THE IMPACT OF FOREIGN DIRECT INVESTMENT ON EXPORT DIVERSIFICATION: A PANEL STUDY ON COMMON MARKET FOR EASTERN AND SOUTHERN AFRICA

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Abstract

The Impact of Foreign Direct Investment on Export Diversification: A panel study on COMESA members

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The main objective of this paper is to investigate the impact FDI has on export diversification in the Common Market for Eastern and Southern Africa (COMESA). The paper employs two measures for the two margins of diversification. Diversification at the intensive margin is measured by Herfindahl index. Diversification at the extensive margin is measured by a count indicator of new export lines. Panel data econometric methods are used; specifically a random effects regression is used as per the choice of a Hausman test. Since linear models are inappropriate for count variables, the paper used a Poisson regression method to investigate the impact of FDI on new export lines.

The findings suggest that FDI does not help COMESA countries diversify at the intensive margin but has a significant positive impact on diversification at the extensive margin. The results can be explained as follows: Even though FDI helps COMESA countries export new products, these products might still be a very small proportion of the export earnings. The Herfindahl index is sensitive to changes in shares of export earnings but it might not pick up small changes in shares. This is because exporting new products doesn't necessarily mean that the export shares of the major traditional export items decline significantly. It is concluded that COMESA countries should continue to pursue FDI favorable policies like tax incentives, administrative support, customs incentives etc. since FDI expands their export basket.

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Table of Contents

List of Tables

Page

List of Figures

Page

List of Acronyms

COMESA	Common Market for Eastern and Southern Africa
FDI	Foreign Direct Investment
GDP	Gross Domestic Product
IMF	International Monetary Fund
ODA	Official Development Assistance
RIA	Regional Integration Arrangement
UNCTAD	United Nations Conference on Trade and Development
WDI	World Development Indicators
WTO	World Trade Organization
UNECA	United Nations Economic Commission for Africa
USD	United States Dollar
MNCs	Multi-national Companies
PTA	Preferential Trade Area
MDGs	Millennium Development Goals
SADC	Southern African Development Community
EAC	East African Community

CHAPTER ONE: INTRODUCTION

1.1 BACKGROUND OF THE STUDY

In the face of the slow recovery of the global economy, Africa continues to show a resilient economic performance. Throughout 2013 and 2014, the macroeconomic prospects of the continent remained favorable with growth rate averaging about 4 percent, though the performance varies across the regions. The COMESA region achieved an average growth rate of 6.6 percent in 2013. The region's growth benefited from a variety of factors of which relatively high commodity prices, increased trade and investment ties with emerging economies, greater domestic demand and public spending on infrastructure are just a few. Lately the region has experienced a dip in economic growth, which is mainly attributed to a slowdown in global economic growth and its far reaching consequences on trade, FDI, ODA and remittances. (COMESA, 2014)

Going forward the challenge for Africa and specifically COMESA is ensuring that global value chains impact the continent and its regions positively by integrating them in a bid to participate, effectively, in the global economy. This is to be achieved by opening up economies, infrastructure development and investing in human capital. Economic growth needs to be sustained and diversified so as to create a firm basis for structural transformation. (COMESA, 2014)

The COMESA wide industrial policy, which is currently under development, emphasizes the region's need to diversify towards value addition. This will require the promotion of global value chains (including trade and FDI) and the creation of an environment for inclusive industrial development in the region. .Lately COMESA has experienced a decline of trade with the rest of the world, which is manifested by the significant fall of overall trade from 295 billion dollars in 2012 to 283 billion dollars in 2013. This was mainly because of the fall of exports by 9.6 percent to 133 billion USD and the stagnation of imports at around 170 billion USD which could be attributed to the slow recovery of the global economy. The European Union, China and COMESA (intra-regional trade) remain the region's major trading partners. The decline in trade was accompanied by declines in FDI inflows of 16 percent. This was mainly a result of low FDI flows to Egypt, Democratic Republic of Congo, Libya, Sudan and Uganda as a result of

instability in some of these countries. Efforts of the COMESA Regional Investment Agency have led countries like the UAE, UK, India, the US and China to invest in the region. (COMESA, 2014).

Many studies have directed the efforts of developing countries to the diversification of their production structure and exports. At first the popular view was the use of restrictive trade policies and import substitution as instruments to diversify. But the failures that ensued these policies and the accompanying success of East Asian countries that followed outward oriented development policies, led to an overall consensus that export-led policies perform better. (Iwamoto and Nabeshima, 2012)

What many developing countries turned to, in order to enhance their export diversification and thereby root the development on sustainable grounds, is the attraction of Foreign Direct Investment. The expectation that FDI has a direct advantage of bringing in additional capital and creating new employment augmented with its indirect spillover effects on economy wide productivity, technology transfer and enhancement of export capabilities, has led governments to pursue incentive based competitive FDI policies. (Iwamoto and Nabeshima, 2012)

As mentioned above one of the ways that FDI could support the domestic economy is through the improvement of the export capabilities. According to UNCTAD (2005) one of the factors that are likely to affect the export performance of a country is Foreign Direct Investment. This study indicated that there is a positive and significant relationship between export performance and capital formation and U-shaped relationship between export performance and FDI. This paper also asserts that the experience in a number of countries suggests that FDI strongly contributes to the diversification of exports. For instance it has been well documented that FDI inflows to Singapore and China have helped to increase the technological content of exports by strongly supporting the development of export supply capacity, including knowledge based industries.

In light of this it is imperative to ask what the contribution of FDI to COMESA's export diversification has been. The lack of consensus on this link coupled with the significant flow of FDI to the region as well as in the global economy makes this issue one that is important to consider.

1.2 STATEMENT OF THE PROBLEM

Although Africa has shown a commendable effort to achieve the MDGs, including reduction in child and maternal mortality rates, attainment of universal primary education and improvement in gender parities, countries are now looking towards a post-MDG agenda that emphasizes economic inclusion and structural transformation. Out of a series of consultations, initiated by various development agencies, emerged "Africa's Common Position". This underlines structural transformation and green growth, innovation and technology transfer, human capital development and sustainable financing and partnerships as the strategic directions for the future. In line with this African countries are looking towards FDI as a means to alleviate shortage of domestic savings and enhancing structural transformation and economic growth (COMESA, 2015). As Parteka and Tamberi (2011) asserted, diversification originates from structural change, which is a multifaceted issue concerning a deep transformation of economies along their development paths, with strong interconnections and mutual dependence among its multiple sides.

The theoretical reasoning behind the efforts to attract FDI to support diversification of exports is that MNCs have increased capability to access new overseas markets and increase competition in the host country. Moreover these firms are well connected globally on different tiers of the process from financial markets to transportation networks and consumer outlets. The improved capabilities of MNCs to launch new products and build integrated international production systems (i.e. global value chains) are also thought to contribute to the increased export diversification of host countries. (Remla, 2012, Menyechel 2008)

The empirical investigation of the foregoing has been conflicting to say the least. Bebeczuk and Berrettoni (2006) asked "what determines export diversification?" Their query lead them to commence an empirical investigation that involves 56 countries and 32 years. Their results show that even though a multitude of factors affect export diversification, like credit infrastructure, GDP, investment rate, they could not find any significant relationship between FDI and export diversification. Kamuganga (2012) uses a conditional logit technique and bilateral trade flow data for the period 1995-2009 to investigate the relationship between FDI and export diversification. In this study the sign of the coefficient of FDI was found to be negative

signifying that FDI inflows to African countries diminish the likelihood of an African nation exporting across a new-product and new-market margin.

In clear contrast Tadesse and Shukrall (2013) investigate the relationship between FDI and export diversification and find that FDI significantly and positively affects export diversification and this link is even stronger for developing countries. They explain that the conflicting empirical results about the FDI-Diversification link could be because this link is not robust to sample composition, reference period and econometric specification. Iwamato and Nabeshima (2012) also find evidence of a positive effect of FDI on export diversification by using a dynamic panel model.

But one could draw a conjecture that since this link is not sample- robust, and it has not been investigated in the COMESA region, then it is worthy to investigate it for this region. But the lack of research on this area for COMESA is not the only motive for this investigation. A lot of the research (like Bebeczuk and Berttoni (2006), Ferdous and Binti (2011) and Iwamato and Nabeshima (2012)) on the FDI-Diversification link uses the Herfindahl index as the appropriate measure for export diversification. And it is not the intention of this paper to discount the usefulness of this measure. But it is also important to note that export diversification itself has two dimensions; intensive and extensive and the Herfindahl index is a good measure of diversification at the intensive margin. But what about diversification along new export lines (at the extensive margin)?

Well Carrere et al (2007), in investigating what the relationship between export diversification and economic growth is, account for diversification at the extensive margin by including a count variable for the number of new export lines that have been inactive for at least the past two years and stayed active for at least the next two years. The notion behind this measure is the idea that imperfectly informed entrepreneurs search for export opportunities; but these entrepreneurs are uncertain about production costs and foreign demand, so they are essentially gambling on their success. If they fail, leading to short export spells, then they will try again in a few months or years and hence there will be more discoveries and new products. This count variable is a good measure of the extensive margin, and it is the contention of this paper that it should be used complementarily with the Herfindahl index. Most works limit themselves either to the intensive margin or the extensive margin of export diversification. But if we examine both margins at the

same time then we can better understand how FDI promotes export diversification. Specifically we might be able to answer the question "On which margin is FDI helping COMESA diversify its exports?" The answer to this question could be on both margins or on none of the margins. So this paper adds value by investigating the effect of FDI on export diversification both at the intensive and extensive margin.

The present paper used the adoption of Melitz's model to explain export diversification used in Jayaweera (2009). Since there is hardly any research on how FDI affects the diversification and concentration of exports in the COMESA region, the present paper employed measures of diversification (i.e. Herfindahl index) and a measure of new export lines based on three digit level SITC revision 3 commodity classification from UNCTAD data base to arrive at an understanding of the relationship between FDI and export diversification. To properly account for the determination of export diversification, the present paper also included other explanatory variables like GDP per capita, infrastructure level, the level of development, trade openness, landlocked dummy, exchange rate, WTO dummy and others.

1.3 OBJECTIVES OF THE STUDY

The general objective of this paper is to examine the impact of FDI on export diversification in COMESA.

The specific objectives are:

- To investigate if FDI inflow has any significant positive effect on export diversification as measured by the Herfindahl index, leading to more exports of the same goods
- To investigate if FDI inflow has any significant positive effect on export diversification as measured by the number of new export lines, leading to a larger set of goods

1.4 RESEARCH HYPOTHESIS

Theoretically FDI is supposed to bring in capital, technology, expertise along with better access to international markets. It is believed that the export diversifying effect of FDI arises from the higher tendency of MNCs to be export oriented and through spillover effects. It is also argued that the export activities of MNCs reduce the export costs of their domestic counterparts leading to an increase in the number of active export lines and also to intensive diversification. In light of

the purported effect of FDI on export diversification, it is hypothesized in the present paper that FDI inflow has a positive and significant impact on export diversification in COMESA.

1.5 SIGNIFICANCE OF THE STUDY

The omnipotent presence of export led and FDI led growth strategies in the industrialization and transformation efforts of developing countries have led many researchers to ask how FDI and exports complement each other. Specifically the question "Does FDI promote Export Diversification?" has been asked most frequently.

A preliminary review of the literature shows that there is no palpable evidence as to the effect of FDI on export diversification. Some research findings support the assertion that FDI enhances export diversification and others reject it. Therefore it is necessary to provide further evidence on this relationship from COMESA's perspective. To address the export diversification domain, the present paper used indicators like Herfindahl index and count indicator of the number of new export lines.

1.6 DATA SOURCE AND METHODOLOGY

This paper depended on secondary data for analysis. The major data sources are the reports and database of United Nations Conference on Trade and Development (UNCTAD) and World Bank. FDI inflow as a percentage of GDP was employed to understand the effects on export diversification which was indicated by Herfindahl index and a count indicator of new export lines. Both qualitative and quantitative methods of analysis were used. The quantitative analysis was based on appropriate econometric methods. Specifically a panel fixed effect and random effect estimators were employed. To choose between the fixed effects and random effects a Haussmann test was used. Since there is also estimation involving a count indicator, appropriate Poisson regression model was used. This model addresses the discrete nature of the count variable which also could be strictly positive in its levels. The time period covered spanned from 1995-2014 based on availability of data.

1.7 SCOPE AND LIMITATION

This study is done to examine the relationship between FDI and export diversification in COMESA using annual country level data from 1997-2014. The major limitation is that understanding of the above stated relationship would be best served by using firm level data instead of country level data. But the unavailability of firm level data leaves us with only one

choice: aggregate data. Another limitation is that the study does not investigate how FDI from different countries has different effects on export diversification. Many researches assert that different sources of FDI have different effects, but the lack of data inhibits the present paper from categorizing FDI according to home countries to study its effects on export diversification.

