

**THE EFFECT OF SELECTED MACROECONOMIC VARIABLES ON
THE FINANCIAL PERFORMANCE OF TEA SECTOR IN KENYA**

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DECLARATION

This management research project is my original work and to the best of my knowledge, has not been presented for the award of a degree in any Institution.

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This research project has been submitted for examination with my approval as the University appointed Supervisor.

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DEDICATION

I dedicate this work to my loving wife Gladys together with our two daughters Pauline and Jane. They were patient with me and gave me support during the period of study.

ACKNOWLEDGEMENT

Am grateful to God for good health that enabled me complete the program. I acknowledge my loving wife Gladys and our daughters Pauline and Jane for invaluable support and unwavering patience in the course of the research work. I owe gratitude to Dr. Duncan Elly, PhD for support in guiding and supervising me consistently through from project inception to its final phase. I thank him for his patience too. I acknowledge my study colleagues for their valuable suggestions and moral support over the period of the study. Finally am grateful to the University of Nairobi School of Business community comprising but not limited to the teaching and support for playing their part while I undertook the research. I say a big thank you to all those people who contributed to the successful completion of this study whether directly or indirectly.

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LIST OF ABBREVIATIONS

APA	:	Automated Public Auction
APT	:	Arbitrage Pricing Theory
CBK	:	Central Bank of Kenya
CPI	:	Consumer Price Index
EA	:	East Africa
EATTA	:	East Africa Tea Trade Auction
GDP	:	Gross Domestic Product
KNBS	:	Kenya National Bureau of Statistics
KSH	:	Kenya Shilling
KTDA	:	Kenya Tea Development Agency
KTDA (M/S)	:	Kenya Tea Development Agency – Management Services
KTGA	:	Kenya Tea Growers Association
MoA	:	Ministry of Agriculture
MPT	:	Modern portfolio Theory
SPSS	:	Statistical Package for Social Sciences
TBK	:	Tea Board of Kenya
TRF	:	Tea Research Foundation
USD	:	United State Dollar

ABSTRACT

Tea sector revenues to growers are affected by unprecedented fluctuations of average tea prices in the market. Determination of these prices by a set of selected macroeconomic variables the subject of this investigation taking into account the sector performance being dependent variable while on the other hand independent variables as the economic factors. The selected macroeconomic variables were: Inflation Rate, exchange Rate, % GDP growth and bank Interest Rate. This research sought to investigate influence of the economic factors on average tea prices. A time series of secondary data from KNBS spanning from Years 2007 to June 2016, taken at quarterly intervals per year was used employing 38 data points enough to provide inference upon analysis. A functional mathematical model was deployed to analyze through regression the influence that selected macroeconomic variables have on the average prices of tea. The study established varying degrees of effect on tea sector performance (prices) by the independent variables selected. A unit increase in Exchange Rate of Kenya Shilling (Ksh) against USD (\$) increases the average tea price by 0.017 (approximately 2%). GDP growth rate increase by a unit leads to decrease in tea prices by 0.098 (approximately minus 10%). Bank lending interest rate unit rise increases the average tea price by 0.043 (approximately 4%). Tea price decreases by 0.057 (approximately 6%) with unit increase in inflation rate. These macroeconomic variables should therefore be carefully considered by policy makers and stakeholders in the tea sector while designing related macroeconomic policies. Practitioners and finance managers should take caution on effect of changes in macroeconomic environment when forecasting tea earnings and devising pricing strategies. Unprecedented fluctuations in the selected macroeconomic factors would translate into unstable earnings. Further research should be initiated to demonstrate how the selected relate with prices of other export crops in addition to other different economic sub-sectors.

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

Tea leads as cash crop in Kenya contributing the highest foreign exchange in the Agriculture sector. Tea production value in 2013 was estimated to be USD 15.4 billion (World Tea News, 2014) and USD 40.7 billion in retail value (Euromonitor International, 2014). Tea in Kenya is grown in the following regions: Thika, Kisii, Trans-nzoia, Nyeri, Kericho, Nandi, Embu, Kakamega, Nakuru, Meru, Bomet and Kirinyaga. Kenyan tea accounts for 10% global production and constitutes 22% of total Kenya export (Tea Research Foundation Kenya, 2011). Tea for export in Kenya is sold in dollar denominated currency through auction at Mombasa, which is the second largest in the World. This market is run by East Africa Tea Trade Auction (EATTA). Approximately 32 % of tea exported globally passes through this auction. Macroeconomic environment fluctuates as noted by Karingi S (200) thus affecting tea prices and the government is charged with fronting economic policy interventions to stabilize this environment.

Selected macroeconomic variables namely such as GDP growth rate , Bank lending Interest rate, Exchange rate of USD against KSH and Inflation rate are thought to influence financial outcome of the Tea Sector. Average Tea Price per Kilogram is a good measure of this output (Muthamia, & Muturi, 2015). This perception is supported by empirical studies and a number of theories link macroeconomic factors with commodity prices. H.M. Markowitz linked pricing of commodities with reference to risk and return but emphasized on diversification in his theory of Modern Portfolio Management (MPT) of 1952. This diversification leads to higher prices of commodity (Kane & Marcus, 2011). MPT has shortcoming since it is complex and highly mathematical. Theory of Exchange Rates was developed in 1959 by Tsiang explained changes in asset prices by taking into account fluctuations in currency exchange rate. This theory is important because it forms a basis of connection between prices of commodities and changes in exchange rate (Todani & Munyama, 2005). Theory of exchange rate however addresses a single macroeconomic variable in price determination

(Cross, 1998). Theory of Real Business cycle proposed that fluctuation of pricing of commodities is due to impact of shocks from business cycles. It was developed in 1970 by Finn E. Kydland and Edward C. Prescott (Preston J. M. 1986). This theory is important to this study as it acknowledge fluctuations of prices although it puts emphasis on irrelevance variables. It also lacks Scientific support (Lawrence H. 1986). Ross explained estimation the price of a commodity using the Arbitrage Pricing Theory (APT) developed in 1976. It makes assumption that various macroeconomic, market and security specific factors influence return of an asset. Though it looked at macroeconomic environment it focuses mainly on risk is also a one-period model (Stephen A. 1986).

Macroeconomic variables are expected to play a role in price determination of Agricultural produce for export for which tea is critical to Kenyan economy (Tea Board of Kenya (2012). Average tea pricing in USD at the Mombasa Auction is an indicator of sub-sector output hence qualify as critical aspect that cannot be ignored by all players. Gross Domestic Product growth rate (GDP), Bank lending Interest rate, Exchange rate and Inflation rate are inferred to have influence financial performance of Tea Sector in Kenya (Muthamia,A.K. & Muturi W. 2015). Determination of effect by these variables would inform the degree of their monitoring and consequently relevant macroeconomic policy direction to be taken to mitigate the effect accordingly.

1.1.1 Macro Economic Variables

Macroeconomic variables are factors important to a broad economy at the regional or national level affecting substantial population as opposed to a few selected individuals (Brinson et al. 1991). Selected macroeconomic factors poised to have a link with commodity prices included: Gross domestic product (GDP) rate, exchange rate, bank rates, inflation rate, risk, regulatory and legislative environment. Firms which carry long term investments as observed by Sharma and Singh, (2011) expect that macroeconomic variables will remain stable and favorable to their operations over the entire duration of their investment. This however is never the case since macroeconomic environments keep fluctuating from time to time. Government on the other hand responds to macroeconomic challenges through policy interventions. Business profitability can be promoted by conducive macroeconomic environment. Kwon and Shin (1999) asserts that

a country's economy affects the performance of its organizations. The most influential selected macroeconomic variables as GDP growth rate, currency exchange rate, interest rates and inflation (Sharma and Singh 2011).

