

**DETERMINANTS OF KENYA'S TEXTILE EXPORTS TO THE USA UNDER THE
AFRICAN GROWTH AND OPPORTUNITIES ACT (AGOA)**

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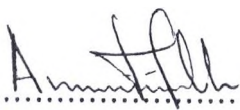
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DECLARATION

This is my original work and has never been presented for any degree award in any other university.

Signed



ANTHONY M. NJERU

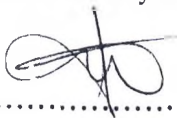
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APPROVAL

This research paper has been submitted with my approval as University Supervisor

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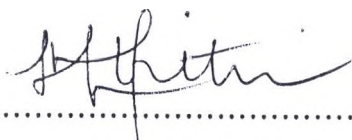


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ABSTRACT

Whereas African Growth and Opportunity Act (AGOA) provides a long list of goods that can be exported to the United States of America (USA), Kenya has not been able to take advantage of the huge market to export textile and apparel products. This paper therefore has analyzed the factors that determine Kenya's textile exports to the United States of America under the AGOA provisions. The paper sourced secondary data for the period 1990 to 2010 from UNCTAD, World Bank database, Statistical Abstracts and Kenya's Economic Surveys. The study used the general export model applied by Ogun (1998) and Edwards and Alves (2005) and introduced GDP for USA as a proxy to capture the demand for Kenya's apparel exports or purchasing ability of USA citizens, employment in the textile sector, Foreign Direct Investment from USA to Kenya, Real Exchange Rate, GDP for Kenya to capture the level of infrastructure development and a dummy variable to capture the effect of AGOA on Kenya's apparel exports to the US. The results showed that USA GDP, Kenya's GDP, Terms of Trade, Real Exchange Rate (RER) and the dummy had a positive and significant impact on Kenya's textile exports while FDI and employment in textile sector had a significant but negative impact on apparel exports to the USA.

Abbreviations

ADF	-Augmented Dickey Fuller
AGOA	-African Growth Opportunity Act
DF	-Dickey Fuller
EAC	-East African Community
CBTPA	-Caribbean Basin Trade Preference Act
COMESA	-Common Markets for Eastern and Southern Africa
CPA	-Cotonou Partnership agreement
DFE	-Dynamic Fixed Effects
ECM	-Error Correlation Model
EDP	-Export Development Program
EU	- European Union
EPZs	-Export Processing Zones
GATT	-General Agreement on Tariffs and Trade
GDP	- Gross Domestic Product
GDPU	-Gross Domestic Product for US
GDPK	-Gross Domestic Product for Kenya
GOK	-Government of Kenya
GFC	-Global Financial Crisis
GSP	-Generalized System of Preferences
H-O	-Hecksher Ohlin Model
FDI	-Foreign Direct Investment
FTA	-Free Trade Area
IMF	-International Monetary Fund
LDCs	-Least Developed Countries
MFA	-Multi Fibre Agreement
MDGs	-Millennium Development Goals
MNE	-Multinational Enterprise
PEV	-Post Election Violence
OLS	-Ordinary Least Square

CHAPTER ONE

1.0 INTRODUCTION

1.1 Background

Trade is one of the most essential sectors in the economies of the world. Trade provides a channel through which wealth is transmitted from one sector of the economy to another by providing a link between the sectors (both goods and services sectors). For instance, trade links agriculture, manufacturing and services sectors by providing markets among and outside the sectors therefore acting as a channel for distribution of economic growth to all sectors of the economy (Republic of Kenya, 2011).

The world economies realized that trade can be used to alleviate poverty among the poor economies especially in the developing countries. In the late 1990s, the United States of America (USA) development policy advocated for trade and not aid as part of its assistance to developing countries in poverty reduction and eradication. USA advocated for the policy since she was convinced that trade distributes resources not only among sectors of an economy, but also from the industrialized/developed countries to the Least Developed Countries (LDCs) and Developing Countries (Republic of Kenya, 2011).

The Kenyan Government has entered into a number of bilateral, regional and multilateral agreements to increase trade flows between Kenya and other countries. The agreements include the following; Common Markets for Eastern and Southern Africa (COMESA) agreement; East African Community (EAC) treaty; the Cotonou Partnership agreement (CPA) with the European Union (EU); World Trade Organization (WTO) agreement; Economic Partnership Agreements (EPA); and other bilateral trade agreements signed between Kenya and other countries (Republic of Kenya, 2010). All the agreements between Kenya and other parties are expected to increase Kenya's exports abroad and consequently reduce the trade deficit by providing markets for locally manufactured goods and services.

After the liberalization of the economy, the performance of the textile sector deteriorated as the sector could not compete with cheap products from other countries. With the removal of the trade barriers, the sector collapsed leading to loss of jobs in the sector. In the 1990s, more than 70,000 jobs were lost in the textile industry with the sector operating at less than 50% (Robert and Douglas, 2005).

To save the industry, the Kenyan Government established the Export Processing Zones (EPZs) with the aim of providing incentives to investors in the textile sector. The government tried to provide fiscal incentives and improve the infrastructure of the EPZs. For instance, the government exempted investors from payment of corporate taxes for a period of 10 years to enable the firms grow and be able to compete with other foreign firms (Robert and Douglas, 2005). With the incentives provided, many textile industries were set up in the zones. The industries constitute 22.9% of enterprises, 80.9% of total local jobs, 53.0% of exports, 48.8% of total sales, 30.1% of expenditure on local goods & services and 26.0% of private investment (Export Processing Zones Authority, 2009).

As part of the implementation of the “Trade, not Aid” policy, the USA Government through the US Congress approved the African Growth Opportunity Act (AGOA) whose aim was to help African economies through trade by allowing African-made goods entry to the USA market on a duty and quota free (Title 1, Trade and Development Act; P.L. 106-200). The AGOA agreement was also aimed at increasing Foreign Direct Investment (FDI) from the USA to African countries thus improve the economic relations between USA and African economies (Robert and Douglas, 2005). The increased trade flows to USA and FDIs to African countries was intended to offer an alternative to the development assistance from USA and therefore discourage African countries from relying more on aid.

In 2002, the USA Government signed the AGOA II agreement whose purpose was to expand preferential access for imports from eligible countries. This was followed by the signing of the AGOA Acceleration Act in 2004 which allows the eligible countries preferential access to USA market for a period which expires in 2015. In addition, the Act allowed the Third Country Fabric provision to be extended for three years and end in 2007. The expiry date for the Third Country

Provision was pushed forward again to September 2012 by the African Investment Act of 2006 (AGOA IV).

The AGOA provision is scheduled to expire in the year 2015 while the clause on third country fabric will expire in September 2012. The US Government is discussing with members of Congress and AGOA eligible countries on the proposal to extend AGOA and the Third Country Fabric clause.

The AGOA was implemented as part of the US Trade Act of 2000. In the same legislation, the Caribbean Basin Trade Preference Act (CBTPA) was also enacted. The aim of the US Government through AGOA was to offer developing economies increased access to US market, and in particular the clothing market, in exchange for making progress towards market economic principles (Terrie and Sandra, 2004).

The Act authorizes the US president to designate countries as eligible to receive the benefits of AGOA if they are determined to have established, or making continual progress towards establishing the following: Market based economies; The rule of law; Elimination of barriers to USA trade and investment; Protection of intellectual property; Effort to combat corruption; Policies to reduce poverty; Increasing availability of health care and educational opportunities; Protection of human rights and worker rights; and elimination of child labour practices.

In addition, countries are required to produce a certificate of origin customs visa which is subject to approval by the US Government. This is necessary to prevent illegal transshipment of goods from non-AGOA sources. Finally, countries must agree to make their industries open and available to US Customs Service inspection teams, while individual firms must maintain records of raw materials, employment, production equipment, and sales for five years after export for review by the US Customs officials.

African countries that have signed the AGOA agreement are offered the most liberal access to the US market compared to other countries or regions with which the US does not have a Free Trade Agreement (FTA). On the other hand, by encouraging reforms of Africa's economic and

AGOA's GSP allows eligible African countries to sell products/goods to the US market without paying import duty (zero duty). The AGOA GSP allows more than 6,400 items to be exported to the US while General GSP only covers 4,600 items.

