

**DOES FOREIGN TRADE MATTER IN THE ECONOMIC GROWTH  
OF EAST AFRICAN COMMUNITY?**

**Klege, Rebecca Afua** 

Department of Economics, University of Cape Coast, Cape Coast, Ghana  
rebeccaklege@gmail.com

**Babyenda, Peter**

School of Economics, Makerere University, Kampala, Uganda  
pbabyenda@gmail.com

**Abstract**

*The objective of this study is to examine the effect of foreign trade on economic growth in East African Community (EAC) using data obtained from World Bank development indicators (2014) from 1990 to 2012 and employing panel data estimation techniques for empirical analysis. We found that foreign trade has no effect on the economic growth in the EAC. However, gross capital formation, total labour force participation, FDI had a positive effect on economic growth in the EAC. The study recommends that the EAC partner states should invest widely in gross capital formation and there is need for increased skilled labour force participation in the EAC. The EAC should also strive hard to attract foreign investments in their countries since this practice increase their growth levels.*

*Keywords: Foreign Trade, Economic Growth, East African Community*

**INTRODUCTION**

The issue of foreign trade and growth has gained much debate in the East African Community partner states due to the implementation of EAC customs Union in 2005 and the common market in 2010 (EAC, 2012). This has led the EAC partner states to open up their economies to foreign economies (Shinyekwa & Mawejje, 2013). The partner states have also implemented liberal economic policies in order to increase the volume of foreign trade and it is evident that the volume of trade has increased in the EAC (Othieno & Shinyekwa, 2011). The EAC partner states have increasingly become integrated into the global economy and foreign trade has become one of the essential elements of their economic growth (WTO, 2014).

Trade liberalization has been an important part of East African policy agenda in the recent past as the partner countries embarked on several structural adjustment efforts (Othieno & Shinyekwa, 2011). More recently countries in the East African region have been involved in a number of trade initiatives, particularly regional economic integration and, in particular, the EAC and the Common Market for Eastern and Southern Africa (COMESA) (EAC, 2012).

During the period 2001 to 2009, the imports of the EAC partner states from the rest of the World, excluding Uganda, grew from US\$ 6.0 billion to US\$ 18.3 billion, respectively (Othieno & Shinyekwa, 2011). In terms of value, it is evident that the EAC region relies on non-partner countries for imports more than the EAC partner states (Shinyekwa & Mawejeje, 2013). Contrary to prior expectations, the implementation of the EACCU in 2005 seems not to have reduced imports from the rest of the World into the partner countries as the value of imports increased from US\$ 9.8 billion in 2005 to US\$ 20.7 billion in 2008 (EAC, 2012). In 2011, Rwanda recorded the highest economic growth rate of 8.6 percent followed by Tanzania and Uganda with 6.4 and 5.9 percent respectively. Kenya and Burundi were almost at par with growth rates of 4.4 and 4.2 percent respectively. Kenya had the highest per capita income of USD 862.4 while Burundi recorded the lowest at USD 264 (EAC, 2012).

While the role of variables such as exports and imports have received considerable attention, the effect of foreign trade on economic growth in East African Community has largely been ignored. Therefore, the major objective of the paper is to examine the effect of foreign trade on economic growth in East African Community using panel data estimation techniques. The rest of the paper is structured as follows. After this section the literature review is presented followed by the methodology of the study. Discussions of empirical results are presented then finally the study presents conclusions and recommendations.

## LITERATURE REVIEW

The effects of foreign trade have been analyzed as a major factor for economic growth by Grossman and Helpman (1991); Frankel and Romer (1999); Rodrik and Rodriguez (2000); Wacziarg and Welch (2003); Alcalá and Ciccone (2004). Sachs and Warner (1995) found that the growth rate of the economies with free trade regimes is higher than the closed economies. Edwards (1998) studied the relation between foreign trade and total factor productivity (TFP) in 93 countries and concluded that TFP growth is faster in more open economies. The study by Lewer and Van den Berg (2003) examined the size of the impact between international trade and growth by not just considering its statistical significance but also regarding its economic significance, and revealed that one percentage point increase in growth of exports leads to a one-fifth percentage point increase in economic growth.

