# Different stages of regional integration and economic growth: Going beyond Intra-trade

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The levels of regional economic integration among African countries are relatively low because of many contributing factors. It widely accepted the regional economic integration may play a vital role in strengthening different stages of economic integration in Africa. Since most of the studies seem to be literature review based, the notion of this study is to address that gap by using regression analysis on the regional integration and economic growth. Such is done by applying different levels of integration namely trade integration, macroeconomic integration, productive integration, infrastructural integration and free movement of people on the continental economic growth. The regression analysis findings can be interpreted as follows when the trade integration increases by 1% the economic growth of Africa will increase by 1.82%. This implies that the higher is the levels of trade integration the higher is the economic growth. Such does not only mean increases in the impact but also reflect the positive the trade integration has on stimulating the levels of th economic activities. Same reasoning applies with productive integration if its increases by 1% that would result into the African economic growth to increase by 0.31%. Similarly, when the free movement of people increases by 1% that amount to economic growth to be stimulated by 0.87%. It can also noted that macroeconomic integration has strong impact on the economic growth compared to other stages of regional economic integration. The impact of macroeconomic integration into economic growth can contribute to 7.2% growth of the African economy. In contrast, infrastructural integration reflected that if it increases by 1% the economic growth will decreases by 2.14%. Basically, the study went beyond the trade integration or not only addressing the so-called intra-trade regional issues within the African continent.

#### ملخص

تعد مستويات التكامل الاقتصادي الإقليمي فيما بين البلدان الأفريقية منخفضة نسبيا لعدة أسباب. ويُعتَقَد على نطاق واسع أن التكامل الاقتصادي الإقليمي قد يؤدي دورا حيويا في تعزيز مختلف مراحل التكامل الاقتصادي في أفريقيا. وبما أن معظم الدراسات تستند إلى مراجعة الأدبيات، فإن هذه الدراسة تهدف إلى معالجة هذه الفجوة باستخدام تحليل الانحدار في التكامل الجهوي والنمو الاقتصادي. وبجرى ذلك عن طريق تطبيق مستويات مختلفة من

التكامل، وهي التكامل التجاري، والتكامل الاقتصادي الكلي، والتكامل الإنتاجي، وتكامل الهياكل الأساسية، وحرية تنقل الناس على مستوى النمو الاقتصادي القاري. ويمكن تفسير نتائج تحليل الانحدار على النحو التالي: عندما يزيد التكامل التجاري بنسبة 1%، فإن النمو الاقتصادي لأفريقيا سيزيد بنسبة 2.1%. وهذا يعني أنه كلما ارتفعت مستويات التكامل التجاري كان النمو الاقتصادي أعلى. إلا أن ذلك لا يعكس زيادة في الأثر فحسب، بل يعكس مدى إيجابية التكامل التجاري في تحفيز مستويات الأنشطة الاقتصادية. والشيء نفسه ينطبق على على التكامل الإنتاجي، فإذا زاد بنسبة 1%، هذا يعني أن النمو الاقتصادي بإفريقيا سيزيد بنسبة 3.0%. وعلى نفس النحو، عندما تزداد حرية تنقل الأشخاص بنسبة 1%، فإن ذلك قد يحفز النمو الاقتصادي بنسبة 7.0%. ويمكن الإشارة أيضا الى أن للتكامل الاقتصادي الكلي أثر قوي على النمو الاقتصادي مقارنة بالمراحل الأخرى للتكامل الاقتصادي الإقليمي. ويمكن أن يساهم تأثير اندماج الاقتصاد الكلي للنمو الاقتصادي في نمو الاقتصاد الأفريقي بنسبة 2.7%. في المقابل، إذا زاد تكامل البنية التحتية بنسبة 1%، فسوف ينخفض النمو الاقتصادي بنسبة 8.2%.

