ANALYSIS OF THE EFFECTS OF EXCHANGE RATE MOVEMENTS ON FUEL PRICE CHANGES IN TANZANIA: A CASE OF DAR ES SALAAM CITY

MALICK MKILINDI KHATIB

A DISSERTATION SUBMITTED IN PARTIAL FULLFILMENT OF THE REQUIREMENTS FOR THE DEGREE OF MASTER IN BUSINESS ADMINISTARTION (MBA) OF THE OPEN UNIVERSITY OF TANZANIA

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CERTIFICATION

The undersigned, certifies that I have read and hereby recommend for acceptance by the open university of Tanzania (OUT), a dissertation entitled; Analysis of the Effects of Exchange Rate Movements on Fuel Price Changes in Tanzania, A case of Dar es salaam city in partial fulfillment of the requirements for the Masters Degree of Business Administration (MBA) of the Open University of Tanzania (OUT).

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Dr. Salum S. Mohamed

(Supervisor)

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Date

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DECLARATION

I, **Malick Mkilindi Khatib**, declare that, this thesis is my own original work and that it has not been presented and will not be presented to any other university for a similar or any other degree award.

…….....…….

Signature

…….....…….

Date

DEDICATION

This research is dedicated to my family who support my academic life since childhood, my fellow classmates and other friends who encouraged me to embark on further studies.

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Preparation and writing of this dissertation has been contributed by many people whom I have to say thanks for their contributions. It is not easy to mention all of them by their names but my special thanks should first go to the Almighty God who on His infinite mercy gave me the grace, strength health and endurance adding me the courage to pursue my studies and then conducting this research study. Secondly I would like to express my gratitude to my research supervisor Dr. Salum S. Mohamed who worked tirelessly reading and giving his constructive criticism suggestions and encouragement at every turn up to the completion of this work.

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Lastly I am deeply indebted to my family for their support and patience while I went on my marathon studying stretching long hours into the morning. I would like to declare that I bear all responsibilities for all errors that will be found in this work.

ABSTRACT

This study has attempted to establish the Effects of Exchange Rate Movements on Fuel Price Changes in Tanzania, the case of Dar es salaam city. The purpose of this research was to analyze the magnitude of the effects brought by exchange rate movements on fuel price changes in Tanzania, study the appropriate measure to avert or minimize the adverse impact taken by the government of Tanzania. Secondary data has been mostly used in this research. Primary data has been obtained through close ended and structured questionnaires supplemented by observation and face to face interviews.

According to the findings, there is a direct relationship between the current trend of fuel price changes and the movements of exchange rate. The study also showed that there is an inappropriate association between the extent of fuel price changes and the movements of exchange rate, thus the appreciation or depreciation of foreign exchange does not tally with fuel price changes in the country. The study showed that fuel computation and periodic indicative price done by Ewura are wrongly applied and do not reflect the actual movements of exchange rate. The study revealed that foreign exchange appreciation or depreciation has immediate effect on fuel price changes because of weakness of local currency which causes Ewura as Government Regulatory Authority to use this weakness of TZS over USD to set and change the fuel prices every now and then.

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LIST OF ABBREVIATIONS AND ACRONYMS

AERC:	African Economic Research Consortium
BOT:	Bank of Tanzania
CGE:	Computable General Equilibrium
EWURA:	Energy and Water Utilities Regulatory Authority
ERM:	Exchange Rate Movement
FC:	Foreign Currency
FDI:	Foreign Direct Investment
FOB:	Free or Freight on Board
GDP:	Growth Domestic Product
HC:	Home Currency
IFEM:	Inter-bank Foreign Exchange Market
MENA:	Middle East and North Africa
MNC:	Multinational Corporation
PPP:	Purchasing Power Parity
SPSS:	Special Package for the Social Sciences
SUMATRA:	Surface and Marine Transport Regulatory Authority
TBS:	Tanzania Bureau of Standards
TIPER:	Tanzania International Petroleum Reserves
TPDC:	Tanzania Petroleum Development Corporation
TZS:	Tanzanian’s Shilling
USD:	United States Dollar
VAR:	Vector Auto Regressive

WWI: First World War

CHAPTER ONE

1.0 INTRODUCTION

1.1 Background to the Problem

Tanzania introduced financial sector reforms in early 1990s. As part of the reforms, efforts were made to develop, broaden and deepen the financial sector. This included liberalization of foreign currency whereby private companies or individuals were allowed to hold, buy or sell foreign currencies to authorized dealer or a Bureau de Change.

When foreign currency started to circulate in the market, its exchange rate also started to move up and down. Exchange rate is one of the key measures of economic performance which shows growth (output), demand conditions, and the levels and trends in monetary and fiscal policy stance. This was a key reason for this study. It had analyzed the effects of exchange rate movements on fuel price changes in Tanzania.

Tanzania is among the countries which depend entirely on imports for their fuel needs. Tanzania consumes about 1.54 million cubic meters as per annum of petroleum products wholly imported from Mediterranean, Arabia Gulf and sometimes from Durban South Africa. Effective from January 2000, petroleum downstream subsector was liberalized enabling oil marketing companies to individually procure and trade petroleum products in accordance to their market requirements and setting pump prices based on the prevailing work forces (Ewura, 2008).

Operators with each category (importers, wholesalers, retailers) usually have similar cost structure. The costs include importation, handling charges, taxes and levies for importation and unloading usually costs of storage, transportation and retail. It is estimated that there are about 500 to 700 fuel stations. These are owned by either major companies including multinationals or by private individuals. After liberalization, the number of large fuel stations has mushroomed.

Marketers are obliged to purchase main products from ex TPDC with fuel prices and margins set by the government. Importers pay 55% of the FOB price as tax and are subject to a number of levies. These result in the taxes being the highest in East Africa. In 1999 and 2000 fuel prices in Tanzania were increased more than eight times. Therefore oil marketing companies in Tanzania claim that the retail price of petroleum products should be at 150% over the landed price due to increase of FOB prices as tax in super petrol and diesel (Ewura, 2008).

The exchange rate is one of the most important determinants of a country's relative level of economic health. Exchange rate plays a vital role in a country's level of trade, which is critical to most every free market economy in the world. For this reason exchange rates are among the most watched analyzed and governmentally manipulated economic measures. But exchange rates matter on a smaller scale as well; they impact the real return of an investor's portfolio. We should sketch out how exchange rate movements affect the nations trading relationships with other nations. A higher currency makes a country's exports more expensive and imports cheaper in foreign markets, while a lower currency makes a country's export cheaper and

imports more expensive in foreign markets. A higher exchange rate can be expected to lower the country's balance of trade, while a lower exchange rate would increase it (Bangudu, 2010).

For quite sometimes fuel consumers in Tanzania have become victims of unfair practice by traders who temper with fuel prices. There is no competition but only about four oligopolistic companies that are importing petroleum products and then selling it at price that best suit their interests and passed the heavy load on to the consumers. The fuel dealers form a cartel which is a small group of fuel importers who agree to regulate fuel supply in an effort to control or manipulate prices (Hango, 2009).

For example Adam Smith (1776) wrote in the Wealth of Nations that when people of the same trade meet, the conversation ends in conspiracy against the public or in some contrivance to rise or fixing price. This situation used to happen in Tanzania before the Ewura got an authority to set the fuel prices and it raised lots of complaints from fuel customers on the hiked fuel price. Petroleum sector is divided into two categories namely upstream and downstream. Upstream activities involve exploration and production activities, while downstream activities include importation, storage, transportation of crude oil and refined petroleum products, wholesale and retail distribution of petroleum products and liquefied petroleum gas (Ewura, 2008). Tanzania's primary import commodities include consumer goods, machinery and transportation equipment, industrial raw material and crude oil, petroleum products and liquefied gas. The country's imports were worth USD 5.545

billion in 2009 down from USD 7.08 billion in 2008. During the first six months of 2009/10, imports of goods and services amounted to USD 6425 million the increase of 11.6% over the previous year much of it coming from imports of goods (Bangudu, 2010).

Tanzania's primary export commodities include gold, coffee, cashew nuts, manufactured products and cotton. The country exports in 2009 were worth USD 2.744 billion up from USD 2.413 billion in 2008. During year ending September 2009, earnings from export of goods amounted to USD 2671.7 million equivalent o an increase of 7.9 compared with same period in 2008. An improved performance was also recorded in manufactured goods, horticultural products and fish and fish products (Bangudu, 2010).

In July of 2007, the government proposed and the parliament enacted amendments to the petroleum (conservation) Act, Cap, 392 and the Energy and Water Utilities Regulatory Authority Act, Cap 414 (EWURA Act). As a result of these amendments EWURA (also referred to as the Authority or the Regulator) is the economic regulator of the downstream petroleum (importation, marketing distribution) sub sector (Hango, 2009).

Despite the existence of EWURA, the price of fuel remained high and controlled by few fuel dealers. The complaints of high fuel prices emerged again and this time it reached a high level. It was observed that EWURA was lacking full mandate to control, order or instruct any fuel dealer to decrease or increase the fuel prices. This

prompted President J. M. Kikwete to call up on EWURA to regulate the fuel prices. After the longtime fleecing of the customers by fuel dealers lastly EWURA acted by slightly slashing the price which was not coming to even quarter of the world fuel price decline (Hango, 2009).

The fuel prices set by EWURA resurfaced again complaints from customers that the set fuel price is neither proportional to degree of fuel price change in the world market nor to the foreign exchange appreciation. A small increase in fuel price in the world market and a slight appreciation on foreign exchange results to large increase in fuel prices (Hango, 2009).

1.2 Statement of the Research Problem

Due to lot of complaints from fuel stakeholders about fuel price movements (Ngonji, 2008), taking into consideration the explanations below paved the way for the researcher to came up with the problem of the statement as analysis of the effects of exchange rate movements on fuel price changes in Tanzania.

Currently fuel customers in the country are complaining that the fuel price is not stable because price of this month might not be the price of the next month. They also complain that the fuel price within the country does not correlate with the actual movements of exchange rate and the fuel price in the world market. A slightly appreciation in the exchange rate results to a large increase in fuel prices in the country and a small increase in the price of fuel in the world market results to a large increase in fuel prices in the country (Hango, 2009).

One of the main problems facing the Tanzanian petroleum sub sector is the high cost of delivery of petroleum products into the national economy. In Tanzania, it is not the increase in producer prices that affect the local price but the high tax component in the price structure that is largely responsible for inordinately high fuel prices (Senni, 2010).

Turning to the price of the commodity in the world market in July 2008, it is found that it had reached USD 150 per barrel of crude oil. Pump prices in the country were then at TZS 1,500 per liter of diesel. When the world price dropped to USD 36 barrel, EWURA slashed the retail price of diesel to TZS 1,271 and petrol to TZS 1,166 which was very disproportional. This shows that the increase in fuel prices were higher than the respective increase in exchange rate and the price of fuel in the world market. Therefore the study was aimed to examine the effects of exchange rate movements on fuel price changes in Tanzania. This helped to find out if the fuel price changes in the country is increasing or decreasing disproportionately to exchange rate movements (Ewura, 2008).

1.3 Research Objectives

1.3.1 General Objective

The main objective of this study was to analyze the effects of exchange rate movements on fuel price changes in Tanzania.

1.3.2 Specific Objectives

i. To examine the main causes of exchange rate movements in the country.

ii. To examine the main causes of fuel price changes in the country.

iii. To analyze the trends of exchange rate movements and the fuel price changes.

iv. To explore the extent of proportionality between fuel price changes in the country and the fuel price changes in the world market.

1.3.3 Research Questions

1.3.3.1 General Question

The general question of this research is how do the exchange rate movements affect the fuel prices in the country?

1.3.3.2 Specific Questions

What are the main causes of exchange rate movements in the country?

What are the main causes of fuel price changes in the country?

What is the trend of exchange rate movements and the fuel price changes?

What is the extent of proportionality between fuel price changes in the country and the fuel price changes in the world market?

1.4 Research Hypothesis

According to Kothar (2002), hypothesis is defined as a proportion set forth as an explanation for occurrence of some specified group of phenomena either asserted merely as a provisional conjecture to guide some investigations or acceptance as highly probable in the light of established facts. In analyzing this problem, the statistical measurements were done to prove or disapprove the findings. The following one standing hypotheses were proposed to guide the study:

1.4.1 Research Hypothesis One

There is a relationship between exchange rate movements and fuel price changes.

Many researchers identified exchange rate movements as one of the determinant of fuel price changes. It is expected that when the exchange rate appreciates the fuel price increases and when the exchange rate depreciates the fuel price goes down.

1.4.2 Research Hypothesis Two

There is an inappropriate association between the extent of exchange rate movements and the extent of fuel price changes.

Since exchange rate is important determinant of fuel prices, it is expected that the extent of fuel price changes to be proportional to the extent of exchange rate movements. Thus, small appreciation or depreciation of exchange rate must result in small changes in fuel price.

1.5 Significance of the Research

The research is of great importance to fuel customers, fuel importers, Government Regulatory Authority (EWURA), Professionals and Other interested users. The study helped to provide basic knowledge to the stakeholders on the trends of fuel prices in the country. The study revealed the effects of exchange rate movements (ERM) on fuel price changes within the country as the most people depend on fuels for their several daily activities. The study helped the customer to relate the fuel price changes with the exchange rate movements. The findings of the research had been a good

source for EWURA to improve the fuel price setting operations. The researcher showed how much the exchange rate movements have affected the fuel prices and the income of individuals then the foreign currency for the government. The research contributed to academic practitioners and policy makers to make appropriate decision on economic and financial issues to cope with possible solutions to exchange rate movements.

The study assisted to enhance the researcher's ability to carry out economic and financial research. The study helped developing research and reporting skills of the researcher. The research served as a guide for future reference to those who will need to do the same research on the subject matter. The research portrayed new insights of features of the effects of exchange rate movements on fuel price changes.

1.6 Scope of the Research

The study was conducted in Dar es salaam region due to time and financial constraints. Again Dar es salaam is the head quarter of EWURA and BOT where had been used to collect some data; and at the moment Dar es salaam is the main center of businesses in Tanzania which constitute a large number of fuel importers and customers. Thus it had simplified data collection rendering it highly reliable in terms of the quality of data collected.

1.7 Organization of the Study

This study was divided into five chapters; namely introduction, literature review and research methodology, research findings and analysis and conclusions and

recommendations respectively.

Chapter one presented the background information, an overview of the case company, statement of the research problem, research objectives, research questions, research hypotheses, significance of research, scope of the study and organization of the study. Chapter two presented the literature view which includes the conceptual definitions, theoretical literature review, empirical literature review of relevant studies, research gap identified, conceptual frame work and theoretical frame work. Chapter three contained research methodology, research design, population to be surveyed, area of research, data collection methods and techniques, data analysis, validity, reliability and ethical issues. Chapter four presented the data analysis and findings from the research. Chapter five presented the summary of findings, conclusions drawn from the research findings and recommendations.

