THE IMPACT OF INTERNATIONAL TRADE ON THE ECONOMIC GROWTH OF DEVELOPING COUNTRIES: AN EMPIRICAL STUDY OF KENYA

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Abstract

The link between trade and economic growth has been the subject of extensive and intensive exploration in the recent past, with several studies measuring different aspects of both. Most of these studies have been concentrated on the developed economies. However, interest has been growing lately to determine the effects of trade and openness on the economies of developing countries. The study applied the Cointegrated VAR (CVAR) approach with steps from ADF test to The Johansen co-integration test to Vector Error Correction Model (VECM) and finally to the VAR granger causality to determine the existence of long-run equilibrium co-integration and causality between international trade and the rate of economic growth. The model included Exports, FDI and Inflation as the regressor variables of GDP and concluded that there is a significant and positive long-run relationship between export and growth with a bidirectional causality where GDP granger causes export, and export granger causes GDP.

I.   INTRODUCTION

Many scholars consider international trade as one of the avenues for the third world economies to compete and come to economic parity with their developed counterparts. Most developing nations are known to be in abundant possession of numerous natural resources that are in constant and growing demand in the world markets, but whether the trade in these resources is beneficial to them is not an issue of easy consensus. Trade is an important factor in economic growth, and this is majorly achieved through exportation, importation and incorporation of advanced technological systems and innovations. International trade[1] opens local firms to competition and hence the effort to incorporate more effective and efficient production systems *(Belloumi, 2014).*The ability of trade to impact the economic growth of any country is however dependent on the suitability of the environment and effectiveness of the application of the borrowed systems. Both endogenous and exogenous growth theories are in agreement that one of the ways through which trade may bring growth to developing countries is through knowledge and technology spillovers occasioned by the importation of capital and immediate products from the developed world. Utilizing this knowledge in imitation and innovation is likely to lead to improved efficiency in the production of the said developing country. However, if the trade pattern is skewed by the comparative advantages such that the developing countries can only specialize in the traditional manufacturing or extraction sectors then no meaningful growth is likely to be derived from such trade as observed by *Alfonso (2001)* while trying analyze the dynamics of trade and technology on economic growth.

The first and second world economies have more sophisticated and better-structured business systems that put them in a position to benefit enormously from any form of international trade, and some have achieved this at the expense of the developing countries. Liberalism and openness of trade (free trade) are some of the factors that have been touted to enhance the capacity of international trade; but the existence of associated structural imbalances in the form of import- export, budget deficits and inflation has led to competition at the expense of the weaker economies creating a dependency situation hence widening the gap*(Eneji, 2012).*

Jeníček&Krepl (2008) define foreign trade as a "reflection of economic relationships among the individual economies and represents the part of the country foreign relationships, which include trade exchange of a part of the production". They view international trade as a form of substitution of local (home) production systems and structure and home resources with imported products and borrowed technologies as well as foreign resources. They however contend that the ability of international trade to influence the economy of a country depends on the quality of its imports and the competitiveness of the products of the country in the international market. Free trade leads to efficient utilization of available resources thus leading to improved production through the effects of comparative advantage and according to geographical distribution of factors of production and specializationas observed by *Hamideh (2012).*

The results of this study are intended be contributory to the existing research and to bring insightful knowledge on the policies, trends and relationship that exists in a single state (as opposed to cross-country comparisons). Also, the results will be useful to policymakers as a means of achieving maximum exploitation from the country's trade activities. With this regard, the main objectives of this study are:

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[1] *International trade is the main factor in trade openness and is considered by many scholars as in interchangeable term. This paper also treats the two terms as synonyms.*

- To identify if there is a cointegration between international trade and economic growth
- To determine whether international trade affects economic growth positively or negatively.

This structure of this paper is organized that section II reviews empirical literature on trade and international growth, section III gives a profile of Kenya and a brief account of the transformations it has undergone with reference to trade (export and import policies). Section IV describes the data and methodology used and section V gives the interpretation of the results and the conclusion.

II.   LITERATURE REVIEW

There are direct benefits accruing to a country that is well positioned in the global market. A case in point is China, which, according to *Sun (2010),* has in the recent past reaped both static and dynamic benefits[2] of trade that has spurred its economic growth. The static benefits include gains derived from specialization to products that a country can produce at low costs (comparative advantage) thus improve output, affording the local consumers a chance at cheaper products through imports and economies of scale as well an improved variety. On the other hand, dynamic benefits include gains like exposure to a larger market; increased competition to serve the expanded market, accumulation of capital and technological spillovers which eventually leads to efficient production systems and reduction of unemployment.