### RÉSUMÉ

Les niveaux d'intégration économique régionale entre les pays africains sont relativement faibles en raison de nombreux facteurs. Il est largement admis que l'intégration économique régionale peut jouer un rôle vital dans le renforcement des différentes étapes de l'intégration économique en Afrique. Étant donné que la plupart des études semblent être basées sur une revue de la littérature, l'idée de cette étude est de combler cette lacune en utilisant une analyse de régression sur l'intégration régionale et la croissance économique. Cela se fait en appliquant différents niveaux d'intégration, à savoir l'intégration commerciale, l'intégration macroéconomique, l'intégration productive, l'intégration infrastructurelle et la libre circulation des personnes, à la croissance économique continentale. Les résultats de l'analyse de régression peuvent être interprétés comme suit : lorsque l'intégration commerciale augmente de 1%, la croissance économique de l'Afrique augmente de 1,82%. Cela signifie que plus les niveaux d'intégration commerciale sont élevés, plus la croissance économique est forte. Cela ne signifie pas seulement une augmentation de l'impact, mais reflète également l'effet positif de l'intégration commerciale sur la stimulation des niveaux d'activités économiques. Le même raisonnement s'applique à l'intégration productive : si elle augmente de 1 %, la croissance économique africaine augmentera de 0,31 %. De même, lorsque la libre circulation des personnes augmente de 1 %, la croissance économique est stimulée de 0,87 %. On peut également noter que l'intégration macroéconomique a un fort impact sur la croissance économique par rapport à d'autres étapes de l'intégration économique régionale. L'impact de l'intégration macroéconomique sur la croissance économique peut contribuer à une croissance de 7,2 % de l'économie africaine. En revanche, l'intégration des infrastructures montre que si elle augmente de 1 %, la croissance économique diminuera de 2,14 %. Fondamentalement, l'étude est allée au-delà de l'intégration commerciale ou ne s'est pas contentée d'aborder les questions régionales dites intratraditionnelles au sein du continent africain.

**Keywords:** Trade integration, Productive integration, Africa, Macroeconomic integration, Infrastructural integration

### Introduction

The long history of African regional integration can be traced back to the formation Southern African Customs Union (SACU) in 1910 (Geda & Kebret,2008). Likewise, the importance of regional integration in Africa can be also seen through the establishment of the Organization of Africa Unity(OAU) in 1963, by the founding fathers of the continent. Following the decisions of the OAU to create a new continental organization to builds on its work, the African Union(AU) was launched in July 2002 in Durban (African Economic Outlook,2014). Since then, particularly in the 1970s regional economic communities (RECs) were founded across different parts of the continent. The RECs can be defined as the regional groupings of African states for wider economic integration. Dinka & Kennes (2007),observed that RECs have been formed in most of the African regions and its activities informed by the AU work. Furthermore, they are considered as a building block of the AU the umbrella organization.

In a broader sense, regional integration can enforce increase in economic growth. Hence, regional integration is considered crucial for stimulating the levels of economic activities and may lead to substantial economic gains among member states. Peters-Berries (2010) associated regional integration as the mechanism in which countries can improved its economic performance and standard of living. As much as there are different regional economic communities within the Africa continent. The rationale of the study is to mainly focus on the different levels of integration and its impacts on the economic growth. The annual growth rate of some of the African countries can be considered to be impressive

growing at the average of 5%. It is important to note that this is the growth rate not the aggregate size of its economy. In most, instances may be very low compared to their counterpart from the advanced economies. Nonetheless, economic growth is the acceptable measure of efficiency and how the economic activities of respective they are being run. It shows whether the economy has reach functional level or experiencing some difficulties. Even though there might critique on whether economic growth improves the standard of living or well-being of the people. The bottom line is that there cant be better standard of living without the sustainable foundation of the economic growth. Thus, economic growth is the precondition for the existence of economic development or better standard of living. This is elaborate because parts of the formation of regional economic integration is foster better standard of living or improvement in the levels of economic growth.

The regional economic integration and its dimension may have an impact on the economic growth of the African continent. Such should be empirically verified by the legitimate statistically approach instead of the conceptual research work. Since most of the studies seem to be literature review based, the notion of this study is to address that gap by using regression analysis on the regional integration and economic growth. Such is done by applying different levels of integration namely trade integration, macroeconomic integration, productive integration, infrastructural integration and free movement of people on the continental economic growth. Basically, the study goes beyond the trade integration or only addressing the so-called intra-trade regional issues within the African continent. It explore fundamental components or aspects that could be classified as neglected by the academia that is to quantify different levels of integration and measures its impacts on the economic growth. From these basis, the study intend to respond to the questions of whether, Do the different levels of regional integration foster economic growth in Africa? From that perspective the research hypothesis can be formulated at different stages which is informed by sound reasoning.