CHAPTER TWO

2.0 LITERATURE REVIEW

2.1 Introduction

This chapter provided the conceptual framework for this research by reviewing the exchange rate movements and the fuel prices in Tanzania. Although there was considerably body of empirical literature related to exchange rate movements worldwide, not much exists in Tanzania especially on the relationship between fuel prices and foreign exchange movements. This section presented a review of the literature and conclusions from various studies that have been conducted mostly in Tanzania, Africa and other parts of the world regarding fuel price changes.

2.2 Conceptual Definitions

2.2.1 Exchange Rate

Exchange rate is the price at which one currency (e.g. the U.S. dollar) can be exchanged for another currency (e.g. the TZ shilling). In other words, it is the value of another country's currency compared to that of your own (Saunders and Cornett, 2012). If for example you are travelling to Tanzania and the exchange rate for U.S. dollar is 1:1600 TZS, this means that for every U.S. dollar, you can buy TZS 1600. Theoretically, identical assets should sell at the same price in different countries because the exchange rate must maintain the inherent value of one currency against other (Bangudu, 2010).

Again an exchange rate can simply be defined as the price of one nation's currency in terms of another currency, often termed the Reference Currency. For example

TZS/USD exchange rate is just the number of Tanzania shillings that one dollar will buy. Exchange rate can be for spot or forward delivery. A spot rate is the price at which currencies are traded for immediate delivery or in two days in the interbank market. A forward rate is the price at which foreign exchange is quoted for delivery at a specified future date (Shapiro, 2006).

2.2.2 Fixed Exchange Rate

It is own currency on the foreign exchange market in return for the currency to which it is pegged. There are two ways the price of a currency can be determined against other. A fixed or pegged rate is a rate the government (Central Bank) sets and maintains as the official exchange rate. A set price will be determined against a major world currency usually the U. S. dollar but also other major currencies such as Euro, Pound sterling, Yen or as a basket of currencies (BOT, 2009).

In order to maintain the local exchange rate, the central bank buys and sells it. For example, it is determined that the value of a single unit of local currency is equal to USD 3 the central bank will have to ensure that it can supply the market with those dollars. Again in order to maintain the rate, the central bank must keep a high level of foreign reserves (Senni, 2010). Foreign reserve is a reserved amount of foreign currency held by the central bank that it can use to release (absorb) extra funds into or out of the market. This ensures an appropriate money supply, appropriate fluctuation in the market (inflation or deflation) and ultimately the exchange rate. The central bank can also adjust the official exchange rate when necessary (BOT, 2009).

Central bank can also declare a fixed exchange rate, offering to supply or buy any quantity of domestic or foreign currencies at that rate. In this case one talks of a fixed exchange rate under this regime, a loss of value usually forced by market or a purposeful policy action is called devaluation where as an increase of international value is revaluation. The most stable fixed exchange regimes are backed by an international agreement on respective currency values, often with a formal obligation of loans among central bank in case of necessity (BOT, 2009).

An extreme national engagement to fixed exchange rates is the transformation of the central bank in a mere currency board with no autonomous influence on monetary stock. The bank will automatically print or lend money depending on corresponding foreign currency reserves. Thus exports, imports and capital inflow (e.g. FDI) will largely determine the monetary policy. Monetary unions phase out the national currencies in favor of one (new or existing). Some further countries can target to join and put in place economic and financial policies to that aim, especially if there are explicit conditions for entering into that monetary area (BOT, 2009).

2.2.3 Floating Exchange Rate

Unlike the fixed rate, floating exchange rate is determined by the private market through supply and demand. A floating rate is often termed self – correcting, as any differences in supply and demand will automatically be corrected in the market. Take a look at this simplified model if demand for a currency is low, its value will decrease, thus making imported goods more expensive and stimulating demand for local goods and services. This in turn will generate more jobs, causing an auto

correction in the market. A floating exchange rate is constantly changing; in reality no currency is wholly fixed or floating. In a fixed regime, market pressures can also influence changes in the exchange rate. Sometimes when a local currency does not reflect its true value against its pegged currency, a black market which is more reflective of actual supply and demand may develop (Keyfitz, 2004).

The central bank will often then be forced to revalue or devalue the official rate so that the rate is on line with the unofficial one thereby halting the activity of the black market. In floating regime, the central bank may also intervene when it is necessary to ensure stability and to avoid inflation, however it is less often that the central bank of floating regime will interfere the wholly process (Senni, 2010).

When the exchange rates can freely move, assuming any value that is private demand and supply jointly established, freely floating exchange rates will be the name of currency institutional regime. Equivalently it is called flexible exchange rate as well. If the central bank timely and significantly intervenes on the currency market, a managed floating exchange rate regime takes place. The central bank intervention can have an explicit target for example in terms of a band of currency acceptable values (Bangudu, 2010).

2.2.4 Price Change

Price is a value that will purchase a finite quantity, weight, or other measure of a good or service. As the consideration given in exchange for transfer of ownership, price forms the essential basis of commercial transactions. It may be fixed by a

contract, left to be determined by an agreed upon formula at a future date, or discovered or negotiated during the course of dealings between the parties involved (http://www.businessdictionary.com).

In modern economies, prices are generally expressed in units of some form of currency. (For commodities, they are expressed as currency per unit weight of the commodity, e.g. Euros per kilogram.) Although prices could be quoted as quantities of other goods or services this sort of barter exchange is rarely seen. Prices are sometimes quoted in terms of vouchers such as trading stamps and air miles. Economists sometimes define price more generally as the ratio of the quantities of goods that are exchanged for each other (Boudreaux, 2013).

In many financial transactions, it is customary to quote prices in other ways. The most obvious example is in pricing a loan, when the cost will be expressed as the percentage rate of interest. The total amount of interest payable depends upon the loan amount and the period of the loan. Other examples can be found in pricing financial derivatives and other financial assets. For instance the price of inflation-linked government securities in several countries is quoted as the actual price divided by a factor representing inflation since the security was issued (Bangudu, 2010).

In commerce, price is determined by what a buyer is willing to pay, a seller is willing to accept and the competition is allowing to be charged. With product, promotion, and place of marketing mix, it is one of the business variables over which organizations can exercise some degree of control (http://www. businessdictionary.com).

Price sometimes refers to the quantity of payment requested by a seller of goods or services, rather than the eventual payment amount. This requested amount is often called the asking price or selling price, while the actual payment may be called the transaction price or traded price. Likewise, the bid price or buying price is the quantity of payment offered by a buyer of goods or services, although this meaning is more common in asset or financial markets than in consumer markets (Boudreaux, 2013).

Price change is the difference in the cost of an asset or security from one period to another. While it can be computed for any length of time, the most commonly cited price change in the financial is the 'daily price change' which is the change in the price of a stock or security from the previous trading days close to the current day's close. Price change over a period of time such as year-to-date or past 12 months are also commonly used time periods, and is generally computed as a percentage change. Price change forms one of the two elements that comprise the total returns from an investment over a period of time, the other being dividends or distributions obtained from the investment (Boudreaux, 2013).

The pricing of goods and services traded internally is one of the most sensitive of all management subjects and executive typically are reluctant to discuss it. Each government normally presumes that multinationals use transfer pricing to its country's detriment. For this reason, a number of home and host government have set up policing mechanism to review the transfer pricing policies of MNCs. The most important uses of transfer pricing include reducing taxes, reducing tariffs and

avoiding exchange controls. Transfer prices also may be used to increase the MNC's share of profits from a joint venture and to disguise an affiliate's true profitability (Shapiro, 2006).

2.2.4.1 Free Price System

For example, in a free price system, rising prices may indicate a decrease of supply or an increase in demand. Regardless of the underlying reason and without the consumer needing to know the cause the price increase communicates the notion that consumer demand (at this new, higher price) should recede or that supplies should increase. Consumers that do continue to purchase the product at the higher price ostensibly give the product a higher marginal utility. This results in a natural market correction, according to the Austrian theory of catallactics (Boudreaux, 2013).

2.2.4.2 Fixed Price System

In a fixed price system where prices are set by government, price signals may not be as reliable as indicators of shortages, surpluses, or consumer preferences according to opponents of planned economies. These artificial prices may create shortages and surpluses that would not occur under a free price system. An alternative theory of centrally planned economies, the shortage economy theory of Hungarian economist János Kornai argues that it is not a failure of the pricing mechanism, but rather a systemic failure to produce enough goods, since shortages were obvious but persisted.

The theory of price signals argues that higher prices reflect either increased consumer demand (thus spurring higher production), or increased producer costs

(thus reducing consumption), allowing the coordination of the economy. For example, if a producer charges a fixed percentage markup, then prices reflect costs of production, and changes in price correspond to changes in production, rather than changes in profit. Alternative theories include that prices reflect relative pricing power of producers and consumers. For example, a monopoly may set prices so as to maximize monopoly profit, regardless of actual costs of supply or demand, while a cartel may engage in price fixing. Conversely, on the consumer side, a monopoly may negotiate or demand prices that do not reflect actual demand or cost of production (Boudreaux, 2013).

2.3 Theoretical Literature Review

2.3.1 Fuel Pricing Regulatory Theory in Petroleum Sector

The structure of Tanzania's petrol retailing industry suggests the existence of oligopolistic interdependence between the wholesalers. The decision made by one firm with respect to price and other strategic variables may factor in the possible reactions of its rivals. The potential complexity interactions between the firms make conduct in oligopolistic industries particularly difficult to analyze and predict. This is particular true in light of the scant amount of data presently available (Ewura, 2008).

A separate problem for the petroleum products wholesalers is how to implement the periodic price changes necessitated by changes in international petroleum products prices. According to theory, all companies are under the same pressure to make changes but none want to bear the risk of being the first to raise its prices (others may not follow). On the other hand, there is a public relations advantage to gain by being

the first to reduce prices, particularly if one knows that others will soon follow (Ewura, 2007).

Prior to liberalization firms in the petroleum industry were not entitle to compete on the price changes. Now they are. Because low elasticity of demand for petroleum products as a generic commodity, the demand for the product of one wholesaler is likely to be much more responsive to price changes; assuming that all other wholesalers hold their prices constant (Bangudu, 2010).

Some fuel stakeholders believe that the parity between the petrol prices of the various wholesalers together with the parallel form which price adjustments take indicates a lack of competition in petrol retailing. Some further believe that the oil companies are colluding to raise prices above the competitive level for the purpose of earning unfair profits. Again there are features of Tanzanian's petroleum sectors that rise additional suspicions of collusion. These include the horizontal arrangements between the companies themselves such as "hospitality" and "borrow and loan" and the vertical arrangements between the companies and many other of their dealers such as agreement between storage capacity owner and particular gasoline stations (Ewura, 2010).

Market participants will argue that such arrangements are efficiency enhancing because they allow companies to compete on a nationwide scale. On the other hand it could also be said that such joint activities provide opportunities for company representatives to meet and agree on matters that in effect reduce competition

between their companies. However it must be acknowledged that price leadership and conscious parallelism is insufficient to establish an agreement in restraint of trade. In addition there must be "plus factor" which demonstrate that the market participants would not have acted in such a parallel way in the absence of an agreement to restrain trade (Ewura, 2010).

2.3.2 Characteristics of Petroleum Products Retailing

Petroleum products was liberalized operators within each category (importer wholesalers, retailers) usually have a similar cost structure. These include the costs of importation, handling charges, taxes and levies for importation and unloading, usual cost of storage, transportation and retail. Finally operators are also covering their margins (Ewura, 2008).

2.3.3 Pricing Formula for Computing Indicative Prices

Although the petroleum downstream subsector in Tanzania is liberalized, parameters that are taken into account while computing the final price to the consumer are almost the same. Competition among markets oil companies is expected to be on levels of some of the parameters which are negotiable depending on their trading volumes, frequency of importation and other policies (Ewura, 2008).

In computing the indicative fuel prices, differential parameters which are free on board price and which is the major determinant of the end user price, freight and seller premium which comprises of a sea from the port of loading to destination plus the supplier's expenses and profit margin, commonly known as his "premium", exchange rate due to the fact that, petroleum products are internationally priced in

U.S dollar as a standard currency used in the petroleum industry. Currently estimation of the exchange rate that is included in the pricing formula is based on thirty (30) days average of the selling rates as quoted by the BOT for the same dates as applied in the computation of FOB (Ewura, 2008).

Other parameters are insurance, wharf age fee (port and handling charges), destination inspection fee, TIPER manifold fees, TBS quality certification fee, transit loss, SUMATRA charges, EWURA levy, Government taxes, company margin and overhead recovery, dealers margin, financing costs, delivery charges and conversion factor (Ewura, 2008).

2.3.4 Theory of Foreign Exchange Rate

Exchange rates show the purchasing power of a currency in a different currency. They make the monetary value of goods, services capital spending and investments comparable to the world over. An exchange rate of e.g. USD/TZS 1600 expresses the prices of the U.S dollar in TZS. The notation USD/TZS is the system used by traders, although mathematically it would be more correct to express the exchange rate in other way round, as it shows how many TZS have to be paid to obtain 1 USD (Sercu, 2008).

2.3.5 PPP as a Theory of Exchange Rate Determination

Purchasing power parity (PPP) was first stated in a rigorous manner by the Swedish economist Gustav Cassel in 1918. He used it as the basis for recommending a new set of official exchange rates at the end of WWI that would allow for the resumption

of normal trade relations. Since then, PPP has been widely used by central banks as a guide to establishing new par values for their currencies when the old ones were clearly in disequilibrium (Shapiro, 2006).

The PPP relationship becomes a theory of exchange rate determination by introducing assumptions about the behavior of importers and exporters in response to changes in the relative costs of national market baskets. Recall in the story of the law of one price, when the price of a good different between two countries markets, there was an incentive for profit seeking individuals to buy the goods in the low price market and resell it in the high price market (Hango, 2009).

Similarly if a market basket containing many different goods and services, costs more in one market than another, we should likewise expect profit seeking individuals to buy the relatively cheaper goods in the low cost market and resell them in the higher price market. If the law of one price leads to the equalization of the prices of a good between two markets then it seems reasonable to conclude that PPP describing the quality of market baskets across countries should hold (Hango, 2009).

As the relative inflation rates (and interest rates) change, foreign currency exchange rates that are not constrained by government regulation should also adjust to account for relative differences in the price levels (inflation rates) between the two countries. According to PPP, foreign currency exchange rates between the two countries adjust to reflect changes in each country's price levels (inflation rates and interest rates) as consumers and importers switch their demands for goods from relatively high

inflation (interest) rate countries to low inflation (interest) rate countries. Specifically the PPP theorem states that the change in the exchange rate between two countries' currencies is proportional to the difference in the inflation rates in the two countries (Saunders and Cornett, 2012).

The theory behind PPP is that in the long run exchange rates should move toward rates that would equalize the prices of an identical basket of goods and services in any two countries. This is also known as the law of one price, an economist concept which states that in an efficient market, if countries produce a good or service that is identical to that in other countries, that good or service must have a single price, no matter where it is purchased (Saunders and Cornett, 2012).

One of the central ideas of international finance stems from arbitrage, in competitive markets, characterized by numerous buyers and sellers having low cost access to information, exchange adjusted prices of identical tradable goods and financial asset must be within transaction costs of equality worldwide. This idea, referred to as the law of one price, is enforced by international arbitrageurs who follow the profit guaranteeing dictum of "buy low, sell high" and prevent all but trivial deviations from equality. Similarly, in the absence of market imperfections, risk adjusted expected returns on financial assets in different markets should be equal (Shapiro, 2006).