Full AGOA benefits (including apparel) are limited to those countries that have been certified as eligible for duty and quota free treatment for certain apparel exports in so far as they adopt an effective visa system to prevent transshipment and the use of counterfeit documentation as well as rules for enforcement and verification procedures.

The following countries are eligible for the AGOA benefits; Angola, Benin, Botswana, Burkina Faso, Burundi, Cameroon, Cape Verde, Chad, Comoros, Republic of Congo, Djibouti, Ethiopia, Gabon, Gambia, Ghana, Guinea-Bissau, Kenya, Lesotho, Liberia, Malawi, Mali, Mauritania, Mauritius, Mozambique, Namibia, Nigeria, Rwanda, Sao Tome and Principe, Senegal, Seychelles, Sierra Leone, South Africa, Swaziland, Tanzania, Togo, Uganda and Zambia (United States of America, 2000).

1.2 Overview of Kenya's Textile industry

The textile industry is very important to the economic development of Kenya through employment creation, attraction of new investments and value addition among others. Textile and apparel exports are among the major export products from the country. In the year 2010, textile and apparel was the fourth highest foreign exchange earner in value terms and accounted for 4.2 percent of total exports (Republic of Kenya, 2011). In view of this, the government has been encouraging farmers to increase production of cotton because of its economic importance.

In the 1990s, the colonialists introduced cotton as a commercial crop into the country. It took many years before the crop was introduced to other parts of the country. Since independence the textile industry was the engine of growth in the private sector, created numerous jobs and became the second largest employer after the civil service. The sector was dominated by private colonial ginners by 1963 but by the end of 1990 the government introduced controls in the textile sector (Ikiara and Ndirangu, 2003).

The industry was divided into 3 segments namely yarn, fabric and apparel manufacture. Closed market policies of between 1960 and 1980 ensured backward integration of the textile industry leading to majority of the textile industry mills being merged. Small domestic markets with little or no exports led to poor economies of scale in exports in most factories. Over the 20 years between 1965 and 1984, annual lint production increased from 20,000 to 70,000 bales and in the 1980s the textile-apparel industry became the country's leading manufacturing activity in both size and employment.

Favorable climatic conditions for growing of cotton encouraged industries to focus towards its production. Despite the focus on production of cotton, most factories catered for the domestic market only. Small domestic markets, poor economies of scale and low purchasing power stagnated growth of the industry at the same time as Kenyans resorted to purchasing of second hand clothing (used clothing) from the 1980's to date.

Under the Export Development Program (EDP) which was being implemented by the Government, the Export Processing Zones (EPZs) program was launched in the year 1990 to enhance textile and apparel exports. The EPZs program intended to incorporate the country into the World supply chain and encourage investments that promote exports and transform the economy to a path of export led growth. This aimed at realizing economic goals through job creation, diversification and expansion of exports, value addition, increase in productive investments, technology transfer and creation of backward linkages between the industries and producers of raw materials (Republic of Kenya, 2011).

Table 1 illustrates the performance of the textile sector during the implementation of AGOA.

Table 1: Performance of the Textile Sector in the EPZs (2002–2010)

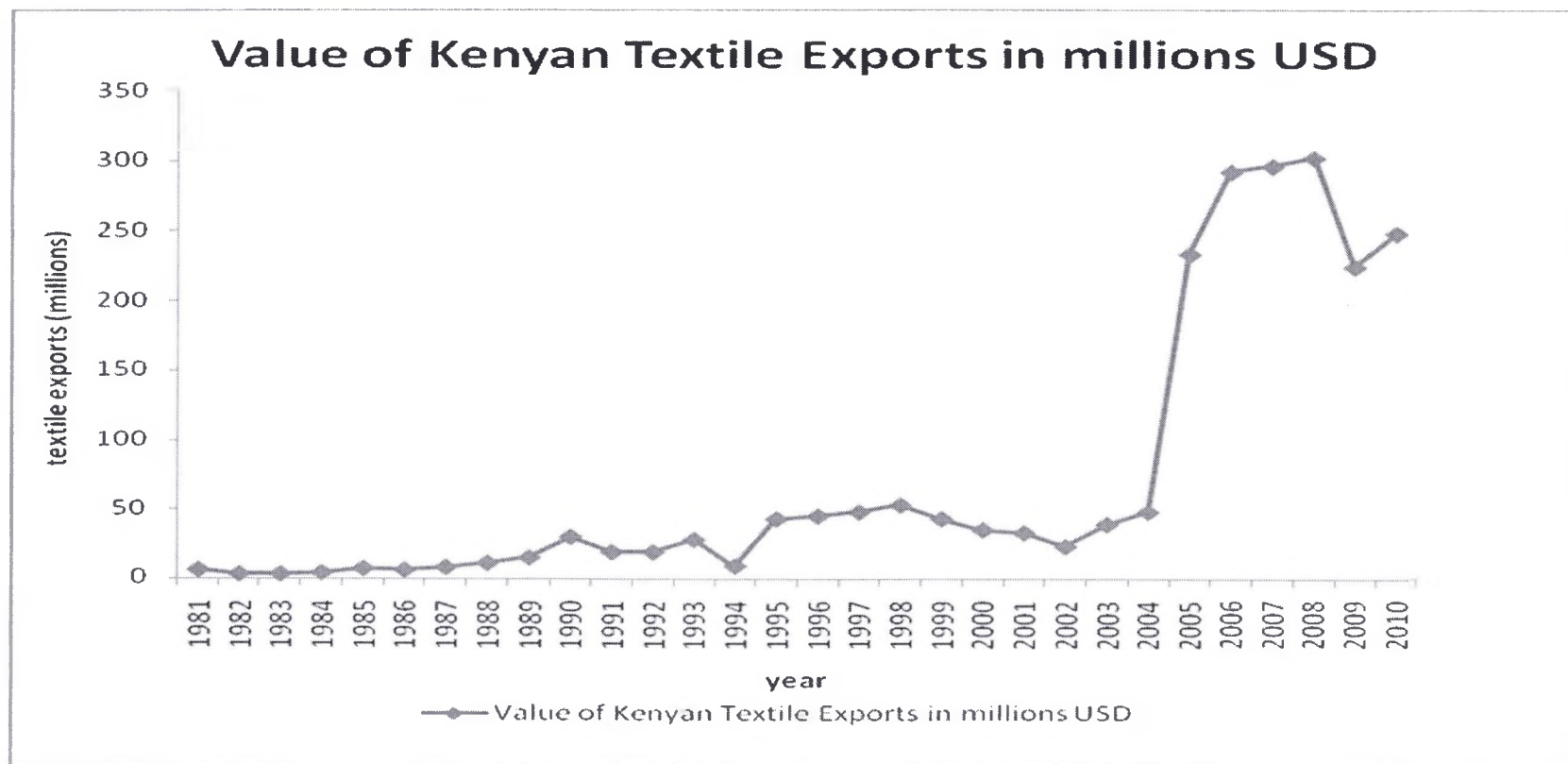
	2002	2003	2004	2005	2006	2007	2008	2009	2010
Number of Enterprises	30	35	30	25	25	22	18	19	16
Employment (No.)	25,288	36,348	34,614	34,234	31,813	28,506	25,766	24,359	24,114
Investment (Kshs million)	6,908	9,710	8,595	9,977	10,317	8,314	7,578	5,490	6,959
Exports (Kshs million)	8,149	11,083	17,575	14,688	14,894	13,768	15,811	12,699	16,190
Quantity of exports (million pieces)	28.0	42.8	56.3	50.0	46.3	59.6	67.9	58.1	70.3
Imports (Kshs million)	5,699	7,121	10,012	8,592	7,674	8,439	9,146	6,443	10,123
Annual average exchange rate (Kshs/US\$)	78.7	75.9	79.3	75.6	72.1	67.3	69.2	77.4	79.2

Source: EPZA, 2011

The performance of garment sub-sector within the zones in the years 2006 to 2009 continued on an environment characterized by stiff market competition, effects of the expiry of the Multi-Fibre Agreement, and high cost of production/operation coupled with global economic recession especially in the US during part of 2008 and 2009. The net effect of this was that some firms underwent restructuring in order to remain afloat which saw firms scale down operations. Overall during the period 2002-2010, the performance of the textile sector was characterized by downward trend with respect to major indicators.