#### Literature

Regional economic integration and regional economic communities are not same. Such is being mentioned because graphically illustration will includes the performance of the regional economic communities when it comes to different stages of regional economic integration. This is done to compare the continental levels performance with different groupings within the continents. Afterwards, the analysis will be based on the regional economic integration and economic growth. The starting point is to look at the overview of regional economic integration within the continent. Then focuses on the trade integration, macroeconomic integration, productive integration, infrastructural integration, and free movement of people.

### **Regional integration**

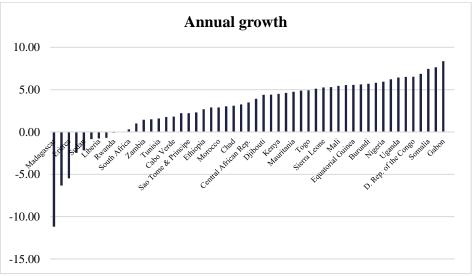
Regional integration in Africa has been existence for decades, it not something that is new. But because colonial history, it has seen itself being stagnated not reaching the intended outcome. Interferences by external forces in any form usually does not result regional economic integration to become a success. Sovereignty of the individual state it important for ensuruing that regional economic integration does achieved the predetermined goals. The assumption is that each state is much more aware of the dynamics of their issues compared to the external forces. Less intervention of the global communities from designated countries it best for the effective regional economic integration. This does not mean they cannot put financial resources or other relevant resources at the disposal of the vulnerable regional groupings. Such should be done with the minimal or zero imposing of the policy directions towards these regional economic integration. When looking at South Africa as the last country to be partially liberated from political and economic oppression which destructed the marginalized group different aspects of their livelihood. The country has made an impressive improvement in terms of regional economic integration performance. In 2019, the country has achieved the value of 0.6254 pertaining to the regional economic integration performance. The value is sound and biggest in the reported year by the African development Bank. It is important to note that if the value of regional economic integration approaches zero it considered weak performance. But in the case it is getting closer to one it referred as the sound or best performance. From the same reporting year, it can be observed that South Sudan had least performance of 0.1469 towards the regional economic integration performance. Poor performance of South Sudan may be attributed to the country's poor institutional environment.

### **Annual growth**

Economic growth of Africa has been portrayed as stagnated, however less evidence that attest to these claims. Because the only focus is on the 21st century it does not go back where the world initially started. Nonetheless using the current claims there are number of factors to consider before making a conclusion that African economies are stagnated. Part of those factors includes international mainstream the way it allows the image of Africa to be distorted. African economies are not only stagnated or lagging behind some influences of the external forces has a negative role to play. If the African economies images is not protected such will allows the situation where it doesn't not taken seriously. Apart from the protection of its reputation there are factors should be taken into account such as remuneration of factors of production or natural resources. It has been a tendency of the global community to not fairly remunerate resources which are extracted from Africa. This is done in the name of value which cannot be precise defined or universally agreed by the scholars. A value of something cannot only be based on the final output of the products but underestimated the input. This is because there is no final product without the input expressed through the factors of production especially natural resources. Such kind of arrangement allows for the situation to which the aggregate economic growth not fairly represented.

Economic growth usually contains two separate forms of remunerations that are salaries or wages and profits. Most of the remuneration goes to the multinational enterprises in the name of profits while salaries or wages continues to among the main factor in widening the inequality. In other words, wage inequality it strictly ignored by the calculation of economic growth. As matter of fact, it does not account for the remuneration of factors of production especially from Africa. Remuneration is the crucial element of economic growth because it shows whether there is fairness in resource allocation or the main point of focus on the monetary resources instead of actually invaluable natural resources. If the African continent has to be fairly evaluated the issues of natural extraction and exploitation should not be treated as something that is valueless. As much as much there are problems with economic growth measurement, the above analysis can be used to show a slight mirror of the African economies. In which most continues to experience difficulties that not really self-imposed but rather constrains which comes with economic liberalization. It important to note no single countries in this world have achieved high level of economic growth purely based on the principles of the economic liberalization. In fact, most countries that are called advanced economies they have a history of colonizing other countries and applying illiberal policies. When the conditions began to suitable for them, then they preached the concept of economic liberalization. In which doesn't have any proven track record to liberality Africans both politically and economically.

