

**FACTORS INFLUENCING CASHEW NUT EXPORTS IN
TANZANIA**

BY

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DECLARATION

Declaration by the Student

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DEDICATION

To my late Daddy, who I miss so much

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ACRONYMS AND ABBREVIATIONS

BOT	Bank of Tanzania
CBT	Cashew nuts Board of Tanzania
NBS	National Bureau of Statistics
WTO	World Trade Organization
RCUs	Regional Co-operative Unions
CI	Cashew nuts Industry
CATA	Cashew Authority of Tanzania
SRBC	Southern Regions Cashew nut Board
TCMB	Tanzania Cashew nuts Marketing Board

ABSTRACT

The demand for cashew nuts worldwide is high. However, Tanzania as one of the formerly world's cashew nuts largest producer in 1970s, has its export supply fluctuating since its largest exports in 1970s. Though the prices have been increasing as from 2006, the marketed output of cashew nuts kept fluctuating and even declining in some years. This is an indication that output is declining despite increase in prices, which is in complete contrast with the role played by the price in influencing supply. This research analyzed factors influencing cashew nuts exports in Tanzania. The study analyzed the influence of cashew nuts produce on export volumes, the impact of real exchange rate on export volumes, and the impact of relative prices on cashew nuts export volumes. The study was based on Tanzania as the economy. Secondary data was obtained from various publications such as National Bureau of Statistics (NBS), Bank of Tanzania (BOT), and Cashew nuts Board of Tanzania (CBT). Quantitative data on quantity produced, export volumes, relative prices and real exchange rate was collected from year 1980 to year 2012. Regression analysis on export supply model was done using STATA version 12. Empirical results indicated that quantity produced and relative prices influenced cashew nuts export. However, real exchange rate had no impact on export volumes. Therefore, policies on trade and prices need to be considered. This study recommends the revival of local processing industries for both employment and more revenue as 99 percent of what is produced is exported unprocessed. Also cooperative unions should seek markets both locally and internationally so as to pursue a better price.

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CHAPTER ONE: INTRODUCTION

1.0 Overview of Chapter One

This chapter outlines the background to the study, statement of the problem, objectives and hypotheses of the study, scope and significance of the study.

1.1 Background to the Study

Agriculture is the backbone of the economy in most of the third world countries. It provides the economy with revenue, employment and foreign exchange through exportation. Cashew nut is one of the leading cash crops in Tanzania providing revenue and income to farmers. Almost 98% of the production is done under small-scale farming. Tanzania export more than 90% of her cashew nut output to India in raw form and only a small part of national production is consumed locally after processing by traditional methods. This dates back to early 1960's and 1970's when Tanzania did not have any local processing factories hence provides the nation with the average contribution of 4% to the total earnings of foreign exchange of the country. The product is among the top four and together with other agricultural products such as coffee, tea, tobacco, accounts for 26 per cent share of GDP at current 2010 prices, together with forestry and hunting (National Bureau of Statistics, NBS, 2011).

Tanzania was the fourth biggest global producer of cashew nuts worldwide in 2002 producing 92,000 tons (Eskola, 2005). The current production is around 74,000 tons compared to 1970s when production was 140,000 tons (NBS, 2011). The performance of cashew nuts exportation has been fluctuating due to a number of reasons such as poor quality and decrease in production. However, the government of Tanzania is

currently undergoing major reforms in a bid to attain economic and social development such as financing all the operations of the crop board through subvention.

1.2 Evolution of the Cashew Nut Industry

The cashew tree originates from the north-eastern part of Brazil. It was introduced to East Africa by Portuguese sea men in the 16th century. Other countries that grow cashew nuts today include India, Brazil, Mozambique and Nigeria. The crop can grow even in infertile soils but it does well in drained red clay loamy and light coastal sandy soils. Soils with pH more than 8 are suitable for cashew cultivation. That probably explains why the crop has done better along the coast than in deep inland areas. In Tanzania among other regions, Mtwara, Lindi, Ruvuma and coastal regions produce the lion's share of the crop.

Up to 1962, the procurement and marketing of cashew was carried out by individual private merchants acting as middlemen between producers and Indian buyers. Prices varied widely from place to place and from season to season (Ellis, 1980). From the year 1962 onwards, Tanzania embarked on an aggressive programme of forming rural cooperatives and farmer associations to represent farmers in negotiations with buyer. In 1962, the Southern Region Cashew nut Board (SRCB) was set up to carry out marketing of cashew nuts. The SRCB sold cashew nuts to exporters through auctions; the farmers were paid according to the price of the last auction. This marketing system was efficient and each farmer was paid a price determined by the forces of the market.

In 1963 National Agriculture Products Board (NAPB) replaced the SRCB, again the primary cooperative societies procured cashew nuts from farmers and sold them to Regional Cooperative Unions (RCUs) until 1974 when Cashew Nuts Authority of Tanzania (CATA) replaced NAPB. CATA was the controller, promoter, procurer, exporter and advisor of the government on Cashew nut Industry. Tanzania Cashew nut Marketing Board (TCMB) replaced CATA in 1984, again the system of procurement of cashew nut through the RCUs and primary village societies continued unabated and TCMB bought cashew nuts from RCUs. At this period cashew nuts were exported in raw as all the factories had been closed due to lack of sufficient raw materials to process among other reasons.

In 1993 the Cashew nut Board of Tanzania (CBT) replaced TCMB and assumed regulatory role of all the activities in Cashew nut Industry. The government thus stopped its control on the prices and liberalized the procurement and export of cashew nut. The CBT is given the mandate and powers to develop, promote and regulate the Cashew nut Industry in Tanzania.

In 2007, CBT set goals aimed at achieving a production of 180,000 tons of cashew nuts by 2010 through the objectives implemented to take action in three years from 2007/08 to 2009/10 but up to 2009/10 the production was 74,000 tons that was almost 100,000 tons below the target (NBS, 2011). Usually producers sell to primary cooperatives which collect the nuts on behalf of the buyers and administer a levy issued by the district council. The agents will then negotiate the final price and transport. Main exporters claim and transport the goods to customers. The CBT set indicative price. The price negotiations are based on current price at the kernel market

and price of raw cashews in other producing countries. The CBT also collects a 3 percent levy on the fob value of export (Mitchell, 2004). Export is dominated by small number of large- scale actors (Eskola, 2005). Cashew nut is usually sold unprocessed to India.

1.3 Statement of the Problem

Over 500,000 Tanzanians engage in small-scale cashew nut farming. One survey (Jaffee, 1995) found that cashews accounted for more than three-quarters of total cash incomes of farmers of Lindi, Mtwara and Ruvuma districts. In mid 1970s Tanzania and Mozambique were the main global producers of cashew nuts. Tanzania alone could produce 145,000 metric tons of raw nuts in 1974 but since then the high yield story has not repeated. Cashew production made a remarkable recovery since the near collapse of the 1980s. Marketed production rose to 121,207 tons in 1999/00, from a low of 29,868 tons in 1990/91. Export earnings from raw cashew nuts rose from less than \$4 million in 1990 to \$107 million in 1998. This recovery has been credited to the economic reforms begun in 1986, however again in recent years export figures have not been stable decreasing to as low as \$ 13.2 mil in 2007 (NBS, 2011).

Tanzania applies an export tax on raw cashew nuts (WTO, 2007). Taxes are collected on gross sales. However, this tax was high and likely to affect the amount of exports as it affects the export prices, hence in March 2005, a Memorandum of Understanding was signed between the Prime Minister's Office and export sector to reduce taxes. However, still a number of several local council levies are still collected on cashew nut sales, but the good news is the levies are channeled to various development funds (Eskola, 2005).

Cashew nut in Tanzania as an export, contributes to about 1.5% on total export goods sales. This shows how important cashew is in export sector; hence its performance ought to be made higher.

The value of cashew nut exports was \$71.5million in 2009. This was due to increase in volume of export from 55,000 tons in 2008 tons to 99,300 tons in 2009. The average price of cashews however had gone down to USD 720 per ton in 2009 due to the impact of the financial crisis experienced in that period (URT, 2009).

The table 1.1 below provides information on cashew nuts export trends in terms of values, quantity and price for period 2001-2010.

Table 1. 1: Export Values (millions of US \$) for period 2001-2009.

