Time Series Data Showing Monthly Fluctuations in the Volume of Sugar Import Between 2013 and 2014: A Case Study of Sugar Imported Via Nimule Border (at South Sudan-Uganda Border)

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DECLARATION

I, Alier Michael Majak, hereby declare to the best of my knowledge that this research report is a result of my original work and has not been presented elsewhere in part or otherwise for the award of a degree in any other University/Institution or publication.

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Sign: _____ Date: _____

DEDICATION

This research project is dedicated to my followers, beloved parents.

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I wish to extend my sincere appreciation to those people who facilitated the progress and completion of this research project.

My thanks go to the different people who in different ways have helped me write up this report to the final end, the only research work done on trend of volume of sugar imports in the Republic of South Sudan.

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ABSTRACT

This research report deals with the analysis of South Sudan volume of imported quantities of Sugar in metric tons from Nimule Station for a period of two years (2013-2014) and specifically focuses on seasonal variations on the volume of imported sugar and their major determinants.

Sugar has always drawn a wide attention of the governments all over the world. South Sudan is an important participator in the world sugar market. It is not only consumption country but also main net import and a big potential sugar consumption country in the world sugar market. Sugar in South Sudan depends on import to make up the supply-demand gap.

This research first identifies the main determinants of imported sugar and further their effects on the variables quantified. Further, the component correlation on selected customs value is analyzed.

We study the factors influencing the sugar imports in South Sudan. A linear regression model for quantitative analysis is established. Research result has shown that customs value has little impact in influencing the changes in the quantity of sugar imported but combined factors such as domestic consumption/demand of sugar, exchange rate, substitution effects of sugar, sugar prices in the market, insecurity in most part of the country, poor government policies towards import, poor road networks, low standard of living, among others, help in the fluctuations of the volume of sugar imports.

On the basis of the conducted analysis, customs value represents only 1.2% changes in the volume of imported sugar. Other determinants, such as demand of sugar, sugar prices in the market, long distance travel, ownership of major importing companies by foreigners, and poor road network especially during rain seasons, are represents 98.8% changes in the volume of sugar imported.

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LIST OF ABBREVIATIONS AND ACRONYMS

SPSS	Statistical Package for Social science
SSP	South Sudanese Pounds
USDA	United State Department of Agriculture
FAO	Food and Agriculture organization
EU	European Union
ACP	African Caribbean and Pacific
COMESA	Common Market for Eastern and Southern Africa
WTO	World Trade Organization
LTD	Limited
SADC	Southern African Development Cooperation
EAC	East African Community
CSA	Commonwealth Sugar Agreement
USD	United State of American Dollars
IMF	International Monetary Fund
CBK	Central Bank of Kenya
SPS	EU Special Preferential Sugar Arrangement

DEFINITIONS OF SOME KEY CONCEPTS

SUGAR Is the generalized name for sweet, short-chain, soluble carbohydrates, many of which are used are used as food. They are carbohydrates, composed of carbon, hydrogen and oxygen. There are various types of sugar derived from different sources. Simple sugars are called monosaccharide and include glucose (also known as dextrose), fructose and galactose. The table or granulated sugar most customarily used as food is sucrose.

IMPORTS: Are goods or services brought into one country from another. Along with exports, imports form the backbone of international trade. The higher the value of imports entering a country, compared to the value of exports, the more negative that country's balance of trade becomes.

TIMES SERIES: A time series is a sequence of observations which are ordered in time (or space). If observations are made on some phenomenon throughout time, it is most sensible to display the data in the order in which they arose, particular since successive observations will probably be dependent.

REGRESSION ANALYSIS In statistics, regression analysis is defined as a statistical process for estimating the relationships among variables. It includes many techniques for modeling and analyzing several variables, when the focus is on the relationship between dependent variable and one independent variables. More specifically, regression analysis helps one understand how typical value of the dependent variable changes when any one of the independent variable is varied, while the other independent variables are held fixed. Regression analysis is widely used for prediction and forecasting.

CUSTOMS VALUES: refers to the valued of imported goods as appraised by the customs and used as the basis for assessing the amount of import duty and other taxes. It may be computed in several ways, but the most-preferred method is transaction-value which (in addition to the price paid by a buyer to a seller) includes other cost incurred by the buyer, such as packing costs, license fee or royalty and any other sum(s) that accrue to the seller. It is the customs officer (and not the importer, exporter or customs broker) who has the final say in assigning this value. It is also called customs import value.

CHAPTER ONE: INTRODUCTION

1.1. Background to the Study

After several years of quantities of sugar floating among countries there is yet to emerge a consensus among academic economists regarding the impact of customs values or tariffs on economic variables like import. The traditional view is that fluctuations in customs value affect relative domestic and foreign prices, causing expenditures to shift between domestic and foreign goods (Obstfeld, 2002). The new view is that relative prices are not much affected by customs value fluctuations in the short run (Obstfeld, 2002 and Engel, 2002).

In contrast to this debate among academic economists, business people appear convinced that customs values have real effects. Executives and Directors especially of sugar import companies, agonize over declining sugar imports when their home customs values are high. This was pointed out by a director of skyline and constructing company when contacted by the author.

Available evidence generally suggests that most developing countries registered a persistent decline in their foreign exchange earnings from the early 1980s. This is attributed largely to the collapse of commodity prices in the market. Combined with this, there are two principal factors, first is reduced foreign lending and second is the increased cost of external borrowing.

This triggered a series of developments in most developing countries. It is a statement of fact that external trade dominates government revenue in these countries. Both imports and exports of developing countries are subjected to periodic fluctuations in the world market as evidence in the 2008 economic meltdown, and revenue from this source tends to fluctuate accordingly. Thus, it was not surprising that the collapse of a commodity export prices in the early 1980s engendered fiscal crises in most African countries, as reflected in their Hugh budget deficits. In part, this led to the adoption of economic reforms programmes.

However, there is little systematic research, examining whether customs values affect South Sudanese sugar import. This study seeks to fills the gap by examining the impact of customs values fluctuations on the quantity of sugar imported to South Sudan via Nimule.

1.2. Statement of the Problem

The economy of South Sudan is one of the world's weakest and most underdeveloped economies, with the country having little existing infrastructure and the highest maternal mortality and female illiteracy rates in the world as of 2011

South Sudan relies on sugar imports from neighboring countries, such as Uganda, Kenya and Sudan. These come at a high transportation cost which, coupled with inflation, has caused sugar prices to rise dramatically in South Sudan. The declining agricultural production and the reliance on expensive foreign sugar suppliers have contributed to a severe food shortage in South Sudan. Importers of sugar companies have been affected with these severe economic phenomena.

This research seeks to illustrate how the volume of sugar imported via Nimule border have been changing over the given period of time bearing the worst economic status of the country in mind.

1.3. Objectives of the Study

In light of the above background, the aim of this research is to understand, interpret and draw the trend and patterns of the volume of sugar imported. The sub goals included are as follows:

1. To identify the macro economic factors that influence the importation of sugar in South Sudan
2. To investigate empirically, the relationship between the quantity of sugar imported and the customs values.
3. To identify the major companies involves in sugar importation to South Sudan via Nimule

1.4. Research Questions

This research work shall be guided by the following research questions

1. What has been the trend and pattern of South Sudan's volume of sugar import via Nimule?
2. What are the macro-economic factors that influence sugar importation to South Sudan via Nimule?
3. What are the major companies that are involved in sugar importation to South Sudan via Nimule?

1.5. Research Hypothesis

From the research questions stated above, the core hypothesis to be investigated is H1, quantity of sugar imported depends on customs value.

