

THE COMPARATIVE POTENTIAL GROWTH-ENHANCING EFFECTS OF THE AfCFTA AND COMESA TRADE REGIMES

Research Paper by

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ABSTRACT

*Based on the principle of *acquis*, the AfCFTA is founded, inter alia, on the already existing eight RECs. The focus of this paper is to empirically investigate the potential compatibility of the trade regimes of the COMESA REC and the AfCFTA in terms of contributing to the shared objective of raising the standard of living as represented by the per capita income in Africa. Taking intra-Africa trade and a dummy to represent, respectively, the effects of AfCFTA and COMESA REC and applying various econometric models (pooled, fixed effects, XTGLS and system GLS), the study finds that the two regimes yield non-uniform income-enhancing effects. The study finds that whereas intra-continental trade has a significant net positive income-enhancing effect, the COMESA REC has a non-statistically significant effect in static models. However, dynamic modelling with System GMM reveals that while intra-African trade has no significant growth effect, the COMESA regime is robustly growth enhancing. One area which requires policy attention in ensuring that COMESA increases its contribution to continental integration would be to increase its intra-REC trade to converge to the continental intensity. Although COMESA has put in place requisite integration instruments, there is a need to intensify supply-side measures, such as increasing intra-regional productive investment, which are designed to enhance production and reduce the burden of landlockedness and border inefficiencies and bottlenecks.*

1.0 INTRODUCTION: BACKGROUND

The formation of Regional Economic Communities (RECs) in post-colonial Africa was earmarked to serve two purposes; namely, to act as building blocks to the establishment of an African Economic Community (AEC) and to facilitate economic, political and social development of the African countries. Under the auspices of the Organization of African Unity (OAU), the initiative to establish an AEC was formalized by the Lagos Plan of Action (LPA) and the Final Act of Lagos (FAL) by the year 2000. It was however in the Abuja Treaty (of June 1991) that the African continent expressed a comprehensive and more serious plan in an attempt to establish the AEC by 2027. Key aims of the Treaty were to intensify the process of integration of African economies, free movement of factors of production across Africa, promotion of cooperation among African states, coordination and harmonization of policies.

These objectives were to be achieved through the “strengthening of existing regional economic communities and establishment of other communities where they do not exist” (Qobo, 2007). The Abuja Treaty went further to recognize the following five regions: North Africa, West Africa, Central Africa, East Africa and Southern Africa. Further, six stages to achieving an

economic union were identified, starting with free trade areas and customs unions, moving to common markets, and eventually monetary unions with the regional economic communities as the pillars toward establishment of the AEC.

The Abuja Treaty (enforced in 1994) did not lead into successful implementation of the integration process. Instead there was multiplicity of RECs with overlapping memberships which according to ARIA II (2006) had several drawbacks, including:

- fragmented economic spaces and approaches to regional integration.
- increased cost of membership in regional economic communities.
- unhealthy rivalry for donor funds.
- contradictory obligations and loyalties for member countries.
- inconsistent objectives and conflicting operational mandates.
- duplicated efforts, and
- reduced ability for regional economic communities to pursue coherent and effective integration programmes.

The rationalization process of RECs and more concrete steps were taken with the establishment of the African Union (AU) at the turn of the century. The AU was established by the Sirte (Libya) Declaration (October 1999) and operationalized with the signing of the Constitutive Act of the AU which was signed in Lome, Togo in July 2000. In the rationalization of RECs as the building blocks to the establishment on the AEC, the AU decided to impose a freeze to the formation of new RECs (AU, 2006) and only recognizes the following institutions as RECs: Arab Maghreb Union (UMA), Community of Sahel-Saharan States (CEN-SAD), Common Market for Eastern and Southern Africa (COMESA), East African Community (EAC), Economic Community of West African States (ECOWAS), Economic Community of Central African States (ECCAS), Inter-Governmental Authority on Development (IGAD), and Southern African Development Community (SADC).

Efforts to harmonize and deepen the regional integration process led to the negotiations which have intended to establish a Tripartite Free Trade Area (TFTA) among COMESA, EAC and SADC. However, as of February, 2020 only eight countries had ratified the Tripartite Agreement which was less than the threshold of fourteen member states for it to come into force.

The process to establish the AEC were concretised, after two years of negotiations, with the adoption of the Agreement towards the formation of the African Continental Free Trade Area (AfCFTA) in Kigali, Rwanda (21 March 2018). The AfCFTA came into effect on 30 May 2020 having been ratified by the 22nd member state.

Figure 1: RECs in Sub-Saharan Africa - Progress towards Economic Integration

RECs	Date of Establishment	FTA	Customs Union	Common Market	Monetary Union	Political Federation
AMU	1989	Planned (Blue)	Planned (Blue)	Not Planned (White)	Not Planned (White)	Not Planned (White)
CEN-SAD	1998	Planned (Blue)	Planned (Blue)	Not Planned (White)	Not Planned (White)	Not Planned (White)
COMESA	1994	Achieved (Green)	In Progress (Orange)	Planned (Blue)	Planned (Blue)	Not Planned (White)
EAC	2000*	Achieved (Green)	In Progress (Orange)	In Progress (Orange)	Planned (Blue)	Planned (Blue)
ECCAS	1983	Planned (Blue)	Planned (Blue)	Not Planned (White)	Not Planned (White)	Not Planned (White)
ECOWAS	1975	Achieved (Green)	In Progress (Orange)	Planned (Blue)	Planned (Blue)	Not Planned (White)
IGAD	1998	Not Planned (White)	Not Planned (White)	Not Planned (White)	Not Planned (White)	Not Planned (White)
SADC	1992	Achieved (Green)	Planned (Blue)	Planned (Blue)	Planned (Blue)	Not Planned (White)