### Annual growth of the African countries



Source: Author's compilation

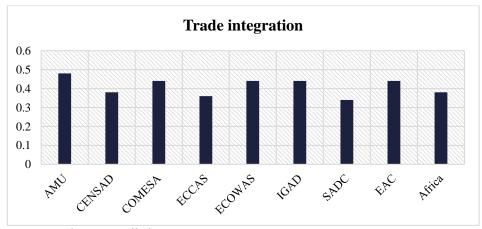
### **Trade integration**

# H1:High levels of trade integration will have a positive impact on the economic growth

A tendency of referring intra-trade as the trade integration it simple not appropriate since trade integration also includes extra-trade. If the study had to define the two concept will be much easier intra-trade refers to the trade among the same members of regional economic integration. While extra-trade can be defined as trade of regional economic integration members with other countries that doesn't fall part of the union. It is crucial to note that as much as extra-trade is much more higher within the

context of African regional economic integration with other countries especially with Anglo-American countries. The so called historically injustice or wounds of the past has a significant role to play because extratrade is influenced by the colonial linkage. It is not a coincidence that regional economic integration groupings in Africa mainly trade with Anglo-American countries. Similarly intra-trade is small for African regional economic groupings because of the extractive or exploitative behavior of the Anglo-American countries multinational enterprises that doesn't fairly remunerate factors of production extracted in Africa.

### **Trade integration**



Source: Author's compilation

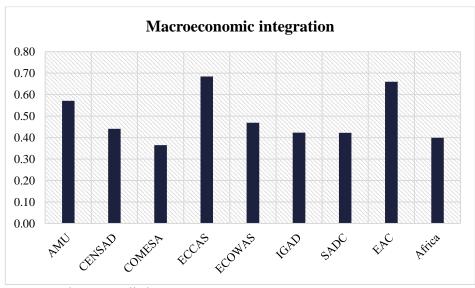
Intra-trade in Africa as much as it perceived to be low, it simple not true that has seen any growth of the past few years. There have been improvements in intra-trade of the African regional economic integration. Trade integration goes beyond extra-trade and intra-trade but also involves spatial integration which were created through unfair legislation imposed by those deemed to be superior then the rest of us. Spatial integration could be observed from eight different regional economic communities formed part of the African Union. Nonetheless, trade integration on its own without capital inflows or fairly remuneration doesn't strengthen the African economic integration. It basically keep it stagnated and falling behind to the rest of the world. If the trade integration should be measure concise remuneration will have to be incorporated among the main measurement of consideration. Trade integration as the measurement of intra-trade, extra-trade, spatial trade,

and other different levels of integration could be not considered good enough for true reflection of trade integration. Nevertheless, trade integration is crucially element of different stages of economic integration but it should be combined with degree of different kinds of investment.

## **Macroeconomic integration**

# H2:High levels of macroeconomic integration will have a positive impact on the economic growth

### **Macroeconomic integration**



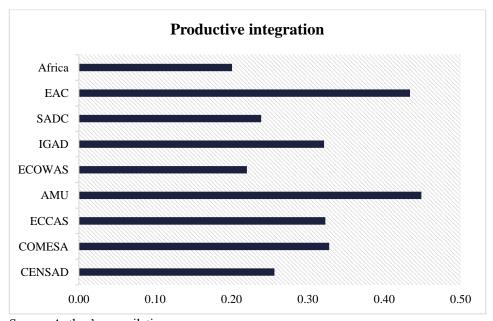
Source: Author's compilation

Monetary value of African natural resources has been underestimated which that has undermine the effort of macroeconomic integration. If the macroeconomic integration had to be measured appropriate it should not ignored the remuneration of factors of production as well as illicit financial flows. The money that is not accounted for, by the multinational enterprises it leads to the loss of revenue. Government revenue in terms of taxation becomes unrecognizable which results in both monetary and fiscal policy to become weak. Monetary policy of the country goes in hand with macroeconomic integration since it enables the regional economic integration intend to ensure financial stability of regional economic integration intend to ensure financial stability of regional economic

