

## CHAPTER ONE

### INTRODUCTION

#### 1.1: General Introduction

In the developing world, rapid economic growth and prosperity has often been linked with the massive inflow of Foreign Direct Investment (FDI) into a nation, and the impact of FDI on economic growth has also been argued extensively in the development and economic growth literature for many years.

FDI has acquired increasing importance to economic strength in both invested and recipient countries. In the views of most nations, FDI is a beneficial source of foreign capital in part because it is associated with a transfer of technology and skills in areas like managerial techniques, marketing ideas, accounting practices, and multiple other business-relevant realms. Generally FDI increases income and social welfare on the host except in cases of unexpected market distortions.

The benefits of FDI manifest themselves a little differently in a developing nation than they do in the developed world. FDI is more reliable than equity and debt capital flows thus providing the needed stability to developing nations.

Capital is considered as the stimulant of economic growth and development and developing countries are usually faced with lack of capital, therefore understanding the factors that attract capital has remained very crucial (Shekoofe et al., 2013). FDI is one of the main channels for promoting capital and technological transformation in these countries, it follows that resorting to regional arrangements and economic integration can facilitate the globalisation processes which maintain the economy of many developing countries versus global competition. Besides, competitive benefit is reinforced through this in various markets leading to increasing investment opportunities in the region. The economic welfare is further enhanced through increase in the volume of commercial transaction and thus providing the premise of economic growth and development (Shekoofe et al., 2013).

Furthermore, development of international economic organisations and regional economic unions, merging of financial markets, creation of monetary unions, liberalisation and easier

transaction of goods and services, capital transfer and merging of large productive enterprises that emanate from this would stimulate international business flows and FDI.

During the past few decades, at the global level, an increase in the number and depth of Regional Integration Agreement (RIA) has taken place quite remarkably and facilitating the movement of factors of production across international boundaries. The former European Economic Community has transformed into a single European Union (EU) with the successful adoption of a common currency, Euro. In America, a number of agreements such as the North American Free Trade Agreement (NAFTA), Mercado Común del Sur “southern common market”

(MERCOSUR) among others have been either created or strengthened. Likewise, countries in the South-Asia have adopted the Association of Southeast Asian Nation (ASEAN) Free Trade Area. On a broader East-Asia outlook, ASEAN together with Japan, China and Korea is getting prominence. Africa has successfully formed its Economic Union devoted to fostering regional integration. Each of the regional economic communities in Africa is in various stages of integration with none yet to attain full integration.

However, it should be noted that the nature of FDI and RIA that takes place between the “developed-developed” nations differs from the one that takes place between “developed-developing nations and “developing –developing nations.

Moreover, the increasing importance of FDI relative to other forms of international capital flow has resulted in the increased production of world output (Hagen and Zhang, 2009). The world has been experiencing a dramatic surge in the flows of FDI with comparison to world trade. The surge in FDI involves flows toward both developed and developing countries and there is competition among emerging economies in attracting FDI. This is due to the benefits that accompany FDI flows.

In the light of the above, the role of RIA as a determinant of the location of FDI has become an increasingly relevant issue. An important comment often made is whether RIA is complement or supplement to FDI and this has been in the interest of economists over time.

The attraction of FDI has assumed a prominent place in the strategies of African countries in the face of inadequate resources to finance long-term development. The experience of a small number of fast-growing East-Asian newly industrialised economies has strengthened the belief

that the attraction of FDI could bridge the resource gap of low-income countries and enabling them to avoid further build-up of debt while directly tackling the causes of poverty (UNCTAD, 2004).

During and after the 1990s, the dramatic surge in private capital flows to developing countries represented an additional resource for supplementing local domestic resources in financing economic growth and development. In several of these countries, domestic resources could hardly provide the necessary resources needed for financing economic development.

Given the significant disparities in development, African countries need continuous flows of foreign investment so as to stimulate their economies and thus trigger reductions in poverty levels. Over some few decades, there has been increase in the net inflows of per capita FDI and ratio of FDI to total GDP accompanied with simultaneous increase in the real per capita GDP as well as the Human Development Index. This conveys a message on the linkages between the increase in FDI and welfare. Despite these apparent linkages one could be tempted to question the type of FDI received and the macroeconomic conditions under which some African countries attract FDI.

FDI is considered to be very important to both home and host countries for a number of reasons. First, FDI flows provide an important window through which firms can avoid soaring production costs at home and find attractive markets abroad. Second, since FDI flows are non-debt creating financial commitments, they are preferred instruments of financing external current account deficits particularly in developing countries. Third, FDI flows affect growth positively through decreasing the costs of research and development (R &D) by stimulating innovation in the host country. Borensztein et al. (1998) considered FDI as an important vehicle for transfer of technology, contributing to growth more than domestic investment. Fourth, in the presence of sufficient absorptive capacities, FDI can have positive effects on domestic employment in addition to leading to higher rates of human capital accumulation, hence, it is a potential for the future growth processes and accelerated technological transfer over time. FDI can be an important channel for bringing knowledge and integration into global production chains which are needed for successful export strategy of developing countries.

Both theory and evidence from economic integration suggest that measures that reduce trade costs among partner countries may provide an important stimulus not only to trade, but also to FDI. Moreover, specific regional integration initiative can influence the level and pattern of FDI flows between member countries and also between member countries and outsiders. Issues on Regional Integration (RI) and FDI have begun to emerge and these have coincided with strong growth in both the number of Regional Trade Agreements (RTAs) and the value of FDI in developing countries. There seems to be a consensus in the literature that Regional Integration leads to further FDI and one of the factors often cited is the increase in the “market size” that follows regional integration. Although some integration agreements have been motivated by political consideration, economic consideration is generally the driving force.

A great question of interest relates to the consequences of the process of integration for growth either based on permanent growth or temporary growth effects. It is believed that increasing economic integration between economies would increase the long run growth rate. These prospects for growth would be permanently diminished if a barrier were erected that impeded the flow of goods, ideas and people. Some regions such as the Economic Community of West African States (ECOWAS) have worked towards a customs union so as to benefit from combined prosperity. The assumed benefits include economic of scale and facilitating access to existing resources, infrastructure and capital flows with the ultimate aim of stimulating growth.

Countries enter into regional integration agreements due to the economic benefits it promises. Integration in the short run is expected to stimulate intra-regional trade and investment while in the long –run, it is hoped that the combination of larger markets, tougher competition, more efficient resource allocation and various positive externalities would raise the growth rate of the participating economies.

Trade by and between Sub-Saharan Countries is increasing over time due to the fact that the continent has a very high density and diversity of RTAs and that many African countries are actually members of several different RTAs. It has been observed that RTAs have been proliferating exponentially and Africa is now dense web of RTAs.

The fact that the world has been experiencing a dramatic surge in FDI, which involves flows toward both developed and developing countries throws more light on the relevance of regional integration agreements as a determinant of the location of FDI and growth.

## **1.2: The Statement of the problem.**

The Global recession of the 1980s and consequently the decline in the volume of official development assistance exposed developing countries to the importance of foreign investment as a source of capital, new technology and skill for development.

Regionalism and foreign investment driven growth strategies adopted by African countries and other developing world as complementary strategies for economic development were beset with problem of elaboration and implementation. Measures useful in integrating the national markets through the elaboration of regional industrialization policies were initially lacking, hence liberalization of FDI policy has proved inadequate to attract the desired level of foreign capital inflows. Besides, African countries still lack the capacity and conducive environment to attract FDIs due to restrictive features inhibiting trade and investment, including geographical distance from leading markets, landlocked nature and unfavourable climatic conditions (UNCTAD, 2005). The implication of the poor growth rate resulting from low investment is limited progress in poverty reduction.

Moreover, the small size and poor economic base of African countries means that in isolation their development options are narrowly constrained. Their development and in particular the implementation of any strategy that aims at a significant structural transformation of the economic base demands access to a larger rather than purely national markets and consequently the renewed impetus for economic growth. Whether these efforts towards deeper economic integration have yielded positive results in terms of improved economic performance remains largely unexplored in most cases.

While the African Union (AU) acknowledges that regional economic communities (RECs) have made tremendous progress, the pace of implementation of programmes is still low and needs the support of integration players. The implementation challenges result from lack of adequate technical and financial resources, political will to facilitate implementation of the agreements and absence of coordination and enforcement mechanism for the harmonisation of tariff and the

elimination of non-tariff barriers that embody the inconsistency of the integration process. An instance of this is the ECOWAS compared to Southern African Development Community (SADC) which abandoned this role of implementation for decades and instead concentrated on resolving border conflicts between its member states together with issues of peace and security up to end of 2000s. Also, even though SADC region devised a series of regional protocols to give effect to the principle of regional cooperation and integration, some of these protocols have remained extremely controversial. Moreover, political leaders take policy decisions at RECs without essentially putting in place the institutional arrangement and accountability systems needed for the implementation.

In line with the above, despite the existence of the African Economic Union since 1994, which was re-affirmed in 1999 with the creation of a political entity, the AU, meant to foster economic regional integration, intra African average protection rate is still as high as 6.7% (AEO, 2013). This apart, African region also imposes non-tariff barriers in the form of price controls, product standards, discriminatory foreign exchange allocations, imposition of quotas, non-automatic licensing, administrative hurdles, excessive and unnecessary document requirements and delays. The implementation of several protocols since the beginning of the 1990s and resolution towards higher level of integration have not successfully led to strong intra-regional trade; instead, intra-regional trade has been weak in the ECOWAS and SADC trade blocs due to restrictive borders, an under developed internal infrastructure and growing transnational threats. Even though trade in these RECs grew during 2000s, intra-regional trade stagnated thereafter. This has resulted from weak supply response to regional market opportunities and lack of export competitiveness. Firms in most regions face high production costs due to poor access to production factors such as electricity, credit, skilled labour and other inputs. As a result, they find it difficult to produce competitively. Africa lags behind other developing –country regions in terms of physical and social infrastructure. Road density on the continent is 7.2kilometres per 100 square kilometers of arable land compared to 127 for non-African developing countries. Furthermore, only 67 percent of the population have access to water and 35 percent have access to improved sanitation facilities. The corresponding figures for non-African developing countries are 85 percent and 70 percent respectively (Beck et al., 2011). Ensuring domestic macroeconomic conditions and compatibility have been important facets of EU integration and perhaps explains why the EU

provides technical and financial assistance towards preparations and assessment of the initial conditions of its potential member states prior to admittance to the bloc. In African experiences, socio-economic compatibility is sometimes overlooked; a situation that makes balanced development difficult to attain (Braude, 2008).

Moreover, given the minimum level of economic integration attained in ECOWAS and SADC, high expectations about the role this plays in FDI flows and economic growth and socio-economic development in Africa have not been met due to the failure of numerous integration frame works to exert any discernible influence on transactional corporations. Where integration has been considered, the emphasis amongst strategists, analysts and researchers has been placed on “globalisation”, - instead of focusing on the collective potential of African countries. Moreover, taking the case of ECOWAS and SADC, it is not only the intra-regional integration that is weak in these trade blocs, Inter-regional integration has also been relatively low in the two sub-African regions with that of ECOWAS lower than SADC. Thus, considering these arguments, an emerging issue is whether the degree of integration determines FDI flow and GDP growth as well as their link. This thus raises the following questions:

- (i) Do FDI and growth drive each other in the absence of integration in ECOWAS and SADC?
- (ii) What role does economic integration play in FDI-growth relationship in ECOWAS and SADC?
- (iii) Does economic integration complement FDI in facilitating Growth in these trade blocs?

### **1.3: Objectives of the study**

The broad objective of this study is to examine the cause and effect between FDI and growth under economic integration in ECOWAS and SADC trade blocs. The specific objectives are to

- (i) Examine whether FDI and growth drive each other in the absence of integration.
- (ii) Examine the role of economic integration in FDI-growth relationship.
- (iii) Examine the complementary impact of economic integration and FDI on growth in these trade blocs.

#### **1.4: Justification for the study**

The questions of whether FDI affects growth and whether growth affects FDI have become pertinent. Clearly, literature on FDI and growth is abundant, but examining the two-way linkages between FDI inflows and growth in which FDI drives economic growth and in turn economic growth is viewed as a tool to attract FDI using economic integration as an important channel has not been given much attention especially for ECOWAS and SADC. This is supported by the fact that a search on the economic literature could not reveal specific studies that have been conducted to examine exactly this issue within ECOWAS and SADC regional trade blocs. This study therefore attempts to fill this insufficiency in the existing literature.

Although ECOWAS and SADC are yet to attain full integration, integration indices are constructed based on the level attained so far in the integration process by both trade blocs. Their effects are observed each on FDI and growth. We also interact each of the indices with FDI to examine the interaction effect on growth. We compare the robustness of the integration indices in each of the equations constructed. This approach has not been carried out by many research works in this area for ECOWAS and SADC. Even though ECOWAS and SADC have not attained full integration, it would nonetheless be important to assess the performance of the present level of integration in these blocs so as to give an insight into what may be expected under the attainment of full integration.

On methodological ground, we discuss the aforementioned fundamental questions in both single and simultaneous equation frameworks in which FDI and growth variables are treated endogenously. Few studies use this approach in the literature as most concentrate on causality tests. The justification for this is to discuss the two-way relationship with and without economic integration.

Moreover, this study equally shows the role FDI plays in growth using the economic integration transmission mechanism. This becomes necessary based on the debate on whether both are complements or substitutes. In most studies, attention has been on the role of FDI in economic growth without considering whether FDI complements integration or whether it serves as a substitute for integration in facilitating growth. This study provides a clear deviation from what is usually observed in the previous studies.



Again, this study is distinguished from previous studies based on the scope. Most African regions were identified with various stages of integration during this period under study. Therefore studying the impact of integration becomes highly imperative compared to when the process of integration was not in place. Therefore studying this using ECOWAS and SADC which are the two major Africa's Regional Trade Agreements (RTAs) with different structural characteristic offers a comparative analysis of the two. This is indeed a further contribution to the literature.

Finally, available evidences have not concluded on the role of financial development, macroeconomic and institutional factors on FDI flows. Again, what constitute the drivers of FDI in other developing regions may not necessarily match well with the case of African regions. For instance Zeng et al., (2002) demonstrate that a higher return on investment and better infrastructure have a positive impact on FDI to non-Sub-Saharan African countries (SSA), but have no significant impact on FDI in SSA countries. It is therefore imperative to account for the prevailing macroeconomic and institutional characteristics of African regions when formulating specific national and regional policies targeted at increasing foreign investment flows. Few studies have been done on the relationship between FDI and these regional characteristics particularly on the role of financial system development.

### **1.5: Scope of the study**

ECOWAS and SADC trade blocs are chosen based on their significant contribution to African trade in terms of their shares. The study covers the period of 1994 to 2013. This study period is justified on two grounds: The first is that a clear picture of the implementation of the Abuja Treaty by the African regional economic communities is gradually revealed during the period. Secondly integration processes are advancing as time passes and so give clear picture of the nature of integration stages. In this study, the current members of ECOWAS and SADC are considered. The ECOWAS countries considered are Benin, Burkina Faso, Cape Verde, Coted'Ivoire, Gambia, Ghana, Guinea, Guinea Bissau, Liberia, Mali, Niger, Nigeria, Senegal, Sierra Leone and Togo. The countries included for SADC are Angola, Botswana, Democratic Republic of Congo, Lesotho, Madagascar, Malawi, Mauritius, Mozambique, Namibia, Seychelles, South-Africa, Swaziland, Tanzania, Zambia and Zimbabwe.

## **1.6: Organisation of the study**

The study combines three key important issues. These are FDI, Economic growth and Economic Integration. These issues are given a broad look following existing literature and relevant framework. On this basis, the study is structured in the following way:

Chapter one consists of the basic introduction. This consists of the general introduction, the problem statement of the research, research questions and research objectives. Included here also are the justification for the study and the scope. Chapter two focuses on the basic macroeconomic stylised facts in relation to integration process in Africa. Chapter three focuses on review of related literature of the previous studies. Theoretical framework and methodology of research are covered in chapter four while chapter five provides the detailed empirical analysis. Chapter six provides summary, recommendation, conclusion and limitation of the research and finally suggestion for further study in this area is equally provided.

## CHAPTER TWO

### ECONOMIC INTEGRATION, FDI AND GROWTH - THE STYLISED FACTS

#### 2.1: Introduction

History of regional economic integration in Sub-Saharan Africa dates back to the 1950s when pioneering leaders such as Nkrumah (Ghana), Toure (Guinea) among others proposed a regional integration scheme for the African continent. In 1959, the Francophone West African countries signed the convention that established the West African Custom Union (WACU), but the union did not stimulate trade which led to a new convention that established the Union Douaniere entre les Etats de L'Afrique l'Ouest (UDEAO) in 1966. Member countries could not however abide by the principles and consequently it was announced that the union be terminated. The union was however terminated. The efforts of the Francophone West African countries led to the formation of the Communauté Economique De L'Afrique De L'ouest (CEAO) in April 1973 as a follow up to UDEAO, basically built around UDEAO's monetary bloc. A decision was made in 1994 to merge the West African Economic and Monetary Union (UMOA) and CEAO into a single Francophone regional bloc, WAEMU.

Regional and continental integration is a major development strategy of African countries. The 1980 Lagos Plan of Action, the 1991 and the 2000 African Economic Treaty have the common mission of achieving continental integration in trade, economic, social and cultural spheres. For African continental integration, the building blocks comprise of the regional economic communities (RECs) which were established on the basis of their respective constituting treaties. An important feature of regional and continental integration is the trade liberalization leading to the formation of regional free trade areas, customs unions and common market and Economic Community.

There has been a multiplicity of regional and sub-regional groupings. Moreover, the intense competition for markets and external resources for economic development has fostered the strengthening of economic links both at the regional and continental level in Africa. As a way of creating a greater rationalisation among these groupings so as to facilitate convergence towards

achievement of a continental market and economic community, the AU Head of States recognized eight RECs as the building blocks of continental integration. The RECs are Arab Maghreb Union (UMA), Common Market for Eastern and Southern Africa (COMESA), Economic Community of West African States (ECOWAS), Southern African Development Community (SADC), Intergovernmental Authority on Development (IGAD), East African Community (EAC) and the Community of Sahel-Saharan States (CEN-SAD). Other African inter-governmental organisations with trade programmes are the West African Economic and Monetary Union (UEMOA) with members also in ECOWAS, the Central African Economic and Monetary Union (CEMAC) with members also in Economic Community of Central African States (ECCAS), the Indian Ocean Commission (IOC) whose members are also members of COMESA and the Southern African Customs Union (SACU) with members also in SADC. The formation of RECs is consistent with the global trend towards proliferation of regional trade agreements with the effect that trade under regional and bilateral free trade agreements now covers almost 50% of global merchandise trade indicating expanding regionalism.

### **2.1.1: Topography of the African Free Trade Areas (FTAs)**

The first category of the South-South type FTAs established by the African states are compatible with the Abuja Treaty and are regionally based and consistent with the deeper model of economic integration. The Regional Economic Communities in this category evolve through Balassa's stages of integration and eventually achieve the African Economic Community (AEC). The North-South market access inspired FTAs in the second category also entail a deeper model of economic integration. The North-South FTAs being negotiated by the African states were initially focused on providing for World Trade Organization (WTO) compatibility in trade relations between the parties. The scope of these FTAs are however increasingly being expanded to incorporate disciplines negotiated outside the WTO such as competition policy, intellectual property rights, governance environment and climatic change etc (Baldwin, 2011).

The FTAs being negotiated among the 77 African Caribbean and Pacific (ACP) states and the European Union (EU) and generally referred to as Economic Partnership Agreements (EPAs) match this profile. These FTAs propensity towards depth is not only based on seeking to

integrate both the goods and services markets between the ACP and the EU but also scale up and require market compliance (on trade related issues such as governance, trade and environment)

### **2.1.2: Status of Economic integration in Africa**

The process of economic integration in the continent raises the question of how deep the deeper integration status can foster integration. Through its Minimum Integration Programme (MIP), the AU has acknowledged that the “RECs have made tremendous progress in their respective domain since their creation, but the pace of implementation of programme is still low and thus needs the support of the integration players”<sup>1</sup>. Virtually all the stages have implementation challenges.

According to Abuja Treaty, the major objectives of the African Economic Community were to

- i. Promote economic, social and cultural development and the integration of African economies so as to enhance economic self-reliance as well as to promote an endogenous and self-sustained development.
- ii. Establish at a continental level, a frame work for the development, mobilisation and utilization of the human and material resources, in order to achieve a self –reliant development.
- iii. Promote cooperation in all fields of human endeavour, so as to enhance economic stability, foster closer and peaceful relations among member states and thereby contributing to the development and economic integration of the continent; and
- iv. Coordinate and harmonize policies among existing and future economic communities so as to foster the gradual establishment of the community.

African economic integration involves some stages. These stages include the creation of free trade areas, Customs Unions, a Common Market, and a single currency, all leading to the establishment of an Economic and Monetary Union. At the moment, the African Union recognizes eight RECs, with overlapping Member States in many of them. All the RECs

which form the ‘pillars’ of the African Economic Community(AEC) consist primarily of trade blocs and, in some cases , involve some political cooperation.

The AEC established through the Abuja Treaty, signed in 1991 and entered into force in 1994 is expected to be created in six stages:

- Stage one: This is the creation of regional blocs in regions where such blocs do not yet exist. This was already completed since 1999
- Stage two: This involves the strengthening of intra-REC integration and inter-REC harmonisation. This stage was already completed in 2007
- Stage three: This is the establishment of a free trade area and customs union in each regional trade bloc. This is to be completed in 2017 by all trade blocs
- Stage four: In this stage, coordination and harmonisation of tariff and non-tariff system among the RECs with a view to establishing a Free Trade Area culminating in a continent-wide customs union is the major task
- Stage five: This is the establishment of a continental-wide African Common Market (ACM). This is to be fully completed in 2023.
- Stage six: This stage is to be completed in 2028 and it involves the establishment of a continent-wide economic and monetary union and a parliament; and all transition periods are expected to come to an end by 2034 at the latest.

Based on the Available information on the eight recognised RECs by the African Union (AU), the EAC happens to be the most advanced Community in the integration stages. After five years of operationalisation of its Customs Union, the EAC launched its Common Market in 2010. COMESA launched its Customs Union in 2009. ECOWAS and SADC have made progress in building their FTAs. ECCAS launched its FTA but is facing enormous challenges in implementing it. UMA, CEN-SAD and IGAD are still in the stage of cooperation amongst their Member States.

Economic integration has progressed relatively faster in the Eastern and Southern Africa (ESA) than in other parts of the continent as shown in table 2.1. Therefore the ESA region provides illustrations for examining further the deeper and expanded status of integration. AMU, CEN-SAD and IGAD have gone not beyond stage two. The African Economic Community (AEC) is envisaged to be ready by 2028 (latest 2034).

**Table 2.1: Status of Implementation of the Abuja Treaty per REC**

Stages of the Abuja Treaty	Stage one 1994-1999	Stage two 2000-2007	Stage two 2000-2007	Stage three 2008-2017	Stage three 2008-2017	Stage four 2018-2019	Stage five 2020-2023	Stage six 2024-2028
<b>RECs</b>	Strengthening existing RECs and creating new ones where they do not exist	Coordination and harmonisation of activities	Gradual elimination of tariff and non-tariff barriers	Free Trade Area	Customs Union	Continental Customs Union	Establishment of an African Common Market	Monetary and Economic Union and parliament
UMA	✓	✓	In progress	Not yet	Not yet	Not yet	Not yet	Not yet
IGAD	✓	✓	In progress	Not yet	Not yet	Not yet	Not yet	Not yet
SADC	✓	✓	✓	✓	2013	Not yet	Not yet	Not yet
CENSAD	✓	✓	✓	✓	Not yet	Not yet	Not yet	Not yet
ECOWAS	✓	✓	✓	✓	2015	Not yet	Not yet	Not yet
COMESA	✓	✓	✓	✓	✓	Not yet	Not yet	Not yet
ECCAS	✓	✓	✓	✓	No date yet	Not yet	Not yet	Not yet
EAC	✓	✓	✓	✓	✓	Not yet	Not yet	Not yet

Source: M O Ibrahim Foundation 2014, and African Union Commission, 2013



ECOWAS and SADC, our major focus, clearly demonstrate achievement of about three stages out of the six stages expected of a full integration. The stages reached by ECOWAS and SADC are strengthening existing RECs, coordination and harmonisation of activities, gradual elimination of tariff and non-tariff barriers and free trade. Therefore, it is evident that these blocs are without zero level of integration. Stage four which is the Continental Customs Union will be achieved when all RECs have achieved Customs Union and harmonised their respective Common External Tariff (CET) with a view to creating one single continental CET. Stage five which is the establishment of an African Common Market will be achieved when all RECs have achieved continental customs union as well as free movement of labour and capital. The Monetary and Economic Union in stage six will be realized when all RECs have achieved African Common Market at which time there will be a common currency, issued by the African Central Bank.

Most FTAs in Africa are based on proximity and thus are formed among geographically proximate partners. These become possible due to tariff and trade liberalisation inconjunction with the removal of quantitative and other trade restrictions so as to create conducive market environment. Preferential access is realised through enabling rules of origin and participating countries have mostly agreed to the elimination of all trade restrictions among members. Partners within the FTA however maintain independent trade policy with third countries. The FTAs focus on the improvement in areas such as trade facilitation, infrastructural development, resource mobilisation, development of social and economic sectors and other areas that would benefit participating partners.

FTAs in Eastern and Southern part of the continent have made some progress towards deeper commitments. Apart from having similar economic structures, the EAC partners also have competitive economies that have enabled the countries pursue deeper commitment. The EAC regional partners have a CET and also have free movement of capital and labour. With a CET, COMESA region has deeper commitment involving 19 countries. Next is SADC with deeper commitments resulting from its FTA. ECCAS and ECOWAS too have regional commitments through protocols aiming at deeper commitments. IGAD is in transition from being an inter-

governmental body to finalising an FTA while the status of economic integration in AMU and CENSAD are however not yet established.

**Table 2.2: Depth of African Free Trade Areas**

Dept of treaty/Provision	AMU	CENSAD	COMESA	EAC	ECCAS	ECOWAS	IGAD	SADC
Trade in Goods, Elimination of Trade Barriers, Customs Procedures, Trade facilitation, Trade Defence Instruments, Trade investment,	----	-----	PTP	PTP	PTP	PTP	----	PTP
Trade in Services, Trade related measures, Competition Policy, Intellectual Property Rights, Trade development,	-----	-----	PTP	PTP	-----	-----	-----	PTP
Movement of persons	-----	-----	PTP	PTP	-----	-----	-----	PTP
Infrastructure Development	PTP	PTP	PTP	PTP	-----	-----	PTP	PTP
Industrial & Value Chain Development	PTP	PTP	PTP	PTP	-----	-----	-----	PTP
Policy Coordination-Third Parties	-----	-----	PTP	PTP	-----	-----	-----	PTP
Common External Tariff	-----	-----	PTP	PTP	-----	-----	-----	-----
Movement of factors of Production	-----	-----	-----	PTP	-----	-----	-----	-----
Capital	-----	-----	-----	PTP	-----	PTP	-----	-----
Labour			PTP	PTP	PTP	PTP	PTP	PTP
Land	-----	-----	-----	*	-----	-----	-----	-----
Shared Policies: Monetary & Fiscal	*	*	*	*	*	*	*	

*Source: African Economic Brief, November, 2012*

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<sup>1</sup> PTP means provisions in the Treaties/ Protocols of RECs, ----- means provisions yet to be realised or information unavailable, \* means provisions not yet attained.

Generally, some of the notable successes of the deeper model of integration include regional trade liberalisation, regional infrastructure development and capacity building initiatives, improvement in cross border trade and dispute settlement, peace and security.

The proposed COMESA-EAC-SADC Tripartite FTA (CEST FTA) has its origin from three RECs- COMESA, EAC and SADC- so as to overcome challenges of overlapping memberships and the need to address joint projects and programmes, and politically to accelerate the Abuja Treaty requirement for the formation of the AEC, but more importantly to broaden and deepen areas of cooperation, institutionalise and give legal effect to the existing arrangement. The CEST FTA is an expansion model which seeks to establish an FTA across 26 countries.

### **2.1.3: Africa's Growing Integration**

Africa seems to be the least globalised region of all, but the economy has started opening up to the rest of the world. On the openness level, Africa has the highest percentage of countries whose visitors are able to obtain a visa on arrival (28.0%). East Africa happens to be the second most open sub-region in the world, alongside South-East Asia. The following facts about Africa's openness level are also imperative:

- Less than one-third of the world's population require traditional visas
- Of the African countries assessed by the United Nations World Tourism Organisation, nine African countries have been listed in the top 25 least-restrictive destinations in 2013: Mauritius, Seychelles, Rwanda, Mali, Cape Verde, Guinea-Bissau, Mozambique, Togo and Uganda
- Only five African countries (Seychelles, Mozambique, Rwanda, Comoros and Madagascar) offer visa-free access or visas on arrival to other African citizens. On the average, African citizens require visas to visit 60% of African countries.
- East Africans require the most visas to travel within Africa, where as ECOWAS countries have the most access, partly due to their visa free movement protocol.

The increasing economic openness and integration over the past ten years has contributed towards Africa's economic rise. To buttress this point, over the past decade, Africa has increasingly opened up the spread of exports to international markets. Volumes of export have grown at an average of 8.8% per year since 2000, compared with the world average of 3.7%. This is reflecting the rising global demand for Africa products and services. Moreover, given that Africa's exports growth exceeded economic growth over the period, it follows that exports have become a relatively more important component of the region's economy since 2000-indicative of the importance of openness as a component of sustained economic growth.

New trade partners like Brazil, Russia, India and China which are the so called BRIC economies- have increased their trade substantially over the past decade and this has contributed strongly

towards African economic growth. In 2001, African economies exported US\$24billion in goods and services to these four economies; and by 2011, this figure had grown nearly ten-fold to US\$194billion.

The increasing trade diversification and sophistication that resulted from important reforms during the 1990s and early 2000s further demonstrate Africa's economic growth and rising competitiveness.

Rising international trade flows have been met as a result of an increased flow of private capital, which provides further evidence of Africa becoming increasingly open. While this improvement comes at a low rate, the available evidence shows that increased financial openness corresponds with rising economic welfare. FDI flows to Africa in recent years provide clear support for this argument. From 2003 to 2011, the number of FDI- financed projects increased at a rate of 7.6% per year, rising from 339 projects at the start of the period to 857 projects by 2011. While Africa's share of global FDI projects remains modest, and understates the region's economic potential, the share has steadily risen in recent years from 3.5% in 2003 to 5.5% in 2011 pointing to Africa's rising openness and growing competitiveness.

Flows of private capital to Africa have increased as well as deepened in recent years. On a more specific case, FDI flows to Africa are starting to diversify beyond the resource extraction sector. For instance between 2010 and 2012, Chinese investors committed almost US\$101 billion to commercial projects in Africa, but less than half of this figure was directly towards extractive industries. It is true that many of these FDI flows are meant for mega rail, port, road and energy projects that service the extractive industries. Also, Chinese FDI flows, alongside with others, are financing new areas of industrial activity and that these flows are being directed to other areas of the economy beyond resource extraction.