Notes: Achieved (green), in progress (orange), planned (blue), not planned (white).
 *EAC was first established in 1967, disbanded in 1977 due to internal conflicts among the member countries and reformed in 2000

In their quest to make RECs the building and founding blocs of continental economic integration, African leaders and technocrats have adopted the standard linear stages model to regional integration (as stated in the Abuja Treaty (1991)) from FTA, customs union, common market to economic community. This model was used by Western European countries to the eventual establishment of the EU. As shown in Figure 1 above, the major RECs are at different stages in the implementation of the continental objective of regional integration for achieving accelerated growth and development. This also means that the RECs which are beyond the FTA stage have a more liberal trade regime than the AfCFTA trade regime.

It is in this context that this paper seeks to achieve two objectives; first, to establish quantitatively the contribution of intra-African trade to the continent's economic growth; and second, to examine the potential contribution of the COMESA REC to continental economic growth. In the second objective the aim is to establish the extent of compatibility of the COMESA trade regime with the overall inter-continental trade regime as determinants of continental economic growth.

Theoretically, trade liberalization in general and in the context of regional integration is expected to lead to both static and dynamic gains. This liberal philosophy has been embraced and enshrined in the policy documents on the justification for the formation of RECs and intensification of intra-African trade. Given that our empirical methodology uses both static and dynamic econometrics models and in the light of scarcity of empirical work on the effects of intra-African and intra-regional trade on economic growth, it is hoped that the results of our study will illuminate both theoretical and policy discourses.

The rest of the paper is structured as follows: Section 2 provides the literature review. Section 3 is devoted to the study's methodology. Section 4 contains presentation and discussion of empirical findings. Section 5 provides a summary of the main findings and policy and research recommendations.

1.1 Relevance of Study in the Context of Objectives and Principles of the AfCFTA

This paper seeks also to contribute to the achievement of some of the objectives and principles of the AfCFTA. The AfCFTA, inter alia, seeks to operationalize the goals of Agenda 2063 especially in the eradication of poverty. In this respect the Agreement establishing the AfCFTA has recognized, inter alia, the principles of recognizing RECs' Free Trade Areas (FTAs) as its building blocs, preservation of the *acquis* and best practices in the RECs (AU, 2018).

The potential compatibility of the COMESA REC and AfCFTA is that the former covers all the areas of agreement except three, namely STEs, Public procurement and IPRs, among the following covered in the AfCFTA: Tariffs on manufactured goods, Tariffs on agricultural goods, Export taxes, Customs, Competition policy, State aid, Antidumping, Countervailing measures, state trading enterprises (STEs), technical barriers to trade (TBTs), General Agreement on Trade in Services (GATS), sanitary and phytosanitary (SPS) measures, Movement of capital, Public procurement, intellectual property rights (IPRs), Investment, Environmental laws, Labor market regulations (Based on Hofmann, Osnago, and Ruta (2017), and Maliszewska and Ruta (2020)). Although this paper narrowly focuses on potential cooperative role between COMESA and the AfCFTA on income performance, it is hoped that

our study helps to lay the foundation for subsequent monitoring and evaluation of future continental trade integration efforts.

2.0 LITERATURE REVIEW

The focus of this Section is to review the relevant theoretical and empirical literature which is pertinent to the studies' objectives.

The literature on trade and growth has been dominated by the application of traditional free trade theory to show the superiority of openness to the inward-looking approaches of socialism and import substitution industrialization strategy which was implemented by many countries in the developing world in the 1950s. The classical and neoclassical trade theory laid the foundation for the case for free trade to enhance productivity and efficient growth. The new theories of trade have emphasised the exploitation of economies of scale. According to Vamvakidis (1998), "the rapid economic growth of developing countries that opened their markets to free international trade during the past two decades has stimulated a large empirical and theoretical literature on the impact of trade on growth. This literature concludes that free trade and growth were positively correlated during the 1970s and 1980s and that this result was robust to different proxies for openness and the specification of the empirical model" (Dollar, 1992; Edwards, 1992; Levine & David, 1992; Ben-David, 1993; Barro & Sala-I-Martin, 1995; Sachs & Warner, 1995; Vamvakidis, 1996; Vamvakidis, 1997).

2.1 Growth Effects of Regional Integration

The analysis of growth effects of regional integration poses some challenges. In the African context, regional integration has been pursued alongside other trade liberalization initiatives including: (i) Joining the then GATT after gaining independence and later the World Trade Organization (WTO, 1994) at the multilateral level; (ii) Joining the Preferential Schemes especially initially with former colonial European powers which culminated in the first Lome Convention as EU-ACP partnership in mid-1970s. The trade relationship shifted from non-reciprocity to reciprocal relation with the Cotonou Agreement and the EU has expressed commitment to promote regional integration among its ACP member states. AGOA is the other preferential scheme that most African countries have participated in since the US Government initiated it in 1999. (iii) At the unilateral level, African countries have since the 1980s implemented market-oriented liberalization and reform programmes based the Washington Consensus neoliberal philosophy. This started as conditionality for accessing finance from the World Bank and the International Monetary Fund (IMF). In these programmes market liberalization took the form of domestic and external liberalization. (iv) The multiplicity of membership of African countries to bilateral and regional trade agreements in what has been dubbed the "spaghetti bowl" syndrome. Furthermore, these regional bodies, even the RECs recognized in the formation of the AfCFTA, are at different integration levels on the linear stages for regional integration and countries within the RECs have variously implemented the liberalization requirements.

