

**EFFECTS OF FOREIGN EXCHANGE RATE FLUCTUATIONS ON
EXPORT EARNINGS A CASE STUDIES OF KENYA
DEVELOPMENT AGENCY FACTORIES**

**BY
NANCY CHEPKURUI RUTTOH**

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DECLARATION

This research project is my original work and has not been presented for a degree or other award in any other university.

Signature..... Date.....

Nancy Chepkurui Ruttoh

D61/6053/2017.

This research project has been submitted for the examination with my approval as the university supervisor.

Signature..... Date.....

Dr. Kennedy Okiro.

Lecturer, Department of Finance and Accounting

School of business, University of Nairobi.

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DEDICATION

This work is dedicated to my family for their love, patience, support and encouragement throughout the duration of my studies.

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LIST OF ABBREVIATIONS

CBK	Central Bank of Kenya
CPI	Consumer Price Index
EATTA	East African Trade Association
FDI	Foreign Direct Investment
FOREX	Foreign Exchange
GDP	Gross Domestic Product.
GDP	Gross National Product
KNBS	Kenya National Bureau of Statistics
KTDA	Kenya Development Authority
MOA	Ministry of Agriculture
PPP	Purchasing Power Parity.
TBK	Board of Kenya
UK	United Kingdom
US	United States of America
USD	United States Dollars

ABSTRACT

Firms trading internationally have their performances immensely affected by the volatile exchange rates. This is due to the frequent exposure to unfavorable volatile exchange rates. This poses as a threat to the local forms to compete with other from different nations. sector on itself flaunts a 10% contribution to the GDP whereby 90% produced is exported. 60% of the accounts that export are owned and managed by KTDA. This is done through the auction process in Mombasa. The exports are exposed to volatile exchange rates on two levels. The initial level of exposure is at the time an export contract is entered for the sale of . The exchange rate may have changed due to the timing difference between the sale time contract and the when the payment is made for the sale by importer. The Second level is at the realization point of the sale to the local currency, Kenya shillings, from the foreign currency. The exchange rate figures may have also changed due to timing differences. The research aimed at ascertaining the effect of volatile exchange rate on the KDTA earnings on exports. The study utilized data on earnings when the contract sale was closed between the importer and KTDA. For relational analysis of the variables like earnings of , the prevailing inflation and the exchange rate fluctuations, descriptive research suited the analysis. The data used was sourced from KTDA, CBK and KNBS. A regression model was applied to set on the variables to ascertain the relation between the variables which reveal that there a 0.221 factor correlation between the earnings on and the exchange rate. The outcome of the results from the regression analysis signified that the model was statistically reliable for the prediction of the dependent variable. This is was with the support of the F significance of 0.003. The relationship between export earnings and exchange rates was positive while it is negative with monthly inflation. The results further gave an indication that there could be other factors not incorporated in the model since the constant derived displayed a negative value. The study therefore advocates for a wider scope of the other peripheral factors that might have an effect on export earnings other than exchange rates and the prevailing inflation. The study also extends an urge the players of the exports industry like the policy makers to come up with tools and mechanisms to sustain the earnings for a period of high inflation and low exchange rates. This will mean favorable and stable earnings on the sector hence creating room for expansion to a wider markets and destinations.

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

Organizations that venture into international trade encounter numerous risks of volatility in exchange rates which immensely influence their operations and outcome performances in general. Exporter's exchange of goods is in form of the importers currency which they then convert to their local currencies (Adetayo, 2013). Exchange rate is a key resolution to the economy since it manipulates the local and international consumption and output of products. With no doubt having a stable equilibrium of exchange rate is crucial in determining earnings from exports, spending, economic growth, employment, wealth distribution and also private capital investment allocation (Bah & Amusa, 2003). Exchange rates constancy or instability extensively establish the competitiveness a particular country's goods are compared to others internationally and is also an indicator of an economy's. The relation and interface of inflation, exchange rate and FDI determines firm's earnings on exports (Bah & Amusa, 2003).

The purchasing power parity theory and Fisher theory was used to revolve around the fluctuations of interest rate and the firms' earnings. The purchasing power parity (PPP) regards the homogeneity of products in two different countries had similar cost when measured in terms of the country's legal tender currency. Consumers distinctively consume varied baskets of products in different locations (Wei, 1995). The Absolute'' version equalizes the purchasing power of different currencies while the "relative" version, the price difference rate of change locally and internationally (inflation rates difference), was

equated to the percentage appreciation or depreciation of the exchange rate. PPP exchange rate fluctuations are commonly due to diverse rates of inflation amid the dual economies (Rogoff, 1996).

The International Fisher theory contradicts the inflation rate to the current and the future theoretical rate of return. The theory articulates the interest rates variances indifferent markets which can trigger flow of money from low interest rate sectors to high interest rates sectors. With regards to this hypothetical assumption, gains was netted or cancelled off by variations of exchange rates in case an investor attempts to lend funds in different currencies hence the theory adherent inadequacies apart from inflation that influence exchange rate (Ubindi, 2006). Bah and Musa (2003) they advocate that the foreign direct investment, inflation and foreign exchange rate are the major exports determinants. A country's exchange rate serves as a cross border competitiveness measure that determines the cross-boarder trading and earnings on exports. This paper hence analyses the major effects of foreign exchange rate fluctuations on exports earnings.

1.1.1 Exchange Rate Fluctuations

Exchange rate fluctuation precisely infers to a degree to which currency prices fluctuates periodically (Cote, 1994). Stephen et al (1998) came up with the concept of foreign rate exchange fluctuations for comparison purpose of price value increase or decrease on one currency against another. A country's commodity price determination is a crucial element globally thus a country's price currency rate exchanged for another country's price rate is assumed to be the exchange rate. Thomas (2006) ascertains that World trade today is exercise in a floating exchange rate system, whereby there is a continuous change in the

exchange rate throughout the day and night. Samuelson and Nordhaus (2010) gave a definition of exchange rate to be a strength price of one currency compared to another; they can either be expressed indirect and direct quotation.

Thomas (2006) guides that the foreign exchange system has been the balance between many countries' currencies dating way back to the 1970s. The essence for such nations to permit floating of currencies was with an aim of developing the market ties and encourages trade with other countries. According to Rodrik (2008) it also signals the competitive nature of an economy of a particular country hence reinstating the county's exchange power compared to the rest of the world. Furthermore, it provides a short- and long-term sustainable anchorage that supports sustainability both in the internal and external macroeconomic environment (Thomas, 2006). It also serves as benchmark among countries economic progress and forecasting element for economist in setting the countries financial goals and resource between sectors that can increase the Kenyan shilling exchange rate to other countries.

