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Masters of Management (Finance and Investments)
Research Project



Africa's Investment Attractiveness

An Intra-Regional Focus

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ABSTRACT:

This research study aims to establish the channels through which African owned firms can expand their operations across the continent, as a remedy for the low level of FDI flows in Africa. Despite the weak economic conditions in most African countries, we have seen expanding African MNCs flourish. Given the effort made by African countries to attract more FDI and the successes of these African MNCs within Africa, we conclude that promoting African-owned firm expansion across Africa will increase the level of FDI flows in Africa and thus attract further investments to the continent. Our study examines FDI flows in Africa, defines adequate business environments for African owned firms and shows the impact of FDI on major African countries' economic indicators.

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1. Introduction

1.1. Project Context

An increasingly globalized world creates enormous capital flows from country to country and continent to continent. Capital flows to where investment opportunities are attractive; we would therefore expect capital to flow from capital rich to capital poor countries, as is suggested by developments in the Heckscher-Ohlin approach to trade by Mundell (1957).

The investment opportunities can arise in various manners, but for the purposes of this study, we will focus mainly on Foreign Direct Investment (FDI).

FDI can be defined as a long term investment made by a resident of one economy to another economy and where the investor has a "significant degree of influence" on the management of the enterprise. For operational purposes, 10 percent of the voting shares or voting power is the level of ownership necessary for a direct investment interest to exist (IMF, 1993, paragraph 362; OECD, 2008, paragraph 117).

FDI arises primarily from activities of firms that operate across countries, with recent studies suggesting that FDI might be able to enhance economic activities of host countries. Kevin Honglin Zhang (2001) investigated the causality between FDI and economic growth and showed a correlation does indeed exist. The positive impact of FDI on the economic growth of host and investing countries is undeniable, with China and the United States are the largest FDI recipients in 2014 according to the world economic report (WIR) 2015.

Firms embark upon FDI by either engaging in Greenfield investments or in cross-border acquisitions (Volker Nocke and Stephen Yeaple, 2004):

- Cross-border acquisitions is entering a foreign market by buying an existing enterprise
- Greenfield FDI is entering a new market by creating a new enterprise.

Over the past decade, foreign direct investment has increased significantly in Africa. According to the United Nations FDI flows to Africa has risen from $ USD 5 billion in 2000 to $ USD 56 billion in 2013 placing Africa second in terms of FDI inflows. Africa also saw cross-border Mergers and Acquisitions (M&As) grow from just $130 million in 2013 to $2.4 billion in 2014. A joint study by the African Development Bank (AFDB), the Organization for Economic Cooperation and Development (OECD), and the United Nations Development Program (UNDP) estimate that external financial flows to Africa have quadrupled since 2000. The appeal of the continent's potential (human resources, natural resources and improvement in the investment environment), explains its attractiveness to investors.

On the other hand, FDI flows in Africa is still only 4.5% of the total FDI inward flows in the world and represent approximately 1% of global FDI outward flows in 2014 (UNCTAD 2014, Global Investment Trends Monitor N.15). With evidence of the impact of FDI on host countries and investing countries' economy, the increase of capital flows into Africa will be beneficial for African countries' economies.

We have also seen the rise of African multinational firms from countries such as South Africa, Nigeria and Egypt expanding within Africa. It is essential to explore these firms' implementation and expansion across the continent to assess how other African firms can invest in the continent, and as such increase FDI flow to and within Africa.

1.2.Problem statement and research objectives

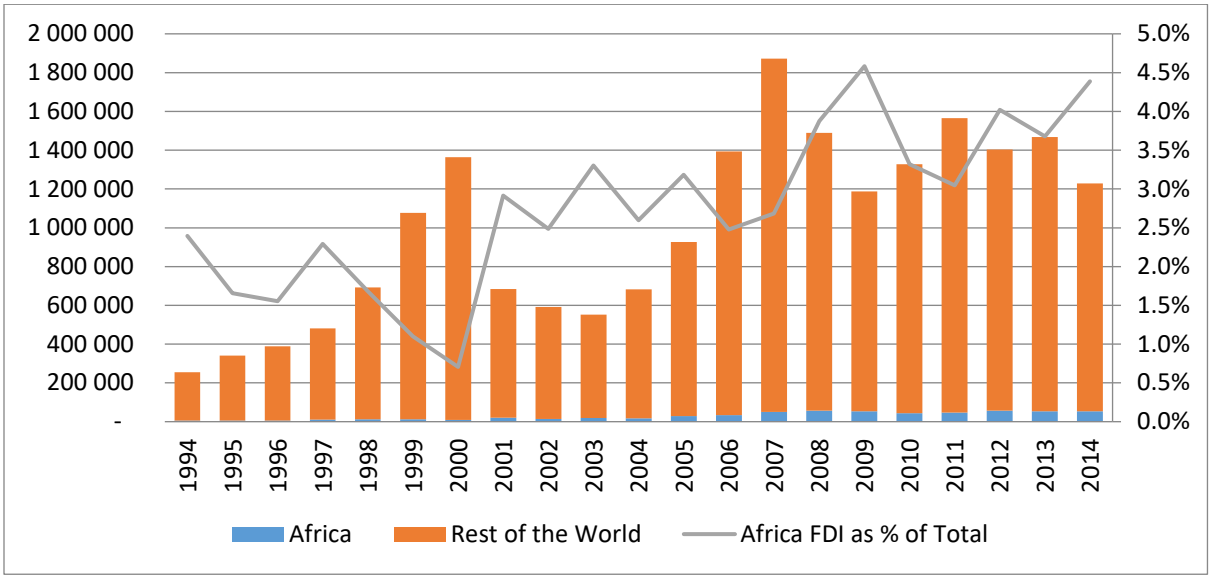
Given the investment attractiveness and the improvement of the business environment in Africa, we can easily state that Africa offers an adequate platform for investments to prosper, but still the level of FDI flows into the continent remains very low.

Evidence of the impact of FDI on host countries and investing countries leads countries to create the conditions to attract more FDI and MNCs to expand their operations abroad, which was

emphasized by Mundell (1957) who noted that American firms obtained a higher rate of return from their European investments that at home. This assertion is supported by the fact that the African top 10 performing firms operate in more than 10 countries across the continent (Africa Business Review, 2012). According to Ernst & Young survey (2015), foreign investments (both direct and portfolio) are the largest source of capital flows to Africa after remittances estimated at USD $ 73 billion in 2015.

Given the low level of FDI flows into African (as seen in Figure 1) despite the effort of African's countries to create an adequate investment environment to attract more FDI, how can we increase the level of FDI on the continent?

Figure 1: Foreign Direct Investment: Inward flows 1995-2014 (Millions of US dollars)



Source: UNCTAD, FDI/MNE database (www.unctad.org/fdistatistics)

As shown in figure 1 African Outward FDI flows stand at USD 13 billion - only about 1% of the world outward flows and 2.8% of the total flows from developing economies. The top performing firms on the continent are present in more than 10 countries across Africa (Table 1). From that perspective, promoting African owned companies' expansion across the continent could undeniably increase the level of FDI on the continent, which would further stimulate economic growth.

Table 1: Top 10 African Companies

Company	Country	Sector	African Operations
Sonatrach	Algeria	Petroleum	Yes
Sonangol	Angola	Petroleum	Yes
Sasol	South Africa	Chemicals	Yes
MTN Group	South Africa	Telecoms	Yes
Bidvest Group	South Africa	Diversified	Yes
Eskom	South Africa	Electricity	Yes
Shoprite Holdings	South Africa	Retail	Yes
Sanlam	South Africa	Insurance	Yes
Vodacom Group	South Africa	Telecoms	Yes
Imperial Holdings	South Africa	Diversified	Yes

Source: Africa Business Review, 2012

Considering the performance of African owned companies and their spread across the continent, does the solution to increase FDI flows in Africa lay in promoting and increasing intra-Africa FDI? In other words, instead of focusing to attract international FDI, given the success of African owned firms embarking on FDI across the continent, should Africa focus on enhancing the spread of African firms in order to increase the level of FDI flows?

It is then necessary to identify the channels through which African owned companies can implement their operations across the continent.

As Dunning (2000) suggested, FDI is the most capital intensive activity a firm can choose, but it seems to be worth it, given the performance of African owned firms that expanded their operations across the continent such as:

- Technology and Telecommunication: MTN, GLO, Safariscom, and Orascom.
- Retail and consumer product: Shoprite, Pick and Pay, and Dangote Group.
- Financial services: Ecobank, Uba, and Atlas Mara.

Given the statements made above, the objective of this research is to demonstrate the following:

1. The necessity to promote and increase intra-African FDI as a solution to the low level of FDI in Africa, given the fact that some African multinationals expanded successfully across the continent despite the challenging investment landscape in Africa.
2. Determine the barriers of trade that African firms experience when attempting to embark on intra-African FDI, based on the business environment in Africa.
3. Establish the impact of FDI on African countries' macroeconomic indicators such as GPD growth, Unemployment and Current Exports. Based on the study by Zhang (2001), we demonstrate the relevance of promoting and increasing intra-African FDI and its impact on the macroeconomic variables in Africa.

With a globalised business world with high levels of competition, we examine the impact of African firms embarking on intra-African investment, compared to similar firms in Africa, which have not crossed borders, as well as analysing the investment and trade landscape in Africa.

1.3.Overview of methodology

The objective of this paper is to demonstrate the increase of intra-African investments as a remedy for the low level of FDI flows in Africa and to suggest the necessity to stimulate and promote the African firm's operation across the continent.

To conduct our research a trend analysis and a quantitative analysis have been conducted.

Our trend analysis is supported by a literature review and a qualitative analysis. The literature review aims to determine the importance and the impact of FDI on the economy of the host and investing countries and the extent to which embarking on FDI can be beneficial for African firms against the background of theories on FDI. The qualitative analysis was conducted as follows:

- Analysing global FDI flows
- Examination of FDI flows in Africa

- Assessment of the business environment in Africa to define the adequate investment and trade landscape for intra-African investment to prosper.
- A case study of selected African-owned multinational operations and performances across the continent with a view to establish some solutions to promote intra-African FDI.

These analyses assist in responding the following questions:

- How can we promote and increase intra-African investment?
- What are the barriers to trade that some firms experience when attempting to embark on intra-African FDI?
- Which are the channels through which African firms' investments can spill over efficiently across the continent? Thus highlighting the platform to ease and to make any investments efficient in Africa.

Our quantitative analysis establishes the impact of FDI on African countries' economic indicators such as GDP, Employment and Current Exports, in order to assess the significance of FDI in improving African economies. To achieve that goal, we have selected the top 3 African countries FDI recipients on the continent and determine the impact of the investments on their economy.

Each research question stated above are covered separately in Chapter 2, 3 and 4 as follows:

Chapter 2: Literature review

Chapter 3.2.1: What is the current state and what are the current trends of FDI in Africa?

- Analysing the trends on intra-African FDI
- Assessing the top African countries, recipients and investors in terms of intra-Africa FDI.

Chapter 3.2.2: What are the investment challenges and the barriers of trade African firms experience when attempting to embark on intra-African FDI?

- What is the impact on firms embarking on intra-African FDI?

- Case Study of selected African-owned multinational firms.
- Examine and analyse the performance and the channels through which selected African successful firms spill over their investments across the continent.
- Analysing growth and profitability of selected African MNCs compared to their respective peers.

- What are the barriers of trade African firms experience when attempting to embark on intra-African FDI?
  - Analysing the business environment in African countries.
  - Assessing legislation and regional integration of countries experiencing high levels of FDI compared to those with lower levels of FDI.

Chapter 3.2.3: What is the impact of FDI on African countries?

- Based on Zhang's (2001) study proving the impact of FDI on economic growth, we will conduct an empirical study by selecting the top 3 African FDI recipients (South Africa, Nigeria and Egypt) determine the impact of FDI on economic indicators such as GDP, Employment and Current Exports. The result of our study will aim to establish the significance of the FDI impact on the economies of African countries and thus emphasize the necessity to promote intra-African FDI as a solution to increase the level of FDI flows on the continent.

Chapter 4: Result and discussion

- Using results and information from the previous three sections, this last chapter will combine everything assessed above and recommend improvements that can be made to stimulate intra-African FDI.

1.4.Significance of the study

According to the eclectic paradigm theory (Dunning 1993), in order for FDI to be beneficial the following advantages must be present:

- Ownership advantages: competitive advantages of the firm seeking in FDI
- Location advantages: existence of raw materials, low wages, special taxes or tariff
- Internalization advantages: Advantages for a firm to exploit a foreign market itself than through an agreement with a foreign firm.

In addition Aykut and Ratha (Page and te Velde 2004) distinguished the factors that contribute to make an investment destination more attractive, defined as push and pull factors, but his paper did not deal with the African context.

Africa is well known for its enormous natural resources, from being a provider of raw materials and an extractive based industry, but also, the last decade has seen the development of new sectors related to technology, financial services, consumer products and retail. This indicates that Africa should be considered as a lucrative investment destination from both foreign and African economies but the level of investment across Africa is still low.

Given the performance of African owned firms that have successfully expanded across the continent, it has shown the efficiency of Africa as a platform for inward African FDI to prosper. Increasing FDI flows into Africa can be through spill-overs of more intra-African FDI.

This research aims to establish the necessity to foster the spread of African owned firms to increase the level of FDI flows in Africa. It will also analyse the operations and the performances of selected African multinationals embarked on intra-African FDI as well as the business environment in Africa, thus suggesting the requirements to ease and make any investments efficient in Africa.

Our study will identify the channels through which African owned companies can implement their operations across the continent by analysing how selected African successful firms have spilled over their investments across the continent. To support our objectives we will examine the impact of FDI on African countries economic indicators to establish the significance of intra-

African FDI to impact African country economy as well as outward investments. This will support our statement in promoting and foster intra-African as solution for Africa to its economy.

2. Literature review

2.1. Economics of Trade and Investments

2.1.1. Key features of Trade and Economics of Trade

Countries across the world are different in their needs, this is driven by the difference in the countries' resources, both natural and attained. The exchange of these resources across borders (imports and exports) between countries, companies and individual is what we refer to as international trade.

David Ricardo established the first theory of international trade in 1817 (Suranovic), which explained that the framework of a country's international trade is determined by the ability of an economy to create a comparative advantage in producing specific goods. By specialising in producing a specific good (with a comparative advantage) and importing a cheaper good instead of producing it domestically, grants an advantage to the economy. In addition Heckscher and Ohlin (1920) who stated that the condition of trade between two countries is created from the specialisation of a specific product, which depends on the availability of the factors of production. According to their model "the factor proportions model", a country with a high ratio of labour to capital will export goods that are labour-intensive, whereas a country with high ratios of capital to labour will export goods that are capital-intensive. Thus depending on the production factors of a specific country, it will specialise in a particular industry for exports.