To support this argument, between 2003 and 2011, just 27.6% of FDI flows went to extractive industries, with 38.3% of FDI meant for infrastructure-related investments and 29.9% into manufacturing. This surge in investment in this area is a clear effort towards building capacity and competitiveness in line with policy initiatives such as the African Growth and Opportunities Act (AGOA), which grants preferential access to market in the United States for African manufactured products as an incentive to stimulate export-led growth through manufacturing. The flows are starting to spill over other non-traditional investment sectors like agriculture and tourism.

Africa's share in global FDI projects increased to reach 5.4% in 2012. In 2013, the number of new FDI projects in Africa declined for the second consecutive year by 3.1%. Job creation that resulted from FDI projects also slowed in 2013. This is attributed to the decline in North Africa owing to political uncertainty. However, the number of new FDI projects in SSA increased 4.7% in 2013. Capital investment into Africa also grew by 12.9% with a higher average project size of US\$70.1million in 2013 from US\$60.1million in 2012.

Furthermore, Africa's share of global FDI flows has been improving year on year. In 2013, Africa's share of global FDI projects reached 5.7% -its highest level in a decade. Capital investment in FDI in SSA reached US\$42.3billion (see Appendix A2). The top countries by share of FDI project and those perceived as most attractive by investors are also revealed in appendix A1.

#### **2.1.4. European Union (EU) Economic integration: Some lessons for Africa**

Contrary to what is operative in the African countries, the EU has demonstrated homogeneity in socio-economic and cultural relations, which can be explained by longer history and shared values. This has enabled the EU countries to forge closer links, synchronise, harmonise and coordinate their policies and regulatory environment. Pre-colonialist Kingdoms in Africa had their strong foundations on long distance Trans-Sahelian trade that defined how they related economically with their neighbours. At the advent of colonialism and delineation of borders, formal trade encountered regulatory requirements; communities were disrupted and alienated by the borders, social-cultural relations were linguistically redefined, free movement of people and trade curtailed and new foreign cultures imposed. These initial conditions persisted into independence and even afterwards. Consequently, shortly after independence, African countries could hardly have learnt any meaningful lessons from the EU.

However, after independence when under the auspices of the erstwhile organisation of African Unity integration of the continent became a priority, lessons from the EU to African countries became more recognized. The very first lesson was that of peace and security being an important factor without which little progress may be made in economic integration. Similar example may be cited of the AU which despite having ambitions for the formation of the AEC has instead been spending huge resources on peace and security. In 2012, AU presented annual expenditure estimates of US\$275million while in 2007 its peace and security expenditures had already escalated to US\$132million. The EU is not only a paragon of effective and performing institutions but also has policy and regulatory mechanisms that ensure implementation of policies and programs of the Union. Based on the success in their oversight and integration management,



the EU countries have confidence in the EU supranational institutions such as the European Commission, European Parliament among others and have conferred these institutions with regulatory and institutional mandates to manage economic integration. The African states could borrow a leaf from the EU and cede some of their immense powers to the RECs and similar institutions for effective economic integration.

Economic integration in the EU is people's based and effective leadership explains the usefulness of economic integration. Referenda are frequently held by the EU states on matters that have public interest and which if implemented would affect the citizens' interests. African countries could benefit greatly by putting economic integration within public purview. Political leadership is important in the provision of necessary guidance to the public by explaining why certain integration policies are important. Implementation of the Common Market is slower in EAC because some countries believe that their neighbours would take their land away upon commencement of the Common Market. Even though officially EAC is a Common Market since July 2010, integration of factors of production is much slower because the regulatory frame work is not enabling enough. The EU model does not entail multiple memberships. The EU countries joined the Union on the basis of thorough evaluation and ascertainment of compliance with bench marked requirements. There are important policy and regulatory thresholds for preliminary membership that must be met. These are lessons African countries may learn from the EU integration processes.

The EU economic integration exhibits characteristics of both sequenced deeper and expansion model of integration. The EU started as a smaller group of countries that signed the Treaty of Rome (1957) that established it. The EU expanded to 12 over time and later to the current 27

member states. On this note, Africa may learn that large memberships to FTAs sometimes may slow down progress. Starting with a smaller group is feasible and subsequently enlarges. The original EU six member states had more or less similar economic conditions and the differences in the degree of development were not large. The EU has placed emphasis on balanced socio-economic and even cultural development in all its member states.

### **2.1.5: Economic Integration process in ECOWAS**

ECOWAS, a group of 15 countries was created in 1975 following the African Union Treaty of Lagos, and signed a revised treaty in 1993. The revision of 1993 was aimed at accelerating regional integration and increase political co-operation. The member states of the community are Benin, Burkina Faso, Cape Verde, The Gambia, Ghana, Guinea, Guinea Bissau, Liberia, Mali, Niger, Nigeria, Senegal, Sierra Leone and Togo. Cape Verde joined ECOWAS in 1976 while Mauritania withdrew in 2001.

The ECOWAS Region is a geo-economic space with member states possessing significant differences in land area, population, economic structure dynamism and investment climate. The Community has a total surface area of above 5 million square kilometers translating to about 17% of the total surface area of the African continent. ECOWAS is characterised by two distinct zones: The Coastal zone and the Sahelian one which include the three landlocked countries- Burkina Faso, Mali and Niger. Niger and Mali have the largest land mass of 24.8% and 24.3% respectively of the total while Cape Verde remains the smallest of the region in terms of land mass with 0.1%.

In terms of population size, ECOWAS remains the most populous regional economic community in Africa with an estimated population of 305 million as at 2010 with growth rate of about 2.67% per annum. Given that this growth rate is consistent, a rough estimation of the population would give about 338 million by 2014. Nigeria is the most populous with an estimated population size of 162 million translating to about 7.9% of the region. Cape Verde is least populated with about 0.5 million people translating to about 0.2%.

ECOWAS as a regional bloc which aims at promoting cooperation and development envelops the Francophone and Anglophone sub-regional blocs, WAEMU, which comprises of the seven Francophone member states and the West African Monetary Zone (WAMZ) comprising of five Anglophone countries. Regional integration follows a Trade Liberalisation Scheme, similar to SADC Trade Protocol. Liberalisation began with unprocessed goods, handicrafts and industrial products of community region. One of the conditions of the ECOWAS treaty mentions that “Such goods must be subjected to import clearance procedure spelt out under Nigeria Import and Export Guideline”. This explicit reference to Nigerian rules demonstrates the importance of Nigeria in the ECOWAS.

The WAEMU came into existence through the treaty of Dakar in 1994 and in 1997; Guinea Bissau became its ninth member. WAEMU appears to be the most integrated and is part of the “Zone Franc”, alongside the countries of the CEMAC and Comoros. The Franc CFA is pegged to the euro and the aim of the union is to harmonise legal frames, the creation of a common market, multilateral monitoring of macroeconomic policies and coordination of sectoral national policies in the main fields of economic activity. Just of recent, WAEMU took a further step into regional integration by deciding the creation of Union Parliament, thereby deepening political integration.

As a way of working in the direction of an economic and monetary union, the treaty of Lagos was revised in 1991 and later a Common Market through the adoption of a common external tariff and common trade policy vis-avis third countries was established. On this basis, the ECOWAS-CET which draws on the basic UEMOA-CET composed of four tariff bands or rates of customs duty was put in place. The creation of a joint UEMOA-ECOWAS Committee was adopted to manage the implementation of the ECOWAS-CET and such efforts proved abortive by 2008. Nevertheless, significant progress toward the final implementation of the ECOWAS-CET has been achieved. The ECOWAS-UEMOA joint committee then adopted a fifth band of the ECOWAS-CET at 35% for specific goods for economic development and adoption of common eligibility criteria among all the ECOWAS member states for the submission of products to this fifth band.

### **2.1.5.1: Aggregate output growth performance**

Apart from Liberia, Niger and Togo, least developed countries (LDCs) in ECOWAS experienced growth in domestic output between the period 1980 and 1990s. Growth performance in LDCs was more encouraging than that of the developing countries with overall output performance higher than 1%. An improvement was recorded in output growth between 1985-1990 in most LDCs and all developing countries in the group. Output declined only in Sierra Leone but the average growth rate of LDCs increased to 3.0%. The output of the LDCs rose during 1995-2001 period with average growth rate of 3.6% with the exception of Guinea-Bissau and Sierra Leone which experienced a decline in output by 2.8%. The average growth rate of developing countries rose from 2.9% to 3.5% in the group but still this was less than the ECOWAS overall growth rate of 3.6%. One striking feature is that the target output growth of 7% required for poverty reduction could not be met since the average output growth performance was less than this. ECOWAS had an average growth rate of 3.7% for the period 1970-1980 and this declined to -0.3% during 1980-1989 and later rose to 2.6% during 1990-2000. The growth rate was already 5.3% for 2001-2011 and 6.8% for 2012-2013.

### **2.1.6: Economic Integration in Southern Africa**

Economic integration in Southern Africa dates back as far as 1889. The Union of Southern Africa developed into the Southern African Currency Union (SACU). Even though SACU was already formed by 1910, the agreement establishing the CU was ratified in 1969, after which there were series of re-negotiations due to the feelings of inadequacies in the agreement not serving their interests. SACU operated as a free trade agreement for intra trade and had common external tariffs and in 1974, the Rand Monetary Area was formed. In 1980 the Lusaka Declaration that established Southern African Development Coordination Conference (SADCC) was signed with the objective of reducing the economic dependence on South Africa and promoting regional cooperation. The “Frontline States” that created the SADCC were Angola, Botswana, Lesotho, Malawi, Mozambique, Swaziland, Tanzania, Zambia and Zimbabwe. South African States had a preferential trade agreement with East African nations that transformed into Common Market for Eastern and Southern Africa (COMESA). Meanwhile, not all Southern

African states ratified the treaty establishing COMESA. In addition, SADC has established membership in COMESA and has solicited its members to secede from COMESA.

Based on this, COMESA has not significantly influenced intra-regional trade (Warin et al., 2009). As an effort towards the enhancement of deeper regional integration and promoting intra regional trade, SADC has an established Institutional Frame work for FTA and Protocol on trade, which formed the legal basis for FTA. Most trade reforms in Africa were initiated in the second half of the 1980s. This is illustrated by the fact that in the early 1980s, the average tariff in most African countries was about 25.0%, while it declined to 18.0% by the year 2000. An economic integration measure should therefore take into account the degree of trade restrictiveness within and between the integrating economies.

Growth rates in ECOWAS and SADC demonstrated a fluctuating pattern over the period. On a comparative level, ECOWAS recorded 3.7% and 4.8% during 1970-1980 and 2000-2009 respectively higher than those of SADC with 2.7% and 4.4% for the same period. However, SADC average growth rates rose faster than those of ECOWAS during 1980-1989, 1990-1999 and 210-2014 with growth rates of 1.8%, 2.9% and 5.2% compared with -0.3%, 2.7% and 5.0% of ECOWAS during the same period. However, as indicated below none of the growth rates was negative for SADC during the period.

**Table 2.3: Annual average growth rate (percentage) in ECOWAS and SADC (1970-2013)**

REGION/YR	1970-80	1980-89	1990-1999	2000-2009	2010-2014
ECOWAS	3.7	-0.3	2.7	4.8	5.0
SADC	2.7	1.8	2.9	4.4	5.2

*Source: Computed from UNCTAD database, 2012 2013 and 2015*

### **2.1.7: Overlapping memberships of ECOWAS and SADC**

West Africa presently consists of six different Regional Integration Initiatives (REIs) with each country belonging to at least two of the six REIs. SADC, just as ECOWAS, has majority of SADC member states belonging to at least two of the six regional blocs in both Eastern and Southern Africa. Even if some of the regional groupings' aims are not directly related to promoting intra regional trade, multiple memberships may give rise to duplication and inefficiency.

On the intra and extra regional trade in ECOWAS and SADC, share of intra-regional export in ECOWAS stood at about 3% in 1970 and increased to 6.7% for most period of 1980-1984, 1985-1989 and 1995-1999 and 2005-2009. Although empirical evidence on the effectiveness of regional trade agreements in promoting intra-African trade is limited, the statistics is an indication that ECOWAS may have promoted intra-ECOWAS trade, and indicating a move towards an even spread of the benefits arising from the integration process. However, the average growth rate dropped to 1.3% in 2011-2012, a reason that may be connected to instability in the macroeconomic economic environment. Average import followed similar patterns during the period though dropping to 1.7% in 2011-2012 compared to intra-export of 1.3%.

The emerging pattern of increasing intra RTA trade is even stronger in SADC and this is partly driven by the joining of South Africa in 1994 which accounted for only 22% of the total intra-regional trade and more than half of the SADC GDP. Average intra-export flows were 6.8%, 6.8% and 7.1% during the periods 1980-1984, 1985-1989 and 1990-1994. These later dropped to 6.5%, 6.4% and 6.5% for 1995-1999, 2000-2004 and 2005-2009 respectively. Export trade however further dropped in 2011-2012. Intra-regional imports were 6.7% of the total trade on the average during same period but equally dropped to 2.6% in 2011-2012. Structure of intra-regional trade may to a large extent explain why SADC is performing better than ECOWAS. Moreover, it has been stated that intra-regional trade in ECOWAS is biased towards a number of countries. During the period 1995-2010, Nigeria has the highest percentage of the total exports within the region and in fact contributing about 36% in 1995-2000. This is connected to the position of the economy as a major crude oil exporter in the region.

**Table 2.4: Intra-RTA trade (percentage of total trade, 1970-2012)**

Years	1970	1980-1984	1985-1989	1990-1994	1995-1999	2000-2004	2005-2009	2011-2012
<b>ECOWAS</b>								
Exports	3.1	6.7	6.7	6.7	4.7	6.7	6.7	1.3
Imports	3.3	6.7	6.7	6.7	6.7	6.7	6.7	1.7
<b>SADC</b>								
Exports	-	6.8	6.8	7.1	6.5	6.4	6.5	-10.0
Imports	-	6.7	6.7	6.7	6.7	6.7	6.7	2.6

*Sources: Yang & Gupta (2004, p.17), averages (calculation based on statistics of the blocs websites and Average computed based on IMF Direction of Trade Statistics adapted from Jodie K et al (2010) and UNCTAD database*

In addition, the export diversification index for (EDI) for SADC is far better than that of ECOWAS. EDI for ECOWAS decreased from 0.8 in 2000 to 0.77 in 2008. This is in contrast to SADC with EDI of 5.9 in 2008. However, Merchandised export diversification index for ECOWAS in 2009 was about 0.7 and is approximately the same for 2010 and 2011. This is higher than the index for SADC of approximately 0.6 for each of 2009, 2010 and 2011.

## **2.2: Trend in FDI flows, level of Integration and Growth**

Generally, FDI at the global level has been increasing rapidly in the last few decades. Global inward FDI flows increased from US\$54.1 billion in 1980 to US\$207.7 billion in 1990 before reaching about US\$1.40 trillion in 2000. However, a reduction occurred from 2001 and by 2003, the inflows of FDI was already US\$565.7 billion before increasing again to US\$2100 billion in 2007. The significant decline in FDI flows in 2001-2002 was in connection with a combination of macroeconomic factors (weak economic growth or slump in economic activity linked to the business cycles in many parts of the world). The inflows of FDI were estimated at about US\$1.41 trillion in 2010. Even though, this was higher than that of 2007 but was still below expectation. This is connected to the financial and economic crisis prevailing during the period. A recovery however existed for a short time in as FDI inflows reached US\$1.70 trillion in 2011 which later became US\$1.33 trillion in 2012 accounting for about 18% fall. In 2013, the global inflows rose again by 9% to about US\$1.45 trillion after the slump in 2012.

### **2.2.1: Investment treaties and investment performance in West Africa.**

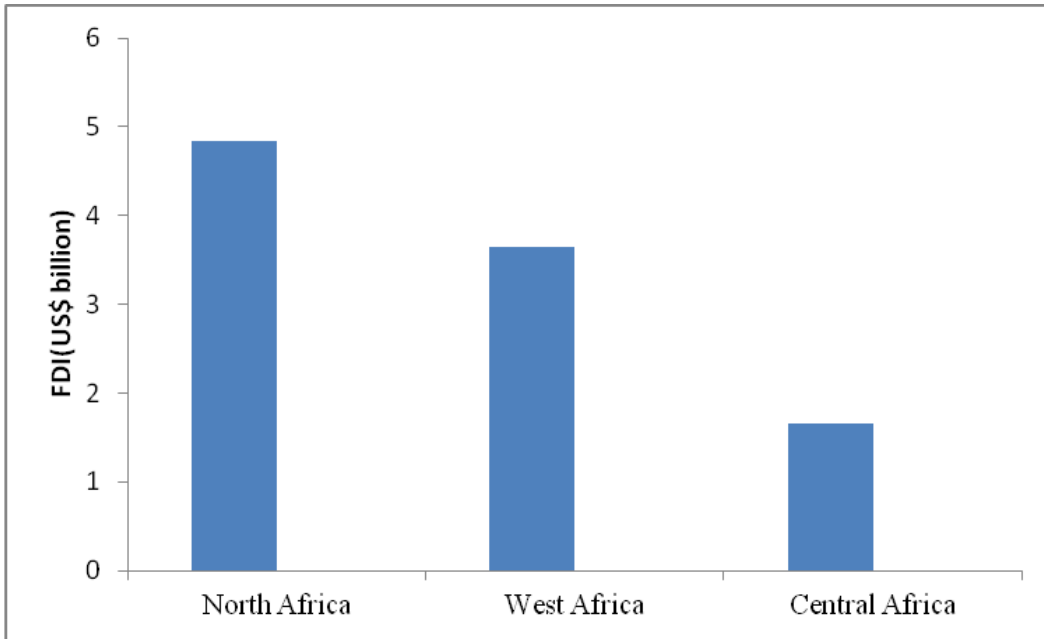
Africa has never been a major recipient of FDI flows on an annual basis, the region's share of global FDI inflows was 1.8% in the period 1986-90 and 0.8% in the period 1999-2000. An improvement was observed slightly in 2001, increasing the region's share of global FDI to 2.3%. This increase was attributed to two unusual cross-border Mergers and Acquisitions (M&A) in South-Africa and Morocco. FDI inflows to the region fell by 40% in 2002 but grew by 28% in 2003. On an annual basis, the share of Africa in global FDI rose to 2.5% over the period 2002-2003. Even though it is an improvement; it is 24.5 percentage points below the average share for developing countries over the same period. From 1995-1999, the share of Africa's FDI inflows was already 5.1% but later dropped to 4.9% in 2000-2008.



After about ten years of growth, FDI inflows to Africa reduced from US\$72billion in 2008 to US\$59 billion in 2009 transforming to about 19% reduction. This is however traceable to the prevailing financial and economic crisis during the period. This reduction continued in 2010 with FDI inflows estimated at US\$44billion. A gradual recovery occurred from 2011 as FDI flows to Africa reached US\$57 billion in 2013 from the initial US\$55billion in 2012 representing about 3.6% growth of FDI flows (UNCTAD, 2014).

FDI in Africa has demonstrated interesting and changing structure as observed from the variation of FDI flows across African sub-regions. The North Africa recorded the highest FDI inflows of US\$4.84billion followed by the West Africa with inflows of US\$3.64billion. The Central Africa's inflows of FDI were put at the lowest average of US\$1.65billion.

It should be noted that North Africa had a greater FDI inflows between 2004 and 2010 before West Africa took over from 2011 even though this was short-lived. However, accounting for the average percentage of the total inflows of FDI to Africa, West Africa received the highest during the same period with 31.3% followed by North Africa with average percentage of 29.7%. Other sub-regions-Central Africa, South Africa and East Africa had 15.3%, 12.0% and 11.8% respectively.



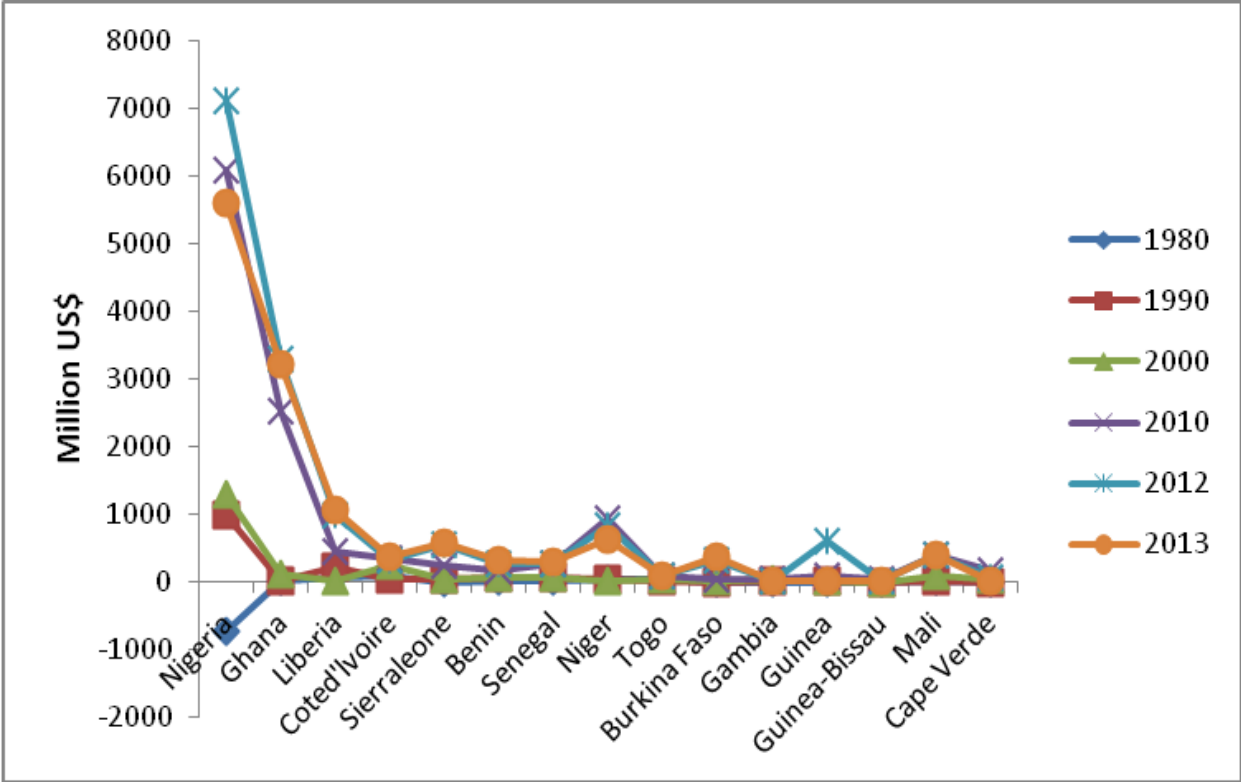
Source: UNCTAD Database (2014)

**Figure 2.1: Average FDI inflows by African sub-regions (1970-2013)**

Examining country differences and major recipients in the case of ECOWAS countries, available statistics shows that Nigeria has been attracting huge FDI flows compared to other ECOWAS countries even though the flows demonstrated declining trends. This may be connected to the instability in the macroeconomic environment in recent times. FDI inflows in Nigeria have been on a positive trend except for 1980 with a negative inflows of about US\$-738.9million to about US\$5.6billion in 2013 down from about US\$6.1billion and US\$8.9billion in 2010 and 2011 respectively (UNCTAD, 2013). The inflows of FDI into Nigeria under the circumstances of unstable business environment could be connected to the large market size of the economy. So far, average net FDI flows into Nigeria was highest for the periods 1980-1990, 1991-2001, and 2002-2011. This supports the fact that Nigeria is one of the largest recipients of FDI flows.

Ghana had an improvement in the average FDI flows during 2002-2011 and had been on a consistently increasing trend except for 1990 and 2013. FDI inflows reached about US\$15.6 million in 1980 and increased to about US\$3.2billion in 2013 though from about US\$3.3billion in 2012. FDI flows to Liberia have also been fluctuating over the period 1980-2013. In 1980, FDI inflows reached about US\$71.9million much higher than those of Nigeria and Ghana. By 2013, the flows recorded about US\$1.1billion.

The effect of bilateral investment treaties (BITs) on FDI did not follow a definite pattern between 1980 and 2001. Bilateral agreement was signed by Mali with Germany in 1980 but with a disappointing FDI inflow of a negative trend. From 1983 to 2001, FDI in Mali showed an explosive but unstable growth implying a considerable lag in the response of FDI to BIT. In Mali, the annual average of FDI inflow was -9.0 during 1980-1990 periods. Figure (2.2) below shows the trend in FDI inflows to ECOWAS countries during the 1980-2013.

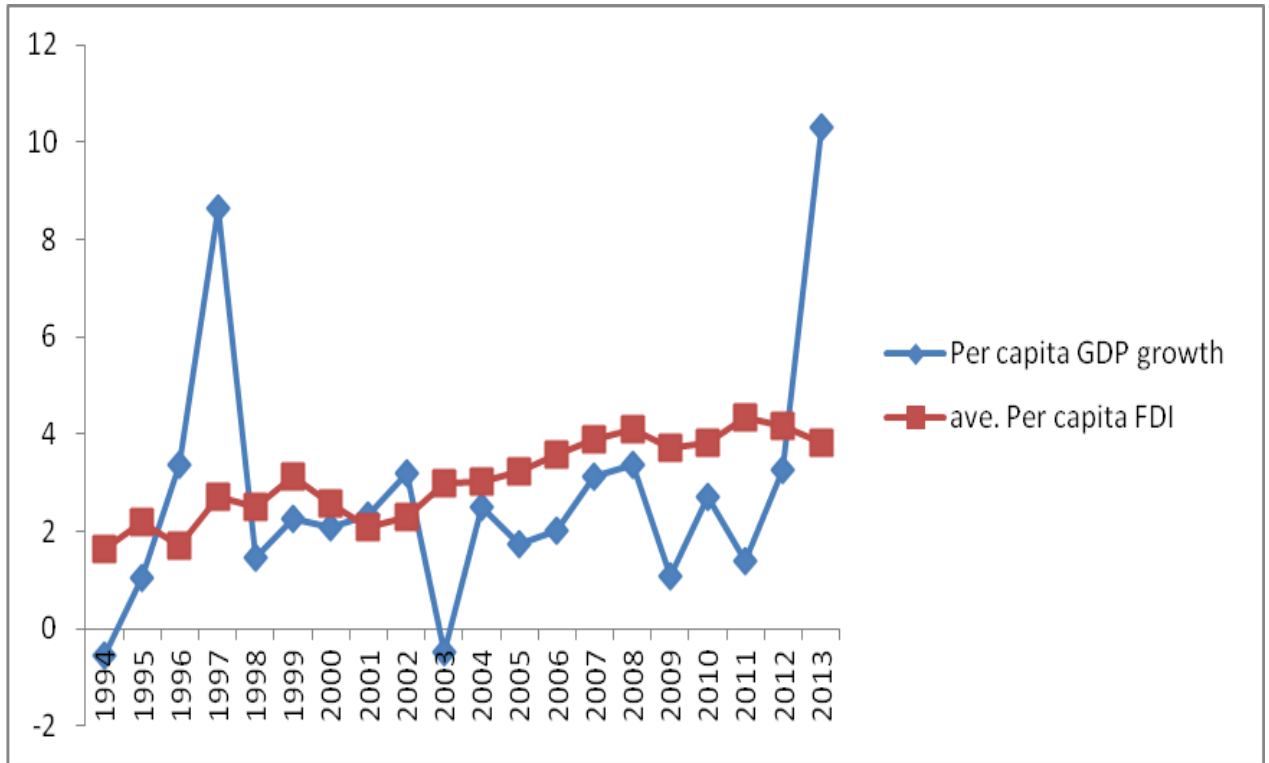


Source: UNCTAD Database (2013)

**Figure 2.2: FDI Inflows to the ECOWAS countries**

Considering the per capita FDI inflows and per capita GDP growth rate, the magnitude of these variables has been affected by the increasing population size. In general, inflows of per capita FDI to ECOWAS region have been fluctuating over some years just as the per capita growth displays a fluctuating pattern with negative growth for some years compared with what was observed in per capita FDI inflows between 1994 and 2013. One peculiar feature as shown in figure 2.3 is that increasing in per capita growth tends to stimulate more per capita FDI inflows coupled with various attempts to move to a different stage of integration. The charts below show the trend in per capita FDI inflows; growth and integration indices based on the level of integration attained in ECOWAS and SADC trade blocs under study.

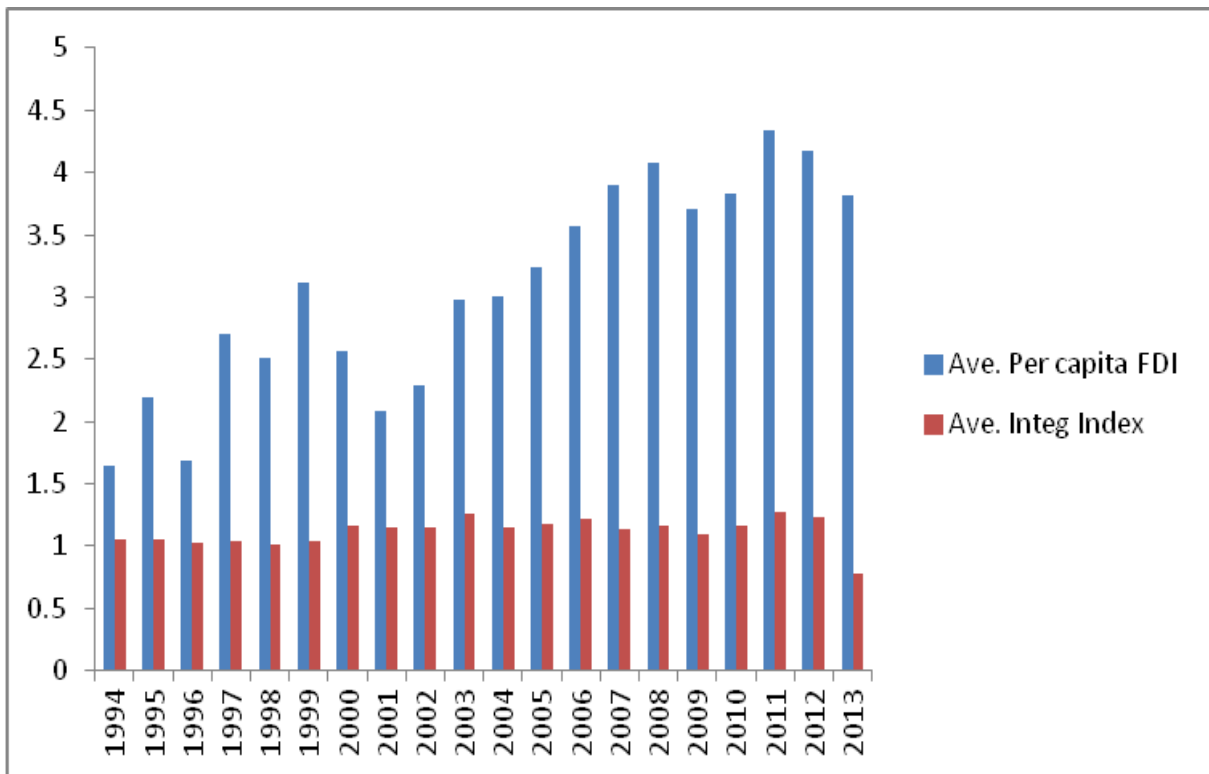
The chart below indicates that growth rate of per capita GDP and FDI flows to ECOWAS have been unstable over time. In actual values, per capita GDP growth rates have been positive in line with the inflows of FDI except for 1994 when the growth showed negative value (-0.6%) with per capita FDI of about US\$5.2billion. During this period one of the key ECOWAS states was experiencing some acute political challenges which affected economic performance. The positive growth rate and FDI flows was consistent though fluctuating until 2003 again when the growth rate was about -0.5 with FDI inflows of about US\$19.6billion much higher than the three previous years. Other growth inducing determinants apart from FDI were expected to stimulate growth during this period. Per capita GDP growth rate was highest in 2013 recording about 10.3% with per capita FDI of about US\$45.7billion. This indicates a growth inducing capacity of other growth determinants including FDI.