At the theoretical level, the growth-effect of regional integration is controversial because it is neither non-discriminatory free trade nor completely closed trade regime. It falls therefore in the realm of the theory of the second best. The question has been whether or not partial trade liberalization through groups of countries leads to multilateral liberalization; that is, whether the welfare gains from partial liberalization are achieved at the expense of countries that are excluded from a given regional grouping. This is summed up in a question that has been asked

‘are regional groupings stumbling blocks or enabling blocs to multilateralism?’ Notwithstanding these controversies, the theory of customs union (CU) has identified channels, static and dynamic, through which a CU may be growth enhancing. In the static sense, a CU is beneficial when on a net basis trade creation exceeds trade diversion. The traditional dynamic gains of trade liberalization have been surmised as follows: provides *competition* for countries to realize their comparative advantage and enhance *efficiency*; firms might realize *economies of scale* especially for inter-industry trade; the wider market provides opportunity for expansion; and the wider market might attract investment both from within the region and from other countries in a tariff jumping fashion. As pointed out in the Introduction to this paper, these goals have been enshrined in the RECs as their key economic targets.

2.2 Empirical Evidence on Regional Integration and Growth

Lipsey (1960) pointed out that the theory of CUs had not yet dealt with effects on changes in economic growth. By the late 1990s, theory had not yet answered Lipsey’s fundamental observation of more than 30 years earlier and Vamvakidis (1999) thought that empirical evidence on the impact of regional integration on growth may provide stylized facts and show the direction that future theoretical work should follow. In this vein, Vamvakidis (1998) posed the questions: Should a country form or join an RTA or reduce trade barriers for all countries? Free trade is beneficial for growth, but what kind of free trade — regional or non-discriminatory?

In a sources-of-growth model, Vamvakidis (1998) included dummies for countries belonging to the following regional groupings which had been in existence since 1960s and 1970s: Association of South East Asian Nations (ASEAN), Andean Common Market (ANCON), Central American Common Market (CACM), European Union, and Union Douaniere et Economique de PAfrique Centrale (UDEAC). The regression results revealed that only the estimated coefficient for the European Union was positive and statistically significant at the 10 percent level, while all other RTAs had no impact on growth. This result corroborates those of Baldwin and Seghezza (1996) and Henrekson et al. (1997) on the positive growth effects of the European Union for the medium term.

In a number of empirical studies on sources of growth, a dummy has been included for sub-Saharan Africa (SSA). Although in Vamvakidis’ (1998) results the dummy was found to be statistically insignificant, in a majority of other studies the SSA dummy has been found to have significant negative coefficient (Collier & Gunning, 1999; Sala-i-Martin, 2002; Mbabazi, Morrissey, & Milner, 2003).

One recurrent finding of studies of the determinants of growth remains to be explained: a dummy variable for that the value of 1 for sub-Saharan Africa and zero for other countries has strong negative significance in almost all the regressions. Africa is predicted to grow very slowly because it scores low on all the variables that are good for growth, and high on all the variables that harm growth. But even so, the significance of the African dummy implies that Africa has grown even less than its performance on those variables would indicate. That is why the finding of a negative coefficient on the African dummy variable is sometimes referred to as a “confession of ignorance.” This grim view, however, has changed greatly since the turn of this century.

In the context of African integration, Gnimassoun (2019) has noted that in spite of the long-standing political will to promote integration in Africa, the actual data reflecting the degree of integration of African economies raises several questions that are worth considering. Has

regional integration in Africa really contributed to improved incomes in African countries? Is there a dominant channel between intra-African migration and trade? In order to study these research questions, the author is motivated by Ortega and Peri (2014) growth model which he extended to study the impact of openness to trade and migration on per capita income. The key variables are intra-African trade (import plus export) as a share of GDP and the intra-African immigration share in the population. The latter is taken as a medium for intra-African trade to influence growth in per capita income. The study's results showed that intra-African integration did not have strong enough significant impact on real per capita income in Africa. But intercountry migration was found to have significant short and medium terms positive impacts in per capita income, thereby concluding that intra-regional trade has significant growth effects through its medium.

A thorough search for literature on the subject at hand shows that studies on the role of regional integration on growth remain scanty for the continent. The review reveals that most studies focus on non-discriminatory openness. Does regional integration matter for economic growth? Do regional trade agreements (RTAs) have any impact on growth? These questions remain unanswered, and so this study seeks to quantitatively address them.

3.0 METHODOLOGY

This section briefly discusses the data, variable measurements and econometrics techniques that were employed to empirically establish the nature of mutual contribution to Africa's economic growth of membership to COMESA and intra-African trade.

3.1 Data and Variable Measurement

The study adopted a panel of 39 African countries for the years 2000-2018. Of the 54 African countries, Chad, Djibouti, DRC, Equatorial Guinea, Eritrea, Guinea-Bissau, Liberia, Libya, Sao Tome and Principe, Sierra Leone, South Sudan, Somalia and Zimbabwe were excluded due to data availability issues. Data were obtained mainly from the World Bank WDI, World Bank WITS, COMESA COMSTAT, ITC and the PWT9.0. Apart from the main variables, various control variables were also included, as prescribed by neoclassical growth theories.

3.2 Analytical Modelling

To check for robustness in achieving the research objectives, various panel model techniques were adopted, namely; static panel models (fixed effects and random effects models) and dynamic panel regression model. Apart from giving more informative data and being able to capture the dynamics of adjustment, panel regression models have the main advantage of controlling for individual heterogeneity as would be expected among the different African economies (Baltagi B. , 2013). The two types of panel models are briefly described below.