1.1.2 Financial Performance

Performance connotes milestones in target accomplishment (Frisher, 2007). To a business firm, it denotes the extent of meeting targets as given in specific fronts. According to Greenwood and Javonovica (1991), magnitude of this accomplishment quantifies degree of increment to ultimately the shareholders' value linked to the quality and success of the decisions made by management in agency relationship. Business, corporate firms and organizational performance viewpoints have been expanded to cover non-financial aspects such as client care and product differentiation (Galor Zeira, 2000). Differing facets of entity's measurement surrounding outcomes in human capital, organizational and business finance have been fronted recently by Muthamia and Muturi (2015)

According to Demirguc-Kunt, Laeven and Ross (2004), good financial results are key to firms survival and how it thrives under uncertain and competing environs. Crane (2000) grouped indicators of business health into profitability, going concern and working capital adequacy. He further proposed that profitability is the ability to create earnings over expenses, going concern implies existence into the next foreseeable future while working capital adequacy implies ability to meet current liabilities as and when they are required to be met. Batten (1984) discussed relationship between profits generated in a firm with production factors that included capital, labor and entrepreneurship. Financial performance narrowing down to tea firms can be equated to improvement in revenues, net-earnings and return on capital employed as mirrored through competitive pricing (Sauza, 2002) . When tea fetches high prices per kilogram sold on average in the market, this is construed to mean better business outcomes hence manifestation of healthy sector (Cosmas & Changwony, 2014).

1.1.3 Effect of Macroeconomic Variables on Financial Performance

Arbitrage Pricing Theory, phenomenon advance by the J Curve, and theory of modern portfolio have established that macroeconomic variables affect financial performance of firms. The factors are: Money exchange rate, rate of GDP, bank lending rate and inflation among others. These macroeconomic variables according to Siqueila (2011) affect pricing of assets. Harris and others (2011) noted that exchange movements could lead to appreciation or depreciation in value of one currency with respect to another currency. Appreciation in Kenya shilling implies that its value has increased and the converse is true. Against the dollar, appreciation of Kenya shilling implies a downward movement. Depreciation of Kenya shilling is bound to favor tea exporters hence improve tea pricing while on the other hand appreciation of Kenya shilling will be expected to have a negative effect on tea exports thus lowering tea pricing (Deaton, A. and Miller R., 1995).

According to the study done by Todani and Munyama (2005), any national income measure like GDP growth rate can indicate how competitive a country can be and this is linked to its productivity. At a given period of time, GDP indicate the sum total of all services and goods manufactured in a country. In 2002, the Tea Board of Kenya noted that Tea contributes greatly to Kenyan GDP since it was the highest cash crop. Were and Karigi (2002) asserted that existence of a relationship between tea revenues and rate of GDP increase means economic implications visible in tea revenues. Inflation may be expressed as reduction in money purchasing power. It is expected that high inflation leads to loss of value in the Kenyan shilling and this may lead to favorable return of tea prices since exports are denominated in dollar (Arize, (1995). With low inflation, the Kenya shilling gains ground thus exchange at a lower value against hard currencies and this may not be favorable for exporters. Interest rates denote cost of capital especially for assets investment in firms. High- lending rates tend leads to increase in production costs. The excess financing for cost of funds is effectively transferred to commodity pricing. It is therefore expected that tea prices are likely to go higher with high interest rate regime (Batten, and Belongia 1984).

1.1.4 Tea Sector in Kenya

Agriculture is the backbone of Kenyan export trade and tea sector is important because tea is the leading cash crop earner. About 100,000 hectares of agricultural land spread across Kenya is under small grower's tea cultivation. (Cosmas & Changwony, 2014). Tea farming supports a sizeable population of Kenyan either directly or indirectly. This population include employees in tea processing plants, suppliers in the supply chain of tea manufacturing, tea brokers and traders in tea auction, employees of small scale growers, employees in private tea firm and management agencies of tea factories (KTDA 2008). At policy level, the Government of Kenya controls the sector through the Ministry of Agriculture (MoA). Players in the industry are categorized as Government Agencies, Tea growers and private players. Among the Governme Agencies are: Tea Board of Kenya, Tea Research Foundation and the Nyayo Tea Zone. Tea growers include small scale farmers, private tea plantations and the KTDA managed factories. Other players in the value chain include brokers and traders, suppliers and membership organizations such as Kenya Tea Trade Association (KTTA) (Tea Board of Kenya, 2012) Deaton and Miller (1995) noted that external trade in Kenya had improved consistently over a span of five decades due to consistent high tea earnings. Kenyan exports and import are done using world currencies especially US dollars and Euros (Arize, 1995).

Tea prices in the Mombasa Auction have shown unpredictable movements thus affecting overall net earnings of the farmers commonly known as 'bonuses (East Africa Trade Association 2012). In the same breadth, from the year 2010 to date, Kenyan economy has witnessed a very unpredictable macroeconomic environment with fluctuating macroeconomic variables. Indeed, there has been an upsurge of, high inflation, fluctuating currency exchange rates, lower rates in GDP growth and rising bank lending rates (Cosmasand Changwony, 2014). In an effort to stem the skyrocketing bank lending rates, the Government introduced legislation to cap interest rates to a maximum of 4 points above the Central Bank lending Rate (CBR). The Central Bank employs various macroeconomic intervention policies to stabilize the economy and guard against the adverse effects of the macroeconomic environment changes. CBR is one such measure and it should be noted that this rate is neither constant and keeps fluctuating too (Kenya Law Reporting: Banking Amendment Act, 2015)

1.2 Research Problem

Tea Sector in Kenya is the main foreign exchange earner in the country providing livelihood to millions of citizens either directly or indirectly hence accounting for a great portion of countries GDP (Tea Board of Kenya. (2012). Tea is mainly grown across numerous counties in Kenya including Trans-nzoia, Nyeri, Kericho, Nandi, Embu, Thika, Kakamega, Nakuru, Meru, Bomet, Kirinyaga and Kisii. According to the Tear Research Foundation (2011), in 2010 the local tea export market share was about 22% which translated at global level approximately 10% in World production. At Mombasa, tea is traded in USA dollars on automated platform (Tea Board of Kenya, 2012). Tea prices are therefore prone currency exchange fluctuations (Muthamia, & Muturi, 2015). Tea sector relies on Banks and Financial Institutions to finance their capital budgets and investments including heavy machinery. Amount of Interest rates charged by commercial banks have direct impact on performance of the Tea Sector as it is accounted as expense in doing business (Nelson et al., 2014). Inflation rates can be estimated from the Consumer price index and affects purchasing power of consumers. Since the Tea Sector is a large economic sector, movements in rate of inflation will always affect the performance of the sector (Todani & Munyama, 2005).

Tea trade in Kenya is conducted through online international Auction platform and is driven by market forces (Deaton and Miller, 1995). Tea earnings computed in US dollar per Kilogram keep fluctuating thus bonus pay are unpredictable (Cosmas and Changwony 2014). In this context, macroeconomic variables namely; Gross Domestic Product (GDP), Bank lending rate, Exchange rate of (USD) United State dollar versus the Kenya Shilling (KSH) and Inflation are thought and this perception supported by empirical studies to have effect on financial performance of Tea Sector in Kenya measured by average Tea Price per Kilogram in the Mombasa Tea Auction (Muthamia & Muturi, 2015). Both KSH and the hard currency (US Dollar) are bound to fluctuate depending on local and international trade dynamics respectively (Deaton, A. and Miller R., 1995). Tea farmers cannot predict the bonuses received from sale of their tea at Mombasa Auction. Examination of effects of macroeconomic variables on this financial performance would yield a relationship model between tea prices and various variables studied (Gujarati, 2003).