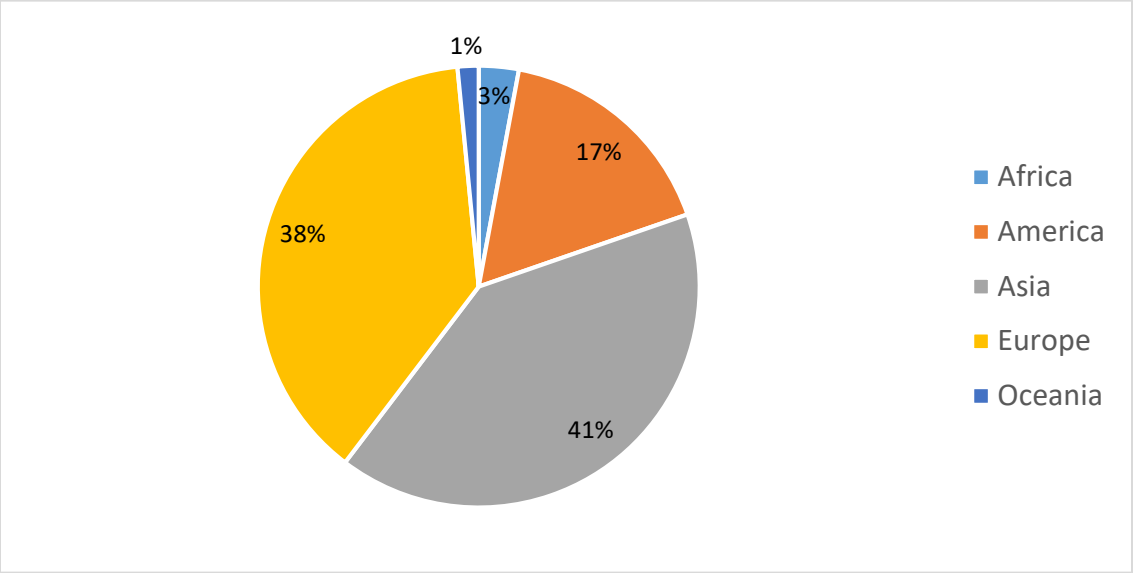
A country can only provide a product to a foreign market for which there is a need, and is either inexistent or too expensive to produce locally. Also the specificity (quality, price, etc.) of the products can generate a demand which can positively affect the exports of countries with performing and innovative industries.

Throughout time, countries have embarked in trade across borders based on the difference of factors of production in countries and this has led to investment across borders too. The link

between trade and investment is evident and thus we need to assess the trade levels in Africa to support investment. The graph below (Figure 3) shows the share of trade across the various continents with Africa's share just a mere 2%.

It could be inferred that should trade increase in Africa, it will stimulate investment. In the sense that trade creates a demand which increase export that affect positively a country's balance of payment. The increase of revenue foster investment in terms of company's creation, infrastructures development and job creation, as effect a positive impact on consumption. The investment flows into Africa in 2013 has created more than 188 400 jobs created in Africa in 2013 from FDI flows (EY Survey, 2015).

Figure 2: Total Trade, annual 2014



Source: World Trade Organization/International Trade Statistics 2014

2.1.2. Economics of Direct Investments

The ultimate goal of an investment is to make a profit, in an economic sense, an investment is the purchase of goods that are not consumed today but are used in the future to create wealth

or for the improvement of existing assets (for example if a country decides to invest in improving its existing infrastructures such as roads, ports, schools, etc.). In finance, an investment is a monetary asset purchased with the expectation that the asset will provide income in the future or appreciate and be sold at a higher price. To that extent we can identify an investment as a movement of capital for the purpose of wealth creation, which can be carried out in many ways by countries, institutions and corporates. The literature on investments is wild and diversified, but for the purpose of this study we will focus on direct investments especially Foreign Direct Investments (FDI).

As defined in section 1.1, FDI is a long term investment made by a resident of one economy in another economy. When examining FDI, the question that arises is why multinational enterprises (MNEs) embark on FDI and why are countries creating the landscape to attract more FDI?

Dunning (1993) defined the need for MNEs to embark on FDI by their 3 reasons:

- Ownership
- Location and
- Internalisation

These are known as “OLI”. These are three potential sources of advantage that may underlie a firm’s decision to become a multinational. A successful MNE has some firm-specific advantages which allows it to overcome the costs of operating in a foreign country which had been emphasized by Hirsh (1976), affirming that “the decision (to invest) of the firm is arrived at by minimizing the relevant cost”.

Location advantages focus on the question of where a MNE chooses to locate; internalisation advantages influence how a firm chooses to operate in a foreign country. By establishing the “OLI”, Dunning (1993) explained why MNEs are embarking on direct investment and then defines four types of MNEs:

- Market-seeking (MNEs that serve market through investment rather than through exports)
- Efficiency-seeking (MNEs using low labour costs)
- Natural resources-seeking
- Strategic asset seeking (seeking technology, skills or take over brand names)

Servicing a foreign market implies taking into account specific factor: control cost, production cost, foreign languages, foreign law, taxation system, etc. According to Hirsch (1976), the servicing of a foreign market leads multinationals to take the decision between investment (implementation of new plants) and exports (from domestic operations). This decision is determined by the evaluation of relevant costs (production cost, capital cost, export cost, etc.), competiveness (know-how, innovation) and the assessment of the export/investing market.
Firm comparative advantage can lead to specialisation which is a key factor for innovation and skill. This was noticed by Nocke and Yeaple (2004), that firms engaging on Greenfield investments increase their efficiency. Bruno and Cippolina (2014) showed the existence of a positive impact of FDI on productivity and ultimately on economic growth.

The industry in which MNEs operate is a determinant of embarking on international investment; for example, as Hirsch (1976) noted, the Steel and Iron industry is mostly internationally traded and not a significant industry in the international investment field.

The trade literature has not distinguished much between the two modes in which a multinational enterprise can engage in foreign direct investment (FDI): cross-border acquisition (entering a foreign market by buying an existing enterprise) and Greenfield FDI (entering a foreign market by building a new enterprise).

2.2. Trade into Direct Investment: The Invest or Export Decision

MNCs expand their operations across borders whether by exporting their products or by implementing new plants in the foreign markets, with the goal of serving the local market or/and their own domestic market. This explains the increasing importance of multinational corporations in the world economy due to the easing of factor mobility noticed by Wade (1996): "Business globalisation with the effect of rapid movement of capital, technology and skill acquisition has caused the changes in several sectors due to the growing of internationalization of trade, capital investment, finance, business and the technology of production".

From the trade perspective a firm can supply a foreign market through exports and its domestic market through its own production or imports. Also from an investment perspective the foreign market can be supplied by implementing new plants which can be used to serve a firm's foreign and domestic market.

The decision to export or invest in new plants is the trade-off between trade and investment; in other words, turning trade into a direct investment comes from a decision of how to service a foreign market efficiently. Minimising relevant costs is the main motive behind the firm expansion strategy which had been illustrated by Hirsch (1976). In "An investment Trade and Investment Theory of the Firm" Hirsch had identified the factors which led a firm to choose between export and direct investment. Key factors P, K, M and C had been identified as incentive for firm whether to invest or export:

- P: Production cost
- K: Firm specific know-how and other intangible income-producing proprietary assets
- M: Export marketing cost
- C: Cost of control

By comparing those factors to their competitors in the seeking market, a firm can make the decision to export or implement new manufacturers abroad. For instance low cost production

countries attract firms for manufacture their products which is the case with China. As noticed by Nocke and Yeaple (2004), greenfield investment increases MNCs efficiency to the extent that international investment facilitates specialisation according to comparative advantage. Thus according to Hirsch (1976) multinationals are exempt from export-marketing costs by expanding output or establishing new manufacturing facilities, which is not the case for pure exporters.

K-intensive firms (high technology industries) appear to be mostly multinationals due to their nature of capital-intensive firms which is subject to economy of scale, which Mundell associated with international direct investment.

The decision for MNEs to embark on FDI is thus also based on comparative advantage. If the costs of production are lower in a specific country, a firm may decide to implement new plants instead of exporting. We will look at African countries and its desirability in terms of comparative advantage in the next sections.

2.3. Overview of Business Environment and Investment in Africa

2.3.1. Investment in Africa

Africa is well known for its vast natural resources; and this is evident from its role as a provider of raw materials and a highly extractive based industry. The last decade has seen the development of new sectors relating to Technology, Financial Services and Retail. More recently we have also seen new sectors such as Consumer Products, Banking and Telecommunication attract more FDI than the traditional sectors such as Mining, Oil and Agriculture.

The shift from extractive industries to consumer-facing industries has attracted more investments with a key role played by multinationals, which brings innovation, technology development and skills to the continent (Ola-David & Yelaran-Oyeyinka, 2012). The knowledge brought by foreign investors can spill-over to indigenous firms, upgrading the technological

capabilities, bolstering skills in the local workforce, and consequently increase the overall competitiveness of their economies (World Bank Group, 2010).

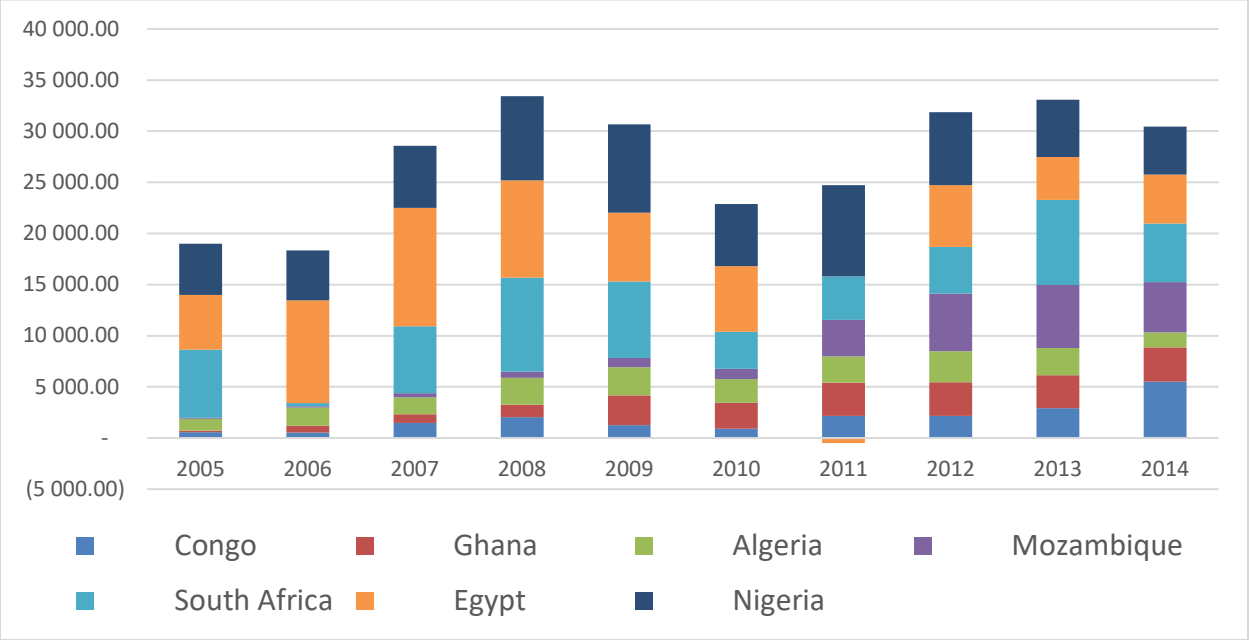
Overall, the main source of investment in Africa is from respectively the US and the UK, with a trend in specific sectors such are business technology, media and telecommunications (TMT), retail and consumer products (RCP) and financial services, representing 47.7% of total FDI flows into Africa (EY survey, 2014).

Capital and financial inflows in Africa can be grouped into 4 categories:

- Capital investment
- Portfolio investment
- FDI
- Changes in international reserves

Data were sought from UNCTAD statistics, the World Bank and the following countries were selected for the study: Angola, Togo, Mauritius, Kenya, Ethiopia, Botswana, Namibia, Libya, Congo, Ghana, Algeria, Mozambique, South Africa, Egypt and Nigeria. The first eight countries were the recipients of the least FDI over the last ten years, whilst the last seven countries received the most.

Figure 3: FDI Top 7 countries in Africa (2005-2014)



Source: UNCTAD, FDI/MNE database (www.unctad.org/fdistatistics)

FDI in Africa has seen steady increases over the last ten years, despite the 2008 and 2009 global recession period. South Africa, Nigeria and Egypt are currently the recipients of most African FDI, with Mozambique and Congo experiencing significant growth in FDI over the last few years.

The chart below (Figure 4) shows the FDI for the bottom eight countries. Here we see that the political unrest in Libya over the last few years has resulted in a significantly reduction of FDI in this country. Angola similarly has also experienced massive FDI outflows recently.

Figure 4: FDI Bottom 8 countries in Africa: Inward Flows and Stocks (2005-2014)



Source: UNCTAD, FDI/MNE database (www.unctad.org/fdistatistics)

The weakness of the overall stock market in Africa (except South Africa) and the need to develop the private sector as factors of economic growth, suggests that capital investment and FDI should become the priorities of governments and local organisations. For example, the African Development Bank has initiated an investment portfolio of $109 billion to finance 297 enterprises. Ramachandran and Shah (1999) proved the significance of the development of the private sector in sub-Saharan Africa on the overall rate of economic growth in the region. In return the increase of FDI will develop the capital market and the private sector (Otchere & Yourougan, 2012).

According to the United Nations Report (World Investment Report (WIR), 2014) the most rapidly increasing resource flows to least developed countries over the past decade has been foreign direct investment (FDI) which rose from less than $5 billion in 2000 to about $33 billion in 2008, before declining to $28 billion in 2009 to rise to $56 billion in 2013 under the impact of the global recession. The largest source of capital flows to Africa after remittance are foreign direct

investment but the traditional sectors mine, metal and agriculture are still on track (EY Survey, 2015).

The leading countries in Africa attracting FDI are South Africa follow by Nigeria, Kenya and Angola (EY survey 2014), South Africa is the main provider of intra-investment in the region and outward FDI from Africa. Of top 10 performing African multinationals 7 are South African with operations across more than 10 African countries (e.g. MTN, Sasol, Naspers, Eskom, and Shoprite).

The highest performing sectors are telecommunication and media, financial services and consumer's products.

- The financial sector saw the rise of Nigerian banks such as UBA expanding their operations within the continent, the Togolese giant Ecobank, the Egyptian based bank Afreximbank and also the expansion of South African banks across the continent.
- The media and telecommunication specially the mobile sector have the major African multinationals such as MTN, GLO, Safaricom, and Orascom.
- Consumer products sector is so far one of the most performing sector with South African giants such as Shoprite and Nigerian Dangote Group.

The UNCADT (2004) emphasized that countries with faster growth rates should receive more FDI than countries with slower growth and also note that the rate of return on FDI in Africa are among the highest in the world. To that extent why Africa with a prospect economic growth are still at a low level in terms of FDI flows?

2.3.2. Trade in Africa

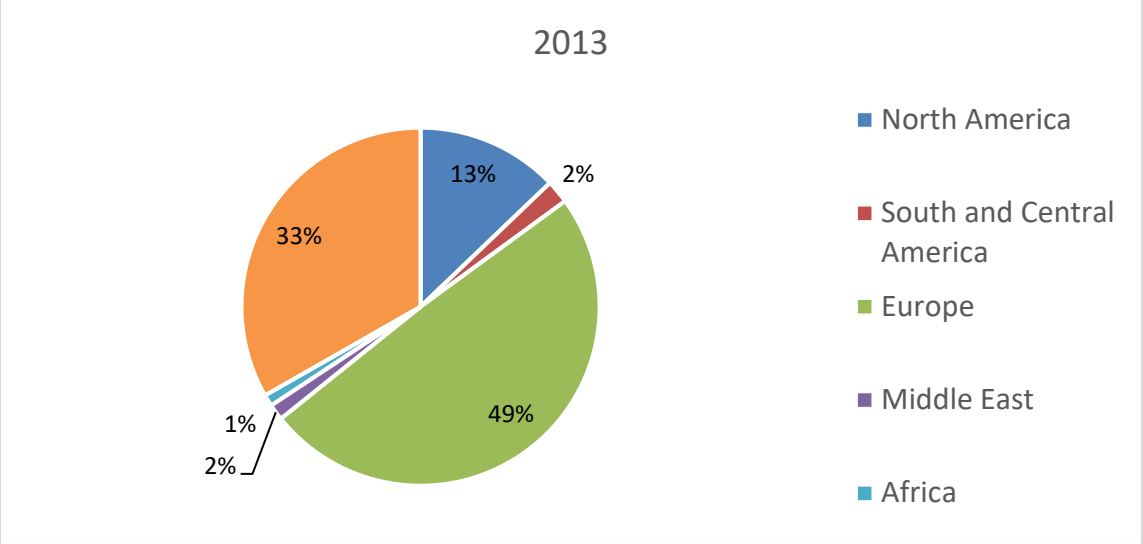
Intra-African trade reportedly represents only 12% of all African trade (UNTCAD 2014), which is a relatively low figure compared to intra-regional trade in other parts of the world, for example intra-European trade is about 70% of all European trade. Africa has experienced weakening growth over the last few years, growing only by 2% in 2014. This has been caused by a myriad of factors such as political turmoil, the Ebola outbreak, terrorist attacks, and the economic slow-

down in North Africa and continuing strife in Central Africa (World Bank, World Economic Situation and Prospectus 2015). The last few decades has seen Africa being largely dependent on the exports of natural resources and commodities. This has accounted for more than half of Africa's total exports. In some countries this has even been as high as 90% (UNCTAD, 2004).