Exchange rate regimes are either pegged or floated. The pegged regime is also regarded as fixed, since it is set by a regulator of exchange rates hence stable while the floating rate regime, which is unstable due to the demand force and the supply force in the market that establishes the point of exchange rate. The constancy of fixed exchange rates shields exporters from operational and transactional costs allied to the risks of fluctuating rates (Masson, Peter, & Hamid, 1996). International trade is currently affected by the floating exchange rates since it is widely applied in different parts of the world with has different uncertainties. This unpredictable nature of floating exchange rates is deterministic tool of

measuring the extent of risk exposed to international traders. (Todani&Munyama, 2005).

1.1.2 Export Earnings

Export earnings denote the aftermath in the economy's performance in the export markets. Export earnings hint crucial signals of an economy's achievements. Findings into the export earnings have continuously considerably grown over the past few periods. Mutual trades of dual countries rely on the relative price level and the exchange rates of the two partners (Todani&Munyama, 2005). Rowlett (1992) concurred that the export earnings is an indicative element that exposes the price competitiveness of a particular commodity in an economy in comparison to other prices commodities in a different country as displayed by the real rate of the currencies exchanged. Up to date no trivial conceptualization has been reached on in the export market, the fact that considerable research findings have been carried out that can enlighten more on export earnings and its preliminaries (Martinez-Lopez, Sousa, & Coelho, 2008).

The difference between the total amount of goods sold or exported to another country and the cost of sales incurred in production in the exporting country results to a measure of export earnings of a country (Otieno&Mudaki, 2011). Promising economic development can be stirred through increased export earnings and a reduction results to low and declining investment and growth.

1.1.3 Effect of Foreign Exchange Rate Fluctuations on Export Earnings.

Previous argumentized models of evaluating the foreign exchange rate effect and fluctuations effects on export earning depicts a negative effect of foreign exchange rate fluctuations on exports earnings exclusively on instances that equivocation cannot be achieved or may be costly (Clark, 1973).

A study carried out by (Kohlhagen & Hooper 1978), where time series data was implemented in reviewing exchange rate risk impact on exports of developed, industrialized and technologized countries, thus unfortunately nullified the relationship. There is mixed or less empirical evidence that can back up hypothesis relation of exchange rate fluctuations and exchange earnings. McKenzie (1999) suited a survey that summed an exchange rate fluctuation could impact inconsistently on different markets. This raised an urge for further studies to be executed by use of export market specific data unlike previous use of time series and cross-sectional data ending up with mixed results.

De Grauwe (1988) proposes a dual result of income effect and substitution effect in case of an increment in foreign exchange risk. Substitution effect reduces export activities hence enhancing exchange rate which then triggers a shift of volatile exports to be less risky. Consequently, Brada & Mendez, (1988), proposes that an income effect triggers a resource shifting to the export sector hence the expected utility or export revenues decline due to export rate risk increasing. It is assumed that when substitution effect dominates the income effect, exchange rate fluctuations will have a negative effect on export earnings and vice versa. Additionally, De Grauwe (1988) insists that if these exporting firms can avoid negative effects from foreign exchange rate fluctuations either by adjusting their trade

volumes to be inclined to the exchange rate which can induce an increase in profits for the exports.

Brada and Mendez, (1988), opined that in event of external shock that results in trade restriction and capital controls hence the exchange rate facilitates adjusts the balance of payment to achieve equilibrium which encourages international trade. Marc and Michelle, (2011), proposed an economic theory that free markets from distortions are not hindered by exchange rate misalignment and more so has no export earnings effect in the long run as it maintains relative prices. Wagacha (2000) says that in an economic development set up the relevance of exchange rate is extensively acknowledged. Logically, export earnings multi variedly prompts growth in ; demand and production connections, economies of scale owing to enormous international markets, hence adoption of ideal technology epitomized in foreign capital production of goods, developed efficiency, human resources improvement and learning effects in pursuit of increased productivity (Basu et al., 2000). According to (Otieno&Mudaki, 2011) in a study advocates for a sustainable policy mechanism that prevents accounts deficit, lessening foreign debts and losses on exchange rates and reduce international competition.

1.1.4 Foreign Exchange Rate fluctuations and export earnings in Kenya.

The study sought to establish how exchange rate volatility affects earnings of KTDA managed factories. The Agricultural sector contributes 27.3 per cent in 2018 and another 26 per cent in direct linkages to other sectors. (Economic Review on Agriculture, 2019

edition). At least ten percent of Kenya's population depends directly or indirectly on the sector in terms of employment and income.

Kenya's is sold at Mombasa Auction which is regulated by EATTA whose composition includes middlemen, importers, growers, bulk storage and blenders (Rutto and Ondieki, 2014). The currency of trade at the auction is USD as per the rules and guidelines regulating the operations (EATTA, 2010).

The acreage of crop in Kenya is about 248,374 acres managed by about half a million growers. The sector there supports a significant number of livelihoods directly. In addition, there are other employed directly in the supply chain who works in the processing, distribution, marketing and middlemen (KTDA, 2008). The Kenyan economy depends heavily on primary products like , coffee and horticulture for foreign exchange income. Over the years, exports have played a significant role as a foreign currency earner (Cherop&Changwony, 2014). This research sought to determine how the change in exchange rates influences how much the factories managed by KTDA earn from exports.

1.2 Research Problem

According to Marc and Michelle, (2011), he insisted that exports earnings have a long standing history with many setbacks related to the fluctuations of the exchange rates dating back from the 1960's. For small and upcoming countries, economically, country's exchange rate fluctuations has been a contingent factor to be considered almost in most trade decisions and investment policy formulation.

However, Minot & Gertz, 2008, insisted that the country has seen a lot of multinational corporation's ties with international bodies disengaging with exporters from the country which has paused unclear circumstances and reasons behind the mutual relations in business anymore. This has then negatively affected the exports earnings inflows into the country. Sameer Africa bowed out in September 2016, decrying cheap and subsidized exports that were not profitable. Following suit in 2014, Eveready East Africa shut down its operations in Nakuru manufacturing plant, to import batteries from its affiliates in Egypt following stiff competition hence breaking ties with Kenyan exporting body. Two weeks later, Cadbury Kenya called it quit in the global market ties with Kenyan market. The other most influential market-ties include Bridgestone, Unilever, Procter and Gamble, Johnson and Johnson and Colgate Palmolive and recently General Motors' all closed business. Numerous studies have been conducted regarding the exchange rate fluctuations and export earnings. An International study conducted by Mustafa and Nishat (2004) on how fluctuations in exchange rate impact the growth in export conclude that major foreign trading partners like United States and Britain were negatively affected by the fluctuations in exchange rates.