Year	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Value	72.6	58.0	98.5	66.6	63.0	39.4	25.2	40.16	71.5	47.3
Volume (tons)	121,000	64,400	82,050	76,600	70,000	66,000	41,300	55,000	99,300	63,000
Price (US\$/ton)	600	900	1200	870	900	594	621	730	720	750

Source: National Bureau of Statistics (NBS)– Tanzania (2010)

Though the prices have been increasing as from 2006, the marketed output of cashew nuts kept fluctuating and even declining in some years. This is an indication that output is declining despite increase in prices, which is in complete contrast with the role played by the price in influencing supply. An increase in cashew nuts export price ought to result in an increase in exported cashew nuts output unless there are other reasons that prevent cashew nut production/supply to increase in response to increasing produce prices. The reasons why supply of export market is not increasing due to increase in export price need to be determined. Though there is a lot of literature on cashew nut production and exports in Tanzania still there are no studies done to explain the decrease in cashew nut export volumes even with the rising export prices. The purpose of this study therefore was to find out factors that condition a country's export and see how they affect cashew nut exports in Tanzania. This study therefore aimed at analyzing the factors postulated to affect exportation of cashew nut in Tanzania.

1.4 Objectives of the study

The general objective of this research was to determine and analyze the main factors affecting cashew nut exports in Tanzania.

The specific objectives were;

- (i) To analyze the influence of quantity produced on export supply
- (ii) To analyze the relationship between exchange rate fluctuation and cashew nut exports in Tanzania.
- (iii) To assess the effect of relative prices on exportation of cashew nut in Tanzania.

1.5 Hypotheses

H₀₁: Quantity produced has no effect on Cashew nut export supply.

H₀₂: Exchange rate has no influence on Cashew nuts export volumes in Tanzania.

H₀₃: Relative price factor has no effect on cashew nut export volumes in Tanzania.

1.6 The Scope of the Study

The study covered Tanzania Cashew nuts exports in relation to the exchange rate, production, and prices from the year 1980 to 2012 and used secondary data from CBT, BOT, TNBS and other publications. Many factors are believed to affect export volume. In this study only three factors were considered. These were amount of cashew nuts produced locally, exchange rate and export prices of cashew nuts. Only secondary data was used. The data was only for the period between 1980 and 2012.

1.7 Significance of the Study

The findings of the research are useful to CBT and policy makers. The information on the factors influencing the performance of cashew nuts export in Tanzania will assist them in making cashew nut production and export promotion decisions in Tanzania and hence expand the industry. Furthermore, decision makers can base their decisions and actions on concrete knowledge from the economic analysis and findings from the research, rather than merely base on what farmers or exporters present. The study can also contribute to the existing literatures on cashew nut exportation and on Tanzania exports in general. The study can also contribute to the existing literature by explaining the influence of different variables on agricultural exports in Tanzania.

CHAPTER TWO: LITERATURE REVIEW

2.0 Overview

This chapter presents review of studies that other scholars have done concerning the recent developments in cashew nuts exportation sector and other studies related to the study topic. As Zina (2007) said, “research may be done alone, but it is never done in isolation”. The production of new knowledge is fundamentally dependent on past knowledge.

2.1 Historical Review of Cashew Nut Production and Export Performance

Cashew nut is a native crop of the coastal area of Brazil. Over a number of years, cashew nut has become naturalized in many tropical countries throughout the world including Tanzania. The crop is considered to be the third or fourth greatest commercial nut (by mass) in the world according to the ratings made by the United Nations Food and Agricultural Organization (1993). It is believed that, Asiatic and African zones account for almost 68% of global production amounting to about 1.256 million tons of raw cashews, of which 0.333 million tons, that is 27%, take place in kernel trade, 0.246 million tons take place in raw nuts trade and 0.72 million tons, almost 68% is for local consumption.

During the period after 1975, there was a decline in the world production of cashew nuts mainly due to political instability in some African producing countries, socioeconomic problems and the impact of fungal diseases in the major African producers of cashew nuts. Except for Brazil and Vietnam, world production of cashew nuts comes from small holders owning small farms of between two and two and half hectares. Brazil relies on larger cashew nut plantations some of which are highly

mechanized. Vietnam has a mixture of small holders and large state owned farms (Sijaona, 2002).

Although the crop has great economic importance to producing countries, it usually receives inadequate attention from economic planners in most countries due to lack of awareness of its economic and biological potentials. Countries like Vietnam, put financial resource and more attention to the crop are fast growing and enjoy the economies of scale through increasing production of cashew nuts (Eskola, 2005).

Although Brazil has a market advantage over India in terms of her closer proximity to USA, which is the major world market of kernels, India beat this competition using her advantage as more cost effective and large volume processor in the world. A more serious marketing threat to India is Vietnam whose emerging cashew nut industry is deliberately subsidized by the state in order to promote foreign exchange earnings (Guledgudda, 2005).

India is the largest producer, processor, exporter of cashews in the world. In year 2002/2003, India could produce almost 26% of the world output and export 46.09% of the world cashew nut exports. The total area for cashews plantation accounts to 16.95 percent of total area under plantation crop which stood the second place from coconut. Export earnings rose from Rs. 749 crores in 1992/93 to Rs. 1811 crores in 2003/04. Even though India produces cashew nuts, it is a major importer of cashew nuts as it does not produce enough to meet her nut requirements (Nasurudeen, 2004).

Furthermore, Nasurudeen (2004), in his study on major problems of agriculture export in India, identified that high tariffs, labeling requirements, exchange rate and inadequate surplus are some of the major constraints of cashews exportation in India. This means, if India rely on modern technology it could probably increase productivity while improving ways to overcome other constraints.

Guledgudda (2005) in his study on production and export performance in India, found out that, even if India could double its production, still there would be no marketing problems or price fall, this is because what India produce internally does not sustain her needs. Hence suitable action should be taken to increase domestic production of raw cashews through developing high yield varieties and infrastructures for post harvest operations. The same can be done to Tanzania where demand for cashew nuts is still high. Emphasize on production, to increase export volumes should be made.

In the beginning of 1980s cultivation of cashew nut trees in Nigeria aimed at erosion control because of the massive erosion problem in the Country. The realization of cashew nuts as a potential revenue- earning commodity compelled the defunct Eastern and Western Nigeria governments to start commercial plantations in most towns in these regions (Ezeagu, 2003).

Export of cashew nuts from Nigeria has been fluctuating widely, falling from 14, 325 tons (US\$ 4.0 billion) in 1990, to 12,580 tons in 1991. The highest exports were recorded in 1995, when 16,938 tons of cashews, amounting to over US\$7.4 billion, were shipped to export markets (NEPC, 2001).

Table 2.1 below provides summary information of the cashew nuts production and export trends for the period 1990-2000.

Table 2. 1: Exports of Cashew Nuts from Nigeria, 1990 – 2000

Year	Quantity (tons)	Value (US\$ billions)	Average unit value (US\$/tons)
1990	14325	4.0	280.6
1991	12580	4.46	354.4
1992	12110	5.20	429.6
1993	13234	6.69	528.2
1994	12307	2.82	229.0
1995	16938	7.42	438.3
1996	12388	n.a	n.a
1997	530	0.2	370.3
1998	13640	n.a	n.a
1999	13136	3.14	259.4
2000	15000	7.02	467.7

Source: Federal Office of Statistics and the Nigerian Export Promotion Council

(Nigeria, 2001)

n.a - not available

Ezeagu (2003) study on the assessment of the situation and development for cashew nuts sector in Nigeria, revealed that, excess levies is a great issue in export marketing. Although exports were not taxed in Nigeria, it was found that inspection agents and commodity associations imposed various levies, and Government agencies charge high service fees, decreasing the price competitiveness of the product.

In 2000/01 producer price declined in Tanzania, while total taxes as a share of producer prices increased substantially since some taxes are specific and not based on cashew prices. These taxes vary from district to district, creating uneven incentives and encourage producers to transport their products to districts that have low taxes to avoid paying the higher taxes (Mitchell, 2004).

Unstable prices of nuts had sent a lot of exporters out of business in the cashew nut trade. For example in Nigeria, in the 1996 season, the price of nuts jumped from \$/ton 400 in March to \$/ton 450 in April. Many exporters made substantial stocks, however, in following period, prices slumped and the unsold stocks were stacked in warehouses. Many exporters who borrowed funds to finance such operations had to sell their personal property to offset such loans. In fact, as a result of this problem, the industry witnessed a lot of high turnover of traders. The result of unstable, in particular low prices is the glut in the supply chain which affects greatly exporters, buying agents and banks (Uzoечи, 2001).

Cashews are important exports for Tanzania and income to small farmers in the southern coastal region. Mitchell (2004), in his study on constraint and challenges in Tanzania Cashew Sector, found out that the cashew industry is not likely to expand or maintain current production if it does not define a more constructive role for the Cashew Board, reverse the decline in export quality, assist farmers with financing of input cost, and avoid price fluctuations.

It is estimated that Tanzania has between forty and fifty million cashew trees most of which were planted in 1960s under Ujamaa villages. Today, probably only between

twenty and twenty five million trees are productive. This is because most of the trees were left behind as farmers moved to new villages. This explains the drastic fall of output after 1973/1974 (CBT, 2007).