Figure 1 below shows the trend of Kenya's textile exports between 1981 and 2010.

Figure 1: Trend of Kenyan Textile Exports (1981-2010)



Source: World Trade Organization

Kenya has not fully exploited the opportunities presented by the AGOA legislation despite its role in increasing the country's exports and directly creating thousands of job opportunities. This is reflected in figure 1 where there has been a sharp increase in textile exports between the years 2005 to 2008. After the enactment of AGOA in 2000, there was no significant increase in the exports for five consecutive years (2000-2004). After 2008, there was a decrease in textile exports which may be attributed to the Post Election Violence (PEV) that hit the country after the 2007 elections.

The financial crisis experienced in late 2000, also known as the Global Financial Crisis (GFC) or the "Great Recession", resulted in the collapse of large financial institutions, the bailout of banks by national governments and downturns in stock markets around the world. Among other things, this led to prolonged unemployment which caused a decrease in purchasing power of the major importers of Kenya's products. The GFC is said to have caused a decrease in exports from African countries including Kenya. In figure 1, the sharp decrease of the textile and apparel exports in the years 2008 and 2009 may also be attributed to GFC.

1.3 Problem Statement

The Kenya textile industry is constrained by the low domestic production of required inputs such as cotton and wool. The instability of the foreign exchange rate constrains importation of raw materials for example synthetic fibres thus increasing the cost of production from time to time. Textile firms do not specialize and are mainly engaged in production of small quantities of a large variety of products which make them not gain the specialization advantage. This is mainly caused by focusing on the domestic market leading to firms only producing fabrics on order instead of producing in mass and look for market internationally (Ikiara and Ndirangu, 2003).

Kenya as one of the countries benefitting from AGOA has not fully utilized opportunities provided under AGOA. It was expected that AGOA would benefit Kenya by creating employment opportunities especially in the EPZs that produce apparel. In view of this, the Government provided incentives to firms investing in the textile sector. The employment opportunities and exports did not grow as expected. Table 1 shows that 36,348 workers were employed in the textile industries in the EPZs in 2003 but the employment declined to a low of 24,359 in year 2009 and fell further to a low of 24,114 in 2010.

Uncertainty regarding the future of AGOA which is set to expire in 2015 makes it difficult to guarantee a secure market for trade and investment. Along the same lines, the potential removal of Kenya from its AGOA beneficiary status can be a significant disincentive for firms considering moving their operations to Kenya. Uncertainty about the extension of the Third-Country Fabric Provision which is set to expire in September 2012, presents a challenge for investors in Kenya (Onyango and Ikiara, 2011). It is therefore important to find out which factors determine exports of textile products in order to come up with policies that will improve textile exports even if AGOA expires.

If the country is able to exploit the opportunities available in the textile industry, incomes of many people in the cotton producing areas would increase and provide job opportunities in the supply chain and in the textile producing firms and consequently reduce the poverty levels in the

country. In addition, this would help in achieving some of the Millennium Development Goals (MDGs) in cotton producing areas and in the country as a whole.

Whereas the US has provided Kenya with the market opportunities under AGOA, the country has not utilised the huge market provided. In view of this, the study focused on the objectives mentioned below.

1.4 Objectives of the Study

The general objective of the study was to investigate the determinants of Kenya's textile exports to the USA under the African Growth and Opportunities Act (AGOA).

Specific objectives

- i. To identify the determinants of Kenya's textile exports to the USA.
- ii. To investigate the effect of AGOA preferences on Kenya's textile exports to the USA.
- iii. To make policy recommendations based on the study findings.

1.5 Significance of the Study

Many countries including Kenya have focused on expansion of exports as a means of eradicating poverty, economic recovery, growth and development (Republic of Kenya, 2005). In so doing, countries develop international trade policies that encourage exports of domestic products and ensure positive balance of trade. In the recent years, economies have focused more on economic ties rather than having political ties that are not beneficial to their economies.

In the Kenya Vision 2030, trade sector was identified to play a key role towards the attainment of national development objectives which include the Millennium Development Goal (MDG) number one on Eradicating Extreme Poverty and Hunger; and goal number eight on Developing Global Partnerships for Development (Republic of Kenya, 2008).

To enable the country reap the benefits of exports through the AGOA initiative, the study tried to identify what Kenya can do to enable the textile industry contribute effectively to the economic

growth of 10% projected in the Kenya Vision 2030. Increase in exports will also solve the problem of fluctuations of the domestic currency which was experienced in 2011 due to trade deficits.

The study therefore analysed determinants of exports of textile products under AGOA. The findings of the study will assist the policy makers in formulating policies that will support the development of the textile industry in the country and the economy as a whole.

CHAPTER TWO

2.0 LITERATURE REVIEW

2.1 Theoretical Literature Review

According to Adam Smith, what determines trade between two countries is based on absolute advantage. Smith stated that if a country has absolute advantage (can produce a commodity a low cost) in producing a commodity than another country but has absolute disadvantage in production of another commodity which the other country has absolute advantage in production, then the two countries should specialize in producing goods in which they have absolute advantage and trade. By so doing, both countries will gain from the trade.

Ricardo (1817) argued that even if one nation is less efficient than the other in production of both commodities, the first nation should specialize in the production and export of the commodity in which its absolute disadvantage is smaller and import the commodity in which its absolute disadvantage is greater. Ricardo therefore says that trade pattern is largely explained by comparative cost advantages and relies on cost or price competitiveness.

The comparative advantage notion was extended in the Heckscher-Ohlin (H-O) model where countries were assumed to have two factors of production, labor and capital, and face the same production functions but different factor endowments. Heckscher-Ohlin theory states that the difference in relative factor abundance or factor endowments among nations determines trade patterns between countries. The model predicts that nations using more capital intensive methods of production will export more goods as compared to countries that are more labour intensive in their methods of production. In addition, accumulation of innovations and knowledge enables capital-intensive firms to produce competitive goods due to economies of scale and therefore able to export more.

Mercantilists believed that all nations should ensure that there is balance of trade. In addition, they believed that for a nation to increase its wealth and treasure, foreign trade was the only means that could be used. Mercantilists encouraged nations to produce and export labour intensive products given that at that time, there was abundant unskilled labour which could produce competitive goods for sale in the international market.

Human capital development has a positive effect on performance of exports. The Neo-Technology model predicts that with highly skilled human capital, exports increase significantly. The opposite is experienced when an economy is characterised by highly unskilled human capital. The Hecksher-Ohlin theorem states that countries should produce and export goods which utilize factors of production that are abundant in the country. Therefore, Hecksher-Ohlin suggests that countries with unskilled human capital should focus on producing labour intensive goods because investing in skilled labour would be very expensive and will affect exports negatively.

In the global economy, differences in technological advancement between nations determine the direction or flow of international trade (Posner, 1961 and Vernon, 1966). Economies with advanced technologies are able to produce and export sophisticated goods to countries with low technological capacity. On the other hand, countries with low technical capacity export only raw materials or goods with little value addition.

Macroeconomics states that there are many factors that determine exports of goods and services. Some of these factors include: national income, foreign income and real exchange rate. When income of other countries increases, they demand more goods (including import goods) leading to increase in exports of exporting countries. When income of the exporting country increases, exports also increase given that the country is able to invest more in the export oriented sectors. For the real exchange rate, Keynesian theory stated that devaluation of the local currency makes exports cheaper in the international market thereby increasing exports of the country. On the other hand, appreciation of the currency makes exports expensive leading to decrease in exports and the opposite occurs with depreciation.

Mundell (1963) and Fleming (1962) pointed out that in an open economy; foreign demand for exports and domestic demand for imports depend on the exchange rate, as well as foreign and domestic income because the exchange rate translates the foreign currency prices of foreign products into domestic currency prices.

2.2 Empirical Literature Review

A country's balance of trade is highly dependent on its exchange rate regime particularly the real exchange rate. Findings of several studies have indicated that when a country's export prices decrease as compared to the world prices (as a result of depreciation of the currency), its exports increase. Sharma (2001) undertook a study to determine the factors affecting exports in India. Using simultaneous equation framework and annual data for the period 1970-1998, the study found out that the demand of Indian exports increased when its export prices fell. The results showed that at one time exports were negatively affected when Indian rupee appreciated.