According to Anderson and Skudelny, (2001) an international scholar focused mainly how aggregate trade flows are affected by the volatility effects of exchange rates, ignoring advanced level optional effects that may be observed especially during analysis of data. A scholar by the name Bini-Smaghi, (1991), opined that there could be optional price elasticity and exports demands across which might be the reason for aggregated analysis focus and has found minimal evidence of the trade effect of exchange rate volatility.

Export commodities are affected differently hence disaggregated focus is more appealing to focus on rather than individual effects on commodities that could perhaps cancel out the difference on varied effects across the sectors. This could have otherwise provided information on how individual commodities are influenced by the fluctuations of the exchange rate. Thus, exchange rate volatility may be highly sensitive when disaggregated data is utilized and pause varied influence on commodities Bini-Smaghi, (1991). Anderton and Skudelny ,2001) concluded that the economical string that negates the relation of exchange rate fluctuations and the exports earnings discourages firms from trade engagement which results to export earnings loss.

African studies conducted previously like in South Africa;Takaendesa, (2005) and (Bah &Amusa ,2003) and also Vergil (2002) from Turkey reviewed the effects fluctuations of exchange rates earnings but concluded mixed reactions since they use aggregated data rather than disaggregated data that gave better results. Although exporters and policy makers have raised concerns over the unclear influence of the fluctuations of exchange rate, and the relation to the export earnings, hence calls for more research to be carried out.

In Kenya (Ngigi ,2004; Were ,2002 ;Minot &Gertz ,2008; Kiptui , 2008; Maana ,2010) have carried varied studies on the effects of exchange rate fluctuations and have arrived on conflicting evidences .In Kenya studies implemented aggregated data in their analysis insd of individual commodity of (Were ,2002; Kiptui ,2008) showed negative effects while those of (Minot and Ngigi,2004);Gertz, (2008) and (Maana,2010) indicated a null or positive effect. This has created a methodological gap due unavailable enough empirical evidence to relate the export earnings on commodities with the exchange rate fluctuations.

A research on the same field was carried out by Abuka (2015) researched on the same field and but used data on exports of coffee from Kenya and concluded that volatility in exchange rates and Foreign Direct Investment expressed as percentage Gross Domestic Product immensely control the export earnings from Kenya coffee. Also, Majok (2015) employed banking industry evidence in Kenya to establish and verify whether volatility in exchange rates influence performance and ascertain the potency link in returns and the fluctuation and concluded that it portrayed weak evidence. Most of the above studies concentrated more on varied agricultural exports apart from agencies but what were the major effects of exchange rate fluctuations on export earnings in Kenya Development Agency Factories?

1.3 Research Objective

The objective of this study was to examine the effect of exchange rate fluctuations on the exports earnings in Kenya.

1.4 Value of Study

These study findings were used by other scholars as the basis of their research findings and acts as research guidance in formulating an advanced framework for analysis of the effects of the exchange rate fluctuations on commodities. The findings were anticipated to be beneficial in policy making, developing investment strategic financial policies and also developing a better and essential institutional framework essential to market Kenya as an ultimate foreign investment destination.

It may widely assist in coming up with fiscal policies on exchange rates that will be consistent for all countries to be used hence stabilizing the income flows from the exports

earnings. It is also anticipated to create global financial market framework with an optimistic goal of attracting foreign markets hence strengthening the open market ties and opening avenues for more exports which increases the export earnings to the country.

The research findings will benefit international exporters in coming up with a more precise and informed decision making in venturing into the Kenyan market. Exporters in the global markets will be at ease in influencing the competitive markets at a pre evaluated potential to impacts the exchange rate fluctuations on different commodities. It will be a blueprint in realizing the more potential effects and impacts of the exchange rate fluctuations on the exports earnings of both aggregate and disaggregated commodities for economic analysis at different time zones.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter represents the theoretical and empirical literature assessment of the study. The theoretical review covers Purchasing Power Parity theory, and international fisher theory and issues related to exchange rate fluctuations is a vis export earnings.

2.2 Theoretical Framework.

For better comprehension of the exchange rate fluctuations between countries, three theories will be used in expounding the knowledge on it. The theories are international fisher theory and Purchasing Power Parity theory.

2.2.1 International Fisher Theory

The theory was developed by an American Economist Irving fisher in the fisher hypothesis which contradicts the inflation and the current and future theoretical rate of return. The theory articulates that the differences of the interest rates in varied markets results to money circulation right from low interest rate business sectors to high interest rates business sectors. With regards to this hypothesis whichever gains an investor gets through attempts of lending funds acquired in different currencies will be netted off by the varied lending rates (Shapiro, 2007). The Fisher hypothesis affirms that real interest rate is independent and does not rely on fiscal intercession of the expected rate of inflation and the nominal interest rates. Substantially, the disparity of the probable estimated rates of inflation clarifies the interest rate variation in different countries. It

now anticipated in a country that a decrease in interest rates with regards this theory results to an appreciation of currency since low interest rates signifies currency deflation while currency depreciation with high interest rates hint an upcoming inflation (Staikouras & Wood, 2004). This theory is assuming a consequential effect of interest rate increase in case of inflation increase hence triggering currency value loss in countries with high interest rates. Apparently international Fisher theory limits itself by focusing on inflation which is not the only contingent factor that determines the exchange rate (Ubindi, 2006).

According to Madura, (2007), additional value of interest rate would change either low or different on different occasions hence this exchange rates buoyancy eventually in the long run cancel the variations in interest rates. Fisher Effect in this study is pertinent in relation to the purchasing power in different nations, which incorporate the inflation factor that facilitate the equilibrium of homogeneity of products purchased in different countries and currencies with similar prices attain an optimum exchange rate. According to (Madura, 2007) International Fisher Effect is explained by the below formula;

$$\% \text{ change} = \left(\frac{\text{Interest rate of home currency} - \text{Interest rate of external currency}}{\text{Interest rate in external market} + 1} \right) * 100$$

2.2.2 Purchasing Power Parity.

The theory was developed by a Swedish economist Cassel originally in 1919, emphasized that exchange rates of two currencies are in equated when their purchasing power is similar. This means that the exchange rate currency of that particular country is proportionate to the price of commodities of that country. A country's exchange rate ought to be depreciated

to attain the PPP when the domestic or rather local price level is increasing (i.e. country experiences inflation) Madura, (2006).

Literally there exist two versions of PPP which are absolute and relative versions. In an example of a given basket of goods 'Absolute' version equalizes the indifference of the purchasing power of currencies while the "relative" version, the price difference rate of change locally and internationally (inflation rates difference), is equated to the percentage appreciation or depreciation of the exchange rate. The PPP that occurs through the exchange rate fluctuations are commonly due to diverse rates of inflation amid the dual economies Rogoff, (1996).