3.3 Static Panel Regression Models

Generally, a simple one-way error component panel regression model is specified with i denoting cross-section units and t denoting the time-series dimension, as follows:

$$y_{it} = x'_{it}\beta + u_{it} \text{ where } i = 1, \dots, N \text{ and } t = 1, \dots, T$$

The one-way error component model for the disturbances, in this case, is defined as:

$$u_{it} = \mu_i + v_{it}$$

where μ_i denotes the unobservable individual-specific effect and v_{it} denotes the remainder disturbance.

For the fixed effects (FE) model, μ_i are assumed to be fixed parameters to be estimated and the remainder disturbances stochastic with v_{it} independent and identically distributed $\text{IID}(0, \sigma_v^2)$. The x_{it} are assumed independent of the v_{it} for all i and t . On the contrary, μ_i are assumed random in the random effects (RE) model to avoid loss of degrees of freedom. In addition, the x_{it} are independent of the μ_i and v_{it} for all i and t . To choose between the FE and RE, the research adopted the Hausman (1978) test which is based on the difference between the fixed and random effects estimators, where a rejection of the statistic directed to use of the FE model. If the assumption of IID disturbances is violated, such that heteroskedasticity, autocorrelation and cross-sectional dependence are evident, panel Generalized Lease Squares (GLS) methods are preferred which allow estimation in the presence of AR(1) autocorrelation within panels and cross-sectional correlation and heteroskedasticity across panels.

3.4 Dynamic Panel Regression Models

With the rate of economic growth at any point in time being a function of, among other things, the previous period's rate, growth is dynamic in nature. This means that a model of economic growth must have as one independent variable the economic growth rate in the previous period, to be given as:

$$y_{it} = \delta y_{i,t-1} + x'_{it}\beta + u_{it}$$

for $i = 1, \dots, N$ and $t = 1, \dots, T$; δ is a scalar and x'_{it} a vector of $1 \times K$ independent variables. In this case, the error component is assumed to be one-way, such that:

$$u_{it} = \mu_i + \varepsilon_{it}$$

where the error components are independent even with each other; μ_i denotes the unobservable individual-specific effect and ε_{it} denotes the remainder disturbance.

In the above specified model, the dynamic component ($y_{i,t-1}$) is correlated with μ_i , the unobserved panel-level effects. This may make use of OLS or the other linear static panel models (Fixed and Random effects models) yield biased and inconsistent estimates. As a solution, Arellano and Bond (AB) (1991) derived a consistent generalized method of moments (GMM) estimator for the model which uses orthogonality conditions of the lag component and the remainder error term to obtain additional instruments for estimation of a dynamic panel data model. The resulting AB one-step GMM consistent estimator of δ is given according to Baltagi (2005) as:

$$\hat{\delta} = [(\Delta y_{-1})'W[W'(I_N \otimes G)W]^{-1}W'(\Delta y_{-1})]^{-1} \times (\Delta y_{-1})'W[W'(I_N \otimes G)W]^{-1}[W'(\Delta y_{-1})]$$

This model was estimated besides the static and GLS models to validate the findings and as a check for robustness.

3.5 Empirical Specification

To achieve the research objectives while keeping the model parsimonious, this study adopted the basic Solow (exogenous) growth model, and modified a specification by Gnimassoun (2019). With some variables estimated in logarithmic forms, the model was specified as follows:

$$\ln PCY_{it} = \alpha_0 + \alpha_1 \text{IntAfrTrade} + \alpha_2 \text{Inflation}_{it} + \alpha_3 \text{FinancialDevt} + \alpha_4 \text{Investment}_{it} \\ + \alpha_5 \ln \text{Labour}_{it} + \alpha_6 \text{COMESA}_{it} + \alpha_7 \text{Landlocked}_{it} + \sum_{j=1}^3 X_{jit} + \varepsilon_{it}$$

where X represents three other regional communities (SADC, EAC and ECCAS)

3.6 Variable Definition and Measurement

The variables were measured as follows:

PCY: This is the dependent variable, measured as real GDP per capita at chained PPPs - constant 2017. The variable entered in natural logs.

IntAfrTrade: This variable representing intra-African trade (trade integration) was measured as the ratio of the sum of exports and imports of a country with other African countries to the country's current GDP in US\$. Other studies, such as Gnimassoun (2019), used intra-African migration as a channel through which intra-African trade affects economic growth. One challenge with this approach is that migration statistics within the African continent remain underreported and so the phenomenon might not be accurately captured. In lieu of that, this study adopted well-recognized regional trade dummies as the channel.

Inflation: Inflation is expected to hinder economic growth, and so a negative coefficient was expected. This was measured as the annual change in the consumer price index (CPI).

Financial Development: Proxied using domestic credit to private sector (as percentage of GDP), financial development is expected to enhance economic growth.

Investment: This is a variable capturing domestic investment, proxied by the percentage of gross fixed capital formation in GDP. The higher the investment growth, the higher the economic growth, other things held constant.

Labour: This is a variable capturing growth in the total labour force. Higher growth in the labour force may lead to a higher economic growth.

COMESA: This is a dummy variable taking 1 for countries that are member to the Common Market for Eastern and Southern Africa in each year (and 0 otherwise), including Burundi, the Comoros, the Democratic Republic of Congo, Djibouti, Egypt, Eritrea, Ethiopia, Kenya, Libya, Madagascar, Malawi, Mauritius, Rwanda, Sudan, Swaziland, Seychelles, Uganda, Zambia and Zimbabwe. A positive coefficient is expected in this case.