Al Mamun&Nath (2005) find a positive long-run causality relationship between exports and industrial production[3], with causality running from exports to industrial production. *Ghirmay et al (2001)* in agreement find results that exports have a causal influence on the efficiency and accumulation of capital, just as this accumulation has on capital. In his review of literature on the effects of international trade in China[4],*Huan (2009*) reviews literature from different studies and finds various conclusions of either one-way or two-way relationship between export and economic growth. He concludes that as much as imports played an important role in promoting the Chinese economy, exports are more directly associated with the growth in the economy.

From the foregoing, there is a general trend in literature of a direct relationship (either one-way or two-way) between export and economic growth*(Edwards, 1998; Van den Cate, 2009;Arodoye&Iyoha, 2014). Lewer (2003)*focused on the size of the relationship between international trade and economic growth and found results of economic significance. He finds that every percentage point increase in the growth of trade leads to an economic growth[5] rise by slightly more than one-fifth of a percentage point. *Cieşlik and Tarsalewska (2008)*looks at both trade and FDI among the CEE countries and gets a positive effect on economic growth. The study by *Yanikkaya (2003)*findsa significant and positive relationship between trade, import and export sizes, but stresses that these effects are not considerably different between developed and developing countries. *Kavoussi (1984)*found a strong correlation between higher export rates and higher economic growth for both middle and low-income economies though the relationship diminishes with the declining level of development. This is supported by

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[2] *Static Gains: Static gains are the gains from the reallocation of factors of production in sectors where the country has a comparative advantage. Static gains can be reaped immediately in the short-run through more efficient allocation.*
Dynamic Gains: Dynamic gains are those gains which accumulate over a period of time. Dynamic gains accrue only over time in less obvious and direct ways.
[3] *Industrial production is one of the indicators of economic growth.*
[4] *Some of the Works reviewed include; BoNai Fan, XiaoChi Mao, Shuang Wang (2005); Jiadong Tong (1995); FuWei Peng (1999); QuanFa Yang (1999) among others.*
[5] *He measures economic growth in terms of real GDP or real per capita GDP.*

*Daumal and Özyurt (2010)*whose result reveal that trade openness is more beneficial to states with higher levels of capital income hence more industrialized states are favored[6].*Sun and Amas (2010)*link the insurgence of China's economy to its strong position in the global trade and its liberalized dynamic trade policies.

Enejiet al (2012) warns against export dependence[7] and instead argues for diversification commodities that can counterbalance the negative effects in each other. Due to the persistent fluctuation in the prices of agricultural products in the world market, *Soi et al (2013)*also suggest for a country to diversify into more value-added manufactured exports to improve its position.

*Obadan et al (2012)*focus on the impact of trade openness to the growth on Nigerian economy and concluded that trade openness had strong positive impact on the economic growth even though this was again negatively impacted by a poor political environment. This underscores the importance of other factors when considering the relationship between international trade and economic growth. Trade openness and institutions are complementary factors in promoting growth according to *Mina and Léonce (2005)*who argue that institutions play an important role in trade liberalism and the promotion thereof. Higher levels of trade openness and effective institutional quality improve the growth effects of trade.

III.   KENYA'S PROFILE AND TRADE REFORMS

Kenya's geographical location on the East African coast bordering the Indian Ocean gives it an upper hand as an access point for trade to most of the Eastern and Central Africa region with its main competition being Tanzania (as Somalia has been war riddled for the better part of three decades). Kenya's international airport (JKIA) acts as the main transit center connecting East and Central Africa to most European as well as the Middle Eastern and Asian Markets. Nairobi with its robust infrastructure and supported by an active Security Exchange acts as the de facto center of business and trade for most of the surrounding states.

Kenya became a lower middle-income country following the rebasing[8] of its GDP in September 2014. This makes it the ninth largest economy in Africa and fifth in the sub-Saharan Africa, with robust infrastructural investments, buoyant manufacturing and other industry sectors, and strong agricultural production, *World Bank Report (2014).*

Kenya is considered a liberal country in terms of international trade, a feat achieved after a series of dynamic transformations in policy from the time of independence in 1963. This reform process was intermittent at best starting from the 1960s[9]. The system of trade in Kenya continued from where it was left by the British after independence in 1963, with import-substitution meant to cushion the local

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[6]*Alesina et al (2005) however find that trade has more impact on the economic progress of smaller economies than larger ones.*

[7] *"For economies highly dependent on exports, the volatility in both export earnings and economic growth associated with economic shocks makes them extremely vulnerable. Given that exports constitute a significant and growing share of GDP for most developing economies, an increased dependence on exports results in significant fluctuations in export earnings. (Export Dependence and Export Concentration- UNDP)*

[8] *The rebasing is a result of a statistical reassessment of the economy by the Kenya National Bureau of Statistics which led to an increase in the economy figures by 25.3%. The rebasing led to a GDP estimate of US$55.2 billion (up from US$44.1 billion before rebasing), with GDP per capita standing at US$1,246 (up from US$994).(World Bank Report, December 2014)*

[9] *For the whole progress of the reform process, read Swamy, (1994); Ng & Yeats, (2005); Sachs and Warner, (1995); Were et al (2006) and Were &Makau (2009)*

industry from competition as most of the extractive products were used for industries in the United Kingdom. The system was riddled with regulatory and protectionist policies in most of the key sectors of the economy and was largely biased against exporting.