1.6. Significance of the Study

In the light of the stated objectives which this study is set to achieve, the following are the significance

(a) it would provide the yardstick to assess the volume of sugar imported to South Sudan via Nimule
(b) it would also help in identifying the major companies involve in the sugar importation and their major source of import, I.e. major sugar exporting countries
(c) The study would also contribute to knowledge by suggesting ways how sugar imports can be handle to reduce the hindering factors that affect it.

1.7. Scope of the Study

The scope of this study covers South Sudan's volume of sugar imports that passed via Nimule from 2011-2013. The general overview of the profile of South Sudan's import shall also be discussed. Furthermore, the study seeks to identify the major sugar importing companies and the factors that influences their importation.

1.8. Research Methodology

Secondary data are the basis of this study; the relevant data to be used is sourced from South Sudan Customs services and Ministry of commerce, trade and investment statistical report for the years under review. The data collected includes, list and name of sugar importing companies and with their major foreign suppliers name and country of origin, volume of sugar imported.

The trend and the pattern of south Sudan's volume of sugar import would be drawn using method of moving averages. Hypothesis testing will be conducted using 5% level of significant to determine linear regression analysis. The method would be applied using statistical packages for social sciences (SSPS).

CHAPTER TWO: LITERATURE REVIEW

This chapter will present a comprehensive review of relevant literature in an attempt to position the study in an appropriate theoretical framework. Thus it will discuss findings of related researches to this study.

2.1. Overview of the Global Sugar Trade/Markets

Sugar is produced in some 127 countries in the world and consumed in all of them. Only about 30 per cent of world output is traded internationally, implying that the world market for sugar is a residual market. Only 30 per cent of the production is traded worldwide with the rest consumed locally.

Consequently, it is important to recognize that world market sugar prices are not an appropriate benchmark for determining the "fair" price for sugar since these prices represent the market only for residual production and residual demand. (USDA)

According to industry figures, some 65% of sugar produced worldwide comes from four countries: Brazil, Australia, Cuba and Thailand. The biggest importer of sugar is Russia. Two thirds of global sugar output is produced from cane with the biggest producers: Brazil (20.3 million metric tons), India (19.9 million metric tons) and the European Union (15.5 million metric tons). (FAO, 2012; Reinbergr, 2012). Currently, non-sugar factors are known to influence world market sugar prices most times in excess of, and unconnected to market forces. Multilateral corporation policies play a significant role. For example, nearly all exports to the European Union are purchased by the British Company Tate & Lyle. (Pokorna, Smutka, Pulkrabek, 2011)

Sugar is a widely traded commodity with international trade representing about 30% of world production. Therefore, prices on international markets are of significant importance, including for those ACP countries that export at world-market prices. As for many internationally traded commodities, international sugar prices are extremely volatile and subject to long-term price decline. The world market for sugar is now bullish after over 5 years of depressed prices. The price differential or working arbitrage between the preferential trading regimes such as the sugar protocol of the EU and the world market is diminishing with significant potential for realignment of future trade in sugar. Developing countries account for more than 60% of the current global sugar consumption. These countries, particularly in Asia, are expected to be the primary source of future demand growth.

Since 1995, prices have been on a decreasing trend which can be mainly explained by an overall excess of production over consumption. Price volatility makes it difficult to forecast world sugar prices but analysts estimate that prices will remain on a decreasing trend over the short and medium term, whether or not reform takes place in the EU. Most international trade takes place under agreements, so the spot trade is considered residual. The EU is a major player on the export market. The EU is the third largest exporter of sugar, with exports stabilized over the last years, and far

behind Brazil which now dominates the export market and who's increase in production and exports accounts for the bulk of the recent decline in world prices.

Internal trade within and among the major economic groupings in Africa like COMESA and SADC is increasing in significance due to deficits that exist in many developing countries with infant or stunted sugar industries. Due to the differing production environments by the various countries, lower cost production settings in Southern Africa now pose a major threat to their Eastern and Central African counterparts. With reduction in both tariff and non-tariff measures that made the traditional wall of protection crumbling, the sugar industry in Africa is expected to be completely realigned in the near future, not withstanding extra Africa market factors.

2.2. Nature of International Sugar Trade Regimes

Sugar is traded in four different ways worldwide: the preferential and quota regimes by developed countries like the United States and EU, accounting for 70% of sugar produced in the world. The rest of the sugar is traded through international sugar agreements and free trade arrangements (such as COMESA, SADC, EAC). The fourth is the residual free market in sugar. Trading in this regime is done under the World Trade Organization's Most Favored Nation (MFN) principle or bilateral commitments by individual countries.

2.2.1 Preferential Sugar Trade Regimes

There are five preferential trade regimes of sugar in the world. Except for the Commonwealth

Sugar Agreement, all of them are practically in operation.

2.2.1.1 The United States Quota Arrangements

These cover about one quarter of world trade, with sugar exports to the United States governed by a country quota system. This arrangement, under which exporters enjoy favorable prices, limits US sugar imports to offshore territories like Puerto Rico as well as countries with special trade relations with the USA such as the Philippines. None of the East Africa countries have a quota for preferential access to the US market.

2.2.1.2 The EU Special Preferential Sugar (SPS) Arrangement

Even though they are both under the EU, the SPS is different and not part of the Cotonou Sugar Protocol. A country could have a quota allocation under the Protocol as well as under the SPS regime. Like the Cotonou pact, the SPS agreement is a bilateral (government- to-government) agreement with a fixed duration for an initial six years. Under this arrangement, the EU undertakes to open annually a special tariff quota for the import of raw cane sugar for refining from ACP states.

2.2.1.3 The EU-ACP Cotonou Partnership Agreement

The Sugar Protocol of the Cotonou Partnership Agreement that, also, is part of the EU Common Agricultural Policy Reforms covers this regime. Under this regime, Kenya and Tanzania has a quota of 10,000 tones to export sugar at guaranteed high prices to the European Union.

2.2.1.4 The Commonwealth Sugar Agreement (CSA)

Signed in London on 21 December 1951, the CSA guaranteed imports of agreed quantities of sugar by the United Kingdom at negotiated prices to commonwealth producers. The CSA covered about 10 per cent of the world trade in sugar. However, with the accession of the UK to the EU, the country's commitment under the CSA was translated into a EU commitment to the ACP states under the Lome Convention Sugar Protocol. Under the Lome Convention Sugar Protocol, only Kenya in East Africa had a quota (5,000 tones). In 1987, the EU distributed Kenya's quota to other ACP countries.

2.2.1.5 Cuba-Russia Sugar Arrangement

Following the diplomatic row that led to trade sanctions imposed on Cuba by the USA in 1960, a special arrangement between the country and Russia came into force. Under the arrangement, Cuba is given price and quantity guarantees on very favorable terms with Russia positioned as the world's largest consumer of sugar. None of the EAC member states has a preferential arrangement with Russia for sugar imports.

2.3. Definition of 'Imports'

Are goods or services brought into one country from another? Along with exports, imports form the backbone of international trade. The higher the value of imports entering a country, compared to the value of exports, the more negative that country's balance of trade becomes.

International trade is the exchange of goods and services across national boundaries. It is the most traditional form of international business activity and has played a major role in shaping world history. It is also the first type of foreign business operation undertaken by most companies because importing or exporting requires the least commitment of, and risk to, the company's resources. For example, a company could produce for export by using its excess production capacity. This is an inexpensive way of testing a product's acceptance in the market before investing in local production facilities.

A company could also use intermediaries, who will take on import-export functions for a fee, thus eliminating the need to commit additional resources to hire personnel or maintain a department to carry out foreign sales or purchases (Daniels and Radebaugh, 2004).

2.4 Determinants of Sugar Imports

Much of the research literature on imports underlines the importance of high per capita incomes, price of imports, and the exchange rate in determining import levels (Lutz, 1994). For developing countries, however, determinants of import demand also include factors such as government restrictions in imports and availability of foreign exchange.