Source: Data compiled from WDI, UNCTAD (2012 and 2013)

**Figure 2.3: Per capita growth rate and Per capita FDI (US\$ Billion) in ECOWAS**

Both the per capita FDI and level of integration have been unstable over time. The average integration index of about 1.1 in 1994 accompanied inflows of per capita FDI of US\$5.2billion. The highest average index was about 1.3 in 2011 and this accompanied per capita FDI of about US\$76. 4billion. Per capita FDI however reduced to US\$45.7 billion in as at 2013 following a drop in the integration index to 0.772. This increasing trend of FDI flows following increase in integration index describes the role of integration in FDI flows as displayed in figure 2.4 below.

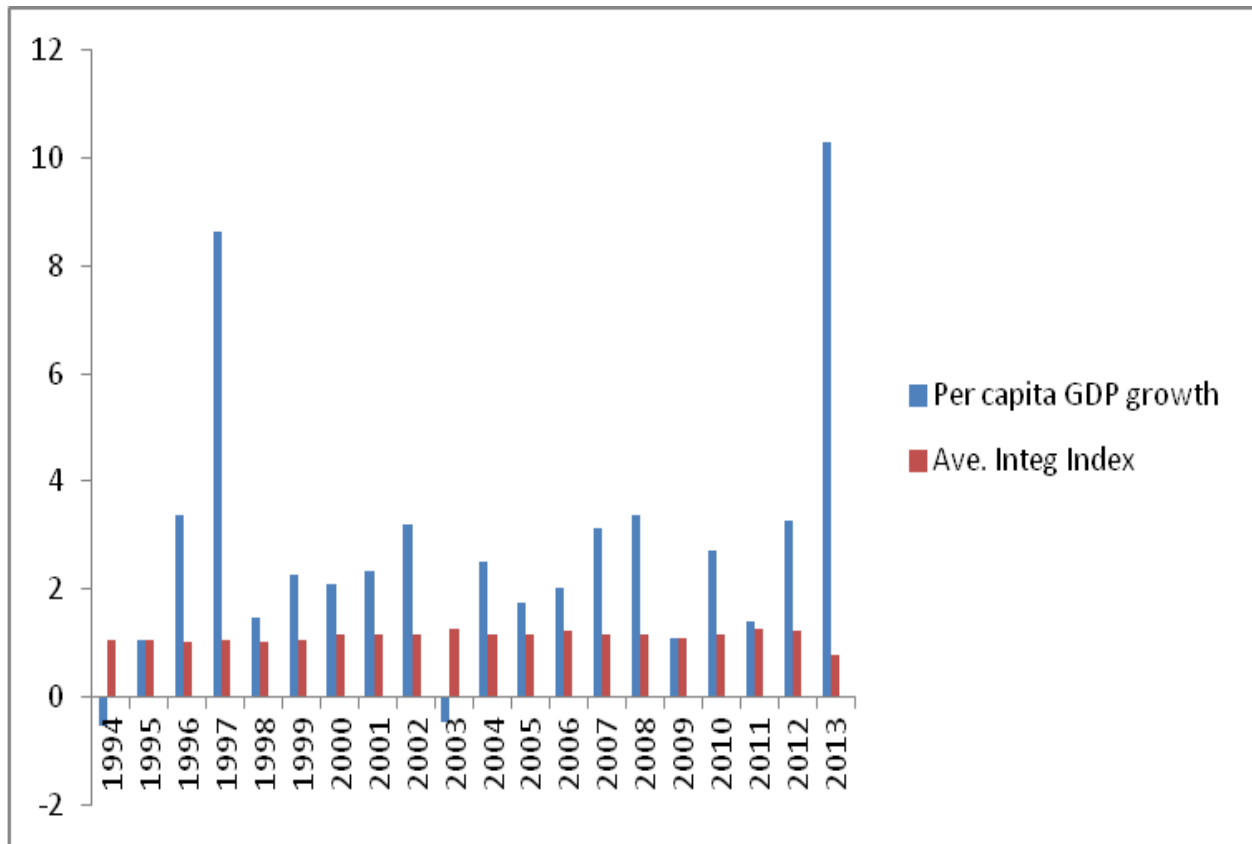


Source: Data obtained from the WDI (2013), WEO (2014)

**Figure 2.4: Per capita FDI (US\$ Billion and average Integration index in ECOWAS**



The pattern of growth and integration is also displayed in figure 2.5 below. Growth has also been fluctuating over the period. Average integration indices in 1994 and 2003 of 10.5 and 1.3 recorded negative growth rates of about -0.6% and -4.7% respectively. Growth was highest during 1997 reaching about 8.7% with integration index of about 1.0%. This index was apparently low compared to 1994 which recorded growth rates of -0.6%. The lowest index of 0.8% was accompanied with 10.3% growth rate in 2013.



Source: Data obtained from WDI (2013), WEO (2014)

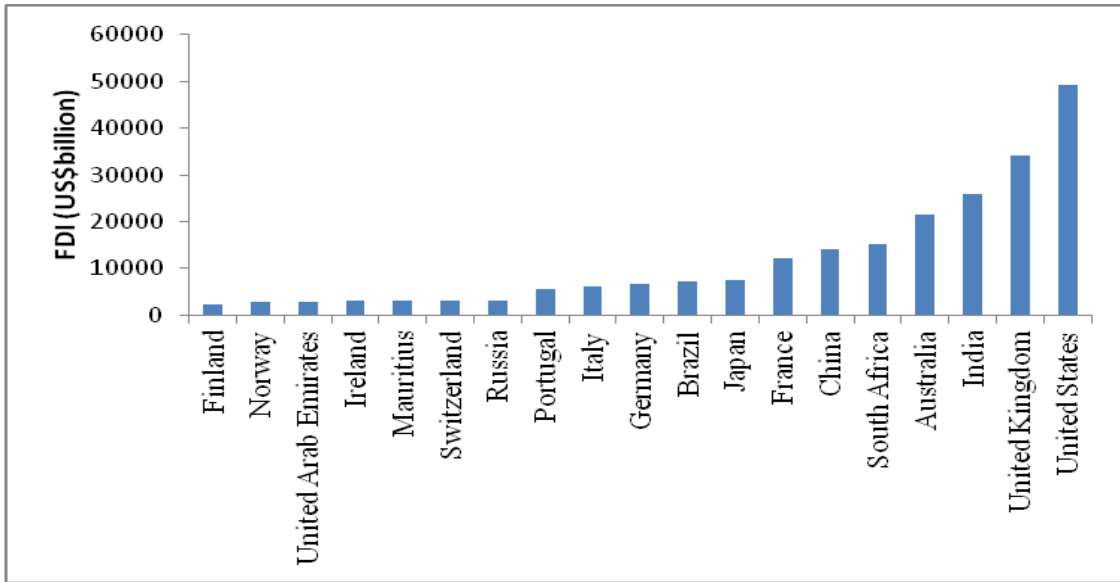
**Figure 2.5: Per capita GDP growth and average integration in ECOWAS**

The link among FDI, growth and average integration vary across time based on efforts towards facilitating integration in ECOWAS. There is no doubt that, FDI is an important aspect of the recent wave of globalisation. In the past few decades, the growth rates of world FDI exceeded both the growth rates of world trade and GDP. While the fact remains that a large portion of world FDI is hosted by developed economies, FDI flowing into developing countries also increased at a rapid pace over the years. Most of the rise in global FDI has been attributed to gradual reduction in barriers to international investment and trade. It has been well documented that communication and transportation costs have been decreasing to a considerable extent in the last few decades. There has also been a significant reduction in tariffs through several rounds of multilateral negotiations under General Agreement to Trade and Tariffs (GATT) and trade policy initiatives by individual or groups of countries (Clemens and Williamson, 2002). These developments certainly help multinational firms manage production across borders and reduce the costs of intra-and inter-firm trade. It is expected that an increasing level of integration would spur growth.

### **2.2.2: Trend in Investment flows, Growth and Integration in SADC**

The Trade Protocol of SADC recognizes the need for newly liberalized economies to benefit from investment flows to reduce the real possibility of weaker economies becoming ‘retail outlets’ for goods and services produced in the relatively stronger economies such as South Africa and Zimbabwe.

According to FDI intelligence (2013), the top five source countries into SADC from 2003 to 2013 include the United states injecting a total of US\$49billion, United Kingdom (US\$34 billion), India(US\$26billion), Australia(US\$21billion) and South Africa(US\$15billion). The USA contributed about 19% of the total FDI into SADC with South Africa, a SADC member, contributed about 6% during the same period (see figure 2.6). Other SADC countries which invest in the region are Mauritius (1.2%), Namibia (0.3%), Zimbabwe (0.2%). Generally, above 80% of the FDI into SADC comes from the America, Europe and Asia.

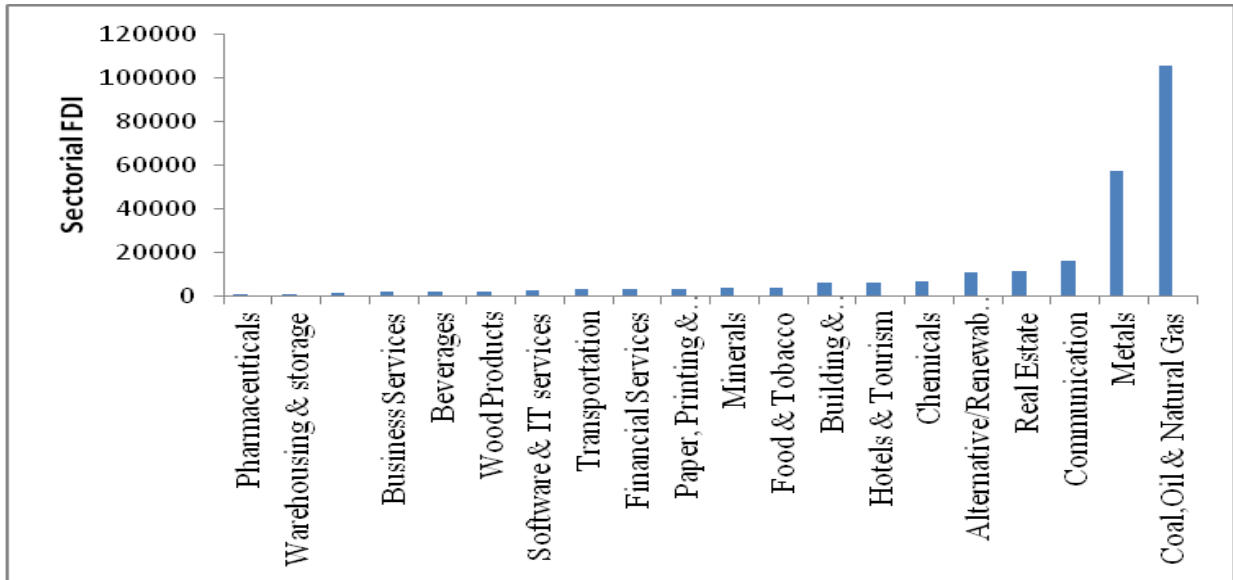


Source: *fDi Intelligence (2013)*

**Figure 2.6: Top Source countries of SADC's FDI (2003-2013)**

FDI into SADC seems to be resource seeking. The major motive in this type of FDI is the acquisition of particular resources not available at home (natural resources or raw materials). Statistics shows that a total of US\$183billion was invested in the extractive sectors indicating about 63.0% of the total FDI to SADC during 2003-2013.

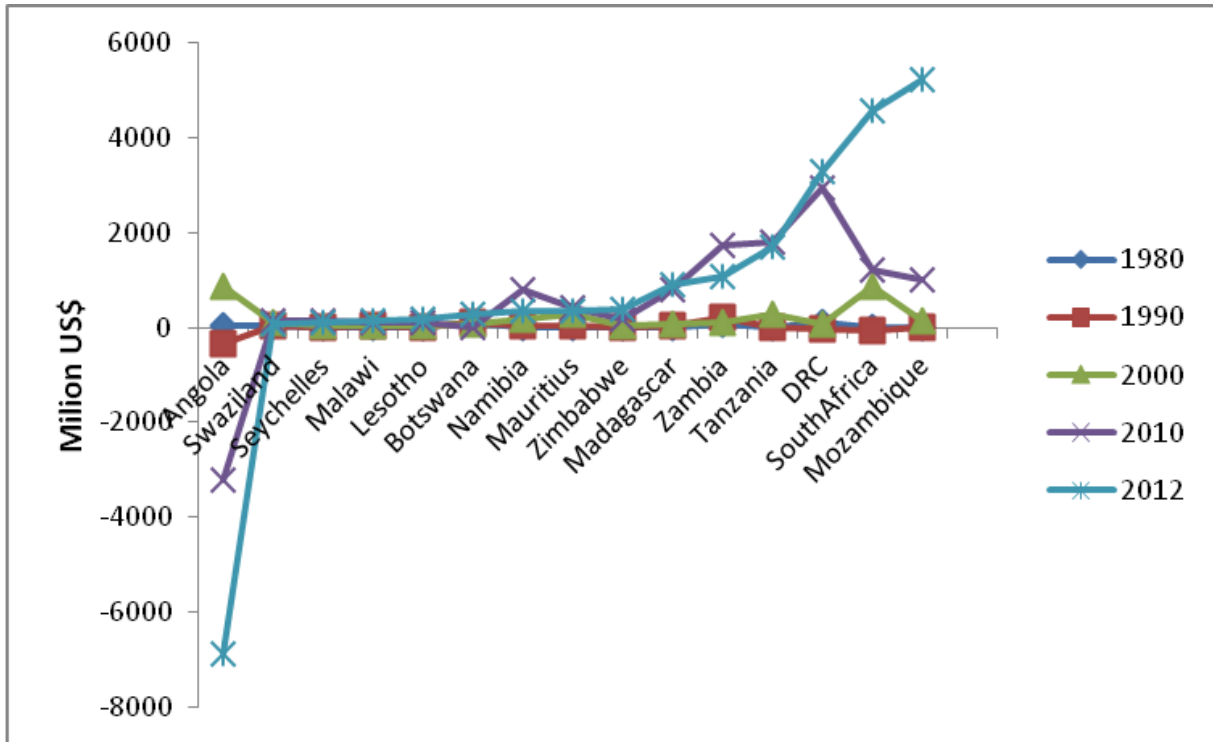
A major beneficiary was the oil and gas sector with US\$106 billion and accounting for about 41% of the total FDI invested in SADC between 2003 and 2013. The metals sector received 22%, the communications sector had 6% while the real estate and renewable energy sectors received 4% each during the same period (see figure 2.7). However, the major recipient of oil and gas investment has been Mozambique.



Source: fDi Intelligence (2013)

**Figure 2.7: FDI Inflows to SADC from some Notable Sectors (2003-2013)**

The FDI inflows into SADC constituted 1.95% of the GDP which is lower than those of all other regional blocs except COMESA. On a country by country analysis of FDI flows, Mozambique has been attracting the highest amount of FDI inflows in recent years even though South Africa remains the biggest economy. FDI inflows into Mozambique increase sharply from about US\$4.4 million in 1980 to the SADC highest of US\$5.2 billion in 2012 accounting for 28% of the total FDI positive flows to the region. South Africa was next followed by DRC and Tanzania with 24%, 18% and 9% of the total flows respectively. The top five recipients of FDI inflows are mineral & oil producing countries. Angola and South Africa are found to be the countries that received the largest share of FDI inflows into SADC for most of the years except for negative FDI flows in 2010 and 2011 in Angola (see figure 2.8).



Source: UNCTAD Database (2013)

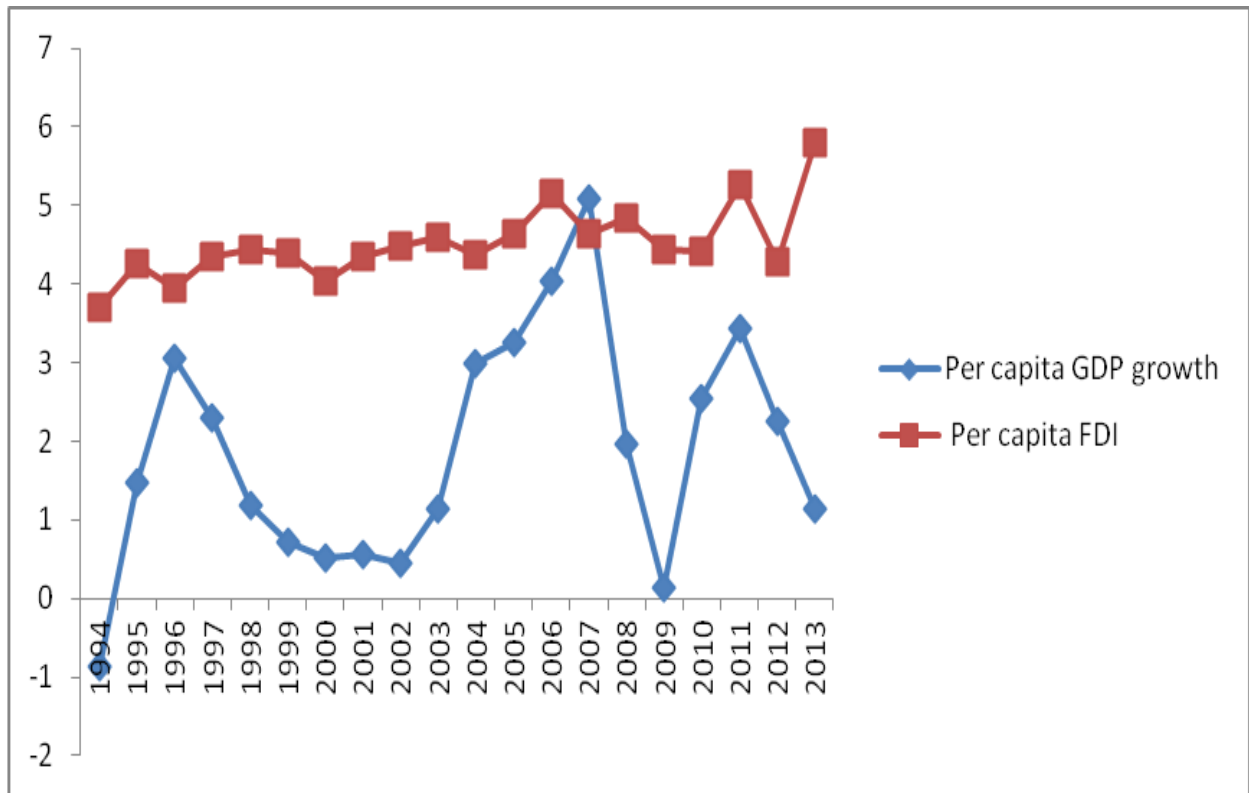
**Figure 2.8: FDI Inflows to the SADC countries**



On the FDI and growth dynamics in SADC, both FDI inflows and growth have been moving with similar trend over time just as in the ECOWAS. Average FDI inflows appeared low in the 1980s with US\$342 million (about 0.3% of the GDP). The real GDP grew about 2.4% during the period. While FDI increased in the 1990s and 2000s, GDP growth rates too rose significantly to about 7.4% in 2007.

The relationship between the growth in per capita GDP and the inflows of FDI over time took another dimension with the level of integration during the period 1994-2013.

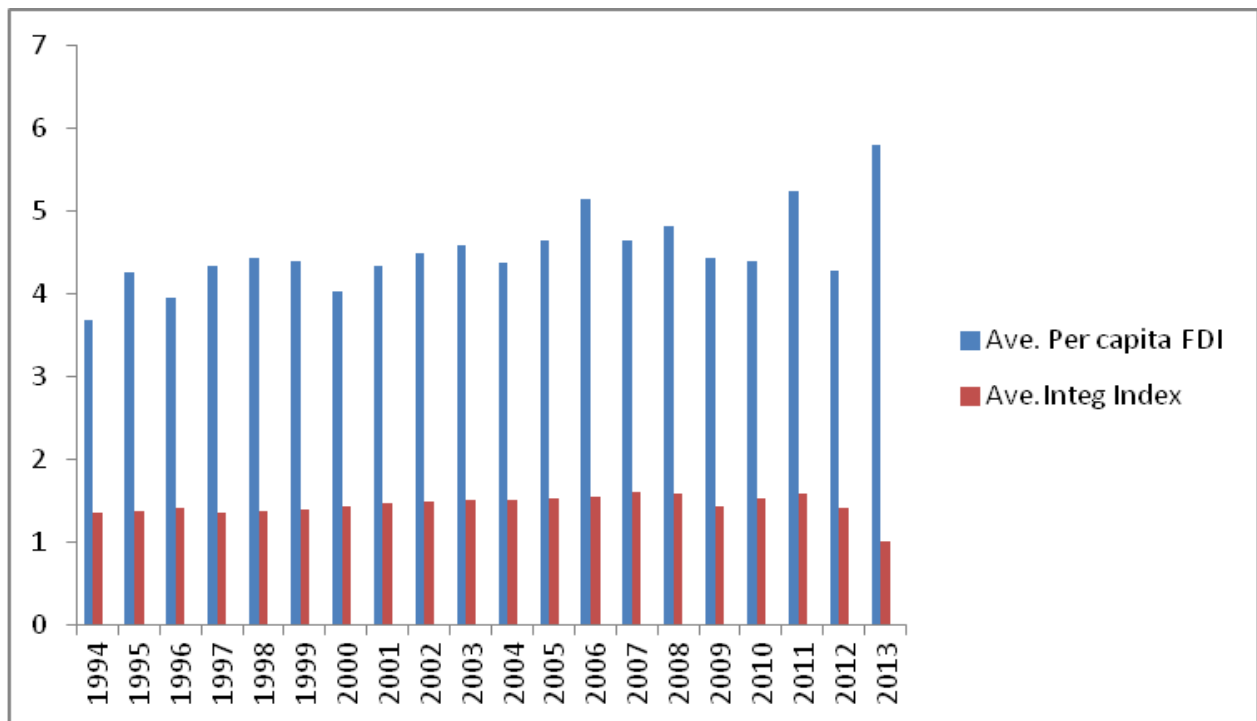
Using the level series, trend in Per capita FDI and growth has been inconsistent during 1994-2013. Per capita FDI flows reached \$40.2billion in 1994 with Percapita growth of -0.9%. The highest per capita FDI flow was highest in 2013 reaching \$333.0billion accompanied by 1.1% per capita growth. This is unexpected following the fact higher growth rate accompanied some years with lower per capita FDI flows. However, both fell significantly during 2008-2009 consequent upon the global economic crisis and have since rebounded.



Source: Data compiled from WDI, UNCTAD 2012 and 2013

**Figure 2.9: Per capita GDP growth and Per capita FDI (US\$ Billion) in SADC**

On a comparative level, average integration index was higher than that of ECOWAS during 1994-2013. The index has been on the increasing since 1994 (1.4) to its highest of about 1.6 before dropping slightly in 2008. By 2009, the index had dropped to about 1.4. The global economic recession around this period could be partly responsible for this. The FDI flows during the 1994-2013 fluctuated around the 1994-2013 starting from about 40.2 billion\$ up to the highest of 333 billion in 2013. FDI flows dropped between 2009 and 2011 just as the index dropped around this period (Figure 2.10).



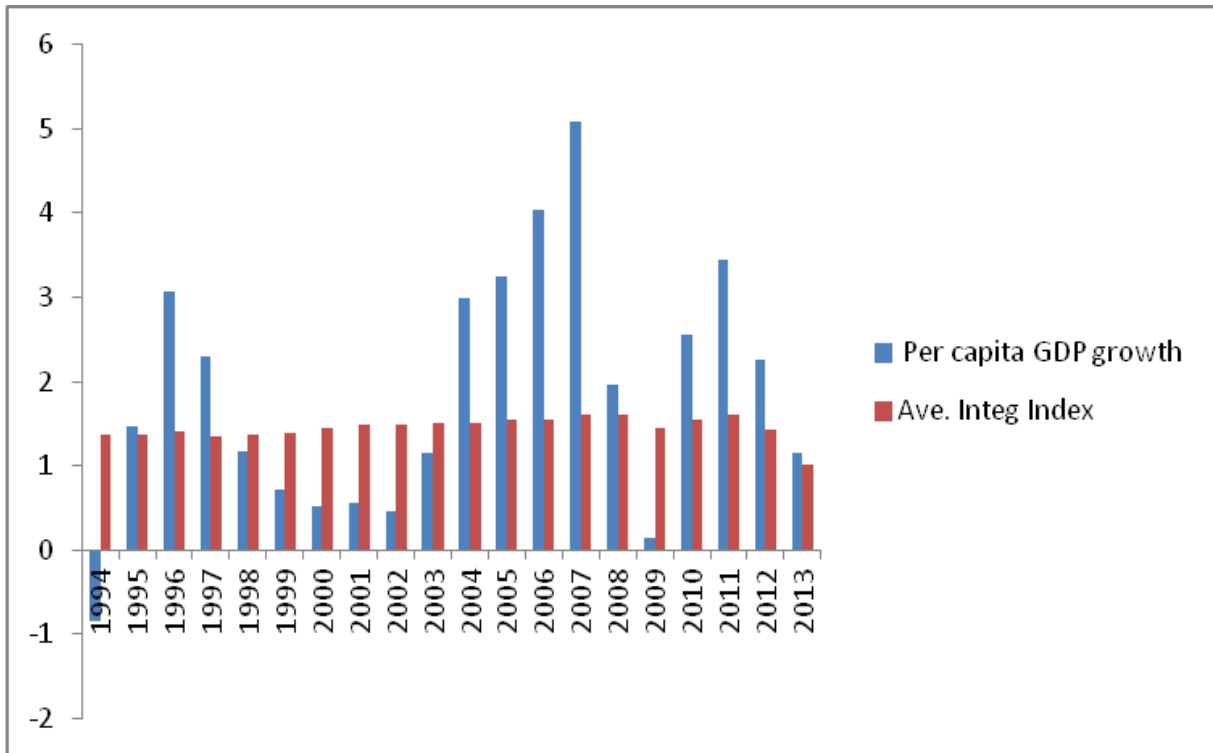
Source: Data compiled from WDI, UNCTAD 2012 and 2013

**Figure 2.10: Per capita FDI (US\$ Billion) and average integration index in SADC**

Per capita GDP Growth has demonstrated a fluctuating pattern in the SADC during the 1994-2013 just as FDI inflows. Starting with about -0.9 % per capita GDP growth in 1994 with corresponding integration index of about 1.4, the growth rate increased to 4.0% in 2006 corresponding to about 1.5 index of integration. By 2013, the average index declined to 1.0% with growth rate too falling to about 1.1% (Figure 2.11 shows the trend)

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<sup>2</sup> Variables in the charts are in their natural log forms except those that appear in rates or those whose log values are negative. This is to control for any form of spike during the period. In econometrics, this may essentially reduce the problem of heteroscedasticity. The average integration index was computed from the combination of inter-regional trade, openness and relative size of the bloc's trade in total world output measures of integration. Interpretation was based on the normal series. Averages of GDP growth and FDI (in per capita terms) are taken across the trade blocs and used for the graphical illustration to reduce over-crowding of figures.



Source: Data compiled from WDI, UNCTAD 2012 and 2013

**Figure 2.11: Per capita GDP growth and average integration index in SADC**

## CHAPTER THREE

### REVIEW OF LITERATURE

#### 3.1: Introduction

In this chapter, attention is mainly on the review of the theoretical, methodological and empirical issues relating to FDI, growth and economic integration. The first part concentrates on the theoretical review which examines the theory of multinational enterprises (MNEs), neoclassical economic growth theory, two-way FDI-growth relationship which considers the FDI-led growth and the growth-driven FDI hypotheses. These have been given different explanations in the literature. Theoretical models have based FDI-led economic growth on endogenous growth model while Multinational Corporations (MNCs) theory is used to explain the growth-driven FDI hypothesis. Next is the discussion of the theory of economic integration. Finally, issues relating to economic integration, FDI and growth are examined. The second part is concerned with the various methodologies adopted by previous researchers in related areas while the third part discusses the empirical reviews. This is mainly based on the various findings in related areas.

This chapter also reviews the FDI-economic integration relationship and as well as growth-economic integration relationship. In the traditional two-country models, the relationship between FDI and the process of regional economic integration is fundamental. The idea is that in a RIA that reduces trade barriers between member countries while maintaining barriers with respect to non-members, the market access of firms operating within the region is improved. Therefore, there is an incentive to locate in member countries in terms of FDI creation at the detriment of other potential host countries (FDI diversion) which do not participate in the RTAs. This intuition seems to be supported by the empirical evidence, with several studies finding a positive impact on regional integration on FDI flows.

It is widely believe that increased economic integration between economies of the world has tended to increase the growth rate in the long run. Prospect for growth would be permanently diminished if a barrier were erected that impeded the flow of goods, ideas, and people.

Given the above, the theoretical and methodological background on the two way relationship between FDI and growth has not been applied on a wider range to take care of the role of economic integration in FDI-growth relationship. Besides, evaluating the complementary impact of integration on growth has not been adequately taken care of.

### **3.2: Theoretical Review**

#### **3.2.1: Theory of Multinational Enterprises (MNEs)**

There have been recent investigations on the role of FDI for economic growth and development of states, regions and cities (Bevan and Estrin, 2004; Dunning, 1993; Meyer and Nguyen, 2005) and the impact of MNEs' activities on the economic development of the countries hosting their subsidiaries has often been discussed in the literature. The regional level and the factors behind the geographical distribution of FDI at the sub-national level have not gained much attention. The MNEs have been the focus of much attention as they are central players in the world economy. Most studies began in the 1960s, and this marked the period when FDI was experiencing an enormous growth. A host of theories exist and attempt to explain the behaviour of MNEs. These theories attempt to answer three fundamental questions: (a) What motivates national firms to produce abroad? (b) What encourages them to do so? (c) Why do they undertake different forms of investment abroad? While some of the theories are overlapping, some emphasize particular characteristics of MNEs. The theories of MNEs center around equity involvement (FDI) by MNEs. Our concern is on the macroeconomic theory of MNEs which explains MNEs from international economics and trade point of view.