Landlocked: This is a dummy taking 1 for countries that are landlocked and 0 otherwise. The challenges that may be faced in trade by such countries may hinder development and so a negative coefficient is expected.

Other RECS: The study also included dummy variables for SADC, EAC and ECCAS, all taking 1 for countries that are member states to the community in each year, otherwise taking 0.

Table 1 below summarizes the variables that were included and shows how they were measured and the sources.

Table 1: Variable Definitions and Expected Signs

Variable	Definition/Measurement	A Priori Expected Sign	Data Source
Economic Growth	GDP per capita, PPP (constant 2017 international \$)		WDI
Intra-African Trade	$\frac{(X + IM)^{Afr}}{(Trade)^{World}}$	+	WITS
Inflation	Inflation, CPI (annual %)	-	WDI
Financial Devt.	Domestic credit to private sector (% of GDP)	+	WDI
Investment	Gross fixed capital formation (% GDP)	+	WDI
Labour	Labour force, Total	+	WDI
COMESA Dummy	1 if country is in COMESA; 0 if not	()	Constructed
SADC	1 if country is in SADC; 0 if not	()	Constructed
EAC	1 if country is in EAC; 0 if not	()	Constructed
ECCAS	1 if country is in ECCAS; 0 if not	()	Constructed
Landlocked	1 if country is Landlocked; 0 if not	-	Constructed

3.7 Diagnostic Tests

For static panel models, important diagnostic tests include tests for heteroskedasticity, autocorrelation and cross-sectional dependence especially in the case with number of cross-sectional units greater than number of time periods.

Consistency for all system GMM estimators is attained if and only if the moment conditions are valid. The Sargan test of overidentifying restrictions is employed to check if the overidentifying restrictions are valid, given that there is no method to test if moment conditions from an exactly identified model are valid. With a null hypothesis that overidentifying restrictions are valid, rejection of the null calls for a modification of the model or instruments.

4.0 EMPIRICAL FINDINGS OF THE STUDY

This section presents the main results of the study, as found from the data that were collected from various sources. Having described the data issues faced, descriptive statistics and summary statistics are presented before moving to the econometric results.

4.1 Data Issues

Due to data availability, the study employed an unbalanced panel of 39 countries for 19 years (from 2000 to 2018)¹. This large number of cross-sectional units ($N \rightarrow \infty$) and fixed number of years (fixed T) justifies the use of standard micro-econometric panel data models, with no question of stationarity of the series. In this regard, unit root properties of the variables employed in the empirical model were not in question. Nonetheless, given that the number of cross-sectional units was greater than the number of time dimensions in the study, issues of cross-sectional dependence became a concern. In this micro panel, cross-sectional dependence was tested using Pesaran's (2015) test for weak cross-sectional dependence, revealing that the

¹ Excluding Chad, Djibouti, DRC, Equatorial Guinea, Eritrea, Guinea-Bissau, Liberia, Libya, Sao Tome and Principe, Sierra Leone, South Sudan, Somalia and Zimbabwe

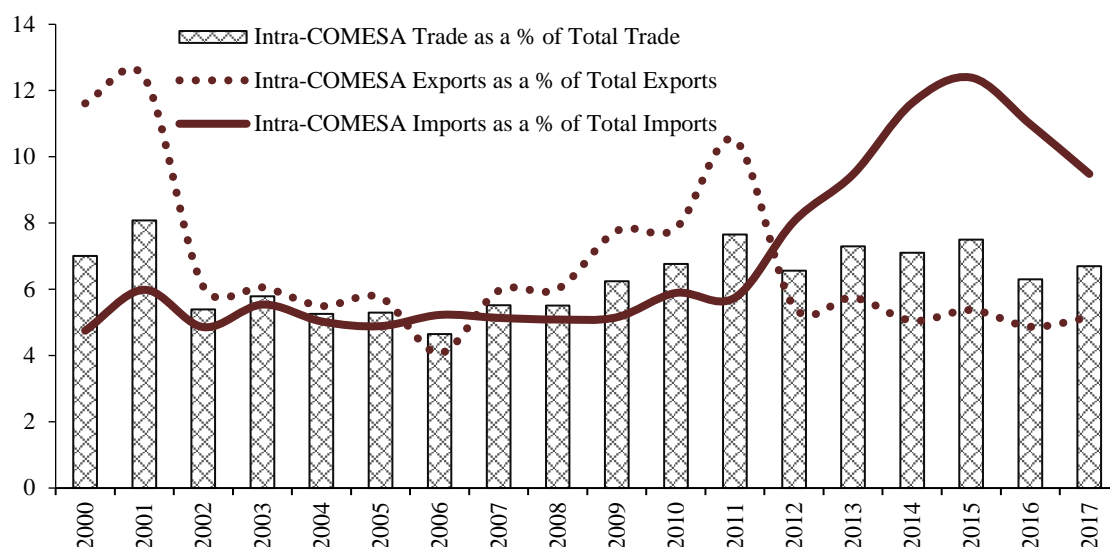
errors are weakly cross-sectional dependent. Given that the dependence between units violates the basic OLS assumption of an independent and identically distributed (i.i.d) error term, that can even lead to endogeneity and therefore inconsistent estimates at times, the panel model was fit using Generalized Least Squares (GLS) to verify the findings². While the panel GLS was conceived for small N, large T panel datasets, the T dimension of this panel (T = 19) dataset is not negligible, justifying its use for the current case. Nonetheless, in the case of contradicting findings between these two models, results from the fixed effects model would be interpreted, so long as the panel GLS results generally support FE results. In fact, weak cross-sectional dependence means that the correlation between units at each point in time converges to zero as the number of cross-section units goes to infinity, thereby making the FE model ultimately consistent.