Besides commodities, countries such as Burundi, Côte D'Ivoire, Ethiopia, and Malawi are dependent on agricultural exports, which are also subject to fluctuating prices. Given the fluctuations in the prices of commodities and agricultural produce, Africa's dependence on these put the economies and growth at risk. The necessity to diversify its economy and the development of a new industry is then crucial.

Africa intra-regional trade stands only at USD 97 billion, while the lowest which are Southern and Central America and the Middle East stand respectively at USD 195 and 135 billion.

Figure 5: Intra-Regional Merchandise Trade 2013



Source: World Trade Organization/International Trade Statistics 2014

Njinkeu, Wilson and Fosso (2008) have examined trade in Africa and concluded that efforts to foster trade will be critical for Africa to diversify its economies and increase the continent's

overall competitiveness. They showed the impact of trade facilitation on intra-African trade and emphasised that the following factors are important determinants in this facilitation:

- Port efficiency: measure the quality of infrastructure of maritime and air ports.
- Customs environment: measure the direct customs coast as well as administrative transparency of customs and border crossings.
- regulatory environment
- Services infrastructure: level of necessary domestic infrastructure (e.g. financial intermediaries, telecommunication and logistic firms).

Customs and regulatory malfunctions have been cited as the main obstacles to intra-African trade and thus improvement in these would bring about significant acceleration in trade between African countries, as well as increase Africa's attractiveness as an investment destination.

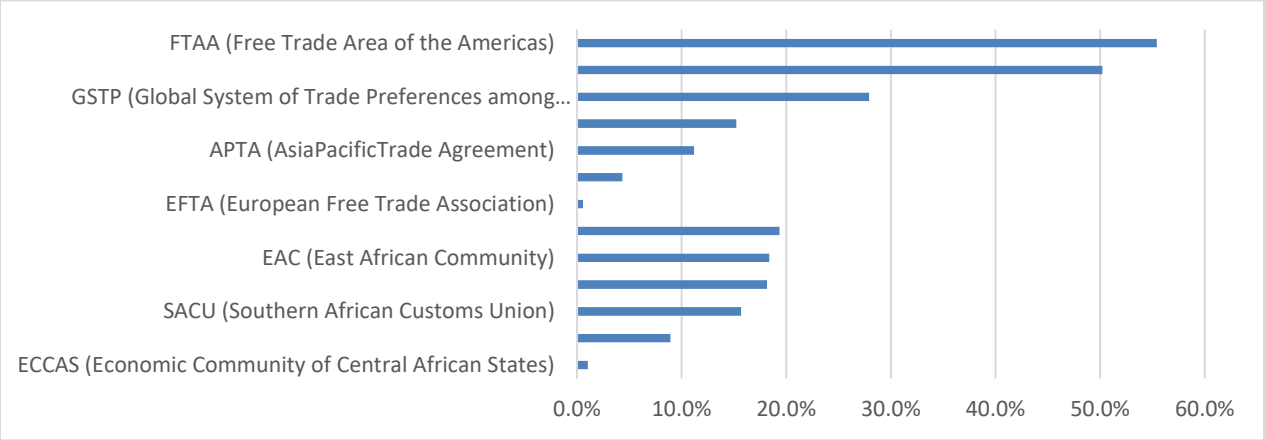
Similarly, Njinkeu, Wilson and Fosso (2008) noted that Wilson, Mann and Otsuki (2003, 2003, 2004) had defined and measured development of trade facilitation indicators by those four factors. They have shown that the customs environment has a significantly positive effect on trade of the importing country. Improvements in the customs environment reduce the cost of imports and enhance trade facilitation. Improvements in the regulatory environment of the importer and exporter also results in a significant positive impact on trade.

This was corroborated by Clark (2006), who found that African manufacturing enterprises are less likely to export to countries with restrictive trade and customs regulation and poor customs administration. Additionally the study showed that African regional agreement, namely CEMAC, COMESA, SADC and UEMOA have a positive and significant effect on trade.

Denis (2006) using the Global Trade Analysis Project (GTAP) showed that facilitation of trade can be improved with economic and political integration within regions and communities. Increasing the reach of these agreements and integration can have significant effects on the factor that contribute to trade facilitation in Africa (Mijiyawa, 2012). The figure below (**Error! Not a valid**

bookmark self-reference.) shows the intra-group trade agreements and the volume of trade between these groups as a percentage of the total trade in within the group.

Figure 6: Intra-group to Total Trade by Country Groups



Source: World Trade Organization/International Trade Statistics 2014

The importance of regional integration and its impact on productivity, labour and infrastructure as mentioned by Mijiyawa (2012) that "strengthen regional integration in Africa can boost some of the factors that contribute to the development of FDI in Africa". With the high correlation between trade and FDI, we can conclude that improving trade within Africa could have significant impacts on investment within Africa.

2.3.3. Africa's business environment

The business environment may be defined as the nexus of policies, institutions, physical infrastructure, human resources, and geographic features that influence the efficiency with which different firms and industries operate (Eifert, Geld and Ramachandran 2005). At firm level, it directly influences costs of production and at the industry level, it often relates to market structure and competition.

Africa is a diverse continent, where multicultural aspects and countries specifics have been deemed to be major obstacles in the generation of business prospects. Vast improvements have been made to remedy political instability and the infrastructure weaknesses across the continent, with the exception of northern African in the past few years.

As an investment destination with the need to facilitate capital inflows, African countries have improved their legislation and regulations in order to attract more investment while at the same time protecting national interests.

Of the 50 economies making the most improvement in business regulation for domestic firms since 2005, 17 are in Sub-Saharan Africa which can be seen by the level of FDI inward flows to sub-Saharan Africa compare to northern Africa (Figure 10):

From June 2011 to June 2012, 28 of 46 governments in Sub-Saharan Africa implemented at least one regulatory reform, making it easier to do business (International Corporate Finance, World Bank Group, Doing Business 2013 fact sheet: Sub-Sahara Africa):

- The Democratic Republic of Congo appointed additional public notaries to ease the starting of new businesses.
- Kenya enhanced electronic filing systems to speed up the payment of taxes for companies.
- Lesotho strengthened investor protections by increasing the disclosure requirements for related-party transactions.
- Madagascar made starting a business easier by allowing the one-stop shop to deal with the publication of the notice of incorporation.
- South Africa reduced the time and documents required to export and import through its ongoing customs modernization program.
- Mauritius made property transfers faster by implementing an electronic information management system at the Registrar-General's Department.

- Niger reduced the time to import by expanding and optimizing the use of an electronic data interchange system for customs clearance.

These improvements all aid in making Africa more attractive as an investment destination. The factors that contribute to make an investment destination more attractive, which are defined as push and pull factors as determined by Aykut and Ratha in 2003 (Page and te Velde 2004). Push factors are the motives that lead multinationals to embark on FDI, whereas pull factors are the attributes which attract FDI to specific countries.

Push factors include:

- Rising wealth in emerging markets
- Rising cost of labour and non-tradable
- Breaking up of domestic monopolies
- New technology and communications that improved information sharing and reduced transaction costs
- Strategic, desire to procure inputs such as oil
- Capital account liberalisation regarding outward FDI, changes in trade barriers, regional trade agreements, and government policies encouraging outward FDI.

Pull factors include:

- Large and growing markets
- Geographic proximity and ethnic and cultural ties
- Supply of cheap labour
- Abundance in raw materials
- Incentives in host countries, preferential treatment of foreign companies, and export markets through preferential treatment

In our study we will examine if those factors are adequate for African or need some adjustments to fit with the African context given the low level of FDI inwards and outwards in Africa.

3. Data and Methodology

3.1. Research Objectives

The objective of this paper is to define the factors than can contribute to stimulate and increase intra-African FDI as a means to foster investment flows across Africa. We have observed excelling performance from African MNCs that have successfully spread their operations across the continent, despite the difficult African business environment.

The data collected to support our research are from the UNCTAD Statistics databases, African development studies and different surveys, and business reports from regional organization and companies to assess the following:

i. What is the current state and trends of FDI in Africa?
ii. What are the investment challenges and the barriers of trade African firms experience when attempting to embark on intra-African FDI?
iii. What is the impact of FDI on African countries?
iv. How can we promote and increase intra-African investment?

3.2. Approach

In our research study, we aim at showing the necessity for government and regional economic communities (REC) in Africa to assist and create the adequate platforms for African firms to expand their operations across the continent and more importantly by promoting emerging industries, given the struggle of traditional industries such as extractive and petroleum resulting from the surge of commodities prices.

To achieve this goal, based on our literature review and the data collected will conduct research by:

- Analysing FDI flows in Africa

- A case study of selected African-owned multinational operations and performances across the continent
- Assessing the business environment in Africa to define the push and pull factors adequate for Africa.
- Assessing the impact of FDI on economic indicators such as GDP, Employment and Balance of Payments on three African countries (South Africa, Nigeria, and Egypt).
- Establishing the benefit and, thus, the importance of African firms to expand their operations across the continent as a solution to increase FDI flows in Africa.

3.2.1. What is the current state and what are the current trends of FDI in Africa?

The expectation is that developing countries should be the recipients of investments, given its growth projections and relative shortage of capital. African countries should thus be experiencing increasing FDI, yet this does not seem to be the case. Also, when African countries invest outward, we expect that these investments should be in Africa, given that Africans are less likely to invest outside Africa for efficiency reasons or for natural resources (Page and te Velde 2004).

3.2.1.1. Inward FDI flows in Africa

FDI can split into Greenfield projects and cross-border Mergers and Acquisitions (M&A), with Greenfield projects being the most preferred investment channel used by investors in Africa. In 2014 Greenfield projects stood at USD 88 billion (Table 2) while cross-borders stood at only USD 3.6 billion (Table 3).

In the past, the primary sector was the preferred industry for FDI inflow, but recently we have seen the rise of new sectors such as manufacturing and services where African investors represent 15% of FDI inward flow. The rise of new industries such as consumer products and business services (where African investors accounted for almost 80%) can be explained by the significant capital and technology required to invest in the extractive, petroleum and

automobile industries, which is still in short supply on the continent. The share of African investors on those growing sectors must be examined, given the fact that they represent more than 60% of the FDI flows for these sectors.

Table 2: Announced Greenfields Projects by Industry 20013-2014 (Millions of Dollars, Nominal)

Sector/Industry	Africa as Destination		Africa as Investors		Africa investor as percentage	
	2013	**2014**	**2013**	**2014**	**2013**	**2014**
Primary	**6 114**	**21 974**	**7**	**48**	**0,11%**	**0,22%**
Mining, quarrying and petroleum	6 114	21 974	7	48	0,11%	0,22%
Manufacturing	**14 722**	**28 787**	**8 013**	**3848**	**54,43%**	**13,37%**
Food, beverages and tobacco	1 437	2 099	535	1214	37,23%	57,84%
Textiles, clothing and leather	1 744	2 091	126	23	7,22%	1,10%
Non-metallic mineral products	3 921	2 213	2805	1918	71,54%	86,67%
Motor vehicles and other transport equipment	1 642	1 585	98	15	5,97%	0,95%
Services	**34 287**	**37 534**	**9 382**	**9 490**	**27,36%**	**25,28%**
Electricity, gas and water	11 537	10 648	-	125	0,00%	1,17%
Construction	3 536	9 229	1 005	462	28,42%	5,01%
Transport, storage and communications	7 774	5 909	2 919	2 305	37,55%	39,01%
Business services	7 099	6 323	2 656	4 949	37,41%	78,27%
Total	**55 124**	**88 295**	**17 402**	**13 386**	**31,57%**	**15,16%**

Source: UNCTAD, Global Investment Trend Monitor 2015.

Table 3: Announced Cross-Borders M&A 2013-2014 (Millions Dollars, Nominal)

Sector/Industry	2013		2014	
	Sales	Purchases	Sales	Purchases
Primary	135	2566	289	1595
Mining, quarrying and petroleum	135	2566	289	1595
Manufacturing	3326	3261	632	209
Food, beverages and tobacco	1023	22	244	35
Paper and paper products	-5	-101		-101
Pharmaceuticals, medicinal chemicals and botanical products	567	51	1310	-51
Basic metal and metal products		301		
Services	**368**	**2166**	**1098**	**3642**
Electricity, gas and water	250	58		1176
Transportation and storage	27	425	27	74
Financial and insurance activities	222	1419	653	228
Business activities	104	12	135	129
Total	**3829**	**5058**	**3019**	**5446**

Source: UNCTAD, Global Investment Trend Monitor 2015.

The weakness of the overall capital market in Africa can explain the low level of cross-borders M&A compare to Greenfield investments

3.2.1.2. Top FDI investing and host countries in Africa

South Africa is the top host and home country of FDI inflow and outflow. Thus, it is the largest investor in Africa, but also receives the most foreign investment. Given that South Africa has the largest stock exchange on the continent, this is not surprising. However, Egypt, Nigeria, and especially Congo, have seen large FDI inflows in 2014, almost matching that of South Africa. In terms of African investing countries, Angola and Nigeria are investing significantly outside their borders.

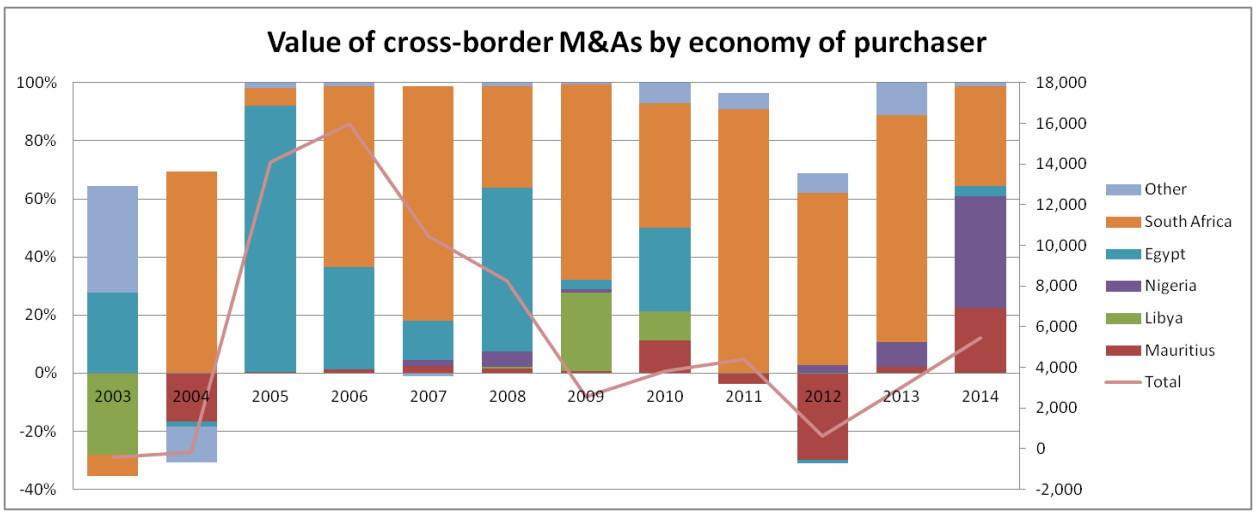
Table 4: Africa top host and home economies FDI flows 2014 (Billion Dollars, Nominal)

Top 5 host economies of FDI Inflow			Top 5 home economies of FDI Outflow		
	Value 2014 ($b)	Change from previous year		Value 2014 ($b)	Change from previous year
South Africa	5.7	-31.20%	**South Africa**	6.9	4.30%
Egypt	4.8	14.10%	**Angola**	2.1	-65.00%
Nigeria	4.7	-16.30%	**Nigeria**	1.6	30.00%
Congo	5.5	88.80%	**Libya**	0.9	422.00%
Mozambique	4.9	-20.60%	**Togo**	0.5	n/a

Source: UNCTAD, Global Investment Trend Monitor 2015.