2.3.5.1 Absolute PPP

In its absolute version, PPP states that price level should be equal worldwide when expressed in a common currency. In other words, a unit of home currency (HC)

should have the same purchasing power around the world. This theory is just an application of the law of one price to national price levels rather than to individual prices. That is, it rests on the assumption that free trade will equalize the price of any good in all countries otherwise, arbitrage opportunities would exist. However, absolute PPP ignores the effects on free trade of transportation costs, tariffs, quotas and other restrictions like product differentiation (Shapiro, 2006).

In the long run, we would expect that equivalent goods in different countries should cost the same in a free market after conversion into a particular currency. The profit opportunities from cross border trade should only be temporary. If the prices and exchange rate are flexible, they should change in such a way that the opportunities for arbitrage gradually disappear. The price alignment process starts when goods which are cheaper from abroad are imported. This will cause demand for foreign currencies. The increase in demand for a foreign currency will result in its costing more. This in turn will cause a gradual increase in the price of the foreign goods and the process will continue until the goods cost the same in both countries and the exchange rate events out the purchasing power of both currencies (Ishizaki, 2002).

2.3.5.2 Relative PPP

The relative version of PPP, which is used more commonly now, states that the exchange rate between the home currency and foreign currency will adjust to reflect changes in the price levels of the two countries. For example if inflation is 5% in the United States and 1% in Japan, the dollar value of the Japanese yen must rise by about 4% to equalize the dollar price of goods in the two countries (Shapiro, 2006).

Changes in price levels can express shift in the purchasing power of one currency relative to another. The most common benchmark for price levels in a country is the retail price index. This measures the price of a basket of goods typically consumed by private households. The growth of the prices combined in the basket can be used to identify the rate of price increases, in other words inflation. The key factors determining exchange rate movements according to PPP are the prices of the marketable goods measured in the producer price index. In the case of relative PPP, movements in the exchange rate should reflect changes in the price level of the marketable goods in the countries concerned. This does not affect actual purchasing power itself. The important factor is therefore the development of the relative price level in the relevant countries. Any change in the relative price level is simply the difference between the inflation rates in two countries. The principle of relative PPP should therefore mean that a change in exchange rates should correspond to the difference in manufacturing price inflation between the countries being analyzed. In other words, the real exchange rate should be constant (Ishizaki, 2002).

2.3.6 Adjustment to the Price Level Changes under PPP

In the PPP theory, exchange rate changes are included by changes in relative price levels between two countries. This is true because the quantities of the goods are always presumed to remain fixed in the market baskets. Therefore the only way that cost of the basket can change is when the goods prices change. Since price level changes represent inflation rates will induce exchange rate changes according to the theory (Bangudu, 2010). However adjustment within the PPP theory occurs with a twist compared to adjustment in the law of one price story. In the Law of one price

story, goods arbitrage in particular product was expected to affect the prices of the goods in the two markets. The twist that is included in the PPP theory is that arbitrage occurring across a range of goods and services in the market baskets will affect the exchange rate rather the market prices (Hango, 2009).

2.3.7 Monetary and Financial Variables in Cross Linked Markets

Interest rate on treasure bonds should influence the decision of foreigners to purchase currency. In this case, higher interest rates attract capital from abroad and the currency should appreciate. Decisive would be the difference between domestic and foreign interest rates, thus a reduction in interest rates abroad would have the same effects. Similarly other fixed interest financial instruments could be objects of the same dynamics. Accordingly, an increase of domestic interest rates by the central bank is usually considered a way to defend the currency. Nonetheless, it may happen that foreigners rather buy shares instead of treasure bonds. If this were the strongest component of currency demand, then an increase of interest rate may even provoke the opposite results, since an increase of interest rate quite often depresses the stock market, favoring a tide share sales by foreigners (Bangudu, 2010).

Inflation rate is often considered as a determinant of exchange rate as well. A high inflation should be accompanied by depreciation if other countries enjoy lower inflation rates, since it should be the difference between domestic and foreign inflation rates to determine the direction and the scale of exchange rate movements. All these would be implied by a weak version of one law of one price stating that price dynamic of goods are the same worldwide after taking into account nominal

exchange rates. Thus here not absolute level, but the percentage differences in price are requested to be equalized (Mkulo, 2009).

Balance of Payments can highlight pressures for devaluation or revaluation, reflected in large and systematic trend of foreign currency reserves at the central bank. In particular, large inflows due for instance to a raise in the exchange rate. Conversely, a collapse in the trust of government to manage the economic conditions might provoke a flight of capital, the exhaustion at foreign currency reserves and force devaluation or depreciation (Mkulo, 2009).

A matter of discussion would be whether the relevant interest rate is the nominal or the real one (which in contrast with the former, keeps into account inflation). Usually foreign investors do not purchase bread, clothes and other items included in the bundle used to compete with price level and its dynamics, they do not buy anything real in the target economy. So nominal rates are more likely to be taken into accounts as a temporary conclusion, interest rates should have an important impact on exchange rate but one has to be careful to check on additional conditions (Mkulo, 2009).

2.3.8 Impacts on other Variables

Levels and fluctuation in the exchange rate exert a powerful impact on exports, imports and the trade balance. A high and rising exchange rate tends to depress exports, to boost import and to deteriorate the trade balance, as far as these variables respond to price stimuli. Consumers find foreign goods cheaper so the consumption

composition will change. Similarly, firms will reduce their costs by purchasing intermediate goods from abroad. Exchange rate influences also the external purchasing real estate and other assets like firm equity as a foreign direct investment (Mkulo 2009).

2.3.9 Types of Exchange Rate

It is customary to distinguish nominal exchange rates from real exchange rates. Nominal exchange rates are established on currency financial markets called forex markets, which are similar to stock exchange markets. Rates are usually established in continuous quotation with news paper reporting daily quotation (as average or finishing quotation in the trade day on a specific market). Central bank may also fix the nominal exchange rate (Keyfitz, 2004).

Real exchange rates are nominal exchange rates corrected somehow by inflation measures. For instance, if country A has an inflation rate of 10%, country B an inflation of 5% and no changes in the nominal exchange rate took place, then country A has now a currency whose real value is 10% - 5% = 5% higher than before. In fact, higher prices mean an appreciation of the real exchange rate, while other factors remain equal (Senni, 2010).

Another classification of exchange rate is based on the number of currencies taken into account. Bilateral exchange rates clearly relate to two countries' currencies. They are usually the results of matching of demand and supply on financial markets or in banking transaction. In this latter case the central bank acts usually as one of the

side of relationship. Other bilateral exchange rates may be simply computed from triangular relationship (Keytz, 2004).

Multilateral exchange rates are computed in order to judge the general dynamics of a country's currency toward the rest of the world. One takes a basket of different currencies select (more or less) a meaningful set of relative weights, and then computes the effective exchange rate of that country's currency. Some countries impose the existence of more than one exchange rate depending on the type and the subject of transaction. Multilateral exchange rates then exist, usually referring to commercial against public transactions or consumption and investment imports. This situation requires always some degrees of capital controls. In many countries beside the official exchange rate, the black market offers foreign currencies at another usually much higher rate (Senni, 2010).

2.4 Factors that Affect the Equilibrium Exchange Rate

As the supply and demand schedules for a currency change over time, the equilibrium exchange will also change. See the figure below. Some of the factors that influence currency supply and demand are:

Relative inflation rates, suppose that the supply of dollars increases relative to its demand. This excess growth in the money supply will cause inflation in the United States, which means that U.S. prices will begin to rise relative to prices of goods and services in Euro land. Euro land consumers are likely to buy fewer U.S products and begin switching to Euro land substitutes, leading to a decrease in the amount of Euros supplied at every exchange rate (figure below).

Dollar price of one Euro

Mark (€ 1 = $ e)

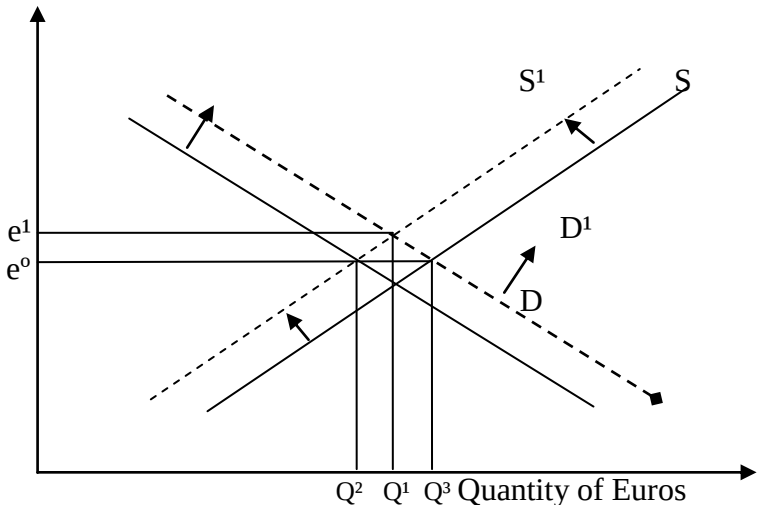

Figure 2.1: Impact of U.S Dollar Inflation on the Equilibrium Exchange Rate (Shapiro (2006).

Relative interest rates, interest rate differential will also affect equilibrium exchange rate. A rise in U.S interest rates relative to Euro land rates, all else being equal, will cause investors in both nations to switch from euro-to-dollar denominated securities to take advantage of the higher dollar rates. The net result will be depreciation of the euro in the absence of government intervention. It should be noted that the interest rates discussed here are real interest rates = nominal or actual interest rate – the rate of inflation.

Current account deficit, the current account is the balance of trade between a country and its trading partners reflecting all payments between countries for goods, services, interest and dividends. A deficit in the current account shows the country is spending more on foreign trade than its earning and that it is borrowing capital from foreign sources to make up the deficit. In other words the country requires more foreign

currency than it receives through sale of exports and it supplies more of its own currency than foreigners demand for its products.

Public debt, country will engage in large scale deficit financing to pay for public sector projects and governmental funding. While such activity stimulates the domestic economy, nations with large public deficits and debts are less attractive to foreigner investors. The reason for this situation is that, a large debt encourages inflation and if inflation is high, the debt will be serviced and ultimately paid off with cheaper real dollars in the future.

Terms of trade, a ratio comparing export prices to import prices, the terms of trade is related to current accounts and balance of payment. If the price of a country's exports rises by a greater rate than that of its imports, its terms of trade have favorably improved increasing terms of trade shows greater demand for the country's exports. This in turn, results in rising revenues from exports which provide increased demand for the country's currency (and an increase in the currency's value). If the price of exports rises by a smaller rate than that of its imports, the currency's value will decrease in relation to its trading partners.

Relative economic growth rates, similarly, a nation with strong economic growth will attract investment capital seeking to acquire domestic assets. The demand for domestic assets in turn results in an increased demand for the domestic currency and a stronger currency, other things being equal. Empirical evidence supports the hypothesis that economic growth should lead to a stronger currency. Conversely,

nations with poor growth prospects will see an exodus of capital and weaker currencies.

Political and economic risk, other factors that can influence exchange rates include political and economic risks. Investors prefer to hold lesser amounts of riskier assets; thus, low risk currencies those associated with more politically and economically stable nations are more highly valued than high risk currencies (Shapiro, 2006; Mkulo, 2009; BOT, 2009).

2.5 Empirical Literature Review

2.5.1 Empirical Evidence in the World

Analysis of the impact of exchange rate on commodity prices has been a major preoccupation of both academic and policy makers for some decades now. A number of common results emerged from research papers on the effects of foreign exchange appreciation on commodity prices.

A recent study by Fratzscher (2009) which looked on how global exchange rate movements can be explained during the global financial crisis, found that a striking and unexpected feature of the financial crisis has been the sharp appreciation of the U. S dollar against virtually all currencies globally. The paper finds that negative United States specific macroeconomic shocks during the crisis have triggered a significant strengthening of the U. S dollar, rather than a weakening.

A study by Hamilton (2008) aimed at examining the factors responsible for changes in crude oil prices found that, although scarcity rent made a negligible contribution to

the price of oil in the past, it would now begin to play role. Again the study by Braig, Mcti, Coady and Ntamatungiro (2007), which reviewed the developments in the pass through from international to domestic petroleum product prices, found that there is limited price passes through in many countries and the consequent increase in fuel subsides.

Similarly study was done by Hyder and Shah (2004). The study aimed on analyzing the effect of foreign exchange appreciation on Pakistan's domestic prices. The study revealed the followings: the exchange rate movements have only a moderate effect on domestic price, the foreign exchange appreciation has strong effects in whole sale price index relative to consumer price index.

There has been a considerable debate on the causes of low pass-through from exchange rates to consumer prices. This paper by Devereux and Yetman (2002) develops a simple model of a small open economy in which exchange rate pass-through is determined by the frequency of price changes of importing firms. But this, in turn, is determined by the monetary policy rule of the central bank. 'Looser' monetary policy, which implies a higher mean inflation rate, and a higher volatility of the exchange rate, will lead to more frequent price changes and a higher rate of pass-through. The model implies that there should be a positive, but nonlinear, relationship between pass-through and mean inflation, and a positive relationship between pass through and exchange rate volatility. In a sample of 122 countries, this is strongly supported by the data. Their paper concluded that, at least partly, low exchange rate pass-through is a result of short-term price rigidities.

Another study by McFarlane (2002) which analyzed the relationship between exchange rate movements and commodity prices in Jamaica revealed that, in the long run the exchange rate pass through is "complete". Also he found that the recent slowdown of the extent of pass through is due to tighter of monetary policy and increased competition.

2.5.2 Empirical Evidence in Africa

The study by Hakan and Nildag (2010) examines how price shocks affect the output growth of the selected MENA countries that are either net exporter or net importer of this commodity but are small to affect the oil prices. The study revealed that the restriction of no command on world oil prices is imposed into the dynamic Vector Auto Regressive (VAR) setting. The impulse response analyzes suggest that the effects of the world oil price on GDP of Algeria, Iran, Iraq, Jordan, Kuwait, Oman, Qatar, Syria, Tunisia and United Arab Emirates are positive and statistical significant. However, evidence on Bahrain, Djibouti, Egypt, Lebanon, Morocco, and Yemen are not statistical significant.

The study by International Association of Agricultural Economists (2008) on rising world prices for fuel and food represent a negative terms-of-trade shock for Mozambique. This study showed that the impact of this price rises is analyzed using various approaches. Detailed price data show that the world price increases are being transmitted to domestic prices. Short-run net benefit ratio analysis indicates that urban households and households in the southern region are more vulnerable to food price increases. Rural households, particularly in the North and Center, often benefit

from being in a net seller position. Longer-term analysis using a computable general equilibrium (CGE) model of Mozambique indicates that the fuel price shock dominates rising food prices from both macroeconomic and poverty perspectives. Again, negative impacts are larger in urban areas.

The importance of agricultural production response in general and export response in particular is highlighted. Policy analysis reveals difficult trade-offs between short-run mitigation and long-run growth. Improved agricultural productivity has powerful positive impacts, but remains difficult to achieve and may not address the immediate impacts of higher prices.

