

# Regional Economic Integration and Economic Growth in the COMESA Region, 1980–2010

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**Abstract:** A key goal of the COMESA Treaty (1993) was to stimulate sustainable economic growth in the region through increased trade between member states. On the basis of a 1980–2010 annual panel dataset, we examine the contribution of COMESA integration to economic growth in the region using instrumental variables GMM regression in the framework of a cross-country growth model. Contrary to *a priori* expectation, we find no significant empirical support for a positive growth impact, as yet, on the region from the integration. Growth in capital stock, population, world GDP and the level of openness to international trade turned out to be the most robust drivers of growth in the COMESA region over the period.

## 1. Introduction

The Common Market for Eastern and Southern Africa (COMESA) is one of the pillars of the African economic community.<sup>1</sup> It was formed to promote intra-regional trade among member states with the ultimate objective of creating more wealth and more incomes for the people of the region (COMESA Treaty, 1993). The expectation was that, by progressively dismantling trade barriers among the countries that make up COMESA, trade in the region would be enhanced through increased competition and a bigger market. Increased trade would ultimately foster economic growth and development of the member countries.

COMESA traces its genesis to the mid-1960s, when the countries of Eastern and Southern Africa initiated a process towards creating an Eastern and Southern African cooperation arrangement. This was after the post-colonial African leaders envisaged that the small sizes and fragmentation of post-colonial African national economies constituted a major constraint to economic development. In 1965, during the ministerial meeting of the United Nations Economic Commission for Africa (UNECA) held in Lusaka, Zambia, the creation of an Economic Community of Eastern and Southern African states was recommended.

In 1981, a treaty establishing the Preferential Trade Area for Eastern and Southern Africa (PTA) was signed, which entered into force in 1982. The PTA Treaty envisaged the eventual transformation of the PTA arrangement into a common market. Subsequently, the treaty establishing COMESA was signed in 1993 in Kampala, Uganda and was ratified a year later in Lilongwe, Malawi in 1994. It transformed into a Free Trade Area (FTA) in 2000.<sup>2</sup> In 2009, the COMESA Customs Union was launched in Harare, Zimbabwe.

The future agenda of COMESA includes negotiating an agreement on trade in services, the establishment of a Common Market by 2015, the formation of a Monetary Union by 2018 and the launch of a COMESA community by 2025. After 2025, COMESA expects to be a single trade and investment area with no internal tariffs, non-tariff and other impediments to the movement of goods, services, capital and people (COMESA, 2011).

COMESA is also actively engaged in the formation of a COMESA-EAC-SADC tripartite Free Trade Area (FTA) to promote regional trade involving 26 countries covering nearly half of the continent. This is motivated by the current overlap of membership among COMESA, SADC and the EAC. Of the 19 members of COMESA, seven are members of SADC and four are members of EAC.<sup>3</sup>

Despite progressive regional integration over the past two decades, economic growth in most COMESA member countries has generally not been impressive. The average annual GDP growth rate for COMESA member countries was only 2.9 per cent

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for the period 1994–2010, and 12 of the 19 COMESA member states were classified among the most impoverished countries in the world by the United Nations (UNCTAD, 2011).<sup>4</sup> This raises the question of whether the COMESA regional integration process has had any significant effect on the growth of the region as a whole and individual member countries. Hence, the objective of this study was to examine the effect of regional economic integration on the economic growth of COMESA member states. The study was also expected to get some empirical evidence on the determinants of economic growth in the COMESA member countries. The study results will be important for policy formulation in order to spur economic growth in the COMESA region.

## 2. Theoretical and Empirical Literature

Economic theory generally supports the conclusion that free trade has positive effects on economic growth. Three theories have been advanced to explain this conclusion: the traditional trade theory, the dynamic trade theory, and the new trade theory.

According to the traditional trade theory, free trade realized through a reduction of import and export impediments constitutes the best strategy for stimulating economic growth. The increase in economic growth is due to specialization gains (increased efficiency due to production according to comparative advantage) and to consumption gains (increased choice of goods at lower prices for consumers).

According to the dynamic trade theory the static gains from trade — due to specialization and reallocation of *existing* resources — are small compared to the dynamic gains due to an increase in the growth rate and the volume of *additional* resources made available to, or employed by, the trading country (Kreinin, 1998). Dynamic gains are caused by an accelerated accumulation of physical capital and human capital (due to a higher rate of domestic and/or foreign saving), enhanced technological transmissions and improvements in the quality of macroeconomic policy. Besides, forward and backward linkages of the expanding sectors, improvements in X-efficiency (improved managerial skills, less slack in the production process) should be pointed out. The above-mentioned dynamic gains manifest themselves in increased growth rates of output in the medium and long run.

The new trade theory is associated with the names of Brander and Spencer (1983), Krugman (1986), Dixit (1986, 1987), Grossman (1992), Tyson (1992) and Klodt (1992). The new trade theory is associated with economies of scale and the existence of externalities (spillovers). Externalities of relevance are those linked to (i) the accumulation of physical capital, (ii) the accumulation of human capital, that is, the improvement of skills and (iii) ‘knowledge production’ (to learn how to imitate; to adapt technology to one’s own needs; to innovate). The existence of spillovers in production is able to lead to an increase in the long-run rate of growth. Permanent growth becomes possible due to positive externalities which result in constant or even increasing returns of the accumulable or reproducible factors (physical and human capital).