1.2 ORGANIZATION OF THE PAPER

The paper is organized as follows: the next chapter presents the theoretical and empirical literature. The third chapter briefly discusses the history of COMESA. After that the methodology is presented in Chapter Four and Chapter Five presents the results of the analysis. The last chapter concludes and recommends

CHAPTER TWO: REVIEW OF LITERATURE

2.1THEORETICAL LITERATURE

2.1.1DEFINITION OF FOREIGN DIRECT INVESTMENT

The sixth Balance of Payments and International Investment Position manual of the IMF published in 2009 defines Foreign Direct Investment as a category of cross-border investment associated with a resident in one economy having control or a significant degree of influence on the management of an enterprise that is resident in another economy. In addition to the equity that gives rise to control or influence, direct investment also includes investments associated with that relationship including, but not limited to, investments in indirectly controlled and influenced enterprises. One of the ways that the aforesaid control or influence maybe achieved is directly by owning equity, of no less than 10 percent, to gain voting power in the enterprise. (IMF, 2009)

2.1.2 THE THEORIES OF FOREIGN DIRECT INVESTMENT

Following the emergence of the "forces of globalization" FDI really took off globally. The growing importance of FDI in the 1950s and 1960s provided the impetus for many researchers to examine the issue of MNCs and the existence of international production. Out of these researches emerged various theories to explain the phenomenon of international movement of capital. Nayak and Choudhury (2014) classify these theories in to five categories as FDI theories based on perfect competition, FDI theories based on imperfect competition, FDI theories relating to international trade, FDI theories and regional integration arrangements and FDI theories explaining investment from developing countries.

I) FDI THEORIES BASED ON PERFECT COMPETITION

Calvet (1981) refers to these theories as market disequilibrium hypothesis. The author goes on to explain that the notion of a perfect economy and perfect competition requires the assumption that prices everywhere are adjusted to bring supply and demand into equilibrium. It may well be that because of the segmentation of world markets, rates of return are not equalized internationally. In this context the role of FDI is to correct the disequilibrium until the markets return to stability. The conditions that provide MNCs with the incentives to invest abroad may arise in foreign exchange markets. Perhaps the simplest example here is currency overvaluation. A currency is said to be overvalued when at the prevailing exchange rate tradable goods production costs more

in the country than in other countries. In this case opportunities for making profit arise by holding assets in the undervalued currency with the expectation that once equilibrium in the market is established, capital gains will be realized. So MNCs take advantage of short-term fluctuations by purchasing productive assets, by using overvalued currencies, in countries with undervalued currencies and moving production to those countries. There are also other conditions like the presence of different profit rates across countries, due to the inefficiency of securities markets, which can only be equalized through FDI.

Here labor costs are also relevant. It is common knowledge that FDI moves from high labor cost countries to low labor cost countries in pursuit of cost minimization. But this process itself is self destructive as the higher demand in the low wage countries will increase wages, while the lower demand in the high wage countries will decrease wages. Calvet (1981)

Incidentally the role of the government in creating the above discussed disequilibria should not be forgotten. Governments adopt fixed exchange rate policies, minimum wage policies, policies regulating the migration of labor. In addition to these, governments also adopt policies that increase the cost of exporting like tariff and non-tariff trade barriers. As Markusen (2000) noted the presence of high trade costs compounded with large domestic markets tend to create location advantages for the domestic economy, giving rise to horizontal FDI. This situation is even more pronounced if the relative endowments of the host and home country are similar. A common conclusion of the FDI theories in this group is that since disequilibrium is a short-run phenomenon, FDI should have a finite life. But this conclusion does not apply to the disequilibria created by the government.

II) FDI THEORIES BASED ON IMPERFECT COMPETITION

Hymer (1976) in his seminal thesis entitled “The international operations of national firms” challenges the application of the theory of portfolio investment to explain the flows of direct investment. He presented this challenge by considering the total liabilities and cash and marketable securities of American companies. These balance sheet items show that while liabilities of these companies are larger in the rest of the world, a larger portion of their marketable securities are sold in the US. According to the prefect competition theories this would seem to suggest that interest rates are high in the US and low elsewhere. But the

companies that he used as an example where some of the largest American direct investors. He showed that American firms simultaneously invest and borrow abroad. This behavior of firms is also confirmed for Dutch companies. Interest rate could not be the only reason behind this cross movement of capital.

Another eye catching observation that Hymer (1976) made is the strong association between direct foreign investment and some industries. The simple fact is the industrial distribution of foreign direct investment should be different for different countries, if we are to assume that interest rate is the only reason behind FDI. This is because the same industry will have different interest rates in different countries. If FDI is searching for high interest rates shouldn't it go to some countries and all industries? But the fact remains FDI flows to all countries but to some industries. The author noted that American FDI is almost invariably associated with industries like oil, motor vehicles, business machinery, tires and tubes, soaps and farm machinery and almost invariably disassociated with industries like cotton textiles, clothing, leather, printing and primary iron and steel. Surely interest rate is not enough to explain this pattern. This hints the existence of other motivations for the flow of FDI other than interest rate.

Continuing to stack up arguments, the author also raises the issue of control. If interest rates are higher abroad than at home, then it is in the best advantage of an investor to lend money abroad. But what is the necessity to control the enterprise that the investor lends to? This question is raised in recognition of the strong control element that FDI has. (Hymer, 1976)

What then explains FDI? Aside from the motivation to reduce competition between firms located in different countries by putting them under the same ownership, Dunning (2001) identified three reasons for the existence of FDI. These are ownership advantages, location advantages and internalization. Each of these explanations try to explain the existence of FDI from different perspectives, but they also reinforce each other.

Dunning (1958) came up with these reasons, called the Eclectic Paradigm, when considering US firms which invest in the UK. The affiliates of these US firms were not as productive as their parent companies, but they were more productive than the UK indigenous firms. The reason that the US affiliates were more productive than there indigenous UK competitors was because they had Ownership advantages. This is one of the reasons for the existence of FDI. In order to offset

the significant costs of doing business abroad relative to domestic firms, foreign direct investors make use of specific knowledge about management or knowledge intensive capital which will give them ownership advantages.(Dunning, 2001)

The second reason identified by Dunning for the existence of FDI was Location advantages. These are the key considerations that multinationals make to determine where to utilize the ownership advantages that they possess. The elements that help in this decision are quantitative and qualitative factors of production, cost of transport, telecommunications, market size, common and specific government policies, cultural diversity, attitude towards strangers, e.t.c. For example, the presence of high trade costs and large host country markets tend to lead to location advantages for horizontal FDI. While for vertical FDI, it is the presence of low trade costs and differences in labor endowments that leads to location advantages. (Denisia, 2010)

The mere presence of ownership advantages doesn't necessarily mean that the firms that own those advantages decide to use them by way of FDI. It is always possible to license foreign firms to use these advantages. But firms might not feel that this is the safe option; especially in the presence of imperfections in the market for licenses. In addition the nature of these advantages might make them easily transferable within one management structure rather than between two management structures. This is the third reason for the existence of FDI. It's called Internalization. (Hymer ,1976)

The essence of Hymer's and Dunning's theories is that firms operating abroad have to compete with domestic firms that are in an advantageous position in terms of culture, language, legal system and consumer's preference. Furthermore, foreign firms are also exposed to exchange rate risks. These disadvantages must be offset by some form of market power in order to make international investment more profitable. The sources of market power are patent-protected superior technology, brand names, marketing and management skills, economies of scale and cheaper sources of finance. These are the manifestations of the imperfection of markets. (Nayak and Choudhury, 2014)

III) FDI THEORIES AND INTERNATIONAL TRADE

Vernon (1966) argues that the power of comparative cost concepts explanation of the shifting international trade and investment is underwhelming. He proposes that factors like the timing of innovation, scale economies, uncertainties and ignorance are important in trading and investment decisions. The study makes one critical assumption about entrepreneurs in advanced nations. It is assumed that these entrepreneurs have equal access to scientific knowledge, but they differ in their ability to utilize this scientific knowledge to make goods and service in order to respond to the gaps in the wants and needs of their society. The ability to take advantage of entrepreneurial opportunities, according to Vernon (1966), is a function of ease of communication which itself is a function of geographical proximity. In this milieu, Vernon's product life cycle theory introduces three stages of production.

In the first stage, a product is invented. At this stage the product is highly unstandardized. Its inputs, its processing, and its final specifications may cover a wide range. Here producers are concerned about the degree of freedom that they have in changing their inputs; what the ultimate decision of the market would be; the efforts of rivals to preempt the market and which specification of the product is likely to be successful. Because of these concerns producers will choose a production location where ease of communication with the market is easiest, Home. (Denisia, 2010)

In the second stage things begin to change. A set of standards emerge opening up technical possibilities for economies of scale. The concern of producers in this stage, are cost related. At this point it's worth noting that limited demand for the product also appears in other countries. Given time, this demand will begin to grow. This germinates the idea of FDI, as producers start thinking about setting up foreign subsidiaries to serve the growing demand in other countries. At this point they weigh two options; export or FDI. This conundrum is complex in nature and its solution depends on considerations such as labor costs, transport costs, trade barriers and the like. As the international market for the product advances and competitors enter, the original producer of the product establishes a production unit in a foreign country to serve the foreign markets and compete with the entrants. (Vernon, 1966)

Now assuming that the ability of the FDI investor to finance capital in the home and foreign country doesn't vary by much, it follows that economies of scale could be achieved to more or less the same extent in both countries. So labor cost becomes the defining factor. There will be a proliferation of foreign subsidiaries as investors hunt for the cheapest labor. And if labor costs are low enough in a host country, then the home country becomes an importer of that product. This is when we say that the product has been standardized; the third stage. And it is within this analytical schema that Vernon (1966) explained the contentious motivation of FDI. (Nayak and Choudhury, 2014).

IV) FDI THEORIES AND REGIONAL INTEGRATION ARRANGEMENTS

Regional Integration Arrangements (RIAs, henceforth) are becoming more and more common. Not only that, but they are also increasing in depth and scope. One notes the transformation of the European Economic Community in to a single market European Union and the successful adoption of a common currency. In America a number of arrangements exist from NAFTA, to MERCOSUR to CAFTA. Countries in South East Asia have adopted the ASEAN free trade area, which extends to ASEAN plus three and later to ASEAN plus three plus three. In Africa RIAs are common from COMESA to ECOWAS to SADC to EAC. More examples could be provided all over the world but at this point, they would hardly serve any purpose. (Salike, 2010)

Contemporaneously the flow of FDI in the world has increased. Granted, it could be argued that this observation is only derivative, as the flow of all productive factors in the world has increased. The world has been experiencing a dramatic surge in the flows of FDI with comparison to world trade. The surge in FDI involves both developed and developing countries and there is competition among emerging economies in attracting FDI.(Urata and Kawai, 2000)

It is then not very unreasonable to ask what the role of RIAs is in the location distribution of FDI. In fact that is exactly what Salike (2010) asked. Do RIAs complement or supplement FDI? There are many channels through which the creation of RIAs would influence the flow of FDI, albeit the direction of these effects is not the same. According to Salike (2010), the role of RIAs depends on the modes and motives of FDI. The paper identifies two motives of FDI; tariff jumping and Internalization and two modes of FDI; Vertical and Horizontal.

Markusen (2000) argues the effect of tariffs (generally trade costs) have contradicting effects on vertical and horizontal FDI. As Helpman (2006) puts it there is always a proximity-concentration trade off. In the presence of high tariffs it is difficult to serve the domestic market of the imposing country (which is what horizontal FDI is all about) by exporting. So the firm will choose proximity over concentration and invest in the imposing country, provided that the market of that country is large enough. And by so doing the firm saves variable unit costs by avoiding trade costs but increases its fixed costs. But the vertical foreign direct investor won't invest. Why? Because the investor is looking for efficiency, it wants to fragment the production process and locate the different parts according to least cost principle, then export final goods from the subsidiaries to the parent firm. But the presence of high trade costs means that it might not be profitable to do so as the parent company first has to export capital and intermediate goods from home to the imposing country. A corollary is the conclusion that vertical FDI is trade enhancing, while horizontal FDI is trade substituting.

Going back to Salike (2010) the papers analysis covers two aspects; inter-regional and intra-regional FDI. The theoretical framework was developed from the cross-section tabulation of motives and modes of FDI. The paper finds that all the factors (motives. modes, location, and source country) work in different directions and as a corollary the net effect of RIAs on FDI is very hard to predict ex-ante.

V) FDI THEORIES EXPLAINING INVESTMENT FROM DEVELOPING COUNTRIES

The emergence, in the past two decades, of multinational investors from developing countries has raised some questions as to what their motives are. These investors have some sources of competitive advantages that their counterparts from developed countries do not have. The first one is their familiarity with conditions in other developing countries. Most of the developing countries have similarities in terms of socio-economic background, infrastructural conditions and inefficient bureaucracy. (Nayak and Choudhury, 2014)

These are not ideal conditions for FDI, MNCs from developing countries have already tackled them in their own countries; so they can deal with them better than MNCs from developed countries that have little experience in working under such conditions. In addition to the foregoing, these MNCs are not seen by the host countries as politically or economically

threatening, unlike the MNCs from developed regions, which augments their competitive advantage. (Nayak and Choudhury, 2014)

2.1.3 DEFINITION OF EXPORT DIVERSIFICATION

Export Diversification can be described as the export of new product varieties to existing and new markets, or the export of existing product varieties to new destination markets. This shows that diversification has two dimensions. These are also called the "Intensive Margin" and "Extensive Margin" of trade in a number of studies (Jayaweera, 2009).

2.1.4 THE NEED FOR DOVERSIFICATION

Prebisch (1950) was one of the first economists to challenge the accepted view of international division of labor and its implied specialization. The author argues that the implicit assumption (that underlies the specialization argument) that countries will equally benefit from technical progress and increased productivity is undermined by reality. If the purported benefits were to be evenly distributed, then developing countries would not need to industrialize due to their pending inefficiency. Therefore it would be better for them to simply reap the benefits through international exchange. But the fact remains that the productivity benefits and the capital accumulating capability of developed and developing countries are far apart and this, according to Prebisch, is an obvious disequilibrium that undermines the schema of international division of labor.

