances and provides the relationships between performance and macroeconomic forces.

4.2 Description of Data

As inferred from table 4.1 below, the minimum ROA for the companies is -0.10 and the maximum ROA is 0.73 with a range of 0.83. The distribution has a standard deviation of 0.17453 and a mean of 0.2349. ROA is positively skewed at 0.665 and has a kurtosis of 0.423. The maximum Tobin’s Q ratio is 5.73 and the minimum Tobin’s Q ratio is 0.74 with a range of 4.99. The average Tobin’s Q ratio is 1.8774 with a standard deviation of 1.00409.

Table 4.1: Descriptive Statistics

<table>
<thead>
<tr>
<th></th>
<th>ROA</th>
<th>TOBIN’S Q</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td>50</td>
<td>50</td>
</tr>
<tr>
<td>Range</td>
<td>.83</td>
<td>4.99</td>
</tr>
<tr>
<td>Minimum</td>
<td>-.10</td>
<td>.74</td>
</tr>
<tr>
<td>Maximum</td>
<td>.73</td>
<td>5.73</td>
</tr>
<tr>
<td>Mean</td>
<td>.2349</td>
<td>1.8774</td>
</tr>
<tr>
<td>Std. Deviation</td>
<td>.17453</td>
<td>1.00409</td>
</tr>
<tr>
<td>Skewness</td>
<td>.665</td>
<td>1.746</td>
</tr>
<tr>
<td>Kurtosis</td>
<td>.423</td>
<td>3.828</td>
</tr>
</tbody>
</table>

As presented in table 4.2 below, the mean ROA for Bamburi Cement is the highest at 0.414 with a standard deviation of 0.12039. The second average ROA is for EA Cables at 0.3500 with a standard deviation of 0.19883. ARM cement average ROA is third at 0.153 with a standard deviation of 0.7394. Crown average ROA is fourth at 0.146 with a standard deviation of 0.0395 and EAP cement average ROA is the fifth at 0.1115 with a standard deviation of 0.07394.
Table 4.2: Descriptive Statistics on Companies ROA

<table>
<thead>
<tr>
<th></th>
<th>Bamburi ROA</th>
<th>Crown ROA</th>
<th>EA Cables ROA</th>
<th>EAPC ROA</th>
<th>ARM CEMENT ROA</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td>10</td>
<td>10</td>
<td>10</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>Range</td>
<td>.43</td>
<td>.12</td>
<td>.62</td>
<td>.38</td>
<td>.25</td>
</tr>
<tr>
<td>Minimum</td>
<td>.17</td>
<td>.08</td>
<td>.11</td>
<td>-.10</td>
<td>.03</td>
</tr>
<tr>
<td>Maximum</td>
<td>.60</td>
<td>.20</td>
<td>.73</td>
<td>.28</td>
<td>.28</td>
</tr>
<tr>
<td>Mean</td>
<td>.4140</td>
<td>.1460</td>
<td>.3500</td>
<td>.1115</td>
<td>.1530</td>
</tr>
<tr>
<td>Std. Deviation</td>
<td>.12039</td>
<td>.03950</td>
<td>.19883</td>
<td>.14583</td>
<td>.07394</td>
</tr>
<tr>
<td>Skewness</td>
<td>-.517</td>
<td>-.412</td>
<td>-.171</td>
<td>-.365</td>
<td>-.201</td>
</tr>
<tr>
<td>Kurtosis</td>
<td>.936</td>
<td>-1.044</td>
<td>-1.646</td>
<td>-.212</td>
<td></td>
</tr>
</tbody>
</table>

Table 4.3 below shows that the highest average Tobin’s Q ratio is 2.694 with a standard deviation of 0.956. The second average Tobin’s Q ratio is 2.360 with a standard deviation of 1.452. The third average Tobin’s Q ratio is 1.885 with a standard deviation of 0.471. EAP cement average Tobin’s Q ratio is 1.432 with a standard deviation of 0.416. Crown average Tobin’s Q ratio is 1.016 with a standard deviation of 1.452.

Table 4.3: Descriptive Statistics on Companies Tobin’s Q Ratio

<table>
<thead>
<tr>
<th></th>
<th>BAM BURI TOBIN’S Q</th>
<th>CROWN TOBIN’S Q</th>
<th>EA CABLES TOBIN’S Q</th>
<th>EAPC TOBIN’S Q</th>
<th>ARM CEMENT TOBIN’S Q</th>
</tr>
</thead>
<tbody>
<tr>
<td>Range</td>
<td>2.88</td>
<td>.51</td>
<td>4.63</td>
<td>1.07</td>
<td>1.46</td>
</tr>
<tr>
<td>Minimum</td>
<td>1.63</td>
<td>.74</td>
<td>1.10</td>
<td>.91</td>
<td>1.20</td>
</tr>
<tr>
<td>Maximum</td>
<td>4.51</td>
<td>1.25</td>
<td>5.73</td>
<td>1.98</td>
<td>2.66</td>
</tr>
<tr>
<td>Mean</td>
<td>2.6940</td>
<td>1.0160</td>
<td>2.3600</td>
<td>1.4320</td>
<td>1.8850</td>
</tr>
<tr>
<td>Std. Deviation</td>
<td>.95591</td>
<td>.16249</td>
<td>1.45222</td>
<td>.41601</td>
<td>.47146</td>
</tr>
<tr>
<td>Skewness</td>
<td>.859</td>
<td>-.211</td>
<td>1.501</td>
<td>.158</td>
<td>.379</td>
</tr>
<tr>
<td>Kurtosis</td>
<td>-.368</td>
<td>-.966</td>
<td>2.452</td>
<td>-1.728</td>
<td>-.847</td>
</tr>
</tbody>
</table>
4.3 Effect of GDP growth rate on Performance of Construction and Allied Companies in Kenya

4.3.1 Effect of GDP growth rate on ROA of Construction and Allied Companies in Kenya

As indicated in Table 4.4 below, there is a weak positive association between GDP growth rate and ROA (r = 0.073).