Detailed and historical validation has proved that international trade affects economic growth positively by stimulating capital accumulation, industrialization, technological progress and institutional development specifically increased imports of capital and intermediate products, which are not available in the domestic market may induce the productivity of the manufacturing sector (Lee, 1995). More active participation in the international market by promoting exports will lead to competition and trade improvements in terms of productivity (Wagner, 2007).

Significantly, the effects of exports on economic growth have been given much more attention may be due to the increasing role of export-led growth strategies in many developing countries. While some economists such as Krueger (1978); Chenery (1980); Tyler (1981); Kavoussi (1984); Balassa (1985); Ram (1985); Fosu (1990); and Salvatore and Hacter (1991) argued that export positively affect economic growth, some others such as Ahmad and Kwan (1991); Yaghmaian (1994) came up with counter-arguments to export-led growth (Temiz and Gokmen 2010). The empirical results provided by the study of Vohra (2001) revealed that exports have a positive and significant impact on economic growth when a country achieved some level of economic development. Related with this point, Subasat (2002) found that export oriented middle-income countries grow faster relative to less export oriented countries, and exports do not have any significant effect on economic growth of low and high-income countries.

Yapraklı (2007) investigated the impact of trade and financial openness and economic growth in Turkey during the period of 1990:1-2006:4. She used multivariate cointegration analysis, error correction-augmented Granger causality tests and vector error correction model. The results of her study revealed that while trade openness positively affects economic growth, financial openness created negative impacts on it. It was also found that there is a bi-directional causality between trade and financial openness in Turkey. Yücel (2009) examined also the causal impacts of financial development, trade openness and economic growth for the Turkish economy during the period of 1989-2007 in monthly basis. He used the Augmented Dickey-Fuller (ADF) for unit root test, Johansen and Juselius (JJ) for co integration analysis, and Granger causality test for causal impacts. Similar to the findings of Yapraklı (2007), he found that while trade openness has a positive impact, financial development has a negative impact on economic growth.

The study by Kehinde, et al (2012) on the impact of international trade on economic growth in Nigeria from 1970 -2010 reveals that three variables are statistically significant at 5% and these variables are export, foreign direct investment and exchange rate and they are positively related to real GDP while other variables such as import, inflation rate, openness exert a negative influence on real GDP. The study demonstrates that increase participation in global trade helps Nigeria to reap static and dynamic benefit of international trade despite non conformity of the coefficient of the openness. Both international trade volume and trade

structure towards high technology export result in positively effect on Nigeria economy. They recommended that the government should design appropriate strategy by diversifying the economy through export promotion, stimulating foreign direct investment and exchange rate stability in order to boost productivity of Nigeria economy by raising the standard of living of the citizens.

Various studies have been reviewed and various facts about foreign trade and economic growth explored but however some of the econometric methodologies employed by these studies are questionable, while others do not provide a conclusive relationship between foreign trade and economic growth. Therefore the present study seeks to close the above gaps by examining the effect of foreign trade on EAC economic growth from 1982 to 2012 using panel estimation techniques.

**METHODOLOGY**

**Theoretical Model**

The model is derived in conventional manner from a production function in which foreign trade is introduced as an input in addition to labor and domestic capital. In the usual notation then production function can be written as follows:

$$Y = f(L, K, T) \dots\dots\dots(1)$$

where Y is gross domestic product (GDP) in real terms, L is labor input, K is domestic capital stock, and T is stock of foreign trade.

Taking the natural logarithms of equation (1), following expression describing the determinants of the growth rate of real GDP is obtained:

$$LnY = \alpha + \beta LnL + \delta LnK + \theta LnT \dots\dots\dots(2)$$

Following the precedent set in numerous previous studies, capital stock is approximated by the Gross Capital Formation expressed in constant US dollars 2005 due to the formidable problems associated with attempts to measure the capital stock, especially in the context of developing countries such as the EAC partner states. In addition, labor input is measured by labor force total participation in the respective economies. Following Karras (2006) and others, several other variables that are often believed to have a significant effect on economic growth are also included hence this study apart from foreign trade, Gross Capital Formation and the total labor force participation, also includes the rate of inflation measured by consumer prices (annual prices %), foreign direct investments and the East African Community a dummy variable as independent variables that are believed to affect EAC partner states' economic growth.