In the face of major changes of the structure of the world economy, the gains from trade will accrue differentially between exporters of manufacture goods and those of primary goods. And with the expansion of trade, the inequality of per capita income between these two types of countries will enlarge. This is the continuing significance of the "Prebisch-Singer" thesis. (Toye and Toye, 2003). According to this thesis, the concentration of many developing countries on exports of primary commodities is one of the contributing factors for their dismal economic conditions (Samen, 2010).

I) THE PROBLEM WITH DEPENDING ON PRIMARY COMMODITIES

The twin effects of technical progress; the tendency for its fruits to be asymmetrically distributed and its asymmetric impact on future demand favorable to manufactured goods, are the major sources of its effects on primary products. These effects are manifested by the continuing

deterioration of the terms of trade for these products, income volatility and ultimately slower economic growth. What's more, primary products are usually associated with a higher level of export instability. But exports remain the major source of foreign exchange for many developing countries, which means their development efforts (especially investment) are going to be significantly affected by the international volatility of prices. Finally the production of primary commodities offers very limited chance for improvement of production techniques and knowledge spill-over (Iwamoto and Nabeshima, 2012).

Hausmann and Klinger (2006) provide an interesting discussion with regards to primary products. They discuss the relationship between the closeness of currently exported goods to goods of more sophistication and higher value on one hand, and structural transformation on the other. They assert that the speed of structural transformation depends on how close exports are to high value goods in the product space. They propose a measure of proximity (closeness) based on the conditional probability that one product is exported given another is also exported. This measure shows that there are variations in the density of the product space, with density being high for high value products and low for primary products. All the above discussion has two implications for exporters of primary commodities. The first one is that since primary products are not very close to high value products, it limits the producers of such products from achieving a speedy structural transformation. The second implication is that the product space is not very dense around primary products. This limits the ability of producers to easily move around the product space. This is because the skills required to produce primary products are not very adoptable to the production of other products. This is compelling evidence and therein lays a strong confirmation for the need of diversification. Diversification allows countries to acquire skills and assets that could be relevant for goods and services nearby in the product space (Carrere et al ,2007).

II) DIVERSIFICATION AND COMPARATIVE ADVANTAGE

Diversification doesn't preclude comparative advantage. To prove it, we will resort to country examples. It is well known that Malaysia has a comparative advantage in palm oil and rubber. By moving in to high value added products that are based on these natural resources, this country was able to reduce its export concentration over the past 40 years. In the 1960's Malaysia had an

export concentration index of 0.5, by 2000 export concentration has dramatically decreased to 0.3 (Hesse, 2008).

Chile is another successful example of resource-based diversification. Many of the new products this country exports such as wine, salmon, fruits and forestry products are close to her comparative advantages. By moving in to these products Chile was able to reduce its export concentration from 0.5 in the 1970's to 0.1 in 2000. Uganda and Thailand provide other examples of countries that diversified based on their comparative advantage.(Hesse, 2008)

These examples are in line with the argument provided in Bonaglia and Fukasaku (2003) that resource-rich low income countries should diversify in to resource-based manufacturing or processing of primary commodities rather than following the conventional path of low-skill manufacturing.

III) THE COSTS OF SPECIALIZATION

Notwithstanding the potential benefits of specialization, in terms of efficient resource allocation, the costs associated with it should also be kept in mind. For a country to specialize it must adjust and restructure its economy. The most obvious cost is, of course, the increased government spending that this restructuring necessitates. The fall of some industries due to their inability to compete with imports is also another cost. This goes hand in hand with the elimination of some sectors and the devastation of some regions (if there is regional distribution of sectors). But the costs do not cease here. With the loss of some sectors, there is bound to be relocation of labor which is likely to be accompanied by retraining programs. Beyond the economic perspective, there are also social costs like family disruption and loss of industrial skills which may be part of the culture of society. Contrasting these costs with the potential benefits of diversification including improved technological capabilities, facilitation of forward and backward linkages, increased sophistication of markets, externalities and substitution of commodities with positive price trends, it can be seen that diversification should be given due emphasis (Samen, 2010).

2.1.5 FOREIGN DIRECT INVESTMENT AND EXPORT DIVERSIFICATION

To understand how FDI is supposed to influence export diversification, we have to first study what factors affect export diversification and see if we can isolate any discernible impact FDI might have on these factors. Meltiz's model as described in Helpman (2006) provides a good

explanation of what might drive export diversification. The model makes one critical assumption that firms are heterogeneous in their productivity. Firms pay upfront costs to discover their productivity, fixed costs to supply to the domestic market, and export entry costs to export. Furthermore they pay variable costs on each export item. These include transport costs, insurance costs, e.t.c. The implication of what has just been discussed is that only the most productive firms are capable of exporting. Now suppose a firm just started exporting a good or service that has not been exported before. Essentially, this means export diversification as per the definition we already gave. According to Meltiz model this means one of the following. The productivity of that firm has changed, may be the firm learned a new way of making a product or a new management practice. Or may be fixed costs of entering export markets declined, may be because all domestic firms acquired new networks in the international trade scenery. May be transport costs declined, due to the fact that domestic firms have now acquired better transport and transit knowledge about some countries. All of the above are plausible ventures of guess. And incidentally all of the above possibilities can be brought about by FDI (Jayaweera, 2009).

Let us start from productivity first. The advantage of FDI is twofold; one it brings in much needed capital and two it enhances productivity through spill-overs. The theoretical literature identifies different channels, through which FDI might boost productivity; imitation, acquisition of human capital, competition and the like. But how do these channels work? Well imitation is basically the main method of spill-overs; simple manufactured products could be imitated by reverse engineering and managerial and organizational process could be imitated by watching. After MNCs train their employees, these employees might leave those firms and join local firms or start their own business. This is what we call acquisition of human capital. When MNCs enter a market other firms might be anxious about it and start to use their available technology and resources more competitively, and this is how the competition channel works. Through these channels domestic firms learn from the foreign direct investor and apply what they learnt (Gorg and Greenaway, 2003).

The other advantage of having foreign direct investors around is the existence of export spillovers. Exporting involves fixed costs in terms of establishing distribution networks, creating transport infrastructure, learning about consumer's tastes and the like. But FDI is strongly armed with the capability to perform these activities. The argument here is that this capability may spill

to domestic firms making it easier for them to export new products. This is the theoretical background that is used to link FDI with export diversification.(Gorg and Greenaway, 2003). The present paper used the adoption of Melitz's model that was used in Jayaweera (2009), and employed both intensive and extensive measures of export diversification to understand the effect of FDI on export diversification. The Melitz model is chosen because of its assumption of heterogeneity of firms and products. It gives an analytical framework that relates productivity of firms with the decision to export. Since earlier models assume that firms are homogenous and all goods are traded, they are inapplicable when it comes to considering changes in diversification (Kamuganga, 2012).

2.2 EMPIRICAL LITERATURE

Theoretically FDI is supposed to foster export diversification since MNCs are likely to be more export oriented than domestic firms. In addition to the spillover effects that arise from the export activities of MNCs, the sunk costs that are involved with the export activities of domestic firms are supposed to fall contributing to the improved export diversification of these firms. When it comes to the empirical evidence there is hardly any consensus.

Jayaweera (2009) aims to investigate whether FDI helps low income nations diversify their export base. By constructing a rich panel data set of 29 countries from 1990-2006 and using an instrumental variable technique, the paper investigates the relationship between FDI and export diversification. In this paper diversification is measured by using a count variable for the number of new export lines in each panel, which is a measure of diversification at the extensive margin. The results suggest a positive correlation between FDI and export diversification. The draw-back of this paper is that it only focuses on diversification at the extensive margin. It doesn't address how FDI might bring a restructuring of already exported products, i.e. diversification at the intensive margin. This issue can be addressed by including Herfindahl index as an additional measure of diversification, which is what the present paper aims to do.

Bebczuk and Berrettoni (2006) try to investigate what determines export diversification. Using data for 56 countries ranging from 1962-2002, they employ panel fixed effects estimator and arrive at a conclusion that FDI has no significant impact on export diversification.

Why the conflicting results? , Ask Tadesse and Shukralla (2013). The paper hypothesizes that the differences in sampling, reference period and econometric specifications might have something to do with it. But these are not the only reasons behind all the confusion, the paper states. They say that heterogeneity in the dependent variable series is not accounted for in the previous studies. Since the studies do not account for the different level of export diversification achieved by the countries in their samples, they do not account for a possible non-linear relationship between FDI and export diversification. To correct this, they utilize parametric (quantile) and semi-parametric econometric methods. The results indicate that an increase in the stock of FDI enhances the horizontal diversification of exports. The actual magnitude of the effects however, is different depending on the existing stock of FDI and stage of diversification achieved.

Ahmadet al (2004) formulate a VAR system comprised of export, FDI, foreign income, exchange rate and domestic income, to study the effects of FDI on exports and domestic output in Pakistan. Although the study failed to find any evidence that FDI increased export performance, their findings do suggest the presence of an FDI-domestic output growth nexus. Aside from investigating the effects of FDI on export volumes, this paper doesn't look into how FDI affects diversification.

Iwamoto and Nabeshima (2012) ask the question "Can FDI promote Export Diversification and Sophistication of Host countries?" The paper utilizes a dynamic panel model to answer this question. The findings suggest that the five year lagged FDI inflow correlates positively with export diversification. But this result is true only for developing countries. The authors provide two explanations for this. The first one is that firms in developing countries possess capabilities that are less diversified than those of MNCs and hence are more affected by the spill-overs from the MNCs. The second one is that developing countries less diversified export baskets are more likely to be affected by the export activities of MNCs. Again this paper makes no reference of diversification at the extensive margin.

Kamuganga (2012) examines the different determinants of export diversification in Africa. Specifically the author asks four major questions: How much of Africa's trade growth can be attributed to export on the new-product new-market margin? What is the effect of intra-African regional trade cooperation? Do learning effects from exporting countries promote export diversification? And what are the other underlying factors that determine the probability that an

African exporter will export a new product or export a product to a new market? Using a conditional logit technique and data for African countries from the period 1995-2009, they get three major findings; Intra-regional trade cooperation in Africa leads to diversification, export experience matters and policy and institutions can hinder export diversification. Moreover they find that FDI has a negative effect on export diversification.

The different effects that FDI might have on export volume and diversification was studied by Banga (2006). This paper begins by admitting that FDI in India has had no effect on traditional export value. But by using a random effects model, it investigates the differential impact of FDI from the US and Japan on non-traditional exports and the effect of the said FDI sources on domestic firm capability to export. The distinction between US based and Japan Based FDI was necessary because of the differing mode of organization of international production that these two types of companies have. The author claims that US FDI has stronger linkages to domestic firms than Japan FDI which tends to be more vertically integrated with its parent companies. This difference means that the export spillover of FDI could be greater with US FDI than Japan FDI. And the empirical findings of this paper confirm this assertion. There is also evidence that both types of FDI have had no effect on traditional exports, but have had some effect on non-traditional exports, which means India has experienced export diversification with little increase in export value.

Gorg and Greenway (2003), attempt to explain the reason behind the proliferation of conflicting empirical evidence as to the effect of FDI on exports and productivity. They approach the problem from the point of view of spillovers. After reviewing the relevant literature, they advance three possible reasons for the lack of consensus. First, they argue that MNCs might protect their technology and knowledge about international markets so that they don't spill over to domestic competitors. (I.e. MNCs are not simply going to hand over their competitive advantages). This might stand in the way of horizontal spillovers. Second, they argue that in some cases spillovers do exist but we don't have the technical capability to identify them. Third, they argue that spillovers are not necessarily positive. There could be negative spillovers to domestic firms and the economy in general. And at the aggregate level, these spillovers might cancel out each other and this characteristic may make them invisible. In the end they conclude

that the impact of FDI on domestic export diversification may depend on factors like the relative backwardness of the home country, contagion and the absorptive capacity of the home country.

When it comes to COMESA, Ndoricimpa (2009) examines what the effect of FDI is on exports and economic growth. Using a panel of 16 COMESA countries, the author utilizes residual-based panel cointegration tests and heterogeneous panel causality tests. The findings lend support to "FDI-led exports", "Export-led growth" and "FDI-led growth". Still the paper does not investigate the issue of structural diversification of exports.

Reviewing these works, one cannot help but notice the limitation in most of them. The limitation is that most of them do not account for the two tier nature of export diversification. These studies either limit themselves to the extensive margin of export diversification or the intensive margin of it. It is the contention of this paper that these two margins should be examined at the same time for each sample. By so doing we can better understand how FDI promotes export diversification; it might be the case that FDI only leads to extensive diversification or only to intensive diversification. By examining both of them, the present paper aims to add value by answering the question "On which margin is FDI helping COMESA diversify its exports?"