Again the study by Kangni Kpodar (2006) on the distributional effects of a rise in various petroleum product prices in Mali where he used an input-output approach, the results show that, although rising gasoline and diesel prices affect mainly non poor households, rising kerosene prices are most harmful to the poor. Overall, the impact of fuel prices on household budgets displays a U-shaped relationship with expenditure per capita. Regardless of the oil product considered, high-income households would benefit disproportionately from oil price subsidies. This suggests that a petroleum price subsidy is an ineffective mechanism for protecting the income of poor households compared with a targeted subsidy.

2.5.3 Empirical Evidence in the Tanzania

According to my knowledge, the relevant studies have done in Tanzania in connection to relation between exchange rate movements and fuel price changes. The

study by Hango (2009), on the influence of foreign exchange appreciation against fuel prices in Tanzania revealed that there is existence of inappropriate relationship between foreign exchange appreciation and the fuel price increasing trend. Also the study showed that foreign exchange appreciation has immediate effect on fuel prices. The study has revealed that the method used by Ewura in computing periodic indicative fuel prices is inappropriately applied because it utilizes foreign exchange rate pegged by BOT during that time, this result to unrealistic fuel prices because fuel importation is normally done on bulky and expected to last for about three months while fuel price setting is done after two weeks which then results into appreciation of foreign exchange rate, consequently a large increase in fuel prices which causes a super profit to fuel importers.

The research by Hango (2009) again showed that there are a lot of complaints from fuel customers on the current trend of fuel price increase. Results revealed that the foreign exchange rate and fuel prices in the world market does not cause fuel price rise in the country, also existence of non theoretical behavior was observed in the trend of fuel price changes in the country which is caused by inappropriate application of foreign exchange rate in computation of periodic fuel prices in the country.

Hango (2009) recommended that the regulatory bodies should be strengthened, including establishment of appropriate fuel pricing system which is in line with developments in international fuel prices and foreign exchange rate movements, which he believed would result into proper and fair competition in fuel industry.

The study by Mwase (2006) on investigating the impact of exchange rate path through to inflation in Tanzania, revealed an incomplete and decreasing exchange rate pass through to inflation.

The study by Rutasitara (2004) on the influence of the major determinants of inflation with a particular focus on the role of exchange rate policy changes. In his study said that the gradual change in policy orientation from “controls” to “market” in Tanzania is associated with a change from a highly controlled exchange rate (until 1985) to a more liberalized regime from 1986 to the present (2002). The parallel exchange rate dominated price changes from the late 1970s to 1985; the parallel premium tapered off gradually from 1986, almost disappearing by 1992. The problem of inflation cuts across both regimes despite improvements in the past four to five years.

The model estimations using quarterly data for 1967–1995 show that the parallel rate had a stronger influence on inflation up until the early 1990s compared with the official rate. Continued macroeconomic (tighter monetary and fiscal), trade and exchange rate reforms, and slow but steady improvements in the growth rates of GDP, may explain the recent (1993–2002) fall in inflation and a more “stable” market for foreign exchange in the inter-bank foreign exchange market (IFEM) arrangement.

The charged debates of the 1980s about devaluation are no longer fashionable, but the exchange rate remains potentially sensitive to exogenous shocks and certainly any policy reversal or similar lapse.

2.6 Research Gap

There have been a number of researches conducted on foreign exchange appreciation against commodity (e.g. fuel) price changes; however most of the researchers so far, have been concentrating on the influence or impact of the foreign exchange appreciation to fuel importation and fuel price setting. For example the study by Rutasitara (2004) on the influence of the major determinants of inflation with a particular focuses on the role of exchange rate policy changes. In his study said that the gradual change in policy orientation from “controls” to “market” in Tanzania is associated with a change from a highly controlled exchange rate (until 1985) to a more liberalized regime from 1986 to the present (2002).

Again the study by Hango (2009), on the influence of foreign exchange appreciation against fuel prices in Tanzania revealed that there is existence of inappropriate relationship between foreign exchange appreciation and the fuel price increasing trend. No research has been conducted to show the effects of ERM on fuel price changes (increasing or decreasing of price) since the Ewura had full mandate to control, order and instruct all fuel dealers not to set the fuel prices by their own, again despite the fact that Ewura has full mandate, still fuel prices continue to be unstable. There is a variation of fuel prices every now and then caused by exchange rate movements (appreciation and depreciation). This causes annoyance to customers, retailers and wholesalers of fuel. Therefore I tried to fill this gap by analyzing the effects of exchange rate movements on fuel price changes, what should be done in order to avoid this variation of fuel prices despite the slightly exchange rate movements and finally have the stable and reasonable fuel prices.

2.7 Conceptual Frame Work

A conceptual framework can be defined as a set of broad ideas and principals taken from relevant fields of enquiry and used to structure a subsequent presentation (Kombo and Tromp, 2006). According to Fisher (2010), he pointed out that a conceptual framework is a way of putting the concepts together. Working out how all the concepts fit together and relate to one another.

The conceptual framework of this study was to analyze the effects of exchange rate movements on fuel price changes in Tanzania, where exchange rate movement is the independent variable while fuel price change is the dependent variable. Figure below shows the conceptual frame work.

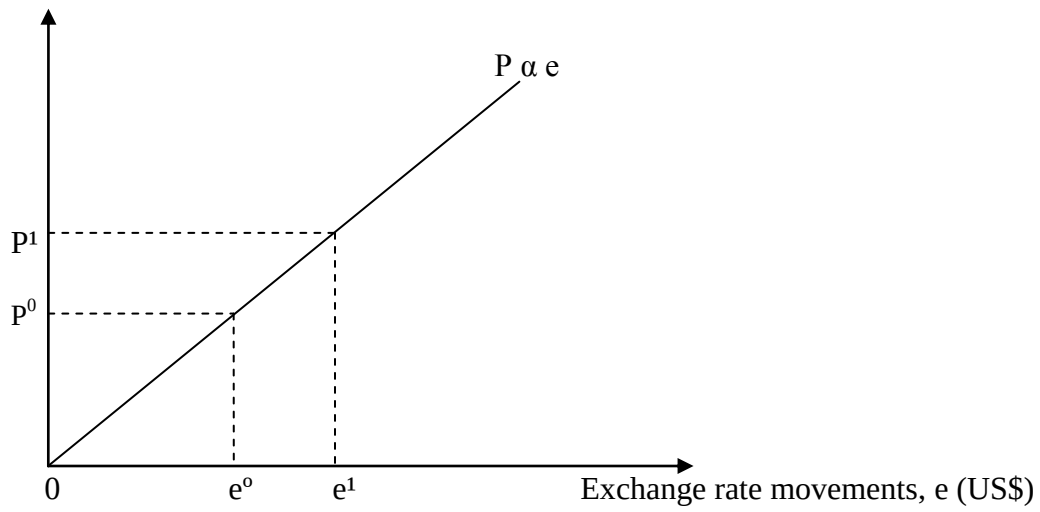

Figure 2.2: Relationships between Exchange Rate Movements and Fuel Price Changes

Source: Developed by Researcher, (2013) by Synthesizing Literature Review

2.8 Theoretical Framework

The conceptual framework above explains the relationship between the independent variables (exchange rate movements) and the dependant variable (fuel price changes).

In attempting to define the variables behind fuel price changes, it is important to establish a relationship between the dependant and independent variables .Thus a general equation can be developed as follows;

$P \alpha e$

$P = f(e)$.

Where;

P = Fuel price changes.

e = Exchange rate movements.

There is a direct relationship between exchange rate movements (US dollar in this case) and fuel price changes (TZS), as when the exchange rate is increased, the fuel price also increases. And when the exchange rate is decreased, the fuel price also decreases.

CHAPTER THREE

3.0 RESEARCH METHODOLGY

3.1 Introduction

Research methodology is a systematic attempt of procedures that help the researcher to avoid self deception. The methodology in this study was geared towards analyzing the appropriate results it spells out the techniques and methods of sampling, types of data and data collection methods, processing and analysis of data which was employed in the study. Thus it provides detailed explanation concerning the area up on which the study has been conducted, methods and instruments which the researcher used in data collection and techniques for data analysis and presentation.

3.2 Research Design

Research design is a conceptual structure within which the research is conducted. It constitutes the blue print for the collection, measurement and analysis of data (Kothar, 2004). A cross sectional survey type of descriptive research was the method used. Collection of information was done by interviewing and administering questionnaires designed based on statistical preferential. Thus a cross section study involves taking a sample of population elements at one point in time. It also involves measurement classification, analysis comparison and interpretation of data.

3.3 Area of the Study

This study was conducted in Dar es salaam because EWURA head office and BOT are centrally placed here. Again it is easy to collect data from fuel importers, retailers or wholesalers since most of them are found in Dar es salaam.

3.4 Population of the Study

Population refers to an entire group of individuals, events or objectives having common observable characteristics. It is the aggregates of all that conforms to a given specification (Mugenda, 2003). The study population comprised of BOT officials, EWURA officials, fuel depot (station) managers and fuel customers. Officials were selected from different levels of management such as executive, middle and operational. The population sample included representatives of different departments.

3.5 Sampling Techniques

3.5.1 Sample Selection

Kothari (2006) defines sample as a collection of some parts of the population on the basis of which judgment is made. A sample is small enough to make data collection convenient and large enough to be a true representative of the population from which it had been selected. The sample must be optimum, i.e. it fulfills requirements of efficiency, reliability, validity and flexibility.

3.5.2 Sampling Procedure

According to Kothari (2006), sampling is defined as the selection of some parts of aggregate of the totality based on which a judgment or inference about the aggregate or totality is made. It is a process of selecting a group of people, events, behavior or other elements with which to conduct a study. An important issue influencing the choice of a sampling technique is whether a sampling frame is available, that is, a list of units comprising the study population.

During the study, the researcher employed the use of purposive sampling method to select respondents from among the population. Purposive sampling represents a group of different non-probability sampling techniques. Also known as judgmental**,** selective or subjective sampling, purposive sampling relies on the judgment of the researcher when it comes to selecting the units (e.g., people, cases/organizations, events, pieces of data) that are to be studied. Usually, the sample being investigated is quite small, especially when compared with probability sampling techniques.

There are different fuel depots (stations) in Dar es salaam that are capable of being potential for candidate to monitor fuel price changes which was the target of this study. EWURA officials, BOT officials and fuel customers were targeted source of information. Purposive sampling enables the researcher to use judgment to select cases that best answer the research questions and objectives.

3.5.3 Sample Size

Sample size refers to a number of items to be selected from the population of the study to constitute a sample. The research involved a total sample of sixty (60) correspondents from the targeted population which includes 5 members of BOT officials, 5 members of EWURA officials, 10 officials from different fuel depots who are purposely selected from among members of other officials and 40 members from fuel customers (as shown from table 1 below). The researcher has selected a sample of 60 correspondents due to manageability and to ensure more accuracy in data analysis. The effects of exchange rate movements on fuel price changes in Tanzania, the case of Dar es salaam city. According to Cohen et al (2000), the

knowledge gained from the sample is of the total population understudy. Large sample increases variability and strength of the revealed information and reliability of test's results.

Table 3.1 Sample Distribution

Targeted Population	**Number of Correspondents**
Different fuel station (depot) officials	10
BOT officials	5
EWURA officials	5
Fuel customers	40
Total	**60**

Source: Developed by Researcher

3.6 Data Sought

To achieve research objectives, the following types of information were made available; the empirical data showing the fuel price changes and exchange rate movements and analytical information on factors that account for discrepancy between the expected prices and the actual prices. The study covered two sectors: exchange rate movements whereby the Bank of Tanzania (BOT) which is responsible for monitoring of foreign currency activities in the country was a source of data; and the fuel price changes whereby EWURA, wholesalers and retailers of fuel stations in Dar es salaam were used as a source of data for fuel price changes. This study used survey strategy to answer research questions and fulfill the objectives. The approach was selected as it enables easy collection of data from various sources. Primary data collected from fuel station managers of selected companies, EWURA and BOT officials as shown from table 1 above.

3.7 Nature of Data and Information Collection

Both primary and secondary data were collected. Primary were collected through the use of questionnaires, interviews and observation and for the case of secondary data documentation was used. The data and information collected reflect the actual relationship between the effects of exchange rate movements and the fuel price changes in the country.

3.8 Data Collection Procedures

Both primary and secondary data were used to collect information in this study. Primary data were collected from wholesalers and retailers of fuels through questionnaires and interviews, the data were obtained regarding the gap between the expected fuel prices with regard to foreign exchange movements and the actual fuel prices. Also primary data were obtained from BOT and EWURA officials who gave their perspectives of foreign exchange movements and expected fuel prices. However secondary data available from publication, literature database and other records were also used.

3.8.1 Primary Data Collection Procedures

Questionnaires, four different types of questionnaires consisting of number of questions are designed. These questionnaires aim to capture data from selected fuel retailers / wholesalers (fuel stations), fuel customers, BOT officials and EWURA officials. Questionnaires consisted of structured questions. Questionnaires are opted because they enable the researcher to gather enough information within a short period of time. Interviews were conducted as supplement to questionnaires.

Interviews had been done to Fuel Consumers, Fuel Importers, EWURA and BOT officials. This tool helped to verify information which was collected from questionnaires. Observation was done from fuel stations, different media, banks or Bureau de change because fuel prices and exchange rates are normally displayed there. The researcher was able to see them. This method enabled the researchers to compare the respondents' answers with the actual observations.

3.8.2 Secondary Data Collection Method

This instrument was used to collect secondary data whereby views of various publications and papers to exchange rate movements and fuel price changes were done.

3.8.3 Data Reliability and Validity

Reliability is the extent to which data collection techniques or analytical procedures would yield consistent findings. (Saunders et al, 2009). Reliability basically means consistency and there are two types of this consistency. First consistency over time or stability which measures stability over time and it is expressed in questions (under the same circumstance but at different time to what extent would they get the same score). Second is internal consistency related to the concept indicator and the question concern to the extent which the items are consistent with each other or all work in the same direction? Internal consistency reliability estimation requires only one administration of the instrument (Punch, 2003). Validity is the extent to which an instrument measures what it is claimed to measure. An indicator is valid to extent that it is empirically representing the concept

it purports to measure. Validity is used to determine whether the researcher measures what it intended to measure and to approximately the truthfulness of the results. Validity is concerned with whether about findings are really about what they appear to be about (Saunders et al, 2009:p157).

In order to ensure the reliability and validity of data research instruments i.e. questionnaires, interviews and observations should be carefully prepared, structured and administered. Good indicators were chosen for every data collected and measured. Before the research instruments are administered to the respondents, they are tested (pretested); this helped to ensure accuracy and precision for validity and reliability.

3.9 Data Processing and Analysis Techniques

After data have been collected, they were edited for accuracy and completeness, and then coded and uploaded into the computer; analysis was done by special package for social sciences (SPSS). Charts, graphs and percentage were generated and used for interpretation to make the subject easier to understand.