The value of cross-border Mergers and Acquisitions undertaken by African countries over the last 15 years is dominated by South Africa, which can be explained by its emerging market status and its developed capital market, however, during the last few years we have seen significant growth in Egypt, Nigeria, Libya, and Morocco which, in terms of capital market levels, are among the best in Africa. These six countries make up more than 98% of all M&As by African countries. With recent political events in Northern Africa, we have seen Sub-Saharan Africa dominating in cross-border M&As, with South Africa, Mauritius and Nigeria making up 95% of these in 2014.

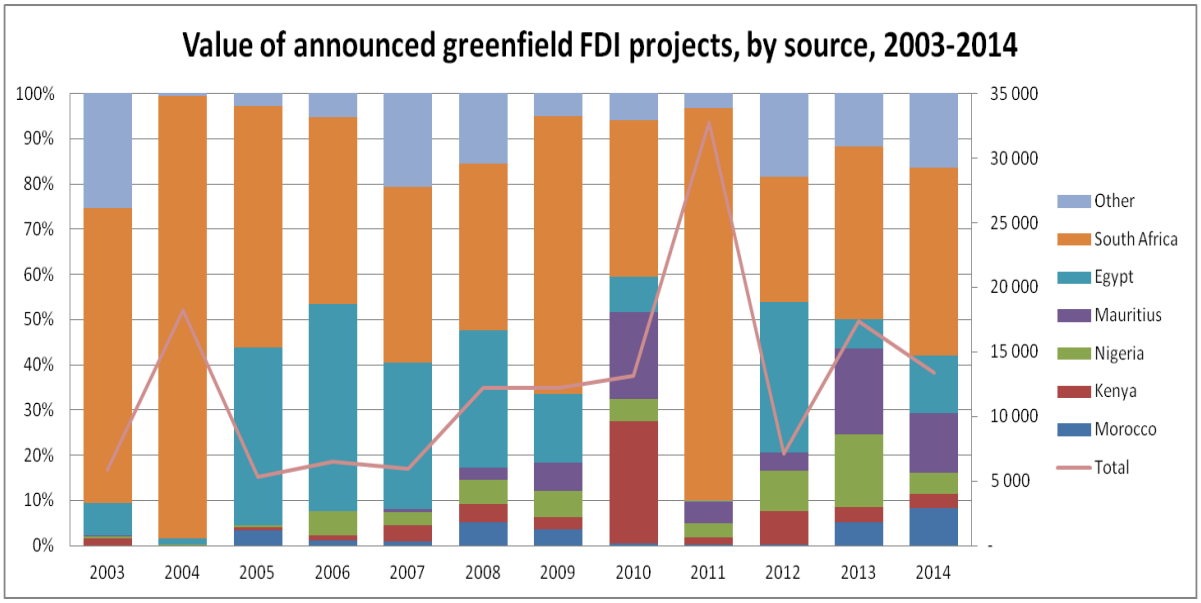
Figure 7: Value of cross-border M&As by region/economy of purchaser



Source: UNCTAD, Global Investment Trend Monitor 2015.

In terms of Greenfield FDI projects, South Africa has consistently been the largest Greenfield projects investor over the last ten years; with Egypt, Mauritius and Nigeria making significant progress over the last few years.

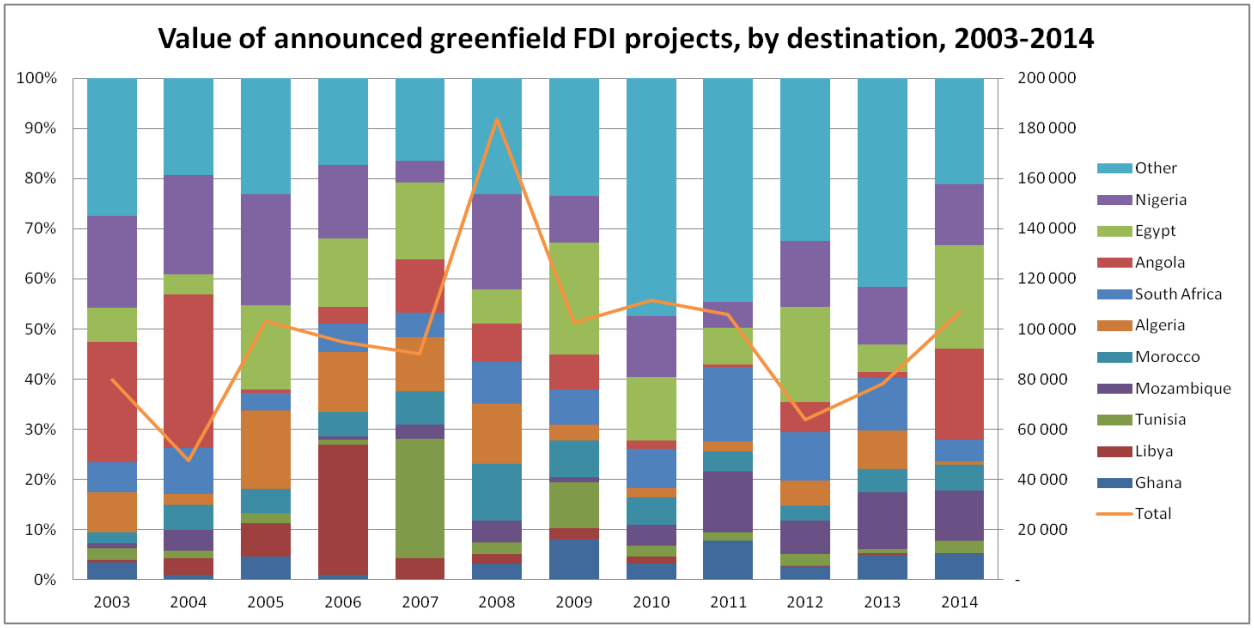
Figure 8: Value of announced Greenfield FDI projects, by source, 2003-2014



Source: UNCTAD, Global Investment Trend Monitor 2015.

The African destinations of Greenfield FDI projects (**Error! Reference source not found.**) are much more diverse compared to the African sources of FDI. Nigeria, Egypt and Angola have consistently received a substantial share of the total Greenfield FDI projects over the last decade. A lot of growth is seen in Morocco and Mozambique.

Figure 9: Value of Greenfield FDI by destination



Source: UNCTAD, Global Investment Trend Monitor 2015.

South Africa, Nigeria, Egypt and Morocco are the African countries which mostly embark on FDI within Africa, but they are also the recipients of most of the FDI. Angola and Ghana have recently received increasing investments. However, the trends are shifting continuously, with different countries receiving FDI throughout the period under observation.

This could indicate that investors are not consistently investing in specific countries and are always looking for better opportunities within Africa. It could also indicate that due to instability (politically or economically) investors enter and exit markets in Africa haphazardly and for shorter terms.

The following tables look at intra-Africa FDI, i.e. African countries investing in Africa and also the proportion of a host African country receiving FDI from within Africa.

Table 5: South African Intra-African FDI

FDI flows abroad from South Africa, to geographical destination												
	2001	**2002**	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**
Total Africa	331	229	253	349	507	462	972	1,464	504	562	982	1,043
Kenya	-	-	-	-	-	-	85	3	-	-	-	-
Madagascar	-	-	-	1	-	1	2	1	-	-	-	-
Malawi	-	-12	2	3	-	-	-	-	-	20	-	-
Mauritius	21	11	37	1	1	1	16	50	16	48	76	93
Mozambique	-	-	-	4	12	37	176	160	41	129	97	-48
Namibia	292	145	119	181	308	309	586	673	-	-	-	-
Nigeria	-	-	-	-	-	-	-	-	-	-	305	972
Rwanda	-	-	-	-	-	-	-	-	-	-	46	-
Uganda	18	21	4	6	8	13	67	51	90	17	14	25
Zambia	-	-	-	-	-	-	106	-	73	-51	-94	426
Abroad	1,833	-221	134	303	227	585	1,644	969	1,641	1,521	-2,813	-4,122
African FDI%	15%	2863%	65%	54%	69%	44%	37%	60%	23%	27%	-54%	-34%
FDI flows to South Africa, by geographical origin												
	2001	**2002**	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**
From Africa (Namibia)	2 164	9	387	653	734	1 046	2 616	2 433	2 145	2 082	-1 831	-3 080
From Abroad	-2 164	- 9	- 387	- 653	- 734	-1 046	-2 510	-2 433	-2 072	-2 134	1 737	3 506

Source: UNCTAD, Global Investment Trend Monitor 2015

Table 6: Nigerian Intra-African FDI

FDI flows abroad from Nigeria, by geographical destination												
	2001	**2002**	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**
Total Africa	-	1	-	-	-	-	-	-	-	1	-2	120
Benin	-	-	-	-	-	-	-	-	-	-	-	26
Mozambique	-	-	-	-	-	-	-	-	-	4	-	-
Rwanda	-	-	-	-	-	-	-	-	-	-	2	-
United Republic of Tanzania	-	1	-	-	-	-	-	-	-	-3	-4	-
Zambia	-	-	-	-	-	-	-	-	-	-	-	95
Abroad	-36	21	-4	325	-396	184	384	0	248	1,816	-671	258

FDI flows to Nigeria, by geographical origin												
	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
From Africa	330	527	560	549	1,285	1,264	1,571	2,129	2,232	1,574	774	18,610
From Abroad	948	1,514	1,611	1,578	3,693	3,634	4,516	6,120	6,417	4,525	1,503	36,624

Source: UNCTAD, Global Investment Trend Monitor 2015

Table 7: Egyptian Intra-African FDI

FDI flows abroad from Egypt, by geographical destination												
	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Total Africa	364	1	-	33	20	17	20	26	26	32	14	2
Algeria	363	-	-	-	-	-	-	-	-	-	-	-
Morocco	1	-	-	1	1	10	8	20	8	35	14	-
Tunisia	-	1	-	26	19	6	10	6	14	4	-	-
United Republic of Tanzania	-	-	-	6	-	2	2	-	-	-	-	-
Zambia	-	-	-	-	-	-	-	-	5	-6	-	2
Abroad	49	-1	-	-33	-20	-17	-20	-26	-26	-32	-14	-2
FDI flows to Egypt by geographical origin												
	2,001	2,002	2,003	2,004	2,005	2,006	2,007	2,008	2,009	2,010	2,011	2,012
From Africa	-	-	-	-	4	2	24	140	14	338	14	11
From Abroad	510	647	237	2,157	5,372	10,041	11,554	9,354	6,698	6,048	-497	5,747

Source: UNCTAD, Global Investment Trend Monitor 2015

South-Africa, Nigeria and Egypt are the most active intra-African investors in Africa and it is essential to note that their investments are spread mostly to their closest geographic countries. Egypt and South Africa receives most of its FDI from non-African countries, but they have invested in African countries substantially, in Egypt mostly to other Northern African countries and for South Africa mostly to Southern and Eastern Africa. South Africa has recently started to expand throughout Africa joining Nigeria and Morocco.

In Appendix A, we have tables showing at the inflows and outflows in other African countries. There we see that even though FDI outflows from these countries are limited, most of the outflows are to other African countries. Almost Botswana's entire FDI outflow is within Africa

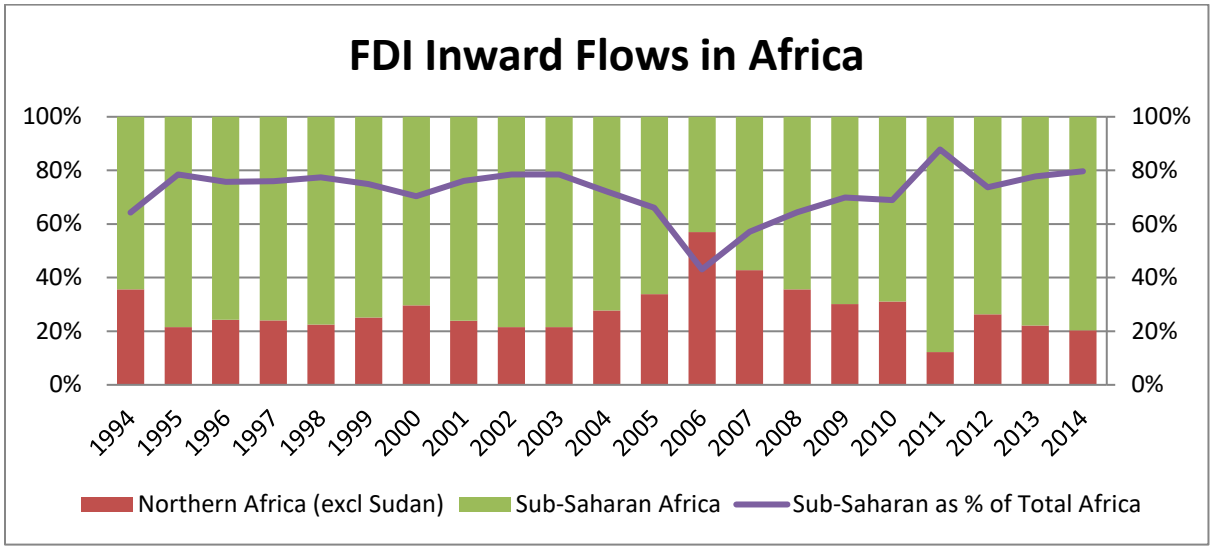
(Mozambique, Tanzania and Zambia). Kenya is similar, with most outflows to Malawi, Rwanda, Uganda, Tanzania and Zambia.

Algeria is similar to Egypt, with most outflows outside the continent, this result due to the fact that most of North African investments are directed regionally and Sub-Saharan FDI outflows to North Africa are very insignificant. But this trend is changing to the extent to which we notice some major acquisitions and investment from North African based banks in sub-Saharan Africa as example the recent investment made by the Moroccan bank Atlas Mara and the Egyptian based bank Afreximbank. The inflows of FDI to Africa, shows us that even though Africa is starting to invest in itself, investments are still largely from abroad and on a very small in scale in comparison to the rest of the world. Mozambique and Mauritius, however, are seeing large intra-African FDI in recent years.

From the above we can conclude that Africa is seeing increased FDI, in particular, intra-African FDI. South-Africa, Nigeria and Egypt are the largest investing countries with growing intra-African investments in industries related to consumer products, telecommunication, retail and bank spreading to mostly neighbouring countries.

The figure below (**Error! Reference source not found.**) shows Sub-Saharan Africa receives the largest flows of FDI to the continent. Intra-African FDI to North Africa is at a very low level and we have noticed that Northern Africa behaves quite differently to Sub-Saharan Africa. Thus the case study, which will examine the impact of African MNCs, will be based on companies located in these only in Sub-Saharan Africa.