Empirical literature on the effect of regional economic integration on economic growth in developing countries is mixed. Studies by Amurgo-Pacheo and Pierola (2007), Jong-Wha *et al.* (2008), and Coulibaly (2004) found a positive effect of regional integration on economic growth. Studies by Berthelon (2004), te Velde (2008), and Vamvakidis (1999) found that regional integration had little or no effect on economic growth. Yang and Gupta (2007) observed that the impact of African Regional Integration Agreements (RTAs) has so far tended to be mixed at best or disappointing at worst especially in terms of welfare enhancement. In fact, Kayizzi-Mugerwa *et al.* (2014) conclude that ‘deep integration’ in Africa itself is still really ‘patchy’.

One of the seminal empirical investigations on the effects of foreign trade on economic growth was carried out by Balassa (1961) who found that the dynamic effects of economic integration on economic growth are rooted in internal and external economies of scale, technological progress, enhanced competition, reduced uncertainty, the creation of a more favourable environment for economic activity and cost of capital.

According to Frank (1978) increased foreign trade is beneficial because of the opportunity to learn by doing, acquisition of technological requirements, and intra-industrial specialization and competition leading to higher efficiency and improved quality of products. Thus, Frank (1978) concludes that expanding foreign trade should be acknowledged as one of the major ways of promoting economic growth through the foreign trade multiplier. Using data from individual country studies, Krueger (1978) used econometric methods to test the hypothesis that a more liberalized trade regime has a positive effect on aggregate growth. Krueger (1978) argued that there are two channels through which openness positively affected growth. First, there are direct effects that operate via ‘dynamic advantages’, including higher capacity utilization and a more efficient investment project. And second there are indirect effects that work through exports: more liberalized economies have faster growth of exports and these, in turn, result in more rapidly growing GDP.

Baldwin (1989) empirically analysed the consequences of a big market in the European Union, taking the endogenous mechanisms of economic growth into account. The study further noted that it led to an increase of the global rate of economic growth, in view of the mid-term effects it had on savings and investments and, in the long term, on the rates of production and consumption growth and on the determinants of innovation and profitability. Thus, Baldwin (1989) concluded that the enlargement of the market afforded by economic integration is a positive factor for the productive effectiveness of the integrated geographic group.

Rivera-Batiz and Romer (1991) developed a model to explain the correlation between economic integration and endogenous growth. They argued that in a world with two similar, developed economies, economic integration explains the permanent increase in the worldwide rate of growth. Starting from a position of isolation, closer integration can be achieved by increasing trade in goods or by increasing flows of ideas. The authors consider two models with different specifications of the research and development sector as a source of growth. They argue that both forms of integration tend to increase the long-run rate of growth through increasing returns to scale in the research and development sector. They conclude that the intensification of world integration enhances access to a wider range of technical know how and provides incentives for increased industrial production.

In a related analysis of economic and economic growth, Madani (2001) found that unilateral liberalization had a positive effect on growth via imported intermediate inputs. Similarly, other empirical studies done earlier by Baldwin and Seghezza (1996) and Levine and Renelt (1992), supported the argument that trade fosters economic growth through its positive effect on investment. Amponsah (2002) examined the empirical evidence of trade policy effects of regional integration within the African framework. Results from his study showed that regional integration may lead to stronger economic growth for the member countries through the importation of knowledge, ideas, investment goods and intermediate inputs. The author therefore recommends outward oriented, transparent, and rules-based economic strategy for increased trade and growth.

Ajayi (2005) reviewed the process of regional economic integration in West Africa. Using a gravity model analysis, the author sought to determine the prospects for further integration among ECOWAS countries. The study's results indicated that relaxation of trade restrictions within the region could reduce internal transport costs, stimulate intra-regional trade, and ultimately increase the growth and productivity of member states. The study underscored the integration benefits of increased intra-regional trade as an alternative to protectionist, inward-oriented strategies.

Amurgo-Pacheo and Pierola (2007) argue that economic integration has a positive effect on economic growth through export diversification, which may either be product or geographical diversification. Similarly, other writers (such as Jong-Wha *et al.*, 2008; Coulibaly, 2004) show that economic integration has a positive effect on economic growth via trade creation. Henrekson *et al.* (1997) show that regional integration has a positive impact on growth through increased volume of commodity traded in the region.

In contrast to the positive association between integration and growth, there are also studies that show that economic integration may actually have no or negative effect on economic growth via trade diversion. A study by de Melo *et al.* (1993) found no evidence that regional integration among developing countries positively impacted growth and incomes, except the case of the Southern African Customs Union (SACU) where favourable growth effects were found for Botswana, Lesotho and Swaziland. In another study, Vamvakidis (1999) found that integration actually had a negative effect on growth. This finding was attributed to the fact that most of these economic trading arrangements were among small, poor and very similar economies.

Berthelon (2004) showed that economic integration had a significant positive effect on growth among developed countries, but the effects in developing countries were ambiguous, seeming to depend on the size of the countries joining together. However, te Velde (2008), using standard growth models for 100 developing countries, did not find robust growth effects of regional integration at the aggregation level although country-specific diagnostics suggested that regional integration could be key to growth, especially deep integration in key infrastructure such as rail, road and energy.