### Model Specification

Following the above theoretical model, the EAC growth model is specified as follows;

$$\ln GDP_{it} = \beta_0 + \beta_1 \ln GCF_{it} + \beta_2 \ln LB_{it} + \beta_3 NX_{it} + \beta_4 INF_{it} + \beta_5 \ln FDI_{it} + \beta_6 EAC_{it} + \epsilon_{it} \dots \dots (3)$$

Where;  $\ln GDP$  is the natural logarithm of Growth Domestic Product (GDP) measured at constant US dollars 2005 used as a proxy variable for Economic growth of EAC partner states,  $\ln GCF$  is Gross Capital Formation,  $\ln LB$  is Labor force participation,  $NX$  is Net exports obtained as total exports minus total import,  $EAC$  is a dummy variable for the EAC partner states, it equals to 1 if the country has joined the EAC and 0 otherwise,  $\ln FDI$  is Foreign direct investment, net inflows (BoP, current US\$),  $INF$  is the Inflation, consumer prices (annual %) and  $\epsilon$  is the error term assumed to be normally distributed with mean zero and variance  $\sigma^2$ ,  $i$  is 5 and  $t$  is 22.

Gross capital formation, labor force participation, the EAC and FDI are expected to have a positive impact on economic growth of the EAC partner states while inflation and foreign trade are expected to have a negative impact on EAC partner states' economic growth. Foreign trade is believed to negatively influence the growth because all the EAC partner states are net importers.

### Estimation Technique

The empirical estimation is based on the application of the balanced panel data utilizing a sample of five EAC partner states; Burundi, Kenya, Rwanda, Tanzania and Uganda over the period 1990 - 2012. The study conducts a panel data unit root test to determine whether the panel data for study variables are stationary or not since panel data contains both the cross-section and the time components. When all the variables are stationary, the traditional estimation methods can be used to estimate the relationship between the variables. However if the variables are non-stationary, a test for co-integration is required. The study employs the two panel unit root tests; Levin, Lin and Chu (LLC) which assumes that the autoregressive parameters are common across countries that is, it assumes homogeneous coefficients and Im, Pesarian and Shin (IPS) which assumes heterogeneous coefficients of the study variables. The results from the two tests indicate that all variables are stationary hence the co-integration tests in this case are not required to estimate the model.

The choice between the two linear panel models of the fixed effects and random effects models is empirical as the study uses the Hausman test to choose between the FE and RE models. The Hausman test tests the null hypothesis that random effects ( $u_i$ ) and Regressors ( $x_{it}$ ) are uncorrelated. If random effects and regressors are uncorrelated, then we estimate random effects model and if they are correlated, then the fixed effects model will be preferred. To carry out this test, the study runs both the Fixed Effects model and the Random Effects

model. Since the P-Value is 0.0000, we reject the null hypothesis that the preferred model is RE and conclude that the preferred model is FE.

## RESULTS AND DISCUSSION

The summary statistic below indicates that the panel is strongly balanced and that the variables are worthy including in the regression since their standard deviation is greater than zero. It further illustrates that there are no outliers since the minimum and maximum of each variable is relatively close to its mean.

Table 1: Summary statistics

Variable	Observations	Mean	Std. Dev.	Min	Max
LnGDP	115	22.35009	1.081389	20.50441	23.96876
NX	115	-9.20E+08	1.17E+09	-5.85E+09	1.03E+09
LnGCF	115	20.60132	1.374628	17.55295	22.91589
LnLBR	115	15.85577	0.6911676	14.78982	16.97274
LnFDI	115	16.54533	3.768186	2.374347	21.33306
Inflation	115	12.33655	10.13601	-2.405932	48.25672

### Unit Root Test

All variables were tested for panel data stationarity using the two tests of LLC and IPS. All variables passed the stationarity test hence the panel co-integration tests were not necessary in this study. The study then proceeded to estimate the model using FE and RE before selecting the best model using the Hausman specification test.