Figure 10: FDI Inward Flows in Africa



Source: UNCTAD, Global Investment Trend Monitor 2015.

3.2.2. What are the investment challenges and the barriers of trade African firms experience when attempting to embark on intra-African FDI?

For our study we have selected 4 firms from growing industries located in sub-Sahara Africa:

- Banking industry: Ecobank
- Consumer product: Dangote Cement (the leading operation of Dangote Group)
- Retail: Shoprite
- Telecommunication: MTN.

We did not select any firms from the extractive, petroleum and agriculture industry for 4 reasons:

- The global trend of FDI flows in Africa is moving away from those industries
- The share of African investment in those industries is not significant
- The innovation and technology related to the sectors are at a low level in Africa

The industries selected are the growing industries in Africa in terms of increasing the level of FDI, innovation and technology. These firms were selected based on the fact that they are African

owned firms leading their respective industries in their country of origin; they spread across the continent in a short period of time; their level of innovation and technology; and they are the driving force in their respective market in their country of origin.

The selected firms' strategies are to increase their investment across the continent as they believe in the continent's potential and are rooted in the African culture. In the section below we look at each of the firms under consideration.

3.2.2.1. What is the impact on firms embarking on intra-African FDI?

To assess the impact of African's firms embarking on FDI we will analyse the operations and performances of 4 African MNCs: Ecobank, Shoprite, Dangote Cement and Shoprite.
A brief summary of each of the firms are given below:

Table 8: African Owned Multinationals

Dangote Group (Nigeria)		**Shoprite (South Africa)**	
Summary	The largest manufacturing conglomerate in sub-Saharan with a revenue in excess of USD 3 billion in 2015, was initially focus on cement. The Group diversified over time into a conglomerate trading cement, sugar, flour, salt and fish. The subsidiary DANGOTE Cement, which is the selected firm for our study, accounts for about 30% of the Nigerian Stock Exchange by market capitalisation.	**Summary**	Shoprite is the largest retailer in Africa, which has operation across the continent covering 15 African countries. Shoprite employs around 18000 people across the continent. The company operate in a high competitive South Africa retail industry.
No. Of countries	14	**No. Of countries**	15
Founded	1981	**Founded**	1979
1st African FDI	1981	**1st African FDI**	1990
MTN (South Africa)		**Ecobank (Togo)**	

Summary	MTN is the biggest African telecoms company with operation across the continent and the Middle East with 231 million subscribers across 22 countries.	**Summary**	The Pan-African bank operates in 36 African countries (more than any other bank in Africa). The creation of the bank resulted from the statement of the banking industry in Africa dominated in the 80s by foreign and stated owned banks. With the support of regional organization such as ECOWAS (Economic Community of West Africa) and West African Chambers of Commerce and Industry. The bank with more than 23000 employees has been listed simultaneously in 3 African stock exchange: Nigerian, Cote d'Ivoire and Ghana.
No. Of countries	22	**No. Of countries**	36
Founded	1994	**Founded**	1985
1st African FDI	1998	**1st African FDI**	1988

The trends observed in the operations of the firms selected are discussed below.

Companies first expand to the countries closest in their geographical region, which is the case with Ecobank and Dangote, starting their operations in Ivory Coast, Benin, Ghana and Nigeria. Shoprite and MTN, have similarly expanded to both Eastern and Southern countries. This can be seen in the table below showing the countries to which these firms have embarked on FDI (text in red shows the first countries to which the firms expanded).

Table 9: Countries of Firms' Operations in Africa

Firms	West Africa	Central Africa	East Africa	Southern Africa
DANGOTE Group	**Benin**	**Cameroon**	Ethiopia	South Africa
	Ghana	Congo Brazzaville	Kenya	Zimbabwe
	Ivory Coast	DR Congo	Tanzania	Zambia
	Liberia		Uganda	
	Senegal			
	Togo			
SHOPRITE	Ghana	Angola	Madagascar	**Botswana**

	Nigeria	DR Congo	Malawi	Lesotho
			Mozambique	**Namibia**
			Uganda	**Swaziland**
				Mauritius
				Zambia
MTN Group	Benin	Cameroon	Kenya	Botswana
	Ghana	Congo Brazzaville	**Rwanda**	Namibia
	Guinea Conakry	Gabon	South Sudan	**Swaziland**
	Guinea Bissau		Tanzania	**Zambia**
	Ivory Coast		**Uganda**	
	Liberia			
	Nigeria			
ECOBANK	**Benin**	Angola	Burundi	Malawi
	Burkina Faso	Cameroon	Ethiopia	South Africa
	Cape Verde	Central Africa	Kenya	Zimbabwe
	Gambia	Chad	Malawi	Zambia
	Ghana	Congo Brazzaville	Mozambique	
	Guinea Conakry	DR Congo	Rwanda	
	Guinea Bissau	Equatorial Guinea	Somalia	
	Ivory Coast	Gabon	South Sudan	
	Liberia	Sao Tome and Principe	Sudan	
	Mali		Tanzania	
	Niger		Uganda	
	Nigeria			
	Senegal			
	Sierra Leone			

These firms embarked on FDI between 1988 and 1998, which corresponds to a period where most African economies were not in a good shape according to the UNCTAD in its Economic Development report on Africa (2001). This was due to trade losses and most of African economies at this stage depended largely on exports of natural resources, especially from agriculture and the extractive industry.

The most popular countries by region were as follows for these countries:

- West African: Nigeria, Cote D'Ivoire and Ghana.
- Central Africa: Angola, DR Congo and Cameroon.
- East Africa: Kenya, Tanzania and Uganda.
- Southern Africa: South Africa and Zambia

None of the firms selected have operations in North Africa except Shoprite that operated in Egypt in 2003, but closed its operation in 2006 because of political turmoil.

We can then firstly highlight the fact that for African firms to expand in a country with economic difficulty and spread across the continent, a better understanding of the market and prospects have to be identified; secondly the will to assist the continent in its development. Those two facts has brought some positive results regarding the success of MTN (R6 billion to R24 billion in Revenue from 2000 to 2004) that established its first operations outside South Africa in Rwanda, Swaziland and Uganda in 1988 with a respective market penetration in 2001 reported respectively at 0.5%, 3.2% and 0.9% which is very low compared to South Africa at the same period standing at 21% (MTN Business Report, 2004).

Ecobank targeted the unbanked from the informal sector as main strategy for market penetration, which put it in competition with foreign banks in the 1980s. Ecobank has increasingly extended its network in 2 years to more than 5 African countries from 1988 to 1990 since the first operation Affiliate opened in Togo which has been the case for MTN and Dangote Cement expanded in 5 countries.

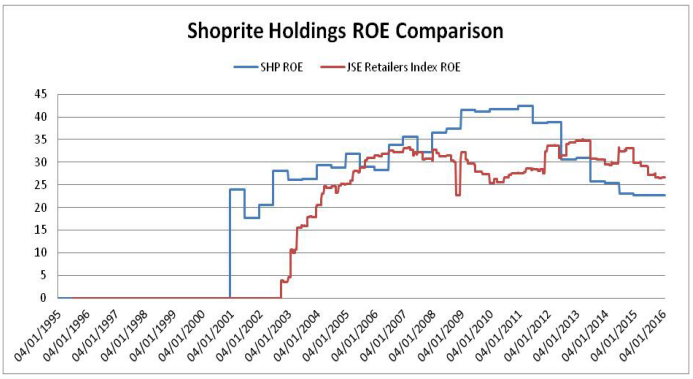
We have compared the share prices and return on equity of these firms to that of the industry in the country of origination. We did this in order to assess whether the decision to expand into Africa has been beneficial to the firms. The results are inconclusive due to the fact that the data has been largely unavailable. The stock markets in Africa (besides South Africa) are very small and results in difficulties in assessing the stock market data.

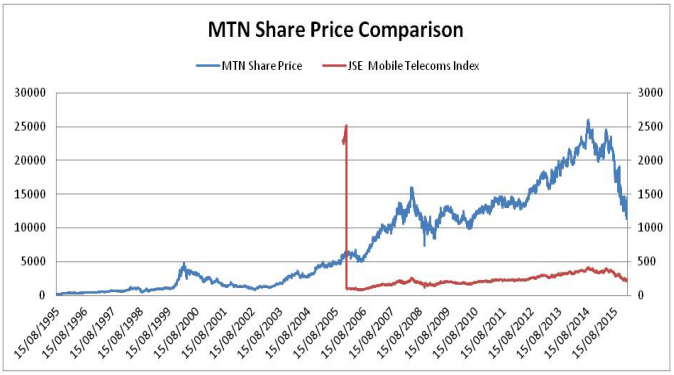
The data for the share prices and return on equity was sourced from Bloomberg. Figure 11 shows the comparisons for the selected firms. We can see that most firms outperform their respective home industries with Dangote and MTN representing respectively 53% and 40% of their industry benchmark. It is difficult to assess the performance for MTN and Dangote, as the two group account for the majority of the benchmark (industry market capitalisation). Further work, assessing more firms is required to conclusively state that firms that expand in Africa deliver higher returns and growth than the average firm in the industry.

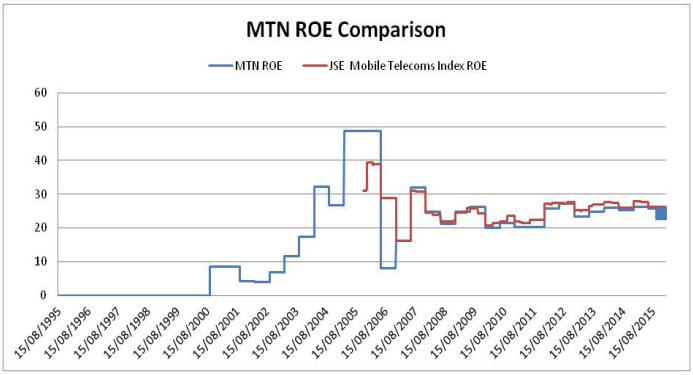
Figure 11: Share Price and ROE Comparisons

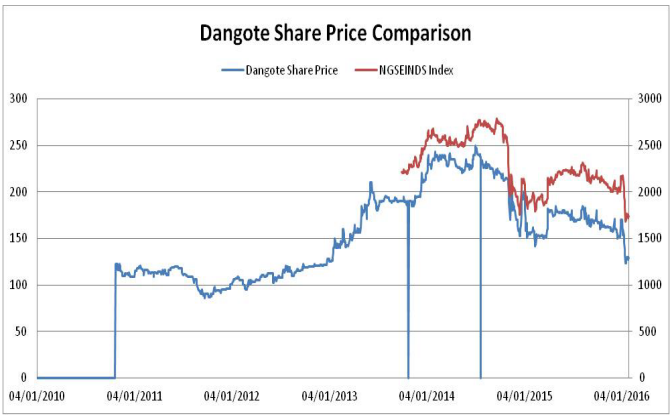
Share Price Comparison | **Return on Equity Comparison**

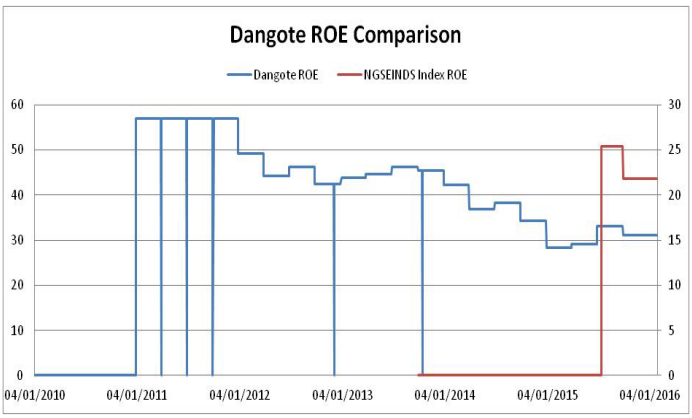


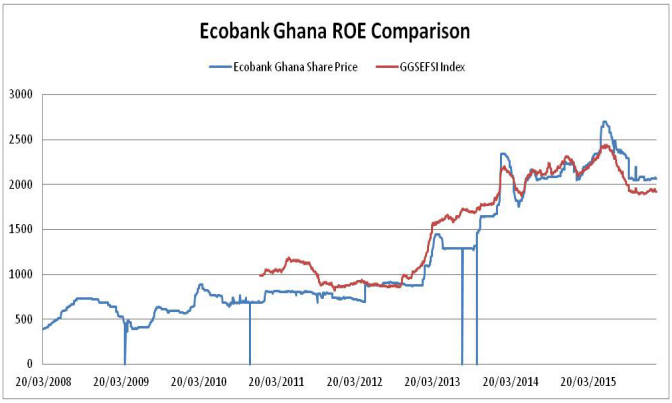


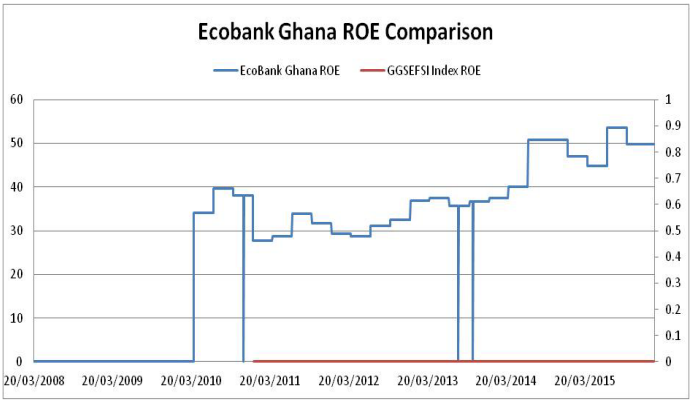












3.2.2.2. What are the barriers of trade African firms experience when attempting to embark on intra-African FDI?

The analysis of the business environment has highlighted the challenges faced in Africa in terms of trade and investment which have been identified below:

- Poor infrastructures (institutional and physical)
- High Transaction costs resulting from corruption, trade procedures, business
- Regulations, fiscal regulations, legal system and bureaucracy inefficient
- Lack of diversity in term of state production: Shift from extractive and oil to innovative industries needed.
- Dependence on foreign import
- Extension of regional integration from Northern to sub-Saharan Africa
- Political instability

Based on Aykut and Ratha's (2003) elaboration of the factors that contribute to make an investment destination more attractive, we now attempt to define, for African investments and trade, the factors leading to incite intra-Africa FDI.

3.2.2.3. Push factors

The Push factors evident for the African firms were as follows:

- Grounding and Market Share in the domestic market where the firm operates:
    - ✓ Dangote, Shoprite, MTN and Ecobank were leading drivers of their respective industry in their country in term of performance, technology, strategy.
- Use of the Rising skilful Labour:
    - ✓ Growing the experience of the African labour force, with qualified staff going overseas for employment and training, can aid in providing Africa with more multinational experience.
- Breaking up of domestic monopolies
- Efficient economic and regional integration leading trade openness
- State backed firms with great vision of expansion as an example of the Qataris Firms spreading in Europe.
- New technology and communications that improved information sharing and reduced transaction costs
- More industries with innovative products corresponding to Africa's needs such as:
    - ✓ Mpesa in Kenyan from Safaricom
    - ✓ Ecobank targeting informal sector
    - ✓ MTN offering of prepaid contract to penetrate Nigerian Market
- Capital account liberalisation regarding outward FDI, changes in trade barriers, regional trade agreements, and government policies encouraging outward FDI.