### 3. Theoretical Framework

The new growth theory points out the importance of growth of labour supply (population growth) and growth of labour productivity as factors of economic growth. Growth in labour supply and labour productivity normally leads to an increase in the country's domestic production and thereby, economic growth. Growth of labour productivity results from physical capital growth (investment), human capital growth (accumulation of skills and knowledge) and technological progress (discovery and application of new production methods).

Assuming a Cobb–Douglas production function with constant returns to scale, aggregate output may be expressed as:

$$Y = AK^\alpha L^{1-\alpha} \quad (1)$$

In Equation (1),  $Y$  denotes GDP,  $A$  technological progress,  $K$  the physical capital stock and  $L$  the labour force. From Equation (1), annual real GDP growth is calculated as:

$$y = a + \alpha k + (1 - \alpha)l \quad (2)$$

In Equation (2),  $a$ ,  $y$ ,  $k$  and  $l$  represent growth rates of  $A$ ,  $Y$ ,  $K$  and  $L$ .

By assuming non-diminishing returns to the accumulation of broadly defined capital, the growth theory is able to predict the long-term growth effects of economic integration (Walz, 1997). The introduction of human capital coupled with other investment and knowledge flows, ensures that returns are sustained and trade patterns transfer technology.

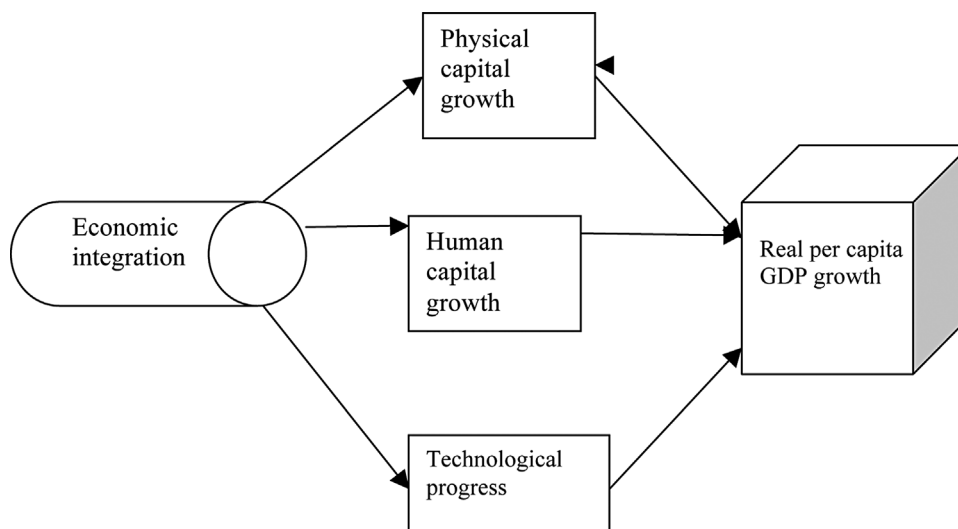
Access to a larger technological base through integration arrangements may in turn accelerate economic growth. Economic integration is also seen as a way of expanding the consumer base which may increase the necessary competition and hence stimulate research and development required to generate economic growth. Economic integration may further lead to inter-sectoral and international reallocation effects or trigger economic geography forces (Krugman, 1991). Figure 1 demonstrates the mechanisms through which economic integration impacts on real per capita GDP growth.

#### 4. The Model

To model the effects of COMESA on economic growth, a cross-country economic growth function was extended with standard variables in growth regressions, such as initial per capita GDP, physical capital stock, human capital stock, population growth, world GDP and trade openness. This is consistent with works from the literature (Benhabib and Spiegel, 1994; Levine *et al.*, 2000; Mankiw *et al.*, 1992; Seetanah and Khadaroo, 2007; Seetanah and Sawkut, 2010 among others). We adopt the following econometric model:

$$G_{i,t} = f(G_{i,t-1}, KSTOCK_{g\ i,t}, HSTOCK_{g\ i,t}, POPGROWTH_{i,t}, GRWORLDGDP, TRADE_{i,t}, COMESA) \quad (3)$$

**Figure 1: The conceptual link between economic integration and economic growth**



Source: Musila (2012).

From Equation (3),  $G_{i,t}$  denotes the growth rate of real per capita GDP of COMESA member countries;  $G_{i,t-1}$  is the growth rate of real per capita GDP of COMESA member countries lagged by 1 to represent initial level of real per capita GDP growth;  $KSTOCK_g$  is the rate of growth of capital stock;  $HSTOCK_g$  is rate of growth of human capital, represented by growth in secondary school enrolment;  $POPGROWTH$  is rate of population growth in COMESA member countries during the period under review;  $GRWORLDGDP$  is the growth rate of world GDP;  $TRADE$  is (Exports + Imports)/GDP, as a measure of trade openness; and  $COMESA$  is a dummy variable = 1, if the country participates in COMESA and 0, otherwise.