Table 4.4: Correlations

<table>
<thead>
<tr>
<th></th>
<th>ROA</th>
<th>GDP Growth Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>ROA</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>GDP Growth Rate</td>
<td>.073</td>
<td>1</td>
</tr>
</tbody>
</table>

Table 4.5: Effect of GDP growth rate on ROA

- **Model Summary**
  
  | Mode | R | R Square Adjusted R Square | Std. Error of the Estimate | Change Statistics | |
  |------|---|---------------------------|---------------------------|-------------------|
  |      |   |                           |                           |                   |
  |      | .073^a | .005 | -.015 | .17587 | .005 | .255 | 1 | 48 | .616 |
  | a. Predictors: (Constant), GDP Growth Rate |

- **ANOVA^a**

<table>
<thead>
<tr>
<th>Model</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Regression</td>
<td>.008</td>
<td>1</td>
<td>.008</td>
<td>.255</td>
</tr>
<tr>
<td>1</td>
<td>Residual</td>
<td>1.485</td>
<td>48</td>
<td>.031</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>1.493</td>
<td>49</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

  a. Dependent Variable: ROA
  b. Predictors: (Constant), GDP Growth Rate

- **Coefficients^a**

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>(Constant)</td>
<td>.264</td>
<td>.062</td>
<td></td>
</tr>
<tr>
<td></td>
<td>GDP Growth Rate</td>
<td>.006</td>
<td>.011</td>
<td>.073</td>
</tr>
</tbody>
</table>

  a. Dependent Variable: ROA

As presented in Table 4.5 above, there is a positive non significant relationship between GDP growth rate and ROA of the listed construction and allied companies in Kenya. The model indicates that 0.5% of variations in ROA is explained by variations in GDP growth rate (R square = 0.005, P>0.05). The positive non significant relationship is indicted by a Beta factor of 0.006 suggesting that ROA is positively

35
influenced by GDP growth rate amongst other factors. The influence is however not significant at 95% levels of confidence. The model thus generates the equation:

$$\text{ROA} = 0.264 + 0.006 \times (\text{GDP Growth rate}) + \varepsilon$$

### 4.3.2 Effect of GDP growth rate on Tobin’s Q Ratio of Construction and Allied Companies in Kenya

As indicated in table 4.6 below, 0.9% variations in Tobin’s Q is explained by variations in GDP growth rate ($R^2 = 0.009, p>0.05$). However, the model indicates that the relationship is not significant. From the model, there is a weak positive relationship between Tobin’s Q ratio and GDP growth rate ($\beta=0.042, p>0.05$). This model leads to the equation:

Tobin’s Q = 1.662 + 0.042 \times (\text{GDP Growth rate}) + \varepsilon

### Table 4.6: Effect of GDP growth rate on Tobin’s Q ratio

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
<th>Change Statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>R Square Change</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>F Change</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>df1</td>
</tr>
<tr>
<td>1</td>
<td>.094\textsuperscript{a}</td>
<td>.009</td>
<td>-.012</td>
<td>1.00997</td>
<td>.009</td>
</tr>
<tr>
<td>a. Predictors: (Constant), GDP Growth Rate</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### ANOVA\textsuperscript{a}

<table>
<thead>
<tr>
<th>Model</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regression</td>
<td>.440</td>
<td>1</td>
<td>.440</td>
<td>.431</td>
<td>.514\textsuperscript{b}</td>
</tr>
<tr>
<td>Residual</td>
<td>48.962</td>
<td>48</td>
<td>1.020</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>49.402</td>
<td>49</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a. Dependent Variable: Tobin's Q</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>b. Predictors: (Constant), GDP Growth Rate</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Coefficients\textsuperscript{a}

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
<td></td>
</tr>
<tr>
<td>1 (Constant)</td>
<td>1.662</td>
<td>.358</td>
<td></td>
<td>4.647</td>
</tr>
<tr>
<td>GDP Growth Rate</td>
<td>.042</td>
<td>.065</td>
<td>.094</td>
<td>.657</td>
</tr>
<tr>
<td>a. Dependent Variable: Tobin's Q</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
As indicated in table 4.7 below, there is a weak positive association between GDP growth rate and Tobin’s Q (r=0.094)

**Table 4.7: Correlations**

<table>
<thead>
<tr>
<th>GDP Growth Rate</th>
<th>TOBIN’s Q</th>
</tr>
</thead>
<tbody>
<tr>
<td>GDP Growth Rate</td>
<td>1</td>
</tr>
<tr>
<td>TOBIN’s Q</td>
<td>0.094</td>
</tr>
</tbody>
</table>

4.4 Effect of Inflation on Performance of Construction and Allied Companies in Kenya

4.4.1 Effect of Inflation on ROA of Construction and Allied Companies in Kenya

Table 4.8 below shows that there is a weak positive association between Inflation rate and ROA (r = 0.109)

**Table 4.8: Correlations**

<table>
<thead>
<tr>
<th>Inflation Rate</th>
<th>ROA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inflation Rate</td>
<td>1</td>
</tr>
<tr>
<td>ROA</td>
<td>0.109</td>
</tr>
</tbody>
</table>

The model in table 4.9 below indicate that there is a positive non significant relationship between Inflation rate and ROA of the listed construction and allied companies in Kenya. The model indicates that 1.2% of variations in ROA is explained by variations in Inflation rate (R square = 0.012, P>0.05). The positive non significant relationship is exhibited by a Beta factor of 0.003 suggesting that ROA is positively influenced by inflation rate amongst other factors. The influence is however not significant at 95% levels of confidence. The model thus generates the equation:

\[
ROA = 0.204 + 0.003 \text{ (Inflation rate)} + \epsilon
\]
Table 4.9: Effect of Inflation rate on ROA