Jafee (1995) reported that a combination of problems led to a near collapse of the CI in 1980s. A key problem was the increasing financial difficulties of the cooperative unions and the TCMB. As a result there were large quantities of unsold nuts at the farm or village level at the end of the buying season. The producer's share of the export price fell by up to 25 percent in the 1986/87 season. Cashew factories were operating at a loss and 9 of 12 factories were closed between 1985 and 1990. Local authorities contributed to the problems by preventing shipment between factories which would have facilitated processing.

In 1986 economic reforms on trade liberalization and exchange rate adjustments begun and other sector reforms begun in the mid 1990s, this changed the almost collapsing CI, and hence export then rose from \$4 million in 1990s to \$107million in 1998 as the production rose to 121,207 tons (CBT, 2007). With the reforms there was almost complete switch from cooperatives and government supplying inputs and purchasing cashew nuts to the private sector providing these services. Again with the reforms the producers were paid on time and in cash unlike the delays in the regulated marketing system. The share of f.o.b prices received by farmers rose to 60-65 percent from 40% paid by the Cashew Marketing Board prior to liberalization (GoT, 2000).

The producer price nearly tripled from mid 1980s to mid 1990s due to the devaluation of the exchange rate. However things reversed in 1993 when the real exchange rate appreciated at an average of 1.1 percent a month. Again in 1996/97, farmers were

paid less than they had been paid over the past few years due to high level of taxes imposed by the district authorities and export levies (Sijaona, 2002).

Tanzania has been experiencing fluctuations in export sector. Sijaona (2002) pointed out a number of factors leading to such fluctuations. He claimed that production and harvesting could be a contributing factor in the sense, there is little control to pests and diseases, mostly tradition methods are used which are old fashioned. Also farmers are not motivated in terms of price as the trade policy is subjected to a number of taxes both locally and centrally. Even the farm mechanization is inadequate as farmers are still using hand hoes and machetes.

The market for cashew nuts is segmented in three main levels: raw cashew nuts, processed cashew nuts (kernels), cashew nut by product such as cashew nut shell liquid (CNSL), and; cashew apple juice and wine. Tanzania export most of its crops in raw form and loses revenue found in processing and marketing areas. Yet the concerned institutions have not taken any measures to revive the processing industries, which in revival will bring diversity of benefits.

2.2 Related Literature Review on Exportation Problems

The price of one currency in terms of another is called the exchange rate (Mishkin, 2004). Usually exchange rate affects the economy and our daily lives, because when let's say the Tsh become more valuable relative to foreign currencies, foreign goods become cheaper for Tanzanians and Tanzanian goods become more expensive for foreigners. Again when the Tsh fall in value, foreign goods become more expensive for Tanzanians and Tanzanian goods become cheaper for foreigners.

Desai (2004) in their study on impact of RER on non-oil exports in Azerbaijan suggested that RER had positive impact on non-oil export performance. They went further and found that appreciating RER impede non-oil export growth. Another study by Yusuph (2007) on the relationship between exchange rate and agricultural export in Nigeria from the period 1970 through 2003 revealed that depreciation of exchange rate promoted export of woods. This means that appreciation of RER may be among the factors influencing agriculture exports. In one of Amin studies on influences of Trade and exchange rate policies on agricultural exports in Cameroon from 1971 to 1992, suggested that, the current exchange policy especially on appreciation of the national currency impedes agriculture exports.

In general, agricultural exports are responsive to changes in RER. Real depreciation of Ksh was associated with the improvement in agriculture exports in 1970s. However, in the same study there was a downward trend of export performance in 1980s while the RER was exhibiting an upward trend Kagira (1999). This concludes that RER partly explains the performance of agriculture exports. Hence a call for investing other factors that influence export volumes.

The increase in volumes and value of coffee exports in 2005 were attributed to an increase in production in the country. The increase in production was also attributed to favorable weather conditions and proper use of fertilizers and pesticides. Furthermore, SADC (2007) reported that the volumes and compositions of exports and imports reflected a response to the country's tariff reforms. However, the county's trade is sometimes affected by supply constraints, notably production and poor infrastructure.

In a study on economic analysis of agriculture crops export in Tanzania, Page (2002), explains that level of production, weather conditions and variations in the world market prices are some of the factors explaining the fluctuations in export performance. It is believed that when production increases hence exportation also increase. For the case of Tanzanian cashew nuts, since almost 90% of production is exported hence increased production will increase export *ceteris paribus*.

In 2005, the fall of tea export was affected by the decrease in average world prices and in both decrease in production levels and quality of tea produced (SADC, 2007). Constraints to international trade expansion and growth in Tanzania include: low production capacity, technological related problems, inadequate physical and economic infrastructure, among many other factors. Hence production is an essential factor when it comes to exportation.

2.3 Need for Africa Cashew Nut Processing Plants

Over 90% of Africa's cashew nut is exported unprocessed to India generating a significant financial loss to the African countries. In Mozambique, out of 18 processing plants only 7 are still operating. On the other hand the Continent's main producer of cashew nuts has refurbished only one plant out of the ten set up in 1980s. In West Africa Guinea Bissau, Africa's second largest producer has no processing plant. Nigeria, another cashews producer, only six plants are operating with a capacity of 12,000 tons annually. As a result, Africa which produces over a third of the world production (slightly more than 350,000 tones) export to India has deficit to make up, amounting to over \$50 million (Desai, 2004).

Table 2.2 below provides summary information of processed cashew (kernel) production and export trends for the period 1990-2001.

Table 2. 2: Export of Cashew kernels from Nigeria

Year	Quantity(tons)	Value(US\$)	Average price(US\$/tons)
1990	Na	252375	n.a
1991	Na	285000	n.a
1992	Na	351000	n.a
1998	10	23850	2385
1999	20	63000	3150
2000	100	115000	1150
2001	111	439474	3959.2

Source: Nigerian Export Promotion Council (2001)

Unlike many other nuts the cashew nut has to go through a difficult process before the kernel is free and ready to eat. Tanzania has mainly been exporting the raw nuts however in 2006 at least 20% was processed locally. During the 1960s and 1970s Tanzania invested in large processing plants to produce kernels for export. The investment was made with heavy assistance from World Bank and other donors. But inappropriate strategies resulted in failure to compete in the market for processed kernels. Between 1985 and 1990 cashew factories were operating at a loss as a result, 9 of 12 of the factories had to be closed. Local authorities contributed to the problems by preventing shipment between factories which would have facilitated processing.

Table 2.3 below shows exports of processed Cashew nut (kernels) for the period of two years from 2005/2006 and 2006/2007.

Table 2. 3: Kernels Exportation for the Period 2005/06 and 2006/07

Year	Cartons	Kilos	FOB sales USD	FOB sales Tshs'000
2005/06	71,807	1,628,644.18	6,868,417.65	7,898,680
2006/07	171,275	3,885,838	14,853,892.57	19,140,070

Source: CBT, 2007

2.4 Performance of Traditional Agricultural Cash Crops in Tanzania.

According to SADC (2007), the performance of traditional exports over the period 2001-2006 has been fluctuating. The availability of inputs, poor infrastructure, unstable production and prices, and variable weather conditions were some of the domestic factors which accounted for year to year changes in the volumes and quality of crops consigned for exporting.

Table 2.4 below provides the summary of different traditional cash crop export trend in Tanzania.

Table 2. 4: Value of Tanzania Export by Type of Commodity (US \$m)

Item	2001	2002	2003	2004	2005	2006	Average growth rate(value) %
Coffee	38.9	16.8	32.5	23.9	45.7	31.9	14.2
Cotton	6.9	5.1	18.7	10.4	29.4	37.8	80.9
Sisal	2.9	3.3	3.7	4	4	3.1	2.3
Tea	18.7	16	16	18.5	16.3	18.2	0.2
Tobacco	16.2	23.5	8.2	16.2	17.4	15.6	14.9
Cashew nuts	25.6	6.3	3.7	10.5	4	19.4	78.0
Cloves	0.6	0.2	5.9	5.2	1.4	2.4	554.0
Total traditional	109.8	73.1	88.7	88.7	118.3	127.7	5.8

Source: Bank of Tanzania (2007)

The increase in the volumes and value of coffee in 2005 were attributed to an increase in production in the country due to favorable weather conditions, the proper use of fertilizers and pesticides, and an increase in the coffee price on the world market. The price increase was associated with a drop in the global production of coffee because of storms that affected production in Latin America and the presence of drought conditions in Vietnam. (SADC, 2007).