Foreign investors mostly assess overseas locations based on market opportunities and obstacles. Their interest is to invest into the locations which offer advantages in terms of proximity, market growth, lower costs, strategic resources, and favourable institutional conditions in order that their return on investment is maximised. Institutions contribute substantially to the location advantage since the specific institutional setting at the location of a business activity is greatly important in large and decentralised emerging markets. Transition states have been exposed to inflows of foreign capital since their socio-economic transformation. Despite the spread of market institutions at the national level, the business environment at the regional and local level are



faced with frequent changes of policies, institutional rules, and attitudes and these reduce the enforceability and predictability of institutions for potential foreign investors.

The factors that tend to attract MNCs towards certain markets and economies are unevenly distributed among countries and regions. While some regions clearly benefit from attractive initial conditions, which tend to pull in foreign investment that further fosters the transition process, regions which do not have such opportunities are left behind and perform relatively poor (Barrel and Pain, 1999). Therefore the regional variation in the institutional environment at different locations indicates an important extension of the original reasoning about foreign firms choosing specific markets (Meyer and Nguyen, 2005). The relevance of the institutional perspective for the location choices of MNCs has gained much attention recently. This focuses on the embeddedness of firms into local institutional environments (Kostova and Zaheer, 1999). Foreign firms tend to be highly dependent on the institutional factors at the chosen location for investment and have to adapt themselves to the local institutional framework so as to gain legitimacy and integration within the regional economic system. FDI from developed into developing countries depends even more on institutional parameters based on the fact that developed country MNCs are used to a business environment shaped by a set of rather complete market-based institutions in their home markets (Kang and Jiang, 2012). However, these MNCs are often strong players in their industry with power to shape institutional contexts in the host country due to their large size, superior capabilities and dominant position in global value chains. Therefore, an independent perspective on institutional quality, location choices of MNCs and institutional changes are needed

### **3.2.2: FDI and Capital flow theory**

Until 1960, FDI undertaken by MNEs was regarded as a form of international capital flows. Capital flow theory suggests that capital moves between countries in relation to differing interest rates in different countries (Hymer, 1979). It is also pointed out that interest rates would vary depending on the “factor endowment ratios of labour and capital and risk premium” (Hymer, 1979). In the same vein, MNEs occur in countries where the return on investment is higher (Parry, 1980). Clearly, no distinction was made between portfolio investment and equity

involvement by MNEs. This theory is however criticized on the grounds that MNEs were not only transferring of capital but also, technology, management and organizational skills, and these were transferred within the firm retaining control over their use (Dunning, 1979). Again, majority of the MNEs were not going to the countries poorly endowed with capital (Hennart, 1982) and financial institutions were not prevailing among MNEs. Owing to some of these criticisms, this hypothesis was abandoned.

The theory of capital movements was the earliest explanation for FDI and is viewed as part of portfolio investment. (Vernon, 1966) used the product life cycle concept to theorise that firms set up production facilities abroad for products that have already been standardised and matured in the home markets. These two issues spawned numerous contributions to explain FDI and MNE activities from different theoretical perspectives. (Caves, 1971) and Dunning (1958) saw FDI as a way of exploiting ownership advantages while it is viewed as risk diversification and as organisational assets and knowledge transfer. The eclectic paradigm of Dunning (1980, 1993) provides an ownership, location and internalisation (OLI) advantages –based frame work to analyze why and where MNEs would invest abroad. Such investment could be resource seeking, market seeking, efficiency-seeking or strategic asset-seeking.

The location decision of an MNC remains of strategic importance because the factors which attract foreign firms to certain locations determine the firm's competitiveness in the long run. International strategies of transnational companies centre on tapping selective knowledge and strategic location-bound resources so as to improve the comparative advantage of an internalising firm over the non-internalising (Porter, 1994). As Internalisation theory was developed, it was further extended by Hennart (1982). This theory states that transnational companies strive to act in such a way as to develop their internal specific advantages which they can therefore exploit during the internalization process. Hymer (1976) contributes to this theory with the line of thinking that any firm decides to invest abroad only when the benefit of exploiting firm-specific advantages exceeds the relative cost of entering foreign markets.

The range of specific host region determinants for the attraction of FDI is broadly divided into two groups: The traditional economic factors and the institutional factors (Frenkel et al., 2004;

Bevan et al., 2004; Kang and Jiang, 2012). The traditional economic factors are based on the conceptualisation of FDI location choices by Dunning (1993) in his eclectic paradigm OLI. Dunning (1980, 1981) supports the internalisation theory through his eclectic paradigm.

The selection of a suitable location is an integral part of FDI decision of a firm. The OLI framework of international production best shows the importance of the location in the context of the FDI decision. According to Dunning (1993), firms will engage in FDI only if three factors are present: Ownership advantages, location advantages and internalisation benefits. Ownership advantages are referred to as the firm specific assets, both tangible and intangible that firm possesses, particularly with regard to the property competences, which enable a company to marginally outreach its competitors in terms of profitability. Any firm is known with certain set of internal advantages, over which it has monopolistic rights that allow using those advantages for the clear benefit of the firm. These advantages can be classified into three groups (Denisia, 2010). These involve the monopoly advantages, technology advantages and economies of large size. If the ownership advantage does not lend itself to arm's length transactions, the firm may seek to extract value by internalising the market for its firm-specific advantage across borders- i.e., FDI. The location advantages refer to those factors that a specific location owns and which attract foreign companies to the hosting location. Advantages of a certain country or even region can be divided into economic advantages, institutional advantages and social advantages. These location-specific parameters enable an MNC to become more profitable with either lower costs involved or better access to specific knowledge, which thus becomes a strategic asset on the way to outperforming competitors. Internalisation advantages are concerned with those advantages which are brought to the firm by owning production within a specific location rather than by licensing or joint-venture agreements. When the benefits of producing the products by itself are higher for the firm than costs of not doing it, then the firm might choose to enter a new market through the FDI entry mode.

Engaging in FDI will depend on finding a suitable location with sufficient country-specific advantages that match the particular FDI motivations of the MNC. Firm's intent in choosing a particular FDI location can be categorised into market seeking, efficiency –seeking, and resource-seeking behaviour (Dunning, 1998). Market seeking FDI will tend to go to large

economies or those economies that cannot be accessed other than via FDI (e.g., ones protected by trade barriers). Efficiency –seeking FDI will go to countries that can provide the best business environment for fully realising the internalisation benefits of the firm’s assets. Resource-seeking FDI will go to those countries that are abundant in the resources sought (e.g., crude oil or low labour costs). Nations that are interested in attracting FDI need to focus on improving their location-specific advantages with respect to the FDI motivations of MNCs.

### **3.2.3: Theories of International Investment and the Monopolistic Advantage**

It has been argued that location theory if extended across national boundaries, could explain reasons for the emergence of MNEs (Parry 1980). Two views exist for location theory- these are supply oriented location theory which explains that production takes place where the factor costs for production (including distribution) are the lowest (Dunning, 1973) and the demand oriented location theory which is of the view that the location of a firm is governed by the location of its market and competitors (Dunning, 1973). The combination of these two theories give rise to location factors such as raw materials, cheap labour, protected and untapped markets and transportation market which are believed to determine the emergence of MNEs (Buckley, 1985). This did not however give explanation on how foreign firms could outcompete domestic firms neither did it give the origin countries of MNEs. Regardless of these shortcomings, this theory often provides valuable insights as to the geographical distributions of MNEs.

In a study of the US FDI, Hymer (1960) found the monopolistic advantage theory. Buckley (2006) classified his ideas in three distinctive phases during which the focus was shifted from the micro-dynamics, such as transactions and the firm, to the macro-dynamics or the world economic system dominated by the Western MNCs.

Hymer (1960) argued that if a firm owns valuable firm-specific assets that cannot be easily replicated by competitors, it tends to generate higher rents and compensate the high costs of investing and operating abroad. The belief is that firms with a superior advantage within an imperfect product market would favour FDI. Structural market imperfection such economies of scale, knowledge advantages and diversification and known important factors that allow utilization of firm’s advantages and acquiring a monopolistic power in foreign markets were

considered (Buckley, 2006; Claver & Quer 2005). Hymer's view of FDI inflows is such that they do not have relationship with country-level factors such as high interest rate (Buckley, 2006; Kogut & Singh, 1988; Rowthorn, 2006). The argument is that cross FDI happens simultaneously and offer within a similar industry; while other industries absorb more FDI flows (Buckley, 2006; Rowthorn,2006;Teece,2006)

### **3.2.4: Evaluating Neo-classical economic growth theory**

The mechanisms underlying economic growth and the explanation of persistent geographical inequalities in levels of productivity have remained issues of key research interest. Prior research on growth theory has considerably improved understanding of these issues; it has however generated substantial debate. There is neo-classical position adopted by exogenous and endogenous (or new) growth theories. At the other end, there are theories based on the Schumpeterian ideas of creative destruction and catching up based on evolutionary and institutional approaches.

Like the literature on growth theories, the econometric literature on productivity has also developed several alternative approaches. The empirical models and inference methods can be categorized into key methodologies: (a) the ordinary least square (OLS) regression based approach and the associated interpretation of the Solow residual as a measure of total factor productivity (TFP), and (b) frontier production function estimation where the distance from the highest achievable levels of productivity is interpreted as a measure of productivity efficiency.

The entire structure of the theory of growth is built on a concept of decline such as the concept of diminishing returns. Due to the reliance on the concept of diminishing returns, growth theory in the neoclassical economics has been unsatisfactory especially as it stands.

The crux of this that it seems impossible to describe how something increases given that the main process used to describe the increase is a process decreasing values. Due to this paradox, neoclassical theorists tend to accentuate a particular set of social concepts such as diminishing returns, and then use technology as an explanatory variable when other concepts are seen not to have sufficient explanatory power.

In the case of the modern economy, the often discussed factors of production are those of capital and labour. With capital and labour as the inputs of production, there exist two possibilities for diminishing returns: these are the cases in which capital is held constant and labour is increased and labour is held constant while capital is increased. The first case is the decreasing marginal productivity of labour and the second, decreasing marginal productivity of capital.

At some point, an additional unit of capital yields only enough returns to barely covers its costs, or in the other case, an additional unit of labour yields only enough returns to barely covers the additional costs. This moment equals the price of capital and labour, respectively. Hence capital and labour receive as income that which they contribute to production (Clark 1927). Therefore, one can deduce how much labour and capital, in the national aggregate, contributed to the economy simply by finding out how much each factor of production received, in the aggregate and so this is the theoretical premise upon which the Neo-classical growth theory is based.

Neoclassical economists tend to concentrate on short- run economic processes which explain the time period before any increase in capital. In the long run both factors of production can be increased proportionally and constant returns may prevail.

There are three fundamental points to be made concerning the neoclassical theory: these are

(i)The “residual” has never been explained (ii) the core technology claims that “technology” is responsible for sustained growth, and this technology cannot be explained and (iii) the assumption of diminishing returns puts into question the validity of the entire theory.

However, many economists have attempted to explain the “residual”. Robert Solow estimated that “it is possible to argue that about one-eighth of the total increase in output is traceable to increased capital per man hour and the remaining seven-eighths to technological change” (Solow, 1957). Denison (1967) is well known for attempting to estimate factors that could account for the remaining seven-eighths. Solow (1988) argues that, according to Denison’s calculations, “the growth of ‘capital’ accounts for 12% of the output growth.

The second point made about neoclassical growth theory is that any sustained level of growth is shown by Solow to be due solely to technology. Accordingly, the permanent rate of growth of

output per unit of labour input is independent of the saving (investment) rate and depends entirely on the rate of technological progress in the broadest sense (Solow, 1988). This conclusion flows from the aggregate production function.

According to the neoclassical economists, aggregate production function is subject to diminishing returns implying that output per worker man-hour increases in proportion to the increase of capital per worker, but at a diminishing rate. The production function in this case is acceptable to the mainstream of economics because it is consistent with the idea of marginal productivity and diminishing returns.

### **3.2.5: Two-way FDI- growth relationship**

The hypothesis of FDI-led economic growth has been based on the endogenous growth model which states that foreign investment associated with other factors-such as capital, human capital, exports, and technology transfer- have had significant effects in driving economic growth(Borensztein et al, 1998; Lim and Maisom, 2000). These growth-driving determinants might be initiated and nurtured so as to promote economic growth through FDI. In this regard, FDI may be growth inducing and thus have positive growth impact that is similar to domestic investment, along with partly alleviating balance- of -payment deficits in the current account(Zhang, 2001). Studies have recommended that the inflow of FDI might be able to stimulate a country's economic performance through technology transfer and spillover efficiency. The spillover efficiency takes place when domestic firms are able to absorb the tangible and intangible assets of multinational corporations (MNCs) embodied in FDI. Moreover, as FDI creates backward and forward linkages, and MNCs contribute technical help to domestic firms, the expectation is that the level of technology and productivity (for labour and capital input factors) of domestic producers will increase (Blomstrom et al., 1992).

The hypothesis of FDI-led economic growth is quite different from that of the GDP-driven FDI hypothesis. The latter is strongly based on the MNC theory. According to eclectic paradigm, Dunning (1977 and 1993) argues that MNCs with certain ownership advantages will invest in another country with location advantages and these advantages can be captured effectively by “internalizing” production, through FDI. The hypothesis of growth-led FDI therefore focuses on

location factors such as market size as the most significant factor in attracting FDI. As the market size of the host country increases with a high rate of growth, other things being equal, FDI tend to increase, resulting from the expected higher level of profitability. High rate of economic growth will induce increase in the level of aggregate demand for both domestic and foreign investment (see Corden, 1999; Zhang, 2001). Besides, better economic performance suggests better infrastructural facilities and greater opportunities for making profits. Hence, the greater the market size, the greater the inflows of FDI into the recipient countries. There is however the possibility of feedback causality existing between FDI and economic growth. As large market size leads to rapid economic growth, which in turn leads to increase in FDI flow and subsequently increasing the profitability levels. This will facilitate economic performance resulting from high level of aggregate demand. Therefore, the conclusion that there exists a positive feedback between FDI and economic growth is not surprising and this is due to the interdependence between the two variables.

There is contradicting evidence on the relation between FDI and growth. On a theoretical ground, FDI may affect growth positively since FDI moves in general from capital- rich countries to capital –scarce economies, lowers rental rate of capital and increase production via enhancing labour productivity and introducing new technology embedded in the capital. On the other hand FDI may affect growth negatively, as it may reduce competition and may corrupt the development path of a country.

The development and dependency theories are among the theories used to explain effect of FDI on growth. The development literature shows many ways in which FDI could contribute to growth in real income of the host country. In the first instance, there is the release from binding constraint of domestic savings through foreign capital inflow. With this, FDI augments low savings in the process of capital accumulation. FDI therefore stimulates domestic investment and the total investment available in the country is enhanced (Ajayi, 2006). Secondly, FDI produces externalities in the form of technological transfer and spillovers (Carkovic and Levine, 2002). With these effects, FDI may affect economic growth through the augmentation of domestic investment and efficiency effects. However, other studies suggest that FDI does not have an independent effect on economic growth. Its effect is dependent on the initial country conditions



that allow it to exploit FDI spillovers. Given the frequent positive relationship between FDI and economic growth, there have been controversies on whether such a relationship entails causality running from FDI to growth or not. According, to Ting Gao (2005), the most often observed positive correlation might not imply any causal relationship since both of them might respond endogenously to economic integration. The dependency theorists are of the opinion that dependence on foreign investment is expected to have a negative effect on economic growth and the distribution of income. It has been claimed that foreign investment creates an industrial structure in which monopoly is predominant leading to what Ajayi (2006) refers to as an enclave economy in which local investors are excluded. As a result, countries that are wholly dependent on FDI will experience stagnation, unemployment and increasing inequality.

### **3.2.6: Economic integration, FDI and growth**

#### **3.2.6.1: Theory of Regional integration**

The theory of regional integration (RI) originates from the standard trade theories supporting free trade over any other trade regime (Ng'eno et al., 2001). The Ricardian model and the Heckscher-Ohlin model provide the basis for pure theory of international trade. While both models advocate for free trade, they differ in terms of what drives nations to trade with each other. The Ricardian model recognizes technology as a prominent factor in explaining trade patterns. The intuition here is that a difference in comparative costs of production as reflected in production techniques remains the necessary condition for the existence of international trade. According to this theory, international division of labour is determined by the technological differences between countries.

The prediction of Heckscher Ohlin theory is based on the fact that nations would specialize in industries most able to utilize their mix of national resources efficiently. This occurs indirectly when countries export those commodities that use intensively the factors in relative abundance. Therefore, free trade in commodities could serve to equalise factor prices between countries with the same technology, even though the production inputs do not have an international market. This concept is applicable to the operations of multinational firms. FDI involves international capital flows in which a firm in one country creates or expands a subsidiary in another. The distinctive feature of FDI does not only involve transfer of resources, it also includes acquisition of control.

The subsidiary in this case therefore forms part of the organisational structure apart from having financial obligation to the parent company. The idea of Heckscher Ohlin is mainly on the movement of production factors for example capital, from capital abundant to capital scarce countries.

Most of the multinationals come to the ECOWAS and SADC to provide the much needed capital while taking advantage of the abundance in labour. The RIAs follow similar principle. As RIA advances to different stages, the more it opens up the region to trade and free movements of production factors such as labour and capital.

There exist four different stages of economic integration. These are Free Trade Area (FTA), Custom Union (CU), Common Market (CM) and the Economic Union. The preferential trading arrangement (PTA) is the lowest level of integration. Under the PTA, member countries agree to lower barriers to trade within the group than to trade with non-member countries. While each country determines its own policies, the trade policy of each includes preferential treatment of group members.

The PTA advances to the free trade (FTA) area in which barriers to intra group trade are eliminated while each country is at liberty to retain its own nationally determined barriers to trade with non-members. This is usually called trade integration and a good example of this is the North American Free Trade Agreement (NAFTA) formed by the United States of America (USA), Canada, and Mexico in 1993.

From the FTA, the region moves to a custom union. At this stage, the partners remove all barriers to intra-group trade. The members, however, maintain a common external tariff with non-members. The next stage is the common market in which the EAC has already achieved. Under this arrangement, free trade is extended among members to factors of production (Labour migration, capital flows) as well as to goods and services. The members in this region are also expected to maintain fixed exchange rates among their national currencies.

The economic union is the most extensive form of integration. This stage involves the implementation of common group-determined economic policies as well as a common currency.

Integration reduces or eliminates protection among member countries, allows them to specialize in trade according to comparative advantages and enables them to exploit potential economies of scale.

The removal of tariff and non-tariff barriers among RIA partners has the effect of motivating foreign firms to produce from their home countries and sell to the host countries. This is as a result of the cost reduction consequent upon the removal of barriers put by countries to protect their market. The tariff jumping FDI, that is, FDI that primarily exists to avoid the extra cost involved in exporting goods to the host countries, would be more attractive than relocating to the host countries. This has the effect of reducing tariff jumping FDI. On the other hand, the removal of barriers would lead to an increase in FDI especially for vertically integrated FDI, where one affiliate company provides inputs for the other, specialized according to their location factors. Location of production is often determined by resources. These resources could be natural or human resources. The natural resources could be minerals like copper, aluminum, oil and so on, while human resources could apply skills that are necessary in the production of goods or provision of services. In a nut shell, the trade liberalization element of RTAs is therefore generally expected to increase the flow of FDI to the region.

### **3.2.6.2: Economic Integration and FDI: The link**

Regional economic integration can affect the inflow of FDI in several ways. First, in principle, the effect of Free Trade Agreement (FTA) on FDI need not always be a positive one. In fact, in the simplest Heckscher-Ohlin world where free trade achieves factor-price equalization, capital has no incentive of crossing borders. Based on this logic, a free trade agreement tends to reduce the incentives for FDI if the original purpose of FDI is to bypass trade barriers so as to access protected domestic markets. In contrast, when the factor endowment of countries is sufficiently unequal, there is incentive for capital to relocate to more labour- intensive countries. These incentives are further strengthened when the flow of goods between countries are unimpeded. Moreover, third-country corporations may, as a diversion, choose to invest in one of the FTA member countries in order to take advantage of the lower tariffs imposed by the agreement partners (Cuevas et al., 2005). Meanwhile, Blomstrom and Kokko (1997) among others

provided relatively extensive theoretical links between changes in FDI and free trade. In line with the vertical FDI theory, multinational corporations establish different stages of production in different countries in order to take advantage of specific conditions in the local factor markets. Controversially, in a horizontal FDI set-up, multinational corporations would establish similar production facilities in several countries, with each one serving the local market. A horizontal FDI set-up is a rational strategy when obstacles to trade are significant. A vertical FDI set-up, on the other hand, would be more suited in a liberalised environment of a regional integration where trade barriers are reduced.

Explanations relating to the effects of trade liberalization and FDI have remained unclear and are dependent on whether trade and investment are complements or substitutes. First, the rising complexity of MNCs production networks and minimum level of trade links necessary for the emergence of FDI are expected to increase vertical intraregional FDI through increasing RTAs (Medvedev, 2012; Witkowska, 2001). The so called export flat forms too can also increase horizontal FDI inflows from countries outside the RTA. These can be analysed using export-flat form models (Veldete & Bezemer, 2006). Based on the assumption of trade-investment substitutability in the early concept, it was expected that creation of an economic bloc decreases the magnitude of FDI flows (or increase FDI flows in the form of divestments).

On the consequences of customs union creation for FDI flows, horizontal FDI inflows from external countries should increase due to greater incentives for MNC to undertake “tariff costs (Chen, 2009). However, such capital flows depend on the differences between tariffs and other barriers which are applicable to member and non-member countries (Athukorola, 2013). A growing number of customs unions tend to increase vertical FDI and decreasing horizontal FDI attractiveness for external MNCs.

The establishment of an economic bloc gives rise to increased market size which tends to impact on the magnitude of FDI flows. This is particularly observed regions with larger economic blocs and existence of multiple agreements. Issue of market size impacting positively on FDI flows is well recognised in the literature (Medvedev, 2012).

Most research works on trade liberalization and growth tend to use broad measures of integration that capture their overall trade volumes or unilateral trade barriers. There are reasons to believe that regional integration can have dynamic effects. For instance, regional integration agreements can stimulate investment through increasing domestic rates of return and encouraging FDI flows (Schiff and Winter, 2003).

### **3.2.6.3: Economic Integration and Growth**

The formation of economic integration for a long time has been known to increase the welfare of its members. Free trade was considered as the optimum form of trade, so that any step towards free trade would be a movement towards greater welfare. Viner (1950) argued that economic integration with its discriminatory tariff changes represents both a movement towards free trade and a movement towards potentially greater protectionism through the common external trade policy. The formation of an economic integration results in two separate effects: trade creation and trade diversion. The former improves the international allocation of resources and increases the welfare while the later has the opposite effects.

Regional Trade Agreements (RTAs) tend to affect growth through dynamic output and productivity effects such as through competition and scale. Many argue that important effects of RTAs are dynamic, with competition creating a more efficient industry and growth. Lower intra-regional tariffs would lead to increased competition (Neary, 2001). The new trade theory emphasizes long-run productivity effects of trade (Grossman and Helpman, 1991). Productivity spillovers can occur via importing and exporting (Coe and Helpman, 1995; Coe et al, 1997). Apart from the fact that a country's efficiency increases due to allocation effects, trade helps actors to learn from each other and appropriate R&D spillovers. These learning effects can be translated into long –run efficiency gains and higher growth. Increased FDI can actually be such a catalyst through spillovers in terms of technology transfer and other linkages with local firms. There can therefore be long-lasting effects on growth and productivity in addition to a one-off effect based on a more efficient allocation of resources.

The benefits of regional integration may not be evenly spread amongst members of a region. It would be of interest to examine whether regional integration helps convergence among

members. Ethier (1998) suggests that smaller countries may have incentives to form a region in order to attract investment away from other members, particularly extra-regional FDI. This may be possible when regional tariff preferences allow foreign investors to set up beach head locations in a small (or poor) country to serve the entire regional market. Venables (1999) on the other hand argues that South-South agreements will tend to lead to divergence of income levels of member states, while North-North agreements may lead to convergence of income levels. The explanation of this is based on the position of countries in a region compared to those outside the region. Countries with a comparative advantage closer to the world average do better in a region than do countries that are at the extreme position as the latter are more likely to switch import suppliers and face trade diversion costs. Possible divergence due to relocation effects may put RIAs under strain. While peripheral countries to the EU such as Ireland caught up during the 1990s in terms of productivity levels with other members of the EU apparently through trade and FDI spillovers, there was a degree of divergence and agglomeration in developing regions such as East African Community and the Central American Common Market both dating back to the 1950s and 1960s.

Literature on regional integration dates back to at least Viner (1950) with the suggestion that the effects of regional integration on trade can either be trade creating or trade diverting. Trade creation comes into play when trade replaces or complements domestic production and trade diversion arises when partner country production replaces trade from the rest of the world. If a country becomes a member of a region that encourages trade diversion to its members, it would have been better to liberalize such a trade.

Regions classified as RTAs under Article XXIV of the GATT (trade in goods) or Article V of the GATS (trade in services) will have to liberalise trade. There are however exceptions under this in the case of regions amongst least developed or developing countries. Reduction or elimination of tariffs on intra-regional trade will have fewer effects if the potential for intra-regional trade is small. For example, Te Velde (2006) argues that intra-regional trade in Africa covers only a small percentage of total trade, in part because economic and trade (in final products) structures are similar (perhaps may be because of underreporting). Therefore any trade effect of lower tariffs is likely to be small. Instead, researchers have argued that deep integration

covering trade rules, trade standards and institutional co-operation would be better for such regions . There are other roles for regional integration aside from trade promotion. Regions can support the provision of regional governance public goods. Effective international economic governance promotes economic development. Some challenges are met at the national or multilateral level, but some policy making occurs at a regional level with national policy-making. Also regions can support the provision of regional knowledge public goods. A regional approach facilitates learning and sharing of information related to trade development and trade policy or other areas of functional co-operation such as agriculture and food security, environmental sanitation and health. Finally, regions can overcome other market and coordination failures and coordinate activities with strong regional externalities.

### **3.3: Methodological review**

Several methodologies have been adopted in examining the relationship between FDI and growth, the two-way relationship, relationship between economic integration and FDI, and relationship between economic integration and growth. Some of the methodologies adopted in the literature include but not limited to panel GMM estimation techniques (Lumbila, 2005), single and simultaneous equation techniques (Li and Liu, 2005), fixed and random effects model (Onyeiwu and Shrestha, 2004), Generalized Method of Moment (Carkovic and Levine, 2005), System-GMM panel estimation technique, Gravity model (Tayyebi and Hartemani, 2006), Two-stage least squares (Antonio, 2008) and many more.

In a study of the impact of FDI on growth, some methodologies have been adopted. Lumbila (2005) used a panel analysis within the GMM frame work to study the impact of FDI on economic growth using 47 African countries between 1980 and 2000. Li and Liu, (2005) investigated the endogenous relationship between FDI and economic growth. They apply both single equation and simultaneous equation techniques to carry out their investigation. While the random effect estimation method is chosen for estimating the single-equation system, the three-stage least squares method estimates simultaneous equation system.

The relationship between FDI and economic growth is examined by (Carkovic and Levine, 2005). They adopted the generalized method of moment (GMM) for a large cross-country data

covering the period 1960-1995. (Alege and Ogundipe, 2014) investigated the relationship between FDI and economic growth in ECOWAS. They utilised the system-GMM panel estimation technique for data covering the period 1970-2011. Turkcan et al (2008) test the endogenous relationship between FDI and economic growth using a panel data set for 23 OECD countries for the period 1975-2004. They estimate a two-equation simultaneous equation system with the GMM. (Onyeiwu and Shrestha ,2004), in their study to explore whether the stylized determinants of FDI affect its flows to Africa from 1975 to 1999 uses the fixed and random effects models in their study to explore whether the stylised determinants of FDI affect FDI flows to Africa from 1975 to 1999.

(Antonio, 2008) tested empirically whether the alleged link between FDI and growth is rather the consequence of both FDI and growth responding endogenously to economic integration using two stage least square regressions.

Chowdhury and Mavrotas (2006) carried out a study for Chile, Malaysia and Thailand titled” FDI and Growth: What causes what? They adopted the causality test for their study.

Studies on the impact of regional integration on FDI have also accompanied several methodological approaches. Daude etal (2003) studied the impact of from different groups of explanatory variables to determine the place of FDI in a study titled “ Institution, Integration and Determining FDI’s place in 1996 using gravity model for 63 host countries and 18 guest countries(including OECD countries). In a study carried out by Tayyebi and Hartemani (2006) on the effect of business integration on FDI flow in the European Union and South-West Asia, the gravity model is used for the period 1992-2003.

The methodologies adopted for the relationship between integration and growth have also been discussed in the literature. In a study of the growth effects of international integration in Southeastern Europe, (Kristo, 2014) used a panel data approach in a fixed effect and within estimator model frame work. Ahn and Lee, (2007) carried out a study on integration and growth in East Asia. They use cross-country panel regression to estimate the relationship.



Having discussed the various methodologies to empirically examine issues relating to FDI, growth and integration, most of these methodologies are based on a single equation approach with little attention focused on simultaneous system equation approach. Moreover, applications to the two-way relationship between FDI and growth are grossly inadequate. In most cases, the joint effect of integration and one of FDI or growth is not given adequate attention. In this study, the methodologies adopted critically evaluate the two-way relationship between FDI and growth taking cognizance of the role of integration. These methodologies are capable of controlling for simultaneity and omitted variable biases.

### **3.4: Empirical review**

In this session, we consider the empirical studies relating to FDI-growth relationship, economic integration and FDI and economic integration and growth.

Most empirical works have found positive impact of FDI on economic growth and vice-versa. For example, (Papanek, 1973), (Balasubramanyam et al, 1996), (Borensztein et al, 1998), (Balasubramanyam et al, 1999), (Berthelemy and Demurger, 2000), (Obwona, 2001), (Saha, 2005), (Lumbila, 2005), (Li and Liu, 2005), (Hansen and Rand, 2006), Gui Dilby (2014) etc; empirically found that FDI enhances economic growth. Li and Liu (2005) investigated the endogenous relationship between FDI and economic growth and found positive effect of FDI on economic growth through its interaction with human capital in developing countries; but a negative effect of FDI on economic growth via its interaction with the technology gap. Lumbila (2005) studied the impact of FDI on economic growth using 47 African countries between 1980 and 2000. By employing the GMM approach, the study found that FDI exerted a significant positive effect on economic growth. Gui Dilby (2014) using panel data estimation technique for 50 African countries between 1980 and 2009 found that FDI inflows exerted a significant effect on economic growth.

In sharp contrast with this, (Akinlo, 2004) reported that the effect of FDI on the Nigerian economy was not significant and was supported by (Ayanwale, 2007). On the relationship between FDI and growth in which the system-GMM approach was applied, (Alege and Ogundipe, 2014) found contrary results to earlier studies based on the findings that FDI had an

insignificant negative relationship on growth in ECOWAS despite controlling for role of human capital and quality of infrastructure in the model. Similarly, contrary to other study of China's growth, Yalta (2013) found that there is no significant relationship between FDI and growth between 1982 and 2008 and this is also contrary to the consensus of the field.