Several analyses have indicated that exports increase with an increase in Foreign Direct Investment (FDI). A study undertaken by Van Dijk (2002) in Indonesia on manufacturing firms in 1995 analyzed several determinants including size of firms, research and development, technological capacities, and human capital. The study used novel empirical model (best for estimating fractional variables). Results showed that both technology and factors related to cost affects export behaviour of firms in Indonesia.

Aggrawal (2001) undertook a study to determine if Multinational Enterprises (MNEs) in India had any effects on exports flows. In addition, the study aimed at finding if MNEs have an advantage over India's local manufacturing firms. The study used the Tobit model in analysing the data collected for the study. The data included the firms' capital line database for the years 1996 to 2000. The analyses concluded that MNEs have a comparative advantage in production of export products compared to local manufacturing firms. The findings also revealed that the firm sizes and importation of raw materials and capital goods, research and development had a significant impact on exports. On the other hand technology transfers and skills of workers had minimal contribution to exports.

Prasad (2000) undertook a study to determine the factors affecting Fiji's exports. The study used a single equation model for exports and laid emphasis on the trading partner's income and relative prices of goods. In addition, the study used imperfect substitution model as a conceptual framework with the assumption that exports are not perfect substitutes for domestic goods in importing countries. Data from various Economic Statistics and IMF International Financial Statistics was used. After the analysis, results showed that the income of the trading partner determines Fiji's export flows in the long run while changes in factors that affect agricultural output for example weather, industrial disputes, relative prices and foreign demand affects exports in the short run.

Zewdie (2002) undertook a study to determine the factors affecting the export of leather products in Ethiopia. Annual time series data for the period 1996 to 2000 sourced from Government Institutions in Ethiopia and publications of some International Organizations was used. The study focused on global price changes, qualitative factors, quantitative determinants on the supply of leather goods and factors affecting the growth of the leather sector in Ethiopia. Zewdie used Ordinary Least Square (OLS) in the analysis to determine the factors affecting exports of leather products. From the findings, it was determined that in the long run, supply of the leather exports is largely affected by the global market prices of exports and the country's real exchange rate. On the other hand, Ethiopia's domestic demand and output from other major exporters of leather products affected the growth of the sector in the short run. Real income of Ethiopia was found to have minimal effect on leather exports.

Menji (2010) studied the factors that determine the volume and value of exports from Ethiopia between the years 1981 to 2004. The researcher used the Imperfect Substitutes Model which can estimate export demand and supply equation concurrently. Results of the study showed that real effective exchange rate and trade liberalization had insignificant effect on manufactures supply. Trade liberalization was found to have significant effect on merchandise exports while gross capital formation, roads and commercial energy had minimal effects.

Edwards and Alves (2005) investigated the determinants of exports flows from the Republic of South Africa. The study used panel industrial data for the period 1970 to 2002 to estimate the demand and supply relationships using import substitution model. The study showed that poor infrastructure (especially roads, railways and ports) negatively affected manufactured exports from South Africa while trade liberalization, research and development, human capital accumulation, import penetration and depreciation of the currency positively affected exports.

Dueñas-Caparas (2006) in a study to determine factors affecting firm's exports in three manufacturing sectors in Philippine used the novel econometric model purposely developed for fractional response modelling. The study analyzed the relationship between the export performance and characteristics of different firms that manufacture export goods. Plant-level data for the period between 1983 and 1988 was used. The analysis from the study showed that; foreign demand, research and development, human capital development, gross capital formation, firm age and firm size significantly affected firm's export performance.

Ndung'u, Were, Geda and Karingi (2002) in their analysis to determine factors affecting exports of primary products from Kenya disaggregated total exports of goods and services into three classes; traditional agricultural exports of tea and coffee, and other exports of goods and services. The study showed that real exchange rate, investment to GDP ratio and trading Partners' income had significant effect on export of tea and coffee. On the other hand, the study showed that trade liberalization had a negative effect on tea and coffee exports from Kenya due to increasing costs of inputs while other sub-sectors like tourism, horticulture and manufacturing performed well with liberalization.

2.3 Overview of the Literature

Overall the literature shows that exports of various countries are determined by various factors in the economy. From the literature review, different researchers have used different models to analyse the determinants of exports in various countries. The literature show that very little has been done to analyse the determinants of textile exports particularly for Kenya.

The data used in the analysis include; real exchange rate, foreign direct investment, size of firms producing export goods, technology, importation of raw materials, capital goods, research and development and incomes of the importing and exporting country.

The review of empirical literature shows that there are many factors that determine export of goods from a country. Many studies that have been undertaken have looked at all the export goods and few studies have looked at specific goods particularly the textile goods. In Kenya, very few studies have been done to determine the factors affecting exports of the textile products to the US under AGOA. In addition, few studies that have evaluated the AGOA initiative, for example Mattoo, Roy and Subramanian (2002), did not address the issue of determinants of exports under the AGOA initiative. This study, therefore, attempts to fill the gap, using time series data regression techniques to isolate the effects of AGOA on Kenya's apparel exports.

This paper therefore examined the underlying determinants of Kenya's apparel exports to the USA under AGOA. The findings will assist policy formulators in developing policies that will help increase exports for the ailing textile sector in Kenya.

CHAPTER THREE

3.0 METHODOLOGY

3.1 Theoretical/Conceptual Framework

According to Alemayehu (1999), the factors that determine the supply of primary commodity exports include cost and accessibility of consumer goods, farm subsidies and taxes, research and development, infrastructure, exchange rate, access to credit, among others. Although literature on commodity export supply functions starts from structural equations, which accommodate a wide spectrum of these factors, the estimated reduced form equations are generally price-focused; they include either current or lagged (relative) prices. The price-focused supply models stem from Nerlove's (1958) model. Nerlove describes the dynamics of agricultural supply by maintaining the assumption that producers are influenced by their perception of normal price, which is captured through adaptive price expectation mechanism. Consequently, production is a function of prices and other adjustment costs.

Commodity models incorporate the real foreign income (of trading partners) and real exchange rate (proxy for relative prices) as explanatory variables in the estimation of the export supply functions in general (Ogun, 1998; Klaassen, 1999; Whitley, 1994; Ndung'u and Ngugi, 1999; Alemayehu, 1999; Balassa, et al., 1989; Branchi, et al., 1999; McKay, et al., 1998 among others). In their analysis, Edwards and Alves (2005) applied the imperfect substitution model (represented by export supply (X_s) and export demand (X_d) equations) which was outlined by Goldstein and Khan (1985). The equations are analyzed concurrently with the intention of determining export price and quantity. The equations are as shown below:

$$X^d = \delta_0 - \delta_1 P_x + \delta_2 e + \delta_3 p^* + \delta_4 Y^* \quad , \quad \delta_1 > 0 \dots \dots \dots (1)$$

And

$$X^s = \alpha_0 + \alpha_1 P_x - \alpha_2 P - \alpha_3 C + \varphi Z \quad , \quad \alpha_1 > 0 \dots \dots \dots (2)$$

Where;

X = volume of exports

Y^* = real foreign income

P_x = domestic price of exports

P^* = foreign domestic price

P = domestic price

e = domestic to foreign currency exchange rate

C = nominal variable cost

Z = vector of other variables that influence the supply of exports

Findings of the study by Edwards and Alves (2005) showed that exports were positively affected by foreign income while foreign price negatively affects exports. If domestic prices are lower than international prices, exporters will prefer to export their products to the foreign markets than sell locally and vice versa.

3.2 Empirical Model

This study used the approach which is related to Edwards and Alves (2005) and Ogun (1998), by introducing GDP for USA as a proxy to capture the demand for Kenya's apparel exports or purchasing ability of USA citizens, Employment Rate Of Kenya, Foreign Direct Investment, Real Exchange Rate and GDP for Kenya to capture the level of infrastructure development and a dummy variable to capture the effect of AGOA on Kenya's apparel exports to the US. The study used the general export model applied by Ogun (1998) and Edwards and Alves (2005).