Sisal is another of Tanzania's traditional exports. In 2005, the price of sisal increased slightly while export volumes decreased following a fall in production. Tanzania's tea exports were affected by a decrease in the average world market price and a decrease in both the production levels and the quality of tea produced by the country's producers. The world average price of cashew nuts also fell and despite domestic problems related to the marketing of cashew nuts, domestic output rose. It is clear that changes in marketing price, production, as well as quality may affect the export volumes. (SADC, 2007).

2.5 Review of Literature on Theoretical Framework of the Study

The impact of International Trade on development process has led to a number of theoretical and empirical studies. There exist a strong correlation between export and real income growth in Sub-Saharan countries. Economic transformation over the last thirty years in East Africa has been credited to export orientation.

Balassa (1990) and Edwards (1993) postulated that there was an agreement among a large segment of economics professionals that countries that relied on outward oriented development strategies have done better over the medium and long run than inward looking countries. Export oriented policies can lead to export led industrialization. This implies that the country open domestic market to foreign competition in exchange for market access in other countries. The importance of this is that it can create profit and also trigger productivity hence leading to more exports. However, manufactured goods exportation is of more advantage as compared to raw goods exportation, as in the latter, a country may export more of raw materials but at

the end import the same amount of the commodities, making the trade profits less and less.

Countries like Hong Kong, South Korea and Taiwan have succeeded in their economies through concentration on export oriented economy. This is because export-led growth can create profit, allow countries to balance their finances, as well as surpass their debts as long as the facilities and materials for export exist. In addition, increased export growth can trigger productivity. Hence it is important to look on factors that condition a country's export.

2.6 Review of Literature on Empirical Studies

Agriculture exports have vital role in economic growth of many developing countries. The Structural Adjustment Programs of 1980s disrupted the positive trend of foreign exchange earnings derived from export crops (Nzioki, 2002).

Many empirical studies have shown that agricultural export supply is so important as a result a number of studies have been done to investigate the determinants of export supply of agriculture commodities. The LDCs exports are so sensitive to price variables (Balassa, 1990).

However, Fosu (1992), noted that RER of domestic does not influence the economy's agricultural exports directly but rather through its effects on the incentives structure. The author emphasized that the inelasticity of agricultural exports response to changes in RER implies that a large change may be needed to stimulate increase in agricultural exports. The 10% depreciation (appreciation) of RER stimulated 1.8% increase in Cocoa (Nigeria) export volumes.

For the last two decades, numerous studies have been done on agricultural export supply and there has been unanimous conclusion that exports in LDCs are more

sensitive to price variables (Balassa, 1990). A number of studies have shown that unless there is an idle capacity in export sector or export production is subjected to constant or increasing returns to scale, it's unlikely that an increase in world demand for a country's exports can be satisfied without any increase in producer's price.

Kwaneshie (1997) in his study undertook a quantitative measurement of agriculture export performance. His model allows for the estimation of long run response functional for export. He specified a linear regression model. The relationship (2.2) is general functional form of his stipulating the variable that he has included in the model:

$$X_t = f(Q_t, W_t, P_x/P_y, Y_t, U_t) \dots \dots \dots \text{equation (2.1)}$$

X_t = export volumes of the crop.

Q_t = productive capacity of the crop industry.

W_t = weather

P_x/P_y = crop producer price relative to the total price

Y_t = the trade weighted income of the country trading partners

U_t = Stochastic error term satisfying the normal classical regression assumption

He found the producer price and income of importing country to be very important in export volume of a country.

Lukonga (1990) examined the factors underlying the past performance of Nigeria's cocoa exports. The results showed that cocoa production was statistically significant to price elasticity with expected sign. However other studies have shown export to be less sensitive to price. Example of Cote d' Ivore where Trivedi and Akiyama (1992)

findings indicated coffee to be more sensitive to price factors while cocoa less sensitive to price.

These empirical studies show that export volumes of cash crops are influenced by many factors which include producer price, export price, income of a consuming countries and agricultural export credit.

Amin (1996) estimated the effects of exchange rate policies on prices of export crops. After calculating the nominal protection co-efficient and estimating real exchange rate, Amin reached the following conclusion: the agricultural primary commodity sectors are heavily taxed through a high level of intervention and is over- valued, tea being one of them: he specified on agricultural export supply model given as:

$$X_S = f(RPP_{t-3}, XC, RPX, DICA, Y_t) \dots \dots \dots (2.2)$$

Where:

X_S = export supply measured in tons.

RPP = the ratio of produce price to the domestic price index.

RPX = the ratio of export price to the producer price.

XC = agriculture export credit.

DICA = dummy variable for quotas.

Y_t = Income of consuming countries.

It is well documented fact that the real exchange rate between two countries fluctuate over time. The real fluctuation in relative prices of countries thus has various impacts on their economies and trade flows (Rutto, 2010). A positive effect of the depreciation

has been found at the firm and sector level but the effect at the aggregate level has been found to be positive and negative in different countries (Kagira, 1999).

It is so unlikely that increase in the world demand for a country's exports can be satisfied without any increase in producer's price at least for a short run, unless the production is subjected to constant return to scale or increasing returns to scale (Gbetnkom and Khan, 2002)

Rutto (2010) in his study noted that foreign income and relative prices have significant effects on performance of Tea exports, implying that tea export growth could be driven by factors which are beyond the control of local policy makers. This implies that external developments were important in influencing performance of Tea exports. He used the following model in his study.

$$\ln X_t = \alpha + \beta_1 \ln Y_t + \beta_2 \ln P_t + \beta_3 V_t + du + \epsilon_t \dots\dots\dots (2.3)$$

X_t = tea export

Y_t = foreign income proxied by the industrial production index of industrial countries

P_t = export prices relative to world non- fuel primary commodity prices and

ϵ_t = an error term

du = dummy variable

V_t = measure of risk or uncertainty given by 12-months moving average of the standard deviation () of absolute changes in the real effective exchange rate.

2.7 Conceptual Framework of the Study

Conceptual framework explains the relationship between variables in the study. In this case the variables; exchange rate, prices and quantity produced are the independent variables which are expected to explain the dependent variable; cashew nut export volumes. The conceptual framework of the study is presented in the figure 2.1 below.

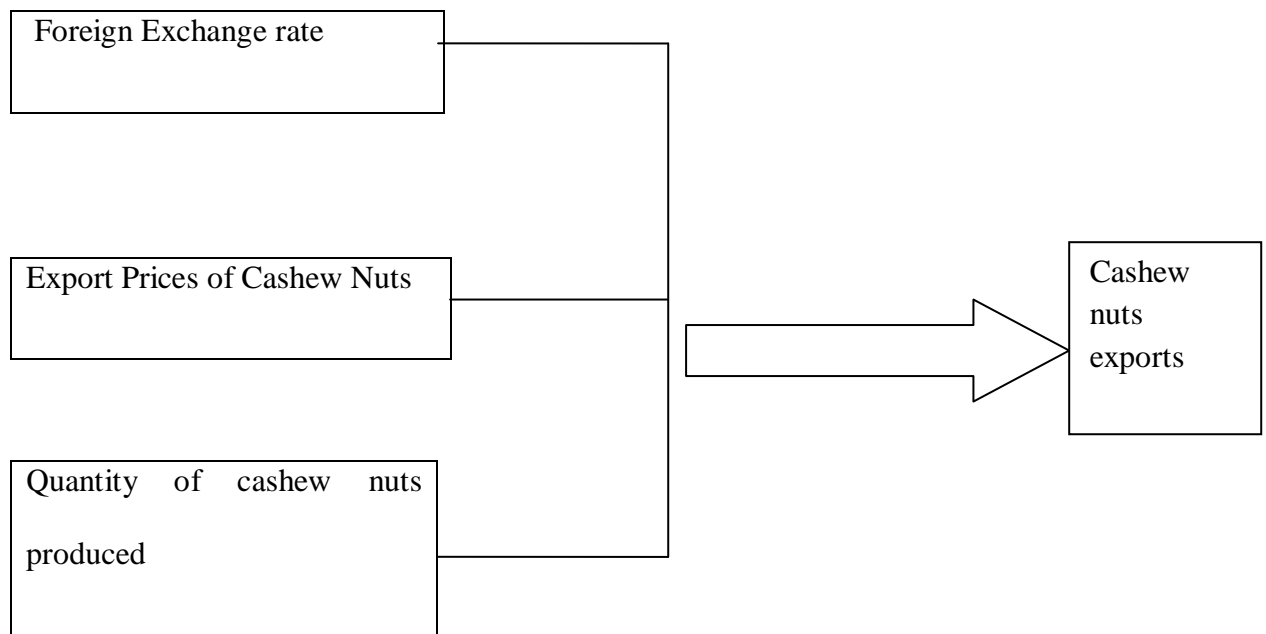


Figure 2. 1: Determinants of Export Volumes of Cashew Nuts

Source: author's own conceptualizations (2012)

CHAPTER THREE: RESEARCH METHODOLOGY

3.0 Overview

This chapter presents the methodology that was used in this study. Research design, choice of data collection tools, source of data, data collection, model specification and methods of data analysis are discussed in this chapter.