CHAPTER FOUR

4.0 RESEARCH FINDINGS, DATA ANALYSIS AND DISCUSSION

4.1 Research Findings

In this chapter, research findings were presented in logical and systematic manner. The findings were in terms of analysis of general qualitative variables, information and hypothesis testing. The presentation of the findings covered descriptive analysis.

4.2 Data Collected

Primary data were collected using questionnaires and each questionnaire contains a number of variables which were analyzed by using SPSS package. In order to control the analysis, scale, nominal and ordinal type of measures were used to collect data. The study samples were collected from BOT, EWURA, Fuel retailers (wholesalers) and Fuel customers. The data collected are analyzed in the next section.

4.3 Fuel Customers Analysis

4.3.1 Sample Characteristics

Customers surveyed were from Dar es salaam comprising normal citizens, businessmen, academicians and civil servants. All customers as end users of fuel were at least attentive on the effects of exchange rate movements in fuel price changes.

4.3.2 Descriptive Analysis of Variables

Independent variables in the hypotheses tested were included in all questionnaires to obtain respondents' opinions on persuade of these variables found in the title

understudy ‘The effects of exchange rate movements on fuel price changes in Tanzania’. The chi-square test was used to test responses on the questions provided. This test helped to make decision whether the hypothesis is significant or not.

4.3.3 Research Questions Responses

The collection of data concerning the effects of exchange rate movements on fuel price changes in the country were done by asking the respondents on fuel price computation, foreign exchange rate fluctuations have immediate effects on fuel price changes, proportionality between the extent of fuel price changes and the exchange rate movements in the country, factors influencing fuel price changes within the country.

4.3.3.1 Fuel Customers’ Opinions on Exchange Rate Movements Used by Ewura in Computing Fuel Prices

This study aimed to get fuel customers’ opinions on exchange rate movements used by Ewura in computing periodic fuel prices. Respondents were asked to indicate their opinions based on the exchange rates used by Ewura in computing fuel prices. The questions asked intended to obtain responses on five point scales ranging from strongly agree to strongly disagree on all variables.

The responses showed that, most of the respondents (60%) thought that fuel price computation is wrongly applied by Ewura because the exchange rate changes on daily basis while fuel importation is done on bulky and not daily. Few respondents (10%) thought that fuel price computation is correctly applied and proportional to the

fuel price changes. Other respondents (58.3%) thought that indicative fuel price set by Ewura does not reflect the actual movements of foreign exchange rate. Some respondents (30.7%) thought that fuel price computation used by Ewura causes super profit to fuel importers because foreign exchange rate may appreciate or depreciate locally and not worldwide. It was therefore concluded that, fuel customers believed that, fuel price computation is wrongly applied by Ewura and it does not reflect the actual movements of foreign exchange rate because the exchange rate movement is done on daily basis while fuel importation is done on bulky not daily.

Please note that NA stands for 'Not applicable'. It represents number of questions that were not asked to other correspondents. NA was used in the SPSS to avoid the missing items because the questionnaires were categorized in four different groups (BOT, Ewura, Fuel Importers and Fuel Customers) with different questions.

Table 4.1 Summary of Fuel Customers' Opinions on Exchange Rate Movements Used by Ewura in Fuel Price Computation

Response	Strongly agree	Agree	Neither disagree nor agree	Disagree	Strongly disagree	NA
Fuel price computation is wrongly applied by Ewura	35%	25%	6.7%	0%	0%	33.3%
Fuel price computation is correctly applied to the fuel price changes	0%	10%	8.3%	36.7%	11.7%	33.3%
Fuel prices set by Ewura does not reflect the actual movements of exchange rates	10%	48.3 %	6.7%	1.7%	0%	33.3%
Fuel price computation causes super profit to fuel importers	1.7%	30%	33.3%	1.7%	0%	33.3%

Source: Developed by Researcher

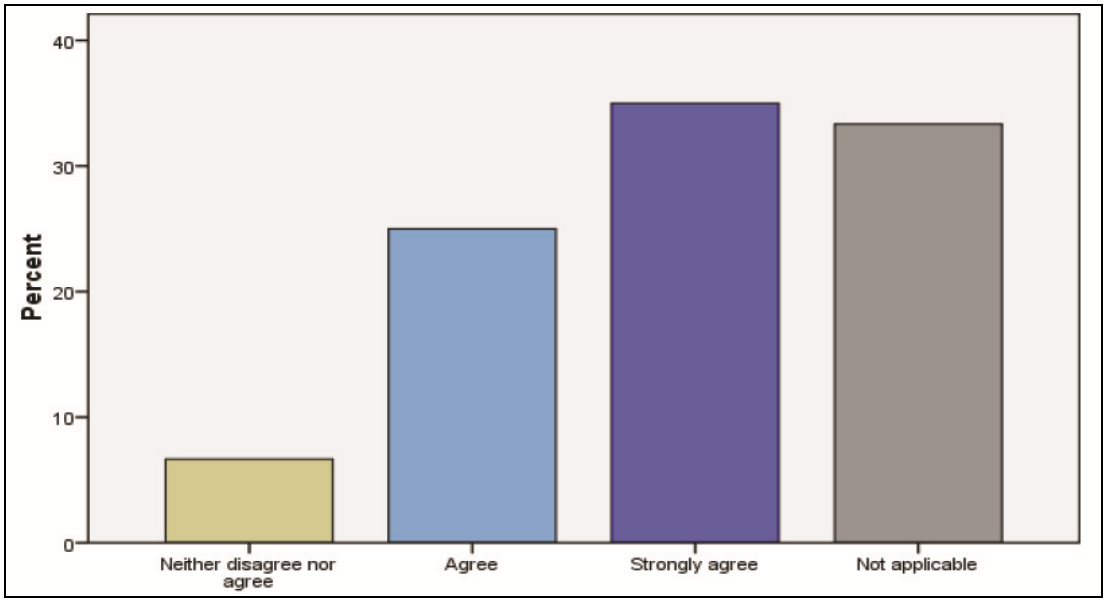

Figure 4.1: Fuel Price Computation is Wrongly Applied by EWURA

Source: Developed by Researcher

The responses showed that most of the respondents 34 (56.7%) out of 40 respondents agreed with the statement that appreciation or depreciation of foreign exchange rates have immediate effects on fuel price changes. These responses implied that fluctuation of foreign exchange rates have immediate effects on fuel price changes in the country provided that other factors are kept constant.

Table 4.2 Summary of the Fuel Customers' Opinions on the Effects of Foreign Exchange Rate Fluctuations on Fuel Price Changes

	Frequency	Percent (%)
Yes	34	56.7
No	6	10.0
Not applicable	20	33.3
Total	60	100.0

Source: Developed by Researcher

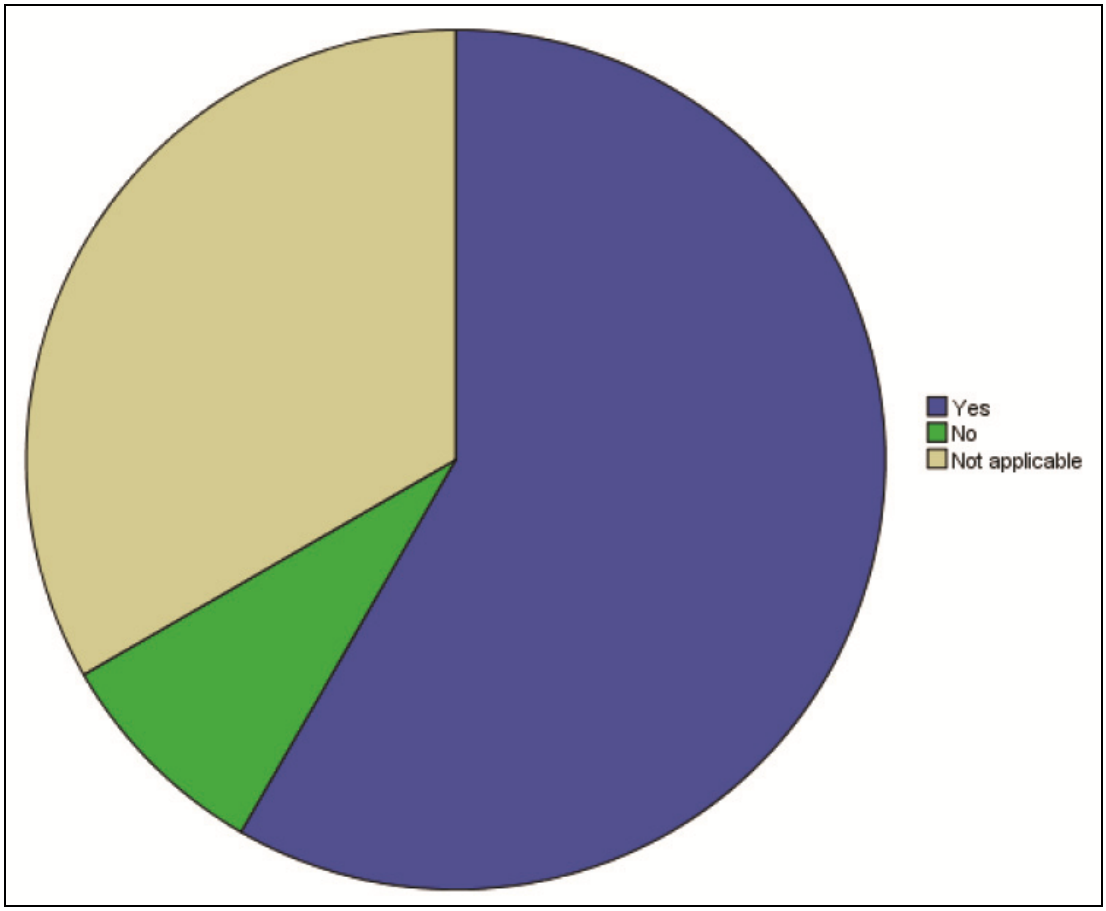

Figure 4.2: Effects of Foreign Exchange Rate Fluctuations on Fuel Price Change

Source: Developed by Researcher

4.3.3.3 Fuel Customers' Opinions on the Proportionality Between the Extent of Fuel Price Changes and the Exchange Rate Movements

The survey intended to get fuel customers' views on proportionality between the extent of fuel price changes and the exchange rate movements. The respondents were asked to indicate their thoughts as to whether they agree or disagree to the statement that the extent of fuel price changes is high and not proportional to the overall rate of foreign exchange movements by ticking 'Yes' or 'No' in the box provided. The responses showed that most of the respondents 56.7% agreed with the statement that the extent of fuel price changes is high and not proportional to the overall rate of

foreign exchange movements while 10% disagreed. These responses imply that small movement (appreciation or depreciation) of foreign exchange rates should tally with the fuel price changes in the country provided that other factors are kept constant.

Table 4.3 Summary of the Fuel Customers' Opinions on the Proportionality Between the Extent of Fuel Price Changes and the Exchange Rate Movements

	Frequency	Percent (%)
Yes	34	56.7
No	6	10.0
Not applicable	20	33.3
Total	60	100.0

Source: Developed by Researcher

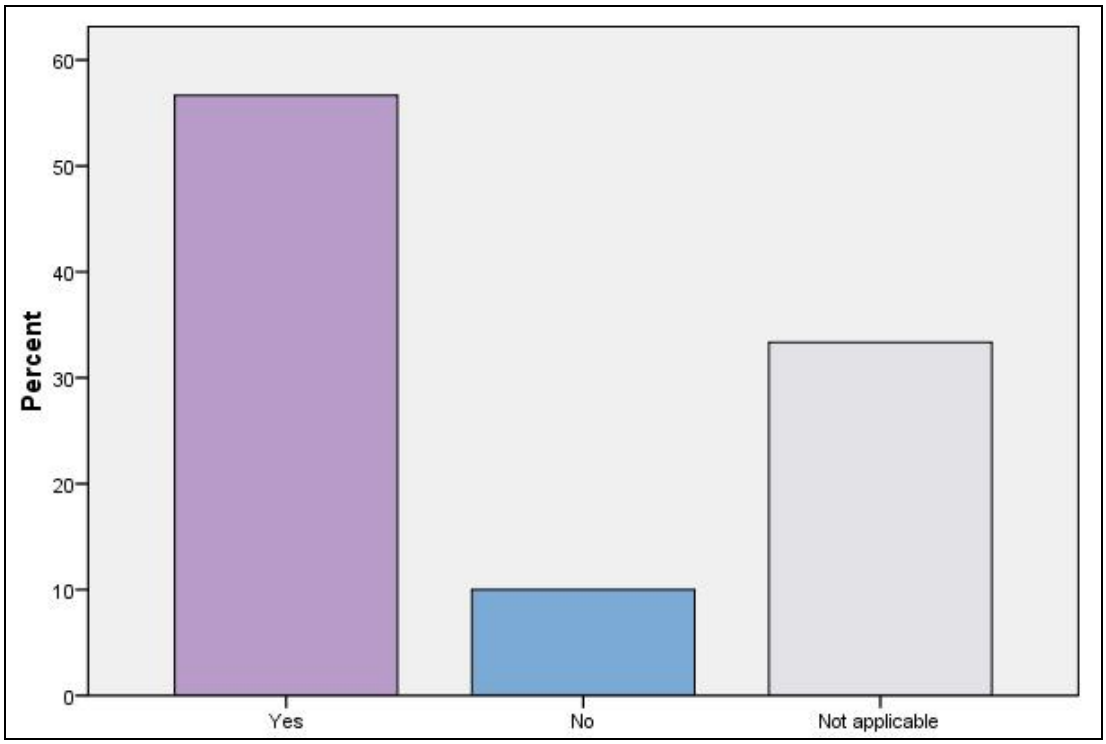

Figure 4.3: Proportionality of Fuel Price Change to Overall of Exchange Rate Movements Countrywide

Source: Developed by Researcher

4.3.3.4 Fuel Customers' Opinions on the Factors Influencing Fuel Price Changes in the Country

In this section the researcher intended to get fuel customers opinions on the factors influencing the current trend of fuel price changes in the country. Respondents were asked to indicate their degree of belief on what could be main causes of the current trend of fuel price changes in the country. The questioned asked aimed to obtain responses on the five point scales ranging from strongly agree to strong disagree on all variables.

The responses showed that some of respondents (58.3%) believed that depreciation of TZS causes fuel price changes in the country. Most of respondent (61.6%) believed that fuel price changes in the World market causes fuel price changes in the country. Also 51.7% of respondents believed that appreciation of USD Worldwide causes fuel price changes in the country. Other respondents (26.7%) believed that increase in fuel demand causes fuel price changes in the country while few respondents (13.3%) believed that increase in fuel supply causes fuel price changes in the country. It is generally concluded that, fuel customers believed that, fuel price changes in the World market, depreciation of TZS over USD and appreciation of USD Worldwide causes fuel price changes in the country.

4.4 Fuel Wholesalers (Retailers) Analysis

4.4.1 Sample Characteristics

Fuel wholesalers (retailers) surveyed are from Dar es salaam comprising of different fuel stations namely Puma, Moil, Camel, Mogas, Oryx, Gapco, Oil com, Engen,

GBP and Lake oil. All Fuel wholesalers (retailers) as the main suppliers of fuels in the country were at least attentive on the effects of exchange rate movements in fuel price changes.

