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Title: Impact of Regional Economic Integration on African Countries' Competitiveness

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Dedication

I dedicate this work to my mother, Eunice W. Wakonyo.

Foreword

Regional integration has been an important element of policy advice to developing countries since the onset of globalization with economic growth being the desired outcome. Africa is set as one to benefit from integration as it is believed that through integration, it will be able to consolidate the small fragmented economies that are characteristic of African states to one big market size that is able to compete for investments in the global market. This investment is critical for Africa's development path as it seeks to diversify its economy from agricultural products and extractive minerals to more manufactured goods which are seen to be resilient to fluctuations of prices in the global markets. Moreover, this investment is also important to Africa in developing its physical infrastructure which are key for providing networks for the free movement of goods, people, information and capital and which are currently seen as barriers to trade, which is a very key economic activity in most African countries economy.

To benefit from integration, countries must be willing to do away with trade barriers that limit this free movement of commodities. With trade openness, a country is able to promote the efficient allocation of resources, enhancing both local and international competition and allowing for the diffusion of technology and knowledge across the countries. Proponents of integration have argued that integration will help African countries in improving their competitiveness by increasing their market size from the small fragmented economies they currently have (Artige and Nicolini, 2006) while those who oppose argue that African countries are too different in terms of country size, population, level of infrastructure development and market size and that this lack of symmetry will lead to some countries benefiting more than others when they integrate into a single bloc, in this case those countries that are perceived to be most developed ones (Venables, 2006, Krapohl, 2010).

It is based on these arguments that this study sought out to find out the relationship and extent at which regional economic integration contributes to a country's competitiveness. A panel regression random effects model was used to analyse this relationship for 52 African countries across 10 years from the period 2006-2015. The outcome of these results was positive and significant implying that indeed, regional economic integration does have a positive and significant relationship with a country's competitiveness. To increase robustness of the model and to test for the mediating factor of asymmetry which I generated by calculating the ratio of nominal GDP of countries with the highest GDP for that year, I ran a combined panel regression whereby I included all the independent variables and their interaction and the control variables step by step. The outcome of this model also gave out significant outcome showing that still regional integration has a significant relationship with FDI. However, for the interaction terms, only two variables were significant.

Abbreviations

IHS	Institute for Housing and Urban Development
ASEAN	Association of South-East Asian nations
AFTA	Asia Free Trade Agreement
FDI	Foreign Direct Investments
REC	Regional Economic Community
AEC	Africa economic community
AU	Africa Union
UNCTAD	United Nations Conference on Trade and Data
SADC	Southern Africa Development Community
EAC	East Africa Community
ECOWAS	Economic focus for Central and West Africa
NAFTA	North American Free Trade Agreement
FTA	Free Trade Agreements
AfDB	Africa Development Bank
UNECA	United Nations Economic Commission for Africa
ARII	Africa Regional Integration Index
EEC	European Economic Community
EFTA	European Free Trade Area
GNP	Gross National Product
GDP	Gross Domestic Product
GCI	Global Competitive Index

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Chapter 1: Introduction

Africa has always lagged in terms of economic growth and development despite it being heavily endowed with natural resources. Small fragmented economies, corruption, poor transport infrastructure, large number of landlocked countries and a small market among others impede the attraction factor of foreign direct investment (FDI) through large firms into the continent as the conditions to invest are harsh and therefore these firms are not assured of returns from capital (Seid, 2013).

Regional Integration has been foreseen as a major instrument to bring about economic growth and development (Geda and Seid, 2015). Most countries have applied the strategy of integration whereby neighbouring states form a regional bloc with a set of laws and regulations that dictate their interactions with each other within the bloc and the other countries outside the bloc. Regional integration is important as it creates an avenue for acceleration of economic growth and intra-trade activities which are set out in trade agreements agreed upon by all members. Trade between these regions is achieved because of specialization and division of labour which is reflected from the comparative advantage in the production of these tradeable commodities

Incorporating trade in integration has been used to propel countries that were once considered to be developing countries to economic powerhouses with a good example being the Association of South-East Asian nations (ASEAN) region in South-East Asia which after adopting the Asia Free Trade Agreement (AFTA), were able to ensure intra trade amongst its members and also attract Foreign Direct Investments (FDI) by partnering with those regions outside their bloc such as east Asia(Japan, Korea) to their cities making the region one of the most powerful economies in the world (Elliott and Ikemoto, 2004).

Africa has not been left behind in the integration process. In 1963, the Africa union was founded to support the rebirth and unity of Africa post colonialization. Beyond this, regionalism has pre-occupied most African nations with the formation of numerous Regional Economic Communities (RECs) of which overlap in roles and which instead of bringing about growth amongst its members states is causing confusion as most countries subscribe to at least two RECs which limit their level of interactions in the bloc as their commitment is split amongst the two RECs (Jordaan, 2014).

To help tackle the issue of overlapping membership; 51 heads of states of African countries met in Abuja in 1991 whereby they signed a treaty (Abuja treaty) which proposed the establishment of the Africa Economic Community (AEC) whose formation process was to come into force in 1994 and take 34 years for the realization of a full economic integration with a continental common market (AU, 1991,). The purpose of creating the AEC was to eradicate poverty through gains from trade and improve the wellbeing of Africans while fostering political stability and peace. This they hope to achieve by promoting Africa integration by strengthening the eight existing economic blocs to act as pillars for intra-African trade and productivity, creation of a free trade area and customs union between these REC blocs and a continent-wide Africa common market (AU, 1991, UNCTAD, 2011). By achieving this, Africa will be able to compete effectively for a share of the global market and be able to attract the much needed FDI to help in development.

1.1 Problem Statement.

Africa's export performance has always been low compared to other regions. This is despite the fact that the countries in Africa each belong to at least one or more regional economic bloc to benefit from intra-trade activities. However, by most accounts, African countries have not made significant progress in boosting regional trade despite the numerous regional integration blocs formed to promote it. Jordaan (2014) identified that most African countries trade within their REC bloc and only trade with members of other blocs on goods that they lack comparative advantage on. He was also able to note that the amount of trade taking place within Africa falls at a mere 8-13% as compared to the trade Africa is undertaking with the rest of the world at 87-92% and the type of goods mostly being exported is agricultural products and extractive minerals which fetch low prices in the world market and end up importing manufactured goods at a higher price.

The main reason why Africa is struggling with low intra-African trade has been attributed to the lack of proximity between African countries (Naude, 2009). This proximity gap is caused by mostly geographic and economic factors that impact access to both local and international markets. These geographical factors which include topography and landlocked countries affect investment and productivity in Africa through high transport costs in that, the transport cost for an intra-regional trade 40-foot container, costs USD 2000 more than the cost of the same container in the other developing regions (Ndulu, 2007). Moreover, Limau and Venables (2001) illustrate that a 10% increase in transport costs in Africa will reduce trade volume by 20% and a further 50% for countries that are landlocked. Secondly, proximity is affected by the effectiveness of border control barriers which could be in the form of level of visa openness to go into another country and the documents or number of days it takes for a freight to clear at a country's customs point. This not only leads to delay in shipment, inflated transport costs but also affects how investors perceive a country's ease of doing business.

Economically, Africa is characterised by small fragmented economies which are unable to compete independently due to low population and low GDP resulting in small market size that are incapable of attracting FDI into their economies. Moreover, the nature of goods that Africa produces and exports also impact on the level of both intra-African trade and trade with the rest of the world. Africa's export constitutes mostly of agricultural commodity products and extractive minerals and some intermediate goods which fetch low prices in the global commodity market and are prone to fluctuations in price beyond the exporters control. This has led to a weak supply response to regional market opportunities and the lack of export competitiveness in products (Beck et al., 2011). With small, fragmented economies, African nations recognise that a robust export performance is characteristically a precondition for reaching sustained and shared growth. A positive export performance does not only mean growth in export, but also improved commodity diversification from low valued-agricultural or extractive minerals to higher-value-manufactured goods (Newfarmer, Shaw, et al., 2009). Such diversification not only improves productivity but also increases the resilience of countries through a reduced vulnerability of exports to external shocks.

Therefore, to be able to achieve diversification of exports, there will be the need to invest in industries and other support infrastructure that promote efficiency. For Africa, this will be a challenge as most of its countries have fairly low capital reserves and unstable export revenues, thus leaving them with the only option of having to rely on capital inflows, in the form of FDI

from the international investors. For Africa to be able to compete for this type of investment, regional integration seems to be the best option for increasing market size as a large market size acts as an attraction factor for FDI (Wall, Burger, et al., 2011). Banga (2006) in his study was able to find that FDI could assist in export variation in the host nation if it increases the export intensity of local firms that have a low share in world exports and this could be achieved through foreign firms such as global value chains which may allow developing countries to access the global economy by including local enterprises in global production chains. Buckley, Clegg et al.(2007) in support of this notion found out that FDI helped develop high-tech and new products.

Nevertheless, Africa has all the relevant regional integration agreements in place, but its FDI and trade levels to the continent that are generally still considered low (UNCTAD, 2013b) and the distribution of the little benefits arising from this low trade has been seen to be unequal especially amongst regional economic blocs in Africa which are expected to be promoting economic equality. Krapohl and Fink (2013) attributed this phenomenon to the nature of African economies being different and characterised by asymmetries in market size, population, size and even level of development. They noted that the reason why this is happening is because; most of existing African regional blocs are characterized by large asymmetrical economies and one dominant economy (take the example of SADC-South Africa, EAC-Kenya, ECOWAS-Nigeria) that overshadows the rest and cause trade diversion. They argue that, integration for such blocs is detrimental and only benefits the dominant economies. This they illustrate by use of trade flows whereby; the dominant country exports most of their secondary products to the non-dominant countries of the bloc as these products are non-competitive in the global market and therefore these countries help sustain their local industries. These same dominant countries end up exporting more of their primary products which constitute of agricultural products and extracted minerals to the developed countries as they are the most competitive products and therefore give them privileged access to this world market.

Therefore, considering that trade is important for African countries economic growth but these countries cannot trade effectively due to the aforementioned problems touching on physiographical proximity, economic fragmentation, lack of diversity of products, lack of domestic capital and the asymmetry between countries; can regional economic integration help reduce some of these problems and create opportunities for investments in the form of FDI?

1.2 Research Objective

It is from this backdrop that this research aims to; assess the extent at which Africa regional economic integration contributes to a states competitiveness as reflected by the inward flow of FDI and whether the asymmetry within these blocs has an impact on a states' competitiveness.

1.3. Research Question

Research question: To what extent does Africa's regional economic integration contribute to a nation's competitiveness in terms of inward FDI?

Sub-questions:

1. What is regional economic integration?
2. What is competitiveness?
3. How does regional economic integration in Africa affect a nation's competitiveness?
4. How does asymmetry within a regional bloc affect the overall competitiveness of African nations?

1.4 Significance of the study

This study acknowledges the importance of regional economic integration in the promotion of intra-regional trade and the role it plays as a determinant of market seeking FDI and seeks to establish a relationship between integration and states' competitiveness based on the inward flow of FDI. There are several theoretical studies that have addressed the importance of and necessity for regional economic integration, but most of them have focused on regions other than Africa. Mattli (1999) notes that previous attempts done by other scholars to compare Africa's regional integration process with the European process have concluded that economic integration cannot work especially for developing regions such as Africa as they lack the structures and market size required to gain from inward FDI and this is because their economies are small and fragmented and that most of these countries still embrace protectionist policies for their national economies instead of adopting regionalism. Murray (2010) describes this as integration snobbery whereby forms of regionalism that do not follow the European model are perceived as under-developed. However, this does not mean that integration is not popular in developing countries and that it does not work in the global south as regions such as the ASEAN have been able to achieve high economic growths over the past years (Krapohl, 2010, Murray, 2010).It is based on this that this study aims to contribute more on existing knowledge on African regional integration and the role it plays in a states' competitiveness.

1.5 Scope and limitations of the Study

The scope of this study will cover the 52 countries of Africa excluding Sudan and South Sudan which were excluded based on the cessation of South Sudan from Sudan in 2011 which made data collection for the countries difficult for the study period 2006-2015. The study relies on total FDI inflow data (2006-2015) from FDI markets to act as the dependent variable while the five pillars of regional economic integration as defined by the African union and used in compiling the Africa regional integration index report (Africa Union, 2016) to be used as the measures for regional integration and my independent variable.

Since I have relied on secondary data, which means that the data was initially collected for a different purpose, the existing datasets might not fit into the research question perfectly or the variables I have measured therefore leading to the operationalization process being influenced causing doubts in validity and reliability of the outcome. To overcome this, I have made use of proxy variables in some cases to improve on reliability and validity.

The method of analysis undertaken for inferential statistics is panel regression which allows for analysis across multiple years and between different entities. The panel regression model used is the random effects with interaction effects as I have a mediating variable (asymmetry) and I am interested in finding out its effects on the independent and dependent variables.

Chapter Two: Literature Review

2.1 Regional Economic Integration

Cavusgil, Knight, et al. (2014) define regional economic integration as "the growing economic interdependence that occurs when two or more countries within a geographic region come together to form an alliance aimed at reducing barriers to trade and investment." It is used as a tool to help countries characterized by small economies or markets to be able to compete for a share of the global markets. By integrating their economies, countries can enjoy lower business transaction costs, lower investment risks, free flow of goods and people, they experience economies of scales in production and are able to allocate and utilize their resources efficiently (Brookings, 2012). Integration is seen to take place when a set of countries in the same region unite to form a regional trading bloc through trade agreements that allow them to set up a customs union that ensures a uniform tariff is set for non-member countries on goods they export into the bloc and, at the same time, allowing free movement of good and people between member states. If the countries choose to impose a common external tariff to non-members, they can form a customs union to improve on economic efficiency while establishing political and cultural ties. Once all the conditions of free trade and customs union have been achieved, and other requirements such as free movement of people and capital, a common market is established (Todaro, 2009).

The motivation for integration for most nations is propelled by the need to liberate internal trade and improve competitiveness in the global market. Trade liberalisation refers to a series of actions that include reduction and elimination of trade barriers and other barriers amongst trading countries (Bezuneh and Yiheyis, 2009). These measures undertaken by countries entering a FTA include tariffs, quotas, subsidies and taxes. Zagha and Nankani (2005) note that even though trade reforms are believed to improve the welfare of the citizens of a country through increased trade, especially in countries with comparative advantage, the general impacts of trade liberalisation vary and are not always pro-poor. Trade reforms also sometimes come with trade restrictions which are a way of a country protecting its citizens from imported products that could be harmful.

Studies on how the European union came to be, have shown that the motivation for integration was to rebuild the member countries post the second world war while for ASEAN countries was as a reaction from global economic shocks and they therefore sought to cushion themselves by choosing to promote intra-regional trade to bring regional stability and avoid future rippling effects from economic shocks from over-relying on trade from developed countries. These, they hoped to achieve by establishing the ASEAN free trade area (AFTA) and later the ASEAN economic community(AEC) (Bhalla, 2016). Integration in Africa has been a very popular concept with it having the highest number of regional blocs which in most cases overlap in membership (Seid, 2013). The initial motivation for regional integration was driven after independence by the Pan-Africanist need of an African unity which was to help African nations transform into industrial countries with the aim of achieving import substitution of goods from the developed world (Bhalla, 2016). Most African countries had just gained independence and were looking at how to spur economic growth and development of their nations (Ake, 2001.). They formed regional blocs that saw most African countries embrace structural adjustment programs that promoted creation of industries. However, this inward-looking strategy did not bring the desired results as most African

economies were too small and poor and most of them had a protectionist approach to their economy whereby nationalism overrode regionalism (Jordaan, 2014, Bhalla, 2016).

In 1980s the concept of new regionalism (Mansfield and Milner, 1999) emerged where countries adopted outward looking strategies that saw them liberalize trade (Bhalla, 2016). This saw new effort in the regionalism process as new integration projects were formed and some old ones reinforced (Kritzinger-van Niekerk, 2005). The resurgence of regional economic blocs characterized by trade liberalization with the removal of trade barriers and free flow of capital, labour and goods and services across national boundaries has been seen to increase regional intra-trade and growth of foreign direct investment within the blocs despite the increase being very marginal (Bhalla, 2016). Trade is used as an important tool for regional integration as it plays an important role in enhancing competition among producers and improving efficiency which in the long run improves the economies of scale of the region (Brookings, 2012). Empirical studies have shown that regional integration promotes intra-regional trade amongst member states. Balassa (2013) in his study of European integration observed that intra-trade activities increased in the member states when the European economic community (EEC) and European free trade area (EFTA) were formed. In fact, this concept of regional integration is the current motivation for the European and American nations, which are currently experiencing low economic growths and are trying to improve their growth rate by creating new trade networks across the Atlantic Ocean through the Transatlantic Trade and Investment Partnership (Blanke and Ko, 2013). Asiedu (2006) notes that integration is important to Africa as it will enable the nations of Africa which are characterized by small fragmented economies, low population and small purchasing power expand their market size and compete for a share of the global markets.

As a result, African leaders adopted the integration by agreements model (Aminian, Fung, et al., 2008) which saw a top-down approach, institutional focus and a linear path model of integration that followed Balassa (2013) model of integration as illustrated below while the ASEAN followed an integration by markets (Aminian, Fung, et al., 2008) approach whereby integration was not path dependent and was also bottom-up as the interactions between economies via trade preceded any trade agreements..

Balassa Model of Integration

Figure 1 Balassa Model of Regional Integration

However, what has happened in Africa is that instead of nations following this linear path to integration, they have ended up forming different RECs representing these levels such as COMESA being a common market, SACU a customs union and some western and central countries having a monetary union under CFA franc. However, what is of interest to note is that majority if not all of these blocs have at least achieved the level of free trade area which has seen members of a regional bloc do away with barriers to trade and enhance trade facilitation so as to encourage flow of goods and services within the bloc.

2.1.1 Free Trade Agreements.

A Free Trade Agreement (FTA) is a form of trade agreement that seeks to improve the trade value of its members in the agreement. Members agree to eliminate both tariff and non-tariff barriers such as licenses and non-tariff barriers such as sanctions and quotas for several commodities traded among themselves. The goal of FTA is to improve the trade relations and protect trade interests among the member countries (Kepaptsoglou, Karlaftis, et al., 2010). Each member in a free trade agreement has an autonomy to set up a tariff regime for non-member countries which is arrived at in reference of what other members have set up. However, this may lead to three concerns. First, concern on transhipment which occurs when a non-member country exports goods to a member country that have the lowest tariffs in a bloc who then re-exports these goods to the member countries in the bloc. To avoid this transhipment, rules of origins are established to remove such transactions. Second, in the case of customs union and trade between members and non-members, there is chance of the price of products being different in each FTA member country as FTA member countries may apply different rates of external tariffs. Third, since FTA members enjoy autonomy in their tariff setup with non-members, the autonomy can be used by groups to lobby the government at national level to accept their special interests and be exempted from such tariffs (Plummer, Cheong, et al., 2011).

Free trade agreement that comes along with integration has been viewed to have both positive and negative effects on the welfare of a nation as a result of trade creation and diversion. Trade creation is when country members allow cheaper products from the REC partners to substitute expensive domestic production while trade diversion is when member countries substitute intra-blocs goods import for imports from non-member in a REC (Plummer, Cheong, et al., 2011). The desirable outcome is to have more of trade being created between REC members at a lower cost as this improves on resource relocation between them than to have trade being diverted from highly efficient non-members outside the REC to low efficient members of the REC as this will result with both countries inside and outside the REC ending up worse off due to loss in efficiency and revenue (Todaro, 2009).

Plummer, Cheong, et al.,(2011) note that by removal of tariff and non-tariff barriers does not take away the competition between countries but instead it increases it as firms in the blocs compete to improve productivity which as a result helps in determining resource allocation. Therefore, productive firms tend to thrive while weak firms end up weaker. Moreover, these competitive forces may encourage efficiency in resource usage and may lead to firms specializing in productions that they have a comparative or competitive advantage over therefore providing the citizens of these RECs a variety of goods to choose from which in the long-run may lead to growth.

2.1.2. Regional Economic Integration as defined by Africa Regional Integration Index(ARII)

Regional integration for Africa as provided by the Africa Union is defined as a cross-border and multi-dimensional concept that seek to create one unified Africa united through a common market. The variables and indicators of the index have been developed based on the operationalisation steps of the Abuja treaty that focus on strengthening of regional economic blocs, establishment of a free trade area and customs union, an African community market and policies on infrastructure, finance and free movement of people (AU, 1991,). These are:

- Trade integration

Intra-trade engagement is currently being considered a key priority in the Africa integration process. This is despite the fact that foreign trade looks to be more lucrative and efficient than trade between countries in a regional block which is limited by infrastructure gaps and non-tariff barriers. Allowing movement of goods freely across borders matters for regional integration as trade is deemed to impact directly on people's livelihood and income and this is seen as a channel that could be used to accelerate Africa's development process. Trade facilitation through integration is at par with the AU objective of increasing intra-African trade and it is believed that once there is trade interconnection amongst African countries, the small fragmented economies will be able to access both regional and global markets.