3.1 Research Design

In this study correlation research design was used. Quantitative techniques were used to test the null hypotheses against the alternative hypothesis to verify presence of correlation. A time series data using secondary data was taken from year 1980 through to 2012.

3.2 Study Area

The study mainly focused on Tanzania as an economy. Tanzania is found in East Africa, bordering Kenya, Uganda, Rwanda, Burundi on the north, Rwanda and Burundi in the North West, Indian ocean on the East, Mozambique on the south east, Malawi on the south, Zambia on the south west while Congo on the west.

3.3 Type and Sources of Data

Secondary data was used in this study. The researcher gathered secondary data on export volumes in tons, producer price, export price, quantity of cashew nuts produced and exchange rate. The data collected was from year 1980 to 2012. Data sources were from secondary sources such as publications from cashew nuts board reports, national bureau of statistics, Annual statistics reports and quarterly bulletin reports from Bank of Tanzania (BoT).

3.4 Model specification

A traditional export framework that was put forward by Goldstein and Khan (1978) has been used in several studies, for example Chowdhury (1993), Arize (1995), Arize et al (2000), Kiptui (2008) and in Rutto (2010), Lukonga (1994) was used in this study. Such a framework postulates a long run relationship between export and production capacity, relative prices and Real exchange rate.

Hence the following model was used in this study:

$$X_t = e^{\alpha} \cdot Q_t^{\beta_1} \cdot RER_t^{\beta_2} \cdot RPX_t^{\beta_3} \cdot e^u \dots \dots \dots (3.1)$$

This model was linearized using double log to natural base, hence the following new equation was formulated:

$$\ln X_t = \alpha + \beta_1 \ln Q_t + \beta_2 \ln RER_t + \beta_3 \ln RPX_t + U_t \dots \dots \dots (3.2)$$

Where:

The dependent variable is:

X_t = exports volumes

Independent variables are:

Q_t = quantity produced

RER_t = Real Exchange Rate

RPX_t = Relative price

U_t = an error term

Quantity produce, Q_t , is the amount of cashew nuts produced at a certain year. Usually when production increases we expect an increase in export performance *ceteris paribus*. The researcher expects a positive coefficient on quantity produced, Q_t .

Real exchange rate, RER_t , measures the relationship between foreign currency and domestic currency. A higher real exchange rate implies that foreign goods have become more expensive relative to local goods. Hence, both residents and foreigners are likely to increase their purchase on domestic goods. The researcher expects a positive coefficient of RER_t .

The third variable, price variable (RPX) measures the behavior of exporters. It is expressed as a ratio of the export price to producer price. The price paid to producers represents cost to exporters. If this cost increases in relation to export price, then exportation become unprofitable, but if export price increases more than export price, then, exportation will be profitable. The research expects a positive coefficient of RPX.

3.5 Data Analysis

Data analysis refers to examining what has been collected in a survey or experiment and making deduction and inferences (Kombo *et al.* 2006). In this study, the computer program STATA 12 was used to analyze the data. The data was then interpreted and presented.

Also in data analysis process a test for unit root for stationarity was considered since the data involve time series figures. When the time series data is non- stationary, the use of (Ordinary Least Square) OLS will produce invalid estimates, such as high R^2 values and high t- ratios yielding results with no economic meaning.

Under time series variables are tested for stationary that is if the variables are non-stationary then we may encounter spurious regressions. In this case the results may suggest statistically significant relationships between the variables in the model, when in fact this is just evidence of contemporaneous correlation. Augmented Dickey-Fuller (ADF) was used to examine our variables for the presence of a unit root.

To test for a unit root, Equation (3.2) estimated by OLS and the t-statistic of P is corrected for serial correlation. If the results of root tests show that the variables are not stationary in their levels, we proceed with a cointegration analysis.

Furthermore, a regression equation involving non-stationary variables, spuriousness can only be avoided if a stationary cointegration relationship is established between the variables. Hence when two or more variables are joined to form an equilibrium relationship spanning a long run, even if the variables contain statistical trends, they will nevertheless move closer over time and the difference between them will be stable. To test for cointegration we run our regression and use the ADF to test for stationarity of the residuals. If the residuals are stationary, then we use Johansen test to test for cointegration.

The model is then estimated to test the hypothesis. The study's first specific objective; to analyze the influence of quantity produced on export supply was analyzed together with the first null hypothesis H_{01} . The data collected was analyzed under STATA 12. The null hypothesis H_{01} is rejected if estimated quantity produced is significant.

The second objective: to analyze the relationship between exchange rate fluctuation and cashew exports was analyzed together with the second null hypothesis H_{02} under

STATA 12. The null hypothesis H_{02} is rejected when the relationship between exchange rate and cashew exports is significant.

Again on the third objective, that is assessing the effect of prices on exportation of cashew nuts, the price variable is analyzed through STATA the third null hypothesis H_3 will be rejected if the coefficient of RPX is found to be significant.

3.6 Limitation of the study

There was a big problem on data accessibility. Cashew Nut Board had very limited data. There were some years where data could not be found. Most of the data were not computerized and even filed together. The researcher had to move from one institution to another to compile the whole package of data.

CHAPTER FOUR: RESULTS AND DISCUSSIONS

4.0 Overview

This chapter presents empirical analysis to support the findings. The analysis starts with Section One, where data properties are presented to verify some of the Gauss-Markov assumption for time series data before running Ordinary Least Square (OLS). Section Two provides estimation of OLS model. Section Three is about testing of parameter stability and robustness, attempting to find if the estimated coefficients of export model has been constant over time, while section four is all about data interpretation.

4.1 Data Properties

Visual inspection of variables were plotted before the variables were made stationary using STATA (see Appendix), suggested that all the variables except exchange rate lacked a defined trend. Moreover, the plots revealed structural breaks in all variables in the early 1990; this could be attributed to the fact that there was transformation towards private sector oriented economy.

Table 4. 1: Descriptive Statistics of the Study Variables

Variable	Observations	Mean	Std. Dev.	Min	Max
Quantity Produced(Q_t)	33	65288.36	36636.25	15300	158134
Cashew nut Exports (X_t)	33	57633.61	34527.45	4258	126993
Real Exchange Rate(RER_t)	33	631.8345	515.7137	8.33	1507.33
Relative price(RPX_t)	33	1.778096	1.030199	.16	5.181123

Source: Data Analysis in this Study (2013)

Table 4.1 shows high standard deviation which suggests the presence of outliers. To be sure if there is presence of outliers a normality test is done and the results are presented in table 4.2

Table 4. 2: Skewness/Kurtosis Tests for Normality

Variable	Observations	Pr(Skewness)	Pr(Kurtosis)	adj chi²(2)	P- value
Quantity produced (Q_t)	33	0.1780	0.8128	2.02	0.3649
Export volumes (X_t)	33	0.2805	0.2743	2.56	0.2785
Real Exchange Rate (RER_t)	33	0.5804	0.0009	9.42	0.0090
Relative Price (RPX_t)	33	0.0005	0.0072	14.70	0.0006

Source: Author's Estimation using STATA 12 (2013)

Descriptive statistics presented in Table 4.2 shows that variables Quantity produced Q_t and export volumes X_t are not normally distributed as it can be interpreted in the p-value results. The p-values for Quantity produced, Q_t and that of Export volume, X_t are 0.3649 and 0.2785 respectively hence prove to be insignificant at 5% level of significance. The logarithmic transformation was applied to all variables to make them normally distributed and the normality test was redone. The new results are presented in table 4.3 below.

Table 4. 3: Skewness/Kurtosis Tests for Normality

Skewness /Kurtosis Tests for Normality					
Variable	Observations	Pr(Skewness)	Pr(Kurtosis)	Adj chi-square (χ^2)	P- value
LQ _t	33	0.2187	0.3248	2.69	0.0260
LX _t	33	0.0190	0.1731	6.66	0.0359
LRER _t	33	0.0226	0.3934	5.63	0.0600
LRPX _t	33	0.0046	0.0032	13.02	0.0015

Source: Author's Estimation using STATA 12 (2013)

Table 4.3 shows that the p-values of all the transformed variables are significant at 5 percent level of significance, thus the null hypothesis was rejected which suggest that the variables are normally distributed.

Table 4.4 below provides results of unit root test using Augmented Dickey-Fuller approach. The ADF approach examine if there is presence of a unit root in the variables so as to avoid problems in statistical inference.