4.2 Descriptive and Summary Statistics

Of interest here is intra-COMESA and intra-African trade performance. Figure 2 below charts trends in intra-COMESA trade for the 2000-2017 period and a few observations are made. First, the share of intra-COMESA exports as percentage of total COMESA exports has been quite unstable. Having peaked around 12 percent in 2001, it sharply declined to a low of 4 percent in 2006 and the steady recovery to a peak of 10 percent in 2011 was later followed by a sharp decline to 5 percent share in 2017. As can be further seen in Table 2 below, intra-COMESA exports have performed below the average for intra-African export share which averaged at 17 percent (with a 15 - 18 percent range) for the 2001-2018 period. Second, the intra-COMESA import share, having been steady at about 5 percent up to 2010, rose sharply to about 12 percent in 2015 before losing momentum thereafter to 9 percent. These shares are well below the comparative intra-African import shares which averaged 21 percent during the period under analysis. Third, the share of total intra-COMESA trade has exhibited a business-cycle shaped trend: Starting from a peak of 8 percent in 2001 to a trough of 5 percent in 2006, followed by a rising trend to another peak of 8 percent in 2011, before trending downwards thereafter. Given that the total intra-African trade has averaged 19 percent, it is safe to conclude that COMESA has so far been a less integrated REC than Africa as a whole.

Figure 2: Overall Shares of intra-COMESA Trade to Total Trade, 2000-2017

² This is done in Stata using the *xtgls* command



Source: COMSTAT Database

Table 2: Period Average Values for Variables for All African Economies

	Period Averages				
	2001-2018	2001-2005	2006-2010	2011-2015	2016-2018
All Economies					
GDPpc, PPP	4,926.12	4,182.49	4,784.11	5,355.48	5,686.59
Log (GDPpc)	8.07	7.92	8.05	8.16	8.22
COMESA Goods Exports*	364,000	147,000	348,000	519,000	499,000
COMESA Goods Imports*	202,000	86,700	190,000	279,000	293,000
Africa Exports*	1,320,000	434,000	1,230,000	2,020,000	1,710,000
Africa Imports*	1,140,000	505,000	1,080,000	1,660,000	1,390,000
Intra-Afr. Exp. (% Tot. Exports)	16.74	15.51	16.94	18.40	15.36
Intra-Afr. Imp. (% Tot. Imports)	21.24	23.57	20.73	21.12	18.53
Intra-Afr. Trade (% Tot. Trade)	19.09	19.74	18.90	19.80	17.03
Intra-Afr. Trade (% GDP)	14.65	15.50	13.83	15.91	12.40
Land Area (KM ²)	461,200	461,188	461,191	461,213	461,213
Total Population (000)	21,400	18,000	20,400	23,200	25,700
Exchange Rate (period avg)	523.08	415.06	464.16	577.45	728.36
Gross Fix.Cap Form. (% GDP)	22.18	19.33	22.40	24.35	22.57
Inflation (CPI, %)	7.14	7.46	7.31	6.60	7.28
Domestic Credit (% GDP)	24.19	19.25	22.86	27.63	29.23

Note: * Values are in thousands of US\$. All monetary values measured in US\$

Source: Authors' calculations from various data sources

4.3 Econometric Results

This Section presents the econometric results obtained using the data described above. As briefly explained, this study made use of both static and dynamic panel models. For the static panel models, choice was made between the fixed effects and random effects models using the Hausman test, which gave a significant statistic thereby favouring the fixed effects model.

Before estimation of the static models, the Wooldridge test for autocorrelation in panel data revealed presence of serial correlation and the likelihood ratio (LR) test showed presence of heteroskedasticity. Application of Pesaran's (2015) test for weak cross-sectional dependence revealed dependence among the errors, prompting the adoption of the panel GLS model to solve all problems. To ensure robustness of the results, a pooled OLS estimator was estimated before the fixed effects model. Apart from these static panel models, a dynamic model was estimated, knowing that an economy's level of income in one period may affect its income level in the next period. Therefore, Blundell/Bond's system GMM estimator was also estimated. Of these models, the XTGLS is preferred to the other models, with the assumption of dynamism of income growth also favouring the system GMM. The regression results presented in the forthcoming Tables also survived various robustness checks.

The econometric results are presented and interpreted at the general level of growth effect of total African trade as a benchmark and at the specific level of growth effect of intra-African trade which is the focus of this study.

Case I: Growth Effect of Total African Trade

[Insert Table 3A]

Table 3A presents results of a benchmark scenario whereby the trade variable is defined as total trade (exports + imports) of each African country with the whole world as a percentage of nominal GDP. This is the most popularly used indicator of trade openness. It can be observed from the table that trade is growth enhancing in all the models except in the fixed-effects model. Belonging to COMESA REC is growth enhancing only in the dynamic case of system GMM. In order to test the robustness of the foregoing results we carried out a sensitivity test by adding dummies for other RECs especially in the Tripartite FTA. As reported in Table 3B, the results for total trade variable and for COMESA are not affected by the inclusion of the other RECs. However, all the four RECs yield regressive contributions to per capita income.

[Insert Table 3B]

Case II: Growth Effect of Intra-African Trade

The comparative growth-enhancing potential of intra-African trade and COMESA is tested using total intra-African trade (exports to + imports from Africa) as a percentage of current GDP for each African country. The interpretation of the results is carried out in the context of the key objectives of our study. In this case, the results (Table 4A) show that intra-African trade is growth enhancing in the pooled and XTGLS models, it has negative effect in the fixed-effects model and, contrary to the base line case above, it has no statistically significant dynamic growth effect.