3.2.1 Model Specification

An empirical model along the standard export trade model is thus specified as;

$$X = f(GDP_U^{\beta_1}, EMP^{\beta_2}, FDI^{\beta_3}, TOT^{\beta_4}, RER^{\beta_5}, GDP_K^{\beta_6}, Dummy^{\beta_7}, \epsilon) \dots\dots\dots (3)$$

Where:

X	=	Export Value of textiles and apparels to the US
GDPU	=	Gross Domestic Product of the United States of America
EMP	=	Employment in the Textile sector
FDI	=	Foreign Direct Investment inflow to Kenya
TOT	=	Terms of Trade
RER	=	Real exchange rate
GDPK	=	Gross Domestic Product for Kenya
Dummy	=	Dummy for existence of AGOA (taking value of 1 for existence of AGOA i.e. 2000 to date and 0 otherwise)
β 's	=	Coefficients to be estimated
ϵ	=	Error Term

Estimation of the above function may result in residuals that violate the assumption of normality of the error terms. This is a simplifying assumption of the classical normal linear regression model and must be satisfied for the method of OLS to yield best linear unbiased estimators. To ensure normality of the residuals, the estimation equation used in this study is expressed in natural logarithm as shown in equation 4. The logarithmic form ensures that the errors are both homoscedastic and normally distributed.

Equation (3) was thus transformed into a logarithmic form for estimation purposes and is shown in equation 4;

$$\ln X = \beta_0 + \beta_1 \ln GDPU + \beta_2 \ln EMP + \beta_3 \ln FDI + \beta_4 \ln TOT + \beta_5 \ln RER + \beta_6 \ln GDPK + \beta_7 \text{Dummy} + \epsilon$$

..... (4)

Error term was introduced since its believed that X is not an exact linear combination of the independent variables (GDPU, EMP, FDI, TOT, RER, and GDPK). The error term captures sources of error that are not captured by other variables. The error term therefore represents the combined effect of omitted variables assuming that; the combined effect of the omitted variables

is independent of each variable included in the equation, the combined effect of the omitted variables is independent across subjects and that the combined effect of the omitted variables has expectation of zero. This is because the observed variables in the real world are very sensitive to a large number of other factors and would therefore likely need a very large number of independent variables to complete all of the factors that influence the value of exports. Failure to include even one such variable means that our independent variables would not have completely predicted the values of exports, hence model misspecification.

3.3 Definition of the Variables and Expectations

The real exchange rate was calculated by the formula:

$$RER = \frac{CPI(USA)}{CPI(Kenya)} * \text{Official Exchange Rate (Local Currency Unit (LCU) per US dollar);}$$

For the Real Exchange Rate (RER), demand for a country's exports increases when its exports prices fall in relation to world prices. The depreciation of a country's currency compared to other foreign currencies like the dollar makes exports cheaper in the international market and therefore expected to have positive impact on exports. Official Exchange Rate (OER) refers to the exchange rate determined by national authorities or the rate determined in the legally sanctioned exchange market i.e nominal exchange rate. OER was calculated as an annual average based on monthly averages (LCU relative to the U.S. dollar) and where CPI is the Consumer Price Index. The US CPI was calculated by observing price changes among a range of products in urban areas and weighting the price changes by the share of income consumers spend purchasing them. Kenyan CPI is a measure of the weighted aggregate change in retail prices paid by consumers for a given basket of goods and services. The price changes are measured by repricing the same basket of goods at regular intervals.

The real exchange rate was factored into the model because it is a major determinant of competitiveness of a country's exports and imports as well. This is because with appreciation of a country's RER, its products become less competitive in the international market and vice versa. Real GDP values for the United States (GDPU) are also postulated to have a positive impact on exports values. This is because when the GDP for the US increases, the demand for Kenyan

exports is also expected to rise *ceteris paribus*. The US GPD was used as a proxy to capture demand for Kenyan exports in the US.

Employment rate (EMP) is the number of people employed in the textile sector in Kenya. It was expected that with increased employment in the textile sector exports would also rise hence a positive relation between exports and employment.

Foreign Direct Investment (FDI) is the amount of foreign investments (in dollars) that flow in the country. It is expected that FDI will have a significant positive impact on export values. FDI is factored into the model because with AGOA preferences, several US firms would take advantage and open up textile firms in Kenya.

Terms of trade (ToT) refers to the ratio of price of exports to the price of imports. With favourable terms of trade, export growth rate is expected to increase and vice versa.

Gross Domestic Product for Kenya (GDPK) was expected to have a positive impact on exports since with increased GDP more money would be channelled to production.

The dummy variable was expected to have a positive effect on exports from the time AGOA was enacted. The dummy is factored into the model to capture the performance of the apparel and textile sector before and after AGOA preferences.

3.4 Stationarity, Cointegration and Diagnostic Testing

This study uses yearly time series data covering the period 1990-2010 for estimating. Therefore, stationarity of the variables used as regressors in the models was checked. This was followed by testing for a causal relationship between the time series. This helped in checking whether the series had a stationary trend and to establish their orders of integration if the series are non-stationary. Augmented Dickey-Fuller (ADF) was used for testing stationarity of the data. In addition, Dickey Fuller (DF) and the Augmented Dickey Fuller (ADF) tests were used to test the level of integration of the variables.

The use of classical methods of estimation such as OLS could lead to mistakenly accepting spurious relationships in the event that the series are non-stationary, leading to meaningless results. In the event that the series are non-stationary around their mean the study differenced the series. This led to stationarity thus application of OLS.

If the t-test statistic from these tests is less than the critical value tabulated, unit root hypothesis of the Dickey-Fuller may be rejected. This also means that, by the ADF test, a unit root exists in the series y (implies non stationary) if the null hypothesis (of β_2 equals zero) is not rejected (Gujarati, 1995). The study pursued the cointegration methodology and the subsequent estimation of the associated error correction model if all variables are found to be non-stationary and have the same order of integration in all the variables (Engle and Granger, 1987). Lack of a cointegrating relationship (long-run equilibrium) among the variables allows the application of simple OLS to estimate the model.

Strong correlation between any two variables in this study (i.e 0.5 and above), shows that there could be a problem of multicollinearity. Multicollinearity could also be present if the R^2 is high with low values of t-statistic, high F-value for a group of coefficients that are individually insignificant and with change of coefficient when a new variable is included.

3.5 Data Types and Sources

This study used time series yearly data of real GDP values for the US, real export values of apparels to the US, employment in textile sector in Kenya, real exchange rate, foreign direct investment and Terms of Trade and Real GDP for Kenya covering the period between 1990 to 2010. The data on real GDP values for the US, apparel exports values to the US, Kenya Employment rate, Foreign Direct investment from the US, Terms of Trade, Real exchange rate and real GDP for Kenya was collected from the various Economic Surveys, Statistical Abstracts and World Bank Development Indicators as well as international development statistics and UNCTAD statistical database.

For computation of RER for the various years, CPI for Kenya was collected from the various Economic Surveys whereas the United States CPI was sourced from International Monetary Fund (IMF) international statistics.

3.6 Limitations of the Study

The model used eight variables including one dummy variable to capture the effect of AGOA preferences on Kenya's apparel and textile exports; however the model may not have captured all the variables that determine Kenya's textile exports to the US. The sample period was limited to 1990-2010. Due to the unavailability of reliable quarterly data for most of the variables under consideration for the entire period, the study used annual data. Moreover, time series data may in practice violate a few of the standard assumptions and it was therefore important to examine the likely scenarios and how to deal with them.

4.0 DATA ANALYSIS, RESULTS AND DISCUSSIONS

4.1 Descriptive statistics

The study's statistical analysis was carried out using STATA 10 software. In the analysis, measures of central tendency and measures of dispersion were taken. Table 2 shows the descriptive statistics for the variables in the series: it shows the measures of central tendencies and measures of dispersion.