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
<th>Change Statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>R Square</td>
<td>Adjusted R Square</td>
<td>Std. Error of the Estimate</td>
<td>R Square Change</td>
<td>F Change</td>
</tr>
<tr>
<td>1</td>
<td>.109a</td>
<td>.012</td>
<td>-.009</td>
<td>.17529</td>
<td>.012</td>
</tr>
</tbody>
</table>

a. Predictors: (Constant), Inflation Rate

ANOVAa

<table>
<thead>
<tr>
<th>Model</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regression</td>
<td>.018</td>
<td>1</td>
<td>.018</td>
<td>.577</td>
<td>.451b</td>
</tr>
<tr>
<td>1 Residual</td>
<td>1.475</td>
<td>48</td>
<td>.031</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>1.493</td>
<td>49</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a. Dependent Variable: ROA
b. Predictors: (Constant), Inflation Rate

coefficientsa

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
<td></td>
</tr>
<tr>
<td>1 (Constant)</td>
<td>.204</td>
<td>.048</td>
<td></td>
<td>4.282</td>
</tr>
<tr>
<td>Inflation Rate</td>
<td>.003</td>
<td>.004</td>
<td>.109</td>
<td>.760</td>
</tr>
</tbody>
</table>

a. Dependent Variable: ROA

4.4.2 Effect of Inflation on Tobin’s Q Ratio of Construction and Allied Companies in Kenya

Table 4.10 shows a statistically significant weak positive association between Inflation rate and Tobin’s Q for the construction and allied companies. As presented in table 4.11 below, 10.1% variations in Tobin’s Q ratio for the commercial and allied companies is explained by variations in Inflation rate (R Square = 0.101, p>0.05). The model infers a weak statistically significant positive relationship between Inflation rate and Tobin’s Q ratio (β=0.053, p<0.05) leading to the equation:

Tobin’s Q = 1.360 + 0.053 (Inflation rate) + ε

Table 4.10: Correlations

<table>
<thead>
<tr>
<th></th>
<th>Inflation Rate</th>
<th>TOBIN's Q</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inflation Rate</td>
<td>1</td>
<td>.317*</td>
</tr>
<tr>
<td>TOBIN's Q</td>
<td></td>
<td>1</td>
</tr>
</tbody>
</table>

*. Correlation is significant at the 0.05 level (2-tailed).
Table 4.11: Effect of Inflation rate on Tobin’s Q ratio

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
<th>Change Statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>.317a</td>
<td>.101</td>
<td>.082</td>
<td>.96204</td>
<td>.101</td>
</tr>
</tbody>
</table>

*a. Predictors: (Constant), Inflation Rate

ANOVA*

<table>
<thead>
<tr>
<th>Model</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regression</td>
<td>4.977</td>
<td>1</td>
<td>4.977</td>
<td>5.377</td>
<td>.025a</td>
</tr>
<tr>
<td>Residual</td>
<td>44.425</td>
<td>48</td>
<td>.926</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>49.402</td>
<td>49</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*a. Dependent Variable: Tobin’s Q
b. Predictors: (Constant), Inflation Rate

Coefficients*

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
<td></td>
</tr>
<tr>
<td>(Constant)</td>
<td>1.360</td>
<td>.261</td>
<td></td>
<td>5.200</td>
</tr>
<tr>
<td>Inflation Rate</td>
<td>.053</td>
<td>.023</td>
<td>.317</td>
<td>2.319</td>
</tr>
</tbody>
</table>

*a. Dependent Variable: Tobin’s Q

4.5 Effect of Exchange rate volatility on Performance of Construction and Allied Companies in Kenya

4.5.1 Effect of Exchange rate volatility on ROA of Construction and Allied Companies in Kenya

Table 4.12 below shows that there is a weak positive association between Exchange rate volatility and ROA (r=0.047). Table 4.13 below indicates the effects of exchange rate volatility on ROA. The study finds a positive non significant relationship between the exchange rate risks measured by standard deviation from the mean to the ROA of the construction and allied companies listed at the NSE. From the model, it is inferred that 0.2% variations in ROA is influenced by variations in exchange rate volatility – risk (R square = 0.002, P>0.05). The model suggests a positive relationship indicated by a beta factor of 0.004. The relationship is however not significant at 95% levels of confidence. The findings therefore infer as:

\[ \text{ROA} = 0.224 + 0.004 \times (\text{Exchange rate Volatility}) + \varepsilon \]
Table 4.12: Correlations

<table>
<thead>
<tr>
<th></th>
<th>Exchange Rate Volatility</th>
<th>ROA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exchange Rate Volatility</td>
<td>1</td>
<td>.047</td>
</tr>
<tr>
<td>ROA</td>
<td>.047</td>
<td>1</td>
</tr>
</tbody>
</table>

Table 4.13: Effect of Exchange rate Volatility on ROA

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
<th>Change Statistics</th>
<th>Change Statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>.047</td>
<td>.002</td>
<td>-.019</td>
<td>.17614</td>
<td>.002</td>
<td>.107</td>
</tr>
</tbody>
</table>

a. Predictors: (Constant), Exchange Rate Volatility

ANOVA a

<table>
<thead>
<tr>
<th>Model</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>1</td>
<td>.003</td>
<td>1.07</td>
<td>.745</td>
</tr>
<tr>
<td></td>
<td></td>
<td>48</td>
<td>.031</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>49</td>
<td>.107</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a. Dependent Variable: ROA

b. Predictors: (Constant), Exchange Rate Volatility

Coefficients a

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>(Constant)</td>
<td>.224</td>
<td>.041</td>
<td>5.405</td>
</tr>
<tr>
<td>1</td>
<td>Exchange Rate Volatility</td>
<td>.004</td>
<td>.014</td>
<td>.047</td>
</tr>
</tbody>
</table>

a. Dependent Variable: ROA

4.4.2 Effect of Exchange rate volatility on Tobin’s Q Ratio of Construction and Allied Companies in Kenya

Table 4.14 shows a weak negative association between Exchange rate volatility and Tobin’s Q (r=-0.180). Table 4.15 presents the relationship between exchange rate volatility and Tobin’s Q ratio. As presented, 3.2% variations in Tobin’s Q ratio are explained by variations in exchange rate volatility (R square = 0.032, p>0.05). The model indicates a negative relationship between exchange rate volatility and Tobins Q ratio evidenced by a negative beta coefficient (β=-0.099, p>0.05). The relationship is represented by the equation:

Tobin’s Q = 2.116 - 0.099 (Exchange rate volatility) + ε
Table 4.14: Correlations

<table>
<thead>
<tr>
<th>Exchange Rate Volatility</th>
<th>TOBIN's Q</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exchange Rate Volatility</td>
<td>1</td>
</tr>
<tr>
<td>TOBIN's Q</td>
<td>-.180</td>
</tr>
</tbody>
</table>

Table 4.15: Effect of Exchange rate Volatility on Tobin’s Q ratio

Model Summary

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
<th>Change Statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>R Square Change</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>F Change</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>df1</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>df2</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Sig. F Change</td>
</tr>
<tr>
<td>1</td>
<td>.180</td>
<td>.032</td>
<td>.012</td>
<td>.99788</td>
<td>.032</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>48</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>.210</td>
</tr>
</tbody>
</table>

a. Predictors: (Constant), Exchange Rate Volatility

ANOVA

<table>
<thead>
<tr>
<th>Model</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig. F Change</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1.606</td>
<td>1</td>
<td>1.606</td>
<td>1.612</td>
<td>.210</td>
</tr>
<tr>
<td>1</td>
<td>47.796</td>
<td>48</td>
<td>.996</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>49.402</td>
<td>49</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a. Dependent Variable: Tobin's Q
b. Predictors: (Constant), Exchange Rate Volatility

Coefficients

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>(Constant)</td>
<td>2.116</td>
<td>.235</td>
<td>.000</td>
</tr>
<tr>
<td>1</td>
<td>Exchange Rate Volatility</td>
<td>-.099</td>
<td>.078</td>
<td>-1.270</td>
</tr>
</tbody>
</table>

a. Dependent Variable: Tobin's Q

4.6 Joint Effect of GDP Growth rate, Inflation rate and Exchange rate Volatility on Performance

4.6.1 Joint Effect of GDP Growth rate, Inflation rate and Exchange rate Volatility on ROA

Table 4.16 presents the findings of a multiple regression model suggesting that 1.4% variations in ROA of the construction and allied companies is explained by variations in GDP growth rate, Inflation rate and Exchange rate volatility (R square = 0.014, P>0.05). The relationship is however not significant at 95% levels of confidence.

The model suggests a positive relationship between ROA and inflation (β=0.003, p>0.05), GDP growth rate (β=0.003, p>0.05). It also suggests a positive relationship between ROA and exchange rate volatility (β=0.001, p>0.05). From the multiple regression output in table 4.7 above, a model can be developed in the equation:
ROA = 0.221 + 0.003 (GDP growth rate) + 0.003 (Inflation rate) + 0.001 (Exchange rate Volatility) + ε

Table 4.16: Effect of GDP Growth, Inflation rate and Exchange rate Volatility on ROA

<table>
<thead>
<tr>
<th>Model</th>
<th>R Square</th>
<th>Adj R Square</th>
<th>Std. Error of the Estimate</th>
<th>R Square Change</th>
<th>F Change</th>
<th>df1</th>
<th>df2</th>
<th>Sig. F Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.118a</td>
<td>.014</td>
<td>.050</td>
<td>.17888</td>
<td>.014</td>
<td>.215</td>
<td>3</td>
<td>.46</td>
</tr>
</tbody>
</table>

a. Predictors: (Constant), Inflation Rate, Exchange Rate Volatility, GDP Growth Rate

ANOVA:

<table>
<thead>
<tr>
<th>Model</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig. F Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regression</td>
<td>.021</td>
<td>3</td>
<td>.007</td>
<td>.215</td>
<td>.885b</td>
</tr>
<tr>
<td>Residual</td>
<td>1.472</td>
<td>46</td>
<td>.032</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>1.493</td>
<td>49</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a. Dependent Variable: ROA

Coefficients:

<table>
<thead>
<tr>
<th>Model</th>
<th>B</th>
<th>Std. Error</th>
<th>Beta</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Constant)</td>
<td>.221</td>
<td>.104</td>
<td></td>
<td>2.130</td>
<td>.039</td>
</tr>
<tr>
<td>Exchange Rate</td>
<td>.001</td>
<td>.015</td>
<td>.013</td>
<td>.084</td>
<td>.933</td>
</tr>
<tr>
<td>Volatility</td>
<td>.003</td>
<td>.013</td>
<td>.040</td>
<td>.243</td>
<td>.809</td>
</tr>
<tr>
<td>GDP Growth Rate</td>
<td>.003</td>
<td>.005</td>
<td>.095</td>
<td>.615</td>
<td>.542</td>
</tr>
<tr>
<td>Inflation Rate</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a. Dependent Variable: ROA

4.6.2 Joint Effect of GDP growth rate, Inflation rate and Exchange rate Volatility on Tobin’s Q ratio

The model indicated in table 4.17 is statistically significant at 95% levels of confidence. The multivariate model suggests that 12.3% of variations in Tobin’s Q ratio are explained by variations in the macroeconomic variables (Adjusted R Square = 0.123, P<0.05). From the model, there is a statistically significant weak positive relationship between Inflation rate and Tobin’s Q ratio (β=0.067, P<0.05). The study finds a weak positive relationship between GDP growth rate and Tobin’s Q ratio which is not statistically significant (β=0.060, P>0.05). The model also infers a weak
negative relationship between exchange rate volatility and Tobin’s Q ratio which is not statistically significant ($\beta = -0.115$, $P > 0.05$). From the models in Table 4.13, a multivariate equation is estimated as:

$$\text{Tobin’s Q} = 1.201 + 0.067 \text{ (Inflation rate)} + 0.060 \text{ (GDP growth rate)} - 0.115 \text{ (Exchange rate volatility)} + \varepsilon$$