For the econometric analysis, Equation (3) was expressed as a log-linear regression, where lowercase variables denoted the natural log of the respective uppercase variables:

$$g_{i,t} = \beta_0 + \beta_1 g_{i,t-1} + \beta_2 (kstock_g)_{i,t} + \beta_3 (hstock_g)_{i,t} + \beta_4 (popgrowth)_{i,t} + \beta_5 (grworldGDP) + \beta_6 trade_{i,t} + \beta_7 COMESA + u_{i,t} \quad (4)$$

From Equation (4),  $\beta_0$  is the constant term,  $\beta_1$ ,  $\beta_2$ ,  $\beta_3$ ,  $\beta_4$ ,  $\beta_5$  and  $\beta_6$  represent the elasticities of real per capita GDP growth relative to the respective variables, while  $u_{i,t}$  is the stochastic error term. Given that economic growth is essentially a dynamic phenomenon, the study employed the Instrumental Variables Generalized Method of Moments (GMM) to estimate the coefficients of the variables specified in the regression. Below is an explanation of how each variable was expected to influence real per capita GDP growth.

Capital accumulation increases the amount of physical capital per worker and the overall productive capacity of an economy. Investment in better technology leads to higher productivity and higher per capita income. Traditionally, economic theory has given emphasis on physical capital accumulation as the most robust source of economic growth, at least in the short run, with exogenous technical progress being the long-run determinant of growth (Artelaris *et al.*, 2007). Even the first development economists focused primarily on the accumulation of physical capital as the driving force in economic growth. Paul Rosenstein-Rodan, Sir Arthur Lewis and Walt Rostow all argued that developing countries suffered from a 'poverty trap' where they could not afford to save enough to accumulate the necessary amounts of physical capital to grow (Easterly, 2006). Therefore, physical capital accumulation was expected to have a positive effect on per capita output.

The growth rate of world GDP was included in the regression to test if economic growth in the COMESA trading bloc was driven by global trends. A higher global annual growth rate of GDP is expected to have a positive effect on economic growth of individual countries or regions. According to Manners and Behar (2007), a rise in global incomes could (i) increase demand for exports, either intermediate inputs into production or consumer goods; and (ii) provide a cheaper supply of inputs into production. These factors would lead to an increase in the country's domestic production and foster economic growth. Therefore, the coefficient estimate for this variable was expected to be positive.

Openness to trade has also been used extensively in the economic growth literature as a major determinant of growth performance. This variable was included in the growth model following the works of Artelaris *et al.* (2007), Dollar and Kraay (2000), Edwards (1998) and Sachs and Warner (1995). These authors generally agree that openness affects economic growth through various channels such as exploitation of comparative advantage, transmission and adoption of new technologies and diffusion of knowledge, increasing scale economies and exposure to competition. Openness is usually measured by the ratio of exports and imports to GDP (Dollar and Kraay, 2000). The coefficient of this variable was expected to be positive and statistically significant, implying that openness has made countries grow faster.

The variable  $COMESA$  was a dummy variable that took the value 1 if the country participated in COMESA and zero otherwise, capturing the effect of COMESA on economic growth. Regional integration is expected to foster economic growth through market expansion and increased competition. If the coefficient of this dummy variable was found to be positive and statistically significant, it would imply that regional integration had made countries grow faster. However, if the coefficient of the dummy variable was found to be negative and statistically significant, then the reverse would be true.

Growth of human capital stock, represented by growth in secondary school enrolment, was included in the regression to capture the role of education in economic growth. Previous empirical analyses have provided somewhat inconclusive evidence on the significance of educational investment as a determinant of economic growth. Some studies found a positive relationship between school enrolment rates and average GDP growth rates (Barro, 1997; Esfahani, 1991; Mankiw *et al.*, 1992; Temple, 2001). According to these studies, human capital can affect economic growth in the sense that workers with higher levels of education or skills should, *ceteris paribus*, be more productive, inventive and innovative. Further, better education is associated

with a more flexible workforce in terms of acquiring new skills as new sectors of the economy emerge. All this can be associated with higher productivity and, therefore, high growth rates in per capita GDP. However, Levine and Renelt (1992) found that neither secondary school enrolment nor other measures of human capital had a robust influence on GDP growth in their sub-sample of developing countries. Therefore, the coefficient of human capital growth was expected to be either positive or negative.

An increase in the annual population growth rate can lead to higher or lower economic growth. The existing literature does not give any clear-cut generalization as to the effect of population growth on economic growth in the less developed countries. Some theoretical analyses argue that high population growth creates pressures on limited natural resources, reduces private and public capital formation, and diverts additions to capital resources to maintaining rather than increasing the stock of capital per worker (Easterlin, 1967; Klasen and Lawson, 2007). Others point to positive effects such as market enlargement, availability of cheap labour, economies of scale and specialization, acceleration of technological progress, and the more favourable attitudes, capacities, and motivations of younger populations compared with older ones (Easterlin, 1967; Simon, 1986; Simon and Steinmann, 1980). The actual evidence on the association between growth rates of population and per capita income does not point to any uniform conclusion.

Neoclassical growth models predict a negative relationship between initial real per capita GDP growth and long-run growth rate of real per capita GDP, with the implication that in the long run all countries will have the common growth rate dictated by the common technological knowledge (Solow, 1957; Swan, 1965). Most previous studies that followed the development of these models found empirical support for this relationship, using the Penn World Tables (Barro, 1997; Mankiw *et al.*, 1992; Summers and Heston, 1991). These empirical studies tend to support the convergence hypothesis proposed by the neoclassical growth model, which suggests that the lower the starting level of real per capita income, the higher the growth rate in per capita output. Therefore, the initial level of per capita GDP growth was expected to have a negative effect on economic growth.