Table 2: Summary Statistics

stats	lnx	lngdpu	lnfdi	lngdpk	lntot	lnrer	lnemp	dummy
mean	10.83223	16.07599	3.41265	9.381319	4.409681	4.522668	10.59634	.4285714
median	10.61889	16.11489	3.496508	9.186876	4.406719	4.52635	10.43998	0
max	12.42953	16.49285	6.591744	10.38276	4.60517	4.813057	11.04792	1
sd	1.20904	.3090377	1.410472	.5860927	.1034384	.1028989	.3756097	.5070926
variance	1.461777	.0955043	1.989431	.3435046	.0106995	.0105882	.1410827	.2571429
cv	.111615	.0192236	.4133069	.0624744	.0234571	.0227518	.0354471	1.183216
min	9.3267	15.57114	.6931472	8.495258	4.248495	4.324795	9.875705	0
kurtosis	1.348915	1.704448	2.739273	1.962525	2.275667	4.355159	1.955711	1.083333

Standard deviation is a measure of dispersion or spread in the series. Kurtosis measures the peakedness or flatness of the distribution of the series. The kurtosis of a normal distribution is normally 3. If kurtosis exceeds three, the distribution is peaked (leptokurtic) relative to the normal and if is less than 3, the distribution is flat (platykurtic) relative to the normal. Table 2 shows that all the variables are platykurtic relative to the normal except real exchange rate.

The mean and median locate the centre of the relative frequency distribution. Median is a strong measure of the centre of distribution and is less sensitive to outliers than the mean. Table 2 shows that the mean and median are extremely close meaning that the data is not affected by outlier problem.

Skewness measures the distribution of the series around its mean. Table 2 shows that the measure of skewness is in most cases close to zero meaning that the distribution of the dataset is normal.

4.2 Correlation of variables

A correlation matrix was to test the linear relationship between the explanatory variables. Table 3 shows the correlation matrix of the variables.

Table 3: Correlation of Variables

	lnx	lngdpu	lnfdi	lngdpk	lntot	lnrer	lnemp
lnx	1.0000						
lngdpu	0.9345	1.0000					
lnfdi	0.6063	0.6290	1.0000				
lngdpk	0.9317	0.9221	0.7364	1.0000			
lntot	-0.5217	-0.3867	-0.4394	-0.4711	1.0000		
lnrer	-0.6049	-0.5874	-0.5010	-0.6560	0.0520	1.0000	
lnemp	0.9308	0.9414	0.5429	0.8698	-0.3642	-0.5827	1.0000
dummy	0.9418	0.8492	0.6156	0.8596	-0.5692	-0.5177	0.9094

The table shows that most of the variables are highly correlated with correlation coefficient greater than 0.5. Highly correlated variables include TOT and GDP for the US, TOT and GDP for Kenya, and employment and TOT. The high correlation leads to multicollinearity problem. This was solved by differencing of variables to make them stationary. The correlation matrix after differencing is shown in Table 6.

4.3 Stationarity Analysis

4.3.1 Unit Root Tests

To avoid a spurious regression associated with non-stationary variables, the study ensured that the model is in a stable equilibrium by testing the time series properties of the variables using the ADF test. One lag is used since the data is annual. Table 4 shows the Unit root test results before differencing while Table 5 shows unit root test results after differencing.

Table 4: Unit root test results

Variable	Test statistic	1% Critical Value	5% critical value	10% critical value	Stationarity
lnX	-0.430	-3.750	-3.000	-2.630	Non stationary
lnGDPU	-1.795	-3.750	-3.000	-2.630	Non stationary
lnFDI	-2.636	-3.750	-3.000	-2.630	Non stationary
lnGDPK	0.6360	-3.750	-3.000	-2.630	Non Stationary
lnTOT	-2.019	-3.750	-3.000	-2.630	Non stationary
lnRER	-2.833	-3.750	-3.000	-2.630	Non stationary
lnEMP	-1.624	-3.750	-3.000	-2.630	Non stationary
Dummy	-0.8090	-3.750	-3.000	-2.630	Non stationary

Table 5: Unit root test result after differencing

Variable	Test statistic	1% Critical Value	5% critical value	10% critical value	Stationarity
lnX	-4.304	-3.750	-3.000	-2.630	Stationary
lnGDPU	-3.756	-3.750	-3.000	-2.630	Stationary
lnFDI	-6.345	-3.750	-3.000	-2.630	Stationary
lnGDPK	-3.671	-3.750	-3.000	-2.630	Stationary
lnTOT	-4.686	-3.750	-3.000	-2.630	Stationary
lnRER	-6.212	-3.750	-3.000	-2.630	Stationary
lnEMP	-4.119	-3.750	-3.000	-2.630	Stationary
Dummy	-4.359	-3.750	-3.000	-2.630	Stationary

From Table 4, it is clear that all the variables were non stationary when they were tested for stationarity using the ADF Test. This is because the test statistic was greater than the critical values at 1%, 5% and 10%. To make them stationary the variables were differenced once and tested using the ADF test. The results in Table 5 showed that the test statistic was lower than the critical values at 1%, 5% and 10%.

4.3.2 Correlation of variables after differencing

Since there was a serious problem of multicollinearity before differencing of the variables, a correlation matrix was run to check if they were still correlated and the variables are presented in the Table 6.

Table 6: Correlation matrix after differencing

	dlnx	dlngdpu	dlnfdi	dlngdpk	dlntot	dlnrer	dlnemp
dlnx	1.0000						
dlngdpu	0.1194	1.0000					
dlnfdi	-0.2119	0.1447	1.0000				
dlngdpk	0.3260	0.1214	0.3289	1.0000			
dlntot	0.0591	-0.3430	-0.1651	-0.1494	1.0000		
dlnrer	-0.3368	-0.0074	-0.1381	-0.4146	-0.1425	1.0000	
dlnemp	0.1618	0.0824	0.0622	0.0516	-0.0904	-0.1862	1.0000
ddummy	0.3069	-0.1326	0.2447	0.0433	-0.0673	0.0139	0.5019

After differencing it was noted that none of the variables were highly correlated hence allowed for application of OLS.

4.4 Autocorrelation test

The analysis gives a Durbin Watson statistic of 2.108911 reflecting no serial correlation between the dependent variable and the residual of the estimated equations. This therefore means the residuals are independent and identically distributed as $N(0, \delta)$.

4.5 Tests for Cointegration

The non stationarity of data series may result in spurious relationship. The study therefore used cointegration methodology by using OLS to estimate a long run equation with variables integrated of order 1. Table 7 shows the results of the analysis;

Table 7: Result of the long run relation of the model

Source	SS	df	MS	Number of obs = 20		
Model	1.31357075	7	.187652964	F(7, 12)	=	1.47
Residual	1.53177988	12	.127648323	Prob > F	=	0.2659
				R-squared	=	0.4617
				Adj R-squared	=	0.1476
Total	2.84535063	19	.149755296	Root MSE	=	.35728

dlnx	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
dlnngdpu	4.992206	4.341111	1.15	0.273	-4.466261	14.45067
dlnfdi	-.1224827	.0590994	-2.07	0.060	-.2512493	.0062839
dlnngdpk	.8663342	.8168298	1.06	0.310	-.9133851	2.646054
dlntot	.5493129	1.220128	0.45	0.661	-2.109119	3.207745
dlnrer	-.7556063	.9732754	-0.78	0.453	-2.876191	1.364979
dlnemp	-.4638754	.8279583	-0.56	0.586	-2.267842	1.340091
ddummy	.9221848	.4600265	2.00	0.068	-.080127	1.924496
_cons	-.1877288	.2262775	-0.83	0.423	-.6807452	.3052875

The results show that only FDI and the dummy variable representing periods of existence of AGOA are significant determinants of apparel exports to the USA. To avoid spurious regression, a residual based cointegration test was done. The stationarity of the residual means that there is a cointegrating relationship among variables in the long run equation.

Table 8: ADF test for residual

Dickey-Fuller test for unit root		Number of obs = 19	
		----- Interpolated Dickey-Fuller -----	
Test Statistic	1% Critical Value	5% Critical Value	10% Critical Value
Z(t)	-5.799	-3.750	-3.000

MacKinnon approximate p-value for Z(t) = 0.0000			

The test statistic is -5.799, therefore less than the critical values 1%, 5%, and 10%. This means that the residual from the regression using the ADF test is stationary. Further, the study estimated the corresponding error correction model (ECM) and found the following results in table 9, 10 and 11.