A study examining the factors influencing import demand of sugar in Pakistan from 1959 to 1986 found that the policy of devaluation or the policy of raising tariffs was not significant in reducing sugar imports except in the case of imports of machinery and equipment (Sarmand, 1989**).**

Sugar import in China is affected by many factors such as output, consumption level, prices and exchange rates among them; output and consumption are the main factors influencing sugar import. Per capita income increase rapidly in China but has no significant correction with sugar import indicating per capita consumption for Sugar in China is still low. (Ruan PN, Wang HU ZJ 2006).

The trend of sugar cane production as well as imports of refined and other related sugar from 1960 to 2010 was studied using grafted model and growth model. It was found that based on the current trend; there will be sugar deficit by the year 2020 if nothing is done now. Three major options are advocated in this paper i.e. hectare expansion, massive funding of research to improve sugar cane production technology such that yield will rise to 150 tons per hectare and importation expansion. Of the three options, only increase funding of research will encourage local technology and save Nigeria of foreign exchange that will otherwise be spent on importation.

A rich body of literature regarding the ACP-EU sugar protocol has emerged in recent years. All of the studies recognize that the sugar protocol has provided some economic benefits to the ACP countries. (Herrmann and Weiss 1995) provided an economic evaluation of the sugar protocol by elaborating on the impacts on prices, trade, export earnings and economic welfare. Using the **Newbery and Stieglitz approach**, **Hermann and Weiss** jointly evaluate the sugar protocol's impact on the level and instability of sugar export earnings and computed transfer and risk benefits. Their major conclusion is that the policy has to be evaluated differently from the donor's and the recipient's respective points of view. Focusing on the recipient country's point of view, they found that there is a revenue raising or stabilizing effect created by the sugar protocol. In addition they pointed out that the instability of sugar export earnings was lowered in all but one ACP country. Their third finding was that, in addition to the transfer benefits that ACP countries were receiving, there was a significant portion of the welfare gains that were realized could be attributed to risk benefits.

McDonald (1996) extended the work on the EU sugar policy to explore the implications of a reform for African, Caribbean and Pacific countries. He showed that there are significant reductions in income transfers and that the Caribbean countries plus Fiji and Mauritius bear the heaviest loss.

In a similar manner, (Milner, Morgan and Zgovu 2004) explored the way in which a reform will affect the transfers of welfare to the ACP countries. The authors take into account the fact that OECD sugar reform can affect both domestic and world prices. They concluded that while some countries would lose due to decreased transfers, others may gain due to the impact that sugar reform has on world prices. They argue that the differences are due to the uneven allocation of preferential quotas across protocol countries and the highly differential dependence of the countries on EU and non-EU export markets.

The practice of quota leasing has been studied for various commodities. Bureau, (Guyomard, Morin and Requillard 1997) develop an analytical framework for evaluating the consequences of a market for quota rights in the EU sugar sector. The theoretical framework they use is based on duality theory and employs the concept of the virtual or shadow price of a rationed good. They show that the equilibrium of the market for a quota is a function of the level of the world price of sugar and that different cases have to be distinguished when analyzing the comparative static's of such a market. They use a simulation to show that marketable quota rights would benefit farmers. Butcher and Heady studied probable quota exchange within a small Iowa area and found that there are some possibilities for income gains (cost savings) by redistributing quotas. They argue that permitting quotas to be traded in a "quota market" would appear to be an expeditious way for allocating quotas so that the efficiency of production will be greater than with ordinary mandatory controls.

Babcock and Foster (1992) explain the distribution of economic rents between owners of quota rights and renters under mandatory supply controls and examine how this distribution changes with increases in marginal costs.

There are several variants of the bilateral monopoly model based on a variety of assumptions regarding both institutional setting and bargaining procedure (Truett and Truett).

An extensive discussion of bilateral monopoly can be found in the works of; (Bowley, 1928), (Fellner, 1947) and (Machlup and Taber 1960). These authors describe a solution based on joint profit maximization that would lead to a determinate quantity traded of the intermediate product but not a determinate intermediate product price.

Recently, (Blair, Kaserman, and Romano (1989) have reiterated the joint profit maximizing solution. Like earlier writers, they argue that the quantity traded of the intermediate goods will be determinate, while its price will be indeterminate. Truett and Truett (1993) use a contract curve approach to establish that the equilibrium price of the intermediate product is determined through a bargaining process between the seller and the buyer and that the optimal solution calls for a joint profit maximization by both the seller and the buyer.

Devadoss and Cooper (2000) use an optimal control, dynamic optimization model to simultaneously determine the price and quantity of the intermediate product in a joint profit maximizing bilateral monopoly with equal bargaining power. Dasgupta and Devadoss (2002) also

applied a game theoretic model to derive the equilibrium price and quantity of the intermediate product when buyer and seller have unequal bargaining power. Their game theoretic model specifies multi-period contracts with threats and punishments that induce Nash equilibrium for a jointly negotiated price and quantity.

The types of sugar imported into Kenya are basically a "like product" as far as the locally produced product is concerned. In Kenya, sugar import surges in the past have been manifested through the existence of high levels of the inventory of sugar stocks in the domestic sugar factories. This study shows that the surges in sugar imports in Kenya do not arise directly from price competition, but from difficulties related to the administration of the duty-free quota allocations.

The other likely contributor to sugar import surges in Kenya is the influx of illegal and unrecorded sugar imports due to cross-border trade in sugar. This factor reflects a trade surveillance problem, but it is a problem that is difficult to solve. The difficulties in the administration of the import (i.e. duty-free) quota allocations cause delays in the importation of sugar when needed, and the subsequent late arrivals of the imported sugar when met may not really be needed in the country. The late arrivals of imported sugar often create serious domestic sugar marketing problems. The domestic sugar marketing problems arise because the traders who end up trading in the imported sugar are the same people who would be expected to get their sugar trading stocks from the warehouses of the local sugar millers. The result is that the local sugar millers end up with huge stockpiles of local sugar with limited outlets. Consequently, it takes time before they are able to sell off their sugar stocks and thus be in a position to pay for the sugarcane deliveries made by the farmers. Such sugar stockpiles and domestic sugar marketing problems in the recent past were experienced in 2002. The delayed payments to sugarcane producers hurt the domestic economy in various ways, but primarily through a chain of causation in which the local cane farmers are unable to meet their financial obligations on time. The result is that their debt burden increases.

For example, they find themselves unable to pay their children's school fees on time, or clear the credit for their farm inputs in time. Therefore, the difficulties related to the administration of the sugar industry safeguard quota allocations end up causing serious injuries to the domestic economy. The sugar sector in Kenya is known to have suffered a serious injury as a result of the failure by the sugar millers to make payments to the farmers for their cane deliveries as a result of the surges in sugar imports in 2002. Equally, the sugar millers were unable to make payments to the suppliers for the services rendered, and the entire sugar sector accumulated heavy debts. The high levels of the industry indebtedness following the surges in sugar imports in 2002 are undoubtedly a tangible indicator of injury. (FAO 2004)

Economic theory suggests that per capita incomes and the general price levels are the key determinants of demand for consumer goods, but the level of demand may be expected to be modified by consumer tastes/preferences. Despite the high incidence of both rural and urban poverty in Kenya, estimated at over 56 percent by year 2000 (NWMS, 2001), demand for maize, sugar and liquid milk in Kenya still remains high, especially in urban areas. Any national shortages

of any of these three commodities are fulfilled through imports, and this factor helps to explain why Kenya has normally experienced increasing levels of the imports of maize, sugar and dry milk powders whenever prolonged droughts that occasion shortfalls in the local production of these commodities have occurred.