Table 4.17: Effect of GDP growth rate, Inflation rate and Exchange rate Volatility on Tobin’s Q ratio

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
<th>Change Statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>R Square Change</td>
</tr>
<tr>
<td>1</td>
<td>.420$^a$</td>
<td>.176</td>
<td>.123</td>
<td>.94049</td>
<td>.176</td>
</tr>
</tbody>
</table>

a. Predictors: (Constant), Inflation Rate, Exchange Rate Volatility, GDP Growth Rate

ANOVA$^a$

<table>
<thead>
<tr>
<th>Model</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regression</td>
<td>8.714</td>
<td>3</td>
<td>2.905</td>
<td>3.284</td>
<td>.029$^a$</td>
</tr>
<tr>
<td>1 Residual</td>
<td>40.688</td>
<td>46</td>
<td>.885</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>49.402</td>
<td>49</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a. Dependent Variable: Tobin’s Q

Coeficients$^a$

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
<td></td>
</tr>
<tr>
<td>(Constant)</td>
<td>1.201</td>
<td>.545</td>
<td></td>
<td>2.204</td>
</tr>
<tr>
<td>1 Exchange Rate Volatility</td>
<td>-.115</td>
<td>.080</td>
<td>-.209</td>
<td>-1.436</td>
</tr>
<tr>
<td>GDP Growth Rate</td>
<td>.060</td>
<td>.067</td>
<td>.133</td>
<td>.892</td>
</tr>
<tr>
<td>Inflation Rate</td>
<td>.067</td>
<td>.024</td>
<td>.398</td>
<td>2.827</td>
</tr>
</tbody>
</table>

a. Dependent Variable: Tobin’s Q
4.7 Chapter Summary

The foregoing chapter presents the findings and results of the study. It describes the trend of the study variables and finds that all the five variables (ROA, Tobin’s Q, GDP growth rate, Inflation rate and exchange rate volatility) are not constant and they keep changing over the years. The study finds a weak negative correlation between exchange rate volatility and tobins Q and weak positive associations between; GDP growth rate and ROA, Inflation rate and ROA, Exchange rate volatility and ROA and Inflation rate and Tobin’s Q. The study establishes a statistically significant weak negative associations between; exchange rate volatility and GDP growth rate and GDP growth rate and Inflation rate. There is also a statistically significant weak positive association between exchange rate volatility and Inflation rate. In both the bivariate and the multivariate regression analyses, the study finds that the relationships between ROA and the predictor macroeconomic variables are not statistically significant. The bivariate models indicate that 0.5% of variations in ROA is explained by variations in GDP growth rate, 1.2% of variations in ROA is explained by variations in Inflation rate and 0.2% variations in ROA is influenced by variations in exchange rate volatility. The study results suggest weak positive relationships between GDP growth rate, Inflation rate, exchange rate volatilities and ROA of manufacturing companies listed at the NSE. The relationships are however not significant at 95% levels of confidence. Multiple regression analyses suggest that 1.4% variations in ROA are explained by variations in GDP growth rate, Inflation rate and Exchange rate volatility. The study finds weak positive relationships between ROA and GDP growth rate, inflation rate and exchange rate volatility. The study establishes that 0.9% variations in Tobin’s Q ratio are explained by variations in GDP growth rate, 10.1% variations in Tobin’s Q ratio are explained by variations in Inflation rate and 3.2% variations in Tobin’s Q ratio are explained by variations in Exchange rate volatility. The bivariate regression analyses finds weak positive relationships between Tobin’s Q ratio and GDP growth rate and Inflation rate and a weak negative relationship between Tobin’s Q ratio and Exchange rate volatility. Multivariate regression analyses suggest that 12.3% of variations in Tobin’s Q ratio are explained by variations in Inflation rate, GDP growth rate and Exchange rate volatility.
volatility. The multiple regression models finds a weak negative relationship between exchange rate volatility and Tobin’s Q ratio and weak positive relationships between Inflation rate, GDP growth rate and Tobin’s Q ratio. The relationship with inflation is statistically significant. Chapter five will discuss the findings presented in chapter four above, conclusions that can be drawn from the findings and recommendations there-to.
CHAPTER FIVE
5.0 DISCUSSION, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter presents discussions of the key findings as presented in chapter four, conclusions drawn based on such findings and recommendations there-to. The chapter also discusses areas for further research given the limitations of the study.

5.2 Summary

The purpose of this study was to investigate the impact of macro-economic factors on financial performance of construction and allied companies in Kenya. The study specifically sought to investigate the: effect of GDP growth rate on performance of construction and allied companies in Kenya, effect of inflation rate on performance of construction and allied companies in Kenya and the effect of exchange rate volatility on performance of construction and allied companies in Kenya.

In the methodology, exploratory research design was adopted on a population of five construction and allied enterprises listed at the Nairobi securities exchange. The study was a census on a ten year period and secondary data was available on all the five companies for the period yielding 50 observations on company performance proxied by return on assets (ROA) and Tobin’s Q ratio. Descriptive statistics were drawn such as frequencies, percentages, means, standard deviation, skewness and Kurtosis. Correlation and regression analyses were applied on the variables with ROA and Tobin’s Q ratio as dependent variables and GDP growth rate, Inflation rate and Exchange rate volatility as predictor variables.

The study confirms that all the five variables in the study (ROA, Tobin’s Q ratio, GDP growth rate, Inflation rate and exchange rate volatility) do not have a constant trend as they keep fluctuating over the years. Comparison of the companies’ levels of financial performance indicates that there is no consistent trend. However, some companies lead the pack of other companies in performance proxied by both Return on Assets (ROA) and Tobin’s Q ratio.
Correlation relationships amongst the macroeconomic variables finds; a statistically significant weak negative association between GDP growth rate and Exchange rate volatility and a statistically significant weak negative association between Inflation and GDP growth rate. It also finds a weak positive association between inflation and exchange rate volatility.