groupings despite of their level of development. In a case there is unfair distribution of monetary resources it may be resolved by circulation of money within regional economic integration. Nonetheless, the African regional economic integration may be deemed to have low levels of macroeconomic integration but the continent is rich in resources. Abundance of natural resources should be an indication that monetary value of those resources sometimes extracted illegitimate by the multinational enterprises are undervalued. Before, any discussion of macroeconomic integration, there some number of issues that should be addressed caused by the external forces that have zero interest of the African agenda.

# H3:High levels of productive integration will have a positive impact on the economic growth

### **Productive integration**

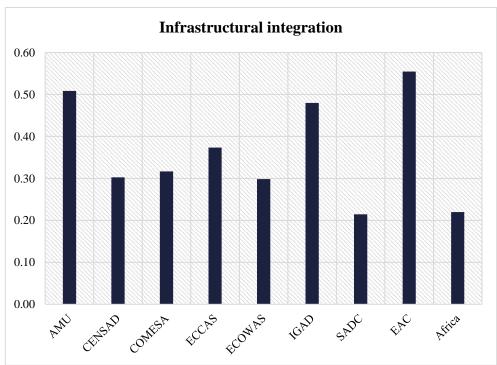


Source: Author's compilation

Productive integration deals with the productivity of economic activities and shows how functional economy in certain degree. If productive integration is not encouraged that will results to economic growth to not be in the favorable position. When regional economic integration of Africa has to reach a great degree of performance it should ensure that productive integration is of paramount. Otherwise, productive integration will remain an idea not a reality, feasibility depends on strong investment on the productive forces of the economy. This shall includes investment on the factors of production particularly human capital in the form of labour which gives rise into the any kind of capital. The notion that labour intensive economy is less productive into a certain degree it true but there is no existence of capital-intensive economy without strong investment on the labour. The knowledge-based economy can only be achieved if more resources are being put to strengthen labour market. Productive integration should not be seen as the standard alone especially if other elements of integration are not as sound. Because that on it own will negatively to economic growth and regional performance of Africa.

H4:High levels of infrastructural integration will have a positive impact on the economic growth

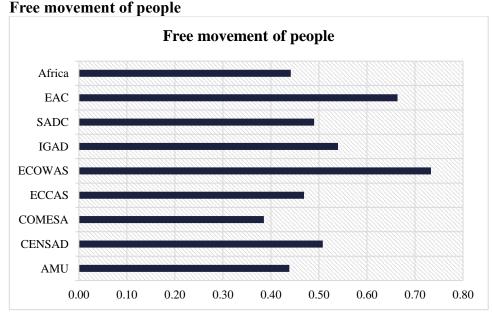
### Infrastructural integration



Source: Author's compilation

Infrastructural integration are perceived to have an impact on the regional integration performance of the African countries. It should be included as part of the key elements or strategic vision of the African agenda with regard to strengthen different stages of integration. Infrastructural integration of Africa should be equipped with advanced level of infrastructure development. However, this remains a challenge because of cost that are associated with financing infrastructure development. The infrastructural integration could not be really achieved while there is financing of the infrastructure that are caused by the intergovernmental organization. There is a behavior of funding the so-called advanced economy more compared to the emerging economies. If this infrastructural integration is also keen interest of the globally community especially multinational enterprises that massively benefit to extracting resources they should monetarily resources at the African economic regional groupings. When abundance of resources works for them, there will be not need for regional economic integration. Any form of groupings are for the countries to cross-subsidies each other but in real terms within the context of Africa shouldn't be the case.