- Production integration

Production integration is important for Africa's integration process as it allows for the creation of a strong economic base that is resilient to external shocks through diversification of their exports. Moreover, it allows for the building of a more skilled regional labour force which is able to add value to goods and services while at the same time earning more income that improves their

wellbeing. Currently Africa has been exporting its commodities as raw materials which fetch low values in the global markets which has been one of the causes of the slow economic growth. For Africa to achieve economic success, it needs to ensure production works for the continent across all sectors and this means linking production to industrialisation whereby industrial clusters are established that produce intermediate goods that have access to regional trade corridors which enable goods to move faster across borders while at the same time promoting regional development such as production and stable electricity supply. Industrialisation clusters will also help firms in the industries gain from the economies of scale and attract more FDI.

- Free movement of people

The free movement of people across borders is seen to contribute to economic development and skill development as this movement could be attached to the purpose of tourism or employment which both mean revenue or income. Cross border movement is seen to contribute to skill development and competitiveness which is important in promoting entrepreneurship and innovation. By doing away with restrictions on visa and work permits, transaction costs on physical and cognitive proximity are reduced therefore allowing for matching of talent which involves attracting the perfect worker to an industry leading to efficiency gains.

- Financial and macro-economic integration

This involves the flow of capital more freely across borders. Under the Africa union, this variable fall under the monetary union priority. It is perceived that when capital is allowed to move freely then investment increases which leads to allocation of finances to the most productive and efficient sectors. In addition, when transaction costs in setting up a business are reduced, financial institutions work more efficiently allowing entrepreneurs to invest in Africa and also the emergence of local and small and medium size companies.

- Regional infrastructure

This is seen as one of the most important factors for integration as it is more visible through the number of roads connecting countries or the number of people being flown from one capital city to another or even the ability to communicate using mobile phones through shared networks across Africa. Poor infrastructure development in Africa has been deemed as one of the barriers to trade and it is given that when infrastructure services work better; business costs reduce as they are mainly borne out of transport costs. As a result, goods and people are able to move faster across borders therefore promoting trade. Moreover, landlocked countries are seen to benefit more as they are able to access the port areas where most trading takes place. It is also from infrastructure development that we have seen an increase on FDI inflow from global development partners into Africa as it is a priority for the realisation of a unified Africa. The role of private sector is also being encouraged through investments in information technology and also energy.

2.2 Competitiveness

Regional competitiveness as a notion has been a topic of debate amongst researchers with no definite definition allocated to it. Huggins, Izushi, et al.,(2014) define competitiveness of regions as an aggregate of firm competitiveness whereby there is a set of conditions that allow firms to compete in their specific markets and the value generated from the activities of these firms is captured within that region. Schwab and Sala-i-Martin (2016) define competitiveness as a derivative of the macroeconomics competitiveness whereby it looks at the level of productivity of a country as defined by a nation's institutions and policies where they point out that competitive economies are able to achieve higher levels of income for their citizens. Porter and Ketels (2003) in support of Schwab's notion go further ahead to add that the wellbeing of a nation's citizens is determined by income paid to the workforce which is determined by the productivity of its economy, which is measured by the value of goods and services produced per unit of the nation's human capital and natural resources. Begg (1999), defines competitiveness to mean either the performance of an economy of a nation or the comparative aspect of a nation as compared to the others and especially in relation to the market-share.

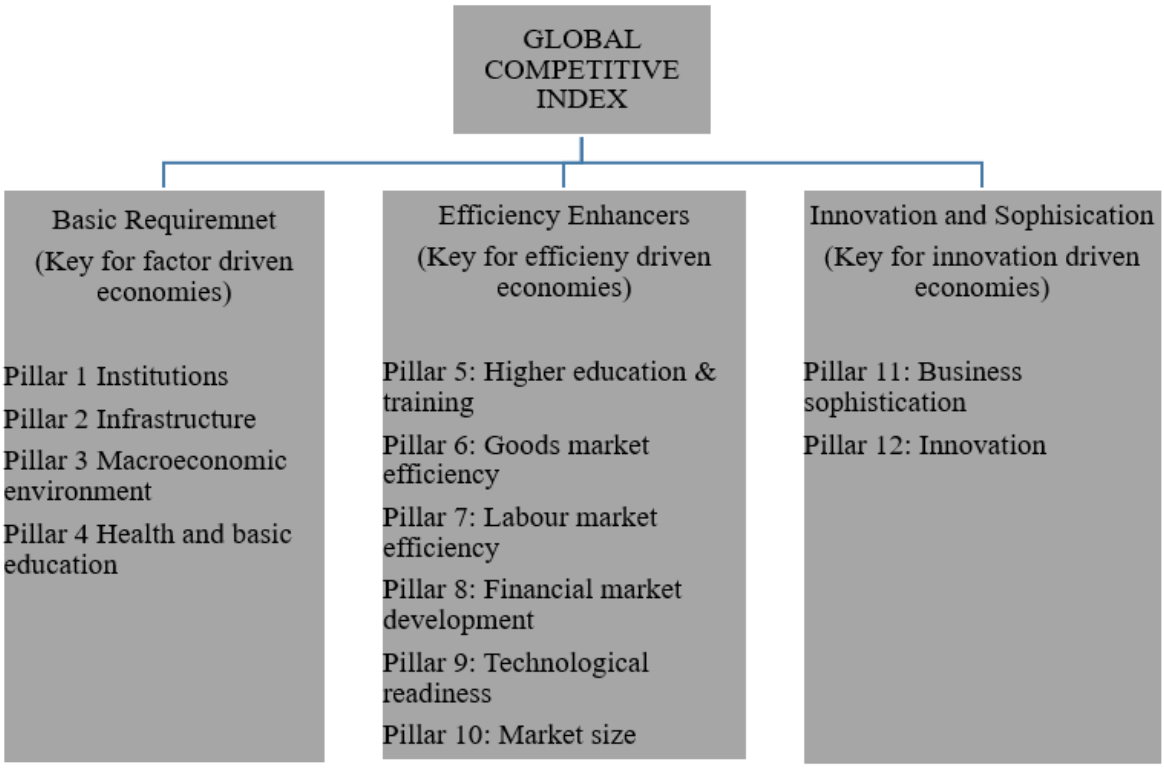
However, Krugman (1994) argues the difficulty of defining the notion of competitiveness especially by placing benchmarks as he views competitiveness of nations as a subjective notion. He points out that the approach of using benchmarks as those used for firms in nations is misleading in that; firms compete comparatively for capital and resources and that firms are characterized by a bottom line which is related to productivity in which if low levels of productivity are registered, the firm stops being competitive, closes shops and sometimes relocates. But with a country, he notes that there is no bottom line based on productivity and the citizens may be happy or unhappy with their economic performance, but the country cannot "close and relocate" He further states that the productivity level of a particular industry in country A and B is not sufficient enough in determining where to locate the mobile resources as there is no defined guideline on what can be defined as high or low productivity and what percentage of resources should be allocated to these high or low productive areas. Dunning (1995) disagrees with Krugman's argument and provides that economic performance can be used as a measure of determining competitiveness. In nations, he provides that the gross national product (GNP) per capita can be used to compare competitiveness of two nations serving the same world markets even though their industries and markets in consideration might differ. Some researchers have been able to use trade balance as a benchmark for competitiveness. Trade balance is the value of a country's export less the value of its imports and it's often assumed that a country that has a trade surplus is more competitive than a country with a trade deficit but Krugman states that it always doesn't have to be the case as the notion of competitiveness can be reversed with surplus being non-competitive and deficit being competitive as nations sometimes lower the price of goods so as to make their commodities more attractive to buyers and end up experiencing a trade surplus while in the real sense they are not utilizing the factors of production effectively.

A country that experiences high economic growth marked with an increase of income and employment opportunities of its citizens is said to be more competitive than other countries in the same market. FDI increases the contestability of markets by different economies as it potentially improves both competition and competitiveness of regions as each seek to attract the mobile capital (Ozawa, 1992). Wall, Burger, et al.(2011) provide that FDI directly contributes to the development of the income of the host country through job creation and skills spillover and is measured by Real

GDP Growth. It is commonly used as a measure of competitiveness as it indicates the level of growth of an economy and its prosperity as FDI prefers to locate to only those cities that provide conducive conditions for business and quicker return on investment.

The global competitive report (Schwab and Sala-i-Martin, 2016) defines competitiveness as the level of prosperity that a country can achieve through productivity. The level of productivity sets the level of prosperity of an economy as it determines the rate of return of investment in an economy and these are seen as the main drivers of an economy. The report ranks nations competitiveness based on the global competitive index(GCI) prepared by the world economic forum. The GCI is a set of 114 indicators that capture values based on matters of productivity and long-term prosperity and are grouped under 3 requirements with 12 pillars.

Figure 2 Global Competitive Index



2.2.2 FDI as measure of competitiveness

Foreign direct investment (FDI) is defined as "investment by a resident entity in one economy that reflects the objective of obtaining a lasting interest in an enterprise resident in another economy. The lasting interest implies the existence of a long-term relationship between the direct investor and the enterprise and a significant degree of influence by the direct investor on the management of the enterprise." OECD Factbook 2011-2012

From the definition of competitiveness, a country that experiences high economic growth marked with an increase of income and employment opportunities of its citizens is said to be more competitive than other countries in the same market. FDI increases the contestability of markets of different economies in that, it potentially improves both competition and competitiveness of regions as each seek to attract the mobile capital (Ozawa, 1992). Wall, Burger, et al.(2011) provide that FDI directly contributes to the development of the income of the host country through job creation and skills spillover and is measured by Real GDP Growth. It is commonly used as a measure of competitiveness as it indicates the level of growth of an economy and its prosperity as FDI prefers to locate to only those cities that provide conducive conditions for business and quicker return on investment.

Inwards FDI draws on the role of firms as creators and exploiters of intangible corporate assets (Ozawa, 1992). He notes that it is the firm and not the country, that is the real actor who is motivated to trade assets across national border. This not only affects the nation's productivity directly, but also indirectly and also through spill-overs in the form of skills and technology (Turok, 2004). Álvarez and Marin (2013) also note that for developing countries who provide outward FDI, they establish new networks that are deemed to have direct access to foreign markets therefore making it a good measure for competitiveness as it factors in trade volumes.

Ozawa (1992) notes that FDI facilitates structural upgrading and economic growth. This is achieved by the setting up of multi-national companies (MNC) which play a role as generators and providers of technology, skills and linkages to the world market. The emergence of MNC is based on the Dunning eclectic paradigm (Dunning and Norman, 1987) which looks at three factors of ownership, location and internalisation advantages (OLI) that necessitate the conditions for international production. These can be explained as;

a) the firm must possess some ownership-specific advantages
b) to exploit those advantages, internalization (local production under equity ownership) is more beneficial to the firm than arm's-length transactions (exporting and licensing, for example); and
c) overseas locational factors are more favourable than domestic ones

The location of FDI amongst the various countries of the world has been seen to be motivated either by markets or resource. Studies have indicated that FDI targeted at poor developing countries are driven by low cost of labour in these countries, whereas those that settle in rich developed countries are attracted by low corporate taxes, and its market size as the high GDP per capita means that the population in these nations are able to afford the goods or services being sold to them as compared to the poor countries (Wall, Burger, et al., 2011). This somehow explains to some degree the difference in economic activities that are undertaken between countries. FDI into poor countries are mostly related to improving efficiency and deals with labour-intensive activities and natural resource seeking while those targeted to rich countries is mainly directed for services (Wall, Burger, et al., 2011).

2.3 Relationship between Regional Economic Integration and Competitiveness

Regional integration plays an important role in attracting FDI to countries as it helps in increasing the market size of a region which is one of the determinants for FDI. Market size as measured by GDP or GDP per capita is amongst the most robust measures of horizontal FDI determinants

(Artige and Nicolini, 2006). Jordaan (2004) states that FDI will move to countries with a growing market size and a higher purchasing power as the foreign investors are assured of a market for their goods and a high return for their investments. Charkrabarti (2001)supports this market-size hypothesis by stating that a large market will ensure efficient use of resources which will lead to increase in FDI which in the long run will lead to more different type of FDI as the market becomes more sophisticated.

Regional Integration is a priority for Africa as by integrating their economies, they are able to combine the small fragmented economies that are synonym to small markets into one big market. This is important because, integrated regional markets are seen to be more attractive to FDI (Bende-Nabende, 2002) and also more powerful in international trade negotiations when the various countries communicate as one voice (Mansfield and Milner, 1999). With integration, the region will be at a position to compete with other regions to attract FDI that is key for economic development and the prosperity of the region and the people. FDI allows for conditions that allow firms to compete and improve their productivity through specialization and improved economies of scale which leads to agglomeration and clustering leading to spill over effects in the form of improved infrastructure, research and development institutes, technological innovation (Porter, 1996).

Ethier(1998) notes that countries within a grouping served by trade are likely to have an increase in inward FDI for establishing export platforms. This FDI inflow may come in the form of vertical FDI or horizontal FDI. Vertical FDI is whereby the investing firms separate their production process by relocating its production in other countries to take advantage of factor price differentials across countries and often this type of FDI is mostly seen in developing countries where there is cheap labour and endowment of natural resource. Horizontal FDI on the other hand locates mainly in developed countries and it is motivated by market access factors which sees similar production activities from a TNC locating in different markets producing exact products such as the car assemblies in Europe (Di Mauro, 2000). Based on above, regional trade agreement may have both positive and negative impacts on FDI attraction and productivity which affects export overall. It can reduce horizontal FDI as it may become cheaper to serve the same region through trade than establishing different production plants in every country therefore avoiding incurring plant level costs. On the other hand, it may increase vertical FDI as with reduced trade barriers associated with cross border trade, it may lead to reduction of costs on setting up firms and therefore, attracting more TNCs to locate.

The relationship between regional economic groups and FDI has been recently examined in a couple of research studies for different world regions, which, as a whole has suggested that there is a positive impact of integration and FDI (Blomstrom and Kokko, 1997, Dunning and Lundan, 2008, Neary, 2002). A growing interest is being observed in policy makers in the use of regional economic blocs as vehicles for trade and foreign investment. This has seen studies being undertaken to assess this impact by using the gravity model with various outcomes being reported from this impact. Kreinin and Plummer (2008) while undertaking a study on the impact of regional economic integration of EU, NAFTA, ASEAN and Mercosour on FDI using a gravity model were able to deduce that regional economic integration has a positive and significant impact on FDI brought from investments creation and diversion and that FDI in a significant number of cases act as a substitute to trade but that in most cases it compliments it. Te Velde and Bezemmer (2006) also using a gravity model in studies on developing countries reginal groupings were able to

identify that, even though the relationship of regional economic integration and FDI is positive and significant; membership of a particular regional grouping does not automatically result in increased benefits of FDI but that the groupings should have a liberalised policy on trade and investment and that factors such as size of the economy or proximity of a small economy country to a large economy country matters. On the contrary, Longo and Sekkat (2004) while still focusing on African economic blocs, found that there was no evidence showing that regional blocs promoted trade and FDI growth while Sandberg and Martin (2001) found that intra-SADC trade had a negative but statistically insignificant impact on economic growth in the region.

From the empirical studies, we can draw two conclusions on the impact of regional blocs on competitiveness. First, regional blocs promote trade and investment and the second being that they are a barrier to trade and investment. It promotes trade by increasing the market size of African economies making them more attractive for TNC to set up production firms therefore providing channels for increased production level, technology exchange and skills spillover which contribute to the prosperity of a nation. It can be a barrier to growth and investment (Bhalla, 2016)(Venables, 2003) as only few countries are set to benefit from such regional arrangements.

2.4 Competition and Asymmetrical economies in regional Integration

Asymmetry as defined by the Oxford English dictionary is the lack of equivalence or equality between parts or aspects of something. Countries are endowed with different quality and quantity of natural resources and they differ as well in the characteristics of their socio-economic structures. The notion of asymmetries in economics of nations or regions portrays the idea of a disparity in endowment or distribution of a given variable such as information, per capita income or assets (Ventura-Dias, 2003). Regional economic integration is usually viewed as a venture that cannot succeed between unequal partners (Nye, 1968). Since industries tend to cluster together to take advantage of the external economies of scale available from the presence of other related industries, this could lead to problems as the spread effects of increased economic activities will be less important to the poorer regions than the backwash effect of the attraction of the resources from the poor over to the richer areas(Myrdal and Sitohang, 1957). Bhalla(2016) notes that regional integration among unequal partners is likely to lead to unequal gains of any perceived or real gains from trade and economic liberation. He notes that generally any gains or benefits achieved from integration tend to gravitate to the most advanced countries and he bases his arguments on the Porter's theory of agglomeration whereby industries tend to locate where there is availability of skills and infrastructure and also a place whereby economies of scale of production can be achieved. However, he notes that the dynamic gains of an increased market size and improved economies of scale from regional blocs are more likely to occur if the bloc has atleast one advanced member to act as a big brother to the others.

Krapohl(2010) defines asymmetry by focusing on the strong and weak states which he calls emerging and periphery respectively. He defines strong states as being those that have large economies in terms of GDP, attract more FDI as they are more attractive compared to their neighbours and those that receive huge exports from the other states as they tend to have manufacturing industries while the weak states as an opposite of the strong. He further identifies two levels of asymmetry: inter-regional asymmetry and intra-regional asymmetry.

2.4.1 Inter-regional asymmetry

This represents asymmetry between those countries referred to devolved and developing countries. The biggest difference between these two countries are the level of economic development which causes asymmetry when they interact through trade in the global market. As mentioned in chapter one; Africa trades more with countries in the developed world as compared to trade within Africa. This has been attributed to the fact that African states share similar factor endowments and export relatively comparable primary products (Seid, 2013) and rely on these developed countries for manufactured goods and development fund in the form of aid and loans (Fink and Krapohl, 2010). Regional integration may be beneficial for these countries as they are able to attract FDI from increased markets and are at a better position to negotiate for better agreements with these developed countries (Krapohl, 2010).

2.4.2 Intra-regional asymmetry

Africa constitutes of countries at different level of economic and institutional development which causes the economies of the region to be asymmetrical as there are some countries that are performing better than the others in terms of GDP and institutions. Even though integration may be beneficial through intra-regional relationships; it may be detrimental within Africa as there is bound to be winners and losers as it may cause divergence of per capita income levels for members (Venables, 2003) and in the long run cause failure in the integration process. This is because, the motive behind Africa's integration is to gain more share in the global market and improve inward FDI making the member states competitors for this FDI as FDI doesn't move to a region but a city in a country and it tends to favour those cities that have a huge market and are well developed than their counterparts in terms of infrastructure, institutions and structures. (Hoffman and Nye, 1966) advanced the suggestion that nations prefer certainty of self-reliance in matters of national interest than the uncertainty of integration and are therefore bound to protect their self-interest when faced with threats. This portrays differences across developing countries which are mostly overlooked in studying regional integration where both the so-called emerging economies and those lagging behind co-exist with differentiated profiles and only come together when it is a matter of convenience (Álvarez and Marin, 2013).

2.5 Conceptual Framework

The conceptual framework identifies dependent and independent variables while controlling for other factors that may affect the dependent variable. It also makes use of an interraction factor (asymmetry) which may be used to explain the relationship between the independent variable (regional economic integration) and the dependent variable (competitiveness).

The dependent variable competitiveness has one measure, inward FDI. The choice of measures was arrived at based on Porter's definition of competitiveness as a measure of productivity as reflected in the improvement of wellbeing of the citizens of a nation whereby FDI is also seen to play an important role in increasing production through plant investments and also export diversification which builds into a countries resilience in trade but also promote economic growth.