The study finds a statistically significant strong positive association between ROA and Tobin’s Q ratio and a statistically significant weak positive association between Inflation rate and Tobin’s Q ratio. The study establishes; weak positive association between exchange rate volatility and ROA, weak positive association between GDP growth rate and ROA and weak positive association between Inflation and ROA. The study establishes a statistically significant weak negative association between exchange rate volatility and Tobin’s Q ratio.

Both bivariate and multiple regression analysis indicate relationships between the dependent variable and independent variables which are not statistically significant except for inflation and Tobin’s Q ratio relationships. Bivariate regression analysis results on the relationships between performance proxied by ROA and macroeconomic variables (GDP growth rate, Inflation rate and Exchange rate volatility) indicate that 0.5 percent of variations in ROA is explained by variations in GDP growth rate, 1.2 percent of variations in ROA is explained by variations in Inflation rate and 0.2 percent variations in ROA is influenced by variations in exchange rate volatility. The models establish weak positive relationships between GDP growth rate, Inflation rate, exchange rate volatilities and ROA of the construction and allied companies listed at the NSE.

Bivariate regression analysis on the relationships between performance proxied by Tobin’s Q ratio and the macroeconomic variables show that 0.9 percent of variations in Tobin’s Q ratio is explained by variations in GDP growth rate, 10.1 percent of variations in Tobin’s Q ratio is explained by variations in Inflation rate and 3.2 percent of variations in Tobin’s Q ratio is explained by variations in Exchange rate volatility. The study findings suggest weak positive relationships between GDP growth rate, Inflation rate and Tobin’s Q ratio and weak negative relationships
between exchange rate volatility and Tobin’s Q ratio. The relationship between inflation and Tobin’s Q ratio is statistically significant at 95 percent levels of confidence.

Multiple regression findings suggest that 1.4 percent variations in ROA are explained by variations in GDP growth rate, Inflation rate and Exchange rate volatility. The study finds weak positive relationships in the variables tested. The relationships between ROA and GDP growth rate, inflation rate and exchange rate volatility are all positive. From the study findings, 12.3 percent of variations in Tobin’s Q ratio are explained by variations in Inflation rate, GDP Growth rate and Exchange rate volatility. The relationships between Tobin’s Q and both inflation and GDP growth rate are weak and positive. Inflation as a predictor factor of Tobin’s Q ratio is statistically significant at 95 percent levels of confidence in the model. The weak relationship between Exchange rate volatility and Tobin’s Q ratio is negative.

5.3 Discussion
5.3.1 GDP Growth Rate and Performance

Bivariate regression analysis establishes weak positive relationships between GDP growth rate and performance as proxied by individual firm’s ROA. Multivariate regression analysis also establishes weak positive relationships between GDP growth rate and performance as proxied by individual firms ROA. Consistent with the definitions of GDP advanced by Learner (2009), big and growing economies are good while small and shrinking economies are bad. Since ROA is a function of net profits and total assets of a firm, the study findings confirm the proposition that with improved economic growth, firms tend to use their assets optimally in generating returns for ownership of the assets employed in generating the revenues.

The foregoing study findings thus suggest that improved economic growth positively influence firm performance either directly through increased consumption or indirectly through various other economic channels. As highlighted in Tharoor (2002), the direct effect is traced from the first and second components of GDP which are consumption and investment. GDP consists of consumption comprised by
household sector’s direct purchase of currently produced goods and services which directly increases the firms’ revenue. GDP also consists of investment including purchase of newly produced plant and equipment by firms, residential construction including building of single and multifamily housing units and change in business inventories. Increased ROA of firms on acquisition of additional net assets is accompanied by increased levels of firm revenues. As explained by Austin (2000), at consumer level, low incomes mean low effective demand and price purchasing power is severely constrained. At low income levels, largest percentage of the budget goes to food purchases and as income rises, food expenditures grow in absolute terms but take up a small share of total family expenditure.

The relationship between GDP growth rate and firm performance as proxied by Tobin’s Q ratio is further verified in bivariate and multivariate regression models. The Bivariate analyses establish weak positive relationships between GDP growth rate and Tobin’s Q ratio and multivariate analyses further confirm weak positive relationships between GDP growth rate and Tobin’s Q ratio. The basic idea behind application of Tobin’s Q ratio is to use the difference between the market value of the firm and its replacement cost as a measure of firm performance. These findings therefore suggest that economic booms enhance corporate performance through increased firm market value and declining replacement costs. With improved economic growth, its envisaged that the net exports position of the country improves with increased gross exports and reduced gross imports suggesting that firms replace their assets internally other than overreliance on imports markets.

The study also establishes weak positive associations between GDP growth rate and ROA and weak positive associations between GDP growth rate and Tobin’s Q ratio in correlation analyses. The positive associations indicate that as GDP growth rate increases, firm performance as inferred in ROA and Tobin’s Q ratio also increases. In case, the GDP growth rate declines, it is expected that ROA and Tobin’s Q ratio will decline. The established association confirms the argument that bigger and growing economies are good for businesses.

The foregoing study findings are consistent with other studies on these relationships that were conducted in other contextual settings by Alexiou and Sofoklis (2009) and
Jefferis and Okeahalam (2000). As explained by Samuelson and Nordhaus (2005), the lessons of Keynesian economics are that changes in aggregate demand can impact on overall level of output, employment and prices in the short run. Aggregate demand changes as consumers, businesses, or government change total spending in tandem with the economy’s productive capacity. Upward and downward movements in output, inflation, interest rates and employment form business cycles which therefore characterize all market economies.