Table 2: Unit Root Test

Variables	LLC	IPS
LnGDP	-4.132***	-1.9210**
NX	-2.0215**	-3.0900***
LnGCF	-2.6617***	-2.0374**
LnLBR	-10.6026***	-1.9732**
LnFDI	-14.7211***	-4.1672***
Inflation	-1.9666**	-2.6129***

\*P<0.1 \*\*P<0.05, \*\*\*P<0.01. Source: Authors Construct

## Estimation of the Results

Table 3: Fixed and Random Effects

Variables	Fixed Effect	Random Effect
NX	2.54E-12 (1.47E-11)	3.24e-11 (2.64E-11)
Ln GCF	0.3192*** (0.0462)	0.7079*** (0.0661)
LnLBR	0.5173*** (0.1710)	0.1874 (0.1168)
lnFDI	0.0135** (0.0055)	0.0008 (0.0931)
EAC	0.0581 (0.0424)	-0.0627 (0.0579)
Inflation	-0.0002 (-0.0012)	0.0033 (0.0024)
Constant	7.3268 (2.1577)	4.789 (0.7876)

Hausman Test = 72.56 (Prob> chi2 = 0.000)

Wald Chi (5) = 156.35 (Prob> chi 2 =0.000)

F(6,104) = 133.74(Prob> F = 0.0000)

\*\*P<0.05, \*\*\*P<0.01 Standard errors are in parenthesis Source: Authors Construct

The first and second columns of Table 3 report the fixed and random effects estimates respectively. The results from the Hausman specification test indicates that the individual country-specific effects are uncorrelated with the explanatory variables since we rejected the null hypothesis that the individual country-specific effects are correlated at 1% level of significance. This suggests that the fixed effects model is preferred to the random effects model for the static panel regression estimates. The results of the Hausman specification test are in line with the recommendations of Baltagi (2001) who recommends the use of fixed effects for a panel with fixed number of cross section observations, that is, a study that involves fixed (small) number of countries and in our case we have only five countries. Therefore, the study only considers the results from the fixed effects estimates in the discussion of the findings and in the suggestions of policy recommendations.

The F-test from FE model which tests the significance of the country effects under the null hypothesis that all the country dummy coefficients are equal to zero (Greene, 2012) indicates that the country dummies are jointly significant since the F- test statistic (F test that all  $u_i=0$ :  $F(4, 104) = 72.36$  (Prob> F = 0.0000)) is significant at 1% level of significance

implying that we reject the null hypothesis that the country dummies are jointly equal to zero. From the estimated results the major explanatory variable of the study foreign trade is not significant but displayed a positive sign. The natural logarithm of Gross Capital Formation, labor force participation and FDI are significant at 1 % level of significance with the expected signs while the EAC dummy variable and inflation are not statistically significant.

The insignificance of foreign trade could be attributed to the fact that the EAC countries are net importers implying that the EAC partner states do not significantly gain from foreign trade since they import more than what they export. This finding is in line with other previous studies such (Atoyebi, Akinde, Adekunjo, & Femi, 2012; Cetinkaya & Erdogan, 2010; DENIVA, 2005; Hisali, 2011; Chen, 2009) among others.

The elasticity of Gross Capital Formation with respect to economic growth is positive and statistically significant at 1% level of significance. Specifically the elasticity of Gross Capital Formation with respect to GDP (Economic Growth) is 0.3192804 implying that a one percent increases in gross capital formation increase the EAC partner states' economic growth by 0.3192804 percent. This finding is in line with economic theory and other previous studies such as (Lee, 1995; Yanikkaya, 2003; Atoyebi, Akinde, Adekunjo, & Femi, 2012; Rodriguez & Rodrik, 1999) implying that the EAC partner states should invest more in the activities that increases Gross Capital Formation in their respective countries.