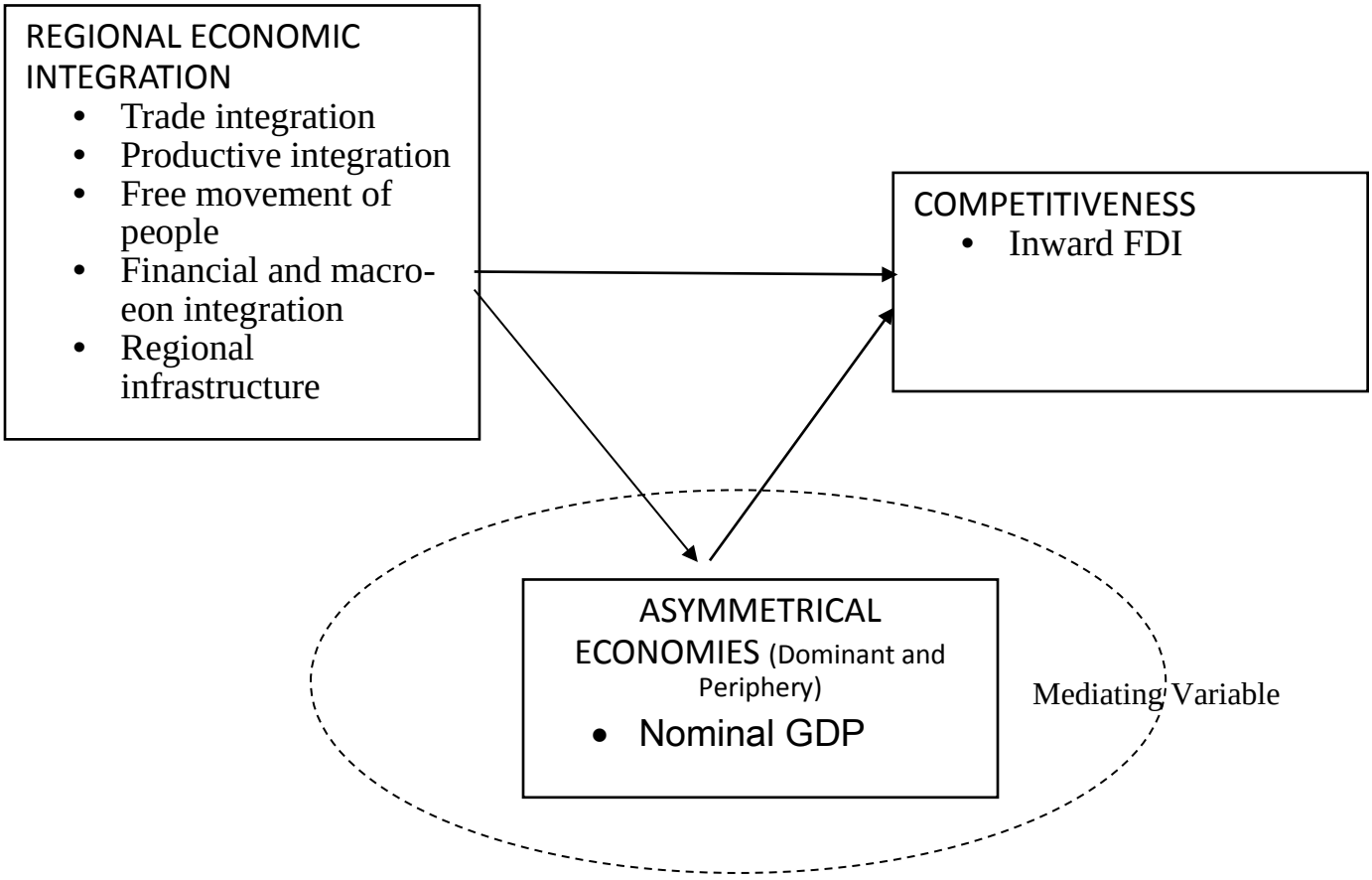
In settling for the independent variables, a well-known or used approach was hard to come by as the field of regional integration and in particularly one that focuses on developing countries and in this

case Africa. Balassa (2013) model of regional integration which is the most commonly known was inspired and influenced by the success of the European union and the lessons derived from which cannot be applied to Africa as the institutional structures and economic characteristics are not the same. The Africa union as one of its desires to track and measure the process of Africa's integration has prepared an African Regional Integration Index with the help of the Africa development bank and UNECA. The index uses five variables that are mostly related to trade. This is because, Africa desires to achieve a continent wide common market that will promote intra-African trade through 8 regional economic communities as set out in the Abuja treaty.

The mediating variable was arrived at based on literature review and empirical studies that implied that integration may not be good for Africa based on the asymmetry experienced in the continent while the control variables which are not included in the conceptual framework were included based on other factors that are known to affect competitiveness (export performance and FDI) and these are shared border, common language and common currency.

Conceptual Framework diagram

Figure 3 Conceptual Framework



Chapter 3: Research Designs and Methods

3.1 Revised research questions

Research question: To what extent does Africa's regional economic integration contribute to a country's competitiveness?

1. What are the trends for FDI inflow?
2. What are the trends in Regional economic integration in Africa?
3. How does regional economic integration in Africa affect a nation's FDI inflow?
4. How does asymmetry within a regional bloc affect the overall competitiveness of African nations?

3.2 Research Objective

The nature of research is testing as it seeks to find out whether there is a relationship between the independent and dependent variable and the extent to which this relationship exists. Previous studies done for European, American and ASEAN regions have revealed that there is a positive relationship between regional integratration and nation's competitiveness and despite not much being done on Africa, some comparative studies between Africa integration and Eurpoean integration have revealed that integration is not helpful to African countries.

3.3 Research approach

The research strategy applied in carrying out this study was the desktop research, whereby quantitative datasets from existing databases were relied on. This strategy was adequate in relation to the research question as it is a deductive research which seeks to find a relationship between regional integration in Africa and a nation's competitiveness based on existing theories. From the scope of the study, it focuses on the broad understanding of the relationships rather than the depth of processes which makes secondary data analysis the most appropriate strategy for obtaining the answers for the proposed research questions (Thiel 2015). Moreover, Africa is a large continent and this strategy allows the study of large number of observations. Third, all the variables required for conducting this study could not be collected through primary survey and therefore were obtained through reliable secondary data sources. For the independent variables which is regional integration, the datasets were derived from a number of databases as included in the operationalisation matrix below while that for FDI were derived from fdimarkets.com and UNCTAD.

The study made use of two types of analysis; descriptive and inferential analysis. The inferential analysis method applied was be the panel regression model which will test the relationship between the independent variable (regional economic integration) and the dependent variable (FDI). A similar regression will also be run while including the asymmetrical measures which will act as the mediating variable and the control variables of shared border, common language and common currency.

3.4 Operationalisation and Indicators

3.4.1 Definition of variables

Competitiveness (Dependent variable) as defined by the global competitive report (Schwab and Sala-i-Martin, 2016) defines competitiveness as the level of prosperity that a country can achieve through productivity. The level of productivity sets the level of prosperity of an economy as it determines the rate of return of investment in an economy and these act as the main drivers of an economy. For this study, based on the above description, competitiveness will be taken to mean the productivity of a nation as based on the goods a country is able to produce and exports to the world market which is defined by its market share and the level of investment it is able to attract to its economy in the form of FDI.

Regional integration (independent variable) as defined by Cavusgil, Knight, et al. (2014) is an economic interdependence when two or more countries within a geographical scope come together into an alliance to reduce barriers to trade and promote investments. This study adopted the same ideology but as an operationalisation definition, regional economic integration was taken to be the interactions of cross border economies that occur through the facilitation of trade that allows for free movement of goods, people and capital.

Economic asymmetry as observed in regional economic blocs in Africa and in Africa as a continent is defined by Krapohl(2010) as the economic disparity in nations brought about by differences in market size and level of development of nations where he further defines strong states as being those that have large economies in terms of GDP, attract more FDI as they are more attractive compared to their neighbours who are weaker. However, for this study, asymmetry will take to mean the variance of any condition at hand for example; if it is wealth, asymmetry will be the variance between the rich and the poor. The operationalisation of the variable will maintain Kraphol's approach of using nominal GDP.

3.4.2 Operationalisation of variables

Dependent Variable.

The dependent variable which is national competitiveness was measured using the indicator; inward FDI value. From literature on the definition of competitiveness, productivity is seen to be an important factor in determining the prosperity of a nation. From the global competitive report, countries that seek to be more productive should try and move from labour intensive activities to efficient seeking and innovative or sophisticated activities (as per the 3 categories of the GCI), which comes about when there is sharing of new skills, knowledge and flow of technology which trickle down from inward FDI to a country. FDI and export seem to have a cyclic relationship whereby when a country exports more, it can attract FDI in the form of TNCs or even infrastructure capital which correspondingly boosts more export and as a result an increase in the economic activities (Kosack and Tobin 2006).

Table 1 Operationalisation Dependent Variable

Concept	Variable	Indicator	Scale of measurement	Source	Value

Competitiveness	Foreign Direct Investment (FDI)	Total FDI inflows	Ratio	Fdimarkets.com	The higher the FDI inflow the more competitive a country is.

Independent Variables:

In the field of regional integration and in particularly one that focuses on developing countries and in this case Africa, there are no standardised models or theories that define the integration process. Balassa (2013) model of regional integration which is the most commonly known was inspired and influenced by the success of the European union and the lessons derived from which cannot be applied to Africa as the institutional structures and economic characteristics are not the same (Mattli, 1999). Since the regional blocs in Africa are at different stages of integration, the Africa union as one of its desires to track and measure the progress of Africa's integration process, has prepared an African Regional Integration Index with the help of the Africa development bank and UNECA. The index uses five variables that are mostly related to free trade and this is because Africa desires to achieve a continent wide common market that will promote intra-African trade through 8 regional economic communities as set out in the Abuja treaty. Just like the integration index; this study has used the five variables to measure regional integration. These variables are, trade integration, productive integration, free movement of people, financial and macro-economic integration and regional integration (ARII, 2015). The variables are a good measure for this study as they give a reliable and realistic measure of regional integration especially in relation to Africa.

Table 2 Operationalisation Inependent Variable

Concept	Variable	Indicator	Explanation	Source
Regional Economic Integration	Trade Integration	1.Share of total intra-regional goods trade (% total intra-REC trade)	This is used to measure the trade openness of a country	DOTs(IMF)
	Productive Integration	1.Intermediate Goods trade complementarity index 2. Industry, value added(%GDP)	ITCI is used to measure trade expansion from the matching of exporters goods to the importers demand Industry of GDP is used to measure the industrialisation process of a country	World bank
	Free movement of people	1.Africa visa openness index	Used to indicate the level of a country's openness to citizens of another country	World bank
	Financial and Macro-	1.Inflation rate differential (based on HCPI)	Inflation rate is used to determine the economic stability of a country	World bank

	economic integration	2.Domestic credit provided to private sector(%GDP)	Domestic credit to private sector(%GDP) is used to indicate a country's support for private investment	
	Regional Infrastructure	1.Africa Infrastructure development index (transport, electricity, ICT, water and sanitation	The index measures the level of infrastructural development of a country in relation to other countries in Africa	AfDB

Control Variables

Control variables are usually variables that you are not interested in, but that can influence the dependent variable. The objective of including them in an equation is to remove any compounding effects that they may have on the dependent variable.

Table 3 Operationalisation Control Variable

Concept	Indicator	Explanation	Source
Government Effectiveness	Govt effectiveness	This is a proxy for how effective governments are in implementing laws and policies relating to regional integration	World bank
Political stability, lack of violence/terrorism	Political stability	This is to measure the political stability of the nation which can affect FDI	World bank
Tertiary education enrolment	Education	This is a measure of how prepared the population of a country can learn new skills and adopt new technology	World bank
Total Population	Population	Total population recorded for that year	World bank
Country land size	Land size	Official boundaries of a country	World bank
Common language	Yes/no	Check whether the African countries were colonised by the same European country	UNECA

Mediating Variables

This represents the generative mechanism or explanation through which the independent variable is able to influence the dependent variable. The mediating variable which is the asymmetry was

measured based on the market size as defined by Krapohl (2010) and in this case as represented by the nominal GDP of a country.

Table 4 Operationalisation Mediating Variable

Concept	Variable	Indicator	Explanation	Source
Asymmetry	Market size	Nominal GDP	This is a proxy variable which is the variation in market size as measured by GDP	World bank

The variable was operationalised by allocating score of between 0 and 1 to countries within Africa with 1 being given to the country with the highest nominal GDP.

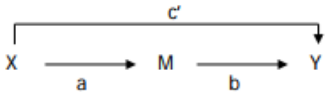
Example: Using 5 countries AB, CD,FG,JK and MN with GDP of 5,3,4,10 and 7 respectively, then the value will be allocated as follows;

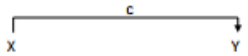
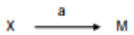
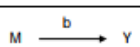
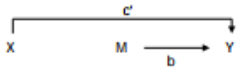
COUNTRY	GDP	SCORE	
AB	5	0.5	
CD	3	0.3	
FG	4	0.4	
JK	10	1	(if JK 10= 1 then the rest is equal to countryX GDP/JK GDP)
MN	7	0.7	

From the literature, authors have argued that regional economic integration is not good for Africa as it affects a nation's competitiveness and this they attributed to the asymmetry of African states (Bhalla, 2016, Venables, 2003).

To test for mediation, the following three regression tests were undertaken (Kelly and Baron 1986): first, regressing the mediator on the independent variable to test whether the independent variable affects the mediator; second, regressing the dependent variable on the independent variable to test whether the independent variable affects the dependent variable; and third, regressing the dependent variable on both the independent variable and on the mediator to test whether the mediator affects the dependent variable in the third equation. If these conditions all hold in the predicted direction, then the effect of the independent variable on the dependent variable must be less in the third equation than in the second. Perfect mediation holds if the independent variable has no effect when the mediator is controlled.

Regression relationship with mediating variable.



	Analysis	*Visual Depiction*
Step 1	Conduct a simple regression analysis with X predicting Y to test for path *c* alone, $Y = B_0 + B_1X + e$	
Step 2	Conduct a simple regression analysis with X predicting M to test for path *a*, $M = B_0 + B_1X + e$.	
Step 3	Conduct a simple regression analysis with M predicting Y to test the significance of path *b* alone, $Y = B_0 + B_1M + e$.	
Step 4	Conduct a multiple regression analysis with X and M predicting Y, $Y = B_0 + B_1X + B_2M + e$	

Kelly and Baron (1986)

3.5 Sample size and Selection

The study focused on 52 African countries which is less two of the total number of countries in Africa. Sudan and South Sudan were eliminated as there was lack of reliable data for the two countries for the period 2006-2015. This follows the secession of South Sudan from Sudan in 2010.

To further understand how the various regional blocs of Africa compared to each other; the countries were grouped into five regional economic blocs. The study had intended to focus on Africa as divided by the 8-recognised regional economic blocks of CEN-SAD, COMESA, EAC, ECCAS, ECOWAS, IGAD, SADC and UMA. However, due to overlap in membership with one country belonging to more than one regional economic bloc; the countries were categorised into five regional groups as illustrated below in table 5. Overlap of membership would have led to the outcome being influenced with repetition of some of the variables which would have led to the interpretation being biased and incorrect.

A graphical representation of the blocs is also included in chapter 4 in the form of a map under the descriptive analysis of the regional integration.

Regional Blocs

Table 5 Classification of countries in REC

Regional Blocs	AMU	EAC	ECCAS	ECOWAS	SADC

Countries	Algeria	Burundi	Cameroon	Benin	Angola
	Egypt*	Djibouti*	Central Africa republic	Burkina Faso	Botswana
	Libya	Eritrea*	Chad	Cape Verde	Comoros*
	Mauritania	Ethiopia*	Congo Republic	Cote d' Ivore	Congo DRC
	Morocco	Kenya	Equatorial Guinea	Gambia	Lesotho
	Tunisia	Rwanda	Gabon	Ghana	Madagascar
		Somalia*	Sao Tome and Principe	Guinea	Malawi
		Tanzania		Guinea Bissau	Mauritius
		Uganda		Liberia	Mozambique
				Mali	Namibia
				Niger	Seychelles
				Nigeria	South Africa
				Senegal	Swaziland
				Sierra Leone	Zambia
				Togo	Zimbabwe

*Countries are not real members: Included due to geographical proximity to the nearest bloc

3.6 Validity and reliability

The variables chosen are most appropriate measure of Africa regional economic integration and national competitiveness as they are based on theories and concepts. However, the reliability of data for Africa may be a challenge due to unavailability of some of the data for the indicators and the units of observation which are the countries within the REC. The findings of this study may also not be generalised to other regions as different continents have different socio-economic and political characteristics that cannot be matched.

The study has a strong measure of validity even though the indicators used for the study are not a perfect representation but proxies, which is a limitation for using the desktop research strategy. However, the selection of these proxy indicators has been supported by existing concepts and theories whose indicators have been chosen based on their ability to be quantified and measured. Moreover, the use of existing secondary data from credible sources such as FDImarkets, UNCTADstat and World Bank contribute to the validity of data. Finally, subjecting the data to assumption tests before undertaking the panel regression also builds on validity of the analysis method. By conducting a panel research for a period of 2006-2015 also contributes to the credibility and validity of the research.

3.7 Data Collection Methods

The data used for the study is secondary quantitative data which was obtained from the following sources.

a) Fdimarkets: The data for the measure of competitiveness which is inflow FDI was obtained from this database which is hosted by the financial times. The data sought was for all countries in Africa and only inward greenfield investments.
b) Direction of Trade: This database hosts a wide range of data on trade for different countries across a long period of time. The study sought data on import and export for the independent variable trade integration whose indicator was trade openness.
c) UNECA: this is a database that has data on Africa on different sectors and indicators. Through their ECAstats database, the study obtained data for indicators for one of the measures of independent variables free movement of people.
d) World bank: the database provides data on economic and financial indicators. This were used in providing data for two of the indicators of independent variable production integration and finance and macro-economics.
e) AfdBank: This is one of the sites with data on Africa's infrastructure development. The study used data from here for the independent variable regional infrastructure.

3.8 Data analysis methods

The study is a deductive research that aims to explain the extent at which Africa's regional integration affect the overall competitiveness of African nations. It applies two forms of analysis; descriptive analysis and inferential analysis to answer the research question and its subsequent sub questions. Descriptive analysis will answer the 'what' research questions while inferential analysis will address the 'how research questions.

3.8.1 Descriptive analysis

3.8.1.1 Correlation

The first step was to conduct a Parson correlation test between the dependent variable and independent variables to establish whether there was a relationship between the two and the type of relationship. Correlation tests are only undertaken on continuous data. The correlation score ranges from zero to one and the nearer the score is to one, the stronger the relationship is and if it's nearer to zero, the relationship is deemed weak. Positive and negative signs are also allocated to the scores with a positive score indicating that a unit increase in one variable will lead to a unit increase of the other variable while a negative score means that a unit rise of one variable leads to a decrease of the other. Correlation however, does not show the direction of influence between two variables.

3.8.1.2Trend analysis

To describe and better understand the basic features of the data, trend analysis was undertaken for both the dependent and independent variables with tables, graphs and maps used as output presentation

3.8.2 Inferential analysis

The purpose of undertaking an empirical analysis is to establish the magniitude of relationship between regional economic integration and a country's competitiveness and characterize this relationship using the mediating factor of asymmetry. This will also help in determining the measures of integration which matter the most to a country's competitiveness while controlling for other factors.

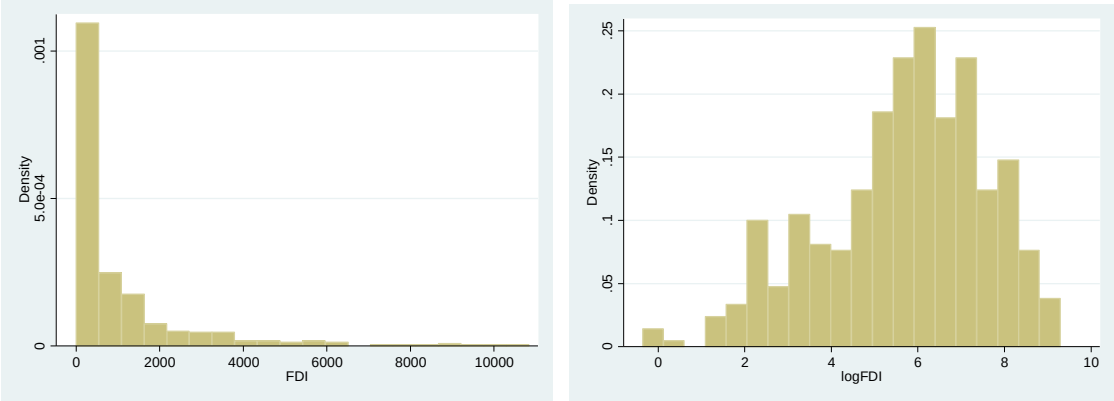
Since the dependent variable data is continuous data that is ratio and the data set consists of time series data for several observations, a panel regression was used as the best model for conducting the analysis. First step was to check on the data to see whether they met the assumption tests for a linear regression model before running the Panel regression. A linear regression model is one which assumes the relationship between the independent and dependent variable is linear.

I started by running a check on the dependent variable by testing for skewness and kurtosis. Skewness is a measure of symmetry in the distribution of data while kurtosis is a measure of whether the data is negative tailed (concentrated on the left side) or positive tailed (concentrated on the right side). The null hypothesis is that the data should be normally distributed with a pyramid shape. To test for both skewness and kurtosis, a simple histogram test was conducted for the dependent variable FDI using Stata and the result were as follows;

Figure (a) below shows the skewed results of the FDI data which is concentrated on the left (negative tailed). This was corrected by logging it to remove the skewness to look as figure (b)

(a) (b)

Figure 4 Skewness Test on Dependent Variable



3.8.2.1 Setting up the regression model

A simple regression model using the ordinary least square method (OLS) was first set up to help in running the assumption tests. The equation used to run the model was as below.

$$Y=B_0+B_1X_1+B_2X_2+\ldots\ldots\ldots\ldots\ldots B_NX_N+e$$

Whereby
Y is dependent variable
B is coefficients
X is Independent variable
e is random error (residual)

3.8.2.2 Testing for assumption tests for the dependent and independent variables

The data was further run through other tests to check whether they met the assumptions for running the panel regression.