Global studies show a general consensus that there is no single factor by itself responsible for commodity price fluctuation but rather a set of factors (Headly Fan, 2008). Gilbert (2010), found these factors are demand and macroeconomic in nature. Correlational model of Vector Error by Davies and Vickner (2003) studied prices in different brands of tea and results indicated some form of relationship with macroeconomic environment. In 2005 at Bamako, Mali, Kergna and Bassler (2005) using the same error model found out that prices are discovered in the wholesale trade where growers meet brokers and retailers. According to Kula (2003), there exists disparity in tea prices at global front in major tea auctions across the World. Studies have attempted to identify macroeconomic versus price causal relationship using econometric tools such as Granger Causality Analysis model of price against macroeconomic variables. These tests have shown that if estimated, the coefficients of the explanatory variables are significantly different from zero (Gilbert, 2010). Studies conducted in international front concentrates on determining prices on the basis of single factor basis. There is a gap in knowledge to inform how a mix of macroeconomic variables would affect prices of Tea in the tea auction. The domestic scholars mainly concentrated in the pricing examining suggested factors responsible for changes in average prices of tea.

Determinants of tea prices have been investigated in a series of local studies. In his study, Were (2002) observed that tea pricing structures incorporated exchange rate in their models as having effect. Tondani and Munyama (2005) found that exchange rate fluctuations in tea market generate uncertainty eventually depressing the prices. Kiptui Kandie (2005) found out that the Kshs exchange rate had gone through various cycles leading either to foreign exchange loss or gain. Wesse (2012) in his study agreed with previous empirical findings by Johnson (1969) and Kihangire (2004) asserting that fluctuations of exchange rate affect pricing of tea in the international market and this study provides vital lessons in conducting the current study. The recent study by Muthamia and Muturi (2015) has identified inflation and exchange rate as key determinants of tea earnings in Kenya and thus serves as a relevant case for reference in the current study. It leaves a knowledge gap as cites two variables only instead of a set of them. Local studies indicate a knowledge gap over how a set of macroeconomic variables would affect pricing of tea. This investigation will determine whether selected

macroeconomic factors have relationship with tea prices. The knowledge gap will be addressed by answering the question of what is the effect of these macroeconomic factors on pricing of tea hence tea sector performance in Kenya?

1.3 Objective of the Study

To investigate the effect of macroeconomic variables on the financial performance of tea sector in Kenya.

1.4 Value of the Study

Those charged with governance of tea sector and policy formulation will benefit from findings of this investigation. The results will inform tea sector formulation and monitoring of relevant macroeconomic policies. This ultimately could result in promotion of the country's economy given the important role played by the sector in enhancing the country's economy.

The study will be useful to key participants in the auction tea trading including tea brokers and suppliers in the value chain as it would provide a pricing explanation model and a basis for future price prediction.

The findings of the study would be important to the KTDA M/S managed factories as it would provide knowledge to the management and farmers as to what degree do macroeconomic variables inform pricing of teas at the Auction thus explain shifts in farmers' earnings (bonuses).

The result of the inquiry would also be of value to scholars and research fellows. Its recommendations would afford suggestions for additional inquiry into the effect macroeconomic variables on tea prices thereby narrowing the knowledge gap on the subject matter.

CHAPTER TWO

REVIEW OF LITERATURE

2.1 Introduction

The contents in this chapter interrogate the literature on link between macroeconomic variables and pricing of tea. It reviews material relating to macroeconomic variables and how they affect tea earnings. The degree to which researchers have investigated this relationship is revealed in this chapter. The sections in this chapter included the theoretical review, other determinants of financial performance, empirical review and summary of literature review.

2.2 Theoretical Review

Bhatt (2009) define a theory as a set of accepted facts, propositions or assumptions, which tries to avail logical explanation of causal relationships within a set of observed phenomenon. Theories discussed here below include; Modern Portfolio Theory, Theory of Exchange Rate, Theory of Real Business Cycle and Arbitrage Pricing Theory (APT)

2.2.1 The Modern Portfolio Theory (MPT)

This theory developed in 1952 by Markowitz proposed pricing of commodities not only with reference to risk and return but emphasized on diversification (Markowitz, 1952). This finance theory proposes maximization of expected portfolio return within a given level of portfolio risk or alternatively for a given level of return then risk should be at minimum. Portfolio models under this theory proposes assets investment combination to be in such a way that effect of weighted assets return is equivalent to the overall portfolio return.

Two phases of portfolio mix choice are suggested with phase 1 covering experiential observations culmination into systems of beliefs on the future behavior of selected assets. Phase 2 extends the belief systems that are relevant to future behavior of investments and culminate into the portfolio choice. The basic rule affecting how portfolio mix is selected is that the asset holder must maximize the capitalized or discounted future earnings. Expected earnings from assets are discounted to mitigate the uncertainty inherent in future. MPT theory advocates for risk spread through combinations of securities with

positively uncorrelated returns (Markowitz, 1952). This diversification leads to higher prices of commodity (Bodie, Kane & Marcus, 2011). MPT had its shortcoming in that it has been touted as being complex and highly mathematical. This theory is important for this study as it sheds light on matters of risk and return which are related to interest rates or the cost of capita. Due to its weaknesses, it provides a room for improvement through exploration.

2.2.2 Theory of Exchange Rate

Theory of Exchange Rates was developed in 1959 by Tsiang and took into account fluctuations in currency exchange to explain changes in asset prices. According to Cross (1998) exchange rate is the ration at which one currency denomination exchanges to another. The currency market is the foreign currency market and hard currency is defined by Ezaela Harrison (2009) as the one meriting confidence from the investors. Currency involves exchange of goods and services. Exchange rates fluctuate from time to time and for this reason international investors and portfolio managers employ hedging techniques to guard against unfavorable effects of exchange rates. Karmin (2007) agrees with reasoning behind hedging being to reduces a portfolio's volatility resulting from currency fluctuation but notes also there are costs related to hedging thus reduction in overall returns over time, compared with an un-hedged portfolio. Foreign exchange market is highly liquid involving huge and numerous transactions (Laura, 1996).

US dollar is the hard currency in which tea export in Kenya is traded (Deaton, and Miller, 1995). This theory is important for this study because it lays the basis of connection between prices of commodities and changes in exchange rate (Todani & Munyama, 2005). Theory of exchange rate however addresses a single macroeconomic variable in price determination (Cross, 1998). This limitation provides a room for further study involving a set of combined macroeconomic variables, a gap which results of this study will address.

2.2.3 Theory of Real Business cycle

Finn Kydland and Edward Prescott developed this theory in 1970. It proposed that fluctuations of pricing of commodities are due to impact of shocks from business cycles

(Preston, 1986). These cycles produce shocks that impact on commodity prices such as tea both on growth and fiscal performance. Real business cycle theory seeks to explain business cycles via the classical model. There is general equilibrium: demand equals supply in every market. An ideological conviction under this approach is argument of microeconomic theory that markets are in equilibrium and thus one must use general equilibrium theory to understand the economy (Lawrence, 1986). This theory argues that the real factors determining commodity prices are Exogenous economic fundamentals namely consumer preferences, technology, and resource endowments which determine the general equilibrium allocation of resources. Changes in important economic variables may lead to business cycles.