## 5. Data Type and Sources

This study used annual panel data on COMESA member countries for the period 1980 to 2010. The dependent variable used in the analysis was real per capita GDP growth. Data on real per capita GDP growth were obtained from the *World Development Indicators* databases of the World Bank, the UNCTAD *Handbook of Statistics 2011* database and from International Monetary Fund, *World Economic Outlook* database, 2011. Data on physical capital stock and secondary school enrolment were from the *World Development Indicators* databases of the World Bank and the International Monetary Fund, *World Economic Outlook* database, 2011. Data on population growth were obtained from the *World Development Indicators* databases of the World Bank. The data on trade were generated from the IMF *Direction of Trade Statistics* and the UN *Commodity Trade Statistics* (UN Comtrade) databases.

## 6. Empirical Results and Discussion

To deal with reverse causality and potential endogeneity problems of the regressors, a dynamic panel data approach was used to estimate Equation 4. This involved applying instrumental variables GMM procedure which in turn generates consistent estimates of the parameters of interest and their asymptotic variance-covariance (Arellano and Bond, 1991; Arellano and Bover, 1995). Results from the econometric model are presented in Table 1.

Empirical results from the model show that the effect of the growth of capital stock on real per capita GDP was positive and statistically significant at the 1 per cent significance level, which is consistent with theoretical expectation. This implies that the growth of capital stock was a key determinant of economic growth in the COMESA RTA. Increasing the stock of physical capital goods expands the productive capacity of the economy, and thereby generates economic growth. This result is in line with the findings of Ndambiriet *al.* (2012). These authors explored the determinants of economic growth in a sample of 19 sub-Saharan African countries for the years 1982–2000, using the GMM regression. Their study results indicated that physical capital formation, among other factors, significantly contributed to economic growth among sub-Saharan African countries.

The effect of population growth was found to be positive and statistically significant at the 1 per cent significance level. This suggests that population growth contributed to the economic growth of COMESA member countries. From the empirical results, a 1 percentage point increase in the average annual population growth rate led to 0.4 of a percentage point increase in per capita

**Table 1: Empirical results**

Dependent variable: real per capita GDP growth		
Variable	Coefficient	Standard error
Initial per capita GDP growth	1.446	0.000
Capital stock growth	0.787	0.234***
Human capital growth	-0.003	0.004
Population growth	0.443	0.083***
Growth of world GDP	0.707	0.073***
Trade	0.013	0.002***
COMESA	-0.264	0.318
Constant	-0.263	0.441
R-squared	0.420	
Number of observations	3470	

\*\*\*, \*\* and \* indicate statistically significant at 1%, 5% and 10% levels respectively.

GDP growth in the COMESA RTA. This result is in line with some of the previous empirical findings (e.g. Easterlin, 1967; Simon, 1986; Simon and Steinmann, 1980). According to the 'population push' model proposed by Simon and Steinmann (1980), the greater the total population, the greater the level of technological growth yielding greater per capita income. Underlying the population push model of technological development is the idea that necessity remains the mother to, and is the primary force behind, invention.

The growth of world GDP had a positive and statistically significant effect at the 1 percent level of significance on the economic growth of COMESA member countries, which is consistent with theoretical expectation. As global incomes rise, the benefits are expected to spill over to the integrated region via trade and financial channels. This result is consistent with the theoretical prediction and broadly in line with the findings of the relevant empirical literature (for instance, Vamvakidis, 1998; Kim *et al.*, 2003; Manners and Behar, 2007). Vamvakidis (1998) assessed the effect of regional integration on economic growth in a sample of developing countries. He found that the level of development of neighbouring economies, especially when they are open, had significant positive spillover effects.

Similarly, the coefficient for the trade volume as a percentage of GDP, which is a measure of trade openness, was found to be positive and statistically significant which is in line with the predicted theory. This implies that implementing more open trade policies means more growth on average for COMESA member countries. This result is in line with the empirical works of Thirlwall (2000) on trade liberalization and economic growth in Africa and Asia. This author's findings suggest that after liberalization countries grew faster on average by 1.5 percentage points, and that an increase in the trade share by 10 per cent led to an increase in the growth rate by 0.56 of a percentage point. These results are consistent with the argument that trade liberalization fosters growth through spillover effects. The growth literature has shown that spillover effects are larger for developing countries that are open to trade, since they benefit from the large knowledge stock of their more developed trading partners (Ramessur-Seenarain and Durbarry, 2007).

Results from the econometric model show that participation in the COMESA trading bloc has so far had no significant effect on the economic growth of member countries, contrary to the generally held view that regional integration promotes economic growth of the participating countries. This result is in line with some of the research findings which suggest that regional integration among developing countries has so far failed to produce the expected positive impact on income and growth unlike broad trade liberalization. Research by Oyejide (2000) found that African regional integration schemes failed not only to promote intra-regional and African trade but also consequently economic growth. Vamvakidis (1999) took 109 cases of participation in 18 regional trade agreements over the period 1950 to 1992 and concluded that their impact on the growth rate of members had been negative. Vamvakidis also took 51 cases of broad trade liberalization and found that countries had grown faster after liberalization.