Table 9: Error Correction Model Results 1

Source	SS	df	MS	Number of obs = 18		
Model	1.76883568	8	.22110446	F(8, 9)	=	2.52
Residual	.789884659	9	.087764962	Prob > F	=	0.0953
				R-squared	=	0.6913
				Adj R-squared	=	0.4169
				Root MSE	=	.29625

dlngx	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
dlngdpu	7.399673	3.775416	1.96	0.082	-1.140912	15.94026
dlnfdi	-.1880824	.0570575	-3.30	0.009	-.3171554	-.0590095
dlngdpk	1.075093	.7003133	1.54	0.159	-.509126	2.659312
dlntot	1.689191	1.131329	1.49	0.170	-.8700527	4.248435
dlnrer	-.1035849	.8397428	-0.12	0.905	-2.003215	1.796045
dlnemp	-.317717	1.380804	-0.23	0.823	-3.441313	2.805879
ddummy	1.230322	.5333037	2.31	0.046	.0239053	2.436739
dEct_1	.2590551	.1186687	2.18	0.057	-.0093921	.5275024
_cons	-.29624	.1980076	-1.50	0.169	-.7441642	.1516843

Table 10 shows results on elimination of insignificant variables like GDP for the US the previous year, GDP for Kenya the previous year, terms of trade, real exchange rate, and employment rate for previous year. Table 11 shows results of ECM on removal of insignificant variables.

Table 10: Error Correction Model Results 2

Source	SS	df	MS	Number of obs = 18		
Model	2.52683736	15	.168455824	F(15, 2)	=	10.57
Residual	.031882978	2	.015941489	Prob > F	=	0.0898
				R-squared	=	0.9875
				Adj R-squared	=	0.8941
				Root MSE	=	.12626
Total	2.55872034	17	.150512961			

dlngx	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
dlngx_1	1.354482	.4098817	3.30	0.081	-.4090967	3.11806
dlngdpu	16.00174	2.573152	6.22	0.025	4.930358	27.07311
dlngdpu_1	-8.857099	3.591425	-2.47	0.133	-24.30975	6.595554
dlnfdi	-.3178141	.036547	-8.70	0.013	-.4750632	-.160565
dlnfdi_1	.1906877	.0515517	3.70	0.066	-.0311215	.412497
dlngdpk	1.566881	.3955962	3.96	0.058	-.135232	3.268994
dlngdpk_1	-.5465952	.4313918	-1.27	0.333	-2.402724	1.309534
dlntot	3.065171	.6418625	4.78	0.041	.3034599	5.826883
dlntot_1	3.3646	1.142482	2.94	0.099	-1.551102	8.280301
dlnrer	2.218502	.6171027	3.60	0.069	-.4366762	4.873681
dlnrer_1	3.095184	.5549421	5.58	0.031	.7074612	5.482907
dlnemp	-5.613318	1.848348	-3.04	0.093	-13.56612	2.33948
dlnemp_1	-.1550195	.3660834	-0.42	0.713	-1.730149	1.42011
ddummy	3.413627	.4703796	7.26	0.018	1.389747	5.437507
dEct_1	.9308096	.1280412	7.27	0.018	.3798926	1.481727
_cons	-.3248676	.1853647	-1.75	0.222	-1.122428	.4726922

Table 11: Error Correction Model Results 3

Source	SS	df	MS	Number of obs = 18		
Model	2.42959289	12	.202466074	F(12, 5)	=	7.84
Residual	.129127453	5	.025825491	Prob > F	=	0.0168
				R-squared	=	0.9495
				Adj R-squared	=	0.8284
				Root MSE	=	.1607
Total	2.55872034	17	.150512961			

dlngx	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
dlngx_1	.4860466	.2289016	2.12	0.087	-.1023637	1.074457
dlngdpu	13.68825	2.602018	5.26	0.003	6.999546	20.37695
dlnfdi	-.3202063	.0448169	-7.14	0.001	-.4354117	-.2050008
dlnfdi_1	.1138523	.0451175	2.52	0.053	-.0021259	.2298305
dlngdpk	1.62767	.4395773	3.70	0.014	.4977001	2.757639
dlntot	2.801034	.6876728	4.07	0.010	1.033315	4.568753
dlntot_1	4.895623	1.141007	4.29	0.008	1.962571	7.828675
dlnrer	2.556103	.7548632	3.39	0.020	.6156653	4.496541
dlnrer_1	2.627644	.6116799	4.30	0.008	1.055271	4.200017
dlnemp	-1.626446	1.11133	-1.46	0.203	-4.483211	1.23032
ddummy	2.634325	.4410851	5.97	0.002	1.500479	3.76817
dEct_1	.7367149	.1158029	6.36	0.001	.4390342	1.034396
_cons	-.6663588	.1374118	-4.85	0.005	-1.019587	-.3131306

When the significant variables were lagged once and run, the ECM results showed that most of the variables and their lagged terms were statistically significant in determining apparel exports to the USA and explain approximately 94% of the variations in exports. Estimation results of Table 11 therefore give the preferred model.

4.6 Mode Estimation results

Table 12 gives a summary of the error correction model results at various stages of regression.

Table 12: Estimation results (dependent Variable = $dlnx$)

Variables	ECM 1	ECM 2	ECM 3
Constant	-0.2962	-0.3249	-0.6664
$dlnx_1$		1.3549(3.30)***	0.4860(2.12)***
$Dlmgdpu$	7.4000(1.96)***	16.0017(6.22)**	13.6883(5.26)*
$dlmgdpu_1$		-8.8571(-2.47)***	
$Dlnfdi$	-0.1880(-3.30)*	-0.3178(-8.70)*	-0.3202(-7.14)*
$dlnfdi_1$		0.1907(3.70)***	0.1139(2.52)**
$Dlmgdpk$	1.0751(1.54)	1.5669(3.96)***	1.6277(3.70)*
$dlmgdpk_1$		-0.5466(-1.27)	
$Dlntot$	1.6891(1.49)	3.0652(4.78)**	2.8010(4.07)*
$dlnntot_1$		3.3646(2.94)***	4.8956(4.29)*
$Dlnrer$	-0.1036(-0.12)	2.2185(3.60)***	2.5561(3.39)**
$dlnrer_1$		3.0952(5.58)**	2.6276(4.30)*
$Dlnemp$	-0.3177(-0.23)	-5.6133(-3.04)***	-1.6264(-1.46)
$dlnemp_1$		-0.1550(-0.42)	
$Ddummy$	1.2303(2.31)**	3.4136(7.26)**	2.6343(5.97)*
$dEct_1$	0.2591(2.18)***	0.9308(7.27)**	0.7367(6.36)*
R^2	0.6913	0.9875	0.9495
Adjusted R squared	0.4169	0.8941	0.8284
F	2.52	10.57	7.84
N	18	18	18

*Significant at 1%, ** significant at 5%, *** significant at 10%

The estimation results shown in table 12, shows the error correction model results at various level, the brackets represents the t values and the asterisk show the level of significant, the ECM results in column three therefore gives the preferred model results, because it gives the more statistically significant coefficients and with high coefficient of determination.

Model

The preferred model regression results are therefore given by equation 5.

$$\begin{aligned} \text{dinx} = & -0.6664 + 0.4860\text{dinx}_1 + 13.6883\text{dingdpu} - 0.3202\text{dinfdi} - 0.1139\text{dinfdi}_1 - \\ & 1.6277\text{dingdpx} + 2.8010\text{dintot} + 4.8956\text{dintot}_1 - 2.5561\text{dlnrer} + 2.6276\text{dlnrer}_1 - \\ & 1.6264\text{dlnemp} - 2.6343\text{ddummy} - 0.7367\text{dEct}_1 \\ & \dots\dots\dots(5) \end{aligned}$$

4.7 Discussion of Results

The estimation results presented in Table 12 column four shows that the 95% of the variations of Kenya’s apparel exports to the US are explained by: the previous year’s exports, GDP of the United States, Foreign Direct Investment, Kenya’s GDP, ToT, RER, employment rate and the dummy variable representing the existence of AGOA preferences. This implies that only 5% of the variations in exports are explained by variables not factored in the model and have hence been captured by the error term. The value of the constant is -0.6664; this shows that if all variables that influence Kenya’s apparel exports to the USA are all zero then the export values would be -0.6664. The results of the analysis show that probability of the F statistic is significant there. This implies that the model is specified correctly.