According to Preston (1986), fluctuations in economic factors trigger equilibrium quantities in the market thus shifting prices of items too. Business cycles can be categorized into either a boom or recession with opposite bearing on labour and production within a given cycle. He further notes that when there are economic changes causing decrease in employment and production, the resulting business cycle is recession due to contraction. The converse causes expansion leading to a boom. A reduction in resource endowments might cause a contraction of output. Usually, proponents this theory attribute the phases to movements in the rate of technical change. Rapid technical change causes a boom, and slow technical change results in recession. This theory is important to this study as it acknowledge fluctuations of prices though puts emphasis on irrelevance variables. It also lacks Scientific support (Lawrence, 1986).

2.2.4 Arbitrage Pricing Theory (APT)

This is a popular theory in finance for pricing investments, developed by Ross in 1976. This theory predicts return of a single asset and portfolio using a mathematical function linear in nature and comprising numerous macroeconomic variables. As an alternative to the Capital Asset Pricing Model (CAPM), APT estimate prices of items by assuming dependence of asset return upon security specific, macroeconomic and market factors (Stephen, 1986). According to Sharpe (2004), this theory explains earning riskless profits through exploiting differences in pricing the same physical assets. Taylor (1989) observed that a security could be sold at high price and at the same time purchase of the

asset or its equivalent done at a lower price. APT asserts existence of arbitrage within trading in two assets one of which is mispriced. Profit advantage is gained when an asset is sold at a higher price and proceeds used to buy the cheaper asset (Frenkel, 1975). Study literature exists investigating the relationship between asset returns against given macroeconomic factors. Fama and French (1989) portend APT theory models as characterized by short run relationship between macroeconomic variables and the stock price in terms of first differences assuming trend. Their tests further concluded Arbitrage Pricing Theory affirms that macroeconomic variables have causal relationship with stock returns. Though APT looks at macroeconomic environment it focuses mainly on risk and is a one-period model. (Stephen, 1986). This theory not only denotes knowledge gap to be filled but provides reference for the current study and therefore it is important.

2.3 Determinants of Financial Performance

Studies and results from the tea sector point out existence of other key determinants of financial performance with regards to tea prices. Such factors include: Production final out-put, levies and taxation, supply at international auction market and corporate governance.

2.3.1 Tea Production Out-put

Production out-put refers to the conversion ratio of green leaf into made tea ready for sale. A higher conversion ratio would mean increased volumes of finished product thus ready for sale (Muthamia & Muturi, 2015).

2.3.2 Levies and taxation

According to Manasseh (2000) and taxation and levies are the main avenues through which governments get revenues. The rates of levies and taxes are set by government of the day and compliance in their payments is unconditional. Tea earnings are subjected to a set of levies and taxes including tea levy and corporate taxes among others. These charges affects the bottom line by reducing proportionately the net tea income (Balunywa, 1988).

2.3.4 Supply levels at international auction market

International tea sale in Kenya is majorly conducted at the Mombasa Tea Auction. Tea sale pricing per unit is to some extent a function of market forces of supply and demand. Excess supply means depressed demand thus pushing the selling price downwards and vice-versa (Nelson et al., (2014)

2.3.5 Corporate Governance

Corporate governance denotes the leadership system at policy level ensuring proper stakeholder's relationships, communication, performance management, control and management oversight and compliance (Hendrikse et al., 2004). Corporate governance is refers to the manner in which the power of an organization is exercised in the stewardship of the Corporation's total portfolio of assets and resources with the objective of maintaining and increasing shareholders value with the satisfaction of other stakeholders in the context of its corporate mission Good governance will result in better overall performance of the firms (Private Sector Corporate Governance trust, 1999).

2.4 Empirical Review

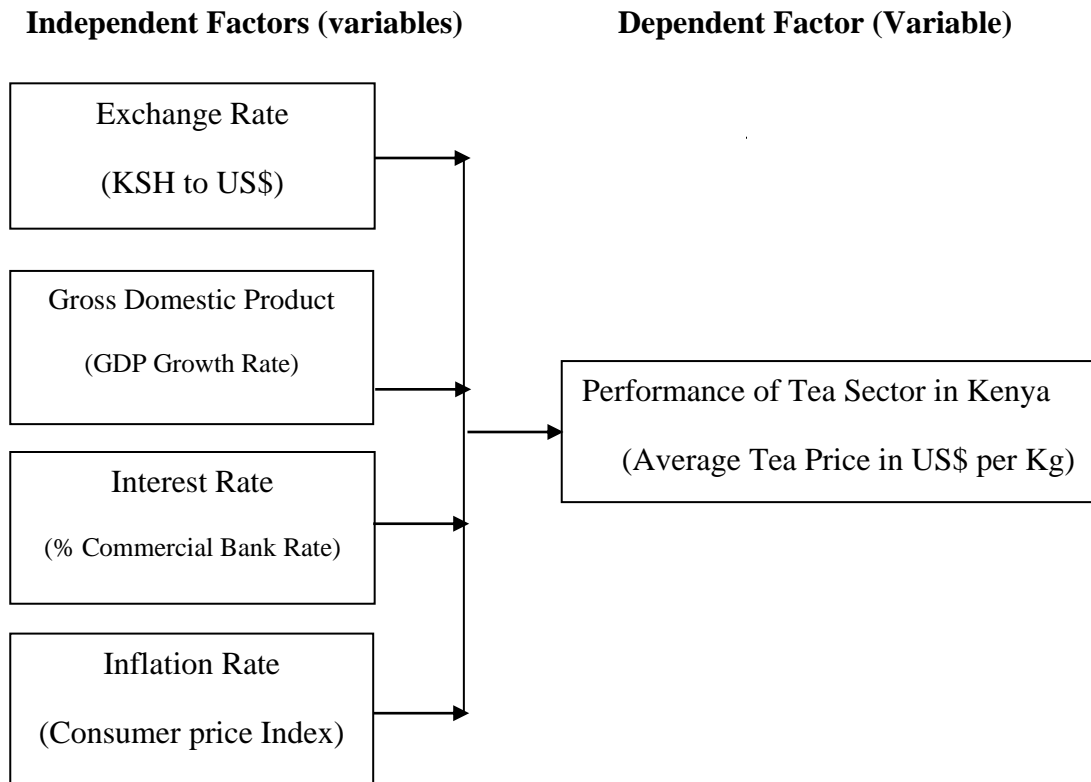
Were, et al. (2002) showed pricing relationship with economic variable in their empirical studies. They evaluated and analyzed export earnings in Kenya in which they classified export into commodity comprising coffee and tea exports as traditional trade and on the other hand a category of other services and goods export. They employed pricing models which incorporated exchange rate and income from major trading partners as independent factors explaining the relationship with prices. Constraints emanating from supply were captured in the model through consideration of ratio of investment against the GDP. Devarajan et al., (1993) concluded from their studies that exchange rate is likely to determine earnings in many production sectors. He noted that exchange rate fluctuation may influence prices of agricultural export products.

Dornbush (1988) agreed with studies by Guitein (1976) which illustrated that appreciation and depreciation of money in circulation in the local economy affects balance of trade among the trading partners. This is because exchange rate affects gross earnings of the home country that rely on export income denominated in hard currency. Frankel (1988) observed a steady-state trend in export trading consistent with a steady variation in macroeconomic environment over time. All economic models used to predict prices indicated that disturbances in the prevailing macroeconomic environment especially currency exchange fluctuations led to changes in prices of items in export trade (Kandil, 2000). While studying the movements in prices of stock in NSE , Akwibi (2003) found that existence of relationship between prices and independent macroeconomic variables held true as put forth by APT in the emerging markets. Among the factors found to affect stock prices included; changes in levels of inflation and exchange rate fluctuations.