The failure of regional integration arrangements to promote economic growth in Africa has been attributed to the features of African economies, such as dependence on basic minerals and primary products as main exports, low level of structural

complementarity of the African economies, poor infrastructural services, but also the brevity of time of integration and the indirect chain of impact on growth from integration. Markusen *et al.* (1995) showed that for economic integration to be welfare increasing there should be zero substitutability between goods.

The effect of the initial GDP per capita growth was found to be statistically insignificant contrary to the theoretical expectation. This implies that the initial GDP per capita did not have a significant impact on the economic growth of COMESA member countries. Comparatively, Levine and Renelt (1992) analysed the determinants of the average annual growth rate of GDP per capita for a sample of 101 countries over the period 1960–89. By applying the method of extreme bounds analysis, they found that the only variables that possessed fairly robust predictive power were the rate of investment, the growth rate of international trade, and the initial level of real GDP per capita.

The effect of education was found to be statistically insignificant. This implies that education did not have a significant impact on the economic growth of COMESA member countries. One might explain this lack of statistical significance of human capital by supposing that lagged rather than current school enrolment influences the contemporaneous growth rate of GDP since a few years may pass before students enter the labour force and become productive. This result is consistent with the findings of Levine and Renelt (1992) who found that neither secondary school enrolment nor other measures of human capital had a robust influence on GDP growth in their sub-sample of developing countries.

## 7. Summary and Policy Implications

COMESA was formed to help member countries achieve sustainable economic growth and development through increased trade. The purpose of this study, therefore, was to examine the extent to which the formation and existence of COMESA has affected economic growth of member states. A cross-country growth model was estimated using instrumental variables GMM regression. The data were generated from the World Bank and the IMF databases. The dataset was from 1980 to 2010. The empirical results from the study showed that, contrary to expectation, there was no evidence to suggest that regional economic integration had any significant effect on the rate of economic growth of COMESA member countries. Results showed that the most robust growth determinants in the COMESA were physical capital stock growth, population growth, world GDP growth and the level of openness to international trade. These variables had positive and significant impacts on the rate of economic growth of COMESA countries. On the other hand, the initial GDP per capita and education did not have statistically significant effects on the economic growth of COMESA member countries.

The study has shown that COMESA regional economic integration has so far had no significant effect on the economic growth of the member countries possibly due to the brevity of time span considered but also the indirect chain of impact that works through the mechanism of increased trade. We found, however, that growth in physical capital stock, population and the level of openness to international trade significantly contributed to GDP growth in COMESA. These findings favour policy reforms toward more open global trade for COMESA member countries and capital accumulation. More open trade can be realized by steadily lowering barriers between COMESA and the rest of the world, while productive physical capital accumulation may be realized through the reduction of tariff levels toward capital goods imports and domestic innovation.

## Notes

1. The COMESA trading bloc is made up of 19 countries, which include Burundi, Comoros, Congo D.R., Djibouti, Egypt, Eritrea, Ethiopia, Kenya, Libya, Madagascar, Malawi, Mauritius, Rwanda, Seychelles, Sudan, Swaziland, Uganda, Zambia and Zimbabwe.
2. Members of the FTA include Burundi, Comoros, Djibouti, Egypt, Kenya, Libya, Madagascar, Malawi, Mauritius, Rwanda, Sudan, Swaziland, Zambia, and Zimbabwe.
3. COMESA/SADC members are DRC, Malawi, Mauritius, Seychelles, Swaziland, Zambia, and Zimbabwe. COMESA/EAC members are Burundi, Kenya, Rwanda and Uganda.
4. The 12 COMESA members included among the world's most impoverished countries are Burundi, Comoros, Congo D.R., Eritrea, Ethiopia, Kenya, Madagascar, Malawi, Rwanda, Uganda, Zambia, and Zimbabwe.