Cassel, (1919) and (Sarno& Taylor, 2002)insist that the law of comparative advantage theorem mimics the absolute PPP by striving to qualify an equilibrium exchange rate just like the Law of One Price of capital goods .It suggests that goods in the similar basket ought to sell with the same price in different countries which is impossible due to different factors that affect price sale of a commodity in a certain location.

Relative PPP connects a link between the exchange rates and prices with regard to growth sales. This may hold the fact that exchange rate does not equate to the exact ratio of price indices. Relative PPP was initiated by Dornbusch, (1976) and Frenkel, (1976) advocate that the actual price levels oughtto be regarded as the relative price. This is because somecommodity goods in foreign exchange do not spontaneously react in line with the foreign prices. (Che&AbulMansuree, 2006).

With this perception, the Foreign exchange market becomes opportunistic in the long run

equilibrium effect analysis. In a study done in three countries in the period 1960-1999 by Engel (1996), he ascertained an implication of a non-stationary real exchange rate, which is an indicator of continuous disequilibria persistence at the foreign exchange market. Engel established that some real exchange rate series were stagnating and this deemed that there is a mean tendency. Engel (1996), pauses that on, natural reason of circumstances, agents believe that dominant currency will depreciate and PPP may insignificantly not hold. Consequently, the weaker currencies by and by will appreciate in real terms.

The fact that Wei (1995) attests that people consumes different commodities in different countries. Kim, (1990), confirms that in calculation of the PPP model, exchange rate is controversial since its complex to locate comparable baskets of goods across countries. The main reason for the PPP parity would not hold is because of the varying determinants of exchange rate fluctuation. This theory would only hold if all the dependent variables were constant. This then advocates for commodity measurements by using price index.

2.3 Determinants of export earnings.

These are the direct and indirect factors that determine how much will be earned from export earnings. Some of the direct factors influencing earnings are the real exchange rate and foreign direct investment inflation.

2.3.1 Inflation rate

According to Tucker, (2007) he regarded inflation term as the general increase in price for goods and services in the economy. Inflation does not look at individual price increase of commodities rather average aggregate increase on price of all commodities. (Kevin & Sloman, 2007) insisted that inflation could either be cost push inflation or demand-pull inflation. Firms respond by raising prices partially or by increasing output in case of demand-pull inflation is a result of persistent rise in aggregate or total demand of commodities.

On the other hand, costs push inflation which results through persistent increase in the costs incurred by firms' operations or activities. Firms respond through pricing highly products but reducing on cost production and also transferring costs on to the consumer. Hendry, (2006) concur that inflation is a result of a varied excess demands and supplies a specific economy.

The fact that different products are priced on a varied index relating to different sectors in an economy, a scholar by the name Tucker, (2007) opinioned that exists varied measures of inflation. CPI and GDP are the two widely utilized indices in pricing commodities for inflation analysis in several countries. Prices that typically affect the consumer are measured by the CPI while GDP is a locally mechanized measure of produced goods and services pricing model.

2.3.2 Foreign direct investment.

A foreign direct investment (FDI) is a set up venture where the possession of a business in a country are controlled and managed by an entity based in another country. A study

carried by Wamukhoma (2014) on horticultural sector established that there is an immense increase of profit margins in the sector brought about by the FDIs. The Foreign Direct Investments considerably are a reflection of the exported goods and service mark-up change. FDI uses high tech machines with a lot of innovations in their performances hence display an increased outcome of exports like the Chinese and Singaporean exporters. FDI supports its business in all sectors with different aspects of capacities from the initial stage to the maturity, transformation process and lastly to the composition and implementation of venturing into the foreign trade. All these are with the aim of enhancing increased efficiency in foreign trade resulting to improved earnings (Fugazza, 2004).

2.3.3 Real exchange rates.

The real exchange rate advises on the ratio of pricing level of goods and services both locally and internationally which is converted to the local currency by use of the prevailing exchange rate. This rate displays the recurrent periods that more goods and services could be purchased in a foreign country as soon as the local currency is converted. An increase in exports is experienced on the short run exchange translation rate hence incase of a currency depreciation of the exporting country in comparison to the currency value of the importing country results to an increase in exports and vice-versa (Muthamia&Muturi, 2015). The real exchange rate is a trivial factor that edifies inherent value of earnings from exports. Firms that have ventured into the export industry are to loss making due to the volatile exchange rate hence is paramount to take precautional measures (Muthamia&Muturi, 2015).

2.4 Empirical Literature Review

Several studies were carried out subject to the effects of foreign exchange fluctuations on export earnings. There is a mix of conclusions among the researchers concluding either a negative or positive connection linking the exchange rate fluctuations and export earnings.

According to (Varangis & Qian, 1992) in their study that sought to establish whether exchange rate volatility hindered export growth, applied ARCH-in-mean model on six countries to estimate the dual and aggregate exports and found foreign exchange rate to being negative, an outcome which was significant statistically on the impact in the two cases: Japanese and Canadian exports to United States. But for Japan and Australia their aggregate exports are negative hence statistically insignificant, while those of Sweden and to some point UK, are significantly positive and again statistically insignificant for the Netherlands country. The foreign exchange rate magnitude greatly varies ranging from an exports decline of 7.4% for Canada and 5% incline for Sweden, resulting to a 10% increase in volatility. The study should have incorporated a varied comparison of commodities exported to US but also to other countries. The study should have also included a mechanism model that can curb inherent potential effects of exchange rate at an advanced level.

According to (Osang, Arize, & Slottje, 2004), in a study on a relation of exchange rate volatility and foreign under eight Latin American countries, scrutinized the impact of the real exchange rate volatility. Significant negative impacts were evident on the effect of the export demand in the long and short terms resulting to a decrease in export earnings due to the exerting increase fluctuations on the exchange rate.

A study by (Armah&Bhattarai 2005), conducted a research on the effects of exchange rate on trade balance in Ghana, validated a sdy long run relationship amid the imports and the exports exchange rate. There is a contradiction that if the domestic currency weakens like devaluation, it affects both the imports and exports.

In India another study by (Srinivasan&Kalaivani, 2012) on exchange rate volatility and export growth in India was concluded taint of unfavorable influences on exports. In the study, exports over 41 years since 1970 and the exchange rate movement in India were applied and Yearly data for the entire period was analyzed by use of bound test approach. The study findings demonstrated a correlation of exchange rates variation with GDP, exports and the external economy's performance. A conclusion was arrived that prolonged exchange rate movements results to a decrease in Indian exports throughout the long run and short run period (Srinivasan&Kalaivani, 2012).