In their study to explore whether the stylized determinants of FDI affect its flows to Africa (Onyeiwu and Shrestha, 2004) applied both the FE and RE estimation techniques and observed that economic growth, inflation, openness of the economy, international reserves, and natural resource availability are significant factors for FDI flows to Africa. Moreover, the volatility of FDI and the financial adjustment necessary have been observed by several Economists. Their arguments have been that a well-developed financial market can not only attract higher volumes of FDI inflows but also allow host countries to gain more extensively from them due to ability to adjust to the volatility of capital inflows. Carkovic and Levine (2005) utilised General Method of Moment (GMM) to examine the relationship between FDI and economic growth using data for 1960-1995 for a large cross-country data set and found that inflows do not exert influence on economic growth directly or through their effect on human capital. To make it more interesting, studies like Durham, (2004) and Herzer et al, (2008) have found no direct relationship between FDI and economic growth.

Moreover, the question of whether Growth determines FDI or not is pertinent. On theoretical ground, it also has contradicting explanations. First, the higher the growth rates in an economy, the higher the growth in demand implying greater profitability opportunities for inflow of capital. Therefore capital must prefer higher growing countries. On the other hand, lower growing economies may imply more profitability opportunities for capital, given that these economies are capital-scarce and labour abundant. Meanwhile, in case the economies are capital abundant and experience low growth rates since there is no incentive for capital to move into such economies. There have been mixed empirical results on these issues. However, works of Chowdhury and Mavrotas, (2006), Saha, (2005) and Choe,(2003) found that higher growth rates attract more FDI and in line with these studies are Hansen and Rand (2006) and Mencinger (2003) who argued that high-growing economies do attract much FDI.

Important for the debate on convergence and divergence within regions, (Velde and Bezemer, 2006) found that the relative size of a country's economy within a region matters for attracting additional FDI, as does a central location in relation to the largest market. Countries that have larger economies or are geographically closer to other larger countries within the region can expect a larger increase in FDI than those countries that have smaller economies or are located in the periphery.

On the two-way relationship between FDI and growth, Turkan et al (2008) tests the endogenous relationship between FDI and economic growth. They estimated a two-equation simultaneous equation system and found that FDI and growth are important determinants of each other and so there exists an endogenous relationship between them.

Using the causality test, the study of Chowdhury and Mavrotas (2006) on FDI and Growth for Chile, Malaysia and Thailand shows that only GDP causes FDI in Chile and that there is bi-directional causality in Malaysia and Thailand.

Empirical studies have tended to address the links between RIAs and FDI. With the implementation of some regional agreements such as European Union (EU), and North America Free Trade Agreement (NAFTA), there has been significant increase in bilateral trade volumes among member countries. FDI also increases much faster than trade even within OECD and among the members of the RTAs mentioned above. It is tentatively found that RTAs in most cases boost extra-regional FDI and, in some cases, intra-regional FDI.

Market size has been found to impact positively on FDI received by countries within the RTAs. With increase in the size of the potential market, the quantity of investment made by both domestic and outside investors could increase. The size of the population matters due to its effect on availability of labour supply. In line with this, most FDI flows were also found to migrate to countries with high per capita GDP alongside the large market size.

Dunning (1997) analysed empirical findings regarding the effects of the formation of the Internal Market Programme (IMP) in Europe largely on the basis of econometric studies. He found that the main dynamic impact of FDI is through effects on other determinants of FDI; such as market

size, income levels, structure of activity and agglomeration economies. The inclusion of IMP as an independent variable increases extra (and to a lesser extent intra) regional FDI but not by as much as other variables. TeVelde and Bezemer (2006) examined the real stock of UK and US FDI in developing countries and find that membership of a region as such is not significantly related to inward FDI, but crucially, when a country is a member of a region with sufficient number and level of trade and investment provisions, this will help to attract more inward FDI to the region.

Daude et al (2003) in a research titled “Institutions, Integration and determining FDI’s place in 1996. The study used the gravity model and found that there is a strong relationship among institutional variables in the host country and FDI of the guest countries. Moreover, business integration among the countries has a positive impact in determining FDI’s place of the host country. However, effects of integration on attraction of FDI compared with the effect of institutional factors of the host country are at a lower level.

Tayyebi and Hartemani, (2006) carried out a study on the effect of business integration on FDI flow in the European Union and South-West Asia” in 1992-2003. The adopted the gravity model estimation technique. The results of their findings showed that GDP in both the source and destination countries of FDI has positive and significant effects on FDI flow.

Empirical literature has emerged to test the link between trade liberalization and per capita income. One branch of this literature (e.g. (Frankel and Romer, 1999) and (Irwin and Tervio, 2002) examined the relationship between the broad trade share and per capita income. They found that a higher trade share increases the level of real GDP per capita. A second branch (e.g. Edwards 1998 and Greenaway, et al, 2002) investigated the connection between trade policy and income and found that higher tariffs, import duties and other non-tariff barriers reduce per capita income. A third branch (e.g. (Easterly and Levine, 2003) and (Rodrik et al 2004) tested the respective roles of integration, institutions and geography in determining per capita income. These authors found that trade has no significant impact on the level of real GDP per capita once institutions are included.

Again, other studies on the impact of regional integration and growth reveal inconclusive debate. Vamvakidis (1999) showed that participating in regional integration agreements was on the average associated with slower growth rates than following a policy of broad liberalisation. Torstensson (1999) identified investment and knowledge transfers as the channels linking economic integration to growth for the OECD countries. Landau (1995) found that there was no long-term growth effects associated with membership of the European Commission (EC). Badinger (2001) finds no permanent increase in growth rates related to economic integration within the European Union. Spilimbergo et al (1999) theoretically shows that RIAs could inhibit growth through changing the composition of trade in favour of low-technological goods. Vamvakidis (1998) in his study finds that open economies grow faster and that economies that have open and large neighbours grow faster; but the growth rate of neighbouring economies has no significant impact on a country's growth rate. Countries tend to benefit from being located close to large, developed, and open economies. (Vanhoudt, 1999) found neither positive nor negative growth effects for the EC members in comparison to non- member OECD states.

Schiff and Wang (2003) found that “there has been no empirical evidence of the dynamic effects of RTAs based on their impact on technology diffusion from partner and non-partner countries”. They go on to show that NAFTA imports have raised productivity in Mexico through imported foreign knowledge shocks, while extra-regional imports have no effects. These effects are long – lasting and can benefit the poor in the long –run. Meanwhile, Gunning (2001), Lyakurwa (1996) and Aryeetey and Oduro (1996) corroborated the fact that positive contribution of economic integration on growth in Africa can be attributed to trade reforms, increased investments and trade. Antonio (2008) tested whether the alleged link between FDI and growth is rather the consequence of both FDI and growth responding endogenously to economic integration. The study utilized the two-stage least squares and confirmed that it is not FDI as such but economic integration in any form or shape that determines growth. There can also be long-lasting effects on productivity through learning by-exporting, and such effects may be appropriated particularly when dealing with more developed partners and these tend to be extra-regional.

In this study, the theoretical frame work of our analysis of FDI is based on the location theory of MNEs discussed so far in this chapter. This theory has been formalised in several seminar papers

by Markusen (1984), Helpman (1984), and Markusen and Venables (1997). The theoretical model of MNEs explains the volume of FDI as a function of characteristics of the parent and host countries such as size, relative endowments and transaction costs. This emanated specifically from the Koyck transformation model

This study adopts the neoclassical theory of growth discussed above for the analysis of the growth model. In this case, the aggregate production function is modified to include other determinants (FDI and integration index) of growth which are the key variables in our model.

## CHAPTER FOUR

### THEORETICAL FRAMEWORK AND METHODOLOGY

#### 4.1: Introduction

In this chapter, we revisit the location theory of Multinational Enterprises and the neoclassical growth theory earlier discussed.

The location theory is modified to include the key determinants of FDI for the purpose of our study. In the same vein, we provide a modification of the neoclassical model of growth to include determinants of growth following the African growth literature which also captures the purpose of the study. This is carried out within a Cobb-Douglas production function framework.

#### 4.2: Model of Multinational Enterprise (MNE)

In the theoretical literature, there is a distinguishing feature of FDI driven by “Horizontal” and “Vertical” motivations. Models of horizontal MNEs predicts that MNEs tend to concentrate production in large countries and in countries with similar relative endowments, while models of vertical MNEs predict that MNEs production will locate in relatively labour-abundant countries. It therefore follows that while horizontal FDI is likely to dominate in bilateral investment flows between industrialized countries, vertical FDI is likely to dominate between developed –where headquarters are located – and developing countries which instead host the production-activity, as several empirical analyses demonstrated (Brainard, 1997; Markusen and Maskus, 2002).

### 4.2.1: Profit model of an investment firm

By considering the intuition of RIAs and the location of firms into a theoretical frame work that can be validated against actual FDI location decisions, it is then necessary to model the profit opportunities available to a firm which decides to invest in a peripheral country of a given RIA. First, we derive the utility function which essentially describes the consumption behaviour of a typical consumer. The utility function is then written as

$$U_i = \left( \sum_{j=1}^N \sum_{h=1}^{nj} (q_{ijh})^{\frac{\sigma-1}{\sigma}} \right) \text{ with } \sigma > 1 \quad (4.1)$$

Where  $q_{ijh}$  = the quantity consumed in such country  $i$  of the  $h$  variety produced in country  $j$  and  $\sigma$  is the elasticity of substitution across varieties with production subject to increasing returns and monopolistic competition. Equation (4.1) essentially describes the utility of a representative consumer in each peripheral country  $i$  belonging to a RIA is a CES function depending on the quantity of each variety  $h=1, \dots, nj$  consumed of a differentiated good produced in country  $j$  (*i.e.*, in the same country  $i$  or in another country  $j$  within the same region).

The technology is characterised by a single factor of production, labour, the marginal production cost in each country  $j$  is denoted by  $\phi_j w_j$ , where  $w$  = the wage and  $\phi$  = inverse of labour productivity, with increasing returns derived from a fixed costs in labour  $w_j F$ . In order to sell its products in country  $i$ , a multinational firm which has located its production in country  $j$  has to pay an additional transport cost  $\tau_{ij}$  which takes the usual iceberg form. The budget constraint is given by the expenditures of country  $i$  on all  $k$  variables produced in all  $j$  countries (including country  $i$ ) belonging to the RIA, *i.e.*

$$k = \sum_j nj \quad (4.2)$$



Equation (4.2) therefore explains that in order that the firm produces both at home and abroad, there has to be an additional cost incurred.

In particular, denoting  $P_{ij}$  as the *c.i.f* price of goods imported in country  $i$  from country  $j$  and  $m_{ij}$  as the value of imports from  $j$  to  $i$ , the budget constraint for a representative variety  $q_{ij}$  produced in country  $j$  and consumed in country  $i$  can be written as

$$M_i = \sum_k m_{ik} = \sum_k q_{ik} P_{ik} \quad (4.3)$$

In equation (4.3), the total value of imports is set equal to product of price of goods imported and variety of goods produced.

The profit function accruing to a firm which would decide to serve all the  $N$  countries belonging to the considered RIA from a plant located in country  $j$  is

$$\pi_j = (\phi_j w_j)^{1-\sigma} \sum_{i=1}^N \frac{1}{\sum_k n_k (\phi_j w_j \tau_{ik})^{1-\sigma}} \tau^{1-\sigma}_{ij} M_i \quad (4.4)$$

Equation (4.4) states that such a profit is a decreasing function ( $\sigma > 1$ ) of the product costs ( $\phi_j w_j$ ) in the same country  $j$ , a decreasing function of the intensity of competition with rivals

$$\left[ \sum_k n_k (\phi_k w_k \tau_{ik})^{1-\sigma} \right] \quad (4.5)$$

itself increasing with the number of rivals  $n_k$  and decreasing with the production costs ( $\phi_k w_k \tau_{sk}$ ) they face, and finally an increasing function of the market potential  $\sum_{i=1}^N \tau_{ij}^{1-\sigma} M_i$  of country  $j$ , *i.e.*, the total demand function that is accessible from a production plant located in country  $j$ . Equation (4.3) can test the likelihood of having foreign investments located within a

RIA, since it can be decomposed in three variables all measurable at the (macro country level): the market potential of country  $j$ , a measure of the relative costs of country  $j$  with respect to the other  $N$  countries of the region (*i.e* the ratio between the labour costs  $\phi_j w_j$  of country  $j$  and those of rival countries  $\sum_k \phi_k w_k \tau_{sk}$ ), and the number of competitors  $K = \sum_k n_k$ .

Bajo-Rubio, Oscar and Simón Sosvilla-Rivero (1994), assume that the first choice a multinational producer must face is whether or not to undertake FDI and this involve the choice of an output level in the foreign country. The cost function faced by the firm consisting of two components associated with producing in the domestic and foreign plants are

$$C = c_d(Q_d)Q_d + c_f(Q_f)Q_f \quad (4.6)$$

where  $C$  and  $c$  are the total and unit costs,  $Q$  is the level of output, subscripts  $d$  and  $f$  refer to the domestic and foreign variables respectively.

Equation (4.6) explains the fact that if the firm produces both at home and abroad, the costs function has to be extended to include a foreign production function.

The firm then minimizes  $C$  in equation (4.6) subject to the constraint that output should be equal to demand  $D$  such that

$$D = Q_d + Q_f \quad (4.7)$$

The total demand in this case should be equal to production both at home and abroad as stated in equation (4.7)

The composite function defined here is the Langrangean function

$$\ell = c_d(Q_d)Q_d + c_f(Q_f)Q_f + \lambda(D - Q_d - Q_f) \quad (4.8)$$

The partial derivatives of  $\ell$  with respect to  $Q_d$ ,  $Q_f$  and  $\lambda$  give the necessary conditions for the solution of the constrained optimization problem: This implies that,

$$\frac{\partial \ell}{\partial Q_d} = \frac{\partial \ell}{\partial Q_f} = \frac{\partial \ell}{\partial \lambda} = 0 \quad (4.9)$$

$$ie \ c'_d(Q_d) + c_d(Q_d) - \lambda = 0 \quad (4.10)$$

$$c'_f(Q_f) + c_f(Q_f) - \lambda = 0 \quad (4.11)$$

$$D - Q_d - Q_f = 0 \quad (4.12)$$

Equations (4.10) and (4.11) give

$$c'_d(Q_d) + c_d = c'_f Q_f + c_f \quad (4.13)$$

Equation (4.13) shows the familiar condition for a producer distributing his output between the domestic and foreign plants. Solving for  $Q_f$  after substituting for  $Q_d$  in equation (4.13) we have

$$Q_f = \delta_1 D + \delta_2 (c_d - c_f) \quad (4.14)$$

where  $\delta_1 = \frac{c'_d}{(c'_d + c'_f)}$  and  $\delta_2 = \frac{1}{(c'_d + c'_f)}$

are both assumed to be positive implying that the output produced at the foreign plant is positively related to total demand and negatively related to their unit costs relative to those of the home country plant. However, the MNE must face a second choice involving input substitution

within the foreign plant. Suppose that the production in the foreign plant takes place using two inputs, labour ( $L$ ) and Capital ( $K$ ) under the Cobb-Douglas technology, the total cost is

$$C_f = w_f L_f + q_f K_f \quad (4.15)$$

As shown in equation (4.15), the total cost incurred by the foreign subsidiary would be minimized where  $w$  and  $q$  are respectively the wage rate and the user costs of capital are both in real terms. This is subject to the constraint given by the Cobb-Douglas production function

$$Q_f = L_f^\alpha K_f^\beta \quad (4.16)$$

The Langrangean is:

$$\ell = w_f L_f + q_f K_f + \lambda(Q_f - L_f^\alpha K_f^\beta) \quad (4.17)$$

$$\text{and } \frac{\partial \ell}{\partial L_f} = \frac{\partial \ell}{\partial K_f} = \frac{\partial \ell}{\partial \lambda} = 0 \quad (4.18)$$

(the necessary conditions).

$$\text{ie } w_f - \lambda \alpha \left( \frac{Q_f}{L_f} \right) = 0 \quad (4.19)$$

$$q_f - \lambda \beta \left( \frac{Q_f}{K_f} \right) = 0 \quad (4.20)$$

$$Q_f - L_f^\alpha K_f^\beta = 0 \quad (4.21)$$

Now from equations (4.19) and (4.20), we obtain

$$\frac{w_f L_f}{\alpha Q_f} = \frac{q_f K_f}{\beta Q_f} \quad (4.22)$$

Substituting for  $L_f$  in equation (4.21) yields the expression for  $K_f$  so that

$$K_f = \left[ \left( \frac{\beta}{\alpha} \right) \left( \frac{w_f}{q_f} \right) \right]^{\frac{\alpha}{\alpha+\beta}} Q_f^{\frac{1}{\alpha+\beta}} \quad (4.23)$$

Replacing  $Q_f$  then  $K_f$ , the subsidiary desired capital stock, is

$$K_f = \left[ \left( \frac{\beta}{\alpha} \right) \left( \frac{w_f}{q_f} \right) \right]^{\alpha / ((\alpha+\beta)(\delta_1 D + \delta_2 (c_d - c_f)))^{1/(\alpha+\beta)}} \quad (4.24)$$

Equation (4.24) shows that the desired capital stock appears positively related to total demand and this demonstrates the profitability of FDI but negatively related to the host country's unit costs relative to those of the home country. However, the effect of relative unit costs is ambiguous in the case of labour. If we introduce additional term into the cost function thereby augmenting equation (4.21), this would lead to a positive relationship with  $Q_f$  (and hence with  $K_f$ ). High tariff barrier in the host country would mean an incentive for the firms wishing to gain access to that market and would settle there by means of FDI in order to overcome such barriers. Omitting subscripts and aggregating across foreign subsidiaries, we can write an expression for the desired stock of foreign capital in the host country as

$$K^* = \psi(ad, c, t) \quad (4.25)$$

where  $K^*$  depends positively on the level of aggregate demand ( $ad$ ) and negatively on the relative unit costs ( $c$ ) [except there were a strong substitution effect between capital and labour] and positively on the level of trade barriers ( $t$ ).

Other essential determinants too exist including an interactive term for the purpose of capturing part of our objectives. This is in line with the Traditional theory of FDI. Hence, equation (4.25) forms the basis of our FDI model specification.

### 4.3: Integration, Convergence and Economic growth

The classical theory of international trade emphasises that integration gains are related to differences in terms of aptitude, factor endowment, and consumer preferences or collective preferences. Two forms of integration exist: institutional integration (which is in force) and spontaneous integration. Due to this, it calls for concern whether regional integration is conducive to the achievement of a real convergence of economies.

#### 4.3.1: Real Convergence Specification

Let us consider the fact that the production function belonging to ECOWAS and SADC regions is of the Cobb-Douglas type such that

$$Y_{(t)} = K(t)^\alpha (A(t)L(t))^{1-\alpha} \quad (4.29)$$

where  $Y_{(t)}$ ,  $K(t)$ ,  $A(t)$ , and  $L(t)$  are respectively production, capital, level of technology and the labour of a country at time  $t$  while  $AL$  represents the country's labour input as an efficiency unit. The parameters  $\alpha$  and  $1-\alpha$  are the elasticities of the production of capital and labour. On competitive markets, production factors are valued at their marginal costs. In equation (4.29), it is assumed that Labour  $L$  and the level of technology  $A$  increase at exogenous growth rates  $n$  and  $g$ . The growth rate of technology  $g$  is assumed constant for all the countries involved and the growth rate of population,  $n$ , generally differs from one country to another. We describe the accumulation of the factor by the equation:

$$\dot{K}(t) = s_k \cdot Y(t) - k \cdot K \quad (4.30)$$

where  $s_k$  refers to the investment ratio and  $k$ , the rate of depreciation of the stock of physical capital. The level of technology  $A$  and Labour  $L$  change at a given exogenous growth rates  $g$  and  $n$ . The resolution of the per capita stationary state  $y^* = \frac{Y}{L}$  implies that there exist

$$y^* = \ln A_0 + gt + \frac{\alpha}{1-\alpha} \ln(n+g+k) \quad (4.31)$$

The standard convergence specification through the Taylor series approximation around the stationary state is

$$\begin{aligned} \ln y_t = & (1-e^{-\lambda\theta}) \frac{\alpha}{1-\alpha} \ln s_k - (1-e^{-\lambda\theta}) \frac{\alpha}{1-\alpha} \ln(n+g+k) - (1-e^{-\lambda\theta}) \ln y_{t-\theta} \\ & + (1-e^{-\lambda\theta}) A_0 + g(t-e^{-\lambda\theta}(t-\theta)) \end{aligned} \quad (4.32)$$

Equation (4.32) specifies the convergence criterion around the steady state. In this equation,  $\theta$  is the period of time to which the convergence specification applies and  $\lambda$  denotes the rate of convergence. Following Islam (1995), it is possible to control the differences in the initial stages of technology  $A_0$ , which are reflected in the countries' specific fixed effects. Therefore, the assumptions that  $n$  and  $s_k$  are constant during the period  $\theta$  are more realistic when they are applied to the shorter periods. Using the conventional notation in the literature on panel data, equation (4.32) can be re-written as

$$\ln y_{it} = \phi \ln y_{i,t-1} + \beta_1 \ln s_{it} + \beta_2 \ln(n+g+k) + \mu_i + \eta_t + \varpi_{it} \quad (4.33)$$

with  $\phi = e^{-\lambda\theta}$ ;  $\beta_1 = \frac{\alpha}{1-\alpha}(1-e^{-\lambda\theta}) = \beta$ ,  $\beta_2 = -\beta$ , =specific effect "region"

(invariant time),  $\eta_t = g(t_2 - e^{-\lambda\theta}t_1)$  =specific effect “ time” (invariant region) and  $\varpi_{it} = IID(0, \sigma^2)$ .

A new form from the above transformation is

$$\ln y_{it} = \phi \ln y_{i,t-1} + \beta(\ln s_{it} - \ln(n + g + k)) + \mu_i + \eta_t + \varpi_{it}$$

This is the same as

$$\ln y_{it} = \phi \ln y_{i,t-1} + \beta \ln \left( \frac{s_{it}}{(n + g + k)} \right) + \mu_i + \eta_t + \varpi_{it} \quad (4.34)$$

and the final form is

$$\ln y_{it} = \phi \ln y_{i,t-1} + \beta \ln x_{it} + \mu_i + \eta_t + \varpi_{it} \quad (4.35)$$

with  $x_{it} = \frac{s_{it}}{(n + g + k)_{it}}$ , the regressive variables.

The empirical model is systematically derived from the foregoing theoretical framework. We basically adopt the FDI location theory and the neoclassical Augmented Solow growth theory based on a Cobb-Douglas production function with labour-augmenting technological progress extended to a panel data frame work. Given this information, we therefore consider two fundamental models: The FDI and the growth models. These are discussed in turn.

#### **4.4: FDI model specification**

Based on equation 4.25 desired capital stock in the host country depends on aggregate demand, unit costs and the level of trade barriers. Following Bajo-Rubio et al (1994), we augment this to include other essential determinants of FDI peculiar to our objectives and within African context. This is the basis of the FDI model.



#### **4.4.1: Discussion of FDI determinants and A priori expectations**

Three major factors that impact on a country's capacity to attract FDI flows according to 1998 UNCTAD report on trends and determinants of FDI are policy frame work, economic determinants and the extent of business facilitation in the host country. Since the existence of this frame work, empirical studies on the determinants of FDI across developed and developing countries have been modeled to incorporate macroeconomic factors, institutional factors and of recent the financial development factors.

##### **4.4.1.1: Macroeconomic Factors**

Some of the commonly discussed macroeconomic factors determining FDI flows are inflation, exchange rate, market size and resource endowment. Starting with inflation, Yartey and Adjasi, (2007) and Aseidu (2002) found a negative significant effect and explain this to mean that both domestic and foreign investors will be unwilling to invest in an atmosphere of high inflation rate. Inflation can impact negatively on the flow of FDI because it sometimes signals weakness in a country's economic fundamentals and monetary management and, because it affects the profitability of business (de Mello, 1997).

The summaries of Onyeiwu and Shretstha (2004) and Schneider and Frey (1985) further emphasised that inflation signals poor economic management and that it should have a decreasing effect on FDI flows. On the contrary, inflation can induce FDI flows under certain conditions. It has also been demonstrated that increased domestic inflation rate increases foreign investment via changes in the intertemporal consumption pattern of the agent and how the effect of inflation on current consumption can reduce the cost of FDI. Inflation is expected to retard FDI flows.

Observing the influence of exchange rate on FDI, relatively low prices in host country might increase FDI inflows since firms can have more endowments and /or equipment through weak exchange rate in host country (Walsh and Yu, 2010). In the FDI literature, the direction and magnitude of influence of exchange rate on FDI is ambiguous as observed in Aqeel and Nishat ,2005). Froot and Stein (1991) claim that a depreciation of the host currency leads FDI to

increase in the host country, while an appreciation of the host currency brings about a decrease in FDI.

External debt is expected to be negatively related to FDI. By implication, a large debt level increases the probability of default. This is an indication of instability in the political and economic system and as such should discourage FDI.

Market size is expected to have a positive impact on FDI flows to developing countries because Western investors usually target economies with large market size (see Billington, 1999; Nigh, 1985). This claim is confirmed by Nasser and Gomez (2009), Chakrabarti (2001) and Schneider and Frey (1985) all of whom have found a significantly positive relationship between FDI and market size at the conventional level. The growth hypothesis has stated that a large market provides relatively better opportunities for making profits. The ability to benefit from a large market size is dependent on the competitive capacity for a prospective foreign firm.

#### **4.4.1.2: Financial Determinants**

The effect of financial development on FDI could be through the allocative channel, the transaction cost reduction channel, the liquidity channel, and financial enforcement contract channel. Through the allocative channel, financial intermediaries increase the productivity of capital by directing financial resources to projects with the highest rates of return, and by providing the mechanisms for risk reduction and diversification (Ncube, 2007; Claessen and Laeven, 2003). This reflects the major aspect of the financial intermediation theory. A financial system is said to be developed if it generally makes it easier for individual and entities in need of external funds to gain access at relatively cheap cost (Guiso et al, 2004). Besides, financial development induces economic efficiency because of its capacity for easing information flow, contract enforcement and transaction costs (Meon and Weill, 2010, Hermes and Lensink, 2003; Levin, 1997). Financial institutions provide transaction cost-reducing information on industries, market and utility services to investors. With this, they reduce the level of information asymmetry that constrains international capital mobility (King and Levin, 1993; Gordon and Bovenberg, 1996). Essentially also a developed financial system increases liquidity and, this tends to facilitate trading of financial instruments and timing and settlement of such trades

(Levine, 1997); enhances competition in the industrial sector by allowing the creation of new firms and the sustenance of existing ones (Rajan and Zingales, 1998) and facilitates the enforcement of financial contracts. Financial development in this context is a process of financial innovation, as well as institutional and organisational improvement in a financial system (Hartmann et al 2007). This means that the more developed a country's financial system is, the more efficient its capacity of playing significant intermediation role in both domestic and international markets for funds. It has been argued that one of the most important indicators of financial development is the ratio of broad money supply to gross domestic product. This proxy is used as a traditional measure of the overall money market in terms of liquidity (Giuliano and Ruiz-Arraz, 2009). Calderon and Liu (2003) demonstrate that a higher ratio implies a larger financial sector.

#### **4.4.1.3: Institutional Determinants**

Institutional factors as major determinants of FDI have been examined in the literature and these include trade openness, infrastructure and corruption among others. Trade openness portrays the ease at which investors can freely move capital in and out of an economy (Onyeiwu and Shrestha, 2004). Studies such as Antonio (2008) have considered trade openness as one of the measures of economic integration. By implication economic integration can be included as institutional factors. Based on Law and Habibulah (2009) opinion, an open economy helps to check the power of political and economic elites and promote competitive markets. The more open an economy is, the greater the attraction of higher FDI flows. This significant positive effect has been confirmed by a number of studies in the past such as Antonio (2008), Law and Abibulah (2009), Abel and Nikky (2011) among others.

We incorporate the Age dependency ratio although as a demographic factor. This is a measure of the age structure of the population. It relates to the number of individuals that are likely to be dependent on the support of others for their daily living to the number of those individuals who are capable of providing such support. The greater the working population, the lower the dependency ratio and the more likely the foreign firm is to invest in the country since its costs of

supporting the elderly population through taxes and pension plans are lower. Hence the coefficient sign for the age dependency ratio is expected to be negative.

There is the possibility of endogeneity of the explanatory variables and the loss of dynamic information even in a panel data framework. For example, Quazi (2005) argues that foreign investors are typically risk averse and tend to support familiar territories and this may mean endogeneity and dynamism in FDI modeling. Cheng and Kwan (2000) further argue that FDI is one of the least volatile forms of foreign capital flows. In fact it has a relatively higher sunk cost of physical investment and becomes more irreversible once it is undertaken and thus is likely to be persistence over time. Noorkbakhsh et al (2001) also observes that many MNCs test their new markets by staggering their investments which gradually reach the desired levels after some time adjustments.

According to Kinoshita (1998), it takes time for the stock of FDI to reach the optimal level. Based on the fore going argument, the base line models of FDI for ECOWAS and SADC are specified as:

$$FDI = f(GDPGR, ECOINT, ADR, CPI, OER, EXGDP, LQD, INV) \quad (4.36)$$

$$\begin{aligned} \text{Therefore } FDI_{it} = & \alpha_0 + \alpha_1 GDPGR_{it} + \alpha_2 ADR_{it} + \alpha_3 CPI_{it} + \alpha_4 OER_{it} \\ & + \alpha_5 EXGDP_{it} + \alpha_6 LQD_{it} + \alpha_7 INV_{it} + \mu_i + \lambda_i + \varepsilon_{it} \end{aligned} \quad (4.37)$$

$$\begin{aligned} FDI_{it} = & \rho_0 + \rho_1 GDPGR + \rho_2 ECOINT + \rho_3 ADR_{it} + \rho_4 CPI_{it} \\ & + \rho_5 OER_{it} + \rho_6 EXGDP_{it} + \rho_7 LQD_{it} + \rho_8 INV_{it} + \mu_i + \lambda_i + \varepsilon_{it} \end{aligned} \quad (4.38)$$

where explained variable  $FDI_{it}$  is the current FDI flows to ECOWAS and SADC regions and is expressed in per capita terms following Abel and Nikki (2011). In this study, the base line models capture scenarios of no integration and that of integration.

The justification for using the general FDI flow as a ratio of population variable is based on the fact that there are inherent problems in measuring FDI particularly when the investment takes the form of machinery or capitalised technological contributions. There are gaps in the FDI statistics available from the source and host countries on FDI. Most countries do not publish

comprehensive information on the foreign operations of their companies, for reason associated with secrecy resulting in inadequate publication of intra FDI statistics. Due to these problems, inconsistency between measures of FDI flows and stocks exists. Moreover, the current practice of reporting FDI stocks on a historical cost basis is unsatisfactory, because it does not consider the age distribution of stocks and thus international comparisons of FDI stock seems impossible.