The elasticity of total labor force participation with respect to economic growth is 0.5172778. This elasticity is significant at 1% level of significance moreover positive as earlier expected by the study. This indicates that a one percent increase in labor force participation in the EAC partner states increases their economic growth by 0.5172778 percent other factors held constant. This finding is very true since most of the EAC partner states is labour intensive implying that the increase in labor force participation increases the production levels hence leading to increased economic growth.

Further, it was found that economic growth in the EAC partner states is not statistically affected by the inflation rates. The EAC dummy variable introduced in the model to cover the influence of the regional integration on their growth is not statistically significant though it displayed a positive relationship. Empirically this finding is in line with Othieno & Shinyekwa (2011) who stated that the EAC partner states view the EAC as their gate way to development.

Also, it was found that increase in foreign direct investments in the EAC countries increases their economic growth. This is very true in the EAC partner states since most of the major investments in these countries are foreign owned. Therefore the EAC partner states should attract foreign investments in their countries in order to increase their economic growth levels.



## CONCLUSION

The findings of the study indicated that economic growth in EAC partner states is not affected by foreign trade. However, gross capital formation, total labour force participation, FDI had positive impacts on economic growth in the EAC partner states while Inflation and EAC regional integration were found out to be insignificant determinants of economic growth in the EAC partner states though they displayed their prior expected signs.

The study therefore recommends that the EAC partner states should invest widely in gross capital formation and there is need for increased skilled labour force participation in the EAC partner states since these variables were positively related with EAC partner states' growth. The EAC partner states should also strive hard to attract foreign investments in their countries since this practice increase on their growth levels.

The study faced some limitations; Earlier we wanted to cover a study period from 1980 to 2013 but due to inavailability of data in some countries especially Rwanda and Burundi, the study was forced to start from 1990 to 2012 which affected the degrees of freedom. The study also faced the problem of incomplete data on some variables over the time under the study but this the was solved by obtaining the data from other sources such as the EAC facts and figures 2012.

## REFERENCES

- Ahmad, J., & Kwan, A. C. (1991). Causality between exports and economic growth: empirical evidence from Africa. *Economics Letters*, 37(3), 243-248.
- Alcala, Francisco, and Antonio Ciccone.(2004). Trade and productivity. *Quarterly Journal of Economics*119(2): 613-646.
- Atoyebi, K. O., Akinde, J. O., Adekunjo, F., & Femi, E. (2012). Foreign Trade and Economic Growth in Nigeria: An Empirical Analysis. *American Academic & Scholarly Research Journal* .
- Balassa, B. (1985). Exports, policy choices, and economic growth in developing countries after the 1973 oil shock. *Journal of Development Economics*, 18(1), 23-35.
- Cetinkaya, M., & Erdogan, S. (2010). VAR analysis of the relation between GDP, import, and export: Turkey case. . *International Research Journal of Finance and Economics* 55 , 135-145.
- Chen, H. (2009). A Literature review on the relationship between foreign trade and economic growth. *International Journal of Economics and Finance* 1(1) , 127 - 130.
- Chenery, H. B. (1980). Interactions between industrialization and exports. *The American Economic Review*, 281-287.
- DENIVA. (2005). *UGANDA: TRADE LIBERALISATION AND ITS IMPACT ON POVERTY; COUNTRY BACKGROUND PAPER*. Development Network of Indigenous Voluntary Associations (DANIVA).
- EAC. (2012). *East African Community Facts and Figures - 2012*. Arusha, Tanzania.: East African Community Secretariat.
- Edwards, S. (1998). Openness, productivity and growth: what do we really know?. *The economic journal*, 108(447), 383-398.
- Frankel, J. A., & Romer, D. (1999). Does trade cause growth?. *American economic review*, 379-399.
- Fosu, A. K. (1990). Exports and economic growth: the African case. *World Development*, 18(6), 831-835.