3.2.2.4. Pull factors

The Pull factors evident for the African firms were as follows:

- Large and growing markets: Nigeria's growing economy for Dangote and South Africa's large economy for Shoprite and MTN have impacted their operations.
- Geographic proximity and ethnic and cultural ties: the rapid West African expansion of Ecobank as their first FDI.
- Supply of cheap labour
- Abundance of raw materials
- The improvement of regional and Economic integration as the European Union: Ecobank has been able to expand faster in West Africa with the support of ECOWAS.
- Infrastructure development:
  - ✓ Port efficiency to measure the quality of the infrastructure of maritime and airports.
  - ✓ Customs environment to measure the direct customs costs as well as administrative transparency of customs and border crossings.
  - ✓ Regulatory environment measure the economy's approach to regulations.
  - ✓ Services infrastructure as level of necessary domestic infrastructure (e.g. Telecommunication, financial intermediaries, and logistic firms).
- Financial market development to diversify the entry of investments: Aim at increase the level of cross-border M&A

3.2.3. What is the impact of FDI on African countries?

Zhang assessed the causal patterns between FDI and economic growth in 2001. This study focused on developing countries in Asia and Latin America. This same premise has not been tested on African economies.

In this study, the same process Zhang followed has been applied to the three top African recipients of FDI in Africa, i.e. South Africa, Nigeria and Egypt. Twenty years' worth of data was available for this test. Even though more data points would be preferred to test this theory in the African context, the data are still sufficient in order to prove causal patterns.

The two-step process (unit root-cointegration-causality test) was as follows:

- Unit-root test for stationarity
- Long-run causality tests, using the Johansen cointegration model

Cointegration tests if a time series process of two of more variable have the same drift (the change in average value of the random or stochastic process), i.e. if all the components of a vector time series process zt have a unit root. This means that if zt is a multivariate I(1) process, there may exist linear combinations βTzt without a unit root. These linear combinations may then be interpreted as long term relations between the components of zt. (Bierens 2010)

Johansen's cointegration test relies on two types of tests: (i) trace test and (ii) maximum eigenvalue test. The approach is based on maximum likelihood estimation and likelihood ratio testing of the VECM (1), by step-wise concentrating the parameters out (i.e. maximizing the likelihood function over a subset of parameters, treating the other parameters as known), given the number r of cointegrating vectors, where the matrix β is the last to be concentrated out. (Bierens 2010)

The data used was obtained from the World Bank. The following variables were used:

- GDP (current US$): GDP at purchaser's prices is the sum of gross value added by all resident producers in the economy plus any product taxes and minus any subsidies not included in the value of the products. It is calculated without making deductions for depreciation of fabricated assets or for depletion and degradation of natural resources. Data are in current U.S. dollars. Dollar figures for GDP are converted from domestic

currencies using single year official exchange rates. For a few countries where the official exchange rate does not reflect the rate effectively applied to actual foreign exchange transactions, an alternative conversion factor is used.

- Unemployment, total (% of total labour force) (national estimate): Unemployment refers to the share of the labour force that is without work but available for and seeking employment. Definitions of labour force and unemployment differ by country. (Insufficient data was available for Nigeria, so was excluded from the tests for this country only.)
- Exports of goods and services: Annual growth rate of exports of goods and services based on constant local currency. Aggregates are based on constant 2005 U.S. dollars. Exports of goods and services represent the value of all goods and other market services provided to the rest of the world. They include the value of merchandise, freight, insurance, transport, travel, royalties, license fees, and other services, such as communication, construction, financial, information, business, personal, and government services. They exclude compensation of employees and investment income (formerly called factor services) and transfer payments.
- Foreign direct investment, net inflows (% of GDP): Foreign direct investment is the net inflows of investment to acquire a lasting management interest (10 percent or more of the voting stock) in an enterprise operating in an economy other than that of the investor. It is the sum of equity capital, reinvestment of earnings, other long-term capital, and short-term capital as shown in the balance of payments. This series shows net inflows (new investment inflows less disinvestment) in the reporting economy from foreign investors, and is divided by GDP.
- This variable was multiplied by GDP to obtain the total FDI flow.

Logarithmic forms were used for all the variables.

The unit-root tests are required before the cointegration tests can be done. If the variables are stationary (as tested for in the unit-root tests), we can apply the Johansen procedure to test for

cointegration. The results above show that after differencing the variables once (in some cases twice), we find stationary variables. These stationary variables have then been used in the Johansen procedure.

The Johansen procedure has shown that all the series are stationary and cointegrated. These linear combinations (the cointegrated variables according to the Johansen procedure) may then be interpreted as long term relationships between the components.

The results for each country are found in Appendix B and are summarised as follows:

Table 10: FDI causality pattern results

South Africa			
Unit-root test	**Augmented Dickey-Fuller**	**H0: Series is non-stationary**	All series are stationary and integrated of order one
	FDI growth	Reject the null hypothesis of nonstationarity at the 5% significant levels	
	GDP Growth	Reject the null hypothesis of nonstationarity at the 5% significant levels	
	Unemployment Growths	Reject the null hypothesis of nonstationarity at the 5% significant levels	
	Current Exports Growth	Reject the null hypothesis of nonstationarity at the 5% significant levels	
Cointegration Tests	**Johansen Procedure**	**H0: Series is stationary**	All series are stationary and cointegration among the variables. These results indicate that there is a long term relationship between FDI, GDP growth, Unemployment and Current Exports in South Africa
	FDI and GDP Growth	Both the trace and λ-max tests reject the null hypothesis that the smallest eigenvalue is 0	
	FDI and Unemployment Growth	Both the trace and λ-max tests reject the null hypothesis that the smallest eigenvalue is 0	
	FDI and Current Exports Growth	Both the trace and λ-max tests reject the null hypothesis that the smallest eigenvalue is 0	
Nigeria			

Unit-root test	**Augmented Dickey-Fuller**	**H0: Series is non-stationary**	All series are stationary and integrated of order one
	FDI growth	Reject the null hypothesis of nonstationarity at the 5% significant levels	
	GDP Growth	Reject the null hypothesis of nonstationarity at the 5% significant levels	
	Current Exports Growth	Reject the null hypothesis of nonstationarity at the 5% significant levels	
Cointegration Tests	**Johansen Procedure**	**H0: Series is stationary**	All series are stationary and cointegration among the variables. These results indicate that there is a long term relationship between FDI, GDP growth and Current Exports in Nigeria
	FDI and GDP Growth	Both the trace and λ-max tests reject the null hypothesis that the smallest eigenvalue is 0	
	FDI and Current Exports Growth	Both the trace and λ-max tests reject the null hypothesis that the smallest eigenvalue is 0	
Egypt			
Unit-root test	**Augmented Dickey-Fuller**	**H0: Series is non-stationary**	All series are stationary and integrated of order one
	FDI growth	Reject the null hypothesis of nonstationarity at the 5% significant levels	
	GDP Growth	Reject the null hypothesis of nonstationarity at the 5% significant levels	
	Unemployment Growths	Reject the null hypothesis of nonstationarity at the 5% significant levels	
	Total Exports	Reject the null hypothesis of nonstationarity at the 5% significant levels	
Cointegration Tests	**Johansen Procedure**	**H0: Series is stationary**	All series are stationary and cointegration among the variables. These results indicate that there is a long term relationship between FDI, GDP growth, Unemployment and Current Exports in Egypt.
	FDI and GDP Growth	Both the trace and λ-max tests reject the null hypothesis that the smallest eigenvalue is 0	
	FDI and Unemployment Growth	Both the trace and λ-max tests reject the null hypothesis that the smallest eigenvalue is 0	
	FDI and Current Exports Growth	Both the trace and λ-max tests reject the null hypothesis that the smallest eigenvalue is 0	

The cointregration tests have shown that there is a long term relationship between FDI and GDP growth, Unemployment and Current Exports in the 3 African countries used in the analysis.

Thus we can conclude that causality does indeed exist between FDI growth and economic growth factors (GDP, Unemployment, and Current Exports) for these African countries. Which prove that more FDI into Africa will undeniably affect employment, trade, investment and lead to economic growth.

4. Results and Discussion

Regarding the success of African MNCs and their spread within Africa, we can state that the African continent is an adequate platform for investment to prosper. Our case study highlights that despite economic difficulties experienced in Africa between 1988 and 1998, the firms still embarked on FDI on the continent. This demonstrates the firms' understanding of the African market and their level of comfort, which has contributed to enhancing their efficiency as mentioned by Nockle and Yeape (2004).

The shift from traditional industries to new innovative industries has been highly beneficial with regards to technology, which has been brought to the host economies with the expansion of the firms. This, coupled with competitive domestic markets related to these industries, has contributed to the firms' competitiveness to a world standard in their respective industries, allowing these firms to establish operations outside Africa. Dangote and MTN both also operate in Asia.

The Media and Telecommunications, Consumer Goods, Financial Services and Retail industries are all labour and/or capital intensive. These are driving forces for firms to spread their operations (as emphasised by Hirsch in 1996), to take advantage of economies of scale and cheap labour in Africa. This has aided in a change in the African investment landscape where most investments in these industries were foreign.

The overall weakness of the African capital market has not been a deterrent of these firms' expansion across Africa, but given that capital markets are engines for raising funds, the development of capital markets in Africa will ease and allow further expansion of other African firms.

Promoting African firms to invest within Africa, and easing the process for African firms to do so, will then also attract further investments from outside the continent (Mijiyawa 2012). Thus

stimulating intra-African FDI may be the remedy for the low levels of FDI currently experienced in Africa.

Given the low level of intra-African trade and knowing the trade-off between trade and investment examined by Hirsch (1996), the improvement of the trade environment on the continent will undeniably increase intra-African investment. The trade barriers improvement in Africa must be seen as a necessity to reach the standard of the European Union (intra-European trade stands at 80%), which will facilitate import and exports among African countries through an efficient regional integration.

The positive impact of FDI on economic indicators of the selected African countries such as GDP, employment and Export proven by the casualty test come as a support of our statement of the need to foster intra-African FDI in remedy to increase the level of FDI flows into Africa. Given the impact of FDI on economic growth and the performance of African MNCs, promoting African firms' expansion across the continent will address the challenges faced by African countries in terms of GDP growth, unemployment and trade deficits.

The facilitation of the spill over of African owned firms across the continent through the improvement of trade and investment environment in Africa and the back of African's government to those firms will be a determinant in increasing intra-African FDI.

5. Conclusion

The positive impact of FDI on economic growth of both host and investing countries has led most African governments to improve their business environments with the intention of attracting more FDI; but still, FDI levels remain low. Support from governments and regional institutions in fostering more African firms to expand within Africa, will increase the level of FDI across the continent and as such, cultivate economic growth.

We observed that successful African MNCs have been able to expand their operations across the continent despite the investment landscape and the economic difficulties faced by African countries. We can then suggest that instead of focusing on attracting international FDI, Africa should focus on enhancing the spread of African firms across the continent through the improvement of intra-African trade, regional integration and the promotion of consumer-facing industries. The development of the stock market in Africa will assist greatly in supporting firms to expand and diversify the sourcing of funds and investments on the continent.

The promotion of intra- African FDI as solution to the low level of FDI flows in Africa would be more conclusive if we could establish the positive impact of intra-African FDI on African countries compared to international FDI. Due to the lack of data, instead we have established the positive impact of FDI on African countries economic indicators such as GDP, employment and current exports. As mentioned by Mijiyawa (2012) more FDI today will attract further FDI in the future, which shows that by promoting African firms to invest within Africa, and easing the process for African firms to do so, will attract more investments from outside the continent.

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Appendix A

African FDI Outflows

FDI Outflow from Originating Country												
	2001	**2002**	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**
Angola												
Total	- 38	5	- 10	- 4	14	130	308	- 178	208	- 74	- 23	290
Intra-African FDI Outflows	-	-	-	-	-	-	-	-	-	1	1	-
FDI Outflow outside Africa	- 38	5	- 10	- 4	14	130	308	- 178	208	- 74	- 24	290
Algeria												
Total	12	65	12	14	13	8	52	302	112	129	160	- 111
Intra-African FDI Outflows	7	3	1	5	4	-	3	2	5	8	4	-
FDI Outflow outside Africa	4	63	11	9	8	8	49	300	106	121	157	- 111
Botswana												
Total	- 1	2	1	3	2	25	10	26	0	- 10	49	22
Intra-African FDI Outflows	-	2	1	3	4	25	10	26	0	- 10	49	12
FDI Outflow outside Africa	- 1	-	-	-	- 1	-	-	-	-	-	-	10
Cote d'Ivoire												
Total	3	37	7	- 26	5	96	- 10	83	- 18	21	- 35	- 34
Intra-African FDI Outflows	1	-	-	-	-	-	-	-	-	-	-	22
FDI Outflow outside Africa	2	37	7	- 26	5	96	- 10	83	- 18	21	- 35	- 56
Ghana												
Total	32	21	58	- 1	6	- 2	- 1	- 0	20	2	- 78	248
Intra-African FDI Outflows	23	23	79	-	-	-	-	-	-	-	- 78	259
FDI Outflow outside Africa	8	- 2	- 21	- 1	6	- 2	- 1	- 0	20	2	- 0	- 11
Kenya												
Total	- 20	25	48	75	81	113	136	132	125	189	317	133
Intra-African FDI Outflows	- 21	27	48	63	78	109	141	121	61	172	336	102
FDI Outflow outside Africa	1	- 2	-	11	3	4	- 5	10	64	17	- 19	31
Mauritius												
Total	3	9	41	35	66	36	58	57	44	130	89	88
Intra-African FDI Outflows	2	8	41	21	30	27	38	21	21	42	49	51
FDI Outflow outside Africa	1	1	0	15	36	9	20	36	23	88	40	37

Mozambique												
Total	- 1	3	- 1	- 1	-	2	2	220	1	- 10	10	32
Intra-African FDI Outflows	-	3	- 1	- 1	-	-	3	-	- 1	- 11	-	-
FDI Outflow outside Africa	- 1	-	-	-	-	2	- 1	220	2	0	10	32
Zambia												
Total	0	-	-	- 5	6	-	- 3	1	- 27	5	- 0	10
Intra-African FDI Outflows	1	-	-	-	6	-	-	2	1	3	2	-
FDI Outflow outside Africa	- 1	-	-	- 5	-	-	- 3	- 1	- 28	3	- 2	10

African FDI Inflows

FDI Inflow to Host Country from Source												
	2001	**2002**	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**
Angola												
Total	429	- 475	- 85	91	974	1 300	- 383	505	-1 025	3 856	2 212	1 941
Intra-African FDI	-	-	-	-	-	-	-	-	-	-	-	-
FDI from Outside Africa	429	- 475	- 85	91	974	1 300	- 383	505	-1 025	3 856	2 212	1 941
Algeria												
Total	1 113	1 072	854	722	1 095	1 795	1 662	2 594	2 761	2 237	-	-
Intra-African FDI	364	98	287	- 152	82	168	117	268	160	51	-	-
FDI from Outside Africa	749	974	566	874	1 013	1 628	1 545	2 326	2 601	2 186	-	-
Botswana												
Total	20	- 3	- 47	- 10	15	3	2	25	35	114	36	27
Intra-African FDI	-	-	-	-	-	-	-	-	-	-	-	-
FDI from Outside Africa	20	- 3	- 47	- 10	15	3	2	25	35	114	36	27
Cote d'Ivoire												
Total	45	- 41	21	438	184	121	59	- 104	318	313	14	18
Intra-African FDI	-	-	-	-	-	-	-	-	80	105	-	-
FDI from Outside Africa	45	- 41	21	438	184	121	59	- 104	238	208	14	18
Ghana												
Total	101	- 30	- 0	150	28	737	2	80	47	535	210	1 060
Intra-African FDI	-	-	-	-	-	-	-	-	-	-	-	-
FDI from Outside Africa	101	- 30	- 0	150	28	737	2	80	47	535	210	1 060
Kenya												
Total	93	58	111	- 33	213	25	827	- 5	451	366	214	- 191
Intra-African FDI	-	-	-	-	-	-	-	-	-	-	1	-