The explanatory variables are as defined as follows:

*GDPGR* is the growth rate of gross domestic product expressed in per capita term

*ECOINT*, economic integration index is measured using the trade integration or inter-regional trade index, openness and relative size of the bloc's trade in world output.

*ADR* equals Age dependency ratio, *CPI* equals average consumer price measuring instability and uncertainty,

*OER* is the official exchange rate

*EXGDP* stands for the ratio of external debt to *GDP*

*LQD* equals liquidity and it measures efficiency of the monetary system and is the financial development variable. In our study, it is taken to be the ratio of broad money supply to *GDP*

*INV* represents domestic investment and  $\varepsilon$  is the error term. The full description of the variables used is presented in table 4.1.

Quazi (2005) argues that foreign investors are typically risk averse and tend to support familiar territories and this may mean endogeneity and dynamism in FDI modeling. Cheng and Kwan (2000) further argue that FDI is one of the least volatile forms of foreign capital flows. In fact it has a relatively higher sunk cost of physical investment and is more irreversible once it is undertaken.  $\alpha_0, \alpha_1, \alpha_2, \dots, \alpha_7$ , and  $\rho_0, \dots, \rho_8$  are parameters to be estimated.  $\alpha_1 > 0, \alpha_2 < 0, \alpha_3 < 0, \alpha_4$  may come with ambiguous sign,  $\alpha_5 < 0, \alpha_6 > 0, \alpha_7 > 0$  and  $\rho_1 > 0, \rho_2 > 0, \rho_3 < 0, \rho_4 < 0$ ,  $\rho_5$  may come with ambiguous sign,  $\rho_6 < 0, \rho_7 > 0$  and  $\rho_8 > 0$

$i$  = each of the countries in the trade blocs and  $t$  = years from 1994-2013. Each of the models is estimated for ECOWAS and SADC. These independent variables have represented the macroeconomic, financial and institutional determinants of FDI flows.

On the basis of our frame work that FDI affects growth of the FDI receiving economy and that growth too affects FDI inflows, this is considered the determinants of FDI and growth within single and simultaneous equation framework.

#### **4.5: Growth Model Specification**

With some modifications, we adopt equation (4.33) derived from the neoclassical growth theory developed earlier *ie* ,

$$\ln y_{it} = \phi \ln y_{i,t-1} + \beta \sum_{j=1}^n \ln x_{it} + \mu_i + \eta_t + \varpi_{it}$$

where  $y_{it}$ ,  $y_{i,t-1}$ ,  $x_{it}$ ,  $\mu_i$ ,  $\eta_t$ , and  $\varpi_{it}$  are as defined earlier. Specifically, growth depends on investment ratio, depreciation rate of physical capital, technology growth among others. We use those variables that have dominated African growth literature to augment this growth model in line with our objective due African structural and institutional characteristics.

##### **4.5.1: Discussion of Growth determinants and A priori expectations**

Starting from the interaction term in which the integration index and FDI flows enter multiplicatively, it is expected that it has a positive impact on growth. This is in line with the fact that economic integration compliments FDI in facilitating growth.

Although there is contradicting evidence on the relation between FDI and economic growth, most of available evidences support the idea that FDI has a positive impact on economic growth. On theoretical grounds, FDI may affect growth positively because it moves in general from capital-rich countries to capital-scarce economies. In another view, FDI may affect growth

negatively as it may deteriorate competition and corrupt the development path of the country in its own interest.

The role of integration on growth has been recognised in both theoretical and empirical literature and both indicate that integration can accelerate economic growth through its effects of increased competition and access to trade opportunities based on efficiency of resource allocation. Therefore the degree of integration can have a positive impact on growth.

The average change in consumer price index measures inflation. Inflation occurs when the growth in money supply exceeds the growth rate. The usual argument for lower and more stable inflation is that it reduces uncertainty and creates efficiency in the price mechanism. It is therefore expected that the average change in consumer price index is negatively related to growth.

The financial system is an important determinant of growth through provision of fund for capital accumulation and facilitates the diffusion of new technologies. These help to improve growth performance. We therefore expect liquidity to have a positive impact on growth.

The higher the ratio of external debt to GDP, the more it depresses growth. A high burden of external debt is one of the factors impeding growth process in developing countries especially in cases of little or no debt servicing. Therefore the coefficient here is expected to be negative.

Devaluation (either increases in the level of the real exchange rate or in the rate of depreciation) is mostly associated with a reduction in output and increase inflation.

For standard explanatory variables of growth equations, it is expected that investment positively affects growth. An increasing level of domestic investment would have a positive effect on the economy. We therefore expect a positive relationship between domestic investment and growth.

Population growth negatively affects growth particularly in African countries. Population growth imposes a negative burden on society. Higher fertility rates imply that more resources should be devoted to raising the newborn population rather than producing new goods, thus reducing income growth (Economidou, et al., (2006). Neoclassical growth models assume the

same thing that a higher population growth rate impacts negatively on the steady-state level of output per worker. For reasons of consistency and nature of the estimation technique, we drop the lag value of the growth variable.

The base line models of growth for ECOWAS and SADC are also specified as:

$$GDPGR = f(FDI, ECOINT, ADR, AID, CPI, EXGDP, LQD, OER, INV, POP) \quad (4.39)$$

Therefore,

$$GDPGR_{it} = \beta_0 + \beta_1 FDI_{it} + \beta_2 ADR_{it} + \beta_3 AID_{it} + \beta_4 CPI_{it} + \beta_5 EXGDP_{it} + \beta_6 LQD_{it} + \beta_7 OER + \beta_8 INV_{it} + \beta_9 POP + \mu_i + \lambda_t + \varepsilon_{it} \quad (4.40)$$

$$GDPGR_{it} = \theta_0 + \theta_1 FDI + \theta_2 ECOINT + \theta_3 ADR_{it} + \theta_4 AID_{it} + \theta_5 CPI_{it} + \theta_6 EXGDP_{it} + \theta_7 LQD_{it} + \theta_8 OER + \theta_9 INV + \theta_{10} POP + \mu_i + \lambda_t + \varepsilon_{it} \quad (4.41)$$

Finally incorporating the interactive term, the extended form of the model is:

$$GDPGR_{it} = \gamma_0 + \gamma_1 (FDI * ECOINT) + \gamma_2 FDI_{it} + \gamma_3 ECOINT + \gamma_4 ADR_{it} + \gamma_5 AID_{it} + \gamma_6 CPI_{it} + \gamma_7 EXGDP_{it} + \gamma_8 LQD_{it} + \gamma_9 OER_{it} + \gamma_{10} INV_{it} + \gamma_{11} POP_{it} + \mu_i + \lambda_t + \varepsilon_{it} \quad (4.42)$$

where  $GDPGR$  is as defined earlier in FDI model above,

$FDI * ECOINT$  shows the role of FDI on growth using the economic integration transmission mechanism. We include these variables based on the debate on whether both are complements or substitutes.

The “ $AID$ ” represents net official development assistance and official aid received. Other explanatory variables are as defined earlier.  $\beta_0, \dots, \gamma_{11}$  are parameters to be estimated.

It is expected that  $\beta_1 > 0, \beta_2 < 0, \beta_3 > 0, \beta_4 < 0, \beta_5 < 0, \beta_6 > 0, \beta_8 > 0$  and  $\beta_9 < 0$

$$\theta_1 > 0, \theta_2 > 0, \theta_3 < 0, \theta_4 > 0, \theta_5 < 0, \theta_6 < 0, \theta_7 > 0, \theta_9 > 0 \text{ and } \theta_{10} < 0$$

$$\gamma_2 > 0, \gamma_3 > 0, \gamma_4 < 0, \gamma_5 > 0, \gamma_6 < 0, \gamma_7 < 0, \gamma_8 > 0, \gamma_{10} > 0 \text{ and } \gamma_{11} < 0,$$



and we also expect  $\gamma_1$ ,  $\beta_7$ ,  $\theta_8$  and  $\gamma_9$  to come with ambiguous sign. The parameters associated with the determinants of growth under interaction term have similar expected signs as those in the growth model without interaction term. Table 4.1 provides the full description of the variables used. The acronyms, units and the sources are explained.

All the variables are in natural log forms to satisfy normality assumptions except those variables in ratios, rates and negative forms. This attempts to reduce problem of heteroscedasticity in the model.

**Table 4.1: Description of variables**

<b>Variable</b>	<b>Description</b>	<b>Units</b>	<b>Database</b>
<b>GDPGR</b>	Growth rate of the gross domestic product in Percapita terms	Index number	World Development Indicators, United Nations Conference on Trade and Development
<b>ECOINT</b>	Economic integration index computed using inter-regional trade, openness and relative size of bloc's trade in total world output measures	Index number	World Development Indicators, United Nations Conference on Trade and Development
<b>ADR</b>	Age dependency ratio	%(working-age population)	World Development Indicators
<b>CPI</b>	Consumer price index	Index number	World Development Indicators
<b>OER</b>	Official exchange rate	Index number	World Development Indicators, African Statistical Year Book
<b>EXGDP</b>	Ratio of external debt to GDP	Index number	World Development Indicators
<b>LQD</b>	Liquidity measured by the ratio of broad money to GDP	Index number	World Development Indicators, African Statistical Year Book
<b>INV</b>	Investment of gross capital formation is the total value of gross fixed capital formation and changes in inventories and acquisitions less disposals of valuables for a unit or sector.	% of GDP	World Economic Outlook
<b>AID</b>	Official development assistance and official aid received.	Current, US dollars	World Development Indicators
<b>POP</b>	This consists of all persons falling within the scope of the census. In the broadest sense, it may comprise either all usual residents of the country or all persons present in the country at the time of the census.	Index	

*Source: Author's compilation*

#### 4.6: Constructing the Economic Integration Index

An important issue relates to the computation of the degree of integration. There is no consensus in the literature on the measurement of economic integration. However, a number of studies use dummy variables for membership in a trade bloc, market expansion, GDP or the share of intra bloc trade in total trade (Badinger, 2001; Njoroge L.K 2010) developed an economic integration index capturing two main aspects that facilitate economic integration. One aspect considers trade reforms within a particular trade bloc that captures the various efforts made by individual member countries towards freer trade. The other aspect considers trade reforms by a particular trade bloc and with the rest of the world capturing efforts at a trade bloc level for freer trade.

Again Literature has produced measures of integration based on FDI, trade and private capital flows. Reliance on such index might create an increasing endogeneity issue in our FDI model since FDI would enter both sides of the equation. Basically our measure of integration should not include FDI in any case in its computation and as such we therefore consider trade integration index or inter-regional trade index as being analogous to economic integration index. Therefore our first measure of economic integration is defined mathematically as:

$$TII_{it} = \frac{openness_{it} - \min_{openness}}{\max_{openness} - \min_{openness}} \quad (4.43)$$

Where  $openness$  = ratio of trade to GDP (constant price) and  $\min_{openness}$  and  $\max_{openness}$  are the minimum and maximum openness values in the sample respectively (both overtime and across countries).

Again the most commonly used integration measure based on quantities is the degree of openness only defined as ratio of trade to GDP. This measure provides a straight forward approach and yields results within the interval (0,1) where a value of 0 indicates that the economy is closed and a value of 1 a lack of domestic bias in the economy(total openness). An issue of great concern here is that it cannot be reasonably assumed that exports and imports are equally important to income growth (Haveman et al., 2001). Therefore, trade, whether it takes the form of exports or imports, is growth inducing and thus the more open economies should

exhibit higher growth rates (Frankel and Romer, 1999). In the present case, we dissect trade into exports as a share of GDP and imports as a share of GDP. Each of these is considered a growth and FDI enhancing factor. This information gives rise to our second measure of economic integration which trade-GDP ratio and is expressed mathematically as:

$$Openness_{it} = \frac{trade}{GDP} \quad (4.44)$$

Our third measure of economic integration is obtained from the degree of perfect connection measure. An economy that is part of a perfectly connected network will emit flows to all other economies which must be proportional to the size of the recipient economy. The flow from the economy  $i$  to the economy  $j$ ,  $X_{ij}$ , can be assessed through the imports of goods or capital. Generally, the flow can be assessed through any other measure relating to the size of the economy. If bias does not exist between orientation of production and domestic demand, then the volume of the former should be different in each economy since it depends on its size. Given that  $Y_i$  = activity volume or size of the economy  $i$ , represented by the GDP of country  $i$ , a world economy is perfectly connected if the flow from economy  $i$  to economy  $j$  is equal to

$$\beta_{ij}(Y_i - a_i Y_i) = \beta_{ij} \hat{Y} \quad (4.45)$$

Where  $a_i = \frac{Y_i}{\sum_{j \in N} Y_j}$  is described as the economy  $i$ 's relative weight with respect to the world economy,  $\hat{Y} = Y_i - a_i Y_i$  is the production destined for export taking into account the weight of the specific economy considered in the world economy and  $\beta_{ij} = \frac{Y_j}{\sum_{k \in N/i} Y_k}$  is the relative weight of economy  $j$  in a world where economy  $i$  is not considered. We assume that  $X_{ii} = 0$  for all

economy  $i \in N$ . It should be noted that  $\sum_{j \in N/i} \beta_{ij} = 1$  and  $\beta_{ij}$  = the degree of openness between economies  $i$  and  $j$  in the perfectly connected world and  $\beta_{ii} = 0$

The degree of economic integration for this third measure is constructed by taking the product of the degree of openness and the production destined for export taking into account the weight of the economy considered in the world economy. This is called degree of perfect connection which is simply taken as the relative size of the bloc's trade in total world output. In this study, we compare the complementary effects of the three measures of economic integration developed on growth models of ECOWAS and SADC and for the purpose of clarity, TGDPR (which is trade-GDP ratio represents the degree of openness, the relative size of the bloc's trade in total world output) is represented as RSBTW while trade integration measure or inter-regional trade index is written as TRDINT. It should be noted that these indices are constructed based on the present level of integration achieved by these trade blocs not on the basis of full integration they are yet to attain. This would give a better clue on how the full integration would perform in the future.

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<sup>3</sup>The third measure of integration is derived from the product of the degree of openness and the production destined for export. The weight of the economy in the world economy is taken into account. This measure is taken to be the relative size of the bloc's trade in total world output for clarity.

#### **4.7: Estimation Technique**

Our analysis is based on 15 countries in each of ECOWAS and SADC trade blocs making a total of 30 countries. This study employs both the FE and RE effect estimation techniques to correct for the possible omitted variable bias that may be encountered and this is in line with (Li and Liu, (2005). Specifically, the unobserved heterogeneity in the cross sectional units is controlled using the FE estimation while the random effect takes care of the effect of these differences on the explained variable. Moreover, our sample data may bring about differences across each cross section; therefore, the unit fixed effect controls for this. We further employ the two stage least square (2SLS) being the most common method for estimating a simultaneous equation model (Green, 2003) and also corrects for the inconsistencies associated with any other estimation techniques. The instrumental variable (IV) estimation (2SLS) is used following Anderson and Hsia (1982) to overcome the problem of endogeneity, given that the regressors may be correlated with the error term and that time-invariant country characteristics (fixed effects), such as geography and demographics may be correlated with the explanatory variables. The fixed effects are contained in the error term in the model specified and consist of the unobserved country –specific effects and the observation –specific errors. Thus, it becomes inappropriate to estimate the above specifications by ordinary least square alone.

#### **4.8: Sources of Data**

Data for this research was collected for 30 countries out of which 15 are taken from ECOWAS and the remaining 15 from SADC trade blocs. For both trade blocs, we collected data spanning the period 1994-2013. The inadequacy and unavailability of data (in some cases) have become a major concern in developing countries. In the case of ECOWAS, Mauritania was dropped because it ceased to be a member since year 2000. The ECOWAS countries considered are Benin, Burkina Faso, Coted’Ivoire, Gambia, Ghana, Guinea, Guinea Bissau, Mali, Niger, Nigeria, Senegal, Sierra Leone and Togo. Data on Foreign direct investment net inflow, Real

GDP, export and import from which we computed the degree of integration index, official exchange rate, and external debt all in US dollars, population and broad money to GDP ratio were mostly collected from the World Development Indicators 2009 and 2011. The average FDI flow data into each individual country of the trade blocs were collected from United Nations Conference on Trade and Development (UNCTAD) 2012 and 2013. However, most ratios such as Per capita FDI, ratio of external debt to PGDP were computed using the available statistics. Some missing values on ratio of money supply to GDP (liquidity) were computed from income velocity of money defined as ratio of GDP to broad money obtained from African Statistical Year book (various issues). Data on exchange rate were mostly obtained from World Development Indicators and Penn world Table. The average change in consumer price indices and the ratio of total investment to GDP were obtained from the World Development Indicator (WDI), International Monetary Fund (IMF) and World Economic data base (2014).

## CHAPTER FIVE

### EMPIRICAL ANALYSIS

#### 5.1: Introduction

On the basis of the earlier discussion on the relationship between FDI and Growth in the literature, we consider the determinants of FDI and growth separately since it is not possible to construct one -equation regression model for both. The determinants of FDI and growth are therefore examined within the context of economic integration. Our study uses three basic integration measures namely, degree of Openness measured by trade-GDP ratio (TGDPR), the degree of perfect connection measured by relative size of the bloc's trade in total world output (RSBTW) and trade integration or inter-regional trade index (TRDINT) measure. These measures are constructed based on the present level attained by ECOWAS and SADC trade blocs in the integration process. So far the levels attained are the strengthening existing RECs and the creation of new RECs where they did not exist, coordination and harmonization of REC activities and gradual elimination of tariff and non-tariff barriers within the RECs and achievement of the Regional Free Trade Agreements (FTAs). To clearly pin-point the role of integration in FDI-growth relationship, we observe the relationship without considering economic integration and later with economic integration. This is within the base line model. In our extended model, we interacted each of these measures with FDI to observe its impact on growth. For instance, the interaction of degree of openness as a measure of integration with FDI is included as one of the determinants. In each of the equations, we carry out a sensitivity analysis to check the robustness of each integration measure.

The above discussion implies that we estimate 8 equations for each trade bloc on the two-way FDI-growth relationship with and without economic integration. We also estimate 3 equations for each on the inclusion of interaction term. This makes up to 11 equations for each so that 22 equations are estimated for the two trade blocs using the fixed and random effects estimation techniques. The main focus is however given to the fixed and random effect estimations. Repeating same process for the 2SLS, we get a total of 44 equations estimated for the two trade



blocs. The two stage least square results are presented in the appendix. We decided to estimate the equation for each region separately due to their different structural characteristics.

To make the analysis follow a sequential order, the descriptive statistics come first followed by other diagnostic tests and finally the estimation results of the equations follow. All estimations are done using the Econometric-views.

## **5.2: Descriptive Statistics**

In the tables that follow, the descriptive statistics of the variables for the individual countries of ECOWAS and SADC is displayed. This essentially describes the statistical behavior of the key variables used in our analysis. These are the growth, FDI and inter-regional trade index, openness and the relative size of trade in world output.

From table 5.2.1, there apparent variations in the magnitude of the variables as demonstrated by the standard deviations. The growth variable happens to have the greatest fluctuation (24.185) in the Liberian economy compared to other ECOWAS countries. This high volatility could be attributed to the instability in this economy around this period. It is also shown that there are mix results on whether the variables are normally distribution across the countries. Generally, growth and FDI are normally distributed while the integration indices (TRDINT, TGDPGR and RSBTW) are normally distributed in Ghana, Guinea, Guinea Bissau, Mali, Niger, Nigeria, Senegal and Togo.

Table 5.2.2 describes the statistical behaviour of the key variables for the ECOWAS region. The RSBTW comes with the highest mean and median values of 19.582 and 20.104 respectively. However, the PGDPGR comes with highest standard deviation of 8.346 demonstrating the fluctuating nature of the growth variable while TGDPGR appears with the least fluctuation over the period. The normality test (0.000) indicates that the variables are non-normally distributed.

Test of equality of means and variances is carried out on table 5.2.3. The Anova F-test (0.000) and Welch F test (0.000) carried out indicate the rejection of the null hypothesis that the means are the same. Therefore, the means of observation within the ECOWAS are not the same across

the region. Using the Bartlett (0.000), Levene (0.000) and Brown-Forsythe (0.000) methods, each confirms that the observations do not possess equal variance within the ECOWAS.

**Table 5.2.1: Summary of descriptive statistics for ECOWAS countries**

<b>Benin</b>	PGDPR	FDI	TRDINT	TGDPR	RSBTW
Mean	1.421	1.884	4.92E-06	4.68E-06	7.082
Median	1.074	1.762	6.05E-08	2.33E-07	6.609
Std dev	2.046	0.764	2.17E-05	1.99E-05	1.585
J-B prob	0.000	0.882	0.000	0.000	0.000
<b>Burkina Faso</b>	PGDPR	FDI	TRDINT	TGDPR	RSBTW
Mean	3.558	0.579	0.133	0.121	19.763
Median	3.485	0.660	0.117	0.107	19.709
Std dev	3.331	0.952	0.066	0.061	1.654
J-B prob	0.058	0.577	0.000	0.000	0.000
<b>Cape Verde</b>	PGDPR	FDI	TRDINT	TGDPR	RSBTW
Mean	6.919	4.510	0.297	0.271	19.349
Median	6.845	4.811	0.315	0.288	19.432
Std dev	4.548	1.166	0.086	0.079	0.769
J-B prob	0.581	0.433	0.919	0.919	0.463
<b>Cote d'Ivoire</b>	PGDPR	FDI	TRDINT	TGDPR	RSBTW
Mean	1.565	2.859	0.5050	0.462	22.550
Median	0.230	2.925	0.505	0.462	22.517
Std dev	7.801	0.370	0.365	0.055	0.648
J-B prob	0.000	0.002	0.000	0.421	0.000
<b>Gambia</b>	PGDPR	FDI	TRDINT	TGDPR	RSBTW
Mean	0.429	3.130	0.300	0.274	19.153
Median	0.221	3.145	0.280	0.256	19.130
Std dev	3.370	0.624	0.054	0.050	0.231
J-B prob	0.189	0.523	0.056	0.376	0.379
<b>Ghana</b>	PGDPR	FDI	TRDINT	TGDPR	RSBTW
Mean	3.206	2.969	0.380	0.348	22.171
Median	2.406	2.408	0.362	0.331	21.915
Std dev	2.617	1.368	0.086	0.080	0.796

J-B prob	0.000	0.305	0.480	0.481	0.421
<b>Guinea</b>	PGDPR	FDI	TRDINT	TGDPR	RSBTW
Mean	1.435	1.454	0.293	0.268	20.701
Median	1.010	2.074	0.289	0.265	20.612
Std dev	3.440	2.090	0.062	0.057	0.290
J-B prob	0.000	0.280	0.423	0.431	0.335
<b>Guinea Bissau</b>	PGDPR	FDI	TRDINT	TGDPR	RSBTW
Mean	-0.244	0.766	0.187	0.171	18.144
Median	1.132	1.080	0.180	0.165	18.142
Std dev	8.554	1.628	0.042	0.038	0.603
J-B prob	0.000	0.386	0.210	0.202	0.299
<b>Liberia</b>	PGDPR	FDI	TRDINT	TGDPR	RSBTW
Mean	10.551	3.532	0.335	0.307	18.810
Median	7.220	3.621	0.306	0.280	18.897
Std dev	24.185	1.695	0.198	0.181	1.015
J-B prob.	0.000	1.453	0.000	0.000	0.885
<b>Mali</b>	PGDPR	FDI	TRDINT	TGDPR	RSBTW
Mean	2.093	1.839	0.290	0.266	20.868
Median	2.136	2.084	0.285	0.261	20.865
Std dev	2.840	1.301	0.039	0.036	0.652
J-B prob.	0.884	0.194	0.816	0.818	0.500
<b>Niger</b>	PGDPR	FDI	TRDINT	TGDPR	RSBTW
Mean	0.605	1.281	0.193	0.177	20.036
Median	0.145	0.904	0.189	0.172	19.786
Std dev	3.494	2.134	0.021	0.019	0.545
J-B prob.	0.702	0.767	0.287	0.285	0.352
<b>Nigeria</b>	PGDPR	FDI	TRDINT	TGDPR	RSBTW
Mean	4.304	3.048	0.415	0.380	24.249
Median	3.122	2.818	0.393	0.360	24.014
Std dev	6.894	0.684	0.099	0.091	0.890

J-B prob.	0.000	0.355	0.939	0.939	0.513
<b>Senegal</b>	PGDPR	FDI	TRDINT	TGDPR	RSBTW
Mean	0.727	2.420	0.296	0.271	21.415
Median	0.755	2.735	0.295	0.270	21.325
Std dev	2.423	0.942	0.022	0.020	0.399
J-B prob.	0.207	0.270	0.493	0.480	0.341
<b>Sierra Leone</b>	PGDPR	FDI	TRDINT	TGDPR	RSBTW
Mean	3.591	1.600	0.183	0.167	19.211
Median	2.190	2.262	0.178	0.163	19.290
Std dev	9.805	2.357	0.069	0.063	0.710
J-B prob.	0.000	0.500	0.000	0.000	0.535
<b>Togo</b>	PGDPR	FDI	TRDINT	TGDPR	RSBTW
Mean	1.262	2.280	0.388	0.355	20.308
Median	0.374	2.269	0.394	0.360	20.254
Std dev	4.648	0.568	0.047	0.043	0.463
J-B prob.	0.144	0.778	0.685	0.683	0.569

**Table 5.2.2: Summary of descriptive statistics for ECOWAS**

<b>ECOWAS</b>	PGDPR	FDI	TRDINT	TGDPR	RSBTW
Mean	2.746	2.285	0.280	0.256	19.582
Median	1.986	2.428	0.282	0.258	20.104
Std dev	8.346	1.699	0.143	0.131	3.824
J-B prob.	0.000	0.000	0.000	0.000	0.000

**Table 5.2.3: Test of Equality of Means and Variances for ECOWAS**

	Method	Df	Value	Probability
Means	Anova F-test	(4.1452)	1094.672	0.000
	Welch F –test	(4.665.959)	1944.225	0.000
Variances	Bartlett	4	4119.177	0.000
	Levene	(4.1452)	69.108	0.000
	Brown-Forsythe	(4.1452)	64.088	0.000

*Source: Computed by the author using E-views*

Variables of the individual countries in SADC also display non-uniform statistical behaviour (table 5.2.4). Just the growth variable remained the most fluctuated in ECOWAS; similar case arises in the SADC as the growth comes with the highest standard deviation (7.494) in Zimbabwe. This is followed by the growth variable's standard deviation in Seychelles (6.956) and Malawi (6.662). Interestingly, the FDI variable appears normally distributed for all the SADC countries except in Namibia (0.010)

Discussing the statistical behaviour of variables in the SADC region, the RSBTW variable has the highest mean and median values of 21.529 and 21.443 respectively in South Africa compared to other SADC countries (see table 5.2.5). The PGDPGR has the highest fluctuation (4.513) in the SADC. However, the degree of fluctuation of PGDPGR is comparatively lower than that of ECOWAS region during the same period.

The Anova F-test (0.000) and Welch F test (0.000) of equality of means carried out indicate the rejection of the null hypothesis that the means are the same (see table 5.2.6). Therefore, just as in ECOWAS the means of observation within the SADC are not equal across the region. Using the Bartlett (0.000), Levene (0.000) and Brown-Forsythe (0.000) methods for testing equality variance, each confirms that the observations have variances which differ within the SADC.

**Table 5.2.4: Summary of descriptive statistics for SADC countries**

<b>Angola</b>	PGDPR	FDI	TRDINT	TGDPR	RSBTW
Mean	5.643	4.247	0.688	0.695	23.087
Median	4.514	4.508	0.721	0.728	22.932
Std dev	5.816	0.888	0.191	0.193	1.773
J-B prob	0.301	0.562	0.000	0.000	0.000
<b>Botswana</b>	PGDPR	FDI	TRDINT	TGDPR	RSBTW
Mean	3.074	4.838	0.688	0.495	22.083
Median	3.381	5.001	0.721	0.508	22.033
Std dev	3.875	0.990	0.191	0.060	0.410
J-B prob	0.005	0.463	0.000	0.252	0.495
<b>Dem. R.C</b>	PGDPR	FDI	TRDINT	TGDPR	RSBTW
Mean	-0.161	1.713	0.349	0.381	21.705
Median	1.630	1.746	0.296	0.303	21.377
Std dev	4.964	1.608	0.191	0.179	0.872
J-B prob	0.459	0.654	0.548	0.288	0.341
<b>Lesotho</b>	PGDPR	FDI	TRDINT	TGDPR	RSBTW
Mean	2.307	3.929	0.438	0.442	20.024
Median	2.817	4.230	0.462	0.467	20.251
Std dev	2.713	0.905	0.128	0.129	0.642
J-B prob	0.000	0.392	0.523	0.523	0.356
<b>Madagascar</b>	PGDPR	FDI	TRDINT	TGDPR	RSBTW
Mean	0.086	1.741	0.255	0.257	21.047
Median	1.056	1.602	0.261	0.263	21.036
Std dev	4.727	1.768	0.041	0.042	0.514
J-B prob	0.000	0.358	0.689	0.695	0.421
<b>Malawi</b>	PGDPR	FDI	TRDINT	TGDPR	RSBTW
Mean	0.022	1.225	0.273	0.276	20.428
Median	0.570	1.189	0.277	0.280	20.294
Std dev	6.662	0.986	0.047	0.047	0.498



J-B prob	0.926	0.561	0.083	0.083	0.406
<b>Mauritania</b>	PGDPR	FDI	TRDINT	TGDPR	RSBTW
Mean	3.476	4.209	0.569	0.575	21.927
Median	3.415	3.936	0.578	0.583	21.868
Std dev	1.738	1.189	0.065	0.066	0.347
J-B prob	0.615	0.465	0.458	0.458	0.899
<b>Mozambique</b>	PGDPR	FDI	TRDINT	TGDPR	RSBTW
Mean	4.399	2.838	0.252	0.254	20.977
Median	4.416	2.720	0.280	0.283	21.110
Std dev	2.464	1.368	0.091	0.092	0.848
J-B prob	0.354	0.468	0.479	0.479	0.440
<b>Namibia</b>	PGDPR	FDI	TRDINT	TGDPR	RSBTW
Mean	2.008	4.455	0.450	0.454	21.695
Median	1.616	4.425	0.455	0.460	21.587
Std dev	3.573	1.529	0.040	0.041	0.520
J-B prob.	0.167	0.010	0.598	0.598	0.296
<b>Seychelles</b>	PGDPR	FDI	TRDINT	TGDPR	RSBTW
Mean	3.306	6.223	0.327	0.330	19.504
Median	2.715	6.379	0.347	0.350	19.460
Std dev	6.956	0.769	0.109	0.110	1.190
J-B prob.	0.060	0.724	0.364	0.364	0.033
<b>South Africa</b>	PGDPR	FDI	TRDINT	TGDPR	RSBTW
Mean	1.051	4.021	0.277	0.280	24.750
Median	1.627	3.929	0.274	0.276	24.672
Std dev	2.970	1.333	0.034	0.035	0.494
J-B prob.	0.000	0.093	0.756	0.756	0.307
<b>Swaziland</b>	PGDPR	FDI	TRDINT	TGDPR	RSBTW
Mean	0.246	4.169	0.704	0.710	21.156
Median	0.750	4.289	0.652	0.658	21.325
Std dev	2.608	0.527	0.133	0.134	0.373
J-B prob.	0.000	0.588	0.279	0.279	0.294

<b>Tanzania</b>	PGDPR	FDI	TRDINT	TGDPR	RSBTW
Mean	2.262	2.479	0.228	0.231	21.616
Median	3.315	2.511	0.205	0.207	21.491
Std dev	3.187	0.847	0.111	0.112	0.685
J-B prob.	0.000	0.648	0.000	0.000	0.453
<b>Zambia</b>	PGDPR	FDI	TRDINT	TGDPR	RSBTW
Mean	1.325	3.505	0.351	0.354	21.487
Median	2.694	3.449	0.344	0.348	21.196
Std dev	3.977	0.959	0.091	0.092	0.834
J-B prob.	0.000	0.803	0.000	0.000	0.340
<b>Zimbabwe</b>	PGDPR	FDI	TRDINT	TGDPR	RSBTW
Mean	-1.480	1.712	0.390	0.394	21.634
Median	-0.838	1.805	0.371	0.375	21.589
Std dev	7.494	1.566	0.083	0.083	0.287
J-B prob.	0.465	0.987	0.000	0.000	0.291

*Source: Computed by the author using E-views*

**Table 5.2.5: Summary of descriptive statistics for SADC**

<b>SADC</b>	PGDPR	FDI	TRDINT	TGDPR	RSBTW
Mean	1.907	3.398	0.403	0.407	21.529
Median	2.305	3.482	0.354	0.358	21.443
Std dev	4.513	1.817	0.181	0.183	1.439
J-B prob.	0.000	0.141	0.000	0.000	0.000

*Source: Computed by the author using E-views*

**Table 5.2.6: Test of Equality of Means and Variances for SADC**

	Method	Df	Value	Probability
Means	Anova F-test	(4,1429)	4611.281	0.000
	Welch F -test	(4,654.488)	15677.240	0.000
Variances	Bartlett	4	2884.411	0.000
	Levene	(4,1429)	163.1949	0.000
	Brown-Forsythe	(4,1429)	158.004	0.000

*Source: Computed by the author using E-views*

### 5.3: Correlation matrix of selected variables

The correlation matrix contains the pair wise correlation coefficients between the variables used for the analysis. The essence here is to identify potential sources of multicollinearity in our estimated equations. The key variables whose degree of association is measured here are adult dependency rate , Relative size of the bloc's trade to total world output, ratio of external debt to GDP, investment as a percentage of GDP , Liquidity, official exchange rate, Per capita FDI , Per capita GDP growth , inter-regional trade integration, Population, development assistance and aid , consumer price index , Degree of Openness, This correlation matrix for each of the trade blocs is presented in tables 5.3.1 and 5.3.2.