The foreign exchange rate policy pursued by any country is expected to influence the country's domestic and international trade (Commodity Exports and Imports) policy. Rising exchange rates that reflect local currency depreciation tend to make exports cheaper while the imports become relatively more expensive, and vice versa. Available data on the monthly movements in the nominal exchange rate in Kenya between 1998 and 2004 show that there were significant monthly exchange rate fluctuations between January 1998 and December 2004. The exchange rate actually rose from a low of KShs 59.06 per USD in July 1998 to a high of KShs 81.27 per USD in October 2004 *(IMF International Financial Statistics)*

Central Bank of Kenya (CBK) attributes much of the inflationary pressure that Kenya has experienced in recent times to the shocks in oil prices (Governor, CBK, June, 2005). The rising exchange rate in Kenya since the 1980s must have decelerated the rate at which Kenya's sugar imports could have deteriorated.

2.5. SOUTH SUDAN SUGAR IMPORT OVERVIEW

2.5.1 Background Information

South Sudan, officially called the Republic of South Sudan, currently referred to as the youngest nation in Africa is the world's newest country. The country officially declared its independence on 9 July 2011, to become the United Nations 193rd member country and the 54th Nation in Africa. South Sudan is a landlocked country located in eastern Africa bordering Sudan to the North, Ethiopia to the East, Uganda to the South, Kenya to the South East, Democratic Republic of Congo (DRC) to South West and Central Africa Republic to the west.

Approximately 83 percent of the 8.26 million people (2008 census) of South Sudan live in rural areas, and are largely dependent on farming and livestock. Livelihood constraints are enormous, only four percent of arable land is cultivated; labor and trade opportunities are often limited.

South Sudan is endowed with natural resources which if well managed could offer the new country immense opportunities to enhance its overall economic and social well-being.

2.5.2 Economy of South Sudan

South Sudan's economy is based mainly on the export of its natural resources. Oil is the main resource in South Sudan and oilfields in the southern part of the country drive its economy. Timber resources like teak also represent a major part of the region's economy and other natural resources include iron ore, copper, chromium ore, zinc, and tungsten, mica, silver and gold. Hydropower is also important as the Nile River has many tributaries in South Sudan. Agriculture also plays a

major role in South Sudan's economy and the main products of that industry are cotton, sugarcane, wheat, nuts and fruit like mangoes, pawpaw and bananas (FAO/WFP 2008)

2.5.3 Agricultural Trade Potential

Agriculture in South Sudan is still underdeveloped the country especially the Central Equatoria State depends heavily on food imports. About 80 to 90 percent of food in this state is imported. The state of Central Equatoria has a population of 1,103.592 persons (2008 census). The main staple foods in the country are ugali (meal prepared from maize flour and water) and bread.

Local cereal production is very low and the country mainly relies on Uganda and Kenya accounting for 50 and 20 percent respectively and the remaining 30 percent comes from the rest of the world especially from North Sudan and Ethiopia.

Currently vegetable production is picking up which includes traditional vegetables. However, currently the vegetables consumed in juba town are from Uganda and Kenya. The commodities from Uganda mainly include bananas, beans onions wheat flour, cassava roots and flour, maize and maize flour, eggs, Irish potatoes, pawpaw and rice. Kenya mainly supplies tomatoes, Irish potatoes, carrots, mangoes, sweet potatoes. Processed agricultural commodities such as cooking oil, tomatoes sauce and spices are also imported from Kenya. On the other hand commodities such as sugar come from Brazil, rice from Pakistan, apples from South Africa and garlic is mainly from China.

The potential for all the above commodities is quite high and currently there is scarcity for carrots and mangoes. The following factors further increase the potential for trade between Kenya and South Sudan has:

- the population in Central Equatoria is steadily increasing due to citizens returning home from Diaspora especially from North Sudan and Kenya
- Per capita income per person in South Sudan is high.
- Presence of high numbers of foreigners and more continue to arrive in Juba.
- The humanitarian organizations that have been working in Juba before independence as calm returns to the country are reducing their donations and this means that more people have to buy food item.

2.5.4 South Sudan's Sugar Potential

Ideal conditions in northern and central part of country for sugarcane production: flat plains, rich alluvial soils, long sunshine hours, ample water supply natural opportunities and access to regional markets makes South Sudan the region's gateway for sugar. According to the report from Agribusiness Forum, 19th October 2011.Johannesburg, South Africa. Hon Betty Achan Ogwaro Minister of Agriculture, RSS reported that **South Sudan** offers an attractive market for agribusiness with significant imports, high prices and growing demand for sugar. Imports of food and agricultural products for Sudan as a whole exceeded $1.9 billion in 2010 Imports of food

products to South Sudan are estimated at $200-300 million per year. Local prices are inflated due to high import costs The WFP (World Food Program) alone expects to buy 100,000 tons of cereals for South Sudan in 2011 – with preference for local sourcing. Driven by oil revenues, government spending and growth in other sectors, incomes and food consumption are expected to double in the next 5 years.

While vast areas of South Sudan are suitable for sugarcane, two abandoned sites at Melut and Mangala are the priorities for investment.

Melut

- Covered a total area of 20,000 hectares; planned production of 110,000 tons of sugar per year for local market and export
- Abandoned due to the war and equipment taken to the North
- Centre of major oil and agricultural production zone – potential to sell excess power from biogases to oilfields, cereal mills, etc

MANGALA

- Rich alluvial plain at confluence of Nile & tributary
- Feasibility study conducted in 1970s; work started but abandoned during war
- Ugandan group already exploring feasibility
- Only 45km from Juba – large potential market for excess power from biogases.

CHAPTER THREE: PRESENTATION, DATA ANALYSIS AND DISCUSSION

3.1 Chapter Objective

This chapter presents the description of the methodological approach used in collecting and analyzing the data. The following sub-topics are covered in this chapter: research design, area and method of data collection, sampling and data arrangement, research instruments, data collection procedures and data processing and analysis.

3.2 Research Design

The study used quantitative methods in order to understand how customs values affects the quantities of sugar imported and the time series variation graph was constructed. The quantitative study design was most suitable since this study aimed to understand research problem from the perspectives of the secondary data (the emic perspective) (Mac Dougall and Fudge 2001; Sandelowski 1995).

3.3 Area and Methods of Data Collection

Secondary data were collected from department of statistics Nimule-station South Sudan customs service and Ministry of commerce and investment Nimule-station as well.

3.4 Sampling and data arrangement

The only available data for 2013-2014 (17months data) were collected for this study. Quantities in metric tons and customs values corresponding to the sugar were extracted from the statistical report.

3.5 Ethical Considerations

Head Department of statistics and Demography who was my supervisor approved the research proposal. Permission to conduct the study in South Sudan customs Service Nimule-station was obtained from South Sudan customs service headquarter-Juba. Written informed consent was sought before data were collected. Directors for all the concerns ministries were informed that there were no or minimal risks in giving us the data for this study. In addition, before the data were collected, the purpose and objectives of the study were carefully explained to concern authorities. It was emphasized that the data collected from them would be treated with maximum confidentiality. The benefits and potential risks of the study were explained to the authorities.

3.6 Research Instruments and Tools

Data for the hypothesis were analysis using SPSS and manually calculation for seasonal variations and seasonal index were done with the help of micro-soft excel.

3.7 Data Presentation and Analysis

This chapter is concern with the presentation, data analysis and discussion. Secondary data on the quantity of sugar in metric tons imported via Nimule border station and their corresponding customs values in South Sudanese pounds were collected from department of Statistics South Sudan Customs service Nimule-Station. Sample interval between 2013-2014 (data for 17 months) data were collected for analysis to demonstrate fluctuation in the quantity of sugar imported and to examine empirically the relationship between quantity of sugar imported and their corresponding customs value.