# H5:High levels of free movement of people will have a positive impact on the economic growth



Source: Author's compilation

Free movement of people should be not taken serious, proper foundation of other dimensions of regional economic integration should be prioritized. In other words, free movement of people is an outcome of strong regional economic integration. Otherwise, if this not carefully managed will lead to unnecessary conflicts and stigmatization of the socalled foreigners or immigrants. A country at individual level should demonstrate strong capabilities before it enter into any form of regional economic integration. Otherwise, receiving economy citizens will violate those who freely move because of the home country unfavorable economic conditions. Nonetheless, free movement of people can easily lead to foreign forces to undermine political stability of the receiving through financial rebels resulting into insurgence. As much as there are issues of rebels in Africa according to the international community this is clearly not evidence based. Because most of the so-called research work on governance issues especially by international relations are very theoretical. They cant even precise determined if the issue is within the regions of the country or its entirely happens at the national level. If rebels and insurgence is recorded at the country level, why then people are moving from one region to another. It suppose that the country should few people if not any, this study is attempting to addressing these issues from the perspective of international business. With the main focus on different stages of regional economic integration including free movement of people.

#### Data and method

Data has been collected from African Development Bank and World Bank indicators which was for 2019 datasets. The notion of choosing 2019 was based on the data availability for the indicators of regional economic integration such trade integration, macroeconomic integration, productive integration ,infrastructural integration, and free movement of people. Based on this limitation robust regression analysis was selected to be the basis for providing answers to research answers and formulated research hypotheses.

### **Summary statistics**

summary statistics allows for the data to be quantified and making it possible for the basic features of the datasets to be analyzed. Also, summary statistics serves as a starting point for data analysis, where data

can be organized, simplified, and summarized. Summary statistics is the basis of any quantitative data analysis, since it provide a broader picture of the datasets and set foundation for conducting complex analysis. Building on this way of rationalizing, it is necessary to look at the descriptive statistics of this study variables of interest. Therefore, for this particular component, the idea is to provide descriptive statistics of the independent variables and dependent variable. This includes both measures of the regional economic integration and economic growth.

### **Descriptive statistics**

| Variable                   | Obs | Mean     | Std. Dev. | Min       | Max      |
|----------------------------|-----|----------|-----------|-----------|----------|
| Annual growth              | 54  | 2.925903 | 3.714285  | -11.19569 | 8.364086 |
| Trade integration          | 54  | 0.382624 | 0.123875  | .1105622  | 0.730043 |
| Productive integration     | 54  | 0.200681 | 0.134303  | 0.0490103 | 1.000008 |
| Macroeconomic integration  | 54  | 0.399109 | 0.129544  | 0.0234356 | 0.809098 |
| Infrastructure integration | 54  | 0.219754 | 0.167447  | 0.0087451 | 0.898360 |
| Free movement of people    | 54  | .4412312 | .3065745  | .0061763  | 1.000001 |

Source: Author's compilation

From the above descriptive statistics, the annual growth of the African countries is average at 2.9%. This growth levels follows below the benchmarking standard of the international community which could be estimated to be 5% for the emerging economies and the so-called underdeveloped countries. It is important to note that there is no universally agreed standard in terms of what separate emerging economies from developing economies. Hence, lists compiled by the international financial institutions doesn't grouped the above-mentioned countries the same. It always a case that South Africa appears to the most of the rankings for the economic growth or other economic efficiencies measures. Nonetheless, it can be also observed that on average different stages of regional economic integration falls below 0.4 which can be classified as weak or moderate depending who is interpreting the analysis.

# Correlation analysis

|                             | Annual growth | Trade integration | Productive integration | Macroeconomic integration | Infrastructural integration | Free movement of people |
|-----------------------------|---------------|-------------------|------------------------|---------------------------|-----------------------------|-------------------------|
| Annual growth               | 1.0000        |                   |                        |                           |                             |                         |
| Trade integration           | 0.0496        | 1.0000            |                        |                           |                             |                         |
| Productive integration      | -0.0619       | 0.1790            | 1.0000                 |                           |                             |                         |
| Macroeconomic integration   | 0.2143        | -0.0165           | -0.0106                | 1.0000                    |                             |                         |
| Infrastructural integration | -0.0125       | 0.1414            | 0.6507                 | 0.3655                    | 1.0000                      |                         |
| Free movement of people     | 0.0857        | -0.0634           | -0.2256                | -0.0399                   | -0.3142                     | 1.0000                  |