[Insert Table 4A]

Does membership to COMESA REC enhance the effect of intra-African trade to growth? The COMESA dummy variable yields conflicting findings in this study. With the assumption that growth in per capita income is dynamic, the study finds membership to the region as growth-enhancing. This is because member countries are able to enjoy benefits of free trade, thereby improving their income levels. However, if countries' current per capita income levels are

assumed not to be influenced by their previous levels, membership to the region can be growth-harming. In order to test the robustness of the foregoing results, we carried out a sensitivity test by adding other RECs especially in the Tripartite FTA. The results from this analysis (Table 4B) confirm the conflicting effect of intra-COMESA trade to continental growth. However, although the SADC REC is found to be growth-enhancing on average, the EAC, which is one of the most advanced RECs in terms of instruments of integration, is found to have potentially negative effects on growth. Both of these RECs do not have dynamic growth effects. The ECCAS REC has a strong growth-enhancing effect in the static models only and negative effect in the dynamic model.

[Insert Table 4B]

The empirical findings of this study seem to contradict those of two key studies on the contribution of regional integration on economic growth. In Vamvakidis' (1998) study only the coefficient for dummy for the EU was found to be positive and statistically significant among the five dummies included for all the regional groupings. In our study the COMESA coefficient is found to be statistically insignificant in two models (the pooled and fixed effects models), statistically negative in the XTGLS model and positive in the dynamic model. In comparison with the finding by Gnimassoun (2019) that African integration has not been strong enough to generate significant and robust impact on real per capita income in Africa, our study finds intra-African trade to have potentially overall positive and statistically significant coefficient in static regressions. It is only in the dynamic model that intra-African trade has statistically insignificant long-run effect on per capita income.

Moving to the other determinants of interest on growth, the results above show a positive expected sign for the effect of investment on long-run economic growth, which is in line with findings by Barro (2003), Ciftcioglu and Begovic (2008) and Adams (2009) for SSA countries. Growth in the labourforce is found to have mixed relationship with economic growth in Africa. While the positive effects conform with expectation of labour as a factor of production, its negative growth effect most likely reflect the high unemployment rates combined with low opportunities of job creation, signifying also that Africa has not yet crossed the Arthur Lewis' turning point in its economic development efforts.

5.0 SUMMARY, POLICY IMPLICATIONS AND RESEARCH DIRECTIONS

The main goal of this study was to establish the extent of mutual compatibility of the AfCFTA and COMESA trade regimes. Augmenting a sources-of-growth model the former was represented by intra-African trade while the latter was proxied by a dummy variable for COMESA countries. The empirical econometric results of the study strongly indicate the absence of mutual positive compatibility between the two regimes. In the pooled model while intra-African trade has statistically significant growth-enhancing effects, the COMESA regime has no effect. While intra-African trade has significant negative growth effect in the fixed-effect model, the COMESA regime has no significant growth effect. In the XTGLS model both trade regimes have statistically negative growth effects. Dynamic modelling with System GMM reveals that while intra-African trade has no significant growth effect, the COMESA regime is robustly growth enhancing. One area which requires policy attention in ensuring that COMESA increases its contribution to continental integration would be to increase its intra-REC trade to converge to the continental intensity. Although COMESA has put in place requisite integration instruments, there is a need to intensify supply-side measures which are designed to enhance production and reduce the burden of landlockedness and border inefficiencies and bottlenecks. Gnimassoun (2019) argues that trade integration in itself is

insufficient to contribute positively to economic growth in Africa and recommends increasing intra-African labour mobility as a conduit for growth-enhancing trade integration. This study has found that the coefficient for investment especially in the dynamic models is statistically significant with expected sign. This suggests that in order for the continent to realize dynamic gains from trade integration there is a need to fast track increased intra-African capital mobility.

One area for further research is whether there is a threshold of intra-regional trade intensity beyond which trade integration starts being growth enhancing. Empirical evidence from the base scenario in this study shows that Africa's total trade openness is, on a net basis, growth enhancing even in the dynamic model. Vamvakidis (1998) found that the EU was the only REC in the sample which had significant positive effect on economic growth and that the RECs of developing countries had no significant effect on growth. For example, although the AfCFTA would significantly increase intra-African trade, it would still be below the EU intensity levels for quite some time. Further research is called for in this direction.

The study faced some challenges especially in the area of data unavailability in some African countries which necessitated reducing the sample size. Further, the unrecorded cross-border trade tends to compromise the quality of results in trade analyses. For instance, although it has been observed that the AfCFTA would boost intra-African trade due to the removal of non-tariff barriers, gains would be greater if informal traders were better integrated into the formal trade channels (UNCTAD, 2015). However, it is hoped that our study helps to lay the foundation for subsequent monitoring and evaluation of future continental trade integration efforts.