## References

- Ajayi, K., (2005) 'Regional Financial and Economic Integration in West Africa', Department of Economics, Stanford University, Stanford, CA.
- Amponsah, W. A. (2002), 'Analytical and Empirical Evidence of Trade Policy Effects of Regional Integration: Implications for Africa', paper presented at the session on 'Trade Policies' during the Africa Development Forum III, Defining Priorities for Regional Integration, 3-8 March, Addis Ababa, Ethiopia.
- Amurgo-Pacheo, A., and M. D. Pierola (2007), 'Patterns of Export Diversification in Developing Countries: Intensive and Extensive Margins', Working Paper No. 20, Geneva, HEI.
- Arellano, M., and S. Bond (1991), 'Some Tests of Specification for Panel Data: Monte Carlo Evidence and an Application to Employment Equations', *Review of Economic Studies*, Vol. 58, pp. 277–97.
- Arellano, M., and O. Bover (1995), 'Another Look at the Instrumental Variables Estimation of Error-Components Models', *Journal of Econometrics*, Vol. 68, No. 1, pp. 29–51.
- Artelaris, P., Arvanitidis, P., and G. Petrakos (2007), 'Theoretical and Methodological Study on Dynamic Growth Regions and Factors Explaining their Growth Performance', paper presented at the 2nd Workshop of DYNREG in Athens, 9–10 March.
- Balassa, B. (1961), *The Theory of Economic Integration*, London: Allen & Unwin.
- Baldwin, R. (1989), 'The Growth Effects of 1992', *Economic Policy*, Vol. 9, pp. 248–81.
- Baldwin, R. E., and E. Seghezza (1996), 'Trade-Induced Investment-Led Growth', NBER Working Paper No. 5582, Cambridge, MA.
- Barro, R.J. (1997), *Determinants of Economic Growth: A Cross-Country Empirical Study*, MIT Press, Cambridge, MA.
- Benhabib, J., and M. Spiegel (1994), 'The Role of Human Capital in Economic Development: Evidence from Aggregate Cross-Country Data', *Journal of Monetary Economics*, Vol. 34, pp. 143–73.
- Berthelon, M. (2004), 'Growth Effects of Regional Integration Agreements', Working Papers for Central Bank of Chile No. 278.
- Brander, J. and Spencer, B. (1983), 'International R&D Rivalry and Industrial Strategy', *Review of Economic Studies*, Vol. 50, pp. 707–22.
- COMESA (2011), *Progress Report for 2012*, COMESA Secretariat, Lusaka, Zambia.
- COMESA Treaty (1993), Available at: <http://www.comesa.int> (accessed 10 October 2012).
- Coulibaly, S. (2004), 'On the Assessment of Trade Creation and Trade Diversion Effects of Developing Countries RTAs', paper presented at the Annual Meeting 2005 of the Swiss Society of Economics and Statistics on Resource Economics, Technology, and Sustainable Development (available at <http://www.wif.ethz.ch/resec/sgvs/078.pdf>).
- De Melo, J., A. Panagariya, and D. Rodrick (1993), 'The New Regionalism: A Country Perspective', in J. de Melo and A. Panagariya (eds), *New Dimensions in Regional Integration*, pp. 159–201, Cambridge University Press, Cambridge.
- Dixit, A. (1986), 'Trade Policy: An Agenda for Research', in Paul Krugman (ed.), *Strategic Trade Policy and the New International Economics*, MIT Press, Cambridge, MA.
- Dixit, A. (1987), 'Strategic Aspects of Trade Policy', in T. F. Bewley (ed.), *Advances in Economic Theory, Fifth World Congress*, Cambridge University Press, New York.
- Dollar, D., and A. Kraay (2000), 'Growth Is Good for the Poor', Macroeconomics and Growth Working Paper 2587, World Bank, Washington DC.
- Easterly, W. (2006), 'Planners vs. Searchers in Foreign Aid', *Asian Development Review*, Vol. 23, pp. 1–35.
- Easterlin, R. A. (1967), 'Effect of Population Growth in the Economic Development of Developing Countries', *Annals of the American Academy of Political and Social Sciences*, Vol. 369, pp. 98–108.

- Edwards, S. (1998), 'Openness, Productivity and Growth: What Do We Really Know?' *Economic Journal*, Vol. 108, pp. 383–98.
- Esfahani, H. S. (1991), 'Exports, Imports and Economic Growth in Semi-Industrialized Countries', *Journal of Development Economics*, Vol. 35, pp. 93–116.
- Frank, I. (1978), 'Reciprocity and Trade Policy for Developing Countries', *Finance and Development*, Vol. 15, No. 1.
- Grossman, G. (1992), *Imperfect Competition and International Trade*, MIT Press, Cambridge, MA.
- Henrekson, M., J. Torstensson, and R. Torstensson (currently Gustavsson), (1997), 'Growth Effects of European Integration', *European Economic Review*, Vol. 41, No. 8, pp. 1537–57.
- Jong-Wha, L., P. Innwon, and S. Kwanho (2008), 'Proliferating Regional Trade Arrangements: Why and Whither?' *The World Economy*, Vol. 31, No. 12, pp. 1525–57.
- Kayizzi-Mugerwa, S., J. C. Anyanwu, and P. Conceição, (2014), 'Regional Integration in Africa: An Introduction', *African Development Review*, Vol. 26, S1, pp. 1–6.
- Kim, S., Kim, S. H., and Y. Wang (2003), 'International Capital Flows and Business Cycles in the Asian Pacific Region', Working Paper 314, East Asia Bureau of Economic Research.
- Klasen, S., and D. Lawson (2007), 'The Impact of Population Growth on Economic Growth and Poverty Reduction in Uganda', Departmental Working Paper No. 133, Department of Economics: University of Goettingen.
- Klodt, H. (1992), 'Theorie der strategischen Handelspolitik und neue Wachstumstheorie als Grundlage für eine Industrie- und Technologiepolitik?', *Kieler Arbeitspapiere* Nr. 533, Institut für Weltwirtschaft an der Universität.
- Kreinin, M. E. (1998), *International Economics: A Policy Approach*, 8th edn, Fort Worth, TX: Dryden Press.
- Krueger, A. O. (1978), 'Foreign Trade Regimes and Economic Development: Liberalization Attempts and Consequences', Ballinger Cambridge MA. For National Bureau of Economic Research, New York.
- Krugman, P. R. (1986), *Strategic Trade Policy and the New International Economics*, MIT Press, Cambridge, MA.
- Krugman, P. (1991), 'Increasing Returns and Economic Geography', *Journal of Political Economy*, Vol. 99, pp. 483–99.
- Levine, R., and D. Renelt (1992), 'A Sensitivity Analysis of Cross-Country Growth Regressions', *American Economic Review*, Vol. 82, pp. 942–63.
- Levine, R., N. Loyaza, and T. Beck (2000), 'Financial Intermediation and Growth: Causality and Causes', *Journal of Monetary Economics*, Vol. 46, pp. 31–71.
- Madani, D. H. (2001), 'South-South Regional Integration and Industrial Growth: The Case of the Andean Pact', Policy Research Working Paper 2614, World Bank Washington, DC.
- Mankiw, N. G., D. Romer, and D. N. Weil (1992), 'A Contribution to the Empirics of Economic Growth', *Quarterly Journal of Economics*, Vol. 107, No. 2, pp. 407–37.
- Manners, P., and A. Behar (2007), 'Trade in Sub-Saharan Africa and Opportunities for Low Income Countries', Background Paper, World Development Report, Oxford University.
- Markusen, J. R., J. R. Melvin, W. H. Kaempfer, and K. Maskus (1995), *International Trade: Theory and Evidence*, McGraw-Hill, Boston.
- Musila, J. W. (2012), 'Dynamic Effects of the African Regional Economic Integrations: Panel Data Evidence', available at: [www.docstoc.com/./Musila\\_Jacob\\_IAABD](http://www.docstoc.com/./Musila_Jacob_IAABD) (accessed 10 November 2012).
- Ndambiri, H. K., C. Ritho, S. I. Ng'ang'a, P. C. Kubowon, F. C. Mairura, P. M. Nyangweso, E. M. Muiruri, and F. H. Cherotwo (2012), 'Determinants of Economic Growth in Sub-Saharan Africa: A Panel Data Approach', *International Journal of Economics and Management Sciences*, Vol. 2, No. 2, pp. 18–24.
- Oyejide, T. A., (2000), *Policies for Regional Integration in Africa*, The African Development Bank, Abidjan.