- **Test for Normality:** To ensure that the error terms for the model are normally distributed and the null hypothesis is that the error terms are normal. The data passed for Normalcy
- **Test for Linearity**: To ensure that there exists a linear relationship between the dependent and independent variable with the null hypothesis being that the data should be linear. Data that is not linear is corrected by logging it and if it does not work it is square rooted. If it still does not work, the variable is dropped. In my research; the variable Merchandise TCI, Domestic credit to private sector(%GDP) and total population have been logged to enable them to pass the linearity test.
- **Test for Multicollinearity:** Done to ensure that there are no variables that influence each other due to collinearity. Rule of law is that those values above 10 after running a variance inflation factor (vif) command on Stata should be dropped. All my data met this rule and none was dropped.
- **Test for Homoscedasticity**: The null hypothesis is that the data set should be homoscedastic, that is; the error terms between the independent variable and dependent variable should be uniformly distributed across all independent variable. If these error terms are heteroscedastic, it should be corrected in the final regression by adding robust to the regression command. My data did not meet this test and therefore robust command was added to the final regression command.
- **Test for Model Fit**: This is used to determine whether there are omitted variables in the model. The null hypothesis is that there are no omitted variables. A significant score we reject the hypothesis and a non-significant score, we accept the hypothesis. My data passed this assumption test as it had no omitted variables.
- **Test for Autocorrelation**
  This is undertaken in panel data regression to check for correleation within and across the various entities and years. The null hypothesis is that there is no first order autocorrelation and significant score we reject the hypothesis and a non-significant score we accept the hypothesis. My data passed this test as it had no first order autocorrelation
- **Test for Outliers** The assumption is that the model has no outliers but if there are, then they should be removed to avoid them influencing the outcomes. My data had outliers which were removed in the final regression command.
- **Hausman Test**: This test is undertaken for panel regression to determine the type of model to be used either to be fixed or random effects model. The null hypothesis is that the model to be used should be fixed but in the case of my data, the proposed model to use was random effects. Fixed effect model (fe) does not allow for generalisation of output while random effects(re) can be generalized to an area of study.

<u>Conducting a Panel regression</u>

Panel regression was run to answer the following questions.

Research question: To what extent does Africa's regional economic integration contribute to a nation's competitiveness?

1. How does regional economic integration in Africa affect a nation's FDI inflow?
2. How does asymmetry within a regional bloc affect the overall competitiveness of African nations?

To answer the first question; a simple panel regression was run that incorporated the dependent variable, independent variable and the control variables.

To answer the second question;

1. Panel regression with interaction terms was employed whereby first, the interaction term of asymmetry was included in separate models with a single independent variable to exclusively examine its role to determine the effects of each aspect of integration on FDI.
2. In the final model, all the interaction terms were included in a single model in steps to determine whether their effect was preserved in the presence of other factors in determining the relationship between regional economic integration and FDI. The control variables were introduced in finally in three steps whereby they represent government measures, social factors and physical factors

Chapter Four: Data Analysis and Findings

This chapter presents the research findings as based on statistical analysis done. The chapter is divided into two main parts; 4.1 will be focused on the descriptive analysis whereby graphical representation generated using excel, ArcGIS and Gephi will be relied on which will try to answer the first two sub questions for this research study. The second part, 4.2 will focus on the inferential analysis as conducted using STATA which will present the study outcomes based on the panel regression analysis undertaken and will try to answer sub question three and four of this research.

4.1 Descriptive Analysis

4.1.1. Pearson Correlation

Pearson correlation is used to measure the strength and relationship of the dependent and independent variables. As an addition, using Stata, the significance of the relationship is also determined. The closer the correlation is to one, the stronger the relationship and the smaller the probability value (p-value) is, the significant the relationship is.

4.1.1.1 Determining the strength of correlation relationship

Table 6 Correlation Matrix

		logFDI	Trad_Int	logPro~t	Indust~P	Inflat~n	logDcr~P	No_visa	Infra_Int
Independent Variables	**Indicators**								
	logFDI	1.0000							
Trade Integration	Trad_Int	-0.2283	1.0000						
Production Integration	logProd_Int	0.3727	-0.1493	1.0000					
	Industryof~P	0.0604	0.2590	-0.1021	1.0000				
Finance and Macro Economics Integration	Inflation	0.0143	0.0043	0.0261	0.0142	1.0000			
	logDcredit~P	0.2725	0.0702	0.4325	-0.1724	-0.0382	1.0000		
Free movement of people	No_visa	-0.1874	0.0522	0.0346	-0.3872	-0.0155	0.1650	1.0000	
Regional Infrastructure	Infra_Int	0.2199	0.2564	0.3373	0.1462	-0.0039	0.5896	-0.0367	1.0000

Source: Author's calculations,2017.

The table above represents the correlation matrix between the dependent variable logFDI and the independent variables and its indicators. From above, the relationship between production

integration, finance and macro-economic integration and regional infrastructure integration with the dependent variable logFDI are positively associated but the relationship is weak which means that an increase in factors that represent these integration sectors will lead to an increase in FDI in a country and the opposite is also true. However, trade integration and free movement of people have a negative relationship with FDI that is also weak. Meaning that a country that increases the factors of trade integration and free movement, will reduce the inflow of FDI into those countries.

4.1.1.2: Determining the significance of correlation relationship

Table 7 Correlation Significance

		(3) **LogFDI**
Trade Integration		-0.228***
Productivity Integration	logTrade complimentarity Index	0.373***
	Industry of GDP	0.0604
Financial and Macro-Environment Integration	Inflation	0.0143
	LogDomestic credit private sector (GDP)	0.273***
Free movement of People		-0.187***
Regional Infrastructure Integration		0.220***

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Source: Author's calculations,2017.

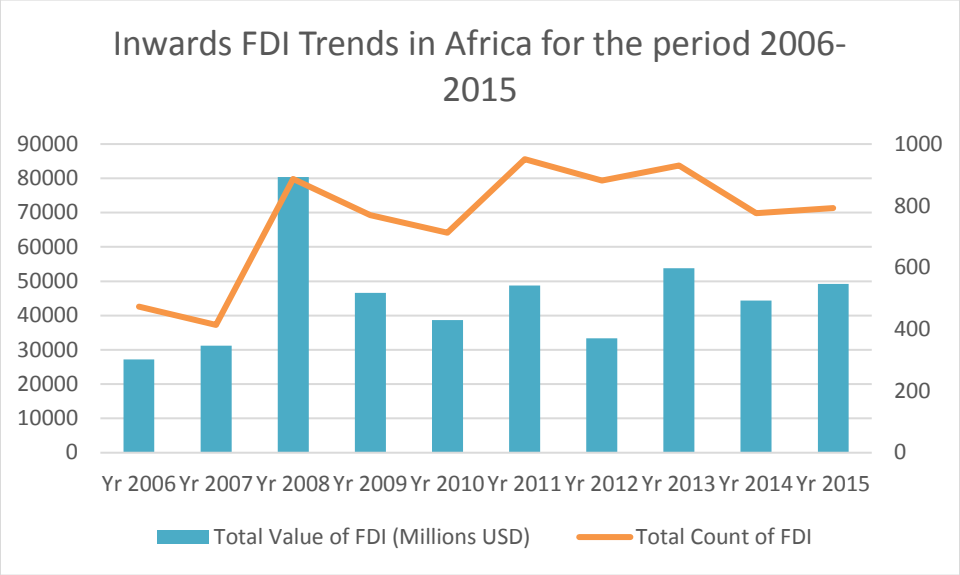
From the above table 7 which measures the significance of relationship between the dependent and independent variables; the correlation relationship between all the five independent variables and logFDI which is the dependent variable is very significant. This means that the likelihood of the five-independent variable having a relationship with the dependent variable is very high.

4.1.2 FDI Trends in Africa

The graph below was prepared by getting the sum of all FDI value and count for a given year then plotting them using excel. From the graph 1 below, the value of inward FDI counts has been increasing with the highest level being attained in 2008 at USD 80429.82 million. The same is experienced with number of FDI investments being made in Africa which doubles up from 414 to 887. In 2009, both figures drop with the value of FDI being invested into Africa almost halves to USD 46582.21 and further to USD 38636 million in 2010 while the number of FDIs being invested reducing to 770 in 2009 and further to 713 in 2010. This huge drop could be attributed to the global economic crisis that was being experienced at the world markets in 2008-2009 which saw many countries experience economic shocks that affected their economic stability and growth. In 2011, there was a huge increase in the number of FDI counts coming into Africa. Despite this being the highest number of FDIs recorded for Africa within the period of 2006-2015, the value of FDI even though it is still an improvement, it is not the best value recorded in that period. Beyond 2010, the trend of FDI inflow has been erratic with the subsequent years recording an up

and down movement in both FDI value and count. However, despite all this, Africa's FDI inflows has remained resilient with the final score of 2015 being an improvement from the 2014 by USD 4419 million.

Graph 1 Inward FDI trends in Africa



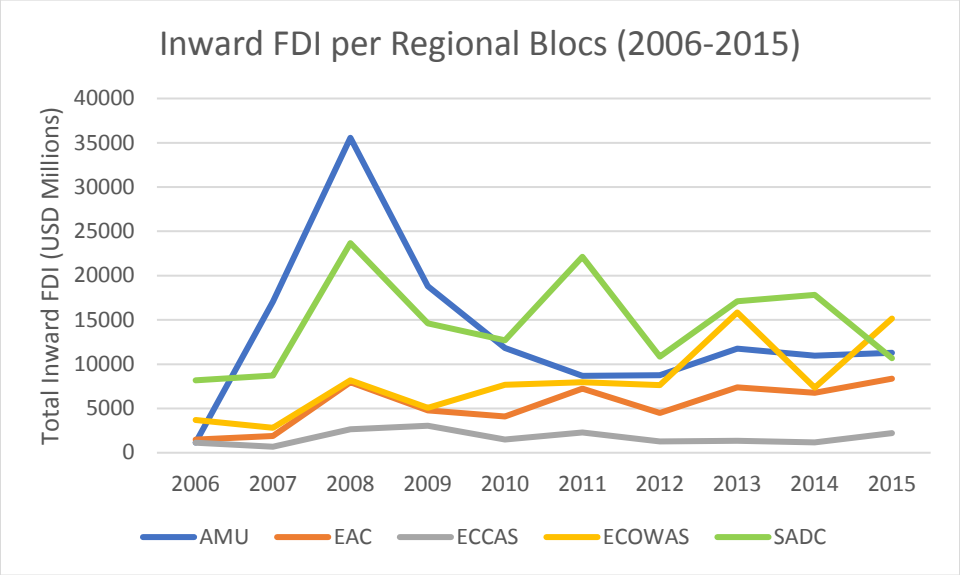
Source: Author's calculations,2017 based on FDImarkets.

4.1.3. FDI Regional Comparison

From the graph 2 below, the period between 2006-2014, AMU and SADC seem to be dominating the numbers on the highest FDI being received into Africa regional blocs with ECOWAS dominating in 2015. AMU had the greatest improvement in the period 2006-2008 as this saw it improve from 1145.6 USD million to 35563.87 USD million representing a more than three thousand percent improvement. An improvement in the other regional blocs is also seen for the same period with AMU and SADC attaining the highest level of inward FDI coming into their region for the period 2006-2015. However, in 2009, all the regions experienced a decline in the value of FDI coming into their region and this is attributed to the global economic crisis of 2008-2009. In 2010-2012, the flow of FDI into AMU declined considerably by 26% from 11835.21 USD millions in 2010 to 8749.63 USD millions. ECOWAS as a region has also been improving with 2013 and 2015 being some of the years with the highest number of FDI inflow. ECCAS has been experiencing the least amount of FDI flowing into the region.

SADC, AMU and ECOWAS are emerging as very competitive regions as the value of FDI across the ten years are the highest in Africa. The large concentration of FDI can be attributed to the large endowment of oil, gas and petroleum products in these regions. Therefore, it can be assumed that the main type of FDI being invested in these regions is based on the extractive sector.

Graph 2 Inward FDI trends per Regional Bloc

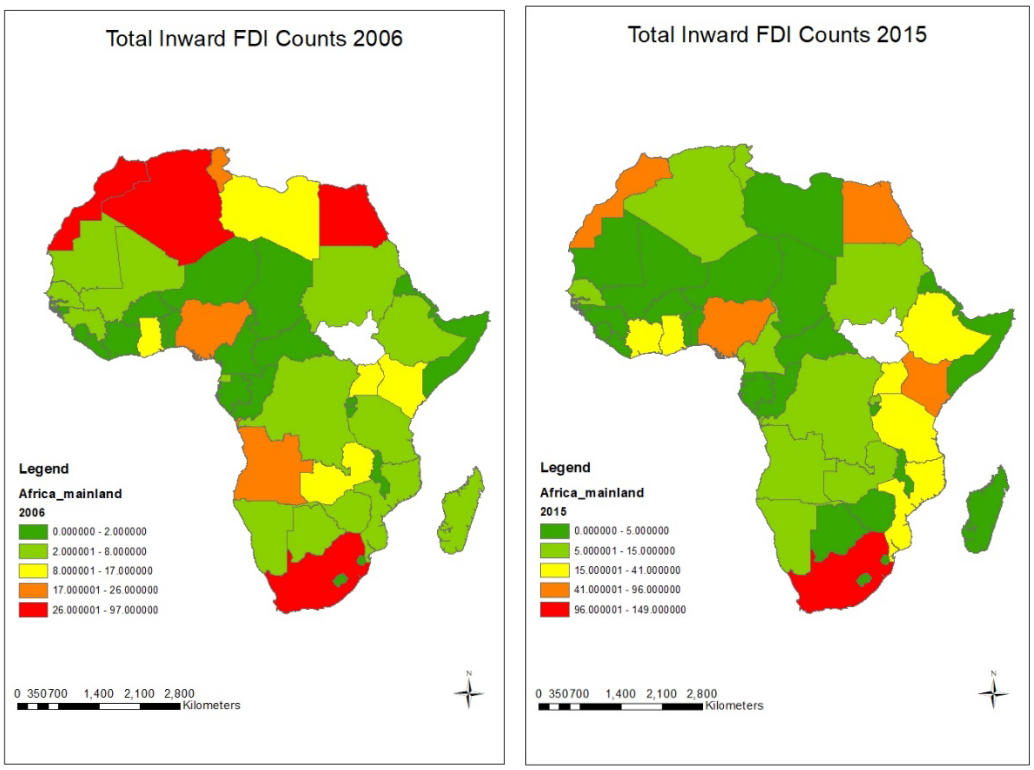


Source: Author's calculations,2017 based on FDImarkets.

4.1.4 Inward FDI trends Countries comparison

From the maps below, the number of FDI coming into the continent has been concentrated in few countries as illustrated by the warm colors of red, orange and yellow for the year 2006 and 2015. From the 2006 map, The FDI count ranges from 0 to 97 with the AMU countries of Morocco, Algeria, Tunisia, Libya and Egypt; and South Africa and Angola in the SADC seem to be dominating in terms of number of FDI being invested into Africa. There are fewer investments being made into other parts of Africa with Nigeria, Ghana, Kenya, Uganda and Zambia being the exceptions. In 2015, the number of FDI coming into Africa increased by almost double the amount received in 2006 with values ranging from 0 to 149. South Africa continued with its dominance as represented by the red colour. However, the dominance of the AMU countries reduced as it is only Morocco and Egypt that have received high values of FDI and their resilience is attributed to their market strength as illustrated by their high GDP within the region which is an important factor for market seeking FDI. In 2015, we also see an improvement in the distribution of FDI in the EAC region with Kenya and Uganda being joined by Ethiopia, Tanzania and Mozambique. The decline of AMU is attributed to the previous year's political instability brought about by the Arab uprising while the EAC improvement could be attributed to the discovery of oil and gas in the countries within that region such as Tanzania and Ethiopia's growing textile industry.

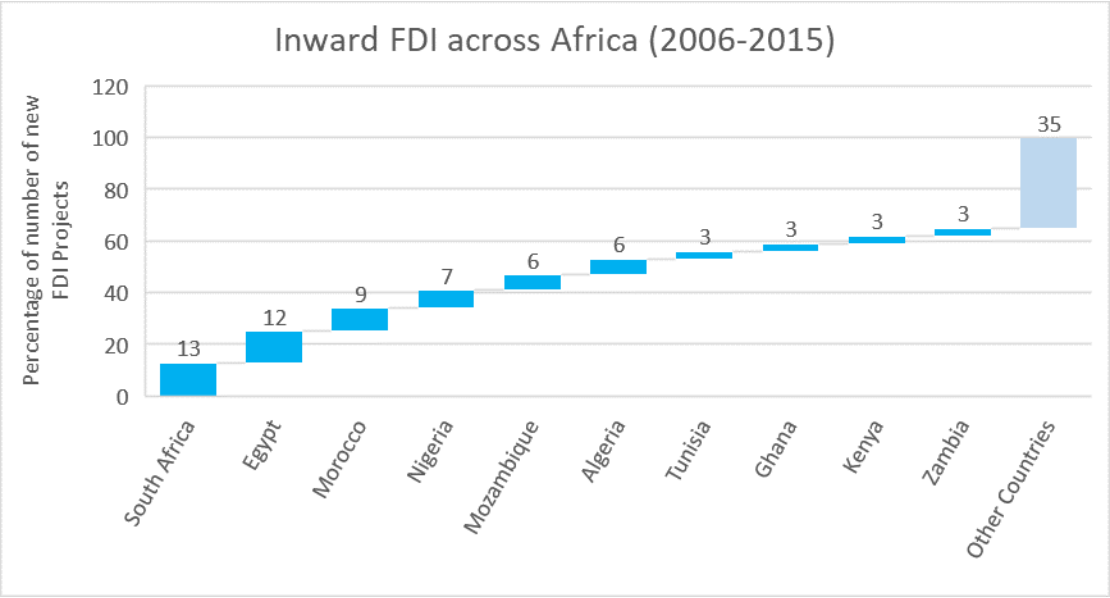
Map 1 Total inward FDI Counts



Source: Author's, 2017 based on FDImaarkets.

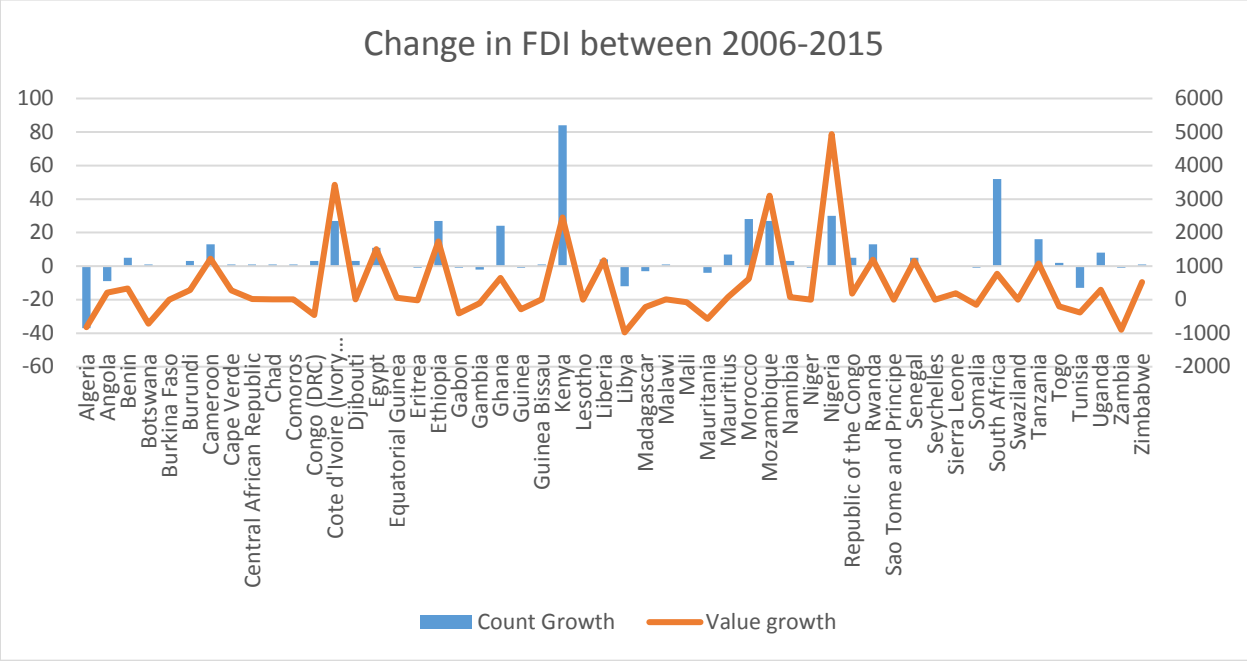
When it comes to the distribution of FDI, the total number of FDI inflow received in Africa between 2006-2015 are concentrated in few economically important countries as illustrated in the graph 3 below. Africa is a continent with over 50 sovereign states however, only 10 of these African countries account for 65% of the Greenfield FDI projects received between 2006-2015. These in decreasing order are: South Africa, Egypt, Morocco, Nigeria, Mozambique, Algeria, Tunisia, Ghana, Kenya and Zambia; almost the same as the top 10 African countries ranked by nominal GDP. From the literature, FDI is seen to follow development (Wall, Burger, et al.(2011) and it seems to be the same in this case.