CHAPTER THREE: HISTORY AND OVERVIEW OF COMESA

3.1 HISTORY

The Common Market for Eastern and Southern Africa is a common market that currently spans over 540 million people in 19 countries. Its headquarters is found in Lusaka, Zambia. Its Members are Burundi, Comoros, Democratic Republic of Congo, Djibouti, Egypt, Eritrea, Ethiopia, Kenya, Libya, Madagascar, Malawi, Mauritius, Rwanda, Seychelles, Sudan, Swaziland, Uganda, Zambia and Zimbabwe. The treaty establishing COMESA was signed on 5th of November 1993 in Kampala, Uganda and ratified a year later in Lilongwe, Malawi. How and why this common market was formed takes us back to the 1950's and 1960's. (AFDB database and Official COMESA website, 27/03/2016)

Held in Accra, Ghana in 1958 and again in Addis Ababa, Ethiopia in 1960, the first and second conferences of independent African states brought to attention a major economic problem to be faced by African economies. The problem was the smallness and fragmentation of post-colonial African national markets would constitute a major obstacle to the diversification of economic activity away from a concentration on production of a narrow range of primary commodities to the creation of modern and internationally competitive enterprises which would satisfy domestic needs and export requirements.(Official COMESA website, 27/03/2016)

In light of this the idea, economic cooperation gained favorable impetus from the buoyant and optimistic mood that characterized the post-independence period in most of Africa. How to go about cooperating was another question. One camp supported the immediate creation of regional continental economic arrangement while another camp advocated the building of sub-regional cooperation arrangements; this camp won. It is from these events that we can trace the origins of COMESA. In 1965 the United Nations Economic Commission for Africa convened a ministerial meeting in Lusaka, Zambia of eastern and southern African countries aimed at considering what different approaches could be adopted to promote sub-regional economic cooperation. The meeting recommended the creation of an economic community of eastern and southern African states. Also recommended were an Interim Council of Ministers and an Interim Economic Committee of Officials. The function of these was to negotiate a treaty and initiate programmes on economic cooperation. The first meeting of the interim Ministerial council was held in Addis Ababa, in 1966. In this meeting the terms of association to govern the interim arrangements

before the signing of the formal treaty were adopted and signed by Burundi, Ethiopia, Kenya, Madagascar, Malawi, Mauritius, Rwanda, Somalia, Tanzania and Zambia. In the meantime the need for sub regional economic arrangements became more urgent. This was especially the case for southern African states as these states experienced the destabilization of their economies by apartheid South Africa. This was complemented by an increasing need to reduce dependency of African economies on their former colonizers (Official COMESA Website, 27/03/2016).

At the first Extra-ordinary meeting of Ministers of Trade, Finance and Planning, held in Lusaka in 1978, the creation of a sub-regional economic community beginning with a sub-regional trade area was recommended. This was gradually to be upgraded over a ten year period to a common market. At a meeting of Heads of State and Government in Lusaka on 21st of December 1981, a treaty establishing a PTA was signed and later in 1982 it came into force after being ratified by more than seven signatory states. As the PTA treaty envisaged the creation of a common market, the treaty establishing COMESA was signed on November 5 1993 in Kampala, Uganda and was ratified a year later in Lilongwe, Malawi. The next step in the process of economic integration for the Eastern and Southern African states is the eventual establishment of an Economic Community. (Official COMESA Website, 28/03/2016)

3.2 COMESA INSTITUTIONAL STRUCTURE

COMESA has eight major organs that play various roles. There are discussed as follows:

1. **The Authority**: - is the supreme organ of the Common Market and is composed of the Heads of States and Government of all the 19 member countries
2. **The Council of Ministers**: - is composed of ministers from the coordinating ministries of all member states. It is responsible for overseeing the functioning and development of COMESA and ensuring the implementation of agreed policies
3. **The Court of Justice**: - is an organ of COMESA which is there to ensure the adherence to law in the interpretation and application of the treaty. It has an important, vital and impartial role in the observance of the rule of law among members
4. **The Committee of Governors of Central Banks**: - is an organ that deals with the Regional Payment and Settlement System and fiscal discipline among members
5. **The Inter-Governmental Committee**: - is an organ that develops the programmes and action plans in all sectors of co-operation, except in the finance and monetary sectors. It is

also responsible for monitoring and reviewing the functioning and development of the common market and overseeing the implementation of programmes in accordance with the provision of the treaty

6. **The Technical Committees**: - are responsible for the preparation of comprehensive implementation programmes and timetables, which serve to prioritize the programmes with respect to each sector. In addition, they monitor and review the implementation of the programmes on co-operation and may request the Secretary-General to undertake specific investigations. These committees submit reports and recommendations to the Inter-Governmental committee, which subsequently submits to the council
7. **The Secretariat**: - this is headed by the Secretary-General, who is appointed by the Authority. The Secretary-General is the Chief Executive Officer of the common market and represents the institution in the exercise of its legal responsibility
8. **The Committee on Peace and Security**: - The member states established a committee comprising senior officials in the Ministries of Foreign Affairs called the committee on peace and security. This committee sits at least once a year to discuss the modalities of peace and security in the region. Its recommendations are discussed by the Ministries of Foreign Affairs. This serves to enhance greater accountability and promote good governance (Official COMESA Website, 27/03/2016)

In pursuit of the aims and objectives stated in the COMESA Treaty, the member states have agreed to adhere to the following principles:

a) Equality and inter-independence of the member states
b) Solidarity and collective self-reliance among the member States
c) Inter-State co-operation, harmonization of policies and integration of programmes among the member States
d) Non-aggression between the member States
e) Recognition, promotion and protection of human and people's rights in accordance with the provisions of the African Charter on Human and People's Rights
f) Accountability, economic justice and popular participation in development
g) The recognition and observance of the rule of law

h) The promotion and sustenance of a democratic system of government in each member state
i) The maintenance of regional peace and stability through the promotion and strengthening of good neighborliness; and
j) The peaceful settlement of disputes among the member states, the active co-operation between neighboring countries and the promotion of a peaceful environment as a pre-requisite for their economic development (official COMES website, 27/03/16)

3.3 ECONOMIC OVERVIEW

In the 1980's and early 1990's most COMESA countries followed an economic system which was state led. The state was the principal producer, distributor, and marketer. The preferred policies during those times were import substitution and subsidized consumption. This system was inefficient. As a result Gross domestic investment fell below 20 percent of GDP. FDI in Africa stood at approximately 1 percent. The share of exports from sub-Saharan Africa in world exports fell from 2.5 percent in 1970 to 1 percent in 1990, while its share in developing country exports fell from 13.2 percent to 4.9 percent. Since then many attempts have been made to increase the private sector participation in COMESA. Egypt is by far the largest economy of the COMESA region, with an average GDP of 60.2 billion US dollars for the period 1980-2007. She is followed by Libya with an average GDP of 30.8 billion and Sudan with an average GDP of 14.7 billion. The five smallest economies of the region for the period 1980-2007, were Swaziland, Burundi, Djibouti, Seychelles and Comoros. Some countries like Ethiopia, Libya, Madagascar, Rwanda and Sudan on average have grown consistently, and others like Comoros, Mauritius, Swaziland and Zimbabwe, have experienced stagnations and recessions (Ndoricimpa, 2009).

When it comes to economic growth, the region has shown rather strong numbers. In 2008 the average growth rate was about 6.8 percent, which took a slight dip in 2009 to about 5 percent. In 2010 and 2011, the region experienced very high growth rates of 7.7 and 7.5 percent. Then economic growth took another dip and by 2013 it was about 6.1 percent. There is however very high variation in the growth experience. Ethiopia has been the fastest growing country in the region, growing at an average of 10 percent from 2009-2013. Zimbabwe seems to be following Ethiopia, as she grew by 7.3 percent on average. Rwanda, Zambia and Dem. Rep. of Congo

follow close by averaging at 6.92, 6.8 and 6.52. Madagascar has been the slowest growing economy in the period 2009-2013. She averaged .48 percent. Swaziland and Comoros also experienced slow growths averaging .94 percent and 2.52 percent respectively (COMESA, 2014).

Trade with the rest of the world declined from 295 billion USD in 2012 to 283 billion USD in 2013. This was mainly because of a decline in Exports, which itself is attributed to a decline in Libya's exports of oil due to the internal political crisis in the country. The EU remains the number one destination for COMESA exports amounting to 42 billion in 2013. Then comes China which was the destination to 11.8 billion USD worth of goods and services. Intra COMESA trade during 2013 amounted to 9.9 billion USD. Major sources of imports in to the COMESA market are EU, China, South Africa, COMESA and India (COMESA, 2014).

Since the launch of the COMESA FTA in 2000, intra-regional trade has grown more than six-fold from 3.1 billion USD to 18.8 billion USD in 2011. This is mainly due to increased trade in copper ores and concentrates, tea, Portland cement, refined copper, crude petroleum, panel boards, cane sugar, cobalt ores and concentrates and others. The region's high dependency on primary commodities has meant that COMESA member states' economies still remain fragile and vulnerable to external shocks such as commodity price volatility and weather/climate change. This is compounded by the deteriorating terms of trade that negatively impact the commodities markets. Adding value to primary commodities (vertical diversification) still remains a challenge of COMESA countries.In case of Africa the necessity is not only moving away from low value goods and services but also ensuring and promoting innovation and socio-economic and productive transformation (COMESA, 2011).

3.4 CHALLENGES AND PROSPECTS

COMESA is implementing a free trade area and it has plans to form a customs union. One challenge here is the limited progress in this area due to country level implementation problems. Another challenge is the existence of overlapping memberships and conflicting goals such as different tariff agreements, and import duties. For example seven countries are members of both COMESA and SADC. These multiple memberships often have costs. They draw down negotiating resources and capacity. Since rules of origin are very complex, they have high administrative costs. In addition to that multiple membership fees are expensive to pay. The

proposed Tripartite Free Trade Area between COMESA, SADC and EAC might be the solution to the above mentioned problems. This deal will reduce the problems of divided loyalty and multiple memberships if executed properly. (Khandelwal, 2004).

Another problem facing COMESA is lack of political commitment from member countries. This has hampered the COMESA FTA, due to institutional changes and structural constraints. Some of the members in COMESA have not joined the FTA, and among those who joined informal non- tariff barriers failure to accept rules of origin certificates, cumbersome bureaucratic procedures and restrictive standards are common. The region has been considering the adoptionof a common external tariff. The proposed common external tariff structure is 0, 5, 15, and 30 percent. However two COMESA members, Kenya and Uganda, have already agreed to another common external tariff structure of 0, 10, and 25 percent. These two countries are also members of the East African Community (EAC) and the later common external tariff structure is already adopted by the EAC. This has created a lot of confusion and delays. Another challenge to the formation of a low and common external tariff is protectionism. There is high resistance to the lowering of the number of tariff bands and maximum tariff rates (Khandelwal, 2004).

There is a proposed customs union with several features. But the customs union will make it essential to undertake border controls for goods coming from COMESA countries. But this requires strong administrative undertaking and costs. The commitment to nondiscriminatory tariff liberalization faces many problems like the dependence of member countries on trade taxes and the fact that many of these countries are unlikely to replace the lost trade tax with other sources of revenue. Another challenge here is the fact that some countries in the union are quite open to international trade while others are much closed. So with the adoption of a common external tariff, the quite open countries might end up closing their economies to the rest of the world. This goes hand in hand with the loss of autonomy in trade policies. (Official COMESA website)

Another challenge that faces COMESA and African countries in general comes from WTO. Most African countries have limited participation in the decision proceedings at WTO meetings. The effect of this is countries of the region have to conform to the rule and regulations of WTO without being part of the negotiation and decision making process. Full participation in WTO is required of COMESA member countries as they are operating in a multilateral trading system

and not in isolation. How can COMESA member countries become more involved? Here the challenge is to ensure full preparedness and adequate technical negotiating and implementation capacity among member countries. To increase the bargaining power during negotiations it might be a good idea to show a united front at these proceedings. (Khandelwal, 2004)

It is clear that throughout the years the proliferation of regional agreements has become even stronger in Africa. This in part is fueled by trends around the globe and in part by negotiations with the developed economies. There are many approaches to regional integration, but the one COMESA chose to take is the market liberalization approach. But it is clear that this approach has been slowed down due to failure of some countries to implement. This implementation problem is indicative of a lack of political will and commitment.

Although there might be limited opportunities for intra-regional trade, due to product complementarity, the COMESA avenue might be a source of other advantages like harmonization and capacity building in various trade related areas. This regional cooperation might also be the best way to alleviate infrastructural constraints and provide policy credibility to trade reforms.

CHAPTER FOUR: PRESENTATION OF THE METHODOLOGY

4.1 THEORETICAL FRAMEWORK

Many papers resort to a kitchen- sink approach when analyzing what determines export diversification. What is meant by "Kitchen-Sink" is that they collect various variables thought to have an effect on the dependent variable and undergo a regression analysis. This has been the approach followed by researches like Bebeczuk and Berttoni (2006) and Ferdous and Binti (2011). Instead of taking that direction the present paper starts from an international trade model and use the predictions of this model to identify relevant variables. The predictions are then augmented with the findings of relevant empirical literature so as to identify other relevant variables.

Accordingly the present paper relies on the Melitz model adoption used in Jayaweera (2009), the model used is Melitz's model of heterogeneous firms. Unlike the previous trade models that assume homogeneity in firm characteristics, Melitz (2003) takes into account the difference in productivity of firms in different sectors. The firms are assumed to produce a differentiated product. Differences in productivity of firms and differentiated products are the two underlying assumptions of the model. Helpman (2006) describes Melitz's model as the following.

Let us say the demand for a particular product is given by

$$X_i = AP(i)^{-E,} \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots 1$$

Where X_i: is demand for a product of firm i

A: is exogenous component of demand

P(i): is price of the good of firm i

E: is a constant elasticity of demand. It is given by

$$E = 1/1-\alpha$$

α: is a constant where $0<\alpha<1$

Firms discover their productivity after incurring a cost of discovery. Let us say productivity is θ_i. θ_i can be output per labor. If production cost per labor is c. Then c/θ_i can be cost per output. Let F_d be amount of fixed resources that are needed to start production, then CF_d will be the total fixed costs.