A study established presence of arbitrage opportunities at exchange bureaus in Kenya concluding existence of inefficiency in market. He noted that there was lack of adequate information at affordable cost and available information was not uniformly available to all participants in the market. Speculators thus took advantage (Wekesa, 2006). Macroeconomic variables according to Mukweso (2003) affect tea prices in addition to the impact from forces of supply and demand. Abugi (2006) investigated influence of macroeconomic indicators namely: industrial production, money supply, interest rate and exchange rate in America. He concluded that these factors played major role in explaining market returns and earnings.

2.5 Conceptual Framework

The research is guided by the framework shown below.



Source: Author (2016)

2.6 Summary of Literature Review

Different local researchers have studied different macroeconomic variables and concluded the influence tea prices. Some global studies have shown that if estimated, the coefficients of the explanatory variables are significantly different from zero (Gilbert, 2010). Kula (2003) for example found out that there exists disparity in tea prices at global front in major tea auctions across the World. Global studies presented a gap in knowledge to inform how a mix of macroeconomic variables would affect prices of Tea in the auction. Wesse (2012) concluded a change in exchange rate regime affects pricing of tea in the international market. The recent study by Muthamia and Muturi (2015) has identified inflation and exchange rate as key determinants of tea earnings in Kenya. Local studies have concentrated on a one-variable- case scenario.

Empirical studies reviewed indicate that different researchers have found different results on effect of one or two variables on tea prices. The studies have not addressed the case for a set of macroeconomic variables would affect the performance of Tea Sector in Kenya. This investigation will determine whether selected macroeconomic factors have relationship with tea prices. The knowledge gap will be addressed by answering the question of what is the effect of these macroeconomic factors on pricing of tea hence tea sector performance in Kenya. These variables are inflation, interest rates, GDP growth, and currency exchange rate.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter describes methodology and procedures used in conducting the study. The contents include; research design, data collection, data reliability and validity, data analysis and analytical model used. Statistical Software used to assist in data processing and analysis is also indicated in this section.

3.2 Research Design

The investigation took a quantitative and longitudinal study design. The basic aim was to determine effect of macroeconomic variables on performance of tea sector in Kenya. This design proved suitable as it promoted ethical use of data and provided no room for obstruction since the data was already available. Various researchers for example (Coleman and Tetty, 2003 and Asaolu and Ogunmuyiwa (2010) have successfully used this design to analyze the stock prices and different macroeconomic variables. Data for the average tea earning per kilogram and that of macroeconomic variables on quarterly basis were collected for the period between years 2007 and 2016 giving a total of 38 points for every variable. The first and second quarters of year 2016 were included.

3.3 Data Collection

The research used secondary data. A time series of quarterly data spanning from Years 2007 to June 2016 were used employing 38 data points considered enough for effective inference. The data for all variables was collected from the Kenya National Bureau of statistics website.

3.4 Diagnostic Tests of Significance / Data Reliability or Validity

The significance in this research was tested at ninety five percent (95%) confidence level and five percent (5%) significant levels. Appropriate conclusions were drawn with regards to the critical value (α) set at 0.05, in explaining resulting relationship.

3.5 Data Analysis

Regression analysis was used in the research to find out effect of selected macroeconomic variables on the tea prices in Kenya with regression equation set as a multivariate function. The study utilized Statistical Software SPSS version 17 to analyze the data.

3.5.1 Analytical Model

The analytical model was mathematical, multivariate and descriptive. Regression analysis of dependable against independent variables was done to investigate the relationship. The independent variables of the study comprised; rate of growth in GDP, levels of Inflation rates, Exchange and Interest rates. The dependent variable w was expressed as an average price of tea per kg in USD on quarterly basis. The macro economic variables coefficients in the analytical model were denoted as “ β ”. The resulting regression equation therefore was expressed as:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \alpha$$

In which:

Y is average tea price in the sector

β_0 is a constant, when all the independent variables equals 0

X_1 is inflation rate (Consumer price Index)

X_2 is GDP growth rate

X_3 is bank lending interest rate

X_4 is exchange rate of Kenya Shilling (Ksh) against US Dollar

α is Error term consisting of legal environment and other unaccounted variables

3.5.2 Model's Goodness of Fit Statistics

The model's validity measured how well the regression model fitted the data by comparing explanatory variables that were proposed to explain variations in the dependent variable. Quantities known as goodness of fit statistics test how well the sample regression function (SRF) fits the data and how or how close the fitted regression line is to all of the data points taken together. The most common goodness of fit statistic is Coefficient of determination R^2 (Brooks, 2008). A correlation coefficient R must lie between -1 and $+1$ by definition. Since R^2 defined this way is the square of a correlation coefficient, it must lie between 0 and 1. If this correlation is high, the model fits the data well, while if the correlation is low (close to zero), the model is not providing a good fit to the data. In this study R^2 is the square of the correlation coefficient between the values of the dependent variable and the corresponding fitted values from the model.

3.5.3 Measures of Key Variables and Justification

This section provides details on how different variables listed above are quantified for analysis purpose.

Average price of Tea

This variable is the measure of performance of tea sector expressed in financial terms i.e. USD per kilogram of Tea sold. The data was collected from KNBS website. Average Teas Price per kilogram wss selected as it encompasses all other performance measures in the sector.

Inflation Rate

In the study, the % change in Consumer Price Index (CPI) was used as a measure of Inflation. CPI is defined as weighted average price of consumer goods. High rates of inflation increase the cost of living and vice versa. Quarterly Inflation rates for spanning 10 years from 2007 to 2016 were obtained from the KNBS websites. Since the inflation rates affect dividend paid for a given common stock, it finally has an effect on the stock prices and hence its inclusion on the model.

Bank lending Interest Rate

The study used average commercial bank lending rate on quarterly basis for 10 year period considered. Interest rates measured in (%) influence the expected discount rate (cost of funds) which has an effect pricing of tea hence its inclusion in the model. The data obtained from the KNBS websites.

Exchange Rate

Tea is sold in the Mombasa Auction in US dollars. Foreign exchange currency keep fluctuating from time to time and this affects value of tea export earnings. This fundamental fact makes it suitable for inclusion in the model. Exchange data was obtained from the KNBS websites

CHAPTER FOUR

DATA ANALYSIS, RESULTS AND DISCUSSION

4.1 Introduction

This chapter presents the results, finding and discussion with reference to and based on the research topic and the study objective. The results are shown in summary tables and analysis matrices. The study data used in this research project was obtained from the Kenya National Bureau of Statistics (KNBS). To answer the research question, a regression equation and tests of correlation were been employed using multivariate regression function to analyze the relationship between the selected macroeconomic variables and the financial performance of Tea Sector in Kenya (dependable variable). The independent variables of the study comprised; Inflation Rate, GDP growth rate, Interest rates and the exchange rate. The analyses involved determination of various coefficients of the independent macroeconomic variables correlated against the average tea earnings. Correlation analysis was employed to further explain the relationship between the dependent and independent variables.

4.2 Descriptive Statistics

Table 1 overleaf shows descriptive statistics for the variables studied in the research. Average Price of tea in US\$ per Kg is the dependable variable with a low of 1.70 and high of 3.31 indicating high fluctuation range of 1.61 for the 10 year period studied. It has a mean and standard deviation of 2.6037 and 0.49305 respectively. Inflation rate within the same period hits a maximum and minimum of 10.50 and 3.00 respectively, with a mean of 6.2945 and standard deviation of 1.67453. This variation is high relative to the dependable variable. GDP growth rate indicates a range of 8.00 from a minimum of 0.30 to a high of 8.30 in the 10 year period under study. The average of GDP growth rate is 4.7842 and standard deviation at 1.91488 indicating moderate fluctuation in the variable. Over the same period, Interest rate record a high of 20.34, a low of 12.87, an average of 15.8455 and standard deviation of 12.87 showing greater fluctuations compared to dependable variable. Exchange rate records high fluctuations with 105.27 in year 2016 and a low of 62.54 with an average of 83.3439 and standard deviation of 11.10298. This

reiterates unprecedented variations in exchange rate movements. Fluctuations as denoted in the statistics mirror unstable macroeconomic environment in the 10 year period. Business environment was not favorable hence unstable and unpredictable prices.