Graph 3 Cumulative total inward FDI percentage projects across Africa



Source: Author's calculations,2017 based on FDImarkets.

Graph 4 Change in FDI in Africa



Source: Author's calculations,2017 based on FDImarkets.

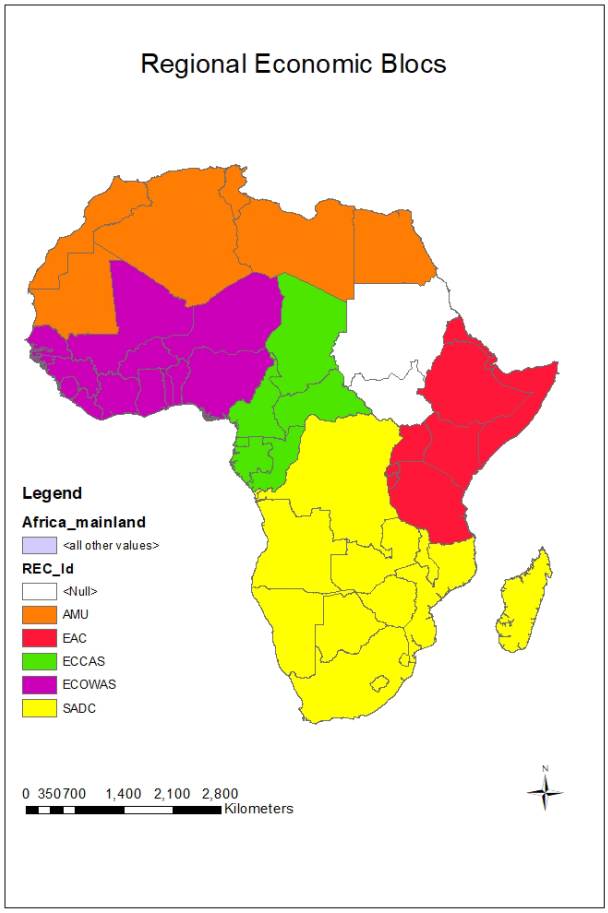
When looking at the change in FDI count and value across the 10 years (from 2006-2015) as illustrated by the above figure, Kenya and Nigeria seem to be dominating in the countries that have experienced the highest change in the number of greenfield FDI count and Value respectively. In 2006, Kenya received 12 new greenfield projects as compared to 96 received in 2015 while Nigeria

received new FDI valued at USD 615 million in 2006 and USD 5552.65 in 2015. Comparing this data with that of those countries that receive the highest FDI inflow in Africa in fig x, we see that even though the change in amount of greenfield FDI going to these countries is still high, the change in value of FDI being invested has been very low and almost constant. For example, south Africa which is the most competitive country in number of FDIs being invested into Africa has only experienced a great change in the count inflows but has experienced very minimal change in the value inflows since 2006. From the above analysis, we see the emergence of new locations for FDI with Nigeria, Mozambique, Cote d'Ivore, Kenya and Ethiopia experiencing the greatest change in value and this same trend is also seen with the count of FDI change. This could be attributed to increase in competitiveness of these countries either due to emergence of new markets brought about by a growth in GDP such as Nigeria or comparative advantage in terms of presence of natural resources such as the recent discovery of gas and oil in East African countries.

4.1.5 Regional Integration

Regional economic integration in Africa is a very popular concept. Apart from a few countries such as Algeria, Lesotho among others, all other countries belong to two or more regional blocs. These blocs all vary in their roles from common markets such as COMESA to customs union such as EAC and monetary union such as ECOWAS and ECCAS. But what is common about all these regions is that they have all achieved the free- trade area milestone as based in the Balassa theory of regional integration. This overlap in membership has been a hurdle to the integration process as the commitment of countries to the various regional blocs is weakened with issues of biasness to one group emerging and since this study tries to determine the effects of regional economic integration on nations competitiveness; I have modified the membership of these regional blocs slightly from 8 recognised REC to 5 blocs with some of the countries which are not real members being included in the study based on their geographical proximity. The assumption being made is that the 52 countries chosen for this study belong to only one regional economic bloc.

Map 2 Adopted Regional Economic Blocs



Source: Partly Africa Union/Author's determination, 2017

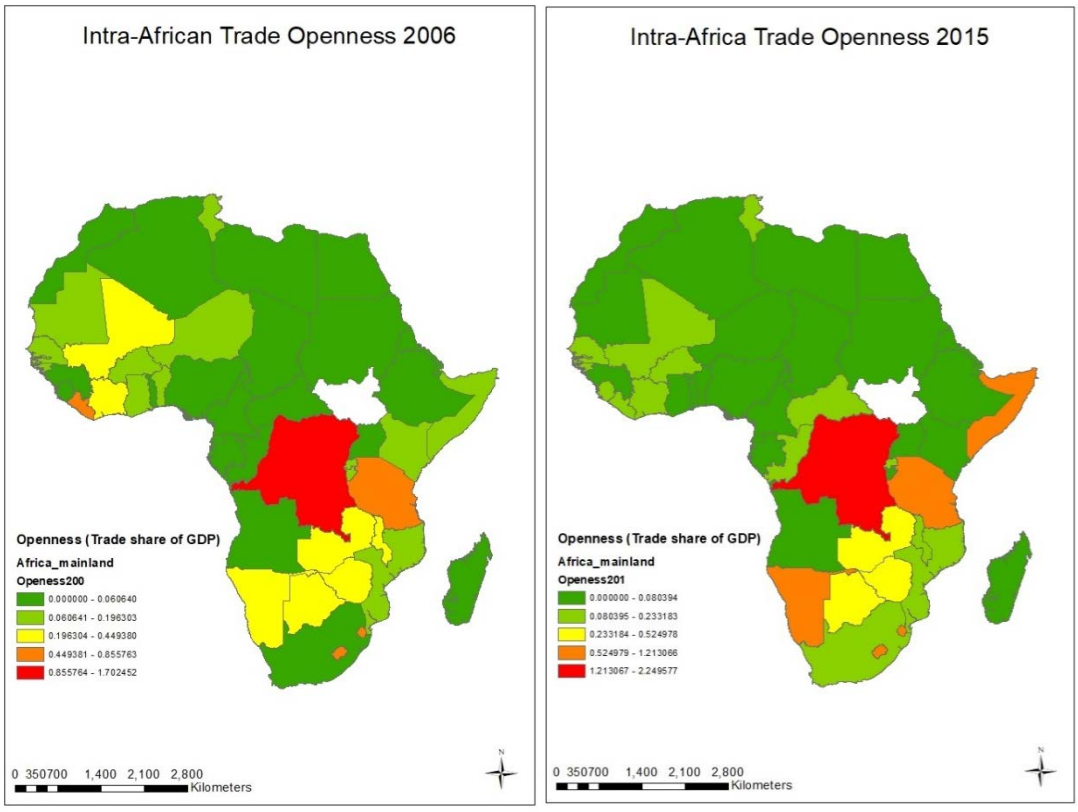
4.1.6 Trade openness

Trade openness is one of the most observable features of regional integration that is mostly used by scholars. It is a measure that determines the level at which a country has liberated its trade relations with other countries. It is measured as a sum of a country's total imports and exports as a proportion of its GDP. From the maps below, trade openness has been determined by looking at the level at which the 52 African countries engage in intra-African trade with each other. From the results, there has been very minimal variation in the level of openness in Africa in 2006 and 2015 with few clustering of countries in the west and south of Africa. Democratic Republic of Congo has emerged as the most open country to intra African trade followed by Tanzania, Angola, Zambia, Zimbabwe, Botswana, Swaziland and Lesotho in the south and Mali, Cote d'Ivore and Liberia in the west. Somali in 2015 also emerges as very open to intra African trade. However, what is of interest to note is that the large countries GDP wise have lower trade openness score. This could be attributed to the fact that these large countries may be undertaking a greater share of trade within their borders. Likewise, the same could be said for landlocked countries which in real sense trade less but the share of trade in GDP is larger to imply they are more open but in the real case it is just the distortion of population and geography.

From the maps, the key common feature of these countries perceived to be more open to trade in the southern part of Africa is that they all belong to SADC which is the REC for countries in the south of Africa. Their degree of openness could have arisen from the trade relations they have with the country of South Africa which is the most developed country in that REC and boasts of having many manufacturing industries whereby these countries provide the raw materials and obtain the manufactured products from. Moreover, more of these countries are landlocked and therefore rely on their neighbours through trade to obtain the goods they need. The degree of openness of Somali, Mali, Cote d'Ivore and Liberia could be attributed to their quest for recovery following years of political instability and war.

In relation to competitiveness which is determined by absolute FDI inflow, it is only Zambia which falls on the top 10 countries that receive the highest amount of FDI across the 10years (2006-2015). The rest have been performing below average which in this case could be translated to that they are not competitive enough. However, this hypothesis cannot be accepted as the values of FDI are absolute and have not been standardized for population or land size which will be put into consideration when undertaking the inferential analysis and therefore changing the premise of these countries competitiveness.

Map 3 Trade openness



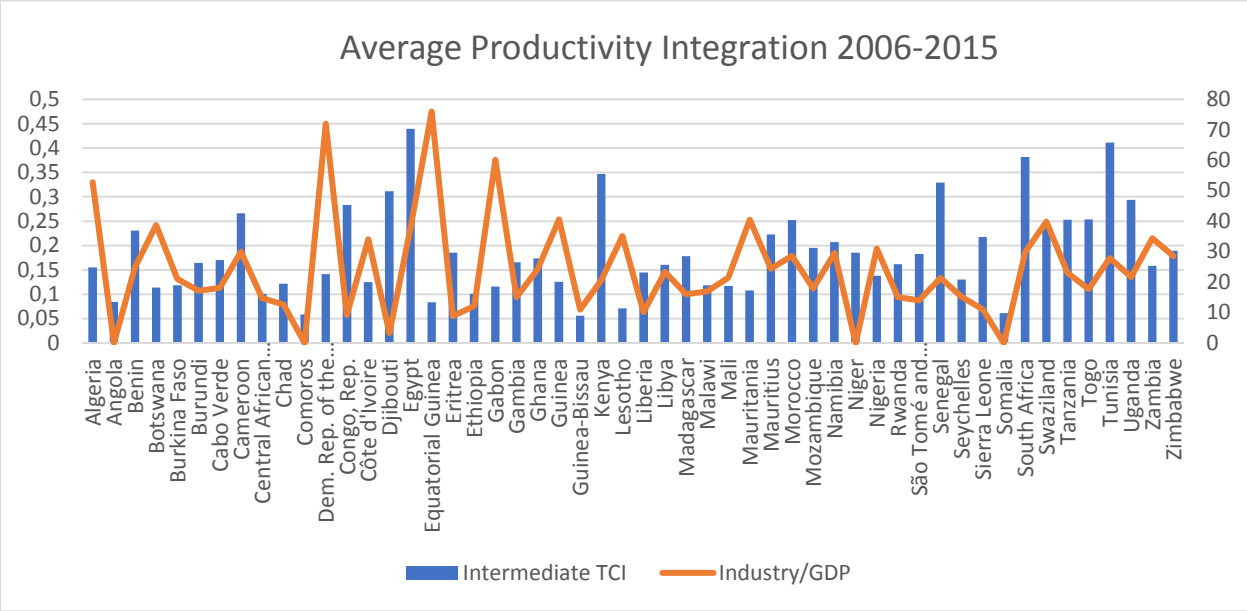
Source: Author's calculations,2017 based on DOTs IMF

4.1.7 Production Integration

This is key for regional resilience and tries to promote the diversification of Africa's exports from agricultural and extractive minerals to manufactured products. The trade complementarity index for intermediate goods and industry per GDP are used to measure this. Trade complementarity index is used to measure the extent to which an exporter matches or compliments the importer's profile with a high index indicative of high chances of gaining from increased trade, while industry as share of GDP is used as a proxy for the industrialization process and technological capacity of developing countries (world bank).

The following graph was prepared by getting the average score for all countries for the 10 years period for both indicators of production integration. From the graph 5 below, Egypt emerges as the country with the most goods that are complimentary to the imports of other countries in Africa while Guinea Bissau has the least complementarity index. Those countries that are perceived to have a bigger market size are dominating in this sector as this can be assumed to the fact that they have manged to diversify their economy. In terms of industrialisation process as measured by industry per GDP, Equatorial Guinea and democratic republic of Congo are leading.

Graph 5 Productivity Integration



Source: Author's calculations,2017 based on WorldBank

4.1.8 Free movement of people

The free movement of people plays an important role in facilitating trade and economic growth in a region. Through tourism a country can gain from increased revenue while immigrants increase economic efficiency by providing the needed skills and labour in low and high skilled jobs while at the same time reducing labour shortages. Moreover, remittances of immigrants play a role in supporting the economies of countries they originate from.

Table 8 Visa Openness Index

Country	No visa needed (%)	Visa on arrival (%)	Visa Needed (%)	Rank	visa_openness index
Seychelles	100	N/a	N/a	1	1
Mali	37	63	N/a	2	0.874
Uganda	31	69	N/a	3	0.863
Cape Verde	30	70	N/a	4	0.859
Togo	28	72	N/a	5	0.856
Mauritania	15	85	N/a	6	0.83
Mozambique	15	85	N/a	6	0.83
Mauritius	11	89	N/a	7	0.822
Rwanda	11	89	N/a	7	0.822
Burundi	7	93	N/a	8	0.815
Comoros	0	100	N/a	9	0.800
Madagascar	0	100	N/a	9	0.800
Somali	0	100	N/a	9	0.800
Djibouti	0	98	2	15	0.785
Kenya	33	56	11	16	0.778
Tanzania	9	69	22	17	0.641
Gambia	41	11	48	18	0.496
Burkina Faso	28	22	50	19	0.456
Zambia	24	22	54	20	0.419
Côte d'Ivoire	39	0	61	21	0.389
Ghana	30	9	61	22	0.37
Guinea	37	0	63	22	0.37
Senegal	30	7	63	24	0.356
Nigeria	33	2	65	25	0.348
Niger	33	0	67	26	0.333
Zimbabwe	27	7	67	27	0.319
Botswana	31	0	69	28	0.315
Malawi	31	0	69	28	0.315
Swaziland	31	0	69	28	0.315
Benin	30	0	70	31	0.296
Lesotho	28	0	72	32	0.278

Liberia	28	0	72	32	0.278
Sierra Leone	28	0	72	32	0.278
South Africa	26	0	74	35	0.259
Tunisia	22	2	76	36	0.237
Congo Republic	2	26	72	37	0.226
Central African Republic	22	0	78	38	0.222
Namibia	22	0	78	38	0.222
Chad	20	0	80	40	0.204
Morocco	17	0	83	41	0.167
Algeria	11	0	89	42	0.111
Democratic Republic of Congo	6	6	88	43	0.100
Cameroon	9	0	91	44	0.093
South Sudan	0	9	91	45	0.074
Eritrea	4	2	94	46	0.052
Ethiopia	4	2	94	46	0.052
Sudan	2	4	94	48	0.048
Angola	2	2	96	49	0.033
Gabon	0	4	96	50	0.030`
Libya	2	0	98	51	0.019
Egypt	0	0	100	52	0.000
Equatorial Guinea	0	0	100	52	0.000
São Tomé and Príncipe	0	0	100	52	0.000

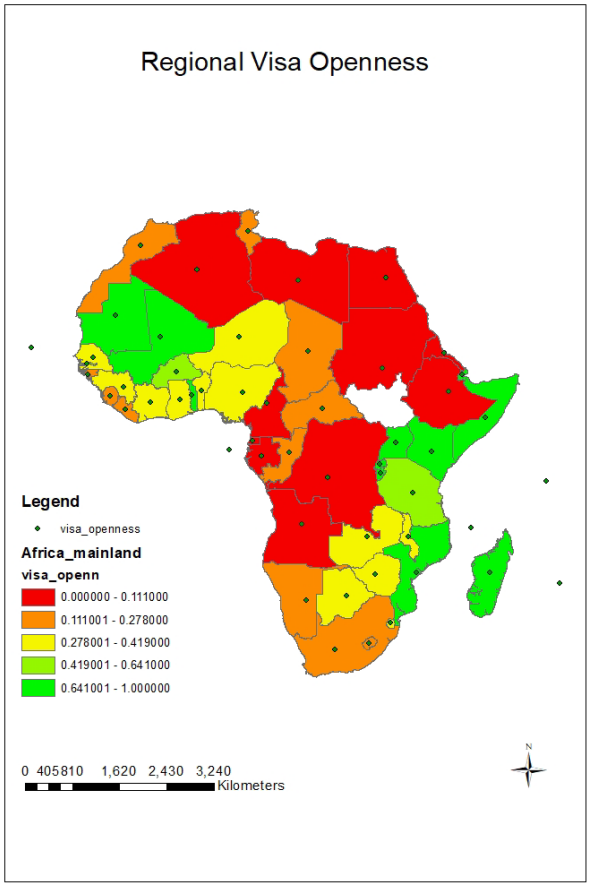
Source: Africa Visa Openness Report 2016

From the table 8 above; Seychelles of all countries in Africa is the only one that provides 100% no visa policy for all Africans while Comoros, Madagascar and Somali provide 100% visa on arrival. Egypt, Equatorial Guinea and Sao Tome and Principe has a strict visa policy whereby 100% of all nations need to apply for a visa.

The map below was prepared using the visa score for all countries and presented graphically in a map. From the map below, the most visa open regional blocs seem to be located on the eastern and western side of Africa which are represented by EAC and ECOWAS. The high score in ECOWAS could be attributed to the free movement protocol agreed upon by the member states for the citizens of partner countries while in EAC is based on the high number of visa on arrivals policy. The northern region represented by AMU seem to be the most closed region in terms of visa openness together with ECCAS in the central part. Moreover, the most developed countries in Africa based on nominal GDP such as Nigeria, Egypt, South Africa seem to be strict on the free movement of people as represented by the low index scores and the warm colors of red, yellow and orange. The

adoption of different policies by the 'high developed' countries and 'low developed' countries in the region on movement of the people could be seen as protectionist and liberal approach respectively. Whereby the protectionist is restrictive in visa openness the liberal is more open.

Map 4 Regional Visa Openness

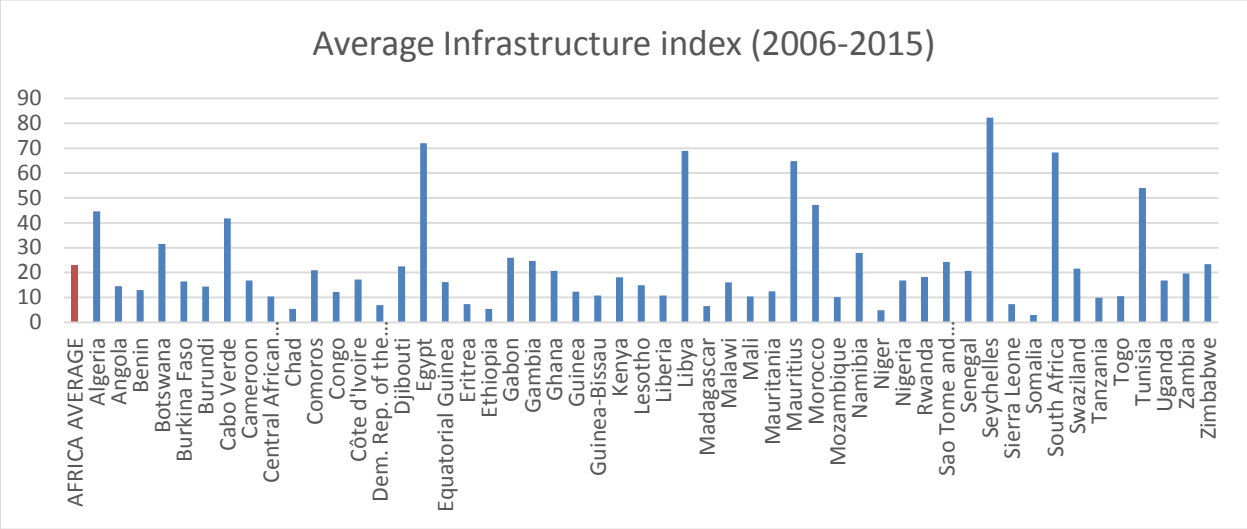


Source: Author's calculations,2017 based on Africa Visa Openness Report 2016.