A profit maximizing firm then maximizes the following problem

$\Pi_i = P(i)X_i - (c/\theta_i)X_i - CF_d$,……..2

but $X_i = AP(i)^{-E}$, so the maximizing problem becomes

$\Pi_i = P(i)AP(i)^{-E} - (c/\theta_i)AP(i)^{-E} - cF_d$.....3

Profit will be maximized at $P = c/\alpha\theta_i$. Then we can express demand as $X_i = A(c/\alpha\theta_i)^{-E}$. Inserting these two equations in the profit function we get

$\Pi_i = c/\alpha\theta_i\, A(c/\alpha\theta_i)^{-E} - (c/\theta_i)\, A(c/\alpha\theta_i)^{-E} - cF_d$, ……..4

After some mathematical manipulation we get

$\Pi_i = \theta_i^{E-1}B - cF_d$, Where $B = (1-\alpha)A(c/\alpha)^{1-E}$.....5

The above equation (eq5) tells us two things. First, the profit of a firm is an increasing function of its productivity. Second below a certain threshold of productivity, a firm cannot profitably produce; so it leaves the market. To understand the export decision of firms, certain twists are introduced.

First the exogenous component of demand is assumed to change from country to country and variable and fixed costs of exporting are introduced. After introducing these changes, the profit function looks like the following;

$\Pi_{ix} = (\mu^j)^{1-E}\theta_i^{E-1}B^j - cF_x^j$ ……..6

Where

μ^j: is the variable export cost of destination j and $\mu^j>1$

F_x: is the fixed export cost and the superscript j represents the different export destinations. And $F_x>F_d$

The above profit equation (6) adds one more piece of information. The profitability of an export venture also depends on productivity. Since the slope of the export profit function is lower than the slope of the domestic profit function, it can be concluded that the productivity threshold for exporting is higher than the productivity threshold for domestic production.

From the above analyses we can understand that when the fixed cost of exports (i.e. establishing of market channels, cost of acquiring information on foreign demand, e.t.c..) decrease, then the minimum threshold of productivity for successful exporting decreases, which means more firms decide to export new products and in new markets. The same conclusion works for a reduction of variable export costs like transportation costs, insurance and tariffs; it leads to more firms exporting new products and in new markets. This is essentially export diversification. Empirical evidence shows that FDI has market access spillovers that reduce the fixed and variable costs of trading for domestic exporters; meaning it has an indirect impact on diversification through market access spillovers.

Another prediction of the model is that when productivity increases the profit opportunity of exporting also increases with it. A number of studies have confirmed that there are productivity spillovers that occur when MNCs invest in host nations. If this is true then FDI can increase the profit opportunity of exporting in various sectors through the channel of productivity spillover.

From the Melitz model we have identified that one of the possible determinants of export diversification could be FDI through its effects on trading costs and productivity. Carrere et al (2007) examine what the path dependence of export diversification looks like in the development process. By using GDP per capita as a proxy of development, they find that diversification and development have a hump shaped relationship, where countries diversify at an early stage of development and re-specialize in latter stages of development. From this work a conjecture can be drawn that GDP per capita may be another important determinant of export diversification.

Iwamoto and Nabeshima (2012) examine the export diversifying effect of FDI and other control variables like the size of the domestic economy (i.e. represented by population), trade openness, inflation and the level of development (represented by GDP per capita). They find that the size of the domestic economy and trade openness have significant impact on diversification. This proves the relevance of domestic size and trade flow indicators.

Parteka and Tamberi (2011) investigate what determines export diversification by using a multitude of explanatory factors like human capital, regional trade agreements, level of development, domestic size and market accessibility. The paper finds that except human capital, all explanatory variables are significant.

MEASURING EXPORT DIVERSIFICATION

I) HERFINDAHL INDEX

The Herfindahl index helps us to measure export diversification at the intensive margin. This is diversification of products along already existing exporting lines; it can be brought about by the restructuring of a country's export structure. The Herfindahl index is calculated according to the following formula.

$$H = \frac{\Sigma(S_k)^2 - 1/n}{1 - /n}$$

Where S_k is the export earning share of each product; n is the number of products exported

This index ranges in value from 0 to 1. The higher that index the more concentrated exports have become. While low values are associated with a diversified export structure.

II) NEW PRODUCT LINES

As we discussed above the Herfindahl index only captures diversification at the intensive margin. The extensive margin refers to the addition of new product lines. To capture export diversification at the extensive margin, we use the number of new product lines activated each year. Diversification at the extensive margin occurs when a country decides to export new products that it did not export previously.

Carrere et al (2007) uses the count new product lines as an indicator of diversification at the extensive margin. This paper adopts this measure. Accordingly new products (at the SITC rev 3 level) are defined as those products that were not active in a country's export trade in the preceding two years, but they were exported in the following two years. Researchers have found the median export spell for developing countries to be 2 years; hence the present paper defines new exports accordingly.

The model that the present paper proposes is the following;

$DIV_{it} = \alpha + f(GDPPC_{it}, , FDI_{it}, ER_{it}, IR_{it} LD_{it}, OD_{it}, WTOD_{it}, \text{Telephone Subscriptions}_{it}, TO_{it}, AGE_{it}) + \varepsilon_{it}$ Where:

DIV_{it}: is the measure of diversification. (i.e. Herfindahl index or count of new products) for country i at time t

$GDPPC_{it}$: is GDP per capita use to proxy the level of development for country i at time t

FDI_{it}: is Foreign Direct Investment inflow as a percentage of GDP for country i at time t

ER_{it}: is the official exchange rate for country i at time t

LD_{it}: is the landlocked dummy used to proxy geographical determinants for country i

OD_{it}: is the oil rich dummy for country i

$WTOD_{it}$: is the WTO member dummy for country i

$\text{Telephone Subscriptions}_{it}$: the number of telephone subscribers per 1000 people used to proxy level of infrastructure for country i at time t

$IR_{it:}$ the inflation rate for country i at time t

TO_{it}: is the trade openness measured as the ratio of exports and imports to GDP for country i at time t

AGE_{it}: is the share of agricultural exports in total exports for country i at time t

The inclusion of these variables helps us control the effect of other variables thereby estimate the true impact of FDI on export diversification.

4.2. ECONOMETRIC FRAMEWORK

The present paper attempts to investigate the effect FDI has on diversification using a panel data econometric approach. Panel data can help researchers identify why individual units behave in different ways and how the behavior of one individual evolves overtime. In our case the individual units are countries. The accuracy of estimates of parameters from panel data is more reliable than time series or cross sections because of two main reasons; the first one, which is rather forward, is the fact that panel data sets are typically larger than cross-sectional and time series data sets. The second reason is the fact that the variables in a panel data vary over two dimensions instead of one; individuals and time. Specifically for our purposes, since time series data on FDI and export diversification is too small, panel data corrects some distortions that we might have because of the small size of the data. The use of panel data for our study is even more justified when we consider that our model contains a lot of exogenous variables, like landlocked dummy and oil rich dummy. Panel data are a better way to measure the effects of these variables than its counterparts. Panel data also provides inspired ways of dealing with omitted variables. In a fixed effect model one can assume that the unobserved omitted variables are individual specific and use within transformation. Alternatively we can also a include time fixed effect that doesn't vary over individuals to capture omitted variables. (Verbeek, 2004)

When it comes to analysis we have two options; fixed effects and random effects

Fixed Effects: in this model the intercept term which varies only over individuals is used to capture individual fixed effects as follows:

$Y_{it}= \alpha_i+x_{it}\beta+\varepsilon_{it}$; Where $\varepsilon_{it}\sim IID\ (0,\delta^2)$,

Assuming that x_{it} is independent of ε_{it}, β is an unbiased estimator of the true population parameter. This model can be estimated using within transformation as follows:

$Y_{it}-\overline{Y_i}= (x_{it}-\overline{x_i})'\beta + (\varepsilon_{it}-\varepsilon_i)$; from this transformation we can obtain the fixed effects estimator. We have to note that the fixed effect estimator focuses on within individual differences and not on differences across individuals. Of course the parametric assumptions that we make about β dictate that difference across and within individuals have the same effect on Y; one can note the absence of any individual or time subscripts on the estimators.

Random Effects: this model assumes that the individual specific effects are random drawings from a population with mean μ and variance δ_α^2. The model is presented as follows

$$Y_{it}= \mu+ x_{it}'+\alpha_i+\varepsilon_{it}, \quad \varepsilon_{it}\sim IID\ (0,\delta_\varepsilon^2);\ \ \alpha_i\sim IID\ (0,\delta_\alpha^2)$$

Here we assume that the error term is $\alpha_i+\varepsilon_{it.}$. This error term has a non time varying component and component which does vary over time but is considered uncorrelated over time. Unless the standard deviation of α_i is zero, then we have ourselves a particular form of autocorrelation. In that case generalized least squares method provides a more efficient estimator.

Now the question remains "Which of these models should we use?" The answer to this question depends on the extent to which we can assume individual specific effects (α_i) are uncorrelated to the explanatory variables (x_{it}). Random effects model assumes that they are uncorrelated while fixed effects gets rid of the individual specific effects through the within transformation that we talked about. In this paper to test whether there is correlation between α_i and x_{it} we use Hausman test.

Essentially what the Hausman test does is, it tests if there is any significant difference between the fixed affects and random effects estimator. The null hypothesis is that α_i and x_{it} are uncorrelated. The alternative hypothesis is that they are correlated. Now we have to note that as long as we can assume x_{it} and ε_{it} are uncorrelated, meaning that the explanatory variables are strictly exogenous, then the fixed effect estimator is always consistent regardless of the correlation between α_i and x_{it}. But the consistency of the random effects estimator depends on the correlation between α_i and x_{it}. Now to calculate the significance of the difference between the two estimators under the null we can use the following formula:

$\text{Var}\ (\widehat{\beta_{FE}}- \widehat{\beta_{RE}})= \text{Var}\ (\widehat{\beta_{FE}}) - \text{Var}\ (\widehat{\beta_{RE}})$, the Hausman test statistic is then calculated as follows:

$\phi= (\widehat{\beta_{FE}}- \widehat{\beta_{RE}})'\ \{\text{Var}\ (\beta_{FE}- \beta_{RE})\ \}^{-1}(\beta_{FE}- \beta_{RE})$, which is actually a chi-squared distribution with K degrees of freedom; K being the number of betas. Now based on the chi-squared table if we reject the null hypothesis that α_i and x_{it} are uncorrelated, then we have to choose the fixed effect estimator; but if we fail to reject the null hypothesis then random effects would be chosen. One

might ask "why would we choose the random effects model, in the case where we fail to reject the hypothesis, knowing that the fixed effect estimator is also consistent?" The reason is the random effects estimator is a generalized least squares estimator which is an optimal combination of the between and within (fixed effect) estimators and hence is more efficient than either one of them. This means that if the assumptions of the random effects model are valid then the random effects estimator is the most efficient.

Another question might be "by choosing the fixed effect estimator are we not getting rid of the country specific non time varying effects like land locked dummy and oil rich dummy, which may be critical?" Well thankfully the purpose of this study is investigating the effect of FDI on export diversification; and FDI is not country specific. So even if we choose fixed effects our main variable of interest will remain intact; but still the country specific effects are very important. What we aim to do if we end up choosing the fixed effect model is instrument the time invariant variables that are correlated with α_i by the time averages of the time varying variables that are not correlated with α_i provided that we have enough time invariant variables not correlated with α_i. The estimators we gain this way are called the Hausman-Taylor estimators. This way we can avoid the tedious task of looking for external instruments.

To test for unit roots it is common practice to use the IPS test proposed by Im, Pesaran and Shin (2003). The IPS test is chosen by many because it allows for simultaneous stationary and non-stationary data series by assuming that the mean reversion parameters for the individual units are different. It also allows for serial correlation. The IPS test estimates the following ADF regression:

$Y_{it}= \rho_i Y_{it-1}+\sum \text{Ơ}_{ij} Y_{i,t-j}+ Z_{it}'\gamma+ \varepsilon_{it}$; the null hypothesis in this test is that each series in the panel contains a unit root. The alternative is at least one series in the panel is stationary. The asymptotic assumption is that T goes to infinity followed by N. One assumption of the IPS test is that the individual series are distributed independently cross-sectionally. This might be a limitation of this test. This is because in our study we are examining COMESA countries that are found in the same geographical region and are led by governments with common interests and relatively similar policies; especially towards FDI. This is bound to create some cross-sectional dependence among our countries. So assuming cross sectional independence might not be

reasonable. Another limitation is that the IPS test requires a balanced panel. So instead we use an alternative developed by Maddala and Wu (1999) and Choi (2001). This test conducts a Dickey-Fuller unit root test on each of our panels and constructs a test statistic using the p-values according to the following formula:

$P= -2\sum \log p_i$; for fixed N and as T goes to infinity this test statistic has a chi-squared distribution

The null hypothesis is all the panels have unit roots and the alternative is at least one panel is stationary. A sufficiently large P statistic will lead to the rejection of the null

As we have discussed in previous chapters, the present paper attempts to measure export diversification both at the intensive and extensive margins. The indicator we use for the extensive margin is the number of new products each year not exported in at least the previous two years. This is a discrete count indicator, which means we cannot use the usual OLS methods. In our study we use an appropriate count data model.

Our outcome variable Y_i takes the form 0,1,2,3… We aim to find the expected value of Y_i given a set of characteristics X_i. Now if we assume that the outcome variable has a Poisson distribution for a given X_i then the subsequent model we use will be the Poisson regression model. The estimators are obtained by maximum likelihood method. The following two equations specify the model:

$E\{Y_i/X_i\}= \exp\{X_i'\beta\}= \lambda_i;$

$P\{Y_i=Y/X_i\}= \exp\{-\lambda_i\}\ \lambda_i^Y/Y!$; maximization of the log likelihood of the Poisson regression model will lead to the usual orthognality condition $E\{\varepsilon_i, x_i\}=0$

Even if the outcome variable is not a Poisson distribution, the estimators that we obtain from the maximization of likelihood function are consistent. This is because the first order condition only requires orthognality and says nothing about the particular distribution. The estimators that we obtain are the quasi-maximum likelihood estimators.