According to Mwanza, (2007) he conducted a study on the strong Kenya shilling effect on exports and noted that the country had different exchange rates movement and alignment at different periods which reflected a consistent gradual increase and gave a previous occurrence of adverse resultant effects. With this research he gave an example in comparison to the Kenyan previous occurrence of adverse effects. The strong shilling on export earnings had cleaned off out millions of earnings that resulted to a huge loss. With this he concluded that the shilling had a strong impact on exports earnings and this portrays a mixed reaction of fortunes on exports. According to Kiptui, (2008), he too conducted a research study in search of any relation whether exchange rate volatility did have any significant impact on Kenyan exports. Kiptui reviewed the essence of the real exchange

rate that influenced the demand on the exports from Kenya through an export demand framework which he also included the economic activity for the specific export categories of manufactured goods, coffee, , and horticulture. Upon analyzing the relationship on the long-run and error term correction model were applied and he did concluded, there was evidence of both short and long run effects on foreign exchange rate on Kenya's real exports of commodities.

A study by(Mudaki&Otieno ,2011), in a study conducted in Kenya, on dynamicwhich control sector of exports and also influence the absolute exchange rate in Kenya. They came to an agreement of obtaining an absolute exchange rate that portrays positive effects though the effects are statistically insignificant. For that reason the effects of the absolute exchange rate are regarded to have an impact in the long run rather than the short term. This makes the short run effects very insignificant and unwarranted. Arguably, the exchange rate is a key factor compliment for economic growth prospect to the export destination countries.

Also another study by (Mbatia,O.,Mwangi,S.M.,&Nzuma,J.2014), which was conducted in Kenya on exports earnings on French Beans had significant long run equilibrium when the export volume was tallied against the exchange rate volatility on the generalized and indiscriminative autoregressive conditional heteroscedasticity model.

2.5 Conceptual framework.

The conceptual model developed below portrayed the expected study relationships and linkages of the variables. The independent variables are exchange rate fluctuations

and inflation rate, all measured on a quarterly basis, while the dependent variable is earnings on exports. The study will utilize the Central Bank of Kenya (CBK) official monthly exchange rate, Kenya National Bureau of Statistics (KNBS) official for the monthly inflation rate will be used and information on Total monthly export earnings will be derived from KTDA and EATTA.

Independent Variables

Dependent Variable.

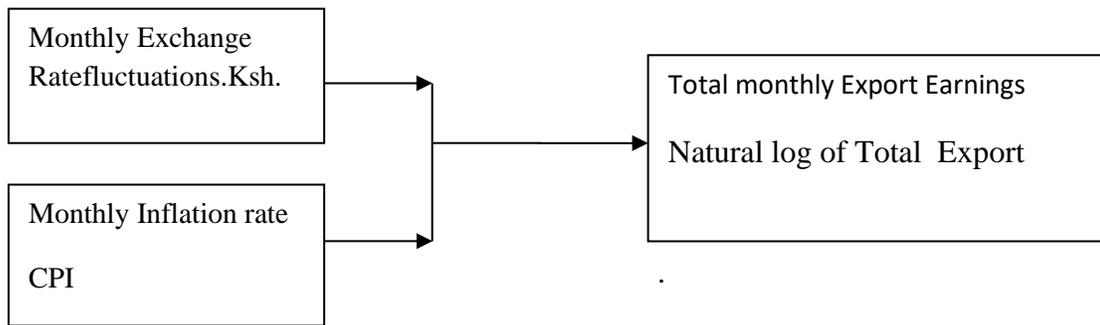


Figure 2.1: Conceptual Frame work

2.6 Summary of Literature Review.

There exists mixed reaction on how exchange rate fluctuations affect the exchange rate. Positive relation was evident on studies carried by Cherop&Changwony (2014) and Muthamia&Muturi (2015) while those of Ondiek, (2014) & Kiptui, (2008) gave a negative relation. Past researchers have focused on mainly the entire sector but minimal studies has been conducted exchange rate and export earnings of KTDA sub-managed factories. The facts there are several factors that hinder the export earning; empirical studies categorically have an attention on the major implicative export earnings effects due to the exchange rate fluctuations. Majority of these factors are non -correlated to the fixed or floating rate regimes. Frequent objectives frequently have come up and sustain an exchange rate that could assure internationals for competitiveness that will minimize the

negative effects on export earnings and simultaneously, maintain a low level of domestic rate of inflation. This study will explore further on the topic and use past finding to address the relation of the exchange rate fluctuations and the earnings on exports.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter explains the research methodology that will be implemented in the study and highlights the general framework for the research. Technicalities of the research design, target population, data collection and analysis of it are also exhibited in this section.

3.2 Research Design.

Research design accredits the manner in which the study is to be planned and carried out, the pre requisite procedural techniques to be utilized in answering the research problem (Schumacher & McMillan, 1984). According to Khan (2008), a research design is a key facilitator to researchers in laying out the research question methodologies, procedures to be implemented and collection of data and analysis. Commonly, three types of research design are utilized which are qualitative design, quantitative design and the mixed methodologies design.

In this study quantitative research design will be implemented takes also consideration of the descriptive research design. The descriptive research design is appropriate in elaborating the inter connection of the exchange rate fluctuations and exchange rates on earnings.

3.3 Population and Sampling

The population of the study will be the KTDA sub-managed factories. The analysis will use aggregate export earnings on a monthly basis.

3.4 Data Collection

Secondary data will be utilized in this study from the following data bases KTDA, EATTA, CBK and KNBS. The information on export earnings will be gotten from the records of KTDA and EATTA while data on the monthly foreign exchange rates will be obtained from the official data base of CBK and lastly ,data on inflation will be sourced from the official database ofKNBS.

3.5 Data Analysis

The obtained raw data of Monthly export earnings from the KTDA database and raw data on exchange rate and inflation of each monthretrieved fromthe CBK database will be analyzed to establish the relationship linking the variables. The study will apply regression analysis to establish the relationship between the export earnings (dependent variable), exchange rates (independent variable) and inflation (independent variable). Descriptive statistics will be used to quantify and code the data. The research will also utilize the Statistical package for social sciences to facilitate data analysis. Additionally, a measures of central tendency will then be applied to come up with the tests of the significance of the variables relations.

3.6 Diagnostic test.

Some of the diagnostic tests that will be used are the Heteroscedasticity to specifically check the systematic change in the spread of the residuals over the range of measured values.

Autocorrelationtestis regarded as the similarity degree representation between a proposed sequential time gaps over successive intervals of time. Its equivalent to testing thecorrelation between a couple of time series, only that autocorrelation utilizes a similar

time series twice: the first computation it incorporates the initial form and a single or double time lagged periods. Normal test and Stationarity test that checks on the mean of data is time independent unit root test are used to detect non variability in all variables.