The incompetence of the system came to light with economic upheavals of the '70s, for instance, the oil crisis of 1973. With insufficient technological know-how and inputs, the country was faced with economic uncertainties. With pressure mounting, the system was shifted in the 1980s to an export promoting strategy where the quantity restrictions were replaced by tariffs. The formation of the Export Processing zones is one of the results of these efforts.

Complete turnaround came in 1993 when the fixed official exchange rate system was replaced by a floating exchange and licensing requirements scrapped off. Subsequent years saw more effort to open up Kenya, through the export-led strategy, to a globally open economy with access to large international markets and a variety of products for its increasing consumer base. Today Kenya boasts a fully liberalized economy without exchange or price controls. No restrictions on domestic and foreign borrowing by residents and nonresidents[10].

Kenya's trade potential has been enhanced by its membership to the 93 million potential market presented by the East African Community, envisioned to have a free flow of goods, services and labor between the member countries (Kenya, Uganda, Tanzania, Rwanda and Burundi) as well as a proposed monetary union. Kenya is also a member of the COMESA (Common Market for Eastern and Southern Africa) with a population of over 470.26 million and annual import figures of around US$170,895 million and export of US$112,546 million[11]. Kenya has signed several other bilateral and multilateral trade arrangements and agreements, including with the World Trade Organization that gives it Most Favored Nation (MFN) treatment in 90% of the world markets; ACP/Cotonou Partnership Agreement arrangement that comes with duty reductions and freedom from all quota restrictions for Kenyan goods to the European Union; and African Growth and Opportunity Act (AGOA)[12].

Currently, there exist several export promoting agencies mandated to perform several functions geared towards establishing, enhancing and maintaining the competitiveness of Kenyan exports through value addition, improved quality and reduced cost of production. These institutions are mostly founded on the background of exploration of and establishing new markets, strengthening the position of Kenyan products in the existing markets as well as maintaining a continuous update on the changes in the market and production methods and systems. They ensure that the Kenyan commodities always meet the dynamic standards of the world market.

IV.   METHODOLOGY

Data

The data for this study is derived from the World Bank World Development Indicators (WDI) data between 1970 and 2013. The variables representing the measure of International Trade are taken to be the export volumes, Foreign Direct Investment (FDI) and inflation rates while the Economic Growth level is represented by the GDP values. The values taken for GDP is given as GDP growth (annual %),

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[10]CFO Africa (Community for Finance Professionals in Africa, http://www.cfoafrica.net/advantages-of-investing-in-kenya.html(*Access date: 9.6.2015*

[11]*Welcome To About COMESA Website* http://about.comesa.int/(*Access date: 9.6.2015*

[12]*Read more about Kenya's trade agreements and arrangements in: Export Promotion Council (EPC), Trade Agreements,* http://epckenya.org/index.php?option=com_content&task=view&id=50&Itemid=70, *(Access date: 9.6.2015) and Meyer, N. et al. (2010)*

exports as Exports of goods and services (% of GDP), FDI as Foreign direct investment, net inflows (% of GDP) and inflation as Inflation, consumer prices (annual %).

There are 2 hypotheses in this research:

Hypothesis 1: H_0: *There is a relationship between theeconomic growth and export*

Hypothesis 2:H_2: *Export positively affects the economic growth rate.*

Model

Based on empirical literature review, the model for economic growth and international can be modelled following models used by of *Mogoe (2014)* and *Azeez et al (2014)*with modifications made to include foreign direct investment.

The model is expressed functionally as:

$$GDP = f(EXPT, FDI, INFL)$$

Where:

GDP= Gross Domestic Product

EXPT= Export

FDI= Foreign Domestic Investment

INFL=Inflation Rate

According to the model, the linear function of the equation becomes:

$$GDP = a_0 + \beta_1 EXPT + \beta_3 FDI + \beta_3 INFL + \mu t3,2$$

Where:

μ= stochastic or random error term (which means properties of zero mean and non-serial correlation).

$\beta_1 - \beta_3$= Coefficients of associated variables

a_0= constant interception

V.   RESULTS AND DISCUSSION

Unit Root Tests

Stationarity of a time series is of paramount importance, especially economic time series, but previous studies have indicated that many of these series lack this stationarity and often carry unit roots, hence the need for a unit root test. While only some of the variables are stationary at level (all except export), all of them become stationary after first difference at 'trends at intercepts' model, with 1% level and an automatic maximum lag length of 8. The table below shows the summarized results of the ADF test for unit root.