Table 1: Descriptive Statistics

Table 1: Descriptive Statistics

Descriptive Statistics											
	N	Range	Minimum	Maximum	Mean	Std. Deviation	Variance	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
Average Tea Price in USD/KG	38	1.61	1.70	3.31	2.6037	.49305	.243	-.268	.383	-1.181	.750
Inflation Rate (Consumer Price Index)	38	7.50	3.00	10.50	6.2945	1.67453	2.804	.235	.383	-.079	.750
GDP Growth % Rate	38	8.00	.30	8.30	4.7842	1.91488	3.667	-.730	.383	.146	.750
Commercial Bank Lending Rate	38	7.47	12.87	20.34	15.8455	2.09198	4.376	.711	.383	-.373	.750
Exchange Rate Kshs to USD	38	42.73	62.54	105.27	83.3439	11.10298	123.276	-.027	.383	-.333	.750
Valid N (listwise)	38										

The relationship between the Macroeconomic variables and the average tea price in UD\$/Kg is graphically summarized in the table 2 overleaf.

Relationship between Independent and dependent Variables

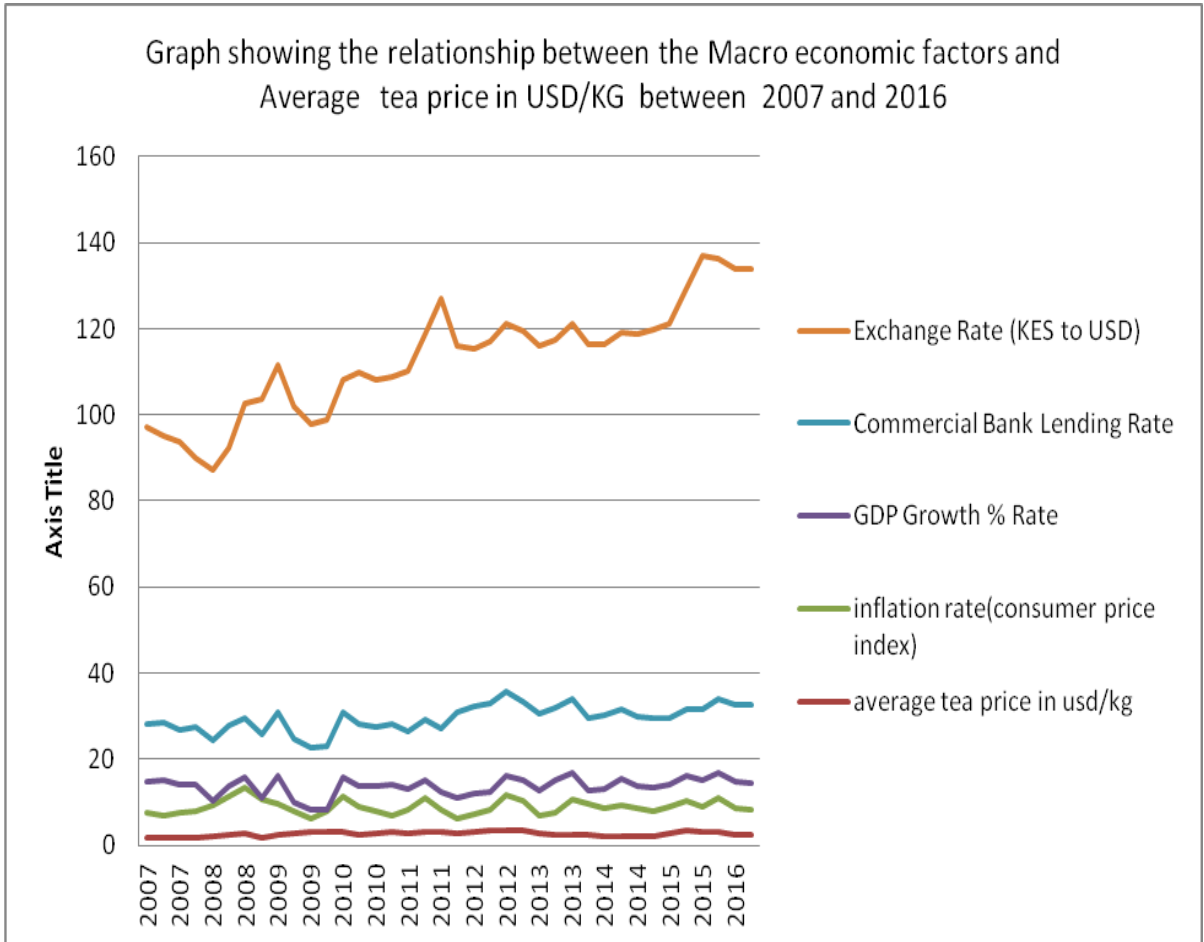


Figure 1: Relationship between Independent and Dependent Variables

4.3 Correlation Analysis

Table 3 overleaf shows correlation of the selected macroeconomic variables studied. It summarizes correlation of average tea prices with; Inflation rate, GDP growth rate, Interest rate and Inflation rate. Inflation rate has a low negative correlation of -0.150 with tea prices. GDP growth rate correlation of -0.235 indicate a negative correlation with tea prices. Interest rate has a positive correlation of 0.382 with tea prices. Exchange rate has a positive correlation of 0.383 with tea prices. Inflation rate has a negative relationship with GDP rate, Interest rate and exchange rate at -0.209, -0.173, and -0.016 respectively. GDP growth rate has a positive relationship with Interest rate and Exchange rate at 0.077 and 0.244 respectively. Interest rate has a positive relationship of 0.520 with Exchange rate.

Table 2: Correlation coefficients for various macro-economic factors

		Average Tea Price in USD/KG	Inflation Rate (Consumer Price Index)	GDP Growth % Rate	Commercial Bank Lending Rate	Exchange Rate Kshs to USD
Average Tea Price in USD/KG	Pearson Correlation	1				
Inflation Rate (Consumer Price Index)	Pearson Correlation	-.150	1			
GDP Growth % Rate	Pearson Correlation	-.235	-.209	1		
Commercial Bank Lending Rate	Pearson Correlation	.382*	-.173	.077	1	
Exchange Rate Kshs to USD	Pearson Correlation	.383*	-.016	.244	.520**	1

Source: SPSS 17 Output

4.4 Regression Analysis

Regression analysis was used to analyze the data to determine effect of independent variables on the dependable variable. Correlation analysis was employed to further explain the relationship between the dependent and independent variables. Multivariate functional model used to predict effect of selected independent variables on the dependent variable was $\hat{Y} = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \alpha$.

Where: \hat{Y} is average tea price in the sector
 β_0 is a constant, when all the independent variables equals 0
 X_1 is inflation rate (Consumer price Index)
 X_2 is GDP growth rate
 X_3 is bank lending interest rate
 X_4 is exchange rate of Kenya Shilling (Ksh) against US Dollar
 α is Error term consisting of legal environment and unaccounted variables

4.4.1 Summary of Selected Macroeconomic Variables Coefficients

Table 3 below shows matrix of coefficient for the selected macroeconomic variables obtained from the regression analysis of the data.