Table 3.0 showing the quantity of sugar imported in metric tons and their corresponding customs values in South Sudanese pounds.

Month	Metric ton	Customs Value
January	18368.56	7840985
February	5443.6	4593804
March	12264.7	6883119
April	4111	9153354
May	5661.7	5246604
June	5759.7	11489504
July	5347.57	44505023
August	5347.57	44505023
September	11225.75	5766690
October	3551.7	3270120
November	11969.8	11290732
December	2048.8	1983612
January	3233.1	3993794
February	13821.9	5468028
March	5135.4	5334735
April	4803.5	4205455
May	3403.2	3719335

Source: Statistical data for the volume of trade between the years 2013-2014 South Sudan Customs Service, Nimule Station.

As seen from above, only the quantity of sugar imported in metric tons and their corresponding customs values were extracted from the volume of trade between 2013 and 014 on monthly basis which satisfied the objective of the research.

3.8 Fluctuations or Variations in Volume of Sugar Quantities Imported in Metric Tons

In order to calculate seasonal variations or fluctuations in volume of sugar imported the following steps were taken.

- Tabulation of the original data month by month for all the 2 years
- Computation of the quarter total of the data by adding the total quantities of sugar imported for the 3months and placed it corresponding to the middle month
- Computation of quarterly moving total by dividing the quarterly total by 3 and placed it corresponding to the middle month.
- Calculation of ration to moving averages by expressing the monthly total as a percentage of quarterly total

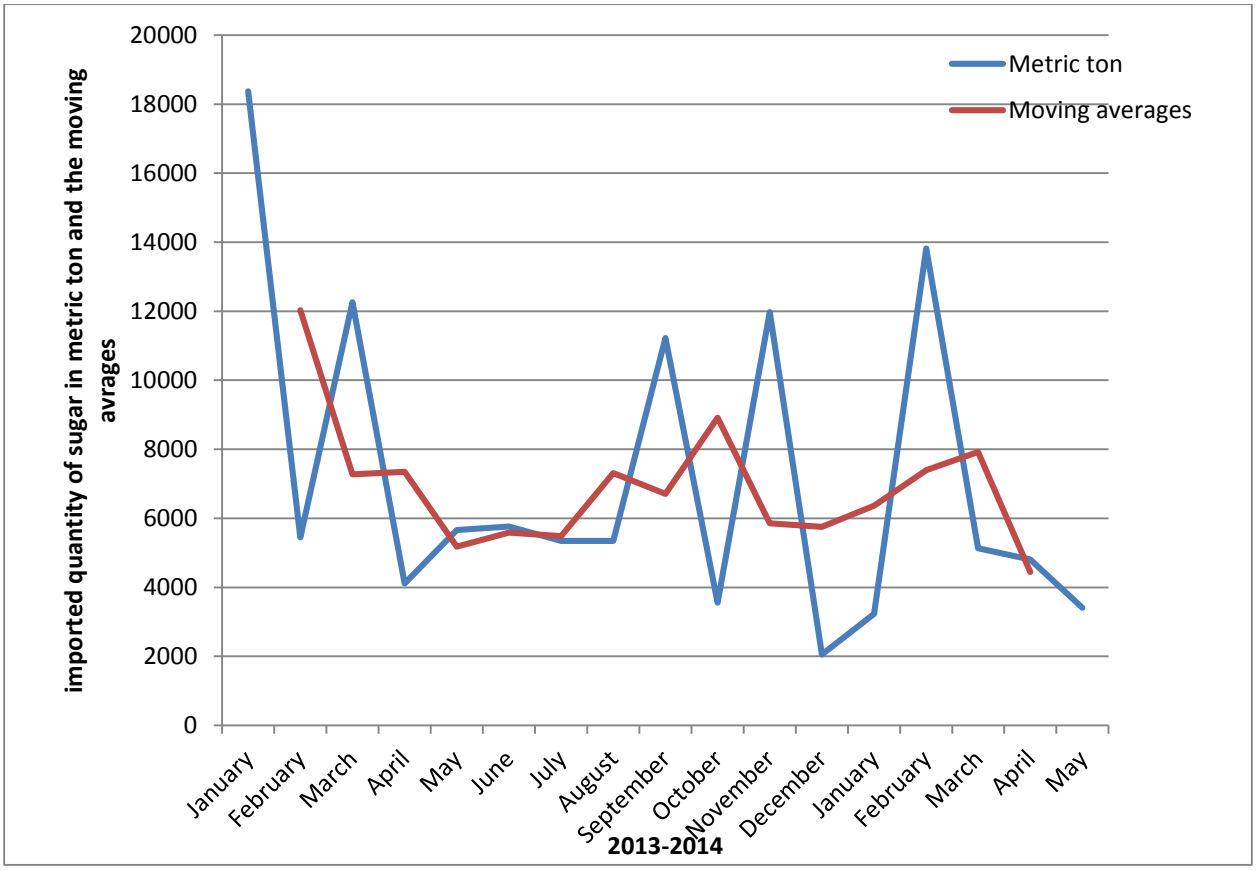
3.1 Table for computation of ratio to moving averages

Month	Metric ton	Quarterly Total	Quarterly Moving Averages	Ratio to moving averages
January	18368.56			
February	5443.6	36076.86	12025.62	45.27
March	12264.7	21819.3	7273.10	168.63
April	4111	22037.4	7345.80	55.96
May	5661.7	15532.4	5177.47	109.35
June	5759.7	16768.97	5589.66	103.04
July	5347.57	16454.84	5484.95	97.50
August	5347.57	21920.89	7306.96	73.18
September	11225.75	20125.02	6708.34	167.34
October	3551.7	26747.25	8915.75	39.84
November	11969.8	17570.3	5856.77	204.38
December	2048.8	17251.7	5750.57	35.63
January	3233.1	19103.8	6367.93	50.77
February	13821.9	22190.4	7396.80	186.86
March	5135.4	23760.8	7920.27	64.84
April	4803.5	13342.1	4447.37	108.01
May	3403.2			

(Source: Computation done by the author with the help of Microsoft Excel)

The ratio to moving averages for all the above months is added and their mean is determined. The mean value for each month becomes the seasonal indices of that month. If the summation all mean not equal to 400, then the mean will be subjected to adjustment and modification if the sum does not add-up to 400.

Figure 3.1 showing the graph of quarterly moving averages and the monthly quantities of sugar imported in metric tons



(Source: Plotted by the author with the help of Microsoft Excel.)

As seen from the graph, total monthly quantities in metric tons have been plotted and joined with the blue line against the quarterly moving total with red line. The quarterly moving total has tried to smooth the trough formed by the actual (monthly quantity of sugar volume imported). As indicated above where quantity imported is higher, the quarterly moving total is down and vice versa. These shows how quarterly moving averages smoothen the seasonal variations.

Also, from the graph, January of 2013 represent the highest month in term of quantities of sugar imported, followed by March of 2014. The least month in term of quantities imported is December

2013, this is because it is Christmas season and most of the business owners take a break to relax with their families.

Generally, the quantities of sugar imported turn to follow certain season, for example during rainy/wet season quantities of sugar imported is low. This is because of nature of our roads, they becomes inaccessible during rainy season and this is evidence from the months of March, April, May, June, July where there are heavy rains. Again during the months of August through January, quantities of sugar imported are higher, this is the dry season and roads are passable, this encourage traders to import more since they are in position to access any market in the country wide.