The degree of association among the variables is measured using the correlation analysis. From the computed correlation statistics, most coefficients are low for ECOWAS. The correlation coefficient between relative size of the bloc's trade in total world output and inter-regional trade index is highest (0.734) and this is followed by the correlation between population and development assistant. Generally, the correlation coefficients between the key variables used in this study are low though positive. Per capita GDP growth and Per capita FDI, comes with positive coefficient of 0.224. By implication, this gives a preliminary support of the two-way positive relationship between per capita FDI and growth. Per capita FDI and openness and inter-regional trade integration index and per capita FDI also display a correlation coefficient of 0.392 each. Relative size of the bloc's in world output and per capita FDI come with coefficient of 0.201. The positive correlations in these cases are a pointer to the relevance of integration in FDI flows in ECOWAS.

Correlations between integration and growth are also low. The openness and per capita GDP and between trade integration and growth is 0.026 in each case. Relative size of the bloc's trade in total world output and per capita GDP are positively related as well (0.077). The level of integration matters for growth as indicated by the positive correlation coefficients as it fosters growth in the trade bloc.

The highest positive correlation coefficient in SADC is 0.615 and this comes up between FDI and liquidity variables followed by 0.567 which measures the association between ADR and

AID. Interestingly, the correlation coefficients between the key variables are exceptionally low even though they are positive. The correlation between per capita FDI and growth is (0.200) indicating a positive relationship between per capita FDI and growth. The correlation between Per capita GDP growth and openness is 0.150, between relative size of the bloc's trade in total world output and per capita FDI is 0.142 and between per capita FDI and inter-regional trade is 0.396. The positive coefficients are an indication that integration irrespective of the measure fosters FDI flows just as integration –growth relationship is also positive implying that integration is a growth driver. Furthermore, correlation between growth and openness is 0.150 and relative size of the bloc's trade in total world output and growth is 0.123.

Following the fact that a rough test of the threat of multicollinearity can be obtained through the degree of association measure and as illustrated above, most variables in ECOWAS and SADC have low correlation coefficients between them so that the threat of multicollinearity is minimal and so regression models will not be seriously distorted. To further confirm that multicollinearity is minimal, we computed the variance inflation factor and values obtained for all the models gave values less than 5 for both trade blocs implying low correlations; and hence multicollinearity is a minimum.

**Table 5.3.1: Correlation matrix of selected variables in ECOWAS**

	ADR	AID	CPI	TGDPR	RSBTW	TRDINT	EXGDP	INV	LQD	OER	FDI	GDPGR	POP
ADR	1.000												
AID	-0.084	1.000											
CPI	-0.118	0.183	1.000										
TGDPR	-0.339	0.138	0.143	1.000									
RSBTW	-0.146	-0.146	0.073	0.734	1.000								
TRDINT	-0.339	0.138	0.143	1.000	0.734	1.000							
EXGDP	0.068	-0.548	-0.386	-0.018	-0.134	-0.018	1.000						
INV	-0.040	0.378	0.343	0.042	0.076	0.042	-0.447	1.000					
LQD	-0.437	0.039	0.317	0.242	-0.014	0.242	-0.303	-0.459	1.000				
OER	-0.245	-0.060	0.239	-0.248	-0.177	-0.248	0.089	-0.098	-0.210	1.000			
FDI	-0.438	0.119	0.292	0.392	0.201	0.392	-0.415	0.410	0.613	-0.282	1.000		
GDPGR	-0.112	0.152	0.166	0.026	0.077	0.026	-0.298	0.399	0.253	-0.134	0.224	1.000	
POP	-0.087	0.666	0.005	0.280	0.366	0.280	-0.372	0.146	-0.290	-0.041	-0.052	-0.008	1.000

*Source: computed by the author using E-views. Values of TGDPR and TRDINT appear close; hence correlation appears perfect (1.000)*

**Table 5.3.2: Correlation matrix of selected variables in SADC**

	ADR	RSBTW	EXGDP	INV	LQD	OER	FDI	PGDPGR	TRDINT	POP	AID	CPI	TGDPR
ADR	1.000												
RSBTW	-0.170	1.000											
EXGDP	0.380	-0.414	1.000										
INV	-0.218	-0.148	-0.130	1.000									
LQD	-0.852	0.190	-0.400	0.421	1.000								
OER	0.264	-0.020	0.084	-0.143	-0.330	1.000							
FDI	-0.541	0.142	-0.396	0.376	0.615	-0.442	1.000						
PGDPGR	-0.081	0.123	-0.088	0.280	0.117	-0.074	0.200	1.000					
TRDINT	-0.145	0.212	-0.327	-0.013	0.111	-0.366	0.396	0.150	1.000				
POP	0.551	0.518	0.172	-0.279	-0.510	0.432	-0.593	-0.037	-0.355	1.000			
AID	0.567	0.369	0.274	-0.162	-0.478	0.414	-0.490	0.023	-0.445	0.891	1.000		
CPI	-0.310	0.121	-0.341	0.052	0.347	0.347	0.281	0.030	-0.112	-0.125	-0.052	1.000	
TGDPR	-0.145	0.212	-0.327	-0.013	-0.366	-0.366	0.396	0.150	1.000	-0.355	-0.445	-0.112	1.000

*Source: computed by the author using E-views.*

#### **5.4: Discussion of Empirical Model results**

On the estimation issue, our analysis is based on 15 countries in each of ECOWAS and SADC trade blocs although missing data is inevitable in some cases. This has not however affected the period chosen for this study. We present the estimation results for both FDI and growth models of ECOWAS and SADC trade blocs in tables 5.4.1 and 5.4.2 as follows:

We carry out both the fixed effect (FE) and random effect (RE) estimation techniques for each trade bloc and after which a better estimation technique is selected for each trade bloc. In choosing the better technique, both the redundant effect and the Hausman's tests are carried out and in some cases, model adequacy is used as a criterion. Moreover, the sample data here may bring about differences across each cross section based on the test of equality of mean and variance carried out earlier. Thus, the results for these estimation techniques are reported accordingly.

In line with our first objective, we consider the two way relationship between FDI and Growth in the absence of any level of integration. In the first stage of regression (log-linear function) where FDI is the dependent variable as shown in table 5.4.1 above, the fixed effect is chosen for both trade blocs on the basis of its significance. There existed a positive relationship between FDI and growth in both ECOWAS and SADC trade blocs. A unit increase in growth resulted in about 1.1% increase in FDI flows to ECOWAS while a unit increase in growth led to about 1.6% increase in the FDI flows to SADC during the period. It is noticeable here that growth led to higher flows of FDI into SADC than into the ECOWAS. The positive impact of growth on FDI in both cases conformed to the fact that market size and its expansion are essential in attracting inward FDI flows. This finding is in line with Omri and Sassi-Tmar (2014), Chowdhury and Mavrotas (2006) and Mecinger (2003) who argued that high-growing countries do attract much FDI. Moreover, this supports the alleged positive relationship between FDI and growth mostly demonstrated in the literature such as Zenasni and Benhabib, (2013).

The key issue here is that market size remained an important determinant of FDI flows in both trade blocs even in the absence of any level of integration. These results are in line with what literature on the relationship between FDI and growth asserts.



It should be emphasised that the inclusion of other regressors in the estimation is to avoid omitted variable bias in the relationship between FDI and growth and so our interest here is mainly on FDI-growth relationship without necessarily focusing on the impact of other determinants.

**Table 5.4.1: Estimations of FE and RE of FDI model without Economic Integration**

Dep. Var: FDI:      ECOWAS: Equation 1                      SADC: Equation 2

Ind Var/ Coeff.	Fixed Effect	Random Effect	Fixed Effect	Random Effect
constant	13.197(3.101)	10.008(3.046)	1.805(0.576)	0.407(0.134)
GDPGR	0.011(0.703)	-0.002(-0.133)	0.016(0.774)	0.032(1.657)
ADR	-3.323(-3.733)**	-2.678(-4.065)**	-0.388(-0.704)	-0.245(-0.454)
CPI	0.184(1.154)	0.256(1.779)*	0.253(3.308)**	0.411(5.912)**
EXGDP	-0.234(-1.862)*	-0.365(-3.580)**	-0.139(-1.669)*	0.683(2.728)**
INV	0.422(2.365)**	0.396(2.257)**	0.602(3.096)**	0.587(3.081)**
LQD	1.073(5.193)	1.244(6.339)**	0.605(2.360)**	0.683(2.728)**
OER	-0.134(-3.405)**	-0.122(-3.158)**	-0.344(-8.801)**	-0.319(-8.236)**
R-Squared	0.545	0.495	0.638	0.562
Hausman Test		0.008		0.000
Red F.E Test	0.089		0.001	
F-statistic	10.989	36.058	14.443	40.878

*Computed by the author using E-views.*

In the second stage of regression in table 5.4.2 below (linear-log function) where the GDPGR is the dependent variable, the fixed effect model is chosen based on model adequacy and variations across units. As expected, there also existed a direct relationship (0.192) between FDI and growth for ECOWAS region. Thus, holding other determinants constant, FDI influences growth performance positively as a 1% increase in FDI led to about 0.002 unit increase in growth. The FDI's contribution to growth in SADC trade blocs gives a similar view to what is observed in ECOWAS region as FDI also impacted positively on growth while holding other factors constant. By implication, a 1% increase in FDI resulted in about 0.003 unit increase in growth.

This FDI-growth relationship is line with what is frequently observed in the FDI-Growth literature that greater inflow of FDI spur better economic performance. This is consistent with what Soltani and Ochi (2012) obtained using data for Tunisia. The view that FDI impacted positively on growth derives its theoretical underpinning from recent growth developments in growth theory which highlights the relevance of improved technology, efficiency and productivity in stimulating growth. Following this, the contribution of FDI to growth comes through its role as a channel for transferring advanced technology from the industrialised to developing nations.

This largely ambiguous scenario suggests that the influence of FDI on growth is contingent on additional factors within the FDI-receiving economy (Durham, 2004). The initial development level, existing stock of human capital and trade policy regime are key among the host country factors considered in the literature. Moreover, FDI flows can retard growth in a situation where the flows can not sufficiently increase growth and where it is seen to crowd out the domestic investment. Domestic investment is fundamental to growth and as such any reduction in it is likely to be inimical to growth.

As a matter of fact, the positive FDI-growth relationship in SADC is not surprising based on the zeal to attract FDI inflows into the region. However, experience has shown that FDI into Africa has not resulted in the expected growth, mainly because investors have always repatriated their monies back and more so the direct benefit of FDI has been tax revenue, which does not seem to

benefit the economy due to rampant corruption and economic mismanagement. Not until recently, SADC region performed relatively poor in the attraction of FDI due to reasons of small size of regional market, property right issue, political instability to name a few. SADC protocol which tends to extend market boundaries by further liberalising intra-regional trade, often have some consequences on individual member states with respect to investment, industrialisation, trade and growth. SADC has a generally low average GDP per capita compared to other regions. In 2011, South-Africa accounted for 64% of SADC's GDP which is almost twice that of ECOWAS. However, FDI flows into SADC constituted 1.95% of GDP and of course lower than that of all other regional blocs except COMESA.

**Table 5.4.2: Estimations of FE and RE of Growth model without Economic Integration**

Dep. Var: GDPGR: ECOWAS: Equation 3			SADC: Equation 4	
Ind Var/ Coeff.	Fixed effect	Random effect	Fixed effect	Random effect
Constant	41.998(1.985)	-60.319(3.406)	-7.509(-0.726)	1.017(0.101)
FDI	0.192(0.723)	-0.063(-0.251)	0.333(1.329)	0.427(1.933)*
ADR	-8.048(-2.159)**	-9.820(-3.532)**	-1.030(-0.517)	-2.608(-1.344)
AID	0.382(0.797)	0.043(0.095)	0.443(0.994)	0.574(1.484)
CPI	1.841(2.885)**	1.220(2.102)**	-0.018(-0.069)	-0.154(-0.612)
EXGDP	-1.825(-3.623)**	-1.431(-2.932)**	-0.065(-0.213)	-0.230(-0.794)
INV	2.414(3.136)**	3.154(4.249)**	2.173(3.355)**	2.313(3.658)**
LQD	-1.883(-1.904)*	-2.939(-3.120)**	-0.347(-0.399)	-1.206(-1.424)
OER	-0.187(-1.442)	-0.306(-1.927)*	-0.080(-0.522)	-0.055(-0.372)
POP	-0.784(-2.326)**	-0.790(-2.412)**	-0.026(-0.070)	-0.081(-0.234)
R-Squared	0.301	0.227	0.243	0.117
Hausman Test		0.024		0.000
Red F.E Test	0.114		0.008	
F-statistic	3.637	8.349		

*Source: Computed by the author using E-views*

Tables 5.4.3 and 5.4.4 display the third stage of regression for ECOWAS and SADC where FDI is the dependent variable and the integration indices were included among the regressors this time around. Openness, relative size of bloc's trade in total world output and the interregional trade integration indices were incorporated in equations 5, 6 and 7 of ECOWAS respectively while each appeared in equations 8, 9 and 10 of SADC in similar order. In this case, the random effect model was consistent for the ECOWAS trade bloc while the fixed effect was consistent for SADC trade bloc based on the Hausman and fixed redundant tests respectively. Surprisingly, growth impacted negatively on FDI irrespective of the integration measures in ECOWAS. This is contrary to table 5.4.1 where, without the inclusion of integration measure growth impacted positively on FDI. This is a clear indication that integration seemed to influence the two-way relationship between FDI and growth in terms of signs of coefficients in ECOWAS. A unit increase in growth led to about 0.8% decrease in FDI flows under both openness and inter-regional trade integration. However, the reduction in FDI with integration index is less than the increase of FDI inflows when it was excluded except for the relative size of the bloc's trade to total world output (-0.012). For SADC as displayed in table 5.4.4, coefficients of GDPGR are still positive for each of the integration indices. Thus, a unit increase in growth led to about 0.6% increase in FDI flows under both openness and inter-regional trade integration measures of integration, while a unit increase in growth resulted in about 2.2% increase in FDI under the relative size of the bloc's trade in total world output measure. Hence the influence of growth on FDI responds to integration in terms of the magnitude of coefficient in the SADC trade bloc.

Explaining the impacts of other regressors on FDI flows under the three measures of integration, Age dependency variable is significantly negatively related to FDI inflows in ECOWAS trade bloc for any form of integration (equations 5-10). The coefficients are respectively -2.657, -3.098 and -2.657 for ECOWAS and -0.102, -0.332 and -0.102 for SADC. The expected negative signs of the ADR imply the tendency for foreign firms to invest in the region since their costs of supporting the elderly population through taxes and pension plans are lower.

While consumer price index which is a proxy for inflation gave positively signs across all equations of ECOWAS and SADC which is contrary to expectation, coefficients of external debt to GDP ratio and investment variable variables were significant and rightly signed across all

equations of ECOWAS and SADC (Equations 5-10). This is a pointer to the fact that these variables behaved as expected within the macroeconomic environment.

The liquidity variable also displayed positive and significant impact on FDI flows in both trade blocs-ECOWAS (1.207, 1.371 and 1.207) and SADC (0.766, 0.655, 0.766)-. This demonstrates a gradual development of the financial system and is in support of the literature which emphasised the significance of the financial system in FDI flows.

The coefficient of the official exchange rate came with negative values (-0.073, -0.096 and -0.673) for ECOWAS and -0.293, -0.344 and -0.293 for SADC). This implies that a depreciation of exchange rate in these blocs increased FDI inflows. This corroborates with the findings of (Omri and Sassi-Tmar, 2014) and (Froot and Stein, 1991). However, in the FDI literature, the direction and magnitude of influence of exchange rate on FDI is ambiguous (Aqeel and Nishat, 2005).

On the effects of the integration indices, all the integration indices have significant positive relationship with FDI inflows in both trade blocs except for the relative size of the bloc's trade to world output measure with negative coefficient in SADC. This is in line with the findings of (Chakrabarti, 2001) and (Asiedu, 2002). The openness measure (2.918) demonstrated the greatest impact on FDI flows to ECOWAS while the inter-regional trade index (1.998) demonstrated the greatest impact on FDI flows to SADC. Generally, holding the effects of other variables fixed, integration is a necessary step towards facilitating FDI flows.

On the average, the explanatory power of the regressors were 0.534 and 0.659 in ECOWAS and SADC respectively showing the variations in FDI flows they have accounted for on the average. The value of F-statistic in all cases showed that the model was adequate.

**Table 5.4.3: Estimations of FE and RE of FDI model with Economic Integration in ECOWAS**

Dep Var: FDI	Equation 5		Equation 6		Equation 7	
Ind Var/ Coeff.	Fixed	Random	Fixed	Random	Fixed	Random
Constant	9.594(2.159)	10.141(2.649)	11.868(2.615)	10.931(2.740)	9.594(2.159)	10.141(2.649)
GDPGR	-0.002(-0.115)	-0.008(-0.454)	-0.006(-0.330)	-0.012(-0.667)	-0.002(-0.115)	-0.008(-0.454)
TGDPR	2.665(4.001)**	2.918(4.521)**				
RSBTW			0.043(2.034)**	0.053(2.557)**		
TRDINT					2.439(4.001)**	2.670(4.521)**
ADR	-2.536(-2.734)**	-2.657(-3.420)**	-3.245(-3.501)**	-3.098(-3.935)**	-2.536(-2.734)**	-2.657(-3.420)**
CPI	-0.0002(-0.001)	0.078(0.522)	0.112(0.663)	0.167(1.098)	-0.0002(-0.001)	0.078(0.522)
EXGDP	-0.310(-2.436)**	-0.453(-4.446)**	-0.289(-2.217)**	-0.390(-3.738)**	-0.310(-2.436)**	-0.453(-4.446)**
INV	0.454(2.455)**	0.416(2.303)**	0.397(2.091)**	0.361(1.946)*	0.454(2.455)**	0.416(2.303)**
LQD	1.148(5.381)**	1.207(5.899)**	1.283(5.739)**	1.371(6.443)**	1.148(5.381)**	1.207(5.899)**
OER	-0.088(-2.208)**	-0.073(-1.857)*	-0.109(-2.692)**	-0.096(-2.414)**	-0.088(-2.208)**	-0.073(-1.857)*
R-Squared	0.576	0.542	0.555	0.517	0.576	0.542
Hausman Test		0.139		0.107		0.139
Red F.E Test	0.409		0.352		0.409	
F-statistic	11.494	36.609	10.524	33.086	11.494	36.609

*Source: Computed by the author using E-views*



**Table 5.4.4: Estimations of FE and RE of FDI model with Economic Integration in SADC**

Dep. Var: FDI	Equation 8		Equation 9		Equation 10	
Ind Var/ Coeff.	Fixed effect	Random effect	Fixed effect	Random effect	Fixed effect	Random effect
Constant	-1.887(-0.585)	-3.963(-1.279)	4.344( 1.247)	0.010(0.003)	-1.887(-0.585)	-3.963(-1.279)
GDPGR	0.006(0.301)	0.018(0.9302)	0.022(1.034)	0.032(1.601)	0.006(0.301)	0.018(0.930)
TGDPR	1.980(4.142)**	2.550(5.612)**				
RSBTW			-0.108(-1.773)*	0.012 (0.216)		
TRDINT					1.998(4.142)**	2.574(5.612)**
ADR	-0.102(-0.185)	0.098(0.181)	-0.332(-0.584)	-0.225(-0.403)	-0.102(-0.185)	0.098(0.180)
CPI	0.327(4.304)**	0.456(6.698)**	0.232(2.985)**	0.412(5.894)**	0.327(4.304)**	0.456(6.698)**
EXGDP	-0.007(-0.077)	-0.023(-0.268)	-0.194(-2.164)**	-0.190(-2.162)**	-0.007(-0.077)	-0.023(-0.268)
INV	0.652(3.438)**	0.647(3.466)**	0.489(2.366)**	0.596(2.949)**	0.652(3.438)**	0.647(3.466)**
LQD	0.766(2.996)**	0.876(3.534)**	0.655(2.489)**	0.682(2.645)**	0.766(2.996)**	0.876(3.534)**
OER	-0.293(-7.212)**	-0.257(-6.455)**	-0.344(-8.773)**	-0.320(-8.212)**	-0.293(-7.212)**	-0.257(-6.455)**
R-Squared	0.667	0.615	0.643	0.561	0.667	0.615
Hausman Test		0.001		0.000		0.001
led F.E test	0.017		0.000		0.017	
F-statistic	15.491	43.769	13.970		15.491	43.769

*Source: Computed by the author using E-views*

We consider the fourth stage of regression in tables 5.4.5 and 5.4.6 below. The random effect estimation was better selected for ECOWAS while fixed effect estimation for SADC. Each of the integration indices computed based on the level of integration acquired by the trade blocs is included among the regressors for each of the growth equations. The degree of openness, relative size of the bloc's trade in total world output and trade integration measures included in each case show that effect of FDI on growth changed to negative for ECOWAS (-0.230, -0.224,-0.230) while these coefficients remained positive for SADC( 0.221, 0.045 and 0.221). It was however expected that integration would further spur growth in the present of FDI flows in ECOWAS. A reason for this could be based on the level attained by the region which has not yet been capable to provide the expected growth. SADC FDI flows were seen to spur growth in the presence of integration; this again may be attributed to coordination of the process. Likewise, all economic integration indices have impacted positively on the FDI flow in each case with each being highly significant and very robust to all types of integration in the SADC and are in accordance with Antonio, (2008).

A critical look at the estimation results would show that the inter-regional trade index came with the greatest impact (5.248) on FDI flows in SADC compared to other integration measures. This same is true for ECOWAS (1.926). However, SADC inter-regional trade index impacted more on growth. This shows that trade integration stimulated growth more in SADC compared to ECOWAS.

On the impact of other regressors, the adult dependency ratio has the expected signs in both trade blocs. This implies that an increasing dependency ratio retards growth and is a common experience in African nations. The international aid variable (AID) came with a negative impact in each of the equations of ECOWAS (-0.043, -0.093, and -0.043) and positive impact in each of the equations of SADC (0.927, 0.750 and 0.927) above though not significant. The positive impact on growth is in line with Sakyi (2011) and has further supported the theoretical predictions of AID's positive impact on growth. Despite this, this effect may not necessarily be evident in all AID receiving developing countries in that for past few decades now, most of these countries have adopted liberalisation policies aimed at increasing growth.

The consumer price index came with positive coefficient sign across all the equations and this is in sharp contrast to expectation except for the relative size of the bloc's trade in total world output in SADC. Although adverse effect of inflation looks small but the long term effect on the standard of living can be substantial. This variable however came with the expected signs in ECOWAS.

The estimated coefficient of external debt as a ratio of gross domestic product is negative and significant for each of the equations of ECOWAS (-1.360 in equation 11, -1.298 in equation 12 and -1.360 in equations 13). The relationship between debt and growth is not surprising following African countries' characteristics of lack of fiscal discipline and mismanagement of domestic and international resources. As a result, development expenditures have been continuously declining and consequently a declining trend in growth is often experienced. This result is in line with (Iqbal and Zahib, 1998). On the contrary, debt showed positive but insignificant coefficient for SADC. The estimated coefficients of investment to GDP ratio were 3.324 in equation 11, 3.260 in equation 12 and 3.324 in equation 13 and were all statistically significant for ECOWAS. In the same way, all the coefficients on investment to GDP ratio were all positive and statistically significant for SADC (2.313, 2.666 and 2.313) during the period. This is an indication that domestic investment is a strong determinant of growth.

All the estimated growth equations for ECOWAS and SADC have also indicated that exchange rate coefficients were negative except for the equations of SADC. Thus, the growth rate in the ECOWAS blocs is negative function of exchange rate and thus responded to exchange rate depreciation

The coefficient on population variable (POP) was negative for each of the equations of ECOWAS and SADC suggesting that a high population growth may inhibit the growth process and this is in line with the literature. If increasing population has higher dependants with less productive individuals, then it is likely to impact negatively on growth.

While the explanatory power is low in the growth model, the F-statistic computed in each case showed that the model was adequate.

**Table 5.4.5: Estimations of FE and RE of Growth model with Economic Integration in ECOWAS**

Dep. Var: GDPGR		Equation 11		Equation 12		Equation 13	
Ind Var/ Coeff.	Fixed effect	Random effect	Fixed effect	Random effect	Fixed effect	Random effect	
Constant	27.528(1.418)	28.997(1.636)	26.494(1.370)	27.392(1.559)	27.528(1.418)	-28.997(1.636)	
FDI	-0.097(-0.391)	-0.230(-0.964)	-0.107(-0.446)	-0.224(-0.981)	-0.097(-0.391)	-0.230(-0.964)	
TGDPR	1.890(0.634)	2.105(0.732)					
RSBTW			0.120(1.507)	0.093(1.183)			
TRDINT					1.730(0.634)	1.926(0.732)	
ADR	-5.515(-1.595)	-3.849(-1.309)	-5.614(-1.655)*	-3.854(-1.320)	-5.515(-1.595)	-3.849(-1.309)	
AID	0.217(0.500)	-0.043(-0.105)	0.173(0.401)	-0.093(-0.229)	0.217(0.500)	-0.043(-0.105)	
CPI	0.700(1.132)	-0.081(-0.147)	0.729(1.225)	-0.056(-0.103)	0.700(1.132)	-0.081(-0.147)	
EXGDP	-1.819(-3.474)**	-1.360(-2.856)**	-1.825(-3.622)**	-1.298(-2.926)**	-1.819(-3.474)**	-1.360(-2.856)**	
INV	2.716(3.798)**	3.324(4.854)**	2.649(3.807)**	3.260(4.880)**	2.716(3.798)**	3.324(4.854)*	
LQD	0.226(0.239)	-0.607(-0.669)	0.460(0.502)	-0.389(-0.441)	0.226(0.239)	-0.607(-0.669)	
OER	-0.084(-0.576)	-0.176(-1.234)	-0.068(-0.465)	-0.172(-1.220)	-0.084(-0.576)	-0.176(-1.234)	
POP	-0.583(-1.685)*	-0.614(-1.847)*	-0.601(-1.934)*	-0.590(-1.965)*	-0.583(-1.685)	-0.614(-1.847)	
R-Squared	0.284	0.208	0.290	0.211	0.284	0.208	
Hausman Test		0.099		0.045		0.099	
Red F.E Test	0.132		0.101		0.132		
F-statistic	3.095	6.434	3.185	6.539	3.095	6.434	

*Source: Computed by the author using E-views*

**Table 5.4.6: Estimations of FE and RE of Growth model with Economic Integration in SADC**

Dep.Var: GDPGR	Equation 14		Equation 15		Equation 16	
Ind Var/ Coeff.	Fixed effect	Random effect	Fixed effect	Random effect	Fixed effect	Random effect
Constant	-17.975(-1.612)	-6.154(-0.583)	-25.948(-1.936)*	-16.163(-1.294)	-17.974(-1.612)	-6.153(-0.584)
FDI	0.221(0.876)	0.230(0.991)	0.045(0.161)	0.062(0.234)	0.221(0.876)	0.230(0.991)
TGDPR	5.200(2.770)**	4.705(2.736)**				
RSBTW			0.958(2.213)**	0.991(2.453)**		
TRDINT					5.248(2.770)**	4.748(2.736)**
ADR	-1.403(-0.700)	-2.860(-1.461)	0.475(0.224)	-0.973(-0.466)	-1.403(-0.700)	-2.860(-1.461)
AID	0.927(1.913)*	0.809(2.034)**	0.750(1.604)	0.708(1.815)*	0.927(1.913)*	0.081(2.034)**
CPI	0.187(0.687)	-0.019(-0.074)	0.005(0.019)	-0.155(-0.615)	0.187(0.687)	-0.019(-0.074)
EXGDP	0.120(0.380)	0.005(0.018)	0.220(0.656)	0.139(0.425)	0.120(0.380)	0.005(0.018)
INV	2.313(3.567)**	2.543(3.996)**	2.666(3.872)**	2.891(4.284)**	2.313(3.567)**	2.543(3.996)**
LQD	0.058(0.065)	-0.864(-1.003)	-0.602(-0.681)	-1.505(-1.749)*	0.058(0.065)	-0.864(-1.003)
OER	0.004(0.026)	-0.008(-0.057)	0.058(0.357)	0.062(0.397)	0.004(0.026)	-0.008(-0.057)
POP	-0.194(-0.519)	-0.142(-0.411)	-1.046(-1.775)*	-1.047(-2.000)	-0.194(-0.519)	-0.142(-0.411)
R-Squared	0.271	0.145	0.262	0.139	0.271	0.145
Hausman Test		0.001		0.001		0.001
Red F.E Test	0.007		0.009		0.007	
F-statistics	2.629	3.652	2.518	3.501	2.629	3.652

*Source: Computed by the author using E-views*

The fifth stage of the fixed and random regression estimates includes each of the integration indices and the interaction terms. The interaction term include both FDI and Degree of openness, FDI and the relative size of the bloc's trade in world output and FDI and inter-regional trade integration. Other control variables are also included accordingly. There appears certain similarity in both the fixed and random effects estimations and on the basis of the Hausman and fixed redundant tests, the random effect was selected for ECOWAS while the fixed effect for SADC.