TABLES

Table 3A: Using Total African Trade as a % of GDP_COMESA Dummy

	Pooled	Fixed Effects	XTGLS	System GMM
Total Trade (% GDP)	0.0044*** (0.001)	-0.0009** (0.000)	0.0050*** (0.001)	0.0004*** (0.000)
Inflation	0.0083** (0.003)	0.0005 (0.001)	0.0111*** (0.003)	-0.0004** (0.000)
Financial Development	0.0150*** (0.001)	0.0056*** (0.001)	0.0169*** (0.001)	-0.0007*** (0.000)
Investment	0.0056 (0.004)	-0.0005 (0.001)	0.0050 (0.004)	0.0008*** (0.000)
Log (Labour)	-0.1500*** (0.022)	0.5474*** (0.031)	-0.1303*** (0.024)	0.0146*** (0.004)
COMESA	0.0578 (0.061)	0.0265 (0.060)	-0.0729 (0.063)	0.0398*** (0.015)
Landlocked	-0.5296*** (0.060)	-	-	-0.0580*** (0.019)
L. Log (PCY)	-	-	-	0.9743*** (0.007)
_cons	9.6361*** (0.384)	-0.2880 (0.469)	9.1228*** (0.401)	-
chi2	-	-	435.205	19210913.525
P	0.000	0.000	-	0.000
N	601	601	601	601

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 3B: Using Total African Trade as a % of GDP_RECs Dummy

	Pooled	Fixed Effects	XTGLS	System GMM
Total Trade (% GDP)	0.0025** (0.001)	-0.0010*** (0.000)	0.0035*** (0.001)	0.0004*** (0.000)
Inflation	0.0064* (0.003)	0.0006 (0.001)	0.0101*** (0.003)	-0.0004*** (0.000)
Financial Development	0.0147*** (0.001)	0.0054*** (0.001)	0.0172*** (0.001)	-0.0008*** (0.000)
Investment	0.0079** (0.004)	-0.0004 (0.001)	0.0081** (0.004)	0.0007** (0.000)
Log (Labour)	-0.1400*** (0.023)	0.5409*** (0.032)	-0.1151*** (0.024)	0.0153*** (0.004)
COMESA	0.0948 (0.064)	0.0307 (0.058)	-0.0001 (0.067)	0.0326** (0.015)
SADC	0.2111*** (0.064)	-0.1573*** (0.048)	0.0917 (0.066)	0.0264** (0.013)
EAC	-0.1849** (0.090)	0.0342 (0.032)	-0.2566*** (0.094)	-0.0003 (0.010)
ECCAS	0.3141*** (0.073)	0.2683*** (0.054)	0.3663*** (0.077)	-0.0162 (0.012)
Landlocked	-0.5388***	-	-	-0.0639***

	(0.061)			(0.019)
L. Log (PCY)	-	-	-	0.9726***
				(0.008)
_cons	9.4876***	-0.1759	8.8502***	-
	(0.387)	(0.471)	(0.401)	
chi2	-	-	484.141	19162032.692
P	0.000	0.000	-	0.000
N	601	601	601	601

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 4A: Intra-African Trade Defined as Total Intra-African Trade % of GDP_COMESA Dummy

	Pooled	Fixed Effects	XTGLS	System GMM
Intra-Africa Trade (% GDP)	0.0093***	-0.0010**	0.0033*	0.0001
	(0.002)	(0.000)	(0.002)	(0.000)
Inflation	0.0081*	-0.0003	0.0124***	-0.0005**
	(0.004)	(0.001)	(0.004)	(0.000)
Financial Devt	0.0157***	0.0068***	0.0179***	0.0000
	(0.001)	(0.001)	(0.001)	(0.000)
Investment	0.0116***	-0.0009	0.0103***	0.0006**
	(0.004)	(0.001)	(0.004)	(0.000)
Log (Labour)	-0.1557***	0.5030***	-0.1740***	0.0117***
	(0.022)	(0.035)	(0.023)	(0.004)
COMESA	0.0618	-0.0606	-0.1513**	0.0436***
	(0.069)	(0.067)	(0.068)	(0.015)
Landlocked	-0.6046***	-	-	-0.0319
	(0.070)			(0.020)
L. Log (PCY)	-	-	-	0.9798***
				(0.008)
_cons	9.7328***	0.3222	9.9153***	-
	(0.362)	(0.513)	(0.384)	
chi2	-	-	394.456	15305646.432
P	0.000	0.000	-	0.000
N	510	510	510	510

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 4B: Intra-African Trade Defined as Total Intra-African Trade % of GDP_RECs Dummy

	Pooled	Fixed Effects	XTGLS	System GMM
Intra-Africa Trade (% GDP)	0.0076***	-0.0011***	0.0016	0.0001
	(0.002)	(0.000)	(0.002)	(0.000)
Inflation	0.0072*	-0.0002	0.0110**	-0.0005**
	(0.004)	(0.001)	(0.004)	(0.000)
Financial Development	0.0149***	0.0066***	0.0168***	-0.0000
	(0.001)	(0.001)	(0.001)	(0.000)
Investment	0.0117***	-0.0009	0.0108***	0.0007**

	(0.004)	(0.001)	(0.004)	(0.000)
Log (Labour)	-0.1410***	0.5159***	-0.1534***	0.0112**
	(0.023)	(0.036)	(0.025)	(0.005)
COMESA	0.0824	-0.0579	-0.1083	0.0311*
	(0.074)	(0.065)	(0.074)	(0.017)
SADC	0.1936***	-0.1513***	0.2115***	0.0033
	(0.073)	(0.044)	(0.077)	(0.014)
EAC	-0.1753*	0.0188	-0.2388**	-0.0082
	(0.095)	(0.030)	(0.100)	(0.011)
ECCAS	0.2687***	0.2227***	0.2817***	-0.0339***
	(0.083)	(0.064)	(0.088)	(0.013)
Landlocked	-0.5854***	-	-	-0.0314
	(0.069)			(0.021)
L. Log (PCY)	-	-	-	0.9812***
				(0.009)
_cons	9.4655***	0.1520	9.5587***	-
	(0.384)	(0.529)	(0.406)	
chi2	-	-	435.103	15161826.519
p	0.000	0.000	-	0.000
N	510	510	510	510

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

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