In the banking sector context, Alexiou and Sofoklis (2009) established that economic growth as measured by GDP growth rate in this study enhances bank profits through increased demand for household loans and business loans. Such borrowings generate good returns to commercial banks, resulting in higher profits. Another noteworthy argument on why profits improve with economic growth as explained in the study is that fewer loan defaults occur during periods of boom (strong economic growth) because of increased purchasing power of the household and business borrowers. In some African stock markets, Jefferis and Okeahalam (2000) opine that stock prices have a positive long-run relationship with real GDP in South Africa and Zimbabwe. Osei (2006) also opine that there is a long run causal link between GDP and stock returns in Ghana. The positive relationships in these empirical studies are consistent with the findings of the current study for construction and allied firms in Kenya.

5.3.2 Inflation Rate and Performance

Inflation is generally defined as a sustained increase in general price levels of goods and services in an economy. The study findings establish a weak non-significant positive relationship between inflation and ROA and a weak significant positive relationship between Inflation and Tobin’s Q ratio thereby suggesting that increased inflation results into increased firm profitability.

Some part of literature suggests that high inflation rates have a detrimental effect on economic growth and income inequality in a country and thus firm financial performance. Low and stable inflation is established as a necessary step in financial development and subsequently economic growth. Other literature suggest that
inflation increases costs of production for firms and therefore it is given that there should be a negative relationship between inflation and firm financial performance.

Since inflation is generally too much money chasing a few goods, its notable that the construction and allied sector performance would benefit from increase in inflation especially when oversupply of currency resulting from government printing of excess money results into a large amount of money being in circulation as compared to a small quantity of goods and products. Such increased demand pushes the prices up at the advantage of the merchants.

Rise in production costs is identified as one of the causes of inflation whereby firms increase prices of their final products especially when there is an increase in prices of the raw materials such that firms are forced to increase their prices so as to maintain their profit margins especially on events of rising labour costs. Firms could exploit this window to adjust the profit margins favorably.

The finding of a positive effect of inflation on performance is consistent with various previous studies. In the banking sector, the literature of Molyneux and Thornton (1992), Perry (1992), Bourke (1989) and Revell (1979) confirm this proposition. According to Revell (1979), the effect of inflation on bank profitability depends on whether banks operating expenses increased faster than the inflation rate. Therefore, the impact of inflation is contingent on the overall macroeconomic stability that allows the correct predicting of inflation. The study by Ochieng and Oriwo (2012) in stock markets in Kenya indicate that inflation positively affect returns at the stock markets. The finding is consistent with Coleman and Tettey (2008) assertions that inflation leads to a reduction in the demand for financial instruments and causes an eventual reduction in stock prices.

The effects of inflation on firm financial performance can further be linked to its relationship with interest rates. Huybens and Smith (2008) advance the proposition that economies with higher rates of inflation do not reach the steady state where capital stocks would be high as they present less efficient financial markets where higher interest rates follow higher rates of inflation. Given that the Tobin’s Q ratio considers the market value of the firm and replacement costs of its assets, less
efficient markets cannot ascertain the accurate market value of firms. In the arguments of Acemoglu and Johnson (2003), high inflation is a symptom of weak institutions use by the elite to expropriate the resources of another group in society. It thus suggests that high inflation could be an opportunity for producers to exploit final consumers.

5.3.3 Exchange Rate Volatility and Performance
Both Bivariate and multivariate regression models find not statistically significant weak positive relationships between Exchange rate volatility and firm profitability proxied by ROA. The Multivariate and Bivariate regression analysis establishes not statistically significant weak negative relationship between exchange rate volatility and firm profitability as proxied by Tobin’s Q ratio.

Correlation analysis suggests a weak positive relationship between exchange rate volatility and ROA and a weak negative relationship between exchange rate volatility and Tobin’s Q ratio. These findings thus suggest that the exchange rate risks may have either a negative or a positive effect on profitability of the construction and allied firms in Kenya. The effect is dependent on the type of managerial actions after currency depreciations.

As argued by Forbes (2002), profitable organizations are managed by competent managers who are better able to adjust production to benefit from currency depreciations. If currency depreciations are followed by output contraction from the organizations, profitable organizations withstand the contraction in demand for the products but non profitable organizations could go bankrupt. In the arguments, profitable firms can further counteract the effects of currency depreciations by operating closer to their full capacity and thus having negligible excess resources to reallocate and subsequently adjust to foreign currency depreciation.

From the advancements of Clarida (1997), it is envisaged that firms respond to cost benefits availed by foreign currency depreciation by keeping domestic currency prices constant and reducing foreign currency prices hoping to create an increase in sales quantity. Additionally, firms could also respond by keeping foreign currency prices constant while raising local currency prices so that export sales remain constant but
net income increases. Failure by management of firms to pursue any of such strategy could thus result into declined firm performance while pursuit of such alternative strategies could lead to improved firm performance.

As pointed out by Forbes (2002), impact of currency depreciations on firm performance could be reflected by an increase in sales or an increase in income, or a combination of the two. The effects of exchange rate depreciations or appreciations is therefore noted in the argument that currency depreciations affects the organizational performance through a number of mechanisms like: raising the cost of imported inputs as compared to other factors of production, providing exporters with a relative cost advantage as compared to foreign competitors, or a contraction in lending and generating higher borrowing costs for the firm.

The weak negative relationship with Tobin’s Q as a market based measure of firm performance suggest that changes in firm asset values provide additional information on expected longer term impact of depreciations on firm performance in efficient markets where new information from the depreciations are accurately absorbed. The firms that are envisaged to benefit from depreciations in the long run are more likely to increase the assets by purchasing additional machines or plants.