- Greene, W. (2012). *Econometrics Analysis, 7th Edition*. New York: Macmillan Publishing Company.
- Grossman, G. M., & Helpman, E. (1991). Trade, knowledge spillovers, and growth. *European Economic Review*, 35(2), 517-526.
- Hisali, E. (2011). *Trade, employment and gender: the case of Uganda*. Kampala Uganda: On line Publications.
- Kavoussi, R. M. (1984). Export expansion and economic growth: Further empirical evidence. *Journal of Development Economics*, 14(1), 241-250.
- KEHINDE, A., JUBRIL, A., FELIX, A., & EDUN, F. (2012). FOREIGN TRADE AND ECONOMIC GROWTH IN NIGERIA: AN EMPIRICAL ANALYSIS. *American Academic & Scholarly Research Journal*, 4(5).
- Krueger, A. O. (1978). *Liberalization attempts and consequences*. NBER Books.
- Lee, J. (1995). Capital goods imports and long-run growth. *Journal of Development Economics*, vol. 48 , 91 - 110.
- Lewer, J. J., & Berg, H. V. D. (2003). How large is international trade's effect on economic growth?. *Journal of Economic Surveys*, 17(3), 363-396.
- Othieno, L., & Shinyekwa, I. (2011). *Trade, Revenue And Welfare Effects of The East African Community Customs Union Principle of Asymmetry on Uganda: An Application of Wits-Smart Simulation Model*. Kampala, Ugand: Economic Policy Research Centre (EPRC).
- Ram, R. (1985). Exports and economic growth: Some additional evidence. *Economic Development and Cultural Change*, 415-425.
- Rodriguez, F., & Rodrik, D. (1999). *Trade Policy and Economic Growth: A Skeptic's Guide to Cross-National Evidence, NBER Working Papers 7081*. Inc: National Bureau of Economic Research.
- Rodriguez, F., & Rodrik, D. (2001). Trade policy and economic growth: a skeptic's guide to the cross-national evidence. In *NBER Macroeconomics Annual 2000, Volume 15* (pp. 261-338). MIT Press.
- Sachs, J. D., & Warner, A. M. (1995). Economic convergence and economic policies (No. w5039). National Bureau of Economic Research.
- Salvatore, D., & Hatcher, T. (1991). Inward oriented and outward oriented trade strategies. *The Journal of Development Studies*, 27(3), 7-25.
- Shinyekwa, I., & Mawejeje, J. (2013). *J. Macroeconomic and Sectoral Effects of the EAC regional Integration on Uganda: A Recursive Computable General Equilibrium Analysis*. Kampala, Uganda: Economic Policy Research Centre (EPRC).
- Subasat, T. (2002). Does Export Promotion Increase Economic Growth? Some Cross-Section Evidence. *Development Policy Review*, 20(3), 333-349.
- Temiz, D., & Gökmen, A. (2010). AN ANALYSIS OF THE EXPORT AND ECONOMIC GROWTH IN TURKEY OVER THE PERIOD OF 1950-2009. *International Journal of Economic & Administrative Studies*, 2(5).
- Tyler, W. G. (1981). Growth and export expansion in developing countries: some empirical evidence. *Journal of Development Economics*, 9(1), 121-130.
- Verbeek, M. (2008). *A Guide to Modern Econometrics, 3rd Edition*. Rotterdam: Erasmus University.
- WTO. (2014). *Country trade reports* . Washington DC: World Trade Organisation.
- World Bank (2014) World Bank Development Indicators: On line Data set
- Yanikkaya, H. (2003). Trade openness and economic growth: a cross-country empirical investigation. *Journal of Development Economics*, 72 , 57 - 89.
- Wacziarg, R., & Welch, K. H. (2008). Trade liberalization and growth: New evidence. *The World Bank Economic Review*, 22(2), 187-231.
- Wagner, J. (2012). International trade and firm performance: a survey of empirical studies since 2006. *Review of World Economics*, 148(2), 235-267.

Yaghmaian, B. (1994). An empirical investigation of exports, development, and growth in developing countries: Challenging the neoclassical theory of export-led growth. *World Development*, 22(12), 1977-1995.

Vohra, R. (2001). Export and economic growth: Further time series evidence from less-developed countries. *International Advances in Economic Research*, 7(3), 345-350.

Yucel, F. (2009). Causal relationships between financial development, trade openness and economic growth: the case of Turkey. *Journal of Social Sciences*, 5(1), 33.