FDI from Outside Africa	93	58	111	- 33	213	25	827	- 5	451	366	213	- 191
Mauritius												
Total	32	33	70	65	95	228	368	401	275	453	329	422
Intra-African FDI	21	11	43	1	5	9	36	68	33	66	88	101
FDI from Outside Africa	12	22	28	64	90	218	332	334	242	387	242	320
Mozambique												
Total	-	-	-	245	98	181	427	592	893	1 018	2 663	5 218
Intra-African FDI	-	-	-	84	25	69	207	241	240	378	591	429
FDI from Outside Africa	-	-	-	161	73	112	221	351	652	640	2 072	4 789
Zambia												
Total	-	-	-	-	-	-	1 324	-	695	1 729	1 109	1 732
Intra-African FDI	-	-	-	-	-	-	127	-	13	127	- 73	620
FDI from Outside Africa	-	-	-	-	-	-	1 197	-	681	1 602	1 181	1 112

Appendix B

1. South Africa

Summary Statistics, using the observations 1995 - 2014

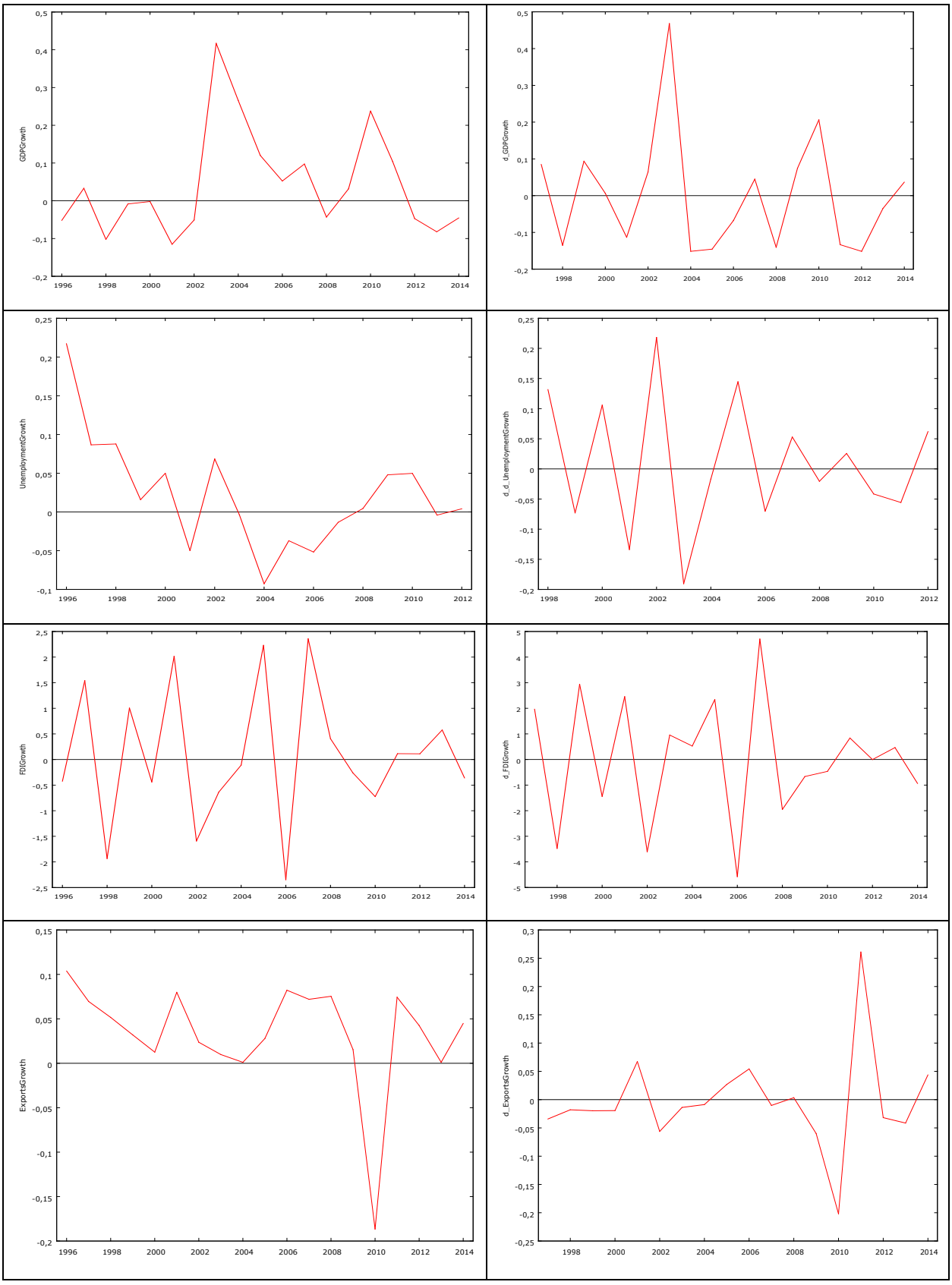
(missing values were skipped)

Variable	Mean	Median	Minimum	Maximum
GDPGrowth	0,0426853	-0,00197873	-0,115267	0,417135
FDIGrowth	0,0802995	-0,110197	-2,34794	2,35781
UnemploymentGrowth	0,0223229	0,00447430	-0,0927305	0,217209
ExportsGrowth	0,033313	0,042523	-0,18662	0,10380
Variable	Std. Dev.	C.V.	Skewness	Ex. kurtosis
GDPGrowth	0,139056	3,25771	1,25290	0,966518
FDIGrowth	1,32668	16,5216	0,112063	-0,584842
UnemploymentGrowth	0,0713741	3,19734	0,973584	1,43152
ExportsGrowth	0,061559	1,8479	-2,4242	6,7492
Variable	5% Perc.	95% Perc.	IQ range	Missing obs.
GDPGrowth	-0,115267	0,417135	0,155189	1
FDIGrowth	-2,34794	2,35781	1,64126	1
UnemploymentGrowth	undefined	undefined	0,0844316	3
ExportsGrowth	-0,18662	0,10380	0,061815	1

We assess the stationarity and cointegration in the sections below.

Unit-root test

The time-series plots of the series and the first differenced are shown below:


GDPGrowth
d_GDPGrowth
UnemploymentGrowth
d_d_UnemploymentGrowth
FDIGrowth
d_FDIGrowth
ExportsGrowth
d_ExportsGrowth

The graphs above shows the first-differenced data, except for unemployment growth rate which is stationary at the second lag. Since the data are around the 0 line, it indicates mean reversion, so the data seems stationary. This can be tested for using the Augmented Dickey-Fuller test. The results are shown below:

The Augmented Dickey-Fuller tests were used to test the hypothesis that the series (FDI growth, GDP Growth and Unemployement Growths) are nonstationary. The results were as follows:

Augmented Dickey-Fuller test for d_GDPGrowth including one lag of (1-L)d_GDPGrowth (max was 1, criterion modified AIC) sample size 16 unit-root null hypothesis: a = 1 test with constant model: (1-L)y = b0 + (a-1)*y(-1) + ... + e 1st-order autocorrelation coeff. for e: -0,006 estimated value of (a - 1): -1,58973 test statistic: tau_c(1) = -4,44004 asymptotic p-value 0,0001	Augmented Dickey-Fuller test for d_d_UnemploymentGrowth including one lag of (1-L)d_d_UnemploymentGrowth (max was 1, criterion modified AIC) sample size 13 unit-root null hypothesis: a = 1 test with constant model: (1-L)y = b0 + (a-1)*y(-1) + ... + e 1st-order autocorrelation coeff. for e: -0,140 estimated value of (a - 1): -2,45411 test statistic: tau_c(1) = -4,7467 asymptotic p-value 6,54e-005	Augmented Dickey-Fuller test for d_FDIGrowth including one lag of (1-L)d_FDIGrowth (max was 1, criterion modified AIC) sample size 16 unit-root null hypothesis: a = 1 test with constant model: (1-L)y = b0 + (a-1)*y(-1) + ... + e 1st-order autocorrelation coeff. for e: -0,213 estimated value of (a - 1): -2,26473 test statistic: tau_c(1) = -4,88782 asymptotic p-value 3,444e-005	Augmented Dickey-Fuller test for d_ExportsGrowth including one lag of (1-L)d_ExportsGrowth (max was 1, criterion modified AIC) sample size 16 unit-root null hypothesis: a = 1 test with constant model: (1-L)y = b0 + (a-1)*y(-1) + ... + e 1st-order autocorrelation coeff. for e: -0,070 estimated value of (a - 1): -1,96456 test statistic: tau_c(1) = -4,6122 asymptotic p-value 0,0001184

All three tests reject the null hypothesis of nonstationarity at the 5% significant levels. This implies that FDI, GDP, Current Exports and Unemployment are all stationary and integrated of order one.

Cointegration Tests

To test whether a positive long-term link exists between FDI and GDP as well as FDI and Unemployment, the Johansen procedure was used to see if these series are cointegrated.
The results are shown in the table below:

Johansen test:

Number of equations = 4

Lag order = 1

Estimation period: 1999 - 2012 (T = 14)

Case 3: Unrestricted constant

Log-likelihood = 83,5878 (including constant term: 43,8575)

Rank	Eigenvalue	Trace test	p-value	Lmax test	p-value
0	0,99717	146,64	[0,0000]	82,157	[0,0000]
1	0,90954	64,485	[0,0000]	33,640	[0,0003]
2	0,74846	30,845	[0,0001]	19,322	[0,0060]
3	0,56092	11,523	[0,0007]	11,523	[0,0007]

Corrected for sample size (df = 9)

Rank	Trace test	p-value
0	146,64	[0,0000]
1	64,485	[0,0002]
2	30,845	[0,0010]
3	11,523	[0,0039]

eigenvalue 0,99717 0,90954 0,74846 0,56092

beta (cointegrating vectors)

d_GDPGrowth 0,61384 2,7805 4,1720 6,0715

d_FDIGrowth -0,18599 0,32457 -0,088268 -0,11930

d_ExportsGrowth 0,021824 1,7211 13,397 0,51333

d_d_Unemployment~ 6,9936 7,7885 3,5667 0,31007

alpha (adjustment vectors)

d_GDPGrowth 0,14159 -0,054716 0,010665 -0,14920

d_FDIGrowth 2,8640 -3,2639 0,40623 1,2011

d_ExportsGrowth 0,029751 0,019750 -0,11357 0,061865

d_d_Unemployment~ -0,18080 -0,080437 -0,0011127 -0,017028

renormalized beta

d_GDPGrowth 1,0000 8,5665 0,31142 19,581

d_FDIGrowth -0,30299 1,0000 -0,0065888 -0,38475

d_ExportsGrowth 0,035553 5,3025 1,0000 1,6555

d_d_Unemployment~ 11,393 23,996 0,26624 1,0000

renormalized alpha

d_GDPGrowth 0,086911 -0,017759 0,14288 -0,046262

d_FDIGrowth 1,7580 -1,0594 5,4421 0,37243

d_ExportsGrowth 0,018262 0,0064103 -1,5214 0,019182

d_d_Unemployment~ -0,11098 -0,026108 -0,014906 -0,0052798

long-run matrix (alpha * beta')

	d_GDPGrowth	d_FDIGrowth	d_ExportsGrowth	d_d_Unemployment~
d_GDPGrowth	-0,92659	-0,027235	-0,024789	0,55581
d_FDIGrowth	1,6702	-1,7712	0,50376	-3,5705
d_ExportsGrowth	-0,025016	0,0035209	-1,4550	-0,023989
d_d_Unemployment~	-0,44266	0,0096495	-0,16603	-1,9002

Both the trace and λ-max tests reject the null hypothesis that the smallest eigenvalue is 0, so we may conclude that the series are in fact stationary.

2. Nigeria

Unemployment data for Nigeria was only available for six years and thus the impact of FDI on unemployment was excluded for Nigeria.

Summary Statistics, using the observations 1995 - 2015

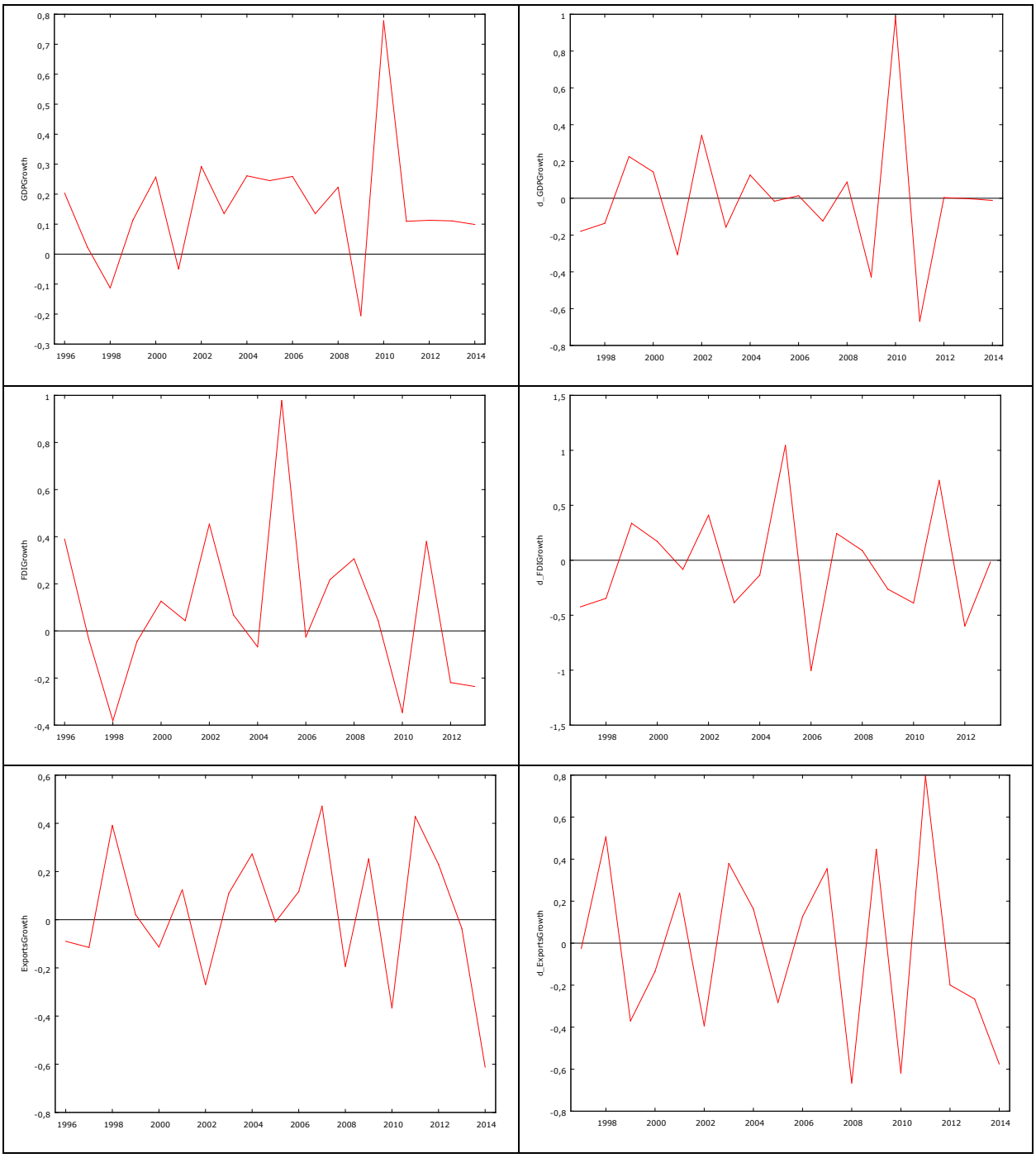
(missing values were skipped)

Variable	Mean	Median	Minimum	Maximum
GDPGrowth	0,157446	0,134917	-0,205107	0,778223
FDIGrowth	0,0915603	0,0430562	-0,381370	0,977846
ExportsGrowth	0,032166	0,020651	-0,61198	0,47136
Variable	Std. Dev.	C.V.	Skewness	Ex. kurtosis
GDPGrowth	0,200923	1,27614	1,17248	3,26212
ExportsGrowth	0,28157	8,7538	-0,38524	-0,24290
FDIGrowth	0,329902	3,60311	0,911050	0,999067
Variable	5% Perc.	95% Perc.	IQ range	Missing obs.
GDPGrowth	-0,205107	0,778223	0,158157	2
FDIGrowth	undefined	undefined	0,430160	3
ExportsGrowth	-0,61198	0,47136	0,36799	1

We assess the stationarity and cointegration in the sections below.