3.7 Analytical Model

Quantitative data was then utilized based on the Pearson correlation analysis and multiple regression models which will take the form of an equation as below;

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \varepsilon$$

Where; the Y = Log of Total export earnings on commodity (on a monthly basis)

X1 = Average monthly Foreign exchange rate volatility (KshsVs the dollar)

X2 = Inflation rates measured on a monthly basis. ε = Error term, α = Constant term and β_1 ,

β_2 , = Regression coefficients which characterizes the rate at which Y (response variable)

is reacts for every unitary change of the predictor variable.

Table 3.1: Operationalization measurement table

Variable	Operationalization/ Measurement
Y = Dependent	Log of Total Export Earnings in Kenya
X ₁ = Independent factor	Quarterly,fluctuations of the Foreign Exchange rate between (Ksh and the dollar) which derived by deducting the average preceding rates from the averaging the subsequent month's rates i.e. (M ₂ -M ₁)
X ₂ = Control variable	Quarterly inflation rate

3.8 Test of Significance

The study carried out the F-test, Analysis of variance (ANOVA), correlation coefficient R and coefficient of determination R^2 to purposely interpret the various associations between the variables in the model.

CHAPTER FOUR

DATA ANALYSIS, RESULTS AND DISCUSSION

4.1 Introduction.

This chapter entails a comprehensive analysis of the data collected, processed and its interpretation of the study out comes. The analyzed data is secondary. It also gives fundamental recommendations among other opined suggestions on discoveries on the research process. The key agenda of this study project was to come up with a conclusive effect on how the exchange rates affect the export earnings of the KTDA factories.

4.2 Export Perfomance.

Table 4.1 gives the tea export performance for the variables used in this study.

Year	N	Aggregate export earnings of the industry (Quarterly - KSh)	Quarterly Foreign Exchange Rate (fluctuations)	Quarterly Inflation rate	Valid N
2011	40	821,495,853	.4576	.5298	
2012	40	1,897,986,749	.5278	.5699	
2013	40	6,288,883,494	.5568	.5388	
2014	40	8,659,865,897	.7732	.5037	
2015	40	9,975,932,551	.8021	.4209	
2016	40	11,853,878,003	.8189	.4102	
2017	40	12,557,897,850	.8038	.3287	

The average export earnings of tea from the industry ranged from as low as Ksh 821,495,853 in the year 2011 to a high value of Ksh 12,557,897,850 in the year

2017. There was a noted progressive improvement of the average export earnings from the year 2013 and 2014 which showed that there could have been a stable political environment that favored the target export destination process in both countries unlike the previous year's which had politics hitches that affected the aggregate export earnings in the long run of the industry.

Descriptive Statistics

The Table 4.2 displays the descriptive statistics variables which were utilized for the study. The SPSS 22.0 software was used in the analysis of the variables of the study for the seven year period ranging from (2011 – 2017) in the Kenyan tea industry.

Table 4.2 Descriptive Statistics

Statements	N	Mean	Std. Dev.
Log,, of total ,,export earnings,, of industry	40	4.253	.874
Quarterly,, foreign Exchange Rate fluctuation	40	4.045	.541
Quarterly ,,Inflation Rate	40	3.985	.461
Quarterly,, interest rate	40	3.487	.823

The outcome of the study displayed that the log of total export earnings from the tea industry had a mean of 4.253 and a standard deviation of 0.874. The 4.045 was the mean quarterly foreign exchange rate fluctuation with an associative standard deviation of 0.541. The quarterly inflation rate displayed a mean of 3.985 with a standard deviation of 0.461. On the hand the quarterly interest rate displayed a mean of 3.487 and a standard deviation of 0.823.

Correlation Analysis.

This entailed the analysis of coefficient of correlation of the variables that were

used to explain the effects of exchange rate ,inflation on export earnings in Kenya a case study of KTDA .It also attempted to establish a possibility of linearity between the independent and the independent variables in the model. Pearson correlation was used to measure the degree of variables correlation in the model.

Table 4.3 Correlation coefficients

	Log of total export earnings	Quarterly foreign Exchange Rate Fluctuation	Quarterly Inflation Rate
Log of total export earnings	1.000		
Quarterly foreign Exchange Rate fluctuation	.603	1.000	
Quarterly Inflation Rate	-.121	.273	1.000
Quarterly interest rate	.639	.532	.478

Source: Researcher 2016

The analysis deduced from the SPSS tool of analysis, displays that the independent variables are evidently correlated to the dependent variables. The above table4.3, displays a 60.3% correlation of the foreign exchange rate and the total earnings from exports of the tea industry. The total export earnings from the industry negatively correlated with a degree of 12.1 % to the monthly inflation.

Goodness of Fit Statistics

Table 4.3 displays the degree of relationship of the export earnings and the independent variables which are the monthly inflation rate and the monthly foreign exchange.

Table 4.4 Goodness of fitness measure

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.907 ^a	0.823	0.796	0.1774832

The Adjusted R squared signifies the adjusted coefficient of determination that expounds on the understanding of the dependent variable variation with the independent variables. From the findings in table 4.4 above, there is a variation of 0.796, which equates to a degree of 79.6% variation of the total exports earnings to the changes of quarterly foreign exchange rates, and the quarterly inflation rates with a confidence interval of 95%. The 20.4% is explained by other peripheral variables that could have an effect of the variations of the total export earnings in the tea industry. The R which is 90.7% shows the degree of correlation coefficient which is assumed to be a strong and highly positive relation between the foreign exchange rate and the inflation rate which are the study variables.

Table 4.5 Analysis of Variance

Model	Sum of squares	Df.	Mean Square	F	Sig.
Regression	.213	2	.071	14.200	.000 ^a
Residual	.180	38	.005		
Total	.393	40			

Source: Researcher 2015

The analysis of variance displayed that the F Test which is 14.200 that is greater than the F critical value. This gives an indication that there is a strong regressions of the variables. The significance value of 0.000 was also obtained. This gave an implication of great significance of the variables relation of the variables in the

model. The significance displayed was less than $\alpha = 0.05$ an indication that the probability level is almost or rather zero.

Regression Model

Regression analysis was used to predict statistical significance between the dependent and independent variables. Regression analysis measures the effect of the relationship of the independent variables on the dependent variable. The researcher conducted a multiple regression analysis to examine the effect of the given independent variables (exchange rate, inflation and interest rate) on the export earnings in Kenya. The model for the regression analysis was expressed in the form of the equation below:

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \varepsilon$$

4.3 Inferential statistics

This was obtained through the probabilistic statistics analysis to obtain the inferential statistics of the data retrieved from the arraigned sources.