- Ramessur-Seenarain, S., and R. Durbarry (2007), 'South Africa as a Motor of Economic Growth for other SSA Countries: A Dynamic Panel Estimation', *International Journal of Business Research*, Vol. 7, No. 5.
- Rivera-Batiz, L. A., and P. M. Romer (1991), 'Economic Integration and Endogenous Growth', *The Quarterly Journal of Economics*, Vol. 106, pp. 531–55.
- Sachs, J. D., and A. Warner (1995), 'Economic Reform and the Process of Global Integration', *Brookings Papers on Economic Activity*, Vol. 1, pp. 1–118.
- Seetanah, B., and A. J. Khadaroo (2007), 'Foreign Direct Investment and Growth: New Evidences from Sub-Saharan African Countries', paper presented at Economic Development in Africa 2007, CSAE Conference, available at: <http://www.csae.ox.ac.uk> (accessed 12 June 2012).
- Seetanah, B., and Sawkut, R. (2010), 'An Assessment of the Impact of a COMESA Customs Union', *African Development Review*, Vol. 22, No. 2, pp. 331–45.
- Simon, J. L. (1986), *Theory of Population and Economic Growth*, Basil Blackwell, Oxford and New York.
- Simon, J. L., and G. Steinmann (1980), 'Phelps' Technical Progress Model Generalized', *Economic Letters*, Vol. 5, pp. 177–82.
- Solow, R. M. (1957), 'Technical Change and the Aggregate Production Function', *Review of Economics and Statistics*, Vol. 39, pp. 312–20.
- Swan, T. W. (1965), 'Economic Growth and Capital Accumulation', *Economic Record*, Vol. 32, pp. 334–61.
- Summers, R., and A. Heston (1991), 'The Penn World Table (Mark 5): An Expanded Set of International Comparisons, 1950–1988', *Quarterly Journal of Economics*, Vol. 106, No. 2, pp. 327–69.
- Temple, J. (2001), 'Growth Effects of Education and Social Capital in the OECD Countries', *OECD Economic Studies*, Vol. 33, pp. 57–101.
- Te Velde, W. D. (2008), *Regional Integration, Growth and Convergence: Analytical Techniques and Preliminary Results*, World Bank, Washington DC.
- Thirlwall, A. P. (2000), 'Trade, Trade Liberalisation and Economic Growth: Theory and Evidence', *Economic Research Papers*, No. 63, African Development Bank, Abidjan.
- Tyson, L. D'Andrea (1992), *Who's Bashing Whom? Trade Conflict in High Technology Industries*, Institute for International Economics, Washington, DC.
- UNCTAD (2011), *Trade and Development Report*, UNCTAD/TDR/2011, United Nations, New York and Geneva.
- Vamvakidis, A. (1998), 'Regional Integration and Economic Growth', *World Bank Economic Review*, Vol. 12, No. 2, pp. 251–70.
- Vamvakidis, A. (1999), 'Regional Trade Agreements or Broad Liberalization: Which Path Leads to Faster Growth?' *International Monetary Fund Staff Papers*, Vol. 46, No. 1 (March).
- Walz, U. (1997), 'Dynamic Effects of Economic Integration: A Survey', *Open Economies Review*, Vol. 8, No. 3, pp. 309–26.
- Yang, Y., and S. Gupta (2007), 'Regional Integration Agreements in Africa: Past Performance and Way Forward', *African Development Review*, Vol. 19, No. 3, pp. 399–431.

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