Unit-root test

The time-series plots of the series and the first differenced are shown below:



The graphs above shows the first-differenced data. Since the data are around the 0 line, it indicates mean reversion, so the data seems stationary. This can be tested for using the Augmented Dickey-Fuller test. The results are shown below:

The Augmented Dickey-Fuller tests were used to test the hypothesis that the series (FDI growth, GDP Growths and Export Growth) are nonstationary. The results were as follows:

Augmented Dickey-Fuller test for d_GDPGrowth including one lag of (1-L)d_GDPGrowth (max was 1, criterion modified AIC) sample size 16 unit-root null hypothesis: a = 1 test with constant model: (1-L)y = b0 + (a-1)*y(-1) + ... + e 1st-order autocorrelation coeff. for e: -0,161 estimated value of (a - 1): -2,40816 test statistic: tau_c(1) = -5,51266 asymptotic p-value 1,625e-006	Augmented Dickey-Fuller test for d_FDIGrowth including one lag of (1-L)d_FDIGrowth (max was 1, criterion modified AIC) sample size 15 unit-root null hypothesis: a = 1 test with constant model: (1-L)y = b0 + (a-1)*y(-1) + ... + e 1st-order autocorrelation coeff. for e: -0,148 estimated value of (a - 1): -2,54498 test statistic: tau_c(1) = -6,66429 asymptotic p-value 2,578e-009	Augmented Dickey-Fuller test for d_ExportsGrowth including one lag of (1-L)d_ExportsGrowth (max was 1, criterion modified AIC) sample size 16 unit-root null hypothesis: a = 1 test with constant model: (1-L)y = b0 + (a-1)*y(-1) + ... + e 1st-order autocorrelation coeff. for e: -0,167 estimated value of (a - 1): -2,05387 test statistic: tau_c(1) = -3,87163 asymptotic p-value 0,002265

All three tests reject the null hypothesis of nonstationarity at the 5% significant levels. This implies that FDI, GDP and Exports are all stationary and integrated of order one.

Cointegration Tests

To test whether a positive long-term link exists between FDI and GDP as well as FDI and Exports, the Johansen procedure was used to see if these series are cointegrated. The results are shown in the table below:

Johansen test:

Number of equations = 3

Lag order = 1

Estimation period: 1998 - 2013 (T = 16)

Case 3: Unrestricted constant

Log-likelihood = 45,0546 (including constant term: -0,351418)

Rank Eigenvalue Trace test p-value Lmax test p-value

0	0,92973	84,433	[0,0000]	42,486 [0,0000]
1	0,80363	41,948	[0,0000]	26,044 [0,0003]
2	0,62989	15,903	[0,0001]	15,903 [0,0001]

Corrected for sample size (df = 12)

Rank Trace test p-value

0	84,433	[0,0000]
1	41,948	[0,0000]
2	15,903	[0,0004]

eigenvalue	0,92973	0,80363	0,62989

beta (cointegrating vectors)

d_GDPGrowth	-1,1279	0,91756	4,6602
d_FDIGrowth	1,4392	1,3194	0,76714
d_ExportsGrowth	0,71036	-1,1562	3,9333

alpha (adjustment vectors)

d_GDPGrowth	0,41167	-0,39975	-0,14295
d_FDIGrowth	-0,65888	-0,42719	0,20292
d_ExportsGrowth	-0,44940	0,50121	-0,15887

renormalized beta

d_GDPGrowth	1,0000	0,69546	1,1848
d_FDIGrowth	-1,2760	1,0000	0,19504
d_ExportsGrowth	-0,62981	-0,87630	1,0000

renormalized alpha

d_GDPGrowth	-0,46432	-0,52741	-0,56227
d_FDIGrowth	0,74315	-0,56362	0,79813
d_ExportsGrowth	0,50688	0,66128	-0,62488

long-run matrix (alpha * beta')

	d_GDPGrowth	d_FDIGrowth	d_ExportsGrowth

d_GDPGrowth -1,4973 -0,044583 0,19233

d_FDIGrowth 1,2968 -1,3562 0,82399

d_ExportsGrowth 0,22642 -0,10739 -1,5236

Both the trace and λ-max tests reject the null hypothesis that the smallest eigenvalue is 0, so we may conclude that the series are in fact stationary.

3. Egypt

Summary Statistics, using the observations 1995 - 2015

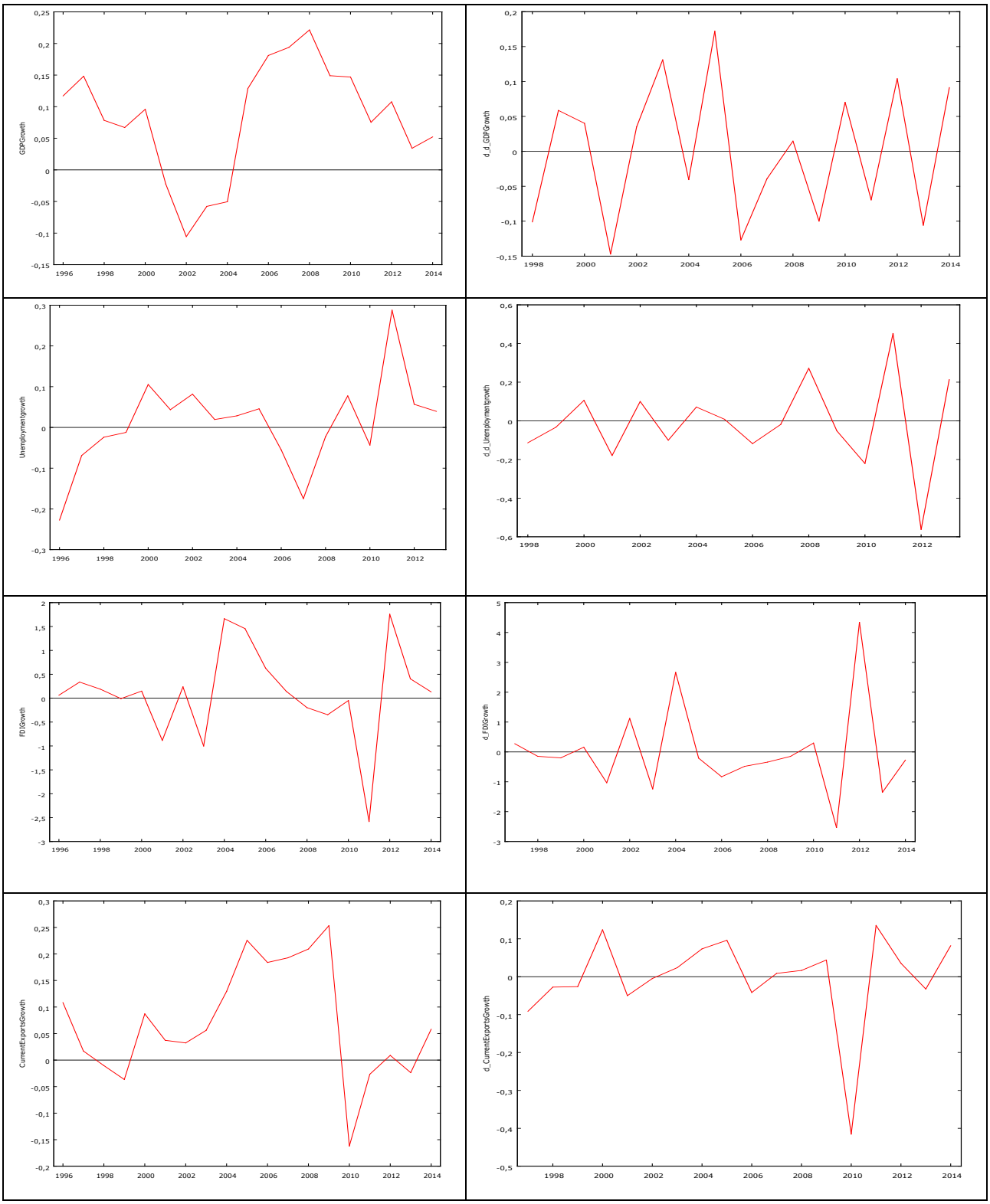
(missing values were skipped)

Variable	Mean	Median	Minimum	Maximum
GDPGrowth	0,0426853	-0,00197873	-0,115267	0,417135
FDIGrowth	0,0802995	-0,110197	-2,34794	2,35781
UnemploymentGrowth	0,0223229	0,00447430	-0,0927305	0,217209
ExportsGrowth	0,070562	0,056078	-0,16199	0,25339
Variable	Std. Dev.	C.V.	Skewness	Ex. kurtosis
GDPGrowth	0,139056	3,25771	1,25290	0,966518
FDIGrowth	1,32668	16,5216	0,112063	-0,584842
UnemploymentGrowth	0,0713741	3,19734	0,973584	1,43152
ExportsGrowth	0,10796	1,5300	-0,023370	-0,51169
Variable	5% Perc.	95% Perc.	IQ range	Missing obs.
GDPGrowth	-0,115267	0,417135	0,155189	1
FDIGrowth	-2,34794	2,35781	1,64126	1
UnemploymentGrowth	undefined	undefined	0,0844316	3
ExportsGrowth	-0,16199	0,25339	0,19437	1

We assess the stationarity and cointegration in the sections below.

Unit-root test

The time-series plots of the series and the first differenced are shown below:



The graphs above show the first-differenced data for FDI growth and Current Export Growth, but the second difference for GDP growth and unemployment growth, which is stationary at the second lag. Since the data are around the 0 line, it indicates mean reversion, so the data seems stationary. This can be tested for using the Augmented Dickey-Fuller test. The results are shown below:

The Augmented Dickey-Fuller tests were used to test the hypothesis that the series (FDI growth, GDP Growths) are nonstationary. The results were as follows:

Augmented Dickey-Fuller test for d_d_GDPGrowth including one lag of (1-L)d_d_GDPGrowth (max was 1, criterion modified AIC) sample size 15 unit-root null hypothesis: a = 1 test with constant model: (1-L)y = b0 + (a-1)*y(-1) + ... + e 1st-order autocorrelation coeff. for e: 0,014 estimated value of (a - 1): -1,80636 test statistic: tau_c(1) = -3,604 asymptotic p-value 0,005714	Augmented Dickey-Fuller test for d_d_Unemploymentgrowth including one lag of (1-L)d_d_Unemploymentgrowth (max was 1, criterion modified AIC) sample size 14 unit-root null hypothesis: a = 1 test with constant model: (1-L)y = b0 + (a-1)*y(-1) + ... + e 1st-order autocorrelation coeff. for e: 0,014 estimated value of (a - 1): -3,1973 test statistic: tau_c(1) = -6,16573 asymptotic p-value 4,735e-008	Augmented Dickey-Fuller test for d_FDIGrowth including one lag of (1-L)d_FDIGrowth (max was 1, criterion modified AIC) sample size 16 unit-root null hypothesis: a = 1 test with constant model: (1-L)y = b0 + (a-1)*y(-1) + ... + e 1st-order autocorrelation coeff. for e: -0,023 estimated value of (a - 1): -2,05836 test statistic: tau_c(1) = -4,14533 asymptotic p-value 0,0008114	Augmented Dickey-Fuller test for d_CurrentExportsGrowth including one lag of (1-L)d_CurrentExportsGrowth (max was 1, criterion modified AIC) sample size 16 unit-root null hypothesis: a = 1 test with constant model: (1-L)y = b0 + (a-1)*y(-1) + ... + e 1st-order autocorrelation coeff. for e: -0,028 estimated value of (a - 1): -1,58916 test statistic: tau_c(1) = -3,62583 asymptotic p-value 0,005314

All three tests reject the null hypothesis of nonstationarity at the 5% significant levels. This implies that FDI, GDP, Unemployment and Current Exports are all stationary and integrated of order one.

Cointegration Tests

To test whether a positive long-term link exists between FDI and GDP, FDI and Current Exports, as well as FDI and Unemployment, the Johansen procedure was used to see if these series are cointegrated. The results are shown in the table below:

Johansen test:

Number of equations = 4

Lag order = 1

Estimation period: 1999 - 2013 (T = 15)

Case 3: Unrestricted constant

Log-likelihood = 68,4147 (including constant term: 25,8466)

Rank	Eigenvalue	Trace test	p-value	Lmax test	p-value
0	0,93625	112,16	[0,0000]	41,292	[0,0002]
1	0,88841	70,870	[0,0000]	32,893	[0,0004]
2	0,79122	37,977	[0,0000]	23,497	[0,0009]
3	0,61915	14,480	[0,0001]	14,480	[0,0001]

Corrected for sample size (df = 10)

Rank	Trace test	p-value
0	112,16	[0,0000]
1	70,870	[0,0000]
2	37,977	[0,0001]
3	14,480	[0,0010]

eigenvalue	0,93625	0,88841	0,79122	0,61915

beta (cointegrating vectors)

d_FDIGrowth	-0,27365	0,69459	0,18542	0,29347
d_CurrentExports~	2,6725	-3,2402	-5,1083	6,3972
d_d_Unemployment~	2,4707	4,4910	3,5477	-0,23713

d_d_GDPGrowth 0,38316 -6,7280 8,1270 3,2883

alpha (adjustment vectors)

d_FDIGrowth 2,2521 -0,91664 -0,63176 -0,92182

d_CurrentExports~ -0,077001 0,0038910 0,10300 -0,11373

d_d_Unemployment~ -0,38172 -0,10211 -0,0065929 -0,052850

d_d_GDPGrowth 0,036639 0,095779 -0,094632 -0,052807

renormalized beta

d_FDIGrowth 1,0000 -0,21437 0,052265 0,089247

d_CurrentExports~ -9,7662 1,0000 -1,4399 1,9454

d_d_Unemployment~ -9,0289 -1,3860 1,0000 -0,072112

d_d_GDPGrowth -1,4002 2,0764 2,2908 1,0000

renormalized alpha

d_FDIGrowth -0,61628 2,9701 -2,2413 -3,0312

d_CurrentExports~ 0,021071 -0,012608 0,36541 -0,37399

d_d_Unemployment~ 0,10446 0,33086 -0,023389 -0,17379

d_d_GDPGrowth -0,010026 -0,31034 -0,33572 -0,17365

long-run matrix (alpha * beta')

	d_FDIGrowth	d_CurrentExports~	d_d_Unemployment~	d_d_GDPGrowth
d_FDIGrowth	-1,6406	6,3190	-0,57493	-1,1355
d_CurrentExports~	0,0094950	-1,4721	0,21961	0,40743
d_d_Unemployment~	0,016798	-0,99370	-1,4126	0,31338
d_d_GDPGrowth	0,023457	-0,066831	0,19747	-1,5731

Both the trace and λ-max tests reject the null hypothesis that the smallest eigenvalue is 0, so we may conclude that the series are in fact stationary.