4.9 Regional Infrastructure

Regional infrastructure is basically one of the most physically visible aspects of integration. One of the barriers to intra African trade has been attributed to the geographical disconnect of countries with each other and more so, FDI tends to follow regions or countries that have the necessary infrastructure to support investments as this reduces their cost of production (Kinoshita 2000b).

Graph 6 Regional Infrastructure Index



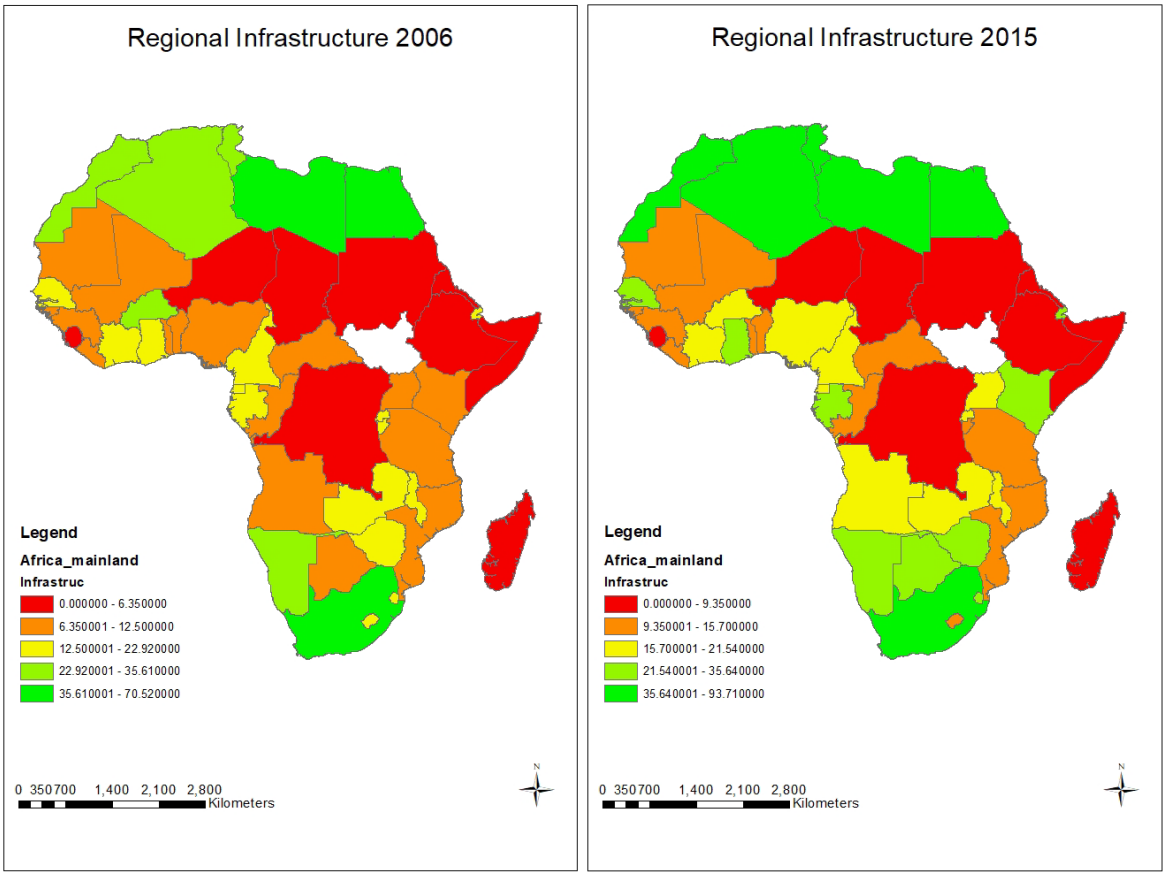
Source: Author's calculations,2017 based on Africa Regional Development Index .

From the graph above, the average regional infrastructure development index for Africa for the period 2006-2015 as indicated by the red bar is 22.92%. This is a very low figure considering that the highest value attained by a country (Seychelles) is 82.32%. Only 15 countries represented by 28.82% have attained a score above average. Seychelle emerges as the most connected country in terms of transport, electrical, telecommunication and water infrastructure. It is closely followed by Egypt, Libya, South Africa, Mauritius and Tunisia. Once again, those country that are perceived as 'developed' in Africa and have a higher nominal GDP are leading and this could be perceived into two ways. First, their economy is too productive and therefore, they can afford the infrastructure and two, increased GDP which translates to a large market size could lead to the inflow of market seeking FDI which could come along with FDI for infrastructure development. In comparison with the countries that are perceived competitive by virtue of the amount of FDI it attracts, the list seems to bear a resemblance.

Regional wise, AMU seems to be dominating in this sector with Egypt, Libya and Tunisia making the top 5 most infrastructural developed countries. South Africa and Seychelles in SADC also seem to be doing well. The dominance of these EAC, ECCAS and ECOWAS seem to be lagging behind with most of the region cover with the low score colours of red, orange and yellow. This is as illustrated by the maps below.

From the map 4, we can also deduce that the overall regional infrastructure development of the region has been improving. This can be seen by comparing the scores in 2006 with those in 2015. In 2006, the highest score bracket as represented by green in the legend stood between 35.61-70.52. In 2015, the score improved to between 35.64-93.71 and this saw more countries in AMU and SADC move to higher score brackets as illustrated by the change of colours in 2006 and 2015. Some improvements are also observed in other three regions of EAC, ECCAS and ECOWAS whereby two or three countries move from the low scores as represented by red yellow and orange and become green which are higher scores.

Map 5 Regional Infrastructure Comparison 2006 and 2015



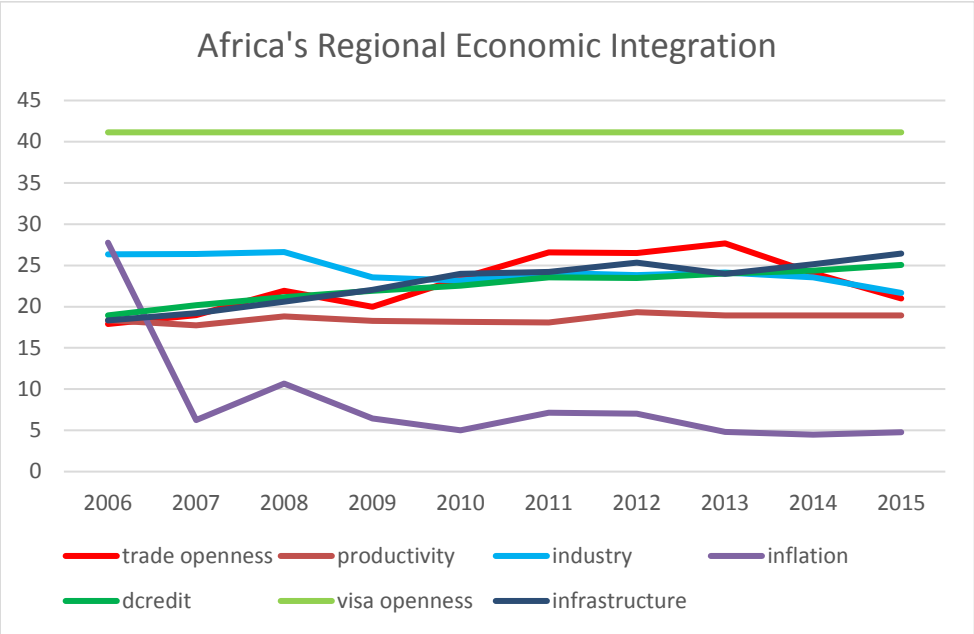
Source: Author's, 2017 based on Africa Regional Development Index.

4.1.10 Trend in Regional Economic Integration

Putting all the measures of integration together, for the time period 2006-2015, the figure below shows a general improvement in Africa's regional integration even though the change is minimal.

Th following graph was prepared by getting the summation of all aspects of regional integration in each year then getting the average and multiplying by 100.

Graph 7 Africa Regional Economic integration 2006-2015



Source: Author's calculations,2017

Trade integration as measured by trade openness has been increasing marginally with the greatest percentage attained being 27.67% in 2013 which represents a 54% increase from 2006. However, the gained momentum seemed to have suffered a setback in 2014 when there was a drop to 24% and a further 20% in 2015. This could have been attributed to

Production integration measured by comparing the complementarity of intermediate goods in Africa has been almost constant with very minimal increases. Industrialization of African nations has been decreasing with countries dedicating less of their GDP on industrial production from 26% to 21%. This could be attributed to globalization and continued dependence of African countries on developed nations whereby domestic industries are being closed in favor of foreign companies either due to increased cost of production.

For finance and macroeconomics, inflation rate decreased drastically in 2007 from 27% to 6% and this is because the figure had been inflated by the high inflation rate of Zimbabwe's currency. After standardizing their currency and adoption of US dollar, there is stabilization of inflation with slight increases and decreases till 2015. This shows that the economy of most African nations is stable and not erratic and therefore, rate of return of investment can be projected which is a key information for would be investors. Domestic credit offered to private investors as a share of GDP has also been increasing steadily. This shows that nations are trying to encourage local investors access financing from banks and other financial institutions. This is critical for Africa as it allows local entrepreneurs to seek financial assistance and this promotes local level innovation which could play a key role in building economic resellience and also in attracting foreign investment.

For free movement of people, the trend has been constant and so far, the best performing indicator with a score of 41%. Most countries are opening up their borders either as a positive reciprocity act between countries or either because they are landlocked and need the free flow of people for trade purposes. With countries adopting regional bloc protocols such as the EAC tourist visa and

also free movement of citizens of partner countries within a regional bloc such as ECOWAS, EAC and SADC, this score is bound to improve.

The last and final measure of integration is infrastructure and from below, it has been improving over the years from 18% to 26%. Improved infrastructure integration means increased efficiency in the production industries and that countries are now more connected and the networks for flow of trade and investments are established.

4.1.11 Factor influencing the relationship between regional economic integration and nation competitiveness. - Asymmetry

Africa constitutes of countries at different level of economic and institutional development which causes the economies of the region to be asymmetrical as there are some countries that are performing better than the others in terms of GDP, education, infrastructure and institutions. Even though integration may be beneficial through intra-regional relationships; it may be detrimental within Africa as there is bound to be winners and losers as it may cause divergence of per capita income levels for members (Venables, 2003) and in the long run cause failure in the integration process.

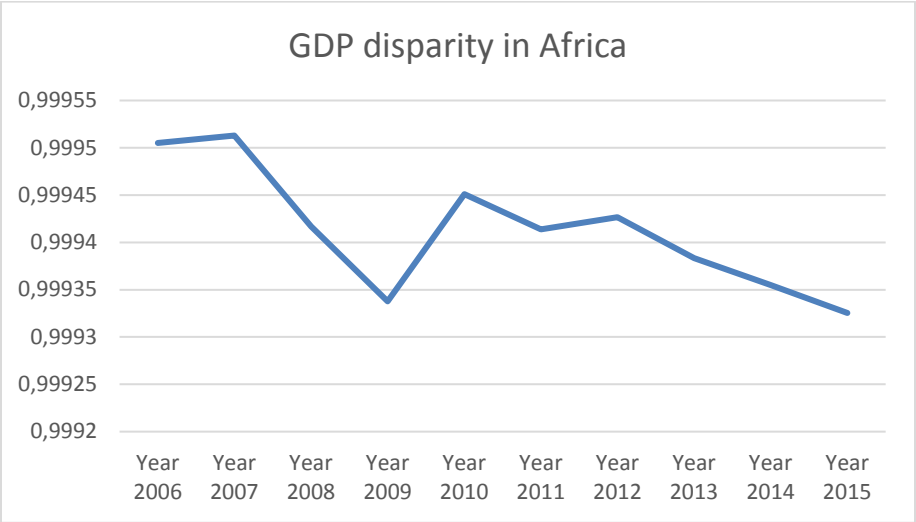
Market size is used as a proxy for asymmetry as it is used by Krapohl (2010).

```
. sum Asym

    Variable |        Obs        Mean    Std. Dev.       Min        Max
-------------+---------------------------------------------------------
        Asym |        520    .0920081    .1957782    .000487          1

.
```

Source: Author's calculations, 2017 based on WDI.

The figure above illustrates the summary of the asymmetry data used for analysis. The most developed country recorded across the 10 years has a score of 1 while the least developed has a score of 0.000487 which is almost a 99.9996% difference.

Graph 8 GDP Disparity

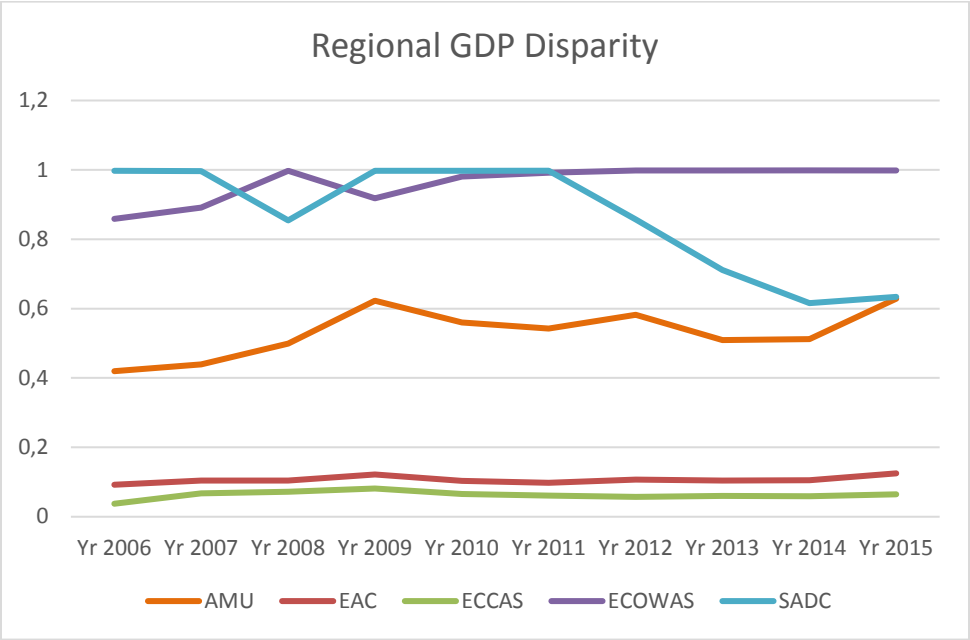


Source: Author's calculations,2017

The figure above is a representation of how the disparity between the country with the highest GDP and that with the lowest GDP have been changing. The asymmetry has been determined by calculating the proportion of a country's GDP relative to the highest country's GDP which is represented by a score of 1. Generally, the gap between these two has been huge with a 99% margin and where there is change it has been very minimal. Between the period 2006-2015, the greatest disparity was in 2007 at 0.9996 which was reduced drastically in 2009 when there was a huge drop to 0.9934. In 2010, the margin increased by 0.0011 to 0.9945 and from there henceforth has decreased steadily to 0.999325.

Regionally, from the figure above, ECOWAS and SADC emerge as the most asymmetric regions followed by AMU, EAC and ECCAS which is the least asymmetric of them all. Nigeria, South Africa and Egypt which are the top countries in terms of GDP could be the reason why there is a huge disparity with smaller nations also located within these blocs. EAC and ECCAS with very low disparity measures could be said to be symmetrical in terms of economic productivity and that the difference is uniform as illustrated by the constant graph.

Graph 9 Regional GDP Disparity



Source: Author's calculations,2017

4.2 Inferential Analysis

The purpose of undertaking an empirical analysis is to establish the extent of relationship between regional economic integration and a country's competitiveness and characterize this relationship using the mediating factor of asymmetry. This will help in determining the measures of integration that matter the most to a country's competitiveness while controlling for other factors which is key for policy makers in national governments. To achieve this; a panel regression with interaction terms is employed whereby, all the interaction terms are included in a single model in steps to determine whether their effect is preserved in the presence of other factors in determining the relationship between regional economic integration and FDI. The control variables are introduced in finally in three steps whereby they represent government measures, social factors and physical factors.

4.3 Panel regression model with Random effects and interaction terms

The statistical regression was done using the five independent variables and their interaction terms with asymmetry and the controls variables in one model. By using this approach, I could compare the real effects of the regional economic integration indicators on FDI and also within the same model compare the interaction effects of the new created variables with asymmetry, with FDI. This was done to basically check whether there is a change in the real effects of the independent variables when the interaction variables created with asymmetry and control variables are included step by step.

From the table 9 below, it is clear that there is an interaction taking place between the indicators for regional economic integration and asymmetry. These interactions can be observed in the form of change in the coefficient sign of the independent variables and the subsequent interaction variables when asymmetry is introduced. Another observation is the change in significance of relationship between independent variable and dependent and the subsequent interaction variables.

Final Regression

Table 9 Panel Regression Model with Random Effects and Interaction Terms

VARIABLES	(1.1) logFDI	(1.2) logFDI	(1.3) logFDI	(1.4) logFDI	(1.5) logFDI	(1.6) logFDI	(1.7) logFDI	(1.8) logFDI	(1.9) logFDI	(1.10) logFDI
Trade Integration	0.00487	0.00114	-0.00465	-0.00407	-0.00689	-0.00529	-3.86e-05	0.00162	0.0105**	0.0118**
	(0.01)	(0.01)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.01)	(0.00)	(0.01)
Asymmetry	0.305	-2.225	0.923	2.020	16.61	15.98	22.23**	22.70**	13.28*	15.22**
	(1.95)	(2.71)	(2.50)	(2.94)	(11.21)	(10.55)	(10.04)	(9.70)	(7.05)	(7.16)
Trade Integration * Asymmetry	0.0763**	0.0762**	0.0831**	0.0785**	0.160*	0.147*	0.118	0.0981	0.0387	0.0328
	(0.04)	(0.03)	(0.04)	(0.03)	(0.08)	(0.08)	(0.09)	(0.09)	(0.06)	(0.06)
Production Integration(logTCI)		1.058***	1.188***	1.221***	1.069***	1.025***	0.932**	0.964**	0.764**	0.905**
		(0.33)	(0.32)	(0.33)	(0.36)	(0.37)	(0.37)	(0.38)	(0.35)	(0.41)
Production Integration (logTCI) *Asymmetry		-1.305	-1.136	-1.368	2.409	2.012	4.162	3.988	0.642	0.975
		(1.05)	(1.16)	(1.25)	(2.83)	(3.78)	(3.39)	(3.40)	(2.94)	(2.87)
Production Integration (IndustryofGDP)			0.0464***	0.0439***	0.0440***	0.0428***	0.0380***	0.0368***	0.0440***	0.0454***
			(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Production Integration (IndustryofGDP) *Asymmetry			-0.127***	-0.132**	-0.227***	-0.224**	-0.171	-0.163	-0.0831	-0.102
			(0.04)	(0.05)	(0.09)	(0.10)	(0.11)	(0.11)	(0.10)	(0.11)
Finance/Macroeconomy(Inflation)				0.0402*	0.0428*	0.0424*	0.0422*	0.0419*	0.0371*	0.0402*
				(0.02)	(0.03)	(0.03)	(0.03)	(0.02)	(0.02)	(0.02)
Finance/Macroeconomy(Inflation)*Asymmetry				-0.119	-0.253	-0.242	-0.282	-0.278	-0.168	-0.192
				(0.12)	(0.18)	(0.19)	(0.19)	(0.18)	(0.14)	(0.15)
Finance/MacroEcon(logDcreditprvtsectorofGDP)					0.0892	0.126	0.488*	0.420	0.834***	0.831***
					(0.32)	(0.31)	(0.29)	(0.30)	(0.22)	(0.21)
Finance(logDcreditprvtsectorofGDP)*Asymmetry					-2.682	-2.505	-2.584	-2.553	-1.978	-1.870
					(2.10)	(2.10)	(2.35)	(2.23)	(1.49)	(1.47)
Free movement of people						-0.401	-0.351	-0.274	0.415	0.518
						(0.79)	(0.74)	(0.79)	(0.70)	(0.70)
Free movement of people *Asymmetry						-0.638	-3.434	-4.115	-8.637	-9.429
						(9.43)	(10.45)	(10.03)	(9.70)	(10.33)
Regional Infrastructure integration							-0.0267***	-0.0349**	-0.00316	-0.00209
							(0.01)	(0.01)	(0.01)	(0.01)
Regional Infrastructure integration *Asymmetry							-0.0192	-0.0124	-0.00486	-0.0176