Misalignments in exchange rates also affect firm performance. The common identified misalignments in real exchange rates include overvaluation, which adversely affects the exports tradable sector. A real decline in the price of foreign goods relative to domestic goods is occasioned by overvaluation. Montiel (2003) explain how misalignments of real exchange rates lead to a distortion in price signals that eventually affect allocation of resources in an economy and could negatively affect firm performance as evidenced by some of the findings of this study which infer a negative relationship between exchange rate volatility and firm performance. Foremost, fewer resources are allocated towards producing export goods which would be expensive for foreigners while at the same time production of substitute goods for foreign goods would decline. Secondly, fall in prices of foreign goods relative to domestic goods would stimulate domestic spending on foreign goods thereby making exports less competitive in foreign markets while stimulating imports. These could negatively affect firm performance.
5.4 Conclusions

5.4.1 GDP Growth Rate and Firm Performance
Correlation analyses establish weak positive associations between GDP growth rate and firm performance which is proxied by ROA and Tobin’s Q ratio. Bivariate regression results imply that there is a weak positive non significant relationship between GDP growth rate and ROA of the listed construction and allied companies in Kenya. The analysis inform that a negligible proportion of variations in ROA is explained by variations in GDP growth rate. These findings confirm that ROA is positively influenced by GDP growth rate amongst other factors. The relationship between GDP growth rate and Tobin’s Q ratio in a Bivariate regression framework also show that a negligible proportion of variations in Tobin’s Q ratio is explained by Variations in the GDP growth rate. The regression model infers a weak non significant positive relationship between Tobin’s Q ratio and GDP growth rate.

5.4.2 Inflation Rate and Firm Performance
Bivariate correlation analysis infers a weak positive association between inflation rate and firm profitability that is proxied by ROA. Correlation analysis also establishes a weak statistically significant association between Inflation rate and Tobin’s Q ratio. Bivariate regression findings indicate that a negligible proportion of variations in ROA is explained by the variations in the rates of inflation. The study finds a weak positive relationship suggesting that ROA is positively influenced by inflation rate. These findings confirm that ROA is positively influenced by Inflation rate amongst other factors. Further Bivariate regression analysis indicate statistically significant weak positive relationships between Tobin’s Q ratio and inflation rates. The model suggests that a moderately significant propotion of variations in Tobin’s Q ratio are explained by variations in the rates of inflation.

5.4.3 Exchange Rate Volatility and Firm Performance
Correlation analysis establishes a weak negative association between exchange rate volatility and firm performance proxied by Tobin’s Q on one hand. On the other hand, there is a weak positive relationship between exchange rate volatility and firm profitability measured by ROA. Bivariate regression analysis indicates a weak positive relationship between exchange rate risks measured by standard deviation
from the mean rate and the ROA of the construction and allied companies. The study establishes that a negligible proportion of variations in ROA is influenced by variations in exchange rate volatility – risk. The study also finds a weak negative relationship between exchange rate volatility and Tobin’s Q ratio. The regression model suggests that moderate levels of variations in Tobin’s Q ratio are explained by variations in Exchange rate volatility. From the findings, it is concluded that exchange rate fluctuations (appreciations and depreciations) can either be favourable or unfavourable for the manufacturers in various channels including denomination of their receivables and payables.

5.5 Recommendations
Based on the findings and conclusions presented above, the study makes the following recommendations for improvement of performance of manufacturing entities in Kenya and future studies on the same:

5.5.1 Suggestions for Improvement
5.5.1.1 GDP Growth Rate
The study establishes a weak positive non-significant relationship between GDP growth rate and performance of firms. Sustainable GDP growth rate is the desire of Governments to facilitate overall productivity in the economy and subsequently improve the living standards of the citizen through employment creation and government revenue to provide social services. Thus to improve the overall firm performance, Government efforts should focus on improved and sustainable economic growth that creates employment and further enhances demand for manufactured goods.

5.5.1.2 Inflation Rate
The study finds a weak positive and non-significant relationship between inflation and performance of the firms. Though a general increase in overall price levels affects the cost of living and reduces the consumption appetite for locally manufactured goods, government policy should focus on maintaining inflation at manageable levels that do not hurt consumption of domestic products that may encourage importation of cheaper manufactured goods. General increase in price levels is however attractive to profit maximizing producers because of increased revenue levels.
5.5.1.3 Exchange Rate Volatility

The study finds a weak negative non-significant relationship between performance and exchange rate volatility. This finding suggests that frequent fluctuations in exchange rates affect firm performance especially on account of exchange rate losses when the firms transact in foreign currencies for payables and receivables. To mitigate this long term managerial concern, firms should put in place mechanisms for managing their foreign exchange exposures especially transaction risks. These mechanisms include; options, swaps, futures, forward contracts and money market hedging techniques. Government policy should also focus on minimizing the exchange rate fluctuations and if need be, there should be government intervention in the market if the foreign exchange risks affect the productive sector.

5.5.2 Suggestions for Further Research

The study suggests that further studies can be undertaken on the effect of other macro-economic forces on performance of firms that are not included in the current study especially money supply, interest rates, balance of payments and government fiscal policy. Future work should also focus on how manufacturers who import raw materials hedge against exchange rate risks and how the hedging alternatives influence firm performance. Since some of the relationships developed in the models are not statistically significant and variations in predictor variables explain only a small proportion of variations in dependent variables, further studies should introduce control variables some of which should be firm specific. The predictor variables should also be lagged to account for the effects of time.
REFERENCES


Nucci, F., & Pozzolo, A. F. Investment and the exchange rate: an analysis with firm-level panel data.


APPENDICES

APPENDIX A: LETTER OF INTRODUCTION

To Whom It May Concern

Dear Sir/Madam,

I am pleased to inform you that am a graduate student at United States International University pursuing a Masters degree in Business Administration, with a bias on finance. As partial fulfillment for my degree, I am conducting a research analysis of the impact of macro-economic factors on firm performance; A case of listed manufacturing enterprises in Kenya.

Please note that any information you give will be treated with confidentiality and at no instance will it be used for any other purpose other than for this project. Your assistance will be highly appreciated. I look forward to your prompt response.

Yours faithfully,

Mariam Makori
APPENDIX B: DATA COLLECTION SHEET

Name of Company (Optional).........................................................................................

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