Table 4. 4: Unit Root Test Results Based on Augmented Dickey-Fuller Approach

VARIABLE	ΔQ_t	ΔX_t	ΔRER_t	RPX_t
Specification	None	None	Constant	Constant
Lag	0	0	0	0
ADF τ	-5.599	-7.917	-3.935	-4.462
Critical values				
1percent	-3.709	-3.709	-3.709	-3.702
5percent	-2.983	-2.983	-2.983	-2.980
Probability	0	0	0.0020	0.0002

Source: Author's Estimation using STATA 12 (2013)

The ADF test results presented in table 4.4 indicate that, all variables except RPX which was stationary at its level, the other variables became stationary in their first difference, that is these variables are integrated of order one, that is, $I(1)$. This hence they have a single root.

Moreover, co-integration test based on Johansen (1988) presented on table 4.5 suggested that variables exhibited long run equilibrium relationship, as the trace critical indicate there are two co-integration equations.

Table 4. 5: Johansen Tests for Cointegration

maximum rank	Parms	LL	eigenvalue	trace critical	5% statistic value
0	20	-40.778106	.	62.5452	47.21
1	27	-28.467933	0.54806	37.9248	29.68
2	32	-20.937775	0.38481	3.7124*	15.41
3	35	-13.851895	0.36692	8.6927	3.76
4	36	-9.5055269	0.24453	.	.

Source: Author's Estimation using STATA 12 (2013)

Before estimating the model, Granger Causality test was applied to measure the linear causation between export and other variables, that is to check for simultaneity and the results are presented in table 4.6.

Table 4. 6: Granger causality Wald tests

Equation	exclude	ch ²	df	prob>ch ²
LX _t	LQ _t	.41196	2	0.814
LX _t	LRER _t	14.147	2	0.001
LX _t	LRPX _t	1.4392	2	0.487
LX _t	ALL	21.007	6	0.002

Source: Author's Estimation using STATA 12 (2013)

Results of Granger causality test conducted and results presented in table 4.6 suggest existence of unidirectional causal relationships between all the independent variables and the dependent variable, which imply that there is no feedback from dependent to the independent variables (that is no simultaneity problem). These findings fulfill the Gauss- Markov (also referred to as classical linear model) assumptions for time series data (normally distributed and stationarity of variables). Hence, estimating equation (3.2) by the ordinary least square (OLS) methods would provide robust regression results.

4.2 Estimation of the Model

Having explored time series properties of the basic data, the analysis preceded as follows. First, Ordinary Least Square (OLS) method in STATA was used to estimate the simple linear regression model. The simple linear regression model of export as defined in equation (3.1) was estimated. Table 4.7 presents ANOVA test results of the analysis.

Table 4.7: ANOVA Test Results

Source	Sum of Squares	Degree of freedom	Mean Square	Number of observations=33	
Model	17.2553739	3	5.75179	Prob > F	= 0.0000
Residual	2.14580529	29	.07399	R-squared	= 0.8894
				Adjusted R-squared	0.8780
Total	19.4011792	32	.606286851		

The analysis of variance (ANOVA) was used to test the significance of the regression model. Multiple correlation R indicate the degree of linear relationship of the dependent variable with all independent variables, where as the coefficient of multiple determination R^2 shows the proportion of total variation in the dependent variables explained by the independent variables in the regression equation (Heady and Dillon, 1990).

The ANOVA results show that the R^2 (the coefficient of determination) value was 0.8894, whereas the adjusted coefficient of determination value was 0.8780. This means that about 88% of the total variation of export was explained by the explanatory variables that is, exchange rate, relative price and quantity produced.

Table 4. 7: Results of OLS Regression Model Estimation

Export volumes	Coefficient.	Std. Err.	t-value	P-value	[95% Conf. Interval]
Quantity produced	1.065511	0.100051	10.65	0.0000	.8608836 1.270138
Real Exchange Rate	0.025291	0.0358838	0.70	0.487	-.048077 .0986817
Relative Price	0.158548	0.0760335	2.09	0.046	.031405 .1030419
Cons	-.968377	.9701895	-1.00	0.326	-2.952638 1.015882

Source: Author's Estimation using STATA 12 (2013)

Before interpretation of the OLS results in table 4.8 we first check for post regression tests so as to have robust results for the model.

4.3 Diagnostic Test for the estimated model

In order to ensure robust result of the model the post regression tests which include multicollinearity, autocolleration and heteroscedasticity tests were checked and the results are presented as follows:

Table 4. 8: Variance Inflated Factors (VIF) Multicollinearity Test

Variable	VIF	1/VIF
LRER _t	1.83	0.547642
LRPX _t	1.01	0.993230
LQ _t	1.82	0.549963
Mean VIF	1.55	

Source: Author's Estimation using STATA 12(2013)

Table 4.8 shows that the variance inflated factors (VIF). The VIF of all the variables are less than 10, suggesting that there is no multicollinearity problem in the model, thus the variables are not correlated. Presence of multicollinearity usually cause strange results.

Moreover, the Breusch-Godfrey LM test results for autocorrelation in table 4.9 shows that the model has no problem of serial correlation, as the p-value of 0.6152 is not significant at 5 percent level of significance; hence the null hypothesis (Ho) was accepted. If there was presence of serial correlation then it is possible o make wrong inferences.

Table 4. 9: Breusch-Godfrey LM Test for Autocorrelation

Breusch-Godfrey LM test for autocorrelation			
lags(p)	chi²	df	Prob > chi²
1	0.319	1	0.5719
H0: no serial correlation			

Source: Author's Estimation using STATA 12 (2013)

Nevertheless the Breusch-Pagan / Cook-Weisberg test for heteroskedasticity in table 4.10 shows that the estimated model does not have heteroskedasticity problem, p-value of 0.12 is not significant at 5 percent level of significance; hence the null hypothesis (H₀) was accepted.

Table 4. 10: Breusch-Pagan / Cook-Weisberg test for heteroskedasticity

Breusch-Pagan / Cook-Weisberg test for heteroskedasticity	
Ho: Constant variance	
Variables: fitted values of lexp	
Chi²(1)	= 22.89
Prob > chi²	= 0.1200

Source: Author's Estimation using STATA 12 (2013)

4.4 Hypotheses testing and Interpretation of the Results

The results indicate that quantity produced of cashew nut and relative price were significant at 5% level of significant, hence their coefficients are statistically significance since their p-value fall below the significance level of $\alpha=0.05$. Moreover, the corresponding coefficients of variables are all positive as predicted in the previous chapter.

The hypotheses were tested based on the statistical significance of the coefficient of all independent variables considered in export function. The first hypothesis to be tested was quantity produced has no effect on Cashew nut export supply. That was the null hypothesis, H_{01} , that is:

$$H_{01}: \beta_1 = 0$$

This was tested against the alternative hypothesis H_1 , that, quantity of cashew nuts produced has effect on Tanzanian Cashew nut export supply; that is:

$$H_1: \beta_1 \neq 0$$

The p-value was 0.0000, meaning that quantity produced has effect on the cashew nuts exports, hence the null hypothesis is rejected. Also the coefficient of quantity produced was 1.065511, which is positive hence reveals that quantity produced has a positive effect on cashew nuts export. That is, at every 1% increase in quantity produced of cashew nuts, other independent variables held constant would lead to cashew nut exports increase by 1.0655%. Also Fosu (1992) estimated an export model on production capacity of cocoa and found that it was statistically significant at 5%. Moreover, Fosu found out that the production capacity coefficient of Cocoa was

positive, this implied that the export industry will perform better as more of the quantity is produced.

On the same note, Pegusa (2008), estimated an export model on coffee in Tanzania and found out that quantity of coffee produced had positive effects on export volumes. He found that at every 1% increase in coffee production, other factors being constant, export volumes of coffee increased by 0.5890%. Hence, production capacity or quantity produced plays a big role in export industry.

The second null hypothesis H_{02} , stated, exchange rate has no influence on cashew nut export volumes in Tanzania, such that,

$$H_{02}: \beta = 0$$

This was tested against the alternative hypothesis that exchange rate has influence on cashew nut export volumes in Tanzania, that is:

$$H_2: \beta \neq 0$$

Using STATA 12 p-value for Real Exchange rate was 0.487, thus the coefficient was insignificant at 5% level of significant, since its p-value is more than $\alpha=0.05$ level of confidence, hence implies that, exchange rate is has no influence on cashew nuts export performance. As a result the null hypothesis H_{02} was accepted and the alternative hypothesis is rejected. Even though, exchange rate proved to have a positive impact on cashew exports. There are number of authors who have demonstrated the insignificant of Real Exchange Rate on export performance, Lukonga (1994) after estimating the performance of agriculture export in Nigeria, found that exchange rate was statistically insignificant with reference to cocoa but significant to rubber exports. Again Fosu (1992) in his export model when estimating

the real exchange rate on Ghana's Agricultural exports noted that RER does not influence the economy's agricultural exports directly. Furthermore Amin (1996) estimated an export model on effects of exchange rate on exports and alerted that relying on RER alone to stimulate increase in agriculture exports should not be relied on.