ADF test for Unit Root Results

		ADF Test at Level		ADF Test at First Difference	
			Prob		Prob
GDP	Test Statistic	5.306267	0.0008	7.852566	0.0000
	Critical Values	4.284580		4.309824	
Export	Test Statistic	2.200256	0.4739	4.999503	0.0017
	Critical Values	4.262735		4.273277	
Inflation	Test Statistic	4.513986	0.0054	6.881608	0.0000
	Critical Values	4.262735		4.284580	
FDI	Test Statistic	6.239162	0.0001	8.617755	0.0000
	Critical Values	4.273277		4.296729	

Significance 1%;trend and intercept; lag length max 8.

Johannes Co-integration Test

In order to determine the existence of long term relation between the variables, there is need to determine if there exists any cointegration between the variables. The Johannes model only uses non stationary variables of the same order. As shown in the following tables, the null hypothesis is rejected as the Trace cointegration test indicates the existence of 1 cointegrating equation while the Maximum Eigen value co-integration tests indicates 2 equations at 5% level. This implies that there is certainly a long run relationship between the economic growth (GDP) and the export. Due to the existence of cointegration in all the variables, we opt for the VECM.

The table below shows the results of the Johannes test at lag 3.

Sample (adjusted): 1973 2013
Included observations: 38 after adjustments
Trend assumption: Linear deterministic trend
Series: LGDP LEXT LFDI LINF
Lags interval (in first differences): 1 to 1
Unrestricted Cointegration Rank Test (Trace)

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.861514	77.82991	47.85613	0.0000
At most 1	0.591643	28.40532	29.79707	0.0717
At most 2	0.157050	6.014974	15.49471	0.6938
At most 3	0.067374	1.743787	3.841466	0.1867

Trace test indicates 1 cointegratingeqn(s) at the 0.05 level

Unrestricted Cointegration Rank Test (Maximum Eigenvalue)

Hypothesized No. of CE(s)	Eigenvalue	Max-Eigen Statistic	0.05 Critical Value	Prob.**
None *	0.861514	49.42459	27.58434	0.0000
At most 1 *	0.591643	22.39034	21.13162	0.0331
At most 2	0.157050	4.271187	14.26460	0.8297
At most 3	0.067374	1.743787	3.841466	0.1867

Max-eigenvalue test indicates 2 cointegratingeqn(s) at the 0.05 level

Granger causality test in the VECM model indicates the existence of a significant long run relationship between export and GDP with a bidirectional causality where GDP granger causes export, and export granger causes GDP.

CONCLUSION

The study looked the various dynamics through which international trade is likely to affect the economic growth of a country and included three economic indicators as regressors to the GDP. The study applied the Cointegrated VAR (CVAR) approach with steps from ADF test to The Johansen co-integration test to Vector Error Correction Model (VECM) and finally to the VAR granger causality to determine the existence of long-run equilibrium co-integration and causality between international trade and the rate of GDP growth. The model included Exports, FDI and Inflation as the regressor variables of GDP and concluded that there is a (positive) significant long run relationship between export and GDP with a bidirectional causality where GDP granger causes export, and export granger causes GDP. In conclusion, the results validate the hypotheses that there is a cointegration between trade and economic growth in Kenya and that export positively affects the economic growth rate of Kenya and thus exposure to international trade is beneficial to Kenya.

The results of this study demonstrate to the policy makers that in line with predicted positive impact of international trade on growth, the government should work towards extensively engaging in export promotion, especially of industrial higher quality capital and intermediate goods while making use of the country's comparative advantage. Also they should establish a strong competitive position in the export sector by taking advantage of the technological spillovers resulting from the openness, encouraging productive imitation of appropriate technology and establish innovation and creativity incubation centers of their own.

To the best of my knowledge, most of the studies done in this area with relevant to developing countries have mostly been concentrated on Latin America and the Asian countries. Very little has been done on sub-Saharan Africa outside of Nigeria and South Africa. Future research should be directed into gaining insights of these areas.

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APPENDIX

VEC Granger Causality/Block Exogeneity Wald Tests
Sample: 1980 2013
Included observations: 25

Dependent variable: D(LGDP)

Excluded	Chi-sq	df	Prob.
D(LXPT)	8.317123	3	0.0399
D(LINF)	3.460764	3	0.3259
D(LFDI)	1.631911	3	0.6522
All	11.28195	9	0.2569

Dependent variable: D(LXPT)

Excluded	Chi-sq	df	Prob.
D(LGDP)	23.81780	3	0.0000
D(LINF)	11.13834	3	0.0110
D(LFDI)	15.75556	3	0.0013
All	48.18536	9	0.0000