4.3.1 Pearson Correlation Analysis

Correlation co-efficient were utilized to scrutinize the relation and the effects of the independent variables on the dependent. The variables which include the exchange rate, export earnings and the control variable, which is inflation rate, were analyzed using Pearson's correlation coefficient. The coefficients measured the strength relationship between the variables.

Table 4.2: Correlations table.

Total export earnings Monthly Foreign exchange rate Monthly Inflation

		Inflation	Exchange_Rate	Export_Rate
Inflation	Pearson Correlation	1	.059	-.577**
	Sig. (2-tailed)		.804	.008
	N	20	20	20
Exchange_Rate	Pearson Correlation	.059	1	-.218
	Sig. (2-tailed)	.804		.355
	N	20	20	20
Export_Rate	Pearson Correlation	-.577**	-.218	1
	Sig. (2-tailed)	.008	.355	
	N	20	20	20

** . Correlation is significant at the 0.01 level (2-tailed).

The table above displays the relational correlation of the two independent variables on the dependent variable. The monthly fluctuations of the exchange posed a correlation coefficient of 22.1% with a monthly inflation correlation coefficient of -27.5% to the Total export earnings.

4.3.2 Regression Analysis

Regression analysis was used to measure the relationship between the independent variable and the independent variable. For an optimum forecast of the statistical significance of the two variables, a multiple regression analysis was run down on the independent variables ;exchange rate and monthly inflation against the total monthly export earnings. This was with an aim of establishing the to establish effect on the Total Monthly Export Earnings. The model coefficients are displayed below in Table 4.3.

4.3.2.1 Model Summary

Table 4.3: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.581 ^a	.338	.260	.02897

a. Predictors: (Constant), Export_Rate, Exchange_Rate

Source: Research data, (2016)

The above Table 4.3, displays the coefficient of determination which is the adjusted R squared of 0.697. This gives an implication of a change of 69.7% in export earnings as a dependent variable. It is explained by exchange rates and inflation (independent variables). The 30.3% balance, accounts for peripheral factors not incorporated in the model. It also demonstrates an R square of 0.71 that implies a strong relationship and a good fit.

4.3.2.2 ANOVAa

Table 4.4: ANOVAa

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	16.952	2	8.476	7.514	.030 ^b
	Residual	40.608	38	1.128		
	Total	57.56	40			

a. Dependent Variable: Inflation

b. Predictors: (Constant), Export Rate, Exchange Rate

Source: Research findings (2016)

F critical = 2.79

Table 4.4, displays an F test of 7.514 which signifies there is an adequate capability of the model to explicate a change in Y which is caused by the variables was strong. There is also reliable statistics to predict the dependent variable as the F significance was 0.003 that replicates that the model has a 0.03% chance of it being incorrect in its prediction since the F significance ought to be less than 0.05.

4.3.2.3 Coefficients.

Table 4.5: Table of Coefficients

The table 4.5 below exhibits the coefficients that facilitate in analysis the regression line.

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	
	B	Std. Error	Beta			
	(Constant)	.750	1.494		.502	.622
1	Exchange_Rate	-.259	.747	-.070	-.347	.733
	Export_Rate	-.057	.020	-.593	-2.930	.009

a. Dependent Variable: Inflation
Source: Research findings (2016)

The regression equation after estimation is

$$Y = - 0.421 + 0.496 X_1 - 0.227X_2$$

The study discloses that a unitary adjustment of the Monthly Foreign exchange rate, incurs for fluctuation positively changes the total export earnings by a factor of 0.496. consequently a unit of -0.227 persistent change in the monthly inflation deters to a negative decrease in the total export earnings in Kenya and vice versa.

4.4 Discussion of the Findings.

The study sought to establish the effects of exchange rates influence on export earnings of KTDA managed factories. There was a significant statistical evidence of ($P < 0.05$) at 5% on export earnings on the regression results. This was with the constant of 0.421; which implies that without the variable in the model, export earnings may then be negative. This then implicates further that there could be other aspect that influence the export earnings that were not incorporated within among the study variables in the equation.

There was a positive factor coefficient of correlation between the exchange rates and export earnings of 0.221, with a P value of .001. This signifies that a unit change in the exchange rate would consequently change the export earnings of the . This is evidenced by prior scholars like Cameron et al. (2005), Batten and Belongia (1984), and Arize et al. (2004), who had similar conclusions that in case of an increase in foreign currency

it would result to high export earnings. This study emphasizes then that the exchange rate is a key element to be considered when determining and forecasting export earnings.

The results extends to display a negative correlation factor of -0.275 , between export earnings and inflation with a P value $.012$ and also a negative Beta coefficient value of -0.227 . Since inflation is regarded as persistent change in price levels of commodities over a period of time can result exporting currency decline due to purchasing power parity. This study gives tries to meddle out that arise in inflation rate in the exporting country will result in a decline of the pre-determined export earnings from hence low exports from firms. Generally, the study flaunts that the model was statistically noteworthy since it displayed values of the coefficients skewing from zero to below 0.05 . F significance value of 0.003 that implies that the model might only be 0.03% off in its predicted

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CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter entails a detailed summary of the research and its deduced conclusions from the data processed and analyzed. It further gives recommendations and extends to display some of the limitations and opined research areas to be considered for further studies.

5.2 Summary

The effect of volatility in exchange rates was a major objective of how it influences the export earnings of KTDA managed factories. A descriptive research chose an alternative

to utilize and implement secondary data were sourced from KTDA, CBK and KNBS. Regression analysis suited the description of how independent variables related to the dependent variable. The results flaunt that there exists positive correlation between the export earnings and the exchange rates. This insinuates then gives an implication that an appreciation of the local currency results to low exports and vice versa. There is also a patch of negative correlation of the independent variables to the export earnings.

Findings of the results from the regression analysis demonstrate that an upward shift of the exchange rates by a unit changes the direction of the export earnings trend by the corresponding unit a factor of 0.496. A consequential upward shift of inflation by single unit export earnings shifts in the contrary direction slumps by a 0.227. In an ideal realistic situation, the variables are eliminated by their rates falling to 0% the assigned value of export earnings is -0.421. This shows that there are other factors that were not incorporated in the model equation which have an effect on export earnings.