However other authors such as Kwanashie *et al.* (1997) in study on Agricultural Export Performance analysis noted that real exchange rate had large significant influence on agriculture exports. Furthermore, Rutto (2010) on analyzing the impact of exchange rate on tea exports had the same results as Kwanashie et al. Hence the question of real exchange rate seems to be of diversity.

The third null hypothesis H_{03} , stated, Price factor has no effect on cashew nut export volumes in Tanzania. That is:

$$H_{03}: \beta_3 = 0$$

This was tested against the alternative hypothesis that that price factor has effect on cashew nut export volumes in Tanzania, that is:

$$H_3: \beta_3 \neq 0$$

The p-value under STATA 12 was 0.046, thus the coefficient of relative price was statistically significant at 5%, hence the null hypothesis was rejected and alternative hypothesis accepted. Meaning that price factor RPX has a statistically significant effect on cashew nut export volumes in Tanzania. Furthermore the results show that relative price factor RPX has a positive effect on cashew nuts exports since its coefficient is 0.7603, this means that, for every 1% increase in relative price, cashew nut exports increases by 0.7603% other independent variables being held constant.

Rutto (2010) in his study on the impact of exchange volatility of performance of Tea export in Kenya found that relative prices have significant effects on tea exports. Likewise, Lukonga (1990) examined the factors underlying the past performance of Nigeria's cocoa exports and found that cocoa was statistically significant to price elasticity with the expected positive sign.

On the same note, Jaeger (2000) carried a study on effects of economic policies on Africa agriculture and estimated the responsiveness of price to the agriculture export supply. He found out that the coefficient of price of Coffee and Cotton were positive and significant but that of Tea was not significant. Also in Nigeria, in the study on price expectations formulations in application to Nigeria farmers, Phillips (2005), provide econometrics evidence that maize exports response to price incentives was statistically significant.

In this study, the Relative price elasticity was found to be less than unity. This mean response is inelastic implying that, though the relative price has influence on export supply, the responsiveness of export supply in relation to relative price changes is low. Hence there are other factors rather than price that could be influencing export supply. Gbetnkom and Khan (2002) in their analysis on export determinants on three crops; Cocoa, Banana and Coffee, found that the relative prices had the positive signs though they were inelastic and not significant.

Export price seems to be increasing at a higher rate as compared to producer price. Though the increase is at a very small rate, but this has a positive impact on exportation, that is it is profitable for exporters to export in a sense that the producer price, which is the cost to exporters is less compared to what they (exporters) receive. Hence more of the crop will be put on market by exporters.

CHAPTER FIVE: SUMMARY OF THE FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

5.0 Overview

This chapter presents the summary, conclusions, recommendations of the study undertaken and suggestions for further research.

5.1 Summary of the study

The general objective was to analyze the main factors that influence cashew nut exports in Tanzania. The regression analysis was done using STATA 12, secondary data formed a time series data from year 1980 to 2012.

The first specific objective was to analyze the influence of quantity produced on cashew nut exports. It was found that a percentage increase in quantity of cashew nut produced has significant influence on cashew nuts export increase. Furthermore the quantity produced has a positive impact on export supply since it has positive coefficient. Hence quantity of cashew nuts produced plays a significant role on cashew nuts export. The second objective was to analyze the relationship between exchange rate fluctuations and cashew nut exports in Tanzania. The analysis showed that real exchange rate was not significant in influencing cashew nut exports. The last specific objective was to assess the effect of prices on exportation of cashew nuts in Tanzania. From the assessment it was found out that, relative prices were significant and have a positive impact on cashew nuts export supply.

The study shows that relative prices and production capacity of cashew nuts are quite important in driving the export supply of cashew nuts, thus an improvement in these two variables will increase export supply.

5.2 Conclusions

To achieve the objectives of the study, a number of hypotheses were tested. The first null hypothesis, effect of quantity produced on Tanzanian Cashew nut export supply is not statistically significant at 5%, was tested and the study rejected the null hypothesis, hence the study adopted the alternative hypothesis. Hence proves that quantity produced influences cashew nuts export.

The second null hypothesis which was that exchange rate has statistically insignificant influence cashew nut export volumes in Tanzania was tested over the alternative hypothesis, unfortunately the null hypothesis was accepted hence, hence there was no relationship between exchange rate fluctuations and cashew nut exports. The conclusion made was that exchange rate has no influence on cashew nuts exports in Tanzania.

The last tested hypothesis was that Price factor has no statistically significant effect on cashew nut export volumes in Tanzania. The null hypothesis was rejected, and the study adopted the alternative hypothesis that price factor has statistical significant on cashew nut exports in Tanzania.

The implication of this study is that, any attempt to improve export revenues of cashew nuts should be focused on improving price factors and production capacity. Letting better price to producers and exporters will increase initiatives of these stakeholders to develop the export industry. On improving production capacity, factors affecting cashew nuts production should be taken into account, since production plays a big role on export sector.

5.3 Recommendations

Basing on the study, the researcher recommended the following:

- i. To pursue a better price, Cooperative unions, since they act as middlemen should seek markets both locally and internationally on their own rather than waiting for the buyers.
- ii. Factors affecting production capacity of cashew nuts should be taken into account so that all the obstacles can be minimized if not removed so that quantity produced can be increased.
- iii. Tanzania is losing billions of shillings every year by exporting unprocessed cashew nuts, the country exports more than 90% of its total cashew production to India in raw form, which after being processed is re-exported to United States and Europe where they fetch fabulously high prices. Tanzania should put emphasize on reviving the cashew nuts processing sector this would increase not only export earnings, but also employment and production.

Area for further studies

There is a need to perform a study on warehouse receipt system with the aim of analyzing whether there is improvement in production and marketing under the warehouse receipt system.

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APPENDICES

Appendix 1: Behavior of the Key Variables, 1980 – 2012

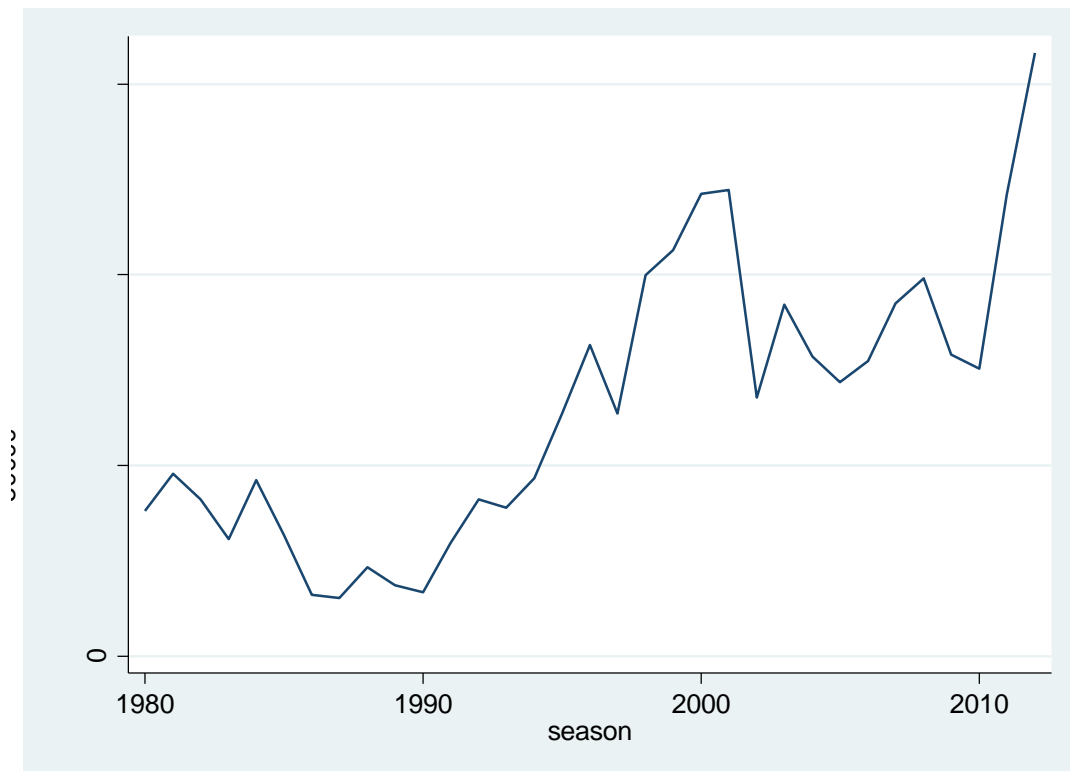


Figure A1: Cashew nuts production from 1980 - 2012

Source: Author's estimation using STATA 12 (2013)