							(0.05)	(0.04)	(0.03)	(0.04)
Government effectiveness								0.0168	0.0257**	0.0251*
								(0.02)	(0.01)	(0.01)
Political stability								-0.00656	1.80e-05	0.000756
								(0.01)	(0.01)	(0.01)
Education									-0.0650***	-0.0628***
									(0.02)	(0.01)
LogTotal Population									0.872***	0.862***
									(0.14)	(0.14)
1.Previous colonisers									0.279	0.301
									(0.34)	(0.34)
1.Landlockness										0.333
										(0.22)
Total Land size										1.98e-07
										(0.00)
2.ECOWAS	-0.623	-0.829*	-0.748*	-0.665	-0.767*	-0.736*	-0.837**	-0.806*	-0.188	-0.0181
	(0.45)	(0.45)	(0.42)	(0.43)	(0.40)	(0.43)	(0.41)	(0.41)	(0.24)	(0.23)
3.AMU	0.137	-0.102	-0.261	-0.168	-0.512	-0.536	-0.603	-0.595	-0.234	-0.154
	(0.46)	(0.39)	(0.45)	(0.45)	(0.54)	(0.52)	(0.52)	(0.55)	(0.39)	(0.39)
4.EAC	0.157	-0.344	-0.359	-0.436	-0.634	-0.419	-0.400	-0.526	-0.622	-0.632
	(0.64)	(0.60)	(0.56)	(0.54)	(0.54)	(0.68)	(0.69)	(0.69)	(0.51)	(0.46)
5.ECCAS	-0.678	-0.671	-1.017**	-0.850**	-0.944**	-1.012**	-0.955**	-0.782	0.577	0.662*
	(0.62)	(0.51)	(0.43)	(0.43)	(0.46)	(0.47)	(0.46)	(0.48)	(0.38)	(0.37)
Constant	5.261***	7.560***	7.074***	6.821***	6.502***	6.418***	5.481***	5.461***	-6.085***	-6.279***
	(0.55)	(0.92)	(0.89)	(0.96)	(1.31)	(1.31)	(1.27)	(1.24)	(2.11)	(2.14)
Observations	172	172	172	172	172	172	172	172	172	172
Number of C_id	37	37	37	37	37	37	37	37	37	37
R-squared	0.4724	0.5982	0.7092	0.7032	0.754	0.7461	0.754	0.7696	0.8887	0.8955

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

P-Value- This is the statistical significance of estimated coefficients. It is related to precision of the estimate. Whereby;

P < 0.1 Conditionally significant (*) P < 0.005 Significant (**) P < 0.001 Very Significant (***)

Source: Author's calculations, 2017

From the table 9 above, the first model 1.1 has three independent variables which are trade integration, asymmetry and the interaction variable of trade integration and asymmetry. Both trade integration and asymmetry have a positive relationship with FDI even though the outcome is not significant. The positive coefficient shows that increase in trade integration leads to increase in FDI in countries which is in line with empirical studies done by (Pärletun, 2008). Increased trade integration through establishment of common markets is an indication of increased market size which is one of the determinants of market seeking FDI (Wall, Burger, et al., 2011). When an interaction is made between trade openness and asymmetry, the relationship with FDI of the new interaction variable remains positive but the nature of relationship becomes very significant. This illustrates that when there is an increase in variation in trade integration as represented by trade openness between countries, that is, when one country is more open to trade than another country, FDI will increase significantly in the country that is more open to trade as countries that are more open are viewed as being friendlier in doing business. The endogenous growth theory collaborates this notion as a country with a more open trade policy is able to benefit more from investments as they are able to redirect factors of production to sectors that have comparative advantage to ensure efficient use of investments (Solow, 1956). Edwards (1992) provides that countries with higher openness tend to grow faster economically as they are able to absorb new technology which comes about from inward FDI as compared to countries with lower openness.

In model 1.2 to 1.3, the indicators for productivity integration, intermediate goods trade complementarity index and industry of GDP, are introduced into the model together with their interaction terms with asymmetry. Both of these indicators have a positive and very significant relationship with the dependent variable FDI. This means that when a country becomes more production integrated, more FDI flows into it to take advantage of economies of scale arising from clustering of related industries and services (Turok, 2004). When asymmetry is introduced to the model, the coefficient sign of the interaction terms become negative with the interaction of industry of GDP * Asymmetry being very significant. The negative sign of the interaction means that when there is a huge difference in the production integration of countries within a regional economic bloc, FDI will decrease in the country with less production integration and increase to the one with more production integration. This explained is that when one country dominates a bloc by having all the industries located in it, the notion of dependency theory emerges whereby resources flow from the countries with few production industries to these dominating countries which end up gaining at the expense of the other members (Krapohl, 2010).

In model 1.4 and 1.5, the indicators for Financial and Macroeconomics integration are introduced. These are inflation and domestic credit to private sector (%GDP) and their interaction terms. The relationship between financial and macro environment integration and inward FDI is generally positive and significant. When interaction terms are introduced between inflation and asymmetry and domestic credit allocated to private sector per GDP and asymmetry, the coefficient of these interaction terms become negative for both indicators but they are not significant. The negative relation means that when there is a huge disparity in terms of inflation and domestic credit to private sector between countries within a regional bloc, those countries with huge inflation rate will have their FDI reduce as a high rate of inflation signifies economic instability (Gwartney, Stroup, et al., 2014) while those countries who have a better domestic credit to private sector per GDP rate will also have a decrease in FDI. This could be attributed to the host nation trying to strengthen domestic industries by having policies allocate finances to domestic investors with the aim of strengthening and protecting domestic industries

and by discouraging the settling down of foreign industries especially export oriented FDI that may cause competition.

In model 1.6 when Free movement of people is introduced to the model, its relationship with inward FDI is negative but only in model 1.6, 1.7 and 1.8. The negative relationship means that when the visa openness of a country increases, the inflow of FDI to host country decreases. When the interaction term asymmetry is introduced to the model, the coefficient sign and level of significance remains unchanged indicating no interaction terms. Since these outcomes before and after interaction have not changed, they will not be discussed.

In model 1.7 when I introduce the final independent variable, regional infrastructure integration, which encompasses electricity, communication, transport and water in model the relationship with FDI is negative and very significant. The negative relationship means that when a country improves its infrastructure, the FDI decreases very significantly. This is a very rare outcome and it usually occurs in the long run when a country has attained the highest most level of infrastructural development in terms of innovation and sophistication. This could be as a result of the Schumpeterian theory whereby too much technology innovation may also cause stagnation in growth causing creative destruction (Martin and Sunley, 2014). When the interaction term is introduced, the coefficient sign and level of significance remains unchanged indicating no interaction terms. Since these outcomes before and after interaction have not changed, they will not be discussed.

In model 1.10, the relationship between regional economic integration and inward FDI remains significant (as indicated by the yellow highlights) even after including interaction variables and the control variables. However, the interaction variables seem to have no significant relationship with the dependent variable. Some of the control variables chosen as being possible influencers of the dependent variable have emerged as possible factors that could be the cause for asymmetry. These are education levels, population, landlockness, land size and political stability. Despite this, the r-square which is a measure of the percentage the chosen model explain varies from 47.24% in model 1.1 to 89.55% in the final model. This indicates that the panel regression model with random effects and interaction terms used in this research explains 89.55% relationship between regional economic integration and inward FDI, therefore indicating the strength of the model chosen.

Chapter 5: Conclusions and Recommendations

5.1 Conclusions

Regional integration has been an important element of policy advice to developing countries since the onset of globalization with economic growth being the desired outcome. The main purpose of integrating as discussed in literature is to basically integrate markets by taking away barriers that may be limiting to free movement of goods, people and capital. With trade openness, a country is able to promote the efficient allocation of resources, enhancing both local and international competition and allowing for the diffusion of technology and knowledge across the countries in the form FDI. Regional economic integration in Africa has been viewed as both positive and negative approach to achieving competitiveness. Proponents of integration have argued that integration will help African countries in improving their competitiveness by increasing their market size from the small fragmented economies they currently have (Artige and Nicolini, 2006, Wall, Burger, et al., 2011) while those who oppose argue that African countries are too different in terms of country size, population, level of infrastructure development and market size and that this lack of symmetry will lead to some countries benefiting more than others, in this case those countries that are perceived to be most developed ones (Venables, 2006, Krapohl, 2010).

5.1.1 Answering the research questions

This research study descriptively and empirically investigates the extent of impact of regional economic integration to African countries' competitiveness by analysing a panel data set for the time period 2006-2015.

1. To answer sub question one and two which are both descriptive and are as follows:

1. What are the trends for FDI inflow?
2. What are the trends in Regional economic integration in Africa?

An in-depth descriptive analysis has been undertaken for the two sub questions in section 4.1 under descriptive analysis which has shown a general improvement in both the dependent and the indicators of the independent variable across the 10 years of 2006-2015.

2. To answer my third research sub question on How does regional economic integration in Africa affect a nation's FDI inflow?

The summary of the outcome of the study is illustrated below in table 10.

Table 10 Outcome summary of panel regression

Independent Variable	**Measure**	**Sign and significance of real effects**
Trade Integration	Openness	Positive S***
Productivity Integration	Intermediate TCI Industry of GDP	Positive S** Positive S***
Financial and Macro Economic Integration	Inflation	Positive S* Positive S***

	Domestic credit to private sector per GDP	
Free movement of people	Visa Openness	Positive $
Regional Infrastructure	Infrastructure	Negative $

Source: Author's calculations, 2017.

From the final results as shown in table 9 model 1.10 and as summarised above; only three aspects of regional integration had a significant relationship with FDI. These are; trade integration, production integration and financial and macro-economic integration identified by their real effects impact on the dependent variable. These three variables of regional integration stand out as the most important factors that determines the amount of FDI an African county receives when it comes to integration as illustrated by the positive and very significant sign in the table 10 above.

I. Trade integration:

The positive coefficient of the measured indicator trade openness shows that increase in trade openness leads to increase in FDI in African countries which is in line with empirical studies done by Parletun (2008). Trade integration is important for African countries which are characterised by small fragmented economies as it is able to come together to form one large market size which is one of the determinants for market seeking FDI (Wall, Burger, et al., 2011). Moreover, by liberalising trade and doing away with trade barriers; a country is able to influence the flow of FDI through risk-return relationship whereby investors are able to invest and repatriate returns and profits to their home countries and a low transaction cost theory (Williamson ,1975) whereby FDI goes to areas with least transaction bottlenecks.

II. Productivity Integration,

Under intermediate trade complementarity index; the more a country's intermediate goods exports compliment those of the importing country, FDI would generally increase in that a high complementarity index intensifies the trade relationships between countries and therefore when trade increases between countries, FDI increases in host countries which leads to efficiency in production and carrying out of trade transactions. The same goes for industry of GDP which is a proxy measure of the industrialization process of a country. When a country becomes more industrialized, more FDI flows into it to take advantage of economies of scale arising from clustering of related services (Martin and Sunley, 2014).

III. Finance and Macro economic environment

A positive relationship between inflation and FDI even though rare usually occurs in the long run whereby increased flow of FDI in the host country lead to increased inflation as the amount of money circulating local economy becomes more or the resources being extracted by an FDI firm become less and consumers have to compete for the little remaining thereby pushing the prices of consumer goods up. However, most investors would prefer having a low inflation rate as this is a sign of economic stability (Gwartney, Stroup, et al., 2014) and also may act as an incentive to investors who want to benefit from a high investment rate of return. With domestic credit to private sector per GDP, the more a nation spends more to domestic credit in the form of loans to local entrepreneurs to start businesses, the economy is expected to expand with increased productivity from these new ventures and as a result FDI increase.

Free movement of people and regional infrastructure development each had a positive impact to FDI but the relationship is not significant on the competitiveness of African countries in relation to the amount of inward FDI they receive.

3. **To answer my fourth sub research question on How does asymmetry within a regional bloc affect the overall competitiveness of African nations?**

Table 11 Outcome summary of Interaction terms

Independent Variable	**Variables**	**Sign and significance of real effects (Models)**									
		1.1	**1.2**	**1.3**	**1.4**	**1.5**	**1.6**	**1.7**	**1.8**	**1.9**	**1.10**
Trade Integration	Real effects Trade Integration	+	+	-	-	-	-	-	+	+s**	+s**
	Trade Integration*Asymmetry	+s**	+s**	+s**	+s**	+s*	+s*	+	+	+	+
Productivity Integration Industry of GDP	Real effects Industry(GDP)			+s***	+s***	+s***	+s***	+s***	+s***	+s***	+s***
	Industry(GDP)*Asymmetry			-s**	-s**	-s**	-s**	-	-	-	-

Source: Author's calculations, 2017.

The table above shows the interaction effects between the independent variable and the interactive variable asymmetry. From table 9 on the panel regression, TradeIntegration*Asymmetry and Productivity Integration Industry of GDP*Asymmetry are the only two terms that had significant relationship with the dependent variable FDI.

The positive coefficient in trade openness basically means that as variation in trade openness increases within a regional bloc, that is the gap between the most open and least trade open countries; those countries which are more open to intra bloc trade will have an increase in the inflow of their FDI while those countries with less openness will have less FDI. This is in tandem with the findings of Parletun (2008). Based on map 3 of trade openness in Africa for the year 2006 and 2015, most African countries seem to have low trade integration. This is illustrated by the low scores in trade openness and the green colour which represents the lowest scores. This assumed lack of openness could be attributed to strong protectionist approach adopted by most countries as compared to liberalism whereby nationalism overrides regionalism. However, all is not lost as there are slight improvements in openness despite them being minimal as illustrated in the same map for the year 2015.

The negative coefficient in the industry of GDP on the other hand illustrate that as the variation of countries in terms of level of industrialisation increases within a regional bloc whereby on country becomes too industrialised at the expense of other member countries; FDI will decrease

for those most industrialised countries and this can be explained by the Schumpeterian theory (Martin and Sunley, 2014) whereby too much advancement in technology makes a country be perceived as having attained the highest level of development and sophistication therefore, opportunities for learning and sharing are reduced. Moreover, one country dominating on industrialisation may lead to a situation as brought out by Raúl Prebisch in the dependency theory(Ferraro, 2008) whereby the countries without industries will have to rely on the most industrialised leading to a situation where the resources flow from the low industrial countries to these more industrial. In the long run, more FDI is channelled to these more industrialised countries at the expense of these low industrialised countries.

4. **Finally, to answer my Main research question on to what extent does regional economic integration affect the competitiveness of an African country?**

From the inferential analysis, my main finding is that Regional economic integration impacts significantly on the competitiveness of African countries. This outcome supports the theoretical linkages of regional integration and FDI based on Bende-Nabende(2002) and on previous studies done by Kreinin and Plummer (2008) and Te Velde and Bezemer (2006).

The output of my panel regression analysis has demonstrated that indeed regional economic integration does impact on the competitiveness of African countries' competitiveness. These have come out significantly when looking at both the real effects and the interactive effects of the independent variable. The role of asymmetry in regional blocs has also come out as a significant part of integration which cannot be assumed especially when it comes to trade and productivity integration whereby the interactive relationship with the dependent variable emerged significant. This is somehow expected especially with the current push by the Africa union to establishing a united Africa through a common market whereby trade becomes borderless and also the increased policy advice for Africa by their development partners to trade more with itself and also to invest more with each other by setting up manufacturing industries so as to cut off its dependency on the developed countries for manufactured goods. Trade and production integration are so important to Africa that without trade; most of Africa's landlocked countries will be cut off from accessing foreign trading which mostly takes place in coastal ports.

Therefore, countries need to also adopt trade openness policies so as to liberalise trade and remove trade bottlenecks such as border controls so as to ease the costs of trading especially for these land locked countries. Just like from the literature; increased trade openness means a liberalised market that is an incentive for foreign investors which will increase the amount of FDI coming into African countries (Pärletun, 2008). Moreover, African countries should adopt production integration so as to benefit from economies of scale that come about from agglomeration of industries which can also lead to specialisation in production. Establishing of industries should be easier for a bloc as compared to an individual country as now the member countries of a bloc can contribute to set up one for the region. With increased trade that results in a big market size and diversification of African products from raw materials to a variety of manufactured goods, African countries are expected to improve in their competitiveness for foreign investment and trade.

5.2 Recommendations

Africa regional integration has a great potential for improving the economic situation of Africa and its citizens as illustrated by the outcomes of these results. However, what has emerged is

that only few countries have embraced regionalism while the rest are still overprotective of their nationalism. Therefore, to be able to gain from the benefits of integration, countries should be able to shed off the nationalism protection and be able to embrace regionalism since integration requires cooperation with neighbouring countries and partners and cannot be attained by an individual country. This can be achieved through, first, African leaders should be able to take the necessary steps to create an environment that will promote trade openness, industrial productivity and reduces inflation rate which is highly essential for attracting foreign capital into an economy.

Secondly, since the economy asymmetry of African countries has come out as a significant factor in determining which countries benefit the most from inward FDI, there is need to ensure that all countries benefit uniformly through equitable distribution of regional wealth and resources and so as to avoid dependency which is brought about by one country dominating the others within a bloc and benefitting alone at the expense of others. This can be managed by signing agreements on how any benefits can be shared between member countries and also establishment of regional institutions that are able to resolve any disputes that may arise from this.

Finally, this study has attempted to provide new insights and contributions to the existing knowledge on the impact of regional economic integration on countries' competitiveness with its focus on Africa, a region that has very little studies done on this matter. During my research, I struggled to find a widely accepted measure of regional integration. By settling for the Africa regional integration index definition, I had to find some proxies for the variables used as most of the various variables provided were hard to find data. However, the final indicators chosen were a close representation of what integration is and what it means based on previous empirical studies done for other regions. Therefore, for future research and when a scientific accepted measure of regional economic integration is accepted, it would be interesting to conduct the same study to confirm whether the relationship of regional integration and FDI is still the same and significant or whether it will change. At an urban scale; future research may also be undertaken to investigate whether there is asymmetry within countries and how it affects the competitiveness of city regions and their flow of FDI.

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Annex 1: Other Regressions Run

Simple Panel Regression

Table Outcome Simple Panel Regression

VARIABLES	(1) logFDI	(2) logFDI	(3) logFDI	(4) logFDI	(5) logFDI	(6) logFDI	(7) logFDI	(8) logFDI	(9) logFDI	(10) logFDI
Trade openess	0.00360	-0.00049	-0.00568	-0.00570	-0.00778*	-0.00393	-0.00305	-0.00253	0.0107***	0.0119***
	(0.01)	(0.01)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
LogProductivity		1.156***	1.355***	1.380***	1.167***	1.027***	1.093***	1.109***	0.719**	0.866**
Integration		(0.34)	(0.29)	(0.31)	(0.29)	(0.30)	(0.32)	(0.32)	(0.29)	(0.34)
IndustryofGDP			0.0504***	0.0484***	0.0541***	0.0470***	0.0471***	0.0482***	0.0424***	0.0421***
			(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Inflation				0.0409*	0.0457**	0.0429**	0.0420*	0.0420**	0.0309*	0.0329*
				(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)
LogDomestic credit to private sector of GDP					0.453*	0.444*	0.656***	0.623**	0.556**	0.577**
					(0.25)	(0.24)	(0.25)	(0.27)	(0.22)	(0.21)
No_visa						-1.361*	-1.405*	-1.223	0.0936	0.165
						(0.76)	(0.75)	(0.78)	(0.51)	(0.53)
Infra_Int							-0.0166*	-0.0200**	0.00319	0.00283
							(0.01)	(0.01)	(0.01)	(0.01)
Govt_efft								0.0148	0.0244**	0.0243**
								(0.01)	(0.01)	(0.01)
stability								-0.0118	0.00117	0.00166
								(0.01)	(0.01)	(0.01)
Educ									-0.0561***	-0.0562***
									(0.01)	(0.01)
logTotPopulation									0.954***	0.938***
									(0.12)	(0.12)
Lang									0.272	0.294
									(0.29)	(0.29)
Land_lock										0.285
										(0.22)
Landsize										1.86e-07
										(0.00)

2.REC_Id	-0.725	-0.881*	-0.760	-0.714	-0.528	-0.480	-0.611	-0.619	-0.0855	0.0711
	(0.59)	(0.53)	(0.48)	(0.48)	(0.48)	(0.51)	(0.52)	(0.52)	(0.26)	(0.24)
3.REC_Id	1.083	0.670	-0.00557	0.0941	-0.0383	-0.190	-0.0702	-0.252	0.282	0.351
	(0.70)	(0.55)	(0.58)	(0.60)	(0.57)	(0.48)	(0.55)	(0.54)	(0.38)	(0.38)
4.REC_Id	-0.192	-0.701	-0.621	-0.744	-0.506	-0.0514	-0.0703	-0.344	-0.625	-0.625
	(0.76)	(0.63)	(0.56)	(0.54)	(0.56)	(0.69)	(0.68)	(0.77)	(0.49)	(0.46)
5.REC_Id	-1.064	-0.958*	-1.301***	-1.143***	-0.674	-1.026**	-1.089**	-1.028*	0.461	0.571
	(0.72)	(0.57)	(0.44)	(0.44)	(0.50)	(0.52)	(0.52)	(0.57)	(0.39)	(0.38)
Constant	5.905***	8.317***	7.747***	7.533***	5.684***	6.004***	5.896***	5.931***	-6.035***	-6.107***
	(0.65)	(0.88)	(0.77)	(0.83)	(1.01)	(1.05)	(1.05)	(1.04)	(1.91)	(1.93)
Observations	172	172	172	172	172	172	172	172	172	172
Number of C_id	37	37	37	37	37	37	37	37	37	37

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

From the above outcome; it is clear that there exists a significant relationship between regional economic integration and FDI (Bende-Nabende, 2002) as all the independent variables measure have a significant value within the 10 outcomes. In the last outcome where the model has all the independent and control variables; Trade openness comes out positive and significant just like as expected in literature (Charkrabarti 2001). The indicators for productivity integration also emerge positive and significant meaning that as a country improves its industry of GDP and continues to produce goods that are complimenting to each other within the regional block, the FDI will increase. The same outcome is seen for the indicator for Financial and macro-economic integration which provides that as countries allocate more funds to private sector, FDI will increase as by providing more funds to private entrepreneurs, it boosts the local industry through creation of job opportunities and innovation from new emerging firms.