Table 3: Matrix of Coefficients

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	1.353	.712		1.899	.066
Exchange Rate Kshs to USD	.017	.008	.379	2.185	.036
GDP Growth % Rate	-.098	.039	-.382	-2.530	.016
Commercial Bank Lending Rate	.043	.040	.181	1.059	.297
Inflation Rate (Consumer Price Index)	-.057	.044	-.192	-1.290	.206

a. Dependent Variable: Average Tea Price in USD/KG

Source : SPSS Version 17 Output

Substituting betas with the coefficients obtained from Table 3 in the regression formula, the multivariate function becomes:

$$\hat{Y} = 1.353 + .017 * X_1 - .098 * X_2 + .043 * X_3 + .017 * X_4 + \alpha$$

A unit increase in Exchange Rate of Kenya Shilling (Ksh) against US Dollar increases the Average Tea Price by .017 (approx 2%). A unit increase in GDP Growth Rate decreases the Average Tea Price by -.098 (approximately 10%). A unit increase in Bank Lending Rate increases the Average Tea Price by .043 (approximately 4%). A unit increase in inflation Rate decreases the Average Tea Price by -.057 (approximately 6%).

4.4.2 Test of Overall Regression Model Significance

Table 4: Analysis of Variance (ANOVA)

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	2.991	4	.748	4.110	.008 ^a
Residual	6.004	33	.182		
Total	8.995	37			

a. Predictors: (Constant), Inflation Rate (Consumer Price Index), Exchange Rate Kshs to USD, GDP Growth % Rate, Commercial Bank Lending Rate

b. Dependent Variable: Average Tea Price in USD/KG

Source : SPSS Version 17 Output

The Anova results indicate the significance of the model. The result of 0.008 given in the significance column in Table 4 above implies that the model is significant at 0.05 Confidence level.

4.4.3 Regression Analysis

Table 5 overleaf indicates the Regression Model Summary. The R square measure (R²) shows how well the study data fits into the preconceived model or how a model explains and forecasts future outcomes. It also measures the goodness of fit of the model and the value expressed as ranging between -1 and 1. The model yields an R² measure of 0.252 (25.2%) which shows there is a correlation between the selected variables and Tea Sector

Financial Performance. The model yields a standard error estimate of 0.42654 indicating that Tea Sector Financial Performance is affected by other variables not included in the regression. The model can therefore be deduced to be fairly fitting to the data set. The model is also fairly reliable in predicting the future effect of selected macroeconomic variables on Tea Prices in Kenya.

Table 5: Model Summary

Model Summary									
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.577 ^a	.333	.252	.42654	.333	4.110	4	33	.008

a. Predictors: (Constant), Exchange Rate Kshs to USD, Inflation Rate (Consumer Price Index), GDP Growth % Rate, Commercial Bank Lending Rate

4.5 Summary and Interpretation of Findings

The objective of the study was to investigate effect of selected macroeconomic variables on the average tea prices using a multivariate function processed through regression analysis. Table 3 on variables correlation and Matrix of coefficients (Table 4) Coefficients gave the relationship, directions and magnitude of effect of the independent variables on the dependable variable. Coefficient of determination, R^2 is used to measure the portion of variation of dependable factor that is explained by the regression equation and therefore does assert the validity of the resultant model. Anova results have indicated that the regression model used in the study is significant at 0.05 confidence level. The overall model fits well in the date and out of the selected macroeconomic variables, there is a negative correlation between GDP Growth rate and inflation. A positive relationship is observed between lending rates, lending rates and the exchange Rate. The net effects of the correlations are therefore consistent and factored in the regression model. In summary the most significant variables in determining the Tea Price performance with reference to Significant Column in the coefficient tables of analysis is GDP % Rate (at sig. 0.016) and Exchange Rate (at sig. 0.036).

A unit increase in Exchange Rate of Kenya Shilling (Ksh) against US Dollar increases the Average Tea Price by .017 (approx 2%). The results contained in the model are in tandem of various observations made in a number of theories such as Arbitrage Pricing Theory, J Curve phenomenon, and modern portfolio theory have established that macroeconomic variables affect financial performance of firms. Also the results are in agreement with observations that this macroeconomic variable affect pricing of assets (Siqueira et al, 2011; Phalippou and Gottschalg, 2005; Harris et al, 2011). Movements in currency exchange rates can either be upwards or downwards (Papell, 1998). Depreciation of Kenya shilling is bound to favor tea exporters hence improve tea pricing while on the other hand appreciation of Kenya shilling will be expected to have a negative effect on tea exports thus lowering tea pricing (Deaton, A. and Miller R., 1995). A unit increase in GDP Growth Rate decreases the Average Tea Price by -.098 (approximately 10%). The results also support empirical studies contained in theories such as Arbitrage Pricing Theory, J Curve phenomenon, and modern portfolio theory have established that macroeconomic variables affect financial performance of firms. These results agree with study Abugri (2006), that GDP growth rate is a variable that affect market returns.

A unit increase in Bank Lending Rate increases the Average Tea Price by .043 (approximately 4%). The study confirms that cost of funds expressed as bank lending interest rate affects tea prices (Batten, S.D. and M.T. Belongia 1984). Results support recent study by Muthamia,A.K. and Muturi W. (2015) that has identified inflation and exchange rate as key determinants of tea earnings in Kenya. There is agreement on Interest rate as a determinant of prices as cited in previous eempirical studies contained in theories such as Arbitrage Pricing Theory, J Curve phenomenon, and modern portfolio theory that have established that macroeconomic variables affect financial performance of firms. A unit increase in inflation Rate decreases the Average Tea Price by -.057 (approximately 6%). This result confirm that inflation as a variable has an effect on tea pricing and this finding is in tandem with earlier conclusion by Muthamia,A.K. and Muturi W. (2015) in that inflation and exchange rate are key determinants of tea earnings in Kenya.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter draws a summary of findings, inferences and conclusions arising from the study. The aim of this study was to establish the effect of selected macroeconomic variables on the financial performance of Tea Sector in Kenya. The selected variables were those perceived by the researcher and supported by previous empirical studies, to have the substantial effect on financial performance of Tea Sector in Kenya as measured by Tea Prices. The variables under study were; Exchange Rate, GDP Growth Rate, Bank lending Interest Rate and Inflation Rate. Tea Prices was taken to be the dependent variable while Exchange Rate, GDP Growth Rate, Bank lending Interest Rate and Inflation Rate were taken to be the independent variables. A time series of quarterly data spanning from Years 2007 to June 2016 was used employing 38 data points sufficient enough for effective inference. The data was analyzed using SPSS version 17 for Windows.

5.2 Summary of Findings

The study established that selected macroeconomic variables have an effect on Tea Prices with GDP Rate and the Exchange Rate having the greatest significance among the selected variables. The Coefficient of Determination R^2 generated by the regression model was 0.252 (25.2%) which indicates that there is a correlation between the selected variables and Tea Sector Financial Performance. The implication of R^2 being 25.2% is that variation of tea prices can thus be explained by the regression model. In effect, 25.2% variation in selected variables leads to variation in performance of the tea sector. The results from the model indicate also that Tea Prices are affected by other variables not included in the regression. These other factors are for instance taxation policy, regulations and other factors. They are shown as error term in the study model.

The research also established positive correlation between the dependent and independent variables albeit to varying degrees. The model is therefore inferred to be fairly fitting to the identified data set. The significance of the model was further

ascertained by results of Analysis of Variance (ANOVA) from the 38 observations representing every quarter in a year for a period of 10 years and 4 independent variables. Results showed that the selected macroeconomic variable have effect on the prices of tea.