3.9 Calculation of Seasonal Index for the Quantity of Sugar Imported in Metric Tons

Table 3.2 showing the calculation of seasonal index

Year	**Quarters**				
	1st	2nd	3rd	4th	
2013	45.27	55.96	97.50	39.84	
	168.63	109.35	73.18	204.38	
		103.04	167.34	35.63	
2014	50.77	108.01			
	186.86				
	64.84				
Total	516.37	376.37	338.02	279.84	
Average	103.27	94.09	112.67	93.28	403.32
Seasonal Index	102.42	93.32	111.75	92.51	400.00

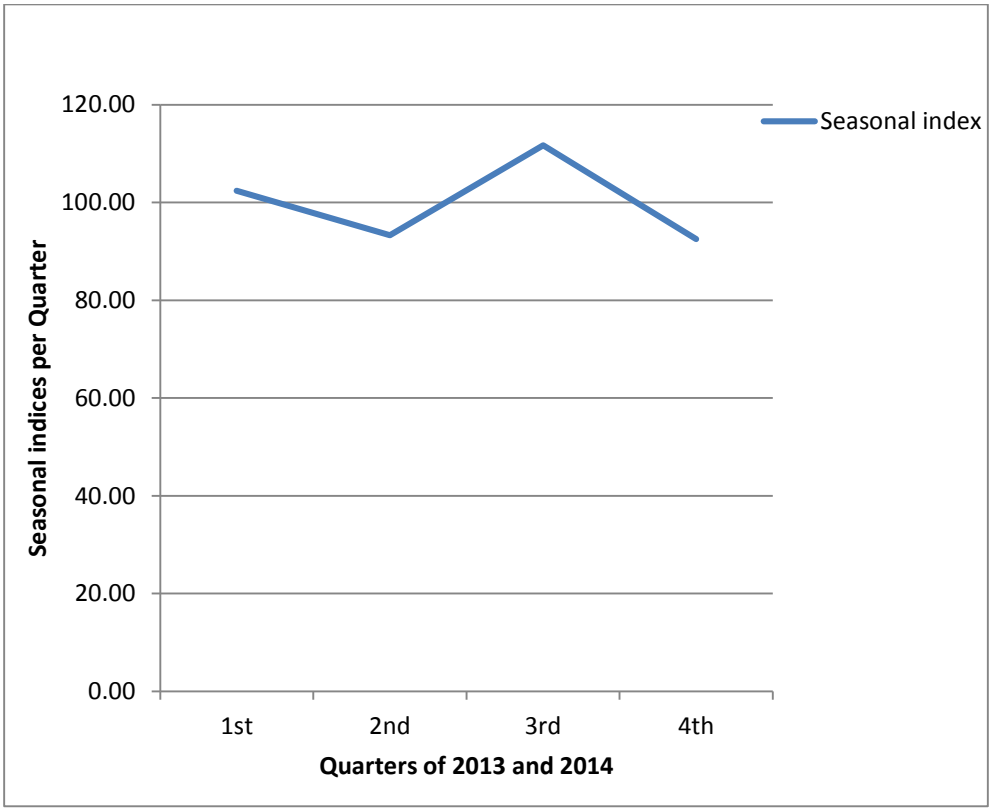
(Source: Computed by the author with the help of Microsoft Excel)

As seen from above, each quarterly total are summed and divide by the corresponding frequencies to give averages. And averages are summed to give averages total.

To get average mean, Average total has been divided by number of quarters 403.32/4 to gives 100.83

Seasonal indices are been calculated by expressing each quarterly average as a percentage of 100.83 as shown above.

Figure 3.2 showing the graph of seasonal indices per quarter against quarters of 2013 and 2014



Source: graph plotted by the author with the help of micro-soft excel

As seen from the graph, the highest quantity of sugar imported is recorded in the third quarters of every year followed by first quarter. The least quantity of sugar imported was in the fourth quarter and second quarter respectively

3.10 Relationship between Customs Value and the Quantities of Sugar Imported in Metric Tons

This relationship is intended to examine whether customs value affect the quantities of sugar imported or not. Thus, this relation is determine from the calculation of the correlation coefficient(**r**)

Determination of correlation coefficient using SPSS.

After identification of variables and their entries into SPSS, we click analyze, regression and then linear from the upper corner of the SPSS table. We shall have a table, one at left hand side containing the variables and the other on the right hand side. Transfer customs values to independent box and sugar quantities into dependent box. Click okay. The regression we entered gives us four tables.

The first table gives us the independent variable which is used to predict the dependent variable.

Table3 .4 Variables Entered/Removed[b]

Variables Entered	Variables Removed	Method
Customs values in South Sudan pounds		Enter

a. All requested variables entered.

b. Dependent Variable: Volume of sugar imported in metric tons

(Source: computation done with the help of SPSS)

The second table gives us the model variable which is the value of correlation coefficient (r) which is equal to 0.111; r = 0.111.

The most important thing is the correlation coefficient squared or r squared which is r^2 = 0.012 translated into percentage gives us 1.2%. That means customs values account for only 1.2% variation in the quantities of sugar imported. So 98.8% of variations are explained by other factors. Customs values don't really explained a lot.

Table 3.5 Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.111[a]	.012	-.054	4790.42140

a. Predictors: (Constant), Customs values in South Sudan pounds

(Source: Computation done with the help of SPSS)

Moving down is another table, ANOVA table doesn't really have any effect to this analysis however only knowing the significant level which is 0.672 which is greater that our level of

significant 0.05. Sum of squares for both regression and residual are shown in the table and mean square errors are also shown in the table for both respective regression and residual.

Table 3.6 ANOVA[b]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	4277577.886	1	4277577.886	.186	.672[a]
	Residual	3.442E8	15	2.295E7		
	Total	3.485E8	16			

a. Predictors: (Constant), Customs values in South Sudan pounds

b. Dependent Variable: Volume of sugar imported in metric tons

(Source: Computation done with the help of SPSS)

Next is the coefficient table which is the most important table.

Table 3.7 Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	8291.225	1549.626		5.350	.000
	Customs values in South Sudan pounds	-4.018E-5	.000	-.111	-.432	.672

a. Dependent Variable: Volume of sugar imported in metric tons

(Source: Computation done by the author with the help of SPSS)

A constant or the intercept or A in the regression equation which is equal to 8291.225 in the coefficient table, that tells us when the customs value is Zero, sugar quantity imported equals to 8291.225 metric tons. This makes sense when we are trying to predict. Moving down to the

customs values, how customs value affects the quantities of sugar imported. -4.018E-5 is the slope or rise of the run for each unit of customs values increase meaning that any reduction in each unit of customs values will results into a reduction of -4.018E-5 in the quantity of sugar imported.

TESTING OF HYPOTHESIS

From the upper end of the table is significant level which is **0.672** which is the same as the value of ANOVA. Since P(our significant) level is greater than **0.05** our α level, therefore we accept or retain the null hypothesis that there is no support relationship between the customs values and the quantities of sugar imported meaning customs values does not statistical support quantities of sugar imported. This can also be elaborated further from the r^2 = 0.12 which is translated to percentage as 1.2% accounting for the variations in quantities of sugar imported which is not statistically significant value.

Construction of regression equation concerning the null hypothesis.

Regression equation regarding the null hypothesis:

- Ho: There is no supported relationship between the customs values and the quantities of sugar imported in metric tons(b=0)
- **Y = a + b*x**
  Where **a** is the intercept or constant
  B is the slope
  X is the independent variable (Customs values in South Sudanese pounds)
  Y is the dependent variable (quantities of sugar imported in metric tons)

  Y = 8291.225 - 4.018E-5x. The use of this regression is to predict for example, what will be the quantities of sugar imported if customs value is **254600** SSP?

  Y=8291.225-4.018E-5*254600

  Y = 8280.9952
  The quantity of sugar to be imported when the customs value is **254600** is predicted to be about **8280.9952** metric tons.