The control variables Adult dependency ratio, external debt to GDP ratio, liquidity and investment and consumer price index were positively related to growth performance in ECOWAS and SADC and similar in some cases to when the interaction term was not included. For instance, each of the integration indices had a positive effect on growth with the inclusion of the interaction term just as the effect of each on growth was positive before the inclusion of the interaction term. Our focus here is therefore on the effect of the interaction term.

Equations 17-19 show the inclusion of the interaction term for ECOWAS while this is shown in equations 20-22 for SADC.

First, while the coefficient of the openness index remained positive (1.534), the interaction between it and FDI equally came with coefficient (0.020) in equation 17 of ECOWAS. This is a clear indication that degree of openness as a measure of integration served as complement for FDI in facilitating growth in this bloc. While the relative size of the bloc's trade in total world output measure displayed a positive impact on growth, the interaction between it and FDI showed a negative impact. The inter-regional trade index impacted positively (1.404) on growth and its interaction with FDI came with a positive sign (0.019). By implication, trade integration would complement FDI in facilitating growth in ECOWAS. The positive impact of trade integration on growth implies that greater trade liberalisation of the trade sector may be growth inducing.

In SADC trade bloc, openness index impacted positively (8.581) on growth with the interaction term of -1.377. This clearly demonstrates that openness as a measure of integration can substitute FDI to facilitate growth in this bloc. The relative size of the bloc's trade in total world output affected growth positively (1.015) while the interaction term in this case also came with a

negative coefficient just as in ECOWAS. This shows that the relative size of the bloc's in total world output would serve as substitute to growth facilitation.

Finally, while inter-regional trade index maintained a positive impact on growth, the interactive term gave the opposite impact on growth. This is further supporting the fact that trade integration served as substitute in facilitating growth in SADC.

The overall model was adequate based on the F-statistics.

**Table 5.4.7: Estimations of FE and RE of Growth model with Interactive term in ECOWAS**

Dep. Var: GDPGR:	Equation 17		Equation 18		Equation 19	
Ind Var/ Coeff.	Fixed effect	Random effect	Fixed effect	Random effect	Fixed effect	Random effect
Constant	18.678(0.846)	21.887(1.120)	277.412(1.393)	26.471(1.491)	18.678(0.846)	21.887(1.120)
FDI	-0.144(-0.565)	-0.280(-1.137)	-0.106(-0.441)	-0.222(-0.968)	-0.144(-0.565)	-0.280(-1.137)
FDITGDPR	0.021(0.843)	0.020(0.863)				
FDIRSBTW			-1.3E-13(-0.27)	1.8E-13(0.396)		
FDITRDINT					0.019(0.843)	0.019(0.863)
TGDPR	1.421(0.468)	1.534(0.519)				
RSBTW			0.124(1.528)	0.087(1.091)	1.300(0.468)	
TRDINT						1.404(0.519)
ADR	-3.830(-0.599)	-2.582(-0.786)	-5.790(-1.674)*	-3.695(-1.252)	-3.830(-0.959)	-2.582(-0.786)
AID	0.209(0.480)	-0.060(-0.147)	0.161(0.369)	-0.074(-0.179)	0.209(0.480)	-0.060(-0.147)
CPI	0.683(1.102)	-0.065(-0.118)	0.753(1.249)	-0.071(-0.131)	0.683(1.102)	-0.065(-0.118)
EXGDP	-1.744(-3.281)**	-1.296(-2.688)**	-1.909(-3.233)**	-1.204(-2.389)**	-1.744(-3.281)**	-1.296(-2.688)**
INV	2.500(3.289)**	3.124(4.318)**	2.615(3.695)**	3.294(4.881)**	2.500(3.289)**	3.124(4.318)**
LQD	0.349(0.364)	-0.481(-0.523)	0.472(0.514)	-0.402(-0.455)	0.349(0.364)	-0.481(-0.523)
OER	-0.088(-0.603)	-0.178(-1.250)	-0.068(-0.464)	-0.169(-1.194)	-0.088(-0.603)	-0.178(-1.250)
POP	-0.486(-1.333)	-0.507(-1.426)	-0.579(-1.805)*	-0.621(-1.998)**	-0.486(-1.333)	-0.507(-1.426)
R-Squared	0.287	0.210	0.290	0.211	0.287	0.210
Hausman Test		0.138		0.071		0.138
Red F.E Test	0.131		0.103		0.131	
F-statistic	3.012	5.909	3.069	5.938	3.012	5.909

Source: Computed by the author using E-views



**Table 5.4.8: Estimations FE and RE of Growth model with Interactive term in SADC**

Dep. Var: GDPGR	Equation 20		Equation 21		Equation 22	
Ind Var/ Coeff.	Fixed effect	Random effect	Fixed effect	Random effect	Fixed effect	Random effect
Constant	-20.695(-1.711)	-7.893(-0.672)	-27.796(-2.051)	-18.392(-1.452)	-20.705(-1.711)	-7.898(-0.672)
FDI	1.569(0.680)	0.954(0.442)	0.095(0.331)	0.118(0.435)	1.567(0.680)	0.953(0.442)
FDITGDPR	-1.377(-0.587)	-0.730(-0.337)				
FDIRSBTW			-1.4E-13(-0.943)	-1.6E-13(-1.058)		
FDITRDINT					-1.375(-0.587)	-0.729(-0.337)
TGDPR	8.581(1.417)	6.572(1.134)				
RSBTW			1.015(2.322)**	1.059(2.587)**		
TRDINT					8.659(1.418)	6.632(1.134)
ADR	-1.431(-0.713)	-2.900(-1.476)	0.318(0.150)	-1.136(-0.543)	-1.431(-0.713)	-2.900(-1.476)
AID	0.935(1.925)*	0.836(2.057)**	0.707(1.503)	0.677(1.729)*	0.935(1.925)*	0.836(2.057)**
CPI	0.206(0.752)	0.0002(0.001)	0.026(0.010)	-0.135(-0.533)	0.206(0.752)	0.0002(0.001)
EXGDP	0.120(0.381)	0.002(0.01)	0.269(0.794)	0.185(0.562)	0.120(0.381)	0.002(0.007)
INV	2.329(3.581)**	2.547(3.994)**	2.610(3.777)**	2.833(4.184)**	2.329(3.582)**	2.547(3.994)**
LQD	0.096(0.109)	-0.844(-0.976)	-0.494(-0.553)	-1.388(-1.600)	0.097(0.109)	-0.843(-0.976)
OER	-0.021(-0.130)	-0.017(-0.112)	0.042(0.253)	0.045(0.288)	-0.021(-0.130)	-0.017(-0.113)
POP	-0.204(-0.544)	-0.156(-0.448)	-0.940(-1.567)	-0.947(-1.778)*	-0.204(-0.544)	-0.156(-0.448)
R-Squared	0.272	0.145	0.265	0.143	0.272	0.145
Hausman Test		0.001		0.002		0.001
Red F.E Test	0.006		0.010		0.006	
F-statistic	2.542	3.316	2.460	3.279	2.542	3.316

*Computed by the author using E-views*

<sup>4</sup> In all the cases, values in bracket are t-statistic, \*\*significant at the 5% level and \* significant at the 10% level

Next, we carry out the 2SLS regression for the FDI and growth equations for each trade blocs. Given that we have fewer instruments than the number of regressors, the model becomes under identified, in this study, we intend using more instruments than strictly needed in the 2SLS. This is justified on the ground that it is often a good idea to have more instruments than strictly needed based on the fact that the additional instruments can be used to increase the precision of the estimates, and to construct tests for the validity of the over identifying restrictions.

The 2SLS estimation results are similar in most respect to the fixed and random effect estimations particularly in terms of the signs of coefficients of the regressors. To point out this difference further, the 2SLS shows that most control variables appeared with the right signs and were significant. However, fundamental results are the ones that have been obtained from relationships between our target variables. The results of FDI-growth relationship without economic integration show that they impacted negatively on each other in ECOWAS and positively on each other in SADC. While the two-way negative relationship in ECOWAS under the two stage least square was a slight deviation from the fixed effect estimation, it agreed with negative impact of growth on FDI under the random effect. However, for a more consistent frame work, we chose the fixed effect estimation based on the test.

With the inclusion of integration, growth impacted negatively on FDI in ECOWAS as obtained under the fixed and random effect estimations. The inclusion of the integration index left the positive impact of growth on FDI unchanged in SADC (See Appendix B1-B5). This is similar to the FE and RE estimations. In the same vein the complementary impact of both FDI and integration (openness and inter-regional trade integration) was still maintained in ECOWAS while each served as a substitute in facilitating growth in SADC. It is obvious that both the single and simultaneous equation system employed essentially gave similar results especially on whether integration would substitute or complement FDI in facilitating growth in these trade blocs.

## CHAPTER SIX

### SUMMARY AND CONCLUSION

#### 6.1: Introduction

In this chapter, the concern is to provide the detailed summary and conclusion of the focus of the entire thesis. The motivation for this study came from the fact that despite the numerous studies on the relationship between FDI and growth, accounting for this under integration is exceptionally inadequate. Thus, an emerging issue is whether economic integration determines FDI flows and growth as well as the link between them. It is on this basis that the main focus of this study was to carefully examine the role of integration in FDI-growth relationship. The first specific objective was to examine the two-way FDI-growth relationship in the absence of economic integration. The second specific objective was to examine the two-way FDI-growth relationship in the presence of economic integration. Examining the complementary impact of the interaction between FDI and economic integration on growth was the third objective. The study was undertaken for 15 countries for each of ECOWAS and SADC spanning the period 1994 to 2013. This time-frame became important following the fact that this period marked the take-off of integration processes in these two trade blocs.

Two fundamental models were formulated in this study. In the first model which described the location of FDI within the FDI location theory that takes into account the core determinants of FDI such as Per capita GDP growth rate, investment-GDP ratio, broad money-GDP ratio (liquidity), exchange rate, external debt-GDP ratio, Adult dependency ratio, consumer price index and the integration index which was constructed using import and export ratios was formulated. For comparison purpose, three measures of integration were constructed; these were degree of international openness, relative size of the bloc's trade in total world output and trade integration. The frame work of FDI location theory was based on the basic models of horizontal and vertical MNEs. In the second model, the Augmented Solow model based on the neo-classical theory was developed and this is the premise upon which the growth model was built. The variables which served as key determinants of FDI including population and Aid variables were also included as growth determinants and the inclusion of these variables follow what is

obtainable in the African growth literature. In this study, we developed both the baseline and extended model. The base line model included the two way FDI-growth relationship without incorporating any of the economic integration indices. We later included each of the integration indices in the two way relationship between FDI and growth.

In this study, analysis was carried out within a fixed and random effects estimation technique. The fixed and random effects (FE and RE) panel techniques and the Two-stage least squares which control for both omitted variable and simultaneity biases. Fixed Redundant and Hausman-test statistics were used to check the robustness of the FE and RE models and all estimated coefficients were evaluated at the 5% level of significance.

We compared the results of the fixed and random estimation technique with the ones obtained from the 2SLS which is the most commonly used estimation technique for simultaneous equation model. In most some cases, these results are similar.

## **6.2: Summary of Findings**

The findings based on the first objective revealed quite interesting results. In ECOWAS trade bloc, the exclusion of integration index in the model showed that both FDI and growth affect each positively in ECOWAS in line with numerous views in the literature on FDI and growth. However, FDI stimulated economic growth much more than how growth stimulated FDI. Therefore with continuous inflows of FDI, there is a lot more potential for improved growth performance. Generally, without economic integration in ECOWAS, FDI and growth induces each other though with varying impacts in ECOWAS trade bloc.

No contrary results were obtained for SADC. In the absence of integration, FDI and growth affected each other positively. However, both FDI and growth performed better in affecting each other in the SADC compared to ECOWAS trade bloc.

Each case is not a deviation from the literature where it is asserted that the relationship between these two variables is expected to be positive; although this may be linked to the structural characteristics of each trade blocs.

In the second objective where integration index was included, FD-growth relationship was negative in both directions. One can deduce that integration index seemed to have a stronger impact on the two-way FDI-growth relationship in the ECOWAS. For SADC however, inclusion of economic integration successfully maintained the two-way positive FDI-growth relationship. We attributed this to the coordination of the process of integration in this bloc.

It should be emphasised all the integration indices irrespective of the form influenced growth in ECOWAS and SADC pointing to the fact that integration is fundamental to economic growth in the regions. By implication, degree of openness, relative size of the bloc's trade in total world output and inter-regional trade were good integration measures for both blocs especially in terms of their separate impact on growth. Thus the deepening of integration processes can be further encouraged by expanding the export market within the ECOWAS and SADC trade blocs or by trade liberalisation between them. Effect of integration on FDI flows in each case was equally positive.

The third objective was based on the effect of the interaction term on growth. The effect of the interaction term involving FDI and each of the integration indices appeared positive across all ECOWAS equations with some exception to relative size of the bloc's trade in total world output. This is a strong evidence that FDI and each of the integration indices- degree of openness and inter-regional trade integration -served as substitute in facilitating growth. Result from SADC was in sharp contrast to that of ECOWAS as the interaction effect came with a negative coefficient each. Hence, any of the integration indices could substitute FDI in facilitating growth in SADC. Further improvement in the level of integration in this bloc would independently spur growth and FDI.

Impact of other control variables on growth and FDI also followed expectation in most cases.

The age dependency ratio showed a negative contribution to growth in most cases within the trade blocs.

Ratio of external debt to GDP generally impacted negatively on growth in all the equations and for all the estimation techniques except in some few cases. Generally, a heavy debt burden would not facilitate growth if resources are directed towards unproductive sectors.

The liquidity variable was seen to perform well in most cases both on FDI and growth. This may be connected to the gradual improvement in the financial sector policy. However very few cases.

The investment variable demonstrated a positive impact on FDI and growth in the trade blocs. This follows expectation in the literature and described the fundamental contribution of investment to growth and FDI flows.

The expected negative impact of the population variable showed negative impact on growth in the trade blocs. Most importantly for ECOWAS, increasing population was shown to retard growth and this is in line with the literature. By implication ECOWAS countries happens to be densely populated thereby creating an avenue for higher dependency ratio instead of the expected labour force.

### **6.3: Recommendation**

The FDI location and the neoclassical theories adopted for this study were based on the empirical evidence discussed. The empirical evidence has shown that this framework can be used to analyse both the FDI and growth models being the principal models adopted. The fixed and random effect and the two stage least squares estimators apparently demonstrated the empirical link between FDI and growth under economic integration in the trade blocs considered. While integration showed unique influence in terms of the role it played in FDI-growth relationship in ECOWAS and SADC, other salient determinants of FDI and growth in each trade blocs namely GDP growth, investment-GDP ratio, broad money-GDP ratio (liquidity), exchange rate, external debt-GDP ratio, Adult dependency ratio, consumer price index, the integration index and population and aid variables (included in the growth model) came with the expected signs of coefficient and some cases are significant. This is a pointer to the fact that these variables are some of the key determinants of FDI and growth considering the structural characteristics of the trade blocs.

While it is admitted based on the findings of this study that both FDI and growth positively affect each other, but with greater impact coming from FDI, a misleading conclusion could be that if attention is only on facilitating FDI flow in order to improve the growth prospect. As an additional option, what countries seeking growth should do is to become ever more integrated with the world economy through growth in capital movement liberalisation. Policies enhancing freer trade and capital flows should be further encouraged in order to improve the degree of integration.

While focusing on FDI inflows as a growth inducing strategy, there is also the need to discourage crowding out-effect of FDI on domestic investment. FDI inflows should be seen as a catalyst that can transform the investment potential of the economy through employment generation thereby reducing poverty in Africa. In the case of ECOWAS, where the performance of FDI flows on growth has been below what is expected due to reasons of political instability, poor infrastructure and property rights. It is important that the institutional factors be well-shaped so as to encourage better integration plans. As observed in this study, a higher level of integration could further complement FDI growth-inducing capacity.

As a matter of fact, financial sector development is paramount to FDI flows and growth and as such the focus on the financial sector should be such that it enhances positive contribution to growth and FDI. More importantly, there is need for further financial sector reforms in these trade blocs. Government can play an active role in the financial sector development. With further financial sector reforms, the regions would benefit from an increase in private domestic investment. Thus, the provision of efficient credit and financial services by the financial system may greatly facilitate technological transfer and induce spillover efficiency.

Given that the evolution of the financial system may affect the speed of technological accumulation and innovations, it is essential to develop a sound financial system in order to reap these efficiency gains and achieve sustained economic growth in the long run.

Generally, while the level of integration matters for both FDI inflows and growth as demonstrated in this study, a more advanced level of integration or full integration in the future is likely to further boost the FDI-growth positive relationship. This would certainly be different

from what a zero level of integration would offer. Most importantly attention should be on improving the degree of international openness and inter-regional trade. Moreover, An achievement of a greater level of integration may be a function the type of coordination, consistency and level of trust.

#### **6.4: Conclusion**

It is a well known fact from the literature that FDI remains a major engine of economic growth. However, the two-way relationship between FDI and growth has been less understood. This is pointing to the fact that there is endogeneity between the two and if such is ignored, this would lead to wrong and misleading econometric estimations.

This study examined the two-way relationship between FDI and growth under economic integration for the ECOWAS and SADC trade blocs using data spanning 1994 to 2013. This time frame was mainly justified on the ground that this period encompassed various stages of integration in ECOWAS and SADC. It was on the basis of the stages reached in the integration process that the integration indices were computed. The various estimation techniques utilised were the fixed and random effect estimation techniques and the two-stage least squares. As measures of the degree of economic integration, the study used the trade integration, degree of openness and degree of perfect connection and each of their impacts was compared. This is followed by the effect of interaction term on growth.

Three fundamental results were obtained from these estimation techniques. Firstly, examining FDI-growth relationship in the absence of any level of integration indicated that these variables affected each other positively in ECOWAS but with greater impact coming from FDI. Similar results were obtained for SADC. Secondly, with the inclusion of integration index, the two-way FDI-growth positive relationship in SADC remained unaltered showing that the relationship is insensitive to any form of integration. In ECOWAS however, the two way positive relationship changed to negative for the main integration indices. These results were fundamental as they clearly indicated the role of integration in FDI-growth relationship. This may not be surprising given that this economy is having a fast growing level of integration and has fundamentally impacted on the FDI-growth relationship.



In the third case, interacting each of degree of openness and trade integration with FDI, showed strong complementary impact of the interaction terms on growth for ECOWAS with greater impact from interaction term that included inter-regional trade. For a growth –inducing ability of FDI in this bloc, integration efforts needed to complement FDI flows for higher level of growth to be registered. In SADC, it was revealed that each of the integration indices served as substitute for FDI in stimulating growth.

The control variable used as key determinants of FDI and growth were GDP growth, investment-GDP ratio, broad money-GDP ratio (liquidity), exchange rate, external debt-GDP ratio, Adult dependency ratio, consumer price index and the integration index were in line with what is obtainable from the literature on FDI and growth in most cases. These control variables along side with population and aid variables are included as determinants of growth. In most cases, these variables performed as expected in influencing both FDI and growth in these regions.

The role of financial development in growth captured by liquidity has generally been favourable in explaining both FDI and growth in the blocs. The positive effect of liquidity in most cases on FDI and growth was attributed to the impact of the gradual change in the structure of the financial reform.

### **6.5: Limitation of the study and Suggestion for further study**

The study can be extended in several ways so as to improve on it. In the first case, very often challenges on data gathering cannot be exempted in this type of study, but should also be noted that new set of data become available as time passes. Integration is an on-going economic process and there seems to be rapid advancement, thus extending the analysis to capture a new development based on the level reached would further show the relevance of integration to growth and FDI flows. This might create something new in terms of the development in integration process.

Moreover, the concept of economic integration need be augmented to include the labour, human migration and the financial market being important dimensions of the economy. These have been left out due to data inadequacy and ineffective proxy to measure labour market, human migration

and financial integration particularly for African countries. The challenges of data inadequacy within African regions are strong limitations to this study.

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## APPENDIX

### Appendix A1: Key African hubs: Reality vs Perception

	<b>Reality *</b>	<b>Perception**</b>
<b>SSA</b>		
<b>South-Africa</b>	24%	37%
<b>Nigeria</b>	9%	9%
<b>Angola</b>	8%	6%
<b>Kenya</b>	7%	6%
<b>North Africa</b>		
<b>Morocco</b>	30%	31%
<b>Egypt</b>	31%	24%

\*Top countries by share of FDI projects (2007-2013)

\*\* Top countries perceived as most attractive by investors

Source: EY's 2014 Africa attractiveness survey (total respondents: 503: fDi intelligence)

**Appendix A2: Capital Invested in FDI projects (US Billion\$)**

	2003-2007	2007	2008	2009	2010	2011	2012	2013
SSA	36.0	30.2	92.5	43.7	55.9	60.9	31.8	42.3
North Africa	30.1	46.9	57.1	36.4	18.7	11.4	14.8	10.3

*Source: fdi intelligence*

### Appendix A3: Diversity vs Comparability

<b>Population Range</b>		<b>Income Range</b>	<b>Geography Range</b>
Population (ratio)		GDP per capita(ratio)	Land area <sup>1</sup> (ratio)
<b>EAC</b>	<b>5</b>	4	36
<b>AMU</b>	<b>10</b>	9	15
<b>MERCUSOR</b>	<b>59</b>	6	48
<b>IGAD</b>	<b>107</b>	3	43
<b>EU</b>	<b>194</b>	15	1711
<b>CENSORED</b>	<b>196</b>	26	174
<b>ECOWAS</b>	<b>341</b>	9	314
<b>ECCAS</b>	<b>349</b>	96	2362
<b>ASEAN</b>	<b>599</b>	55	2588
<b>SADC</b>	<b>712</b>	49	4928
<b>COMESA</b>	<b>993</b>	51	4928
<b>AU</b>	<b>1828</b>	96	5178

*Source: Facts and Figures, 2014, Regional Integration: Uniting to complete*

## Appendix B1: Two-stage least squares estimations of FDI model without Economic

### Integration

Dep. variable: FDI: ECOWAS		SADC	
Ind Var/ Coeff.	Equation 1	Equation 2	
Constant	13.675(3.518)	0.347(0.105)	
GDPGR	-0.011(-0.624)	0.033(1.613)	
ADR	-3.417(-4.344)**	-0.230(-0.390)	
CPI	0.202(1.321)	0.410(5.517)**	
EXGDP	-0.413(-3.929)**	-0.194(-2.245)**	
INV	0.388(2.071)**	0.570(2.792)**	
LQD	1.272(6.010)**	0.701(2.600)**	
OER	-0.114(-2.870)**	-0.323(-7.761)**	
R-Squared	0.505	0.564	
F-stat	36.075	40.460	
Instrument ranking	14	14	

*Source: Computed by the author using E-views*

## Appendix B2: Two-stage least squares estimations of Growth model without Economic Integration

Dep. variable: GDPGR: ECOWAS

SADC

Ind Var/ Coeff.	Equation 3	Equation 4
Constant	27.774(1.560)	-4.557(-0.411)
FDI	-0.171(-0.754)	0.009(3.469)**
ADR	-4.052(-1.372)	-1.763(-0.834)
AID	-0.063(-0.153)	0.327(0.776)
CPI	0.013(0.024)	-0.045(-0.173)
EXGDP	-1.229(-2.758)**	-0.586(3.845)**
INV	3.221(4.762)**	2.586(3.845)**
LQD	-0.451(-0.506)	-1.583(-1.726)*
OER	-0.194(-1.371)	-0.191(-1.279)*
POP	-0.496(-.691)	0.496(1.195)
R-Squared	0.206	0.078
F-stat	7.104	4.372
Instrument ranking	14	14

*Source: Computed by the author using E-views*

### Appendix B3: Two-stage least squares estimations of FDI model with Economic integration

Dep. variable: FDI	ECOWAS			SADC		
Ind Var/ Coeff.	Equation 5	Equation 6	Equation 7	Equation 8	Equation 9	Equation 10
Constant	10.141(2.652)	10.932(2.739)	10.141(2.652)	-3.839(-1.203)	0.131(0.037)	-3.839(-1.203)
GDPGR	-0.009(-0.455)	-0.012(-0.667)	-0.008(-0.455)	0.018(0.895)	0.033(1.553)	0.018(0.895)
TGDPR	2.918(4.528)**			2.580(5.504)**		
RSBTW		0.053(2.556)**			0.011(0.176)	
TRDINT			2.670(4.528)**			2.604(5.504)**
ADR	-2.657(-3.425)**	-3.098(-3.933)**	-2.657(-3.425)**	0.065(0.117)	-0.241(-0.405)	0.065(0.117)
CPI	0.078(0.523)	0.167(1.097)	0.078(0.523)	0.452(6.445)**	0.410(5.508)**	0.452(6.445)**
EXGDP	-0.453(-4.453)**	-0.453(-4.453)**	-0.453(-4.453)**	-0.023(-0.268)	-0.188(-2.010)**	-0.023(-0.268)
INV	0.416(2.306)**	0.416(2.306)**	0.416(2.306)**	0.644(3.353)**	0.582(2.703)**	0.644(3.353)**
LQD	1.207(5.907)**	1.207(5.907)**	1.207(5.907)**	0.8839(3.461)**	0.692(2.525)**	0.883(3.461)**
OER	-0.073(-1.859)*	-0.073(-1.859)*	-0.073(-1.859)*	-0.254(-6.166)**	-0.324(-7.742)**	-0.254(-6.166)**
R-Squared	0.542	0.542	0.542	0.617	0.564	0.617
F-stat	36.609	36.609	36.609	40.460	35.250	43.926
Instrument ranking	14	14	14	14	14	14

Source: Computed by the author using E-views

## Appendix B4: Two-stage least squares estimations of Growth model with economic Integration

Dep.var: GDPGR

Ind Var/ Coeff.	ECOWAS			SADC		
	Equation 11	Equation 12	Equation 13	Equation 14	Equation 15	Equation 16
Constant	28.997(1.620)	27.392(1.539)	28.997(1.620)	-16.396(-1.438)	-17.934(-1.438)	-16.394(-1.438)
FDI	-0.230(-0.954)	-0.224(-0.969)	-0.230(-0.954)	0.010(4.046)	0.007(2.900)**	0.010(4.046)**
TGDPR	2.105(0.724)			6.372(3.654)**		
RSBTW		0.093(1.168)			0.788(0.031)	
TRDINT			1.296(0.724)			6.431(3.654)**
ADR	-3.849(-1.290)	-3.854(-1.304)	-3.849(-1.296)	-1.947(-0.933)	-0.603(-0.282)	-1.947(-0.933)
AID	-0.043(-0.104)	-0.093(-0.226)	-0.043(-0.104)	0.554(1.319)	0.417(1.007)	0.554(1.319)
CPI	-0.081(-0.146)	-0.056(-0.102)	-0.081(-0.146)	0.047(0.184)	-0.133(-0.517)	0.047(0.184)
EXGDP	-1.360(-2.826)**	-1.298(-2.889)**	-1.360(-2.826)**	-0.207(-0.647)	-0.157(-0.441)	-0.207(-0.647)
INV	3.324(4.805)**	3.260(4.818)**	3.324(4.805)**	2.750(4.134)**	2.900(4.300)	2.750(4.134)**
LQD	-0.607(-0.662)	-0.389(-0.436)	-0.607(-0.662)	-1.361(-1.500)	-1.894(-2.081)**	-1.361(-1.500)
OER	-0.176(-1.222)	-0.172(-1.205)	-0.176(-1.222)	-0.084(-0.559)	-0.023(-0.141)	-0.084(-0.559)
POP	-0.614(-1.828)*	-0.590(-1.940)	-0.614(-1.828)*	0.636(1.545)	-0.262(-0.490)	0.636(1.545)
R-Squared	0.208	0.210	0.208	0.106	0.119	0.106
F-statistics	6.434	6.539	6.434	5.700	4.514	5.700
Instrument ranking	14	14	14	14	14	14

Source: Computed by the author using E-views



## Appendix B5: Two-stage least squares estimations of Growth model with Interactive term

Dep.var: PGDPGR						
Ind Var/ Coeff.	ECOWAS			SADC		
	Equation 17	Equation 18	Equation 19	Equation 20	Equation 21	Equation 22
Constant	21.887(1.108)	16.028(0.785)	21.887(1.108)	-15.377(-1.324)	240.879(-1.975)	-15.375(-1.324)
FDI	-0.280(-1.125)	-0.224(-0.969)	-0.280(-1.125)	0.022(1.041)	0.048(2.096)**	0.022(1.041)
FDITGDPR	0.020(0.854)			-0.032(-0.573)		
FDIRSBTW		2.28E <sup>-12</sup>			-1.11E <sup>-11</sup> (-2.139)**	
PFDITRDINT			0.019(0.854)			-0.032(-0.573)
TGDPR	1.534(0.514)			10.003(1.521)		
RSBTW		0.023(0.236)			7.636(2.069)**	
TRDINT			1.404(0.514)			
ADR	-2.582(-0.778)	-1.894(-0.554)	-2.582(-0.778)	-3.177(-1.058)	-4.203(-0.383)	10.096(1.521)
AID	-0.060(-0.145)	0.148(0.317)	-0.060(-0.145)	0.612(1.409)	-2.336(-0.948)	0.612(1.409)
CPI	-0.065(-0.117)	-0.240(-0.411)	-0.065(-0.117)	0.083(0.312)	2.230(1.305)	0.083(0.312)
EXGDP	-1.296(-2.661)**	-0.137(-0.138)	-1.296(-2.661)**	-0.128(-0.364)	1.935(0.942)	-0.128(-0.364)
INV	3.124(4.274)**	3.673(4.765)**	3.124(4.274)**	2.855(4.115)**	1.574(0.453)	2.855(4.115)**
LQD	-0.481(-0.518)	-0.552(-0.589)	-0.481(-0.518)	-1.765(-1.530)	5.210(0.916)	-1.765(-1.530)
OER	-0.178(-1.237)	-0.134(-0.882)	-0.178(-1.237)	-0.061(-0.390)	-1.953(-1.587)	-0.061(-0.390)
POP	-0.507(-1.411)	-0.971(-2.268)**	-0.507(-1.411)	0.792(1.599)	7.184(1.627)	0.612(1.409)
R-Squared	0.210	0.147	0.210	0.100	-21.567	5.200
F-statistics	5.909	6.140	5.909	5.200	36.772	5.200
Instrument Ranking	14	14	14	14	14	14

Source: Computed by the author using E-views