4.7.1 Previous Year’s Exports

The estimation results showed that the previous year’s Kenya apparel exports to the USA were statistically significant in determining current year’s exports to the US and that a 1% increase in previous year’s exports would lead to an increase in current year’s exports by 0.49% holding other factors constant. This may be explained by the fact that when exports are high in the previous year, the returns from the exports is invested for more production.

4.7.2 United States GDP

As expected, the results show that United States GDP growth rate has a positive and significant impact on Kenya's exports to the United States; an increase in United States GDP by 1 unit would lead to an increase in Kenya's apparel exports by 13.69% holding other factors constant. This is explained by the fact that an increase in US GDP would lead to an increase in demand for imports including Kenya's textiles and apparel.

4.7.3 Foreign Direct Investment

It was expected that FDI from the USA to Kenya would have a positive impact on Kenya's apparel exports to the USA, but the results showed that FDI had a significant but negative impact on apparel exports to the USA. The results showed that a 1% increase in FDI would lead to a decrease in apparel exports by 0.32% holding other factors constant. This can be attributed to the fact that there could be limited companies from the USA coming to invest in the textile industry in Kenya.

The results also showed that previous years FDI from the USA significantly impacted on current year's exports and that a 1% increase in previous years FDI would lead to an increase in apparel exports to the USA by 0.11% holding other factors constant. This is because of the fact that USA companies may have taken one year to settle down and start exporting only a year later.

4.7.4 Kenya's GDP

From the estimation, Kenya's GDP was found to have a significant impact on Kenya's textile exports to the US. Results showed that a 1 unit increase in GDP would lead to an increase in apparel exports to the USA by 1.63 units holding other factors constant. Textiles and apparels being the fourth highest Kenya's export good/product in value terms, increase in GDP signifies increased investments/production for Kenya, and therefore more exports.

4.7.5 Terms of Trade

The regression results showed that current year's and previous year's terms of trade are statistically significant determinants of exports to the USA. A 1% increase in current year's terms of trade would lead to an increase in apparel exports to the United States by 2.8%.

Similarly, a 1% increase in previous year's TOT will lead to an increase in current year's exports by 4.9% *ceteris Paribas*. This is because favorable terms of trade are associated with increased exports growth rate.

4.7.6 Real Exchange Rate (RER)

RER for the current and previous year was also found to be statistically significant determinants of Kenya's apparel exports to the United States but with an unexpected sign. It was expected that as RER increases, goods of the exporting country become less competitive in the international market therefore leading to a decrease in their demand therefore negatively affecting exports. It was found that holding other independent variables constant, a 1% increase in current year's real exchange rate would lead to an increase in apparel exports to the US by 2.56%. Similarly the previous year's real exchange rate would lead to an increase in apparel exports by 2.63% holding other factors constant.

4.7.7 Employment in textile sector

Employment rate was expected to have a positive impact on Kenya's apparel exports to the USA, but it was found that though statistically significant determinant of apparel exports to the USA, it had a negative impact on apparel exports. The results show that holding other independent variables constant, a 1% increase in employment rate would lead to a reduction in apparel exports to the USA by 1.63%. The reason for the negative impact could be due to the outdated machines used by the textile industries meaning that even if more people are employed, the output may remain constant leading to low productivity. In addition, increase in personnel in the textile industries without investing in new technology would increase the cost of production and make exports uncompetitive therefore leading to the decrease in textile exports.

4.7.8 Dummy

The coefficient of the dummy variable was significant as expected. The estimation results show that the existence of AGOA preferences increases Kenyan exports by 2.63% holding other factors constant and vice versa. This is mainly because of the preferential treatment which allows Kenya's apparel export products to enter the USA market duty free and quota free making them competitive compared to other textile products from countries that do not enjoy the treatment.

4.7.9 Error correction term

The error correction term is significant and positive with a relatively high speed of adjustment of about 0.7% suggesting that about 0.7% of deviations from long run equation are made up within one time period.

CHAPTER FIVE

5.0 SUMMARY, CONCLUSIONS AND POLICY RECOMMENDATIONS

5.1. Summary

The study investigated the factors that determine textile exports to the United States of America under the AGOA provisions. The study looked at various determinants export of textile products to the US. Further, the study used a combination of supply-side and demand-side factors to construct an empirically traceable export model in accordance with traditional theoretical models.

The study was necessitated by the dismal performance of the textile sector within the duration of existence of the AGOA provision. It is important to note that the sector still imports raw materials for value addition for re-export under the Third Country Provision which was supposed to be used only as a short term measure. The study used General Export Model applied by Ogun (1998) and Edwards and Alves (2005) to analyze time series yearly data of real GDP values for the US, real export values of apparels to the US, employment in textile sector in Kenya, RER, FDI and ToT and Real GDP for Kenya for period 1990 to 2010. The aim of the study was to find reasons for the poor performance of the textile sector in exploiting opportunities provided by the US through AGOA.

5.2. Conclusions

The analysis generally shows that the trade (textile) flows seem to follow the international trade theory where the domestic and foreign GDP are crucial determinants of exports. The study found out that GDP of USA positively and significantly affected exports of textiles from Kenya. On the other hand, with an increase in FDI from USA textile exports reduced. In the case of Kenya's GDP, exports increased as GDP increased showing a positive correlation with exports and which is statistically significant. For ToT and RER, the study found that they are positively correlated with textile exports and are statistically significant. Unexpectedly, employment rate had a negative correlation with textile exports.

5.3 Policy Recommendations

Based upon the results of this study, the Government may use trade policy instruments to increase textile and apparel exports to the US and other markets. The Kenyan Government should ensure that the country takes advantage of the AGOA provision by not only providing a stable macro-economic environment but also ensuring that the players in the industry are sensitized on the available opportunities under AGOA.

The findings have shown that increase in GDP of our trading partner (USA) increases exports of textile products from Kenya to the USA which consequently improves Kenyan economy. If Kenya largely depends on one country (USA) as its market for a product(s), the country may suffer in the event that the trading partner goes through an economic depression. Therefore, to prevent this, the country should diversify to other markets to reduce the risks of collapse of the textile industry in case the US economy suffers depression. Kenya can take advantage of the economic integration, particularly the EAC, COMESA and EAC-COMESA-SADC Tripartite which have potential export opportunities for textile and other products.

The above findings show that though Kenya receives FDI from USA, the FDI does not positively influence exports of textile and apparel products to the USA. The FDI from USA may have been channelled to other sectors or projects and not necessarily the textile sector. Therefore, the Government should encourage investments in the textile sector. In addition, the government should encourage adoption of new technology in textile industries to increase productivity of these industries.

The results of the study showed that the appreciation of the RER encourages exports of textile and apparels to the USA. Whereas the Kenyan Government focuses on continued stability in RER to improve the economy by providing a stable macroeconomic environment, appreciation of the RER could also lead to higher economic growth if the full potential of textile and apparel sector is realized and exploited. In view of the fact that the sector has a lot of potential and with ready market for its products, the Government should encourage investments in the sector in order to reap benefits in the event that there is a depreciation of RER.

The study shows that increase in Terms of Trade increases exports of textile and apparel products to the USA. Therefore, the Government should ensure continuous improvement in ToT to encourage exports of textiles to the USA.

The findings show that increase in Kenyan GDP leads to increase in textile and apparel exports. To ensure that the benefits of the increase in exports are distributed to all players in the textile sector, the Government through the Cotton Development Authority (CDA) should give incentives to farmers in the cotton growing areas to increase production of cotton. This will ensure that farmers benefit from the backward linkages and also protect the industry from the collapse when the Third Country Fabric Provision comes to an end. In addition, the cost of production will decrease by getting cheap raw materials locally, therefore increasing the competitiveness of textiles and apparels in the international market.

5.4 Areas for Further Studies

The study did not consider all factors that affect exports of textile products. In view of the fact that there are many factors that may directly or indirectly affect exports, similar studies need to be carried out.

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