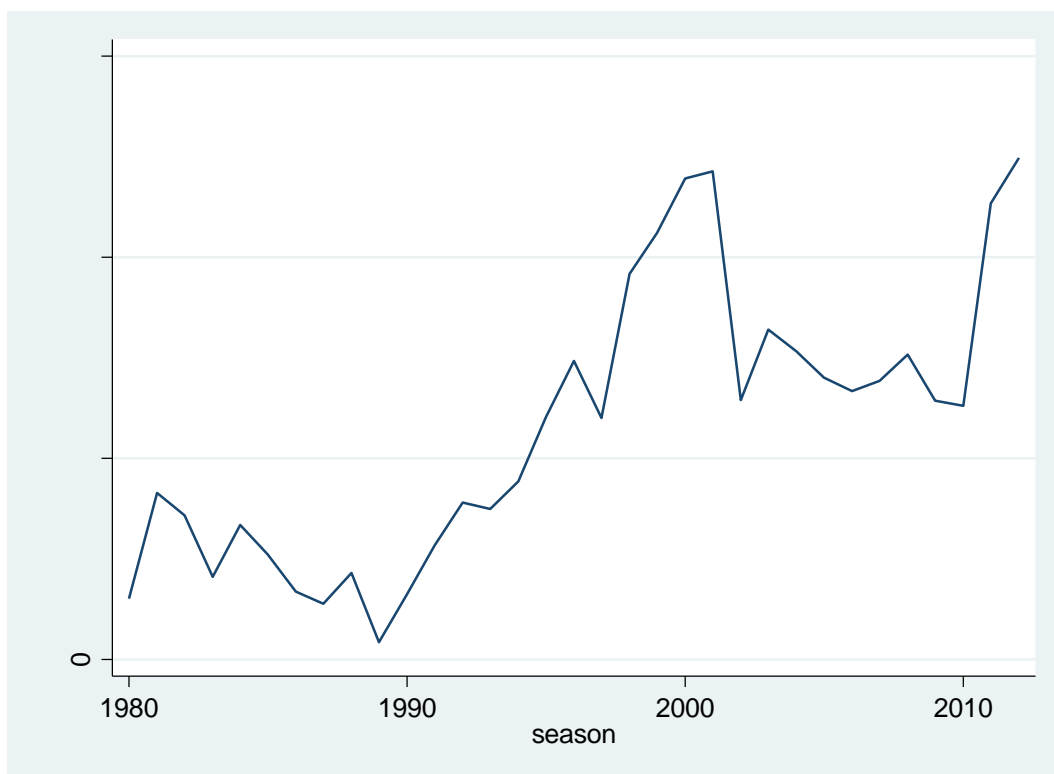


Figure A 2: Cashew Nuts Export from 1980 – 2012

Source: Author's estimation using STATA 12 (2013)

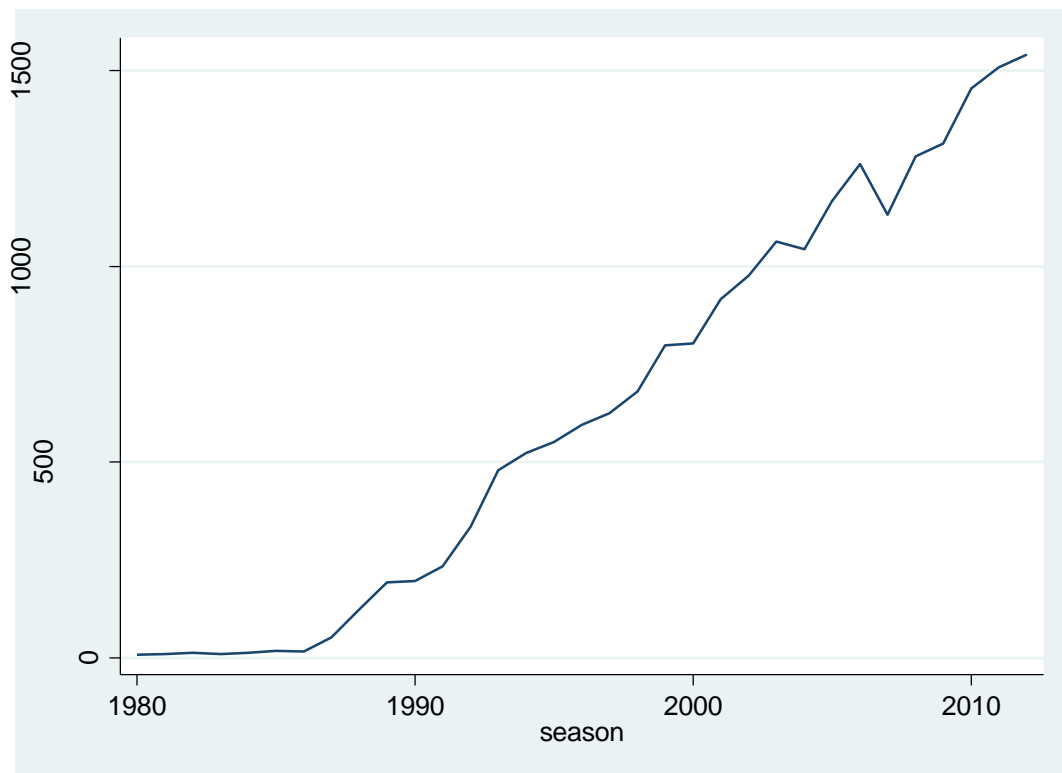


Figure A3: Tanzania Real exchange rate from 1980 - 2012

Source: Author's estimation using STATA 12 (2013)

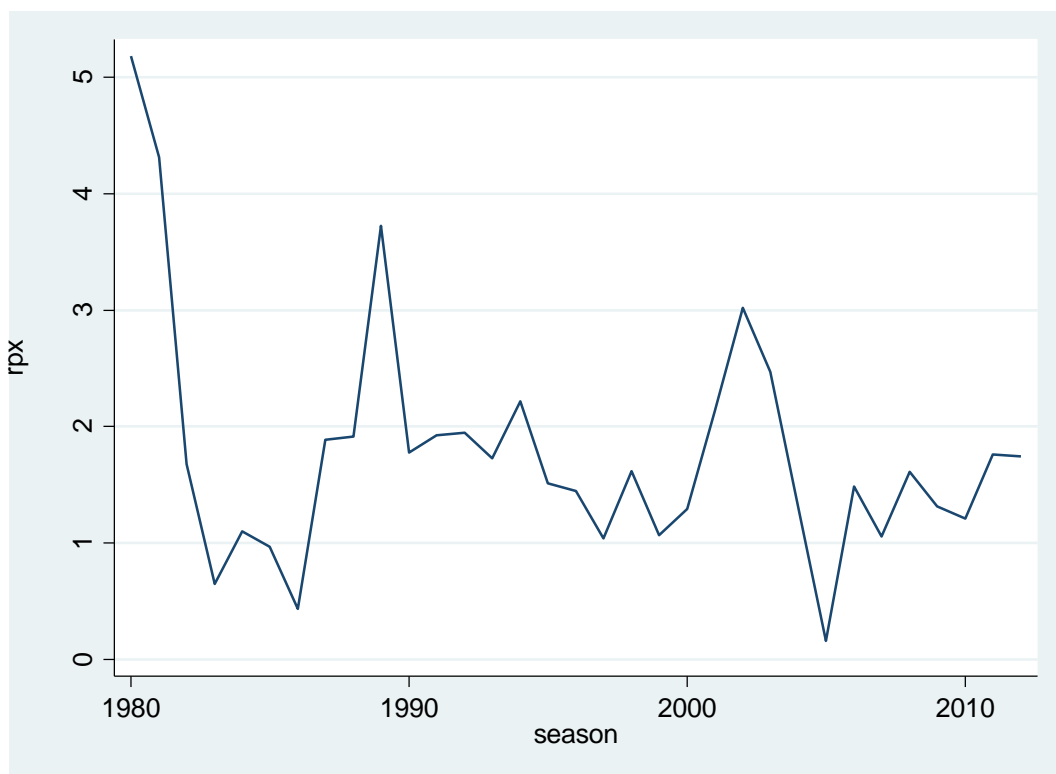


Figure A4: Cashew nuts relative prices 1980 – 2012

Source: Author's estimation using STATA 12 (2013)