5.3 Conclusions

The study established varying degrees of effect between the independent macroeconomic variables selected for the study and the financial performance of Tea Sector measured by Tea Prices. Each of the selected variables namely: GDP growth rate, exchange rate, lending rate and inflation rate has a measure of effect as can be verified from resulting model. The study provided answer to the research question and addressed the objective to investigate the effect of selected macroeconomic variables on the financial performance of Tea Sector. Variation in selected macroeconomic factors by 25.2% will lead to variation in the performance in the tea sector denoted by movements in average price of tea. The resultant model has also shown that the selected macroeconomic factors do not explain all variations in tea prices and this is consistent with empirical studies conducted (Muthamia, & Muturi, 2015).

Global and local studies presented a gap in knowledge to inform how a mix of macroeconomic variables would affect prices of Tea in the auction (Gilbert, 2010). Different researchers had studied effect of macroeconomic variables on financial performance of tea sector in Kenya but concentrated on a single and at most two such variables. The empirical studies also generated different results. This in turn yielded a gap on what effect a composite set of selected macroeconomic variables would have on financial performance of tea sector in Kenya. By studying; Exchange Rate, GDP Growth Rate, Bank lending Interest Rate and Inflation Rate against average tea price, results and findings from this study have attempted to fill in the knowledge gap.

The study has reinforced the widely acclaimed knowledge that in deed macroeconomic environment is critical in price determination. The study has added into literature documentation on relationship between macroeconomic environments to pricing of commodities. Through this study and extensive empirical studies reviewed, management

in the tea sector will find reasons to make reference to macroeconomic environment in making financial projections. The regression model developed does not explain in total and realization that other factors can influence pricing is an important aspect that all should take into consideration.

5.4 Recommendations

The study has established that the selected macroeconomic variables have an effect on the performance of tea sector in Kenya with the regression model indicating that variation in factors studied by 25.2% lead to variation in performance. Policy makers dealing with agricultural product for export should therefore monitor macroeconomic environment. This study has also shown that different macroeconomic factors affect pricing differently and their magnitude should be considered in policy formulation. To a policy maker, this study has shown variation in commodity prices cannot be limited to just a set of factors but policy makers should consider a wide spectrum of factors not covered in this study.

The study provides insight to financial managers and economics in the tea sector. It is recommended that in making financial projections that these practitioner should factor in instability caused by unprecedented changes in macroeconomic environment. They should consider risk associated with unfavorable economic climate and hence reflect the same in their pricing and financial forecasts. The managers should assign weights to different variables as the study has shown that their effects are not uniform. It is recommended that the practitioners consider other factors in addition to usual macroeconomic variables.

The results of the study are in tandem with most empirical studies carried on tea. It is however recommended that researchers carry out similar studies on other export crops for example coffee and horticulture to establish the trends and contribute to the knowledge. Studies could also be extended to establish effects of macroeconomic variables on financial performance of other sub-sectors such as Energy and allied, Financial Services and Airlines. Further studies on the tea sector could be carried out to determine effects of quality of tea manufacture, green-leaf to made tea conversion ratios, management practice and corporate governance on performance of tea sector in addition to the macroeconomic variables addressed by this study.

5.5 Limitations of the Study

The researcher in this study acknowledges existence of other variables which were not included in the model and likely to inform more on the subject matter had been studied. This study looked only at selected variables were those perceived by the researcher and supported by previous empirical studies, to have the substantial effect on financial performance of Tea Sector in Kenya as measured by Tea Prices. The variables under study were; Exchange Rate, GDP Growth Rate, Bank lending Interest Rate and Inflation Rate. The study has shown that there are other factors that affect tea pricing. Probably some omitted factors could even affect tea pricing at a greater degree than the variables covered in the study.

The study in determining performance of tea sector used Tea export Prices denominated in US \$ thereby omitting gate sale earnings. Gate sales are sales made locally in local currency without passing through Mombasa Auction. There is likelihood that in some instances gate sales could be material affecting overall profitability and performance of the sector. Gate sales could have an effect which for now this study is not able to inform.

The study also relied on study economy data compiled by the Kenya National Bureau of Statistics (KNBS). The researcher thus assumed that this data was accurate and could not guarantee whether the data was error free. Verification of this study data could only be done by the Government Agency.

5.6 Suggestions for Further Research

Further research should be carried out to determine the effect of selected macroeconomic variables on financial performance with respect to other export crops such as coffee, miraa and horticulture. Similar studies could also be extended to establish effects of macroeconomic variables on financial performance of other sub-sectors such as Energy and allied, Financial Services and Airlines. Further studies on the tea sector could be carried out to determine effects of quality of tea manufacture, green-leaf to made tea conversion ratios, management practice and corporate governance on performance of tea sector.

Research should be carried out whereby the performance of tea sector is represented by both local sale (Gate sales) and export. Determination should be made as to what extent the selected macroeconomic variables affect local (Gate sales) and simultaneously the export market. An overall picture should then be drawn to inform policy, practice and advance contribution to existing theoretical knowledge.

Study data obtained should be verified for accuracy. Data from website should be checked with other agencies like the Central Bank and World Bank. This would assure correct and reliable data for the study.

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Appendix 1: Study Data

		PRICE OF TEA	INFLATION RATE	GDP GROWTH	COMMERCIAL BANK	EXCHANGE RATE
YEAR	QUARTER	USD/ KG	CPI	% RATE	LENDING RATE	Ksh To USD
2007	Q1	1.70	5.90	7.10	13.56	68.78
	Q2	1.75	5.20	8.30	13.38	66.56
	Q3	1.87	5.80	6.30	12.87	66.97
	Q4	1.85	5.90	6.40	13.32	62.54
2008	Q1	2.21	7.10	1.10	14.06	62.77
	Q2	2.43	9.00	2.20	14.06	64.69
	Q3	2.81	10.50	2.60	13.66	73.22
	Q4	1.89	8.90	0.30	14.80	77.71
2009	Q1	2.32	7.30	6.50	14.87	80.43
	Q2	2.70	5.10	2.00	15.09	77.02
	Q3	3.18	3.00	1.90	14.74	75.00
	Q4	3.21	4.70	0.50	14.76	75.69
2010	Q1	3.01	8.41	4.50	14.96	77.33
	Q2	2.37	6.66	4.60	14.39	81.92
	Q3	2.80	5.08	5.70	13.98	80.68
	Q4	2.94	4.08	7.20	13.87	80.75
2011	Q1	2.89	5.19	4.80	13.69	83.55
	Q2	2.97	8.05	4.10	13.91	89.86
	Q3	3.05	5.32	4.00	14.79	99.83
	Q4	2.86	3.20	4.80	20.04	85.07
2012	Q1	3.03	4.14	4.70	20.34	83.06
	Q2	3.29	4.91	4.30	20.30	84.23
	Q3	3.31	8.29	4.50	19.73	85.28
	Q4	3.27	7.15	4.70	18.15	86.03
2013	Q1	2.81	4.11	5.80	17.73	85.64
	Q2	2.56	4.91	7.50	16.97	85.49
	Q3	2.38	8.29	6.30	16.85	87.41
	Q4	2.45	7.15	3.10	16.99	86.65
2014	Q1	2.16	6.27	4.70	16.91	86.49
	Q2	2.03	7.39	5.90	16.36	87.61
	Q3	2.01	6.60	5.20	16.04	88.92
	Q4	2.01	6.02	5.50	15.99	90.44
2015	Q1	2.72	6.31	5.00	15.46	91.70
	Q2	3.27	7.03	5.90	15.48	97.70
	Q3	3.10	5.97	6.00	16.57	105.27
	Q4	3.03	8.01	5.70	17.41	102.15
2016	Q1	2.30	6.45	5.90	17.87	101.49
	Q2	2.40	5.80	6.20	18.18	101.14

Data Source : Kenya National Bureau of Statistics