Now that we have outlined the theoretical and econometric framework we move to presentation of the analysis and discussion of the results.

CHAPTER FIVE: DESCRIPTIVE AND ECONOMETRIC ANALYSIS

5.1 DESCRIPTIVE ANALYSIS

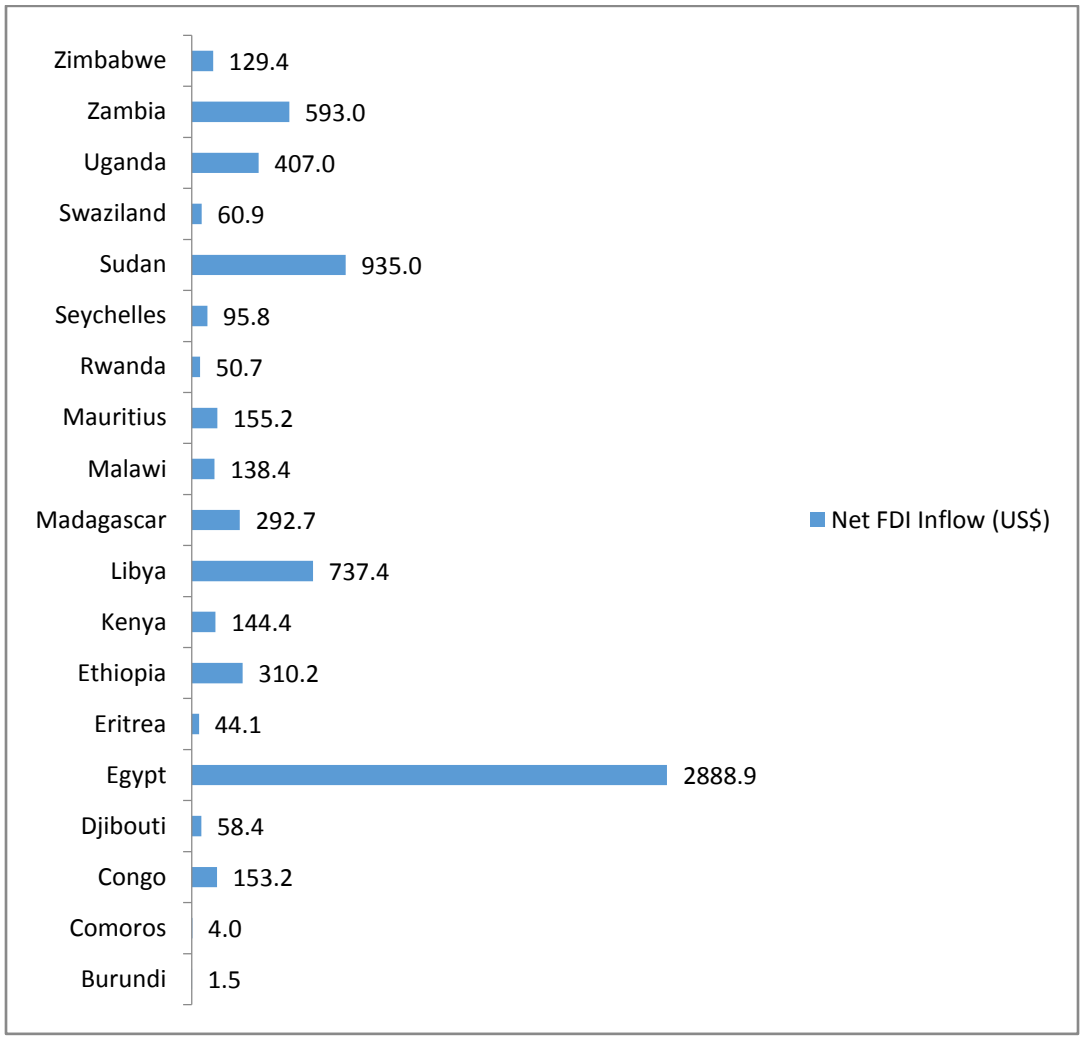
This section will cover the observed trends of Foreign Direct Investment, Export Diversification and Economic growth in COMESA member countries to provide a preliminary examination that will support our econometric analysis. The observations made in this section will help us organize our thoughts on what the interrelationships between FDI and export diversification might look like. A simple look at these trends is not guarantee to grasp the intricate relationship that might exist between FDI and export diversification, which will be left to econometric analysis, but it is a good place to start the analysis.

5.1.1 FOREIGN DIRECT INVESTMENT INFLOW TO COMESA

In many developing countries domestic investment needs cannot be covered wholly from domestic savings. This has forced governments to pay more attention on how to attract FDI, which is believed to be a generator of employment, high productivity and technology spillovers. For least Developed countries FDI means higher exports, access to international markets and international currencies and source of much needed finance. Hence countries find themselves in fierce competition to attract FDI mainly by adopting favorable trade policies and regulations and setting up regional integration arrangements. (Ndoricimpa, 2009), (Denisia, 2010)

The COMESA Common Investment Area (CCIA) was formed with a view to boost trade within the region by attracting both regional and foreign direct investment. The major objective of establishing the CCIA is to enable the region to attract greater and sustainable levels of investment through creating an internationally competitive investment area which allows for free movement of capital, labor and goods and services. In light of the fact that many COMESA countries are too small to attract FDI on their own, the importance of the CCIA cannot be underestimated. The following graph shows the average level of FDI inflow to each COMESA country over the period 1990-2014. (COMESA, 2011)

Figure 1: Net FDI Inflow, Millions of US$, 1990-2014, Average



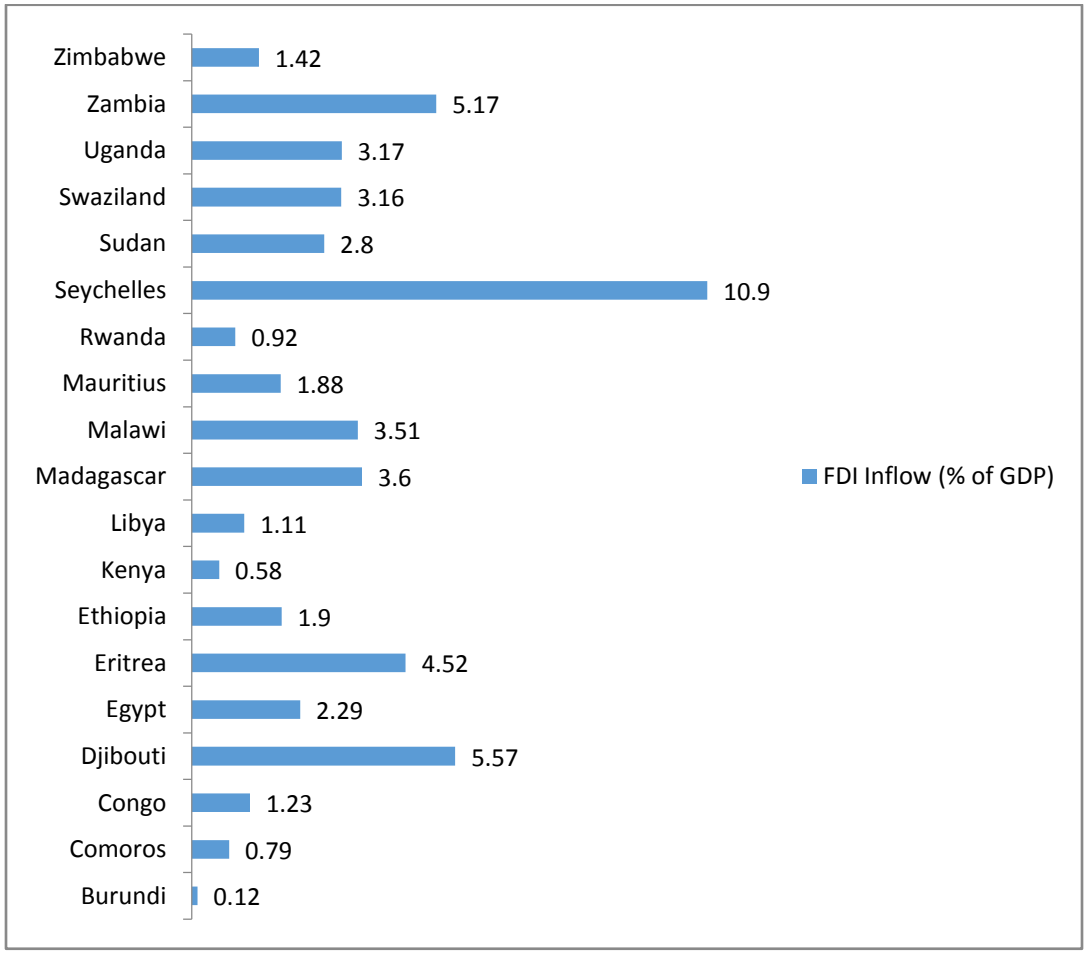
Source: World Bank Data, World Development Indicator, 2015

Figure 1 shows that Egypt was the largest recipient of FDI over the study period. From 1990-2014, the country received an annual average of 2.8 billion USD in Net FDI inflow. Egypt is followed by Sudan, who was able to attract an annual average of 935 million USD, and Libya, attracting 737 million USD in Net FDI inflow. Comoros and Burundi are at the bottom of the list attracting annual averages of 4 million USD and 1.5 million USD respectively. Now a conjecture can be drawn after examining two observations. The first is, the bulk of FDI coming to the region goes to Egypt, Sudan and Libya. These countries are oil rich. So it might not be beyond the scope of reason to believe that FDI coming in to COMESA may be resource seeking. This venture of guess is even more likely to be true when we consider FDI inflow in to mineral

resource rich countries like Zambia. This country attracted 593 million USD worth of FDI inflow over the study period. But our guess should only be taken with a grain of salt. This is because of the share of FDI inflow to the Democratic Republic of Congo. It is a resource rich country but still was able to attract only 153 million USD in FDI on average; of course one could say this is only because D.R. Congo is a conflict prone area.

To make the above analysis robust, we have to take in to account the differences in economic size that these countries have. Hence we examine how they perform when we consider FDI inflow as a percentage of GDP which is shown in Figure 2.

Figure 2: FDI Inflow as a percentage of GDP, 1990-2014, Average

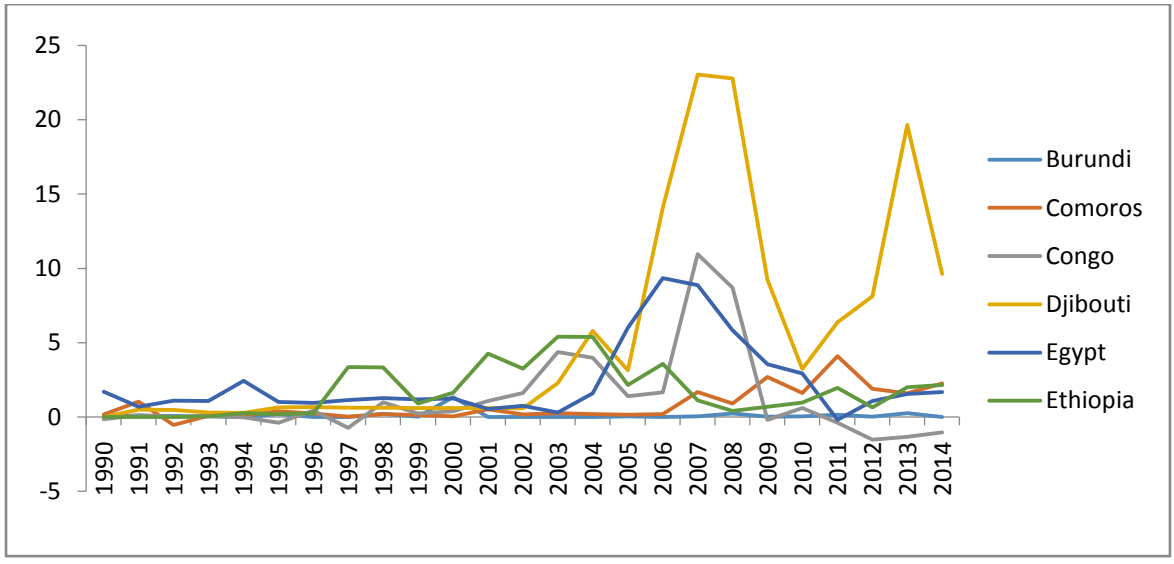


Source: own calculation based on World Bank data, World Development Indicators, 2015

Figure 2 shows that when economic size is accounted for, top FDI recipient among COMESA members is Seychelles. The country received an FDI inflow that amounted to an average of 11 percent of her GDP over the period 1990-2014. Djibouti follows, with annual FDI inflow being 5.6 percent of GDP on average. Djibouti's performance can be explained by factors like its strategic location between Africa, Asia and Europe, its political stability and relative social peace. The major investor in this country is United Arab Emirates and the focus of FDI flowing to Djibouti is port activities. Zambia is close by with FDI inflow as a percentage of GDP being 5.2 percent. Egypt, who is the largest recipient of FDI in absolute terms, only receives about 2.3 percent of its GDP in FDI inflow. Burundi and Comoros are again at the bottom of the list receiving 0.1 and 0.8 percent of GDP respectively.