Source: Author's compilation

Based on the correlation analysis trade integration has weak relationship with other dimensions of the regional economic integration. In certain, it has a negative relationship with macroeconomic integration and free movement of people. It noteworthy that infrastructural integration has a strong positive relationship with productive integration. Nonetheless, the purpose of showing correlation was to look at the features of the datasets and possible relationship. More robust analysis for the interpretation of results are needed such as conducting regression. This will estimate what kind of impacts the different levels of economic integration could possibly have on the economic growth.

### **Results**

The below results of the regression analysis tend to determine if the direction of the impact as informed by the formulated remains the same or not. Therefore, interpretation of the regression analysis results will be aligned with the study hypothesis. The variables of interest shall establish whether the different levels of economic integration such as trade integration, productive integration, macroeconomic integration, infrastructural integration matters for the economic growth of the African continent.

### **Regression Analysis**

| Annual growth               | Coef.     | Std. Err. | P>t   | [95% Conf. | <b>Interval</b> ] |
|-----------------------------|-----------|-----------|-------|------------|-------------------|
| Trade integration           | 1.815084  | 4.534841  | 0.691 | -7.307838  | 10.93801          |
| Productive integration      | .3116422  | 4.128292  | 0.940 | -7.99341   | 8.616695          |
| Macroeconomic integration   | 7.210098  | 3.273567  | 0.033 | .624531    | 13.79567          |
| Infrastructural integration | -2.140553 | 3.963429  | 0.592 | -10.11394  | 5.832838          |
| Free movement of people     | .8722656  | 1.692355  | 0.609 | -2.532314  | 4.276845          |
| _cons                       | 6297858   | 2.563643  | 0.807 | -5.787171  | 4.52              |

Source: Author's compilation

The regression analysis can be interpreted as follows when the trade integration increases by 1% the economic growth of Africa will increase by 1.82%. This implies that the higher is the levels of trade integration the higher is the economic growth. Such does not only mean increases in the impact but also reflect the positive the trade integration has on stimulating the levels of th economic activities. Same reasoning applies with productive integration if its increases by 1% that would result into the African economic growth to increase by 0.31%. Similarly, when the free movement of people increases by 1% that amount to economic growth to be stimulated by 0.87%. It can also noted that macroeconomic integration has strong impact on the economic growth compared to other stages of regional economic integration. The impact of macroeconomic integration into economic growth can contribute to 7.2% growth of the African economy. In contrast, infrastructural integration reflected that if it increases by 1% the economic growth will decreases by 2.14%.

#### Conclusion

The study researched the implications of different stage of regional economic integration on the African economic growth. The study observed that African countries trade less with each other compared to the trade with the rest of the world. On average, intra-African trade is between 10 to 12 percent, whereas over 80 percent of the continent's exports go to other regions instead of the African markets. The study noted that the continent has several regional economic communities that can play a crucial role in fostering high levels of integration. However, various challenges are experienced by these regional economic communities. This includes the tendency of pursuing national interest, multiple or overlapping memberships, uneven benefits of integration, debt dependency, country level issues of implementation, complex and restrictive rules of origin, and dependence on trade taxes. Part of the integration challenges included failing to develop a seamless transportation system and struggling with the creation of the monetary union. In addressing the identified challenges of integration, the study made several suggestions. The continent should prioritize flexibility over rigidity. The countries that don't fulfill the criteria of the regional economic communities should be excluded from the integration. African integration should encourage simplicity, because complexity may not be in the best interest of the integration, especially in the early stages of integration development. In a nutshell, the study suggested that different

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levels of the regional economic integration matters for the African economic growth. However, the direction of the matters may differ depending on the selected variables of interest. Future studies may expand to include other regions such as Anglo-American countries this might be a problem because for those regions there are issues of data availability. Also, future studies may ensure methodological diversity by applying the same data using different method. This should be done for solely compared whether findings are consistent or deviating not for the purpose replicating the study.

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