Interaction between Independent Variables and Mediating Variable

Trade Integration and FDI competitiveness

Table Outcome Trade Interaction with Asymmetry effect to FDI

VARIABLES	(1.1) logFDI	(1.2) logFDI	(1.3) logFDI	(1.4) logFDI
Trade Openness	0.00487	0.00511	0.0221***	0.0218***
	(0.01)	(0.01)	(0.00)	(0.01)
Asymmetry	0.305	0.430	2.458*	2.347
	(1.95)	(2.10)	(1.47)	(1.49)
c.TradeOpenness#c. Asymmetry	0.0763**	0.0734*	-0.0123	-0.00893
	(0.04)	(0.04)	(0.03)	(0.03)
Government Effectiveness		0.00276	0.0273**	0.0258*
		(0.02)	(0.01)	(0.01)
Political stability		-0.00143	0.00643	0.00644
		(0.01)	(0.01)	(0.01)
Tertiary Education enrollment			-0.0281*	-0.0287*
			(0.02)	(0.02)
logTotalPopulation			1.029***	1.040***
			(0.14)	(0.13)
1.Lang			-0.0144	-0.0177
			(0.29)	(0.30)
1.Land_lock				-0.0180
				(0.28)
Land size				-1.20e-07
				(0.00)
2.ECOWAS	-0.623	-0.601	-0.271	-0.347
	(0.45)	(0.49)	(0.33)	(0.38)
3.AMU	0.137	0.126	0.469	0.462
	(0.46)	(0.49)	(0.38)	(0.39)
4.EAC	0.157	0.155	-0.204	-0.276
	(0.64)	(0.66)	(0.38)	(0.43)
5.ECCAS	-0.678	-0.635	0.251	0.184
	(0.62)	(0.71)	(0.50)	(0.54)
Constant	5.261***	5.197***	-6.307***	-6.234***
	(0.55)	(0.72)	(1.65)	(1.63)
Observations	172	172	172	172
Number of Country id	37	37	37	37
R-squared	0.4724	0.4692	0.7751	0.7753

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

The first model 1.1 has three independent variables which are trade openness, asymmetry and the interaction variable of trade openness and asymmetry. Both trade openness and asymmetry have a positive relationship with FDI even though the outcome is not significant. The positive coefficient shows that increase in trade openness leads to increase in FDI in nations which is

in line with empirical studies done by (Pärletun, 2008). The same relationship is observed in model 1.2 when I control for government interventions. On the other hand, when an interaction is made between trade openness and asymmetry, the relationship is positive and significant which illustrates that when there is increase in variation in trade openness between countries, that is, when one country is more open to trade than another country, FDI will increase significantly in the country that is more trade open as countries that are more open are viewed as being friendlier in doing business.

In model 1.3, more control variables touching on social characteristics are controlled in the model. These are education and total population. The addition of these variables changes the relationship between trade openness with FDI which becomes very significant but still maintains the positive relationship. However, the interaction terms between trade openness and asymmetry becomes negative and not significant when run with the additional control variables. The difference in level of openness between countries affect the integration process which as a result impact the relationship with FDI because when one country is more open than the other; the open country is adopting liberal policy measures while those that have low openness are seen as having protective policy measures on trade. As a result, instead of the small fragmented market economies coming together to form one big market size which is ideal for FDI attraction and investment, the status quo of small fragmented economies is maintained and therefore FDI investments reduces. The same relationship is observed in model 1.4 when more controls are undertaken on physical factors such as land-lockness and land size.
To analyse the regional variation in the relationship between trade openness and FDI dummy variables for the five RECs have been included in the regression models. The results show that there is no significant variation in the relationship between trade openness and FDI across regions. However, if EAC and AMU would improve their level of openness to that of SADC, they should be able to improve their flow of FDI. SADC from the descriptive analysis had the highest tarde openness score with AMU being the most closed.

Productivity integration and FDI competitiveness

Table Outcome Productivity Interaction with Asymmetry effect to FDI

VARIABLES	(2.1) logFDI	(2.2) logFDI	(2.3) logFDI	(2.4) logFDI
Log Intermediate TCI	1.199***	1.178***	1.148***	1.243***
	(0.31)	(0.29)	(0.28)	(0.31)
Industry of GDP	0.0457***	0.0467***	0.0437***	0.0437***
	(0.01)	(0.01)	(0.01)	(0.01)
Asymmetry	4.398***	4.112**	1.277	1.906
	(1.64)	(1.77)	(1.44)	(1.66)
c.Intermediate TCI#c.Asymmetry	-1.213	-1.312	-0.998	-0.955
	(0.85)	(0.90)	(0.61)	(0.67)
c.IndustryofGDP#c.Asym	-0.0969**	-0.0958**	-0.0515**	-0.0732**
	(0.04)	(0.04)	(0.02)	(0.03)
Govt. effectiveness		0.00744	0.0257***	0.0270***
		(0.01)	(0.01)	(0.01)
Political stability		-0.00403	0.00160	0.00135
		(0.01)	(0.01)	(0.01)
Tertiary Education enrollment			-0.0433***	-0.0437***

			(0.01)	(0.01)
LogTotal Population			0.651***	0.606***
			(0.07)	(0.08)
1.Lang			0.207	0.209
			(0.23)	(0.23)
1.Land_lock				0.0327
				(0.16)
Landsize				2.30e-07
				(0.00)
2.ECOWAS	-0.782*	-0.730	-0.548*	-0.433
	(0.45)	(0.49)	(0.29)	(0.29)
3.AMU	-0.112	-0.178	0.248	0.290
	(0.51)	(0.53)	(0.31)	(0.34)
4.EAC	-0.278	-0.298	-1.014***	-0.909***
	(0.54)	(0.58)	(0.37)	(0.33)
5.ECCAS	-1.006**	-0.907*	-0.398*	-0.326
	(0.43)	(0.52)	(0.23)	(0.23)
Constant	6.802***	6.625***	0.295	0.644
	(0.77)	(0.78)	(0.89)	(0.96)
Observations	172	172	172	172
Number of C_id	37	37	37	37
R-squared	0.6688	0.6658	0.8734	0.8797

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

The first mode has 5 independent variables; intermediate goods trade complementarity index and industry of GDP which are indicators for production integration, asymmetry the mediating variable and their interaction terms. In model 2.1 to 2.4, both the indicators for productivity integration have a positive and very significant relationship with the dependent variable FDI. This means that the more a country's intermediate goods exports compliment those of the importing country, FDI would generally increase in that a high complementarity index intensifies the trade relationships between countries and therefore when trade increases between countries, FDI increases in host countries which leads to efficiency in production and carrying out of trade transactions. The same goes for industry of GDP which is a proxy measure of the industrialization process of a country. When a country becomes more industrialized, more FDI flows into it to take advantage of economies of scale arising from clustering of related services (Turok, 2004).

However, when the interaction term is introduced to all the models 2.1 to 2.4, the coefficient sign of the interaction terms become negative with the interaction of industry of GDP and asymmetry being significant meaning that when there is a huge difference in the complementarity index and also difference in industrialization of GDP in countries within a regional economic bloc, FDI will decrease. This explained is that when all countries focus on establishing industries in their countries which in most cases will be of similar characteristics as defined by having the same natural resources due to sharing common physio-geographical zones, competition between countries arises and each seeks to outdo the other. As a result, nationalism outrides regionalism as countries adopt protective measures which interferes with any prospects of gaining from economies of scale brought about clustering and regional integration. Since FDI follows development and large markets, the FDI inflow will decrease due to disaggregation (Martin and Sunley, 2014)..

To analyse the regional variation in the relationship between productivity integration and FDI, dummy variables for the five RECs have been included in the regression models. The results show that there is some negative significant variation in the relationship between productivity integration and FDI across regions in ECOWAS, EAC and ECCAS. With the negative coefficient, this means that, if these regions would improve their level of production integration to that of SADC, their inflow of FDI will decrease.

Free movement of people and FDI competitiveness

Table Outcome Free movement Interaction with Asymmetry effect to FDI

VARIABLES	(3.1) logFDI	(3.2) logFDI	(3.3) logFDI	(3.4) logFDI
Visa openness	-1.864**	-1.901**	-0.444	-0.546
	(0.76)	(0.85)	(0.79)	(0.85)
Asymmetry	1.206	1.178	0.862	0.963
	(1.30)	(1.38)	(0.93)	(0.90)
c.Visa Openness#c.Asymmetry	8.000*	8.142*	2.667	2.064
	(4.77)	(4.76)	(3.11)	(2.98)
Govt_effectiveness		0.00719	0.0209	0.0216
		(0.01)	(0.01)	(0.01)
Political stability		0.000794	0.00552	0.00439
		(0.01)	(0.01)	(0.01)
Tertiary Education enrollment			-0.0185	-0.0238
			(0.02)	(0.02)
logTotal Population			0.689***	0.689***
			(0.13)	(0.14)
1.Lang			0.156	0.107
			(0.34)	(0.37)
1.Land_lock				-0.533*
				(0.29)
Landsize				-1.22e-07
				(0.00)
2.ECOWAS	-0.858**	-0.733	-0.607*	-0.771**
	(0.43)	(0.47)	(0.34)	(0.39)
3.AMU	0.434	0.480	0.605*	0.419
	(0.34)	(0.36)	(0.35)	(0.40)
4.EAC	0.129	0.244	-0.761	-0.656
	(0.65)	(0.72)	(0.59)	(0.62)
5.ECCAS	-1.416**	-1.162*	-0.346	-0.406
	(0.67)	(0.69)	(0.64)	(0.61)
Constant	6.820***	6.473***	-0.906	-0.465
	(0.39)	(0.48)	(1.57)	(1.61)
Observations	172	172	172	172
Number of C_id	37	37	37	37
R-squared	0.5538	0.5554	0.7195	0.7449

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

From the table above and outcomes 3.1 to 3.4, visa openness has a negative relationship with FDI but only in model 3.1 and 3.2 is this relationship significant. The negative relationship

means that when the visa openness of a country increases, the inflow of FDI to host country decreases. This is dependent on the type of policies that have been put in pace to ensure that the security stability of the country and its nationals are not compromised. If these policies are missing and the security becomes a problem, then investors may be afraid to invest in such nations and therefore reduction in FDI. Another reason might be dependent on the type of FDI being received by the host country and the type of immigrants coming in. If the immigrants are better educated than residents of a country which is used to receiving labour intensive FDI, this type of FDI will reduce as more investment shift to the technology sector and since less educated local population is more than the more educated immigrant population, FDI will decrease.

However, when interaction terms are made between visa openness and FDI across all models from 3.1 to 3.4, the coefficient of the interaction terms changes and becomes positive with model 3.1 and 3.2 recording significant results. This means that when one country is more visa open than the other within a regional bloc; the country that is more open will receive more inflow of FDI. This is because with an open visa policy, there is ease of visiting a country without having to undergo the unnecessary visa application bottlenecks and investors see this as a key indicator of how easy it will be to make or administer an investment (Akman, 2016, Yasar, Lisner, et al., 2012).

To analyse the regional variation in the relationship between visa openness and FDI, dummy variables for the five RECs have been included in the regression models. The results show that there is some negative significant variation in the relationship between visa openness integration and FDI across regions in ECOWAS and ECCAS. With the negative coefficient, this means that, if these regions which were perceived to be the most open were to become like SADC which performed poorly in its score for visa openness, they would reduce their level of inflow of FDI will decrease.

Financial and Macro and FDI competitiveness

Table Outcome Financial and Macro Interaction with Asymmetry effect to FDI

VARIABLES	(4.1) logFDI	(4.2) logFDI	(4.3) logFDI	(4.4) logFDI
Inflation	0.0493**	0.0498**	0.0490**	0.0476**
	(0.02)	(0.02)	(0.02)	(0.02)
logDomestic credit to private sector of GDP	0.530	0.510	0.877***	0.849***
	(0.33)	(0.33)	(0.24)	(0.26)
Asym	6.629**	6.847**	6.415***	6.329***
	(2.98)	(2.98)	(2.24)	(2.28)
c.Inflation#c.Asym	-0.131	-0.134	-0.135	-0.130
	(0.13)	(0.13)	(0.10)	(0.11)
c.logDcreditprvtsectorofGDP#c.Asym	-0.514	-0.579	-1.199**	-1.202**
	(0.73)	(0.77)	(0.50)	(0.50)
Government effectiveness		0.00539	0.0184	0.0195
		(0.01)	(0.01)	(0.01)
Political stability		-0.00119	0.00498	0.00416
		(0.01)	(0.01)	(0.01)
Tertiary Education enrollment			-0.0408**	-0.0428**
			(0.02)	(0.02)

LogTotal Population			0.797***	0.796***
			(0.12)	(0.11)
1.Lang			0.200	0.164
			(0.31)	(0.34)
1.Land_lock				-0.358
				(0.32)
Landsize				-3.71e-08
				(0.00)
2.ECOWAS	-0.570	-0.518	-0.420	-0.522
	(0.51)	(0.55)	(0.35)	(0.41)
3.AMU	0.242	0.236	0.496	0.381
	(0.51)	(0.56)	(0.42)	(0.47)
4.EAC	-0.0808	-0.0700	-0.910*	-0.853
	(0.68)	(0.73)	(0.51)	(0.52)
5.ECCAS	-0.131	-0.0242	0.636	0.605
	(0.74)	(0.76)	(0.67)	(0.68)
Constant	3.807***	3.696***	-4.841***	-4.529***
	(0.97)	(0.99)	(1.39)	(1.39)
Observations	172	172	172	172
Number of C_id	37	37	37	37
R-squared	0.4505	0.4465	0.7052	0.7191

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Under this section, inflation and domestic credit for private sector per GDP are used as indicators to represent the financial and macro-economic environment integration. Inflation is used as it determines the economic stability of a nation while domestic credit to private sector as a share of GDP represents the financial support that is offered to the private sector as an engine of economic growth. From the regression results in the table above, the relationship between financial and macro environment integration as represented by inflation based on harmonized consumer price index and the domestic credit for private sector per GDP is generally positive and significant with the significance of domestic credit for private sector per GDP emerging when model 4.3 and 4.4 are run. The positive relationship means that an increase in inflation(HCPI) and domestic credit to private sector per GDP leads to an increase in FDI inflow to the host country. A positive relationship between inflation and FDI even though rare usually occurs in the long run whereby increased flow of FDI in the host country lead to increased inflation as the amount of money circulating local economy becomes more or the resources being extracted by an FDI firm become less and consumers have to compete for the little remaining. With domestic credit to private sector per GDP, the more a nation spends more to domestic credit in the form of loans to local entrepreneurs to start businesses, the economy is expected to expand with increased productivity from these new ventures and as a result FDI increase.

However, when interaction terms are introduced between inflation and asymmetry and domestic credit allocated to private sector per GDP, the coefficient of these interaction terms become negative for both indicators with the interaction term of domestic credit allocated to private sector per GDP and asymmetry becoming significant in the 3.3 and 3.4 models when I control for social and physical factors. The negative relation means that when there is a huge disparity in terms of inflation and domestic credit to private sector between countries within a regional bloc, those countries with huge inflation rate will have their FDI reduce as a high rate

of inflation signifies economic instability (Macpherson, 2013) while those countries who have a better domestic credit to private sector per GDP rate will also have a decrease in FDI. This could be attributed to the host nation trying to strengthen domestic industries by having policies that protect such industries and discourage the settling down of foreign industries that may cause competition.

To analyse the regional variation in the relationship between productivity integration and FDI, dummy variables for the five RECs have been included in the regression models. The results show that there no significant variation in the relationship between productivity integration and FDI across regions. However, AMU being the only one with a positive coefficient is the only one bound to improve its inward FDI if it becomes more financial and macro-economic integrated like SADC.

Regional Infrastructure and FDI competitiveness

Table Outcome Regional Infrastructure Interaction with Asymmetry effect to FDI

VARIABLES	(5.1) logFDI	(5.2) logFDI	(5.3) logFDI	(5.4) logFDI
Infra_Int	-0.0158	-0.0237**	0.00559	0.00296
	(0.01)	(0.01)	(0.01)	(0.01)
Asym	4.395***	4.233***	2.063***	1.990**
	(1.37)	(1.15)	(0.80)	(0.83)
c.Infra_Int#c.Asym	0.00120	0.00789	-0.0163	-0.0135
	(0.02)	(0.02)	(0.01)	(0.01)
Govt_efft		0.0186	0.0211	0.0223
		(0.01)	(0.01)	(0.01)
stability		-0.00363	0.00556	0.00401
		(0.01)	(0.01)	(0.01)
Educ			-0.0219	-0.0241
			(0.02)	(0.02)
logTotPopulation			0.760***	0.752***
			(0.15)	(0.14)
1.Lang			0.190	0.158
			(0.30)	(0.32)
1.Land_lock				-0.508*
				(0.30)
Landsize				-1.23e-07
				(0.00)
2.ECOWAS	-1.037**	-0.890*	-0.597	-0.774*
	(0.42)	(0.46)	(0.38)	(0.46)
3.AMU	0.451	0.490	0.547	0.404
	(0.54)	(0.52)	(0.39)	(0.45)
4.EAC	-0.459	-0.465	-0.901*	-0.855*
	(0.62)	(0.65)	(0.48)	(0.52)
5.ECCAS	-1.152*	-0.773	-0.178	-0.217
	(0.70)	(0.74)	(0.62)	(0.62)
Constant	6.327***	5.913***	-1.872	-1.394
	(0.36)	(0.53)	(1.65)	(1.68)
Observations	172	172	172	172

Number of C_id	37	37	37	37
R-squared	0.512	0.5536	0.7142	0.737

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

From literature, integration through infrastructure is very important in trade networks and flow of goods, people and capital between countries. Infrastructure provides the efficiency that is needed to boost productivity of a nation and ultimate economic growth. From the above table, regional infrastructure which encompasses electricity, communication, transport and water in model 5.1 has a negative and not significant outcome. However, when I control for government factors of government effectiveness and political stability in model 5.2, the coefficient remains negative but the outcome is significant. The negative relationship means that when a country improves its infrastructure, the FDI decreases. This is a very rare outcome and it usually occurs in the long run when a country has attained the highest most level of infrastructural development in terms of innovation and sophistication. This could be as a result of the Schumpeterian theory whereby too much technology innovation may also cause stagnation in growth causing creative destruction. (Martin and Sunley, 2014). However, when I control for social factors of education and total population and also the physical factors such as landlockness and land size in model 5.3 and 5.4; the coefficient changes and becomes positive and not significant. This means that an increase in infrastructural development increases the flow of FDI into the host country.

When I introduce the interaction terms of regional infrastructure and asymmetry; for model 5.1 and 5.2 the relationship between the interaction of regional infrastructure and FDI is positive and not significant meaning that when there is a huge variation in level of infrastructure development between countries in a regional bloc, the country with the highest level of development will receive more FDI than that with less level of development. Under model 5.3 and 5.4 when I control for social and physical factors, within the interaction terms; the relationship between the interaction terms of regional infrastructure and asymmetry with FDI becomes negative and not significant. This can be attributed to the fact that when there is a huge difference between countries within the same regional bloc in terms of infrastructure development; the country with the highest and most developed infrastructure will have its FDI decrease as it has already attained innovation and sophistication level and therefore is in no need for factor or efficiency seeking FDI.

In terms of regional variations; if ECCAS and ECOWAS which have significant scores were to gain the level of SADC in regional infrastructure, then they would lose on the inward FDI fow into the region. This could mean that SADC in terms of regional infrastructure is not performing well.

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