Table 4.4 Summary of Fuel Customers' Opinions on the Factors influencing Fuel Price Changes in the Country

Response	Strongly agree	Agree	Neither disagree nor agree	Disagree	Strongly disagree	NA
Depreciation of TZS	38.3%	20%	6.7%	1.7%	0%	33.3%
Appreciation of USD	26.7%	25%	5%	6.7%	3.3%	33.3%
Fuel price changes in the world market	28.3%	33.3%	3.3%	1.7%	0%	33.3%
Increase in fuel demand	6.7%	20%	21.7%	13.3%	5%	33.3%
Increase in fuel supply	5%	8.3%	26.7%	21.7%	5%	33.3%

Source: Developed by Researcher

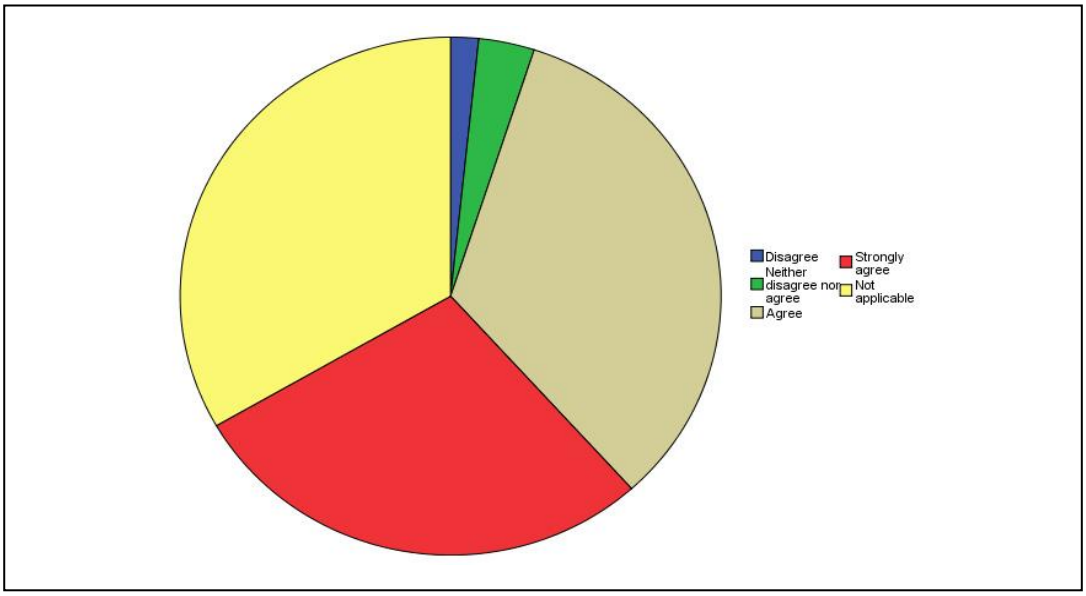

Figure 4.4: Factors Influencing Fuel Price Changes in the Country-World Market

Source: Developed by Researcher

4.4.2 Descriptive Analysis of Variables

Independent variables in the hypotheses tested were included in all questionnaires to obtain respondents' opinions on the influence of these variables in the prices of fuel in Tanzania. Responses on these questions were then tested by the chi-square test.

4.4.3 Research Questions Responses

The collection of data concerning the effects of exchange rate movements on fuel price changes in the country were done by asking the respondents on the frequency of setting fuel prices, difficulty in running a business caused by fuel price changes, proportionality between the extent of fuel price changes and the exchange rate movements in the country, level of customer complaints on fuel price changes, factors influencing fuel price changes within the country.

4.4.3.1 Fuel Wholesalers' (Retailers) Opinions on Frequency of Setting Fuel Prices at Petrol Stations

This study intended to get Fuel wholesalers (retailers) views or experience on how often in average the fuel prices are changed in a month at petrol stations. The questions asked intended to obtain responses among four possible occurrences. The responses showed that almost all respondents 9 (15%) out of 10 said they change their pump prices 2 to 3 times in a month depending on the order from Ewura. Only one (1.7%) respondent from petrol stations said 'other' which means that to change the fuel prices in a month depends on the order from Ewura thus it could be once twice thrice or so. Therefore these responses implied that, the fuel price changes at every petrol station are influenced by indicative prices set by Ewura because this

government regulatory authority has the mandate to control fuel price changes within the country.

Table 4.5 Summary of Fuel Wholesalers' (Retailers) Opinions on the Frequency of Setting Fuel Prices at Petrol Stations

	Frequency	Percent (%)
2-3 times	9	15.0
Other	1	1.7
Not applicable	50	83.3
Total	60	100.0

Source: Developed by Researcher

4.4.3.2 Fuel Wholesalers' (Retailers) Opinions on Difficulty in Running a Business Caused by Fuel Price Changes

The survey intended to get Fuel Wholesalers' (Retailers) views on the difficulties in running a business caused by frequently changing of fuel prices in a month within the country. Respondents from different petrol stations were asked to indicate their thoughts as to whether the extent of fuel price changes cause any difficulty in running a business or not. Thus the respondents were required to indicate their answers by ticking 'Yes' if they agree with the statement and 'No' if they don't agree with the statement.

The responses showed that, most of the respondents 13.3% (8 out of 10 respondents) agreed with the statement that the extent of fuel price changes cause difficulty in running a business while 2 (3.3%) out 10 respondents disagreed with the statement. Therefore the responses implied that Fuel wholesalers (retailers) believed that

changing of fuel prices in a month whether it's once, twice, and thrice or so disturbs their financial plans hence cause difficulty in running a business.

Table 4.6 Summary of Fuel Wholesalers' (Retailers) Opinions on Difficulty in Running a Business

	Frequency	Percent (%)
Yes	8	13.3
No	2	3.3
Not applicable	50	83.3
Total	60	100.0

Source: Developed by Researcher

4.4.3.3 Fuel Wholesalers' (Retailers) Opinion on Proportionality Between the Extent of Fuel Price Changes and the Exchange Rate Movements in the Country

The survey aimed to get Fuel wholesalers' (retailers) views on proportionality between the extent of fuel price changes and the exchange rate movements in the country. Respondents from different petrol stations were asked to indicate their thoughts as to whether the extent of fuel price changes is proportional or not proportional to the overall exchange rate movement countrywide. Thus the respondents were required to indicate their answers by ticking 'Yes' if they agree with the statement and 'No' if they don't agree with the statement.

The responses showed that, most of the respondents 13.3% (8 out of 10 respondents) disagreed with the statement that the extent of fuel price changes is proportional to the overall exchange rate movement countrywide and 3.3% (2 out 10 respondents)

agreed with the statement. These responses implied that Fuel wholesalers (Retailers) believed the fuel prices controlled by government regulatory authority is not proportionality to the overall movements of exchange rate countrywide. Thus Fuel wholesalers (retailers) understood that small appreciation or depreciation of foreign exchange rate should result to smaller change in fuel prices in the country provided others factors are kept constant.

Table 4.7 Summary of Fuel Wholesalers' (Retailers) Opinions on the Proportionality between the extent of Fuel Price Changes and the Exchange Rate Movements

	Frequency	Percent (%)
Yes	2	3.3
No	8	13.3
Not applicable	50	83.3
Total	60	100.0

Source: Developed by Researcher

4.4.3.4 Fuel Wholesalers' (Retailers) Opinions on Customers Complaints Regarding the Fuel Price Changes

The survey aimed to get Fuel wholesalers' (retailers) views on customers' complaints regarding the fuel price changes. Respondents from different petrol stations were asked to indicate their thoughts as to whether they receive any complaint regarding the fuel price changes. Thus the respondents were required to indicate their answers by ticking 'Yes' if they agree with the statement and 'No' if they don't agree with the statement. All 10 respondents (16.7%) from different petrol stations agreed with the statement that they receive complaints from customers regarding the fuel price

changes. Therefore these responses implied that the fuel wholesalers (retailers) confirmed that there are complaints from customers regarding the fuel price changes.

Table 4.8 Summary of Fuel Wholesalers' (Retailers) Opinions on Customers Complaints Regarding the Fuel Price Changes

	Frequency	Percent (%)
Yes	10	16.7
Not applicable	50	83.3
Total	60	100.0

Source: Developed by Researcher

4.4.3.5 Fuel Wholesalers' (Retailers) Opinions on the Levels of Customers Complaints Regarding the Fuel Price Changes

Since the Fuel wholesalers (retailers) received complaints from fuel customers regarding fuel price changes, the survey then intended to get Fuel wholesalers' (retailers) views on the level of customers' complaints regarding the fuel price changes.

Respondents from different petrol stations were asked to indicate their experiences on the levels of customers' complaints regarding the fuel price changes. Thus the questions asked aimed to obtain responses among three possible reactions from customers. The respondents were required to respond by writing 1 or 2 or 3 for 'Likely', 'Neutral' or 'Not applicable' respectively in a small box provided. The responses showed that most of the respondents 15% received complaints from customers on changing the fuel prices. Few respondents 3.3% received few complaints from customers. These responses implied that fuel wholesalers (retailers)

receive lots of complaints from fuel customers which divulge the truth that fuels customers are not comfortable with the trend of fuel price changes in the country.

Table 4.9 Summary of Fuel Wholesalers' (Retailers) opinions on the Levels of Customers Complaints Regarding the Fuel Price Changes

Responses	Likely	Neutral	Not applicable
Many complaints	15%	1.7%	83.3%
Few complaints	3.3%	13.3%	83.3%
Neutral complaints	1.7%	15%	83.3%

Source: Developed by Researcher

4.4.3.6 Fuel Wholesalers' Opinions on the Factors influencing Fuel Price Changes in the Country

In this section the researcher intended to get fuel wholesalers (retailers) opinions on the factors influencing fuel price changes in the country. Respondents were asked to indicate their degree of belief on what could be main causes of the current trend of fuel price changes in the country. The questioned asked aimed to obtain responses on the five point scales ranging from extremely high to very low on all variables.

The responses showed that, most of the respondents (16.7%) of fuel wholesalers (retailers) believed that dollar appreciation or depreciation causes fuel price changes in the country. Again (16.7%) of fuel wholesalers (retailers) also believed that fuel price changes in the world market cause fuel price changes in the country.

Other respondents (13.3%) thought that Ewura indicative prices are the causes of fuel price changes in the country. Some respondents (11.7%) thought that decrease in fuel

supply from world market causes fuel price changes in the country. Very few respondents (3.3%) believed that increase in fuel demand causes fuel price changes in the country. These responses implied that appreciation or depreciation of dollar, price changes in the world market, Ewura indicative prices and decrease in fuel supply are the main causes of fuel price changes in the country.

Table 4.10 Summary of Fuel Wholesalers' (Retailers) Opinions on the Factors Influencing Fuel Price Changes in the Country

Response	Extremely High	Very High	High	Low	Very Low	NA
Dollar appreciation or depreciation	6.7%	5%	5%	0%	0%	83.3%
Fuel price changes in the world market	6.7%	5%	5%	0%	0%	83.3%
Increase in fuel demand	0%	0%	3.3%	8.3%	5%	83.3%
decrease in fuel supply	5%	1.7%	5%	3.3%	1.7%	83.3%
Ewura indicative prices	0%	0%	13.3%	1.7%	1.7%	83.3%

Source: Developed by Researcher

4.5 Analysis of Ewura Officials

4.5.1 Sample Characteristics

Ewura officials surveyed are from Dar es salaam comprising different staff from Ewura. All officials as the members of this government regulatory authority were at least attentive on the effects of exchange rate movements in fuel price changes.

4.5.2 Descriptive Analysis of Variables

Independent variables in the hypotheses tested were included in all questionnaires to obtain respondents' opinions on the influence of these variables on fuel prices in Tanzania. Responses on these questions were then tested by the chi-square test.

4.5.3 Research Questions Responses

The collection of data concerning the effects of exchange rate movements on fuel price changes in the country were done by asking the respondents (Five Ewura Officials) on the schedule for fuel indicative price setting in the country, proportionality between the extent of fuel price changes and the exchange rate movements countrywide, instantaneous effects of foreign exchange rate movements on fuel price changes, proportionality between the extent of fuel price changes in the country and the fuel price changes in the world market, the main determinants of fuel price changes in the country.

4.5.3.1 Ewura Officials' Opinions on the Schedule for Fuel Indicative Price Setting in the Country

The researcher intended to get experiences from Ewura Officials on how often the setting of fuel price is done either weekly, monthly or twice a month within the country.

All five (5) respondents from Ewura stated that setting is done once per month. These responses imply that fuel price changes sometimes do not consider the fact that importers may have in stock the fuel purchased in bulky earlier before the

exchange rate is either appreciated or depreciated depending on the strength and stability of local currency (TZS) which may either be lower or higher than the present one.

4.5.3.2 Ewura's Officials Opinions on the Proportionality Between the Extent of Fuel Price Changes and the Exchange Rate Movements Countrywide

The researcher aimed to get Ewura officials experiences on proportionality between the extent of fuel price changes and the exchange rate movements countrywide. The respondents were asked to indicate their views as to whether agree or disagree to the statements that the extent of fuel price changes is proportional or not proportional to the overall exchange rate movements countrywide. Thus the respondents were required to indicate their answers by ticking 'Yes' if they agree with the statement and 'No' if they don't agree with the statement.

The responses showed that all five (5) Officials from Ewura agreed that the extent of fuel price changes is proportional to the overall exchange rate movements countrywide. They believed that full mandate given to them by the government to control fuel price in the country and the current good governance policies authorized by them are the major cause of this proportionality.

4.5.3.3 Ewura Officials' Opinions on the Instantaneous Effects of Foreign Exchange Rate Movements on Fuel Price Changes

The survey intended to get views from Ewura Officials on the effects of foreign exchange rate movements on fuel price changes. The respondents were asked to

indicate their thoughts as to whether they agree or disagree to the statement that the movements of foreign exchange rate have immediate effects on fuel price changes. Thus the respondents were asked to indicate their answers by ticking 'Yes' if they agree with the statement and 'No' if they don't agree with the statement. The responses showed that all five (5) Officials from Ewura agreed that the movements of foreign exchange rate have immediate effects on fuel price changes.

4.5.3.4 Ewura Opinions on the Proportionality Between the Extent of Fuel Price Changes in the Country and the Fuel Price Changes in the World Market

The researcher aimed to get Ewura officials experiences on proportionality between the extent of fuel price changes in the country and the fuel price changes in the world market. The respondents were asked to indicate their views as to whether agree or disagree to the statements that the extent of fuel price changes in the country is proportional as compared to the fuel price changes in the world market.

Thus the respondents were required to indicate their answers by ticking 'Yes' if they agree with the statement and 'No' if they don't agree with the statement. The responses showed that all five (5) Officials from Ewura agreed that the extent of fuel price changes in the country is proportional as compared to the fuel price changes in the world market.

4.5.3.5 Ewura Officials' Opinions on the Determinants of Fuel Price Changes in the Country

Under this category the researcher aimed to know from Ewura Officials' opinions on the determinants of fuel price changes in the country. Respondents were asked to

indicate their degree of belief on what could be main determinants of the current trend of fuel price changes in the country. The questioned asked aimed to obtain responses on the five point scales ranging from strongly agree to strong disagree on all variables.

The responses showed that all respondents from Ewura believed that FOB prices, fuel prices in the world market, appreciation or depreciation of exchange rate worldwide, decrease in fuel supply, delivery charges, and government taxes are the main determinants of fuel price changes. These responses implied periodic indicative prices set by Ewura which encompasses the effects of exchange rate movements on FOB charges and the fuel price in the world market is the main source of fuel price changes in the country.

4.6 Analysis of BOT Officials

4.6.1 Sample Characteristics

BOT officials surveyed are from Dar es salaam comprising different staff from bank of Tanzania. It was very difficult to get all officials to fill the questionnaires. The researcher had a chance to interview one BOT official. The official as the members of BOT was very corporative to the questions asked and attentive on the effects of exchange rate movements in fuel price changes.

4.6.2 Descriptive Analysis of Variables

Independent variables in the hypotheses tested were included in all questionnaires to obtain respondents' opinions on the influence of these variables on fuel prices in

Tanzania. Responses on these questions were then tested by the chi-square test.

4.6.3 Research Questions Responses

The collection of data concerning the effects of exchange rate movements on fuel price changes in the country were done by asking the respondents (Five BOT Officials) on the frequency of setting foreign exchange rate in a month, proportionality between the extent of fuel price changes and the overall movements of foreign exchange rate countrywide, factors that influence the foreign exchange rate movements in the country, movements of foreign exchange rate have immediate effects on fuel price changes, the main determinants of fuel price changes in the country.

4.5.3.1 BOT Officials' Opinions on the Frequency of Setting Foreign Exchange Rate

The researcher intended to get BOT Officials' views on how often the setting of foreign exchange rate is done in a month either once, 2 to 3 times, 4 to 5 times within the country. Responses from BOT showed that setting is not done by BOT officials rather it is determined by International bank of Foreign Market and it is done on daily basis.

These responses implied that fuel price changes to a certain extent do not follow the trend of foreign exchange rate movements and also do not consider the fact that importers may have in stock the fuels purchased in bulky earlier before the exchange

rate is whether appreciated or depreciated depending on the strength and stability of local currency (TZS) which may either be lower or higher than the present one.

4.5.3.2 BOT Officials' Opinions on the Proportionality between the Extent of Fuel Price Changes and the Overall Movements of Foreign Exchange Rate Countrywide

The researcher aimed to get BOT officials experiences on proportionality between the extent of fuel price changes and the overall movements of foreign exchange rate countrywide. The respondents were asked to indicate their views as to whether agree or disagree to the statements that the extent of fuel price changes is proportional or not proportional to the overall movements of foreign exchange rate countrywide. The respondents were required to indicate their answers by ticking 'Yes' if they agree with the statement and 'No' if they don't agree with the statement.

The responses showed that BOT Officials agreed that the extent of fuel price changes is proportional to the overall exchange rate movements countrywide. They believed that the current trend of fuel price changes in the country to some point is determined by the movements of foreign exchange rate.

4.5.3.3 BOT Officials' Opinions on the Factors that Influence Movements of Foreign Exchange Rate in the Country

In this section the researcher aimed to know from BOT Officials opinions on the factors that influence the foreign exchange rate movements in the country. Respondents were asked to indicate their degree of belief on what could be main

factors that influence the movements of foreign exchange rate in the country. The questioned asked intended to obtain responses on the five point scales ranging from strongly agree to strong disagree on all variables. The responses showed that BOT officials believed that current account surplus, speculation, balance of trade, appreciation of USD and depreciation of TZS (in Global market) are the main factors that influence the movements of foreign exchange rate in the country.

4.5.3.4 BOT Officials' Opinions on the Instantaneous Effects of Foreign Exchange Rate Movements on Fuel Price Changes

The survey intended to get views from BOT Officials on the effects of foreign exchange rate movements on fuel price changes. The respondents were asked to indicate their thoughts as to whether they agree or disagree to the statement that the movements of foreign exchange rate have immediate effects on fuel price changes. Thus the respondents were asked to indicate their answers by ticking 'Yes' if they agree with the statement and 'No' if they don't agree with the statement. The responses showed that BOT Officials agreed that the movements of foreign exchange rate have immediate effects on fuel price changes.

4.5.3.4 BOT Officials' Opinions on the Proportionality Between the Extent of Fuel Price Changes in the Country and the Fuel Price Changes in the World Market

The researcher aimed to get experiences from BOT officials on proportionality between the extent of fuel price changes in the country and the fuel price changes in the world market.

The respondents were asked to indicate their views as to whether agree or disagree to the statements that the extent of fuel price changes in the country is proportional as compared to the fuel price changes in the world market. Thus the respondents were required to indicate their answers by ticking 'Yes' if they agree with the statement and 'No' if they don't agree with the statement. The responses showed that BOT Officials agreed that the extent of fuel price changes in the country is proportional as compared to the fuel price changes in the world market.

4.5.3.5 BOT Officials' Opinions on the Factors that influence Fuel Price Changes in the Country

Under this category the researcher aimed to get views from BOT Officials on the causes of fuel price changes in the country. Respondents were asked to indicate their degree of belief on what could be main factors of the current trend of fuel price changes in the country.

The questioned asked aimed to obtain responses on the five point scales ranging from strongly agree to strong disagree on all variables. The responses showed BOT officials believed that appreciation or depreciation of USD/TZS, fuel price changes in the world market, increase in fuel demand and decrease in fuel supply are the main causes of fuel price changes in the country.

These responses implied periodic indicative prices set by Ewura which covers the effects of exchange rate movements and the fuel price in the world market are the main sources of fuel price changes in the country.

4.6 Responses to Research Hypotheses

Research hypotheses to be tested in this section are those established in section 1.4.1 and 1.4.2. These hypotheses were tested using chi-square test of goodness of fit to ascertain whether the frequency distribution for dependent variables was reliable with the explanations.

4.6.1 First Hypothesis

The proposed first hypothesis states that *"there is a relationship between exchange rate movements and the fuel price changes"*. Under this hypothesis, it was expected that when the foreign exchange rate appreciates or depreciates, the price of fuels will also increase or decrease. Costs associated directly with fuel importation include taxes, handling fees, fob charges and levies are normally paid in USD or valuation is done based on USD.

Therefore small changes in foreign exchange rate were also expected to affect prices of all petroleum products in the world market including fuel prices in the country. The prices of fuel are indirectly related to exchange rate movements, fuel price changes in the world market, increase in fuel demand, decrease in fuel supply and government taxes. The question used to test this hypothesis is found in section C of all questionnaires which asks 'What are the factors that influence fuel price changes in the country?' The respondents were required to rank the factors by writing the numbers 1, 2, 3, 4 and 5 for 1 = strongly disagree, 2 = disagree, 3 = neither disagree nor agree, 4 = agree and 5 = strongly agree in the box provided for each factor. The results are as follow:

Table 4.11 Response Frequency for First Hypothesis

	Frequency	Percent
Disagree	1	1.7
Neither disagree nor agree	2	3.3
Agree	20	33.3
Strongly agree	17	28.3
Not applicable	20	33.3
Total	60	100.0

Source: Developed by Researcher

The above distribution was then tested using chi-square analysis to check whether the hypothesis was significant or not from the expected frequencies. The null (Ho) and alternative (Hı) hypotheses to test for this hypothesis are:

Ho: There is no relationship between exchange rate movements and fuel price changes.

Hı: There is a relationship between exchange rate movements and fuel price changes.

NOTE: If the computed probability value, $P < 0.05$, the results are significant (results are supportive). Therefore in this case null hypothesis is accepted and reject alternative hypothesis. Again if the computed probability value, $P > 0.05$, the results are insignificant (results are not supportive). Therefore in this case null hypothesis will be rejected and accept alternative hypothesis.

The chi-square test is analyzed in the table below;

Table 4.12 Chi-Square Tests for Second Hypothesis

	Value	**Df**	**Asymp. Sig. (2-sided)**
Linear-by-Linear Association (Chi-square)	36.577	1	.000

Source: Developed by Researcher

From table 4.12 above, it was revealed that the movements of exchange rate (appreciation or depreciation) have significant influence on fuel price changes. Therefore since calculated probability, P > 0.05, null hypothesis is rejected at 5% level of significant and alternative hypothesis is accepted. Hence there is a relationship between fuel price changes and the movements of exchange rate.

4.6.2 Second Hypothesis

The proposed first hypothesis states that *"there is an inappropriate association between the extent of exchange rate movements and the fuel price changes".* Under this hypothesis, it is expected that when the foreign exchange rate appreciates or depreciates even for a small amount, the price of fuels should also increase or decrease in a small amount. Costs associated directly with fuel importation include taxes, handling fees, fob charges and levies are normally paid in USD or valuation is done based on USD. Therefore small changes in foreign exchange rate are also expected to affect prices of all petroleum products in the world market including fuel prices in the country. The prices of fuel are indirectly related to exchange rate

movements, fuel price changes in the world market, increase in fuel demand, decrease in fuel supply and government taxes.

The question used to test this hypothesis is found in section B of all questionnaires which asks 'Do you think the extent of fuel price changes is proportional or not proportional to the overall exchange rate movements countrywide?' The respondents were required to respond by writing 'Yes' if they agree with the statement and 'No' if they don't agree, in the box provided. The results are as follow:

Table 4.13 Response Frequency for Second Hypothesis

	Frequency	**Percent**
Yes	34	56.7
No	6	10.0
Not applicable	20	33.3
Total	60	100.0

Source: Developed by Researcher

The above distribution was then tested using chi-square analysis to check whether the hypothesis is significant or not from the expected frequencies. The null (Ho) and alternative (Hı) hypotheses to test for this hypothesis are:

Ho: There is an appropriate association between exchange rate movements and fuel price changes.

Hı: There is an inappropriate association between exchange rate movements and fuel price changes.

NOTE: If the computed probability value, P < 0.05, the results are significant (results are supportive). Therefore in this case null hypothesis is accepted and reject alternative hypothesis. Again if the computed probability value, P > 0.05, the results are insignificant (results are not supportive). Therefore in this case null hypothesis is rejected and accept alternative hypothesis.

The chi-square test is analyzed in the table below;

Table 4.14 Chi-Square Tests for Second Hypothesis

	Value	**df**	**Asymp. Sig. (2-sided)**
Linear-by-Linear Association (Chi-square)	42.624	1	.000

Source: Developed by Researcher

From table 4.14 above, it was revealed that even the small appreciation or depreciation of exchange rate has significant influence on fuel price changes which is sometimes not appropriate since the fuel is imported in bulky while exchange rate movements is done on daily basis depending on the strength of local currency. The calculated probability, P > 0.05, null hypothesis is rejected at 5% level of significant and alternative hypothesis is accepted. Hence there is an inappropriate association between the extent of exchange rate movements and the trend of fuel price changes.

CHAPTER FIVE

5.0 SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

The summary of research findings as collected from the field and analyzed is presented in this chapter. The chapter started by summarizing the empirical findings and their inferences for the fuel pricing system used in fuel industry. These findings might be used by Government regulatory authorities to regulate policies on fuel pricing in Tanzania. The chapter ended with recommendations for some stake-holders of fuel industry in the country. The study analyzed the effects of exchange rate movements on fuel price changes in Tanzania. Data were collected from 40 fuel customers, 10 fuel wholesalers (retailers), 5 Ewura officials and 5 BOT officials.

5.2 Summary of the Main Findings

According to the findings, there is a relationship between the movements of exchange rate and the current trend of fuel price changes. The study showed that the existing relationship is inappropriate since small appreciation or depreciation of foreign exchange fuel prices also change. Again the study showed that exchange rate movements have minor immediate effects on fuel price changes.

The study revealed that the current exchange rate used by Ewura in computing the fuel prices is wrongly applied. All these result to unrealistic fuel price changes because importation is normally done on bulky and expected to last for more than a month while fuel price setting is done in every month. Again the study showed that

there is a possibility for exchange rate movements (appreciation or depreciation of USD/TZS) locally and not universally which will result into appreciated or depreciated foreign exchange rate, as a result changes in fuel prices occur. This situation causes lots of disturbances to fuel customers and fuel importers (wholesalers & retailers) because the prices of fuels is not stable since it may change every now and then, consequently lots of complaints come out from fuel customers as the end users of fuels on the current trend of fuel price changes.

After a long time conspiracy and unfair practice of fuel importers, fuel customers were hoping that Government regulatory body (Ewura) after being given the mandate will prevent them from abusive and violation of their rights. The study revealed that Ewura as a regulatory body lacks the capacity to investigate the complaints from fuel customers on the issues of fuel price instabilities in the country. The study showed that fuel pricing system in the country is implemented in unfairly manner which is leading to increased complaints from fuel customers especially when there is large depreciation of USD over local currency due to different reasons while the fuel prices remain unchanged.

5.3 Conclusions Based on Research Questions and Hypotheses

In this study four different questions were asked: “What are the main causes of exchange rate movements in the country?”, “What are the main causes of fuel price changes in the country?”, “What is the trend of exchange rate movements and the fuel price changes?”, “What is the extent of proportionality between the fuel price changes in the country and the fuel price changes in the world market?” and then two

hypotheses were tested, there is a relationship between exchange rate movements and the fuel price changes and there is an inappropriate association between the extent of exchange rate movements and the fuel price changes.

5.3.1 Research Question One

The research question asked, “What are the main causes of exchange rate movements in the country?” The respondents were asked to indicate their degree of belief on what could be main factors that influence the movements of foreign exchange rate in the country. The questioned asked was set on the five point scales ranging from strongly agree to strong disagree on all variables. The responses from findings in chapter four (4) showed that current account surplus (deficit), speculation, balance of trade, appreciation of USD and depreciation of TZS (in the Global market) are the main factors that influence the movements of foreign exchange rate in the country.

5.3.2 Research Question Two

The research question asked, “What are the main causes of fuel price changes in the country?” the findings in chapter four (4) revealed that appreciation or depreciation of USD/TZS, fuel price changes in the world market, FOB prices, delivery charges, government taxes, increase in fuel demand and decrease in fuel supply are the main causes of fuel price changes in the country.

However the findings proved that periodic indicative prices set by Ewura which encompasses the effects of exchange rate movements, FOB charges and the fuel price in the world market are the main sources of fuel price changes in the country.

5.3.3 Research Question Three

The research question asked, “What is the trend of exchange rate movements and the fuel price changes?” the findings in chapter four (4) showed that setting of foreign exchange rate is not done by BOT officials rather it is determined by International bank of Foreign Market and it is done on daily basis. Again the findings revealed that setting of fuel prices is done once per month. Therefore these responses implied that the price of fuels is not constant and to some point it does not follow the trend of foreign exchange rate movements and also do not consider the fact that importers may have in stock the fuels purchased in bulky earlier before the exchange rate is whether appreciated or depreciated depending on the strength and stability of local currency (TZS) which may either be lower or higher than the present one.

5.3.4 Research Question Four

The research question asked, “What is the extent of proportionality between the fuel price changes in the country and the fuel price changes in the world market?” the findings in chapter four (4) showed that the extent of fuel price changes in the country is proportional as compared to the fuel price changes in the world market.. They believed that the current trend of fuel price changes in the country depends on the strength of local currency (TZS in this case) and is determined by the changes of fuel prices in the world market which depends on the strength and stability of U. S dollar.

5.3.5 First Hypothesis

Statistical evidence proved that the movements of exchange rate are very much related to fuel price changes within the country. For this reason null hypothesis was

rejected and accept the alternative hypothesis that there is a relationship between the movements of exchange rate and the fuel price changes.

5.3.6 Second Hypothesis

From the selected sample, the evidence was found that the movements of exchange rate either appreciation or depreciation does not correlate properly with fuel price changes in the country. Thus null hypothesis was rejected and accepted the alternative hypothesis that there is an inappropriate association between the extent of exchange rate movements and the fuel price changes in the country.

5.4 Recommendations

It is recommended that Government Regulatory authorities should consider significant fiscal and common costs associated between the fuel price changes and the movements of exchange rate that are often poorly understood. The authority should make sure that fuel pricing systems correlate with the extent of exchange rate movements and the fuel price changes in the world market.

It is also recommended that Ewura should be strengthened including establishment of automatic mechanism for adjusting fuel price changes locally in line with developments in fuel price changes in the world market and the appropriate association between fuel price changes in the country and the movements of exchange rate. Ewura should find proper ways of setting fuel prices by considering the fact that fuel importations is done in a bulky and not on daily basis; this will help to make fuel prices be stable for some months and will avoid unnecessary price

changes which cause lots of disturbances to fuel customers and importers.

Generally, it is recommended for Ewura as the decision and price makers to identify and consider significant fiscal, social costs and the fuel pricing systems associated with fuel price changes that are poorly understood by the fuel customers which affect mostly poor household; hence Ewura should take mitigating measures.

5.5 Implications of the Findings

Tanzania as other countries in the world also relies much on oil based fuels for their daily energy needs and is therefore particularly vulnerable to changes in fuel prices. All over the world, fuel consumers as the end users of fuels are the largest economic group affected by almost every public and private economic venture and decision. Instability of fuel prices in the country affects not only fuel customers but also fuel wholesalers (retailers) in many ways. There is a direct effect from an increase or decrease of fuel prices to fuel customers and fuel wholesalers from buying the fuels for direct consumption or importing the fuels from outside the country. Again there is an indirect effect from fuel price changes in other goods and services. For example food, transportation, electricity is normally affected by the change of fuel prices.

Apparently in Tanzania, the market for petroleum products is controlled by Ewura therefore this regulatory authority should make sure that fuel price settings do not affect fuel customers (as the end users of fuels) and fuel wholesalers (retailers) as the main importers of fuels within the country by considering those factors influencing the fuel price changes.

5.6 Limitations of the Study

In conducting this research, some challenges occurred in the whole process of filling the questionnaires. Some of respondents were not willing to accept the questionnaires provided others were trying to advice on how the questions should have been set. Others accepted the questionnaires but were not ready to provide the required information. Again other constraints occurred from sample selection and data analysis, it was somehow difficult to fulfill the objectives. This bounded the volume of data that were analyzed in this study; consequently the need for future research is highly necessary.

5.7 Suggested Area for further Study

The government should strengthen this regulatory authority including the capacity to make sure that fuel price changes is always appropriate to the movements of exchange rate, Ewura also should develop a better understanding of the nature of the volatility of fuel prices and decomposition of price changes into permanent and transitory components. This will lead into the design of good set of policies to control short and long run shocks of fuel price changes.

BOT and Ewura should be very close to make sure that they corporate in setting of fuel prices because it has been seen from findings there is direct proportional between the movements of exchange rate and the fuel price changes and there is an inappropriate association between the extent of fuel price changes and the movements of exchange rate. Therefore these two governments authorities should make the right timing and sizing of fuel price changes and the movements of

exchange rate by considering the fact that fuel importation is done on bulky while exchange rate movements is done on a daily basis depending on the strength of local currency.

This research identified numbers of issues in which further knowledge will be valuable for better understanding to reduce vulnerability to fuel price volatility. Those issues include Fuel price computation and periodic indicative fuel prices set by Ewura, Inappropriate association between the extent of fuel price changes and the movements of exchange rate, difficulties of running a business of fuels caused by price changes every now and then, complaints from customers regarding the fuel price changes.

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APPENDICES

APPENDIX 1: Questionnaire for Fuel Retailers / Wholesalers (Fuel stations)

Introduction

Hallo! Welcome to participate in the questionnaire survey. This questionnaire intends to capture data concerning the effects of exchange rate movements on fuel price changes in Tanzania (the case of Dar es salaam city). The result of this study will be of great importance to fuel customers, fuel importer, Government Regulatory Authority (EWURA), BOT and other interested users. Please spare a little time to fill it. I assure you this survey is anonymous and data collected will only be used for academic purpose hence will be treated as confidential.

The researcher is a student studying Masters Degree (MBA Finance) in the faculty of Business Management at Open University of Tanzania.

Thank You for Your Co-Operation

Section A: General Profile of the Respondent

1. Sex of respondent: Male [ ], Female [ ]
2. What is your age group? Please tick (√) where appropriate.

Years	**21 – 30**	**31 – 40**	**41 – 50**	**Above 50**
Respondent				

3. What is the highest level of education you have attained?

S/No	Education level	Tick (√)
1	Secondary school level	
2	Ordinary diploma level	
3	Advance diploma level	
4	University degree level	
5	Masters degree level	

6. Any other (please specify)……..

Section B: Customers' Complaints on Fuel Price Changes

1. How often in average do you change your price in a month?

   (a) Once (b) 2 to 3 times (c) 4 to 5 times (d) other (please specify)…… ……..……...

2. Do you think this extent of fuel price changes cause any difficulty in running your business? (a) Yes [ ] (b) No [ ]

3. Do you think the extent of fuel price changes is proportional or not proportional to the overall exchange rate movement countrywide?

   (a) Yes [ ] (b) No [ ]

4. Do you receive any complaint from customers regarding the fuel price changes? (a) Yes [ ] (b) No [ ]

5. In your experience, are these levels of customer complaints on fuel price changes likely to occur in station? Please rank by using 1 = likely, 2 = neutral, 3 = not applicable

   (a) Many complaints [ ] (b) few complaints [ ] (c) No complaint [ ]

Section C: Causes of Fuel Price Changes

In your opinion, do you think the following factors influence the fuel price changes?

Please use the following numbers to rank the below factors:

5 = extremely high, 4 = very high, 3 = high, 2 = low, 1 = very low

Please select each factor according to your rank by giving a tick (√)

S/No	Factors	Rank				
		5	**4**	**3**	**2**	**1**
1	Dollar appreciation / depreciation					
2	Fuel price changes in the world market					
3	Increase in fuel demand					
4	Decrease in fuel supply					
5	EWURA indicative prices					

I Am Grateful For the Information You Have Provided

Thank You So Much for Your Time in Completing This Survey

Questionnaire for BOT Officials

Introduction

Hallo! Welcome to participate in the questionnaire survey. This questionnaire intends to capture data concerning the effects of exchange rate movements on fuel price changes in Tanzania (the case of Dar es salaam city). The result of this study will be of great importance to fuel customers, fuel importer, Government Regulatory Authority (EWURA), BOT and other interested users. Please spare a little time to fill it. I assure you this survey is anonymous and data collected will only be used for academic purpose hence will be treated as confidential.

The researcher is a student studying Masters Degree (MBA Finance) in the faculty of Business Management at Open University of Tanzania.

Thank You for Your Co-Operation

Section A: General Profile of the Respondent

1. Sex of respondent: Male [ ], Female [ ]

2. What is your age group? Please tick (√) where appropriate.

Years	**21 – 30**	**31 – 40**	**41 – 50**	**Above 50**
Respondent				

3. What is the highest level of education you have attained?

S/No	Education level	Tick (√)
1	Secondary school level	
2	Ordinary diploma level	
3	Advance diploma level	
4	University degree level	
5	Masters degree level	

6. Any other (please specify)…… …….. ……..……..

Section B: Foreign Exchange Rate Movements

i. How often in average foreign exchange rate setting is done in a month? (a) Once (b) 2 to 3 times (c) 4 to 5 times (d) other (please specify)…… ……..……..……...

ii. Do you think the extent of fuel price changes is proportional or not proportional to the overall movement of foreign exchange rate? (a) Yes [ ] (b) No [ ]

iii. In your experience, what are the main factors that influence the foreign exchange rate movements? Please rank by ticking (√) either of the following five (5) point scale: 1 = strongly disagree, 2 = disagree, 3 = neither disagree nor agree, 4 = agree, 5 = strongly agree: (a) Depreciation of TZS [ ] (b) Appreciation of U.S dollar [ ] (c) Inflation (deflation) rate [ ] (d) Speculation [ ] (e) Current account surplus [ ]

iv. Do you think the appreciation or depreciation of foreign exchange rates have immediate effects on fuel price changes? (a) Yes [ ] (b) No [ ]

Section C: Causes of Fuel Price Changes

i. Do you think the extent of fuel price changes in the country is proportional as compared to the fuel price changes in the world market? (a) Yes [ ] (b) No [ ]

ii. Please indicate the degree of your belief the idea that, the current trend of fuel price changes in the country is not customary as compared to the following factors (Please rank by ticking either of the following five (5) point scales: 1 = strongly disagree, 2 disagree, 3 neither disagree nor agree, 4 = agree, 5 = strongly agree

Please select each factor according to your rank by giving a tick (√)

S/No	Factors	Rank				
		5	4	3	2	1
1	Dollar appreciation / depreciation over TZS					
2	Appreciation / depreciation of U.S dollar					
3	Fuel price changes in the world market					
4	Increase in fuel demand					
5	Decrease in fuel supply					
6	EWURA indicative prices					

I Am Grateful For the Information You Have Provided

Thank You So Much for Your Time in Completing This Survey

Questionnaire for EWURA Officials

Introduction

Hallo! Welcome to participate in the questionnaire survey. This questionnaire intends to capture data concerning the effects of exchange rate movements on fuel price changes in Tanzania (the case of Dar es salaam city). The result of this study will be of great importance to fuel customers, fuel importer, Government Regulatory Authority (EWURA), BOT and other interested users. Please spare a little time to fill it. I assure you this survey is anonymous and data collected will only be used for academic purpose hence will be treated as confidential.

The researcher is a student studying Masters Degree (MBA Finance) in the faculty of Business Management at Open University of Tanzania.

Thank You for Your Co-Operation

Section A: General Profile Of The Respondent

1. Sex of respondent: Male [ ], Female [ ]

2. What is your age group? Please tick (√) where appropriate.

Years	21 – 30	31 – 40	41 – 50	Above 50
Respondent				

3. What is the highest level of education you have attained?

S/No	Education level	Tick (√)
1	Secondary school level	
2	Ordinary diploma level	
3	Advance diploma level	
4	University degree level	
5	Masters degree level	

1. Any other (please specify)…… ……..……..

Section B: Fuel Pricing

1. In your own experience, what is the schedule for fuel indicative price setting in the country? Please tick (√) where appropriate: (a) weekly (b) monthly (c) twice a month (d) other (specify)……
2. Do you think the extent of fuel price changes is proportional or not proportional to the overall exchange rate movements countrywide? (a) Yes [ ] (b) No [ ]
3. Do you think the movements of foreign exchange rate (appreciation or depreciation) have immediate effect on fuel price changes? (a) Yes [ ] (b) No [ ]

Section C: Causes of Fuel Price Changes

1. Do you think the extent of fuel price changes in the country is proportional as compared to the fuel price changes in the world market? (a) Yes [ ]
   (b) No [ ]

2. Please indicate what you consider to be the main determinants of fuel price changes (indicative) in the country? Please rank by ticking either of the following five (5) point scales: 1 = strongly disagree, 2 disagree, 3 neither disagree nor agree, 4 = agree, 5 = strongly agree.

Please select each factor according to your rank by giving a tick (√):

S/No	**Determinants**	**Rank**				
		5	**4**	**3**	**2**	**1**
1	Exchange rate (USD/TZS)					
2	FOB prices					
3	Government taxes					
4	Delivery charges					
5	Increase in fuel demand locally					

I Am Grateful For the Information You Have Provided

Thank You So Much for Your Time in Completing This Survey

Questionnaire for Fuel Customers

Introduction

Hallo! Welcome to participate in the questionnaire survey. This questionnaire intends to capture data concerning the effects of exchange rate movements on fuel price changes in Tanzania (the case of Dar es salaam city). The result of this study will be of great importance to fuel customers, fuel importer, Government Regulatory Authority (EWURA), BOT and other interested users. Please spare a little time to fill it. I assure you this survey is anonymous and data collected will only be used for academic purpose hence will be treated as confidential.

The researcher is a student studying Masters Degree (MBA Finance) in the faculty of Business Management at Open University of Tanzania.

Thank You for Your Co-Operation

Section A: General Profile of the Respondent

1. Sex of respondent: Male [ ], Female [ ]

2. What is your age group? Please tick (√) where appropriate.

Years	**21 – 30**	**31 – 40**	**41 – 50**	**Above 50**
Respondent				

3. What is the highest level of education you have attained?

S/No	Education level	Tick (√)
1	Secondary school level	
2	Ordinary diploma level	
3	Advance diploma level	
4	University degree level	
5	Masters degree level	

2. Any other (please specify)……..

Section B: Foreign Currency Movements

1. Please indicate on a five point scales, your opinion about the exchange rate used by EWURA in computing the fuel prices. Use the following ranks: 1 = strongly disagree, 2 disagree, 3 neither disagree nor agree, 4 = agree, 5 = strongly agree.
   a. It is wrongly applied because the exchange rate changes on daily basis while fuel importation is done on bulky and not daily. [ ]
   b. It is correctly applied and proportional to the fuel price changes. [ ]
   c. Indicative fuel prices set by EWURA does not reflect the actual movements of foreign exchange rate. [ ]
   d. It causes super profit to fuel importers, because foreign exchange rate may appreciate or depreciate locally and not worldwide. [ ]

2. Do you think appreciate or depreciation of foreign exchange rates have immediate effect on fuel price changes? (a) Yes [ ] (b) No [ ]

Section C: Causes of Fuel Price Changes

1. Do you think the extent of fuel price changes is high and not proportional to the overall rate of foreign exchange movements? (a) Yes [ ] (b) No [ ]
2. Please indicate the degree of your belief about the idea that the current trend of fuel price changes in the country is very high as compared to the following factors: Please rank by ticking either of the following five (5) point scales: 1 = strongly disagree, 2 disagree, 3 neither disagree nor agree, 4 = agree, 5 = strongly agree.

Please select each factor according to your rank by giving a tick (√):

S/No	Factors	Rank				
		5	**4**	**3**	**2**	**1**
1	Depreciation of TZS					
2	Appreciation of U.S dollar Worldwide					
3	Fuel price changes in the World market					
4	Increase in fuel demand					
5	Decrease in fuel supply					

I Am Grateful For the Information You Have Provided

Thank You So Much for Your Time in Completing This Survey