ALTERNATIVELY OR MANUAL CALCULATIONS

Table3.8; layout for regression/correlation analysis for the quantities of sugar imported in metric tons and customs values

Month	Metric ton (X)	Customs Value	Y	XY	X2	Y2
January	18368.56	7840985	78.40985	1440276	337403996	6148.105
February	5443.6	4593804	45.93804	250068.3	29632781	2110.304
March	12264.7	6883119	68.83119	844193.9	150422866	4737.733
April	4111	9153354	91.53354	376294.4	16900321	8378.389
May	5661.7	5246604	52.46604	297047	32054847	2752.685
June	5759.7	11489508	114.89508	661761.2	33174144	13200.88
July	5347.57	44505023	445.05023	2379937	28596505	198069.7
August	5347.57	44505023	445.05023	2379937	28596505	198069.7
September	11225.75	5766690	57.6669	647354.2	126017463	3325.471
October	3551.7	3270120	32.7012	116144.9	12614573	1069.368
November	11969.8	11290732	112.90732	1351478	143276112	12748.06
December	2048.8	1983612	19.83612	40640.24	4197581.4	393.4717
January	3233.1	3993794	39.93794	129123.4	10452936	1595.039
February	13821.9	5468028	54.68028	755785.4	191044920	2989.933
March	5135.4	5334735	53.34735	273960	26372333	2845.94
April	4803.5	4205455	42.05455	202009	23073612	1768.585
May	3403.2	3719335	37.19335	126576.4	11581770	1383.345
Total	**121497.55**		**1792.49921**	**12272587**	**1.205E+09**	**3213053**

(Source: computation done by author with the help of Microsoft Excel as a toll)

$$r = \frac{n\sum XY-(\sum X)(\sum Y)}{\sqrt{(n\sum X2-(\sum X)2)(n(\sum y2-(\sum y)2)}}$$

$$= \frac{17(12272587)-(121497.55)(1792.49921)}{\sqrt{17(1.205E+09)-(121497.55)2(17(3213053)-(1792.49921)2}}$$

r = 0.1114

This correlation coefficient (r) tells us that there is a positive weak relationship between customs values and the quantities of sugar imported. In order to know what percentage does this relationship represents we need to know the coefficient of determination which is same as correlation coefficient squared and translates into percentage.

r^2 = 0.12 which is translated into percentage as 1.2%. This means that variations in the quantities of sugar imported is explained by only 1.2% and other factors represents 98.8%

3.12 Major Importing Sugar Companies and their Respective Quantities in Metric Tons

NAMES OF COMPANIES	**Country of origin/Export**	**Authored quantity in metric tons**	Percentage
Dima Gaka Trading Co. LTD	Brazil	1000	3.57
Ropani International LTD	Brazil	2000	7.14
Fortune General Trading	Netherland	2000	7.14
Temaniku Enterprise LTD	India	2000	7.14
Lo-Mariyata for trading and investment	India	500	1.79
M-V-D International LTD	Brazil	500	1.79
Avis International LLC	Netherland	500	1.79
Kaafi General Trading LTD	Brazil	1500	5.36
Kush International trading and Investment LTD	Brazil	500	1.79
Skyline Constructing co- LTD	India	1000	3.57
The Twins co-LTD	Netherland	2000	7.14
Rekamou International	India	2000	7.14
Mkal Co- LTD	Netherland	1000	3.57

New Sudan Hotel and Apartment LTD	India	2000	7.14
Tusma General Trading Co- LTD	Brazil	1500	5.36
Deborah General trading Co-LTD	Brazil	1000	3.57
Marwa General Trading Co-LTD	India	500	1.79
Daryeel General Trading Co- LTD	Brazil	2000	7.14
LTG General Trading LTD	Brazil	1000	3.57
JIT Beverages limited	India	2000	7.14
muse-AF Co-LTD	Brazil	500	1.79
Braliaw Hotel LTD	India	500	1.79
Lodiani General Trading Co-	Brazil	500	1.79
Total		28000	100.00

(Source: Ministry of Commerce and Investment, Nimule Station. Complied by the author)

From the table, Ropani international LTD, Fortune General trading, Temaninku Enterprises LTD, The Twins Company LTD are among the highest importers of sugar to South Sudan representing about 57.14% of the total quantities imported, while Tusma General trading company LTD, Deborah General trading LTD represents the medium importer with about 28.57% and the lowest are Muse-AF company, M-V-D international LTD and among others representing about 14.29%

3.13 Limitations of the Study

- Absent of data from the South Sudan Customs Service General Headquarter-Juba forced me to travel to Nimule which was costly and time consuming.
- Since this data were from one station (Nimule-station) and for only 17months, this result cannot be used for the generalization of the whole behaviors of quantities of sugar imported to South Sudan.
- Poor altitude towards the importance of research from concerned authorities made me to move from office to office explaining to them why I need the data and their importance to the objectives of my research
- Poor organization of data and un-typed data especially from the ministry of commerce cost me a lot of time in sorting and critical observation of data figures
- Shortage of fund to run printing was a major constraint faced

CHAPTER FOUR: SUMMARY OF THE FINDINGS, CONCLUSION AND RECOMMENDATIONS

4.1 Summary of the Findings

The study investigated significantly how customs value affects the quantity of sugar imported and how some underlining factors contributed to the fluctuating volume of sugar imported to South Sudan via Nimule station. Several factors emerged accounting for the variations in the volume of sugar imports representing 98.8% while customs value account for only 1.2%. These factors included sugar prices in the market, fluctuations in the exchange rate, poor nature of infrastructures especially roads, consumers demand towards sugar, presents of sugar substitutes. Also, this study identified the major sugar importing countries such as Ropani International LTD, Fortune General Trading, Temaniku Enterprises LTD, Rekamon International, The Twins Company LTD and among others accounts for about 57.14% of the total quantities of sugar imported in metric tons. The least companies in term of quantities imported are: Lo- Mariyata for trading, MVD International LTD, and among others accounting for about 14.29% and medium companies represents the remaining percentages.

4.2 Results on Relationship between Customs Value and Quantities of Sugar Imported

From the SPSS output table, it was found that P- value was greater that our significant level of 0.05% meaning we have to accept our null hypothesis which states that there is no significant evidence to support the relationship between the customs values and the quantities of sugar imported in metric tons.

From SPSS output as well, it was found that there is a positive weak correlation between customs values and the quantities of sugar imported evidenced by correlation coefficient (r) = 0.111 which is positive but weak. Also, p-value is greater than our 0.05% level of significant thus we failed to reject the null hypothesis and concludes that we do not have enough significant evident to support that there is statistical correlation between the customs value and the quantities of sugar imported because there is no significant correlation between customs value and quantities of sugar imported.

Model summary gives us the correlation coefficient(r) is 0.111 and the most important thing which is correlation coefficient square is 0.0123 which is translated in percentages as 1.2% that means customs values accounts for only 1.2% of variations in the quantities of sugar imported. So 98.8% of the variations are explained by other factors. So customs values do not really explained a lot in the fluctuations of sugar volume or quantities of sugar imported.

4.3 Other factors from Economic and Social Points of View

4.3.1 Citizen Income Level

Economic development and per capita income level are the main factors influencing sugar consumption demand, according to the statistics of international sugar organization, the annual per capita sugar consumption in middle to low income countries is 27.3 kg with per capita GNP within 726 - 2895 USD, that in middle to high countries with per capita GNP within 2 896 - 8 955 USD is 41.0 kg. Therefore, Sugar consumption demand in South Sudan in the coming period will be increasing stage due the rapid changes of resident consumption of sugar structure leads to the increase of individual consumption of sugar. With the continuous income increase of urban and rural residents, especially the farmers, the rural labors force transfer and the urbanization process. Sugar consumption will increase dramatically and further promotes the development of sugar imports industry.