To show the trend of net FDI inflow to COMESA countries we use the following figures. Instead of considering all members of COMESA in the same figure which would end up being overcrowded, we divide the countries in to three groups. This classification is not based on any economic criteria and is merely intended to bring more clarity. Figure 3 below shows the trend of FDI for the first group of countries

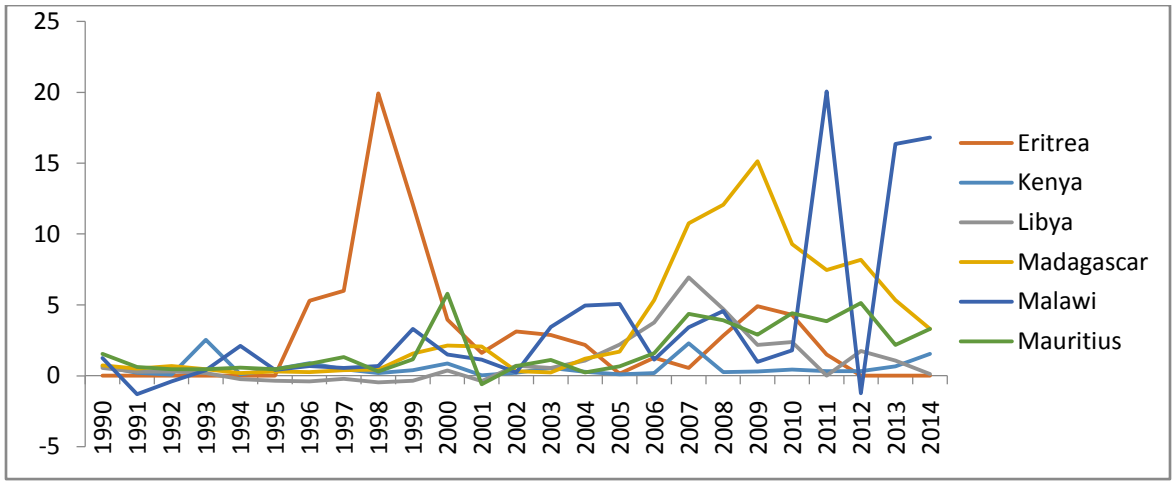
Figure 3: Net FDI inflow trend in COMESA, 1990-2014



Source: World Bank data, World Development Indicators, 2015

As we can see from the above figure, COMESA countries experienced a dramatic increase in FDI during the period 2005-2007. This was the pre-financial crisis period in which there was an expansion of credit and business. This international expansion of credit could explain the surge in FDI inflow experienced. But FDI inflow decreased almost as dramatically as it climbed up from 2007-2009 i.e. during the financial crisis. After 2009, some countries, like Djibouti were able to bounce back up to their previous performance; the country was able to attract 19 percent of her GDP in net FDI inflow in 2013, while others like D.R. Congo never really recovered. Figure 4 below shows similar trends for the second group of countries.

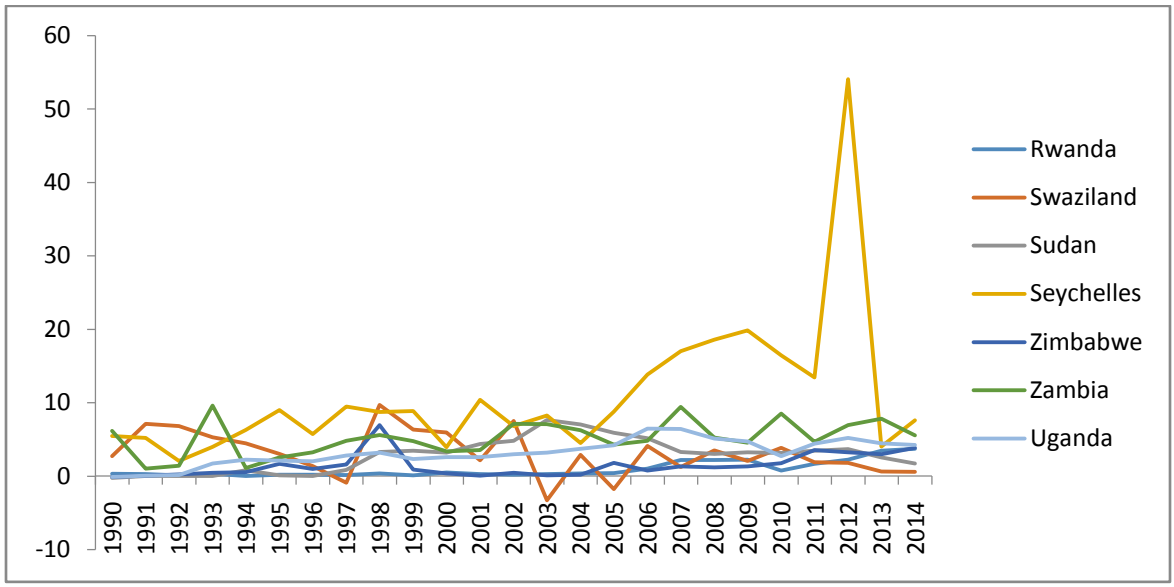
Figure 4: Net FDI inflow trend in COMESA, 1990-2014



Source: World Bank Data, World Development Indicators, 2015

As we can see from Figure 4 above, there are more or less similar trends of FDI inflow for the second group of countries; a dramatic increase in inflow during the pre-financial crisis period followed by a decline during the financial crisis. Countries like Malawi were able to recover from the drop in FDI inflow, while Libya could not manage to attract substantial level of FDI after the crisis; although one could argue Libya's poor performance could be because of the political crisis the country and its neighbors are experiencing. A common observation that could be made from the above two figures is; FDI inflow to these countries was much higher in the 2000's than in the 1990's. This could be because the 1990's were a decade of conflict and instability in many African countries which could have discouraged FDI investors. To get the full picture on FDI inflow trend in COMESA members, we use Figure 5 below.

Figure 5: Net FDI inflow trend in COMESA, 1990-2014



Source: World Bank data, World Development Indicators, 2015

As we can see from the above figure, countries like Zambia have had a rather stable FDI inflow throughout the study period, while other countries like Seychelles have experienced dramatic increases and decreases.

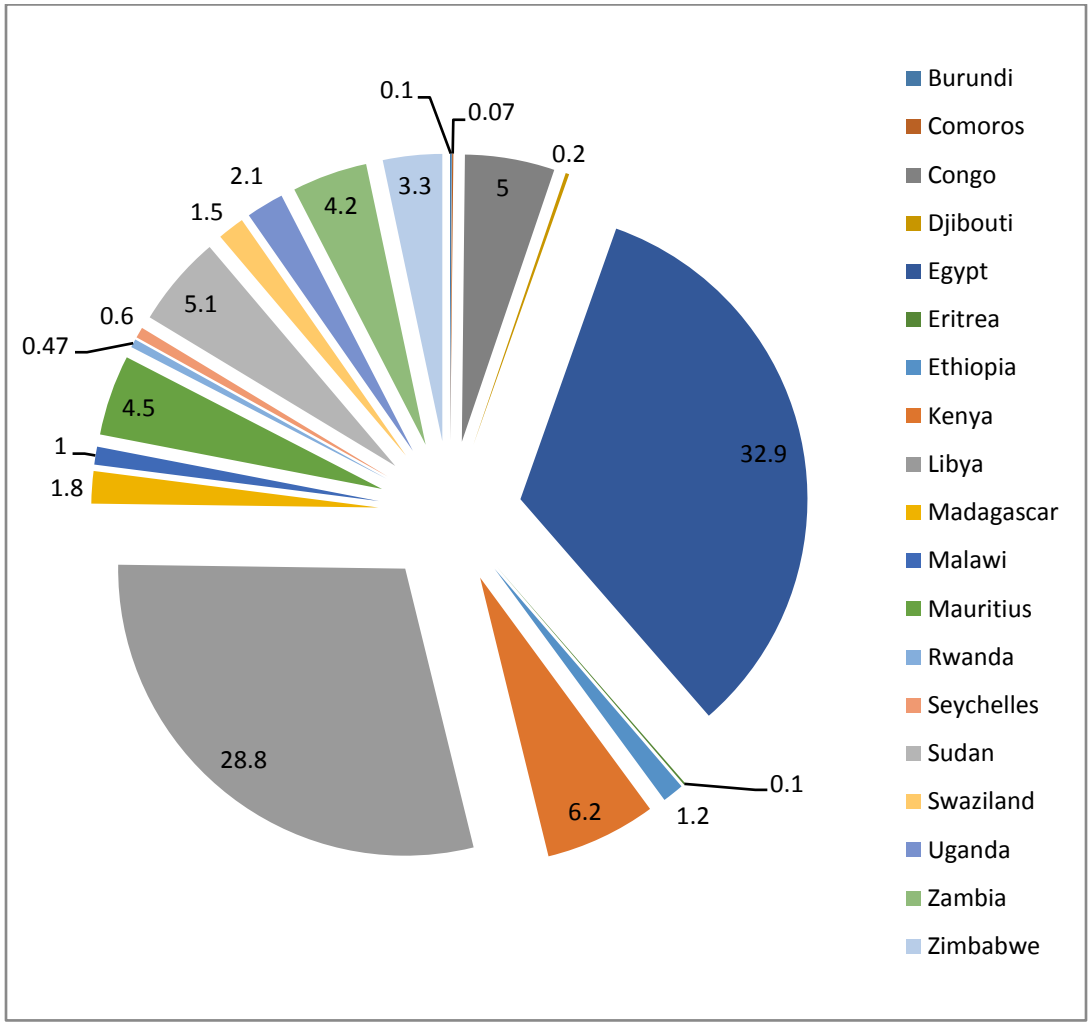
The pattern observed in the figures above is also indicative of the policy changes in the countries. Take Ethiopia for instance; FDI inflow in to the country was close to zero percent of its GDP up until 1995/96. In 1996 the government introduced a proclamation that included opening sectors which were closed to foreigners like health, education, tourism and consulting services and modified the capital requirement. After the introduction of this proclamation, as Figure 3 shows, FDI inflow to the country picked up.

In many members of COMESA, FDI shows little variation even in times of turbulence; this is especially true for countries like Kenya, Uganda, Zambia, Zimbabwe Rwanda and Burundi. Incidentally these are also countries that attract the lowest share of FDI compared to size. It is in the best interest of countries to keep the volatility of FDI to a minimum; this is because sudden changes in the volume of FDI could have devastating impacts on the economy.

5.1.2 EXPORTS AND EXPORT DIVERSIFICATION

Over the period 1990-2014, the COMESA region exported around 1.96 trillion USD worth of goods and services. But as we will see from the next figure, there is high imbalance in the export shares of the countries.

Figure 6: Average Export Shares of COMESA members, 1990-2014



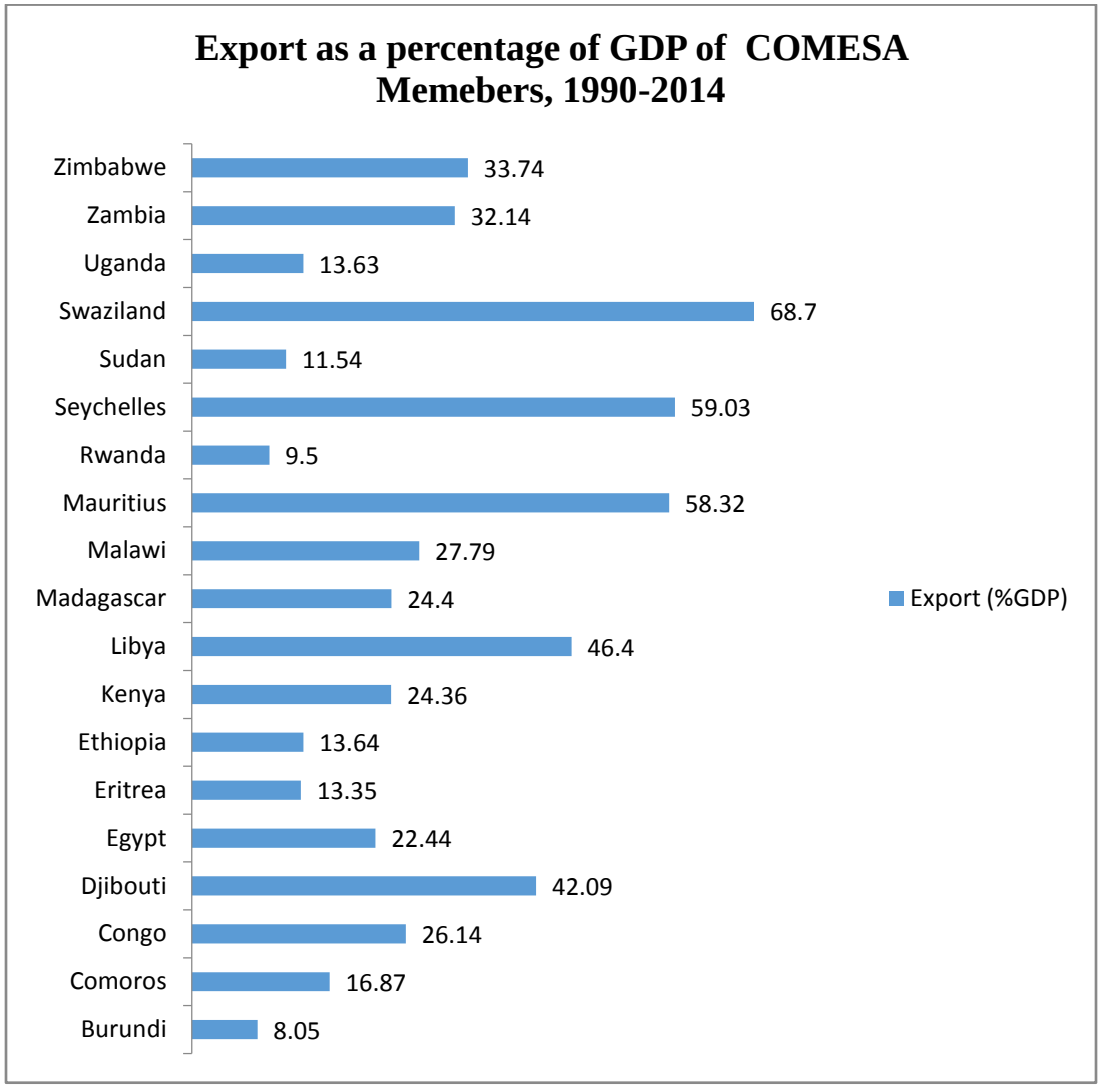
Source: own calculation based on World Bank data, World Development Indicators, 2015

Figure 6 shows that Egypt remains the biggest exporter of the region. The country accounted for 32.9 percent of the total exports of the region. In 2014 alone the country exported 45.3 billion USD worth of goods and services. Egypt's major trading partner is the EU. The country's exports to the EU are dominated by fuel and mining products, textiles and clothing and chemicals. Libya follows Egypt taking the second largest share of exports. Libya's share is

around 29 percent. The country's major export item is petroleum and petroleum products. In 2014, Libya's exports reached 19.3 billion USD. These two countries are followed by Kenya (6.2 percent), Sudan (5.1 percent) and D.R. Congo (5 percent). The smallest exporters of the region are Comoros (0.07 percent), Burundi (0.1 percent), and Eritrea (0.1 percent). For Ethiopia, data was not available for the years prior to 2011; hence her share is artificially low.

The above analysis did not take in to account the differences in economic size among the member countries. In this respect what we have to do is measure exports as percentage of GDP.

Figure 7: Export as a percentage of GDP of COMESA members, 1990-2014



Source: World Bank data, World Development Indicators

As we can see from figure 7 above, when size is taken into account, Swaziland has the highest share of exports. The country exports close to 69 percent of its GDP, followed by Seychelles (59 percent), Mauritius (58 percent) and Libya (46 percent). Rwanda and Burundi export the lowest share of GDP, 9.5 percent and 8 percent respectively

The present paper attempts to measure export diversification at two margins: the intensive and extensive margin. The intensive margin refers to diversification of exports among already active exporting lines. For example if a country exports goods A, B and C. A restructuring of the export shares among these active lines might lead to diversification. This is called diversification at the intensive margin, and it is measured by the Herfindahl Index (Table 1). But there could also be diversification at the extensive margin. This is when a country starts using new export lines. But this begs the question, what qualifies as a new export line? The definition of a new export line adopted in the present paper is those export lines that remained inactive for the past two years, are being exported in the year in question and would remain being exported for at least the next two years. This definition is line with Carrere et al (2007).

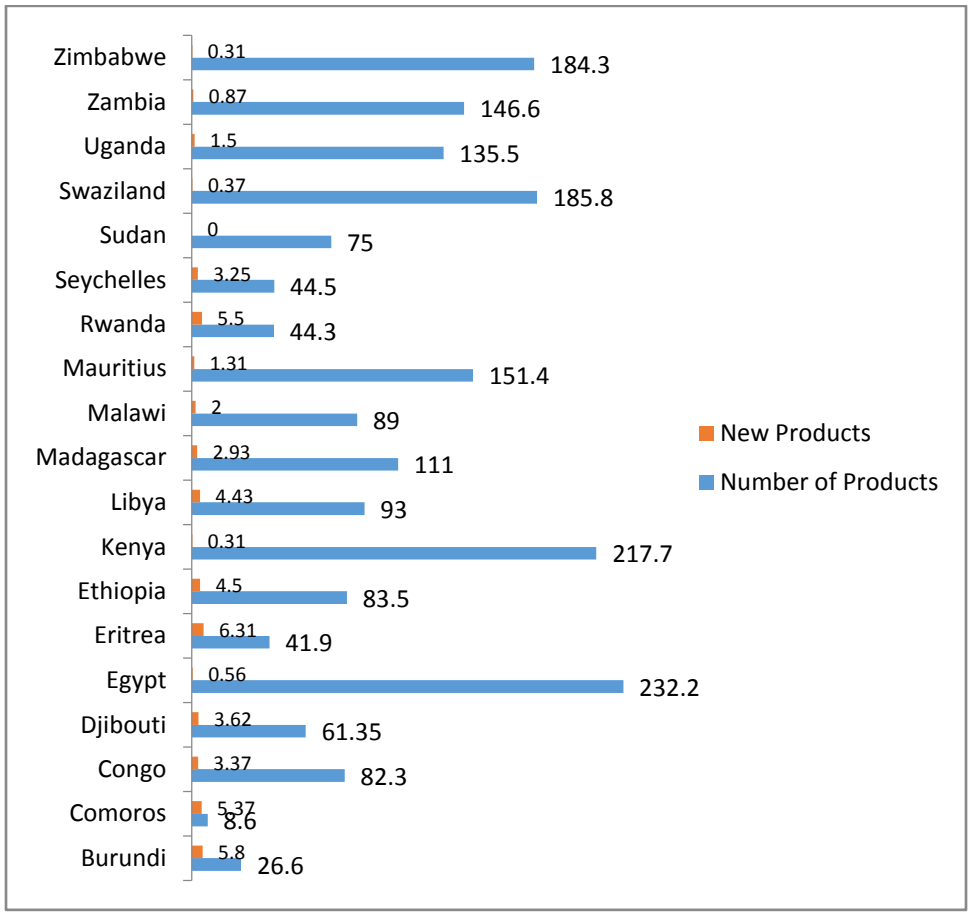
Table 1 below shows that all COMESA member countries had an average diversification index of greater than 0.5 showing fairly concentrated export lines. The main export items are petroleum oils, copper, and cobalt. The high dependence on a few primary commodities indicates the challenge ahead in terms of structural transformation.

Table 1: Average Diversification Index of COMESA members, 1990-2014

No	Country	Herfindahl Index	No	Country	Herfindahl Index
1	Burundi	0.74	11	Malawi	0.82
2	Comoros	0.72	12	Mauritius	0.74
3	D.R. Congo	0.81	13	Rwanda	0.78
4	Djibouti	0.6	14	Swaziland	0.74
5	Egypt	0.61	15	Seychelles	0.8
6	Eritrea	0.67	16	Sudan	0.81
7	Ethiopia	0.79	17	Uganda	0.79
8	Kenya	0.69	18	Zambia	0.84
9	Libya	0.8	19	Zimbabwe	0.76
10	Madagascar	0.75			

Source: UCTAD Stat, International Trade Statistics, 2014

Figure 8: New Product Lines and Number of Products exported, 1995-2014, Average



Source: UNCTAD stat, International Trade Statistics, 2014

The above figure shows the diversification patterns at the extensive margin. Here we use two indicators. The first is new product lines. It measures the extent to which COMESA countries diversify by exporting new products. The second is the total number of products exported by each country. This measures the horizontal diversification patterns of these countries. Both indicators are averaged over the period 1997-2014.

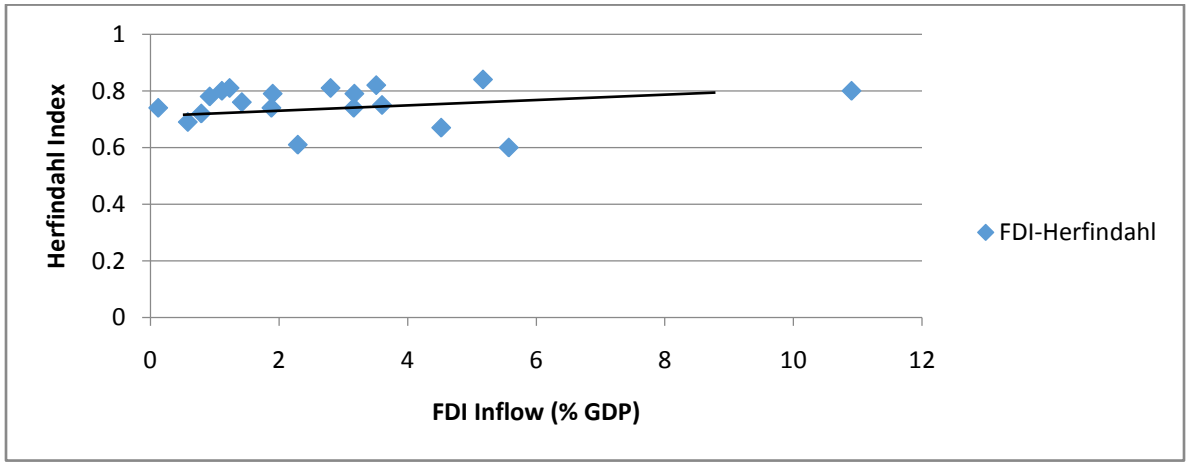
As we can see from figure 8 above, Eritrea has the highest average of adding new products every year. The country added 6.3 products to its export basket on average over the period 1997-2014. Following Eritrea, Burundi comes who added 5.8 products on average every year. Rwanda and Comoros come third and fourth by adding 5.5 and 5.3 products on average respectively.

Zimbabwe and Kenya add the least number of products to their export baskets every year; both 0.31 products. Swaziland adds 0.37 products on average and Egypt adds 0.56.

The same figure shows the total number of products exported on average from 1995-2014. Egypt exports the highest number of products; 232 followed by Kenya who exports 217 products. Swaziland and Zimbabwe come third and fourth exporting 185 and 184 products respectively. Eritrea exports 41.9 products on average, Comoros, Rwanda and Burundi export 8.6, 44.3 and 26.6 products respectively. The above analysis shows one important pattern. The countries that add the largest number of products every year are the ones that export the smallest number of total exports on average and vice versa. This might be because the countries that export a small number of products have much room to improve and add new products, while the countries that export a large number of products do not have any room to add new products every year.

To provide a prima facie evidence of the relationship between FDI and export diversification we calculated the correlation between the average FDI attracted by a COMESA country and the diversification measures. The correlation coefficient between FDI and Herfindahl index was found to be 0.04. This might lead to the conjecture that FDI has a negative relationship with intensive diversification, also the correlation coefficient between FDI and New export lines was found to be -0.06, leading to the conjecture FDI does not help COMESA countries diversify at the extensive margin. The following figures can be used to visualize the correlation between FDI and diversification variables.

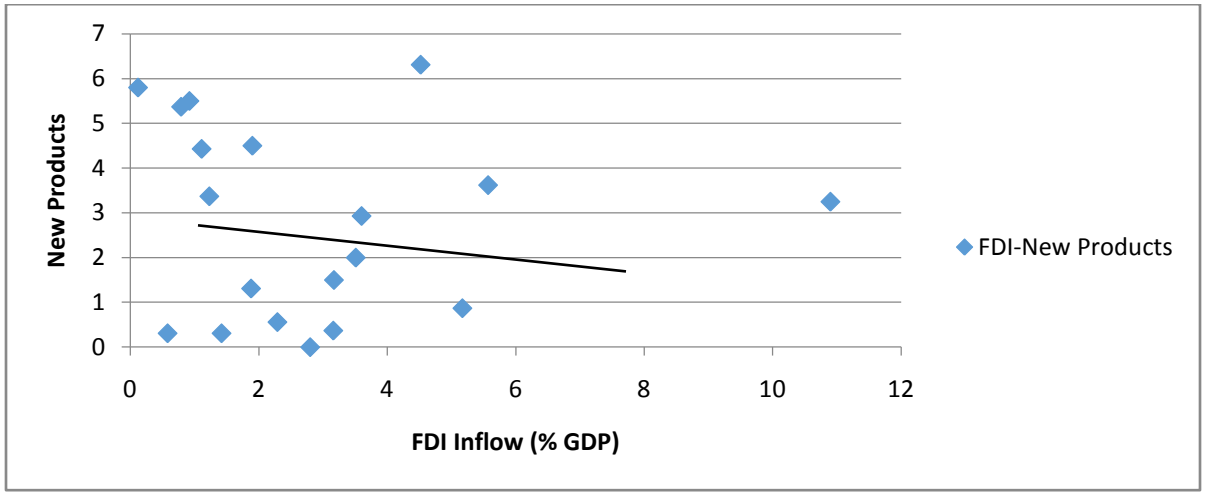
Figure 9 FDI-Herfindahl Index correlation



Source: Own calculation based on World Development Indicators and International Trade Statistics

We can see from Figure 9 that FDI and Herfindahl Index have a very weak positive relationship; as we noted the correlation coefficient was found to be 0.04. This means FDI and diversification have a very weak negative relationship

Figure 10 FDI-New Product Lines correlation



Source: Own calculation based on World development Indicators and International Trade Statistics

We can see from figure 10 above, FDI and New Products have a very weak negative relationship; their correlation coefficient was found to be -0.06. Although the above might give us a little idea of the FDI-Diversification nexus, we leave it to the econometric analysis to work out the intricate details and channels.

5.1.3 ECONOMIC GROWTH AND GDP PER CAPITA

The COMESA region achieved a growth rate of 6.6 percent in 2013 up from 5.5 percent in 2012. During the same year the region's growth continued to benefit from relatively high commodity prices, increased trade and investment ties with emerging economies and increased domestic demand. Over the study period, the growth performance of member countries varied, as we shall see from the following table.

Table 2: Average GDP growth rate of COMESA members, 1990-2014