5.3 Conclusions

The study findings affirm that the exchange rates and inflation are paramount variables that predict the earnings of KTDA from exports. In Kenya's economy the sector is key player in comprehending other peripheral factors that affect the performance of the sector and also tries to address the relational challenges that inhibit the sector as whole. Lately there has been great agitations from the small scale growers for higher payments or rather returns for the unprocessed delivered to the KTDA factories for further processing

and then exported. The grievance for payment has been due to the imagination that KTDA has been taking advantage of the farmers by underpaying them. Over the years KTDA has exported beyond 90% of its products from the small factories hence this study gives an alternative way of educating the factories managed by KTDA of how it affects their returns on investments. Doubtless there could exist peripheral factors that also have an effect on the earnings and may either impact negatively or positively. They could be international factors like the global consumer tastes preferences, weather cyclic, the customized value addition and the global positional brand which influences the earnings. Conversely, since the exports proceeds must be translated using the prevailing exchange rate, it remains a key player to be considered in determining the earnings of KTDA.

5.4 Recommendations.

The players in the industry should come up with marketing models to penetrate to newer markets with an aim of expanding the markets to reach out for more consumers of the product. This will consequently create a demand gap for the commodity hence increasing the volumes which triggers the purchasing price compensation against the volatile exchange rate. The government also needs to make moves to facilitate in the sector in creating forums for inhibiting newer markets for the commodity. This can be achieved by the government signing in exporting contracts with other countries hence opening up more markets for other commodities and reducing inherent cost in export ventures. Policy makers need also to work towards reforming policies that delineate the threshold of commodity export. This will facilitate the creation of a wider market destination hence increased market destination as opposed to the usual target markets of

the same price brackets of commodities. This can immensely be achieved through promotional initiatives which may be done regionally with consistent compliance with the quality of the standards set. The evolving technology can also be a considerable tool to implement in attaining the set standards which facilitates the return on investments to the farmers. Among other government facilitators to improve the sector, the national Treasury and KTDA can confer and come up with a cash reserve through the Ministry of Agriculture to instill consistent returns. These cash reserve acts as a buffer in case of low earnings which can top up the deficit of returns. This can assist in mitigating uncertain risk on exported returns.

KTDA can explore widening its scope by opening outlets in overseas markets so that they reach the consumers directly. This will not only expand the market territories but also increase the margins prices since there will be less middle men in the distribution chain. The overall supply chain ought to embrace the changing technology of processing cycle to packaging models and equipped transportation means from the warehouse to the targeted destinations hence reducing on cost. Continuous training of the farmers should be elevated on the current agronomy practices attain an optimum output and on improved quality of the commodity and in return maximizes returns.

5.5 Limitations of the Study.

Owing to the sensitivity of the data, sourcing information from KTDA proved to be a challenge since most of the data was not readily available on their websites. The concealment of the information was for reasons that it could be used as a competing tool by rival firm

against them or could be used for malicious purposes like inciting farmers un- accordingly. The data obtained was very selective and had to be scrutinized against others for purposes of accuracy. The prevailing exchange rate at the time the contract was sealed between the entered between the importer and the exporter (KTDA)..Although the conversion of the proceeds from sale to the local currency is exercised later. Exchange rates change between the times of contract seal to the time the proceeds are converted to local currency. The timing gap created could have slightly hence creating a timing difference. This therefore could have vaguely misrepresented the outcome analysis. This could also be the adjustment on data on exports for reasons of brokerage or commission based activities on the export process, charges accompanying the process like levies might have.

There could have been adjustments in the data on exports for brokerage and other commissions, levies and charges that disfigured the total earnings. Apparently there was unavailable complete information on these adjustments like penalties imposed on and paid by importers for failure to abide by the payment terms among other set rules of the auction process. This could have also distorted the resulting regression analysis.

5.6 Suggestions for Further Research.

The researcher urges that more widely scoped studies should be conducted on effects and the extend of the effects of the exchange rate volatility not only to the sector but to other commodities of export that affect the economy performance of the county. Additional studies should also focus on peripheral effects like weather trends, supply chain balances of demand and supply to different target regions, and the instability of the target markets to cut on risks. The regression equation shows that there could be other determinants that were not factored in the equation which call for more research to be carried on them.

The results of the regression equation show that there may be determinants that were excluded from the model. Additional research is recommended with inclusion of new variables. It's also vital to scrutinize the timing gap created between the values of exports contracts and the prevailing exchange rates of the target destination currency which might have an influence the expected earnings.

The income statement changes may only focus on charging the variances for gain or loss which more analytical treatment on the available data should be imposed to give more evidence on the effect of the exchange rate differences. This could also help in understanding the local consumption in detail. Recently there exists divergent markets into the normal local market with diverge attention and focus on they approach the branding, marketing and the distribution channels. They could have a great impact on the exports as the suppliers stagnate on earnings. Overtime, the alteration they make could in the long run affect the quality of the exports and with that may also change the volume ratios over the years which need a lot of consultations to be done.

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APPENDIX I: KTDA Managed Factories

1. Chebut Factory Company Limited
2. Chinga Factory Company Limited
3. Gacharage Factory Company Limited
4. Gachege Factory Company Limited
5. Gathuthi Factory Company Limited
6. Gatunguru Factory Company Limited
7. Gianchore Factory Company Limited
8. Githambo Factory Company Limited
9. Githongo Factory Company Limited
10. Gitugi Factory Company Limited
11. Ikumbi Factory Company Limited
12. Imenti Factory Company Limited
13. Iriaini Factory Company Limited
14. Kagwe Factory Company Limited
15. Kambaa factory Company Limited
16. Kangaita Factory Company Limited
17. Kanyenya-ini Factory Company Limited
18. Kapkatet Factory Company Limited
19. Kapkoros Factory Company Limited
20. Kapsara Factory Company Limited
21. Kapset Factory Company Limited
22. Kathangariri Factory Company Limited
23. Kebirigo Factory Company Limited
24. Kiamokama Factory Company Limited
25. Kiegoi Factory Company Limited Profile
26. Kimunye Factory Company Limited
27. Kinoro Factory Company Limited
28. Kionyo Factory Company Limited
29. Kiru Factory Company Limited
30. Litein Factory Company Limited
31. Makomboki Factory Company Limited
32. Mataara Factory Company Limited
33. Michimikuru Factory Company Limited
34. Mogogosiek Factory Company Limited
35. Momul Factory Company Limited
36. Mudete Factory Company Limited
37. Mungania Factory Company Limited
38. Mununga Factory Company Limited

39. Ndimba Factory Company Limited
40. Nduti Factory Company Limited
41. Ngere Factory Company Limited
42. Njunu Factory Company Limited
43. Nyamache Factory Company Limited
44. Nyankoba factory Company Limited
45. Nyansiongo Factory Company Limited
46. Ogembo Factory Company Limited
47. Ragati Factory Company Limited
48. Rukuriri Factory Company Limited
49. Sanganyi Factory Company Limited
50. Tegat Factory Company Limited
51. Theta Factory Company Limited
52. Thumaita Factory Company Limited
53. Tombe Factory Company Limited
54. Weru Factory Company Limited