4.3.2 Consumption demand of Sugar

Since the reform and opening up, with the improvement of people's living standard and the adjustment of diet structure, saccharin as well as other chemical synthesized high sweeteners has been restricted, and the consumption of sugar has increased greatly, Before the year 2003, the annual sugar consumption was about 800×10^4 t, occupying 6.2% of the total world sugar consumption. In the year 2013 and 2014, the sugar consumption in South Sudan is has increased greatly, this is evident from the data analyzed. With the increase of sugar consumption year by year and the relative limitation of domestic sugar industries to offers another alternatives, the trend of demand exceeding supply of sugar would be irreversible.

4.3.3 Price Level of Sugar

Theoretically, under a perfect market, the changes of sugar prices are determined by the relation between supply and demand. Keeping other parameters constant, the rise of domestic price reduces the demand, thus import decreases, the fall of price promotes the demand, and the import increases. However, only the fluctuation of domestic and the international market prices cannot fully explain how it impacts sugar imports in South Sudan, and comparison between the domestics and international market prices can fully explain this problem. The increase of ratio to domestic market price to international market price promotes the rise of sugar import in South Sudan. The decrease of the ratio promotes the reduction of import.

4.3.4 Substitution Consumer Goods

The substitutions of sugar are mainly saccharin and starch sugar as known as sugarcane. The presence of sugar substitutes, the lower the quantities of sugar imported and the opposite is true. Without the substitution of starch sugar, sugar consumption can reach higher. Therefore, the usage situation of starch sugar will become an important factor influencing the increase of sugar consumption. Furthermore, will influence the import of sugar.

4.3.5 Fluctuation of Exchange Rate

The reaction degree of domestic sugar market to South Sudanese pounds exchange rate is fixed according to its ratio of import to consumption. The more the import volume, the greater impact

on domestic sugar market, and vice versa. With the improvement of people's living standard in South Sudan, the consumption demand on sugar will increase and the supply-demand gap will become larger. In the long term with South Sudanese pounds appreciation, people's ability to buy will be enhanced and the import volume will be more, thus it brings along the rise of international commodity price. Meanwhile, the rise of international commodity price will make the domestic commodity price close up to international commodity price. Finally, the domestic commodity price increase. Therefore, variation of South Sudanese pounds exchange rate will have great impact on sugar import in South Sudan.

4.3.6 Poor Infrastructural Network

Poor road network especially, within the country hinders the quick distribution of sugar to various states, counties and Payams timely such that it will allows room for more importation. This was one of the reasons raised by a member of skyline constructing and trading company. "Poor roads hindered our access to far states and this has reduced our sales"

4.3.7 Insecurity

Presence of insecurity especially in greater Upper region has reduced the quantities of sugar imported. With the presence of insecurities, such areas are inaccessible and this has reduced the quantities of sugar supposed to have reached and increase the export. Also, it has scared most of the foreign sugar importing companies from importation of sugar to the country.

4.4 Sugar Importing Companies

4.4.1 Major sugar importing companies

From ministry of commerce and investment Nimule border station, it was found that below are the major sugar importing companies;

1- Ropani International LTD
2- Fortune General trading
3- Temaniku Enterprises LTD
4- The Twins Company LTD
5- Rekamou International
6- New Sudan Hotel and Apartment LTD
7- Daryeel General Trading Company LTD
8- JIT Beverages trading LTD

Also the above eight companies account for about 57.14% of the total quantities of sugar imported to South Sudan via Nimule.

4.4.2 Middle sugar importing Companies

Below companies account for the average quantities of sugar imported representing about 28.57% of the total quantities of sugar imported to South Sudan via Nimule-station.

1- Dima Gaka Trading Company LTD
2- Kaafi General Trading LTD
3- Skyline Constructing Company LTD
4- Mkal company LTD
5- Tusma General Trading company LTD
6- Deborah General Trading company LTD
7- L.T.G General trading LTD

4.4.3 Least sugar importing companies

Below is the least sugar importing companies representing about 14.29% of the total quantities of sugar imported as per the data given and their authored quantities from the ministry of commerce and investment Nimule-station.

1- Lo-Mariyata for trading and investment company LTD
2- M-V-D International LTD
3- Avis International LLC
4- Kush International trade and investment LTD
5- Marwa General trading company LTD
6- Muse-AF company LTD
7- Barliaw Hotel LTD
8- Lodiani General trading company LTD

4.5 Major exporting countries/suppliers of sugar to South Sudan companies

Most of above companies imports their sugar quantities from Brazil, India, Netherland, where Brazil accounts for the largest suppliers of sugar to South Sudan followed by India and Netherland in third.

4.5 Conclusion

The objective of this study was to understand, interpret, draw trend and identify the macro-economic factors that influence the quantities of sugar imported in South Sudan. quantities of sugar imported in South Sudan is fluctuating with January recording the highest in term of quantities imported and December of 2013 with the least respectively. These variations are caused

by number of factors such as citizen income level, insecurity in Greater Upper Nile regions, Sugar prices in the market, poor road network, consumption demand of sugar, fluctuation of foreign exchange rate which represents about 98.8% and to a small extent customs values also known as tariffs which represents only 1.2%.

The empirical section was based on the analysis of time series data within the year 2013-2014, correlations between the variables were quantified with the utilization of regression analysis; specifically a linear regression model with the help of SPSS and regression equation was drawn. Thus, the results are valid in accordance to the assumption of such dependency.

List of major and minor importing companies were extracted from the ministry of commerce, Nimule station. And it was found out that major companies represents about 57.14% and medium companies' represents 28.57% and minor companies represents 14.29% of the total authored quantities of sugar to be imported. It was also found out that Brazil is the major supplier of sugar to South Sudanese companies, followed by India and Netherland.

In conclusion, it can be said that the main suppositions of the quantities of sugar imported by various named companies above, that is from economic standpoint and the anticipated effect of the main determinant on the examined variable was established. Nevertheless, the effect of some factors which undoubtedly affect the quantities of sugar imported proved to be the major when compared to customs values, or insignificant from statistical standpoint.

4.6 Recommendations

A number of recommendations can be drawn from this study.

There is need of maintaining peace and stability in South Sudan, this will results in stability in the quantities of sugar imported because this stability will attracts investors who will invest in the vast areas of South Sudan such as abundant suitable sugarcane sites of Melut and Mangala. These areas are rich in alluvial plain soil at confluence of Nile and tributary. Ugandan group are already exploring the feasibility and if war stops than there are chances of sugar factories coming up and hence reduction in sugar deficiencies.

Also, there is need of government support in providing protection to sugar companies in term of making possible access to foreign currencies and this was a major cause of variations.

There is need of Improvement in the infrastructural sector such as roads. This will facilitate transportation of sugar across all the ten states and this will results into increase in consumption and hence increase in quantities of sugar imported.

There is need to attract more investors especially in sugar industry, this can be done by developing appropriate investment policies that can attracts foreign investors to the industry. Putting that in place will helps reduce dependency on import.

There is need for government to stabilize prices; the high prices of sugar in the market discourage consumption and thus low demand for sugar. Consumers resorted to sugar substitutes and if price are stabilize, there will be high demand and hence increase in the quantities of sugar imported.

4.7 Proposed areas for further research

Since this was from only one station or entry point, there is need to research extensively for all the entrance points/stations such that a comprehensive conclusions regarding the quantities of sugar imported is known.

Also, there is need to research on other factors that affect/cause variations in the quantities of sugar imported such as relationship of sugar prices and the quantities imported.

Also, there is need to have a trend record/Large number of data for up to 10 years, in order to gives a clear overview about the behaviour of quantities of sugar imported and enable in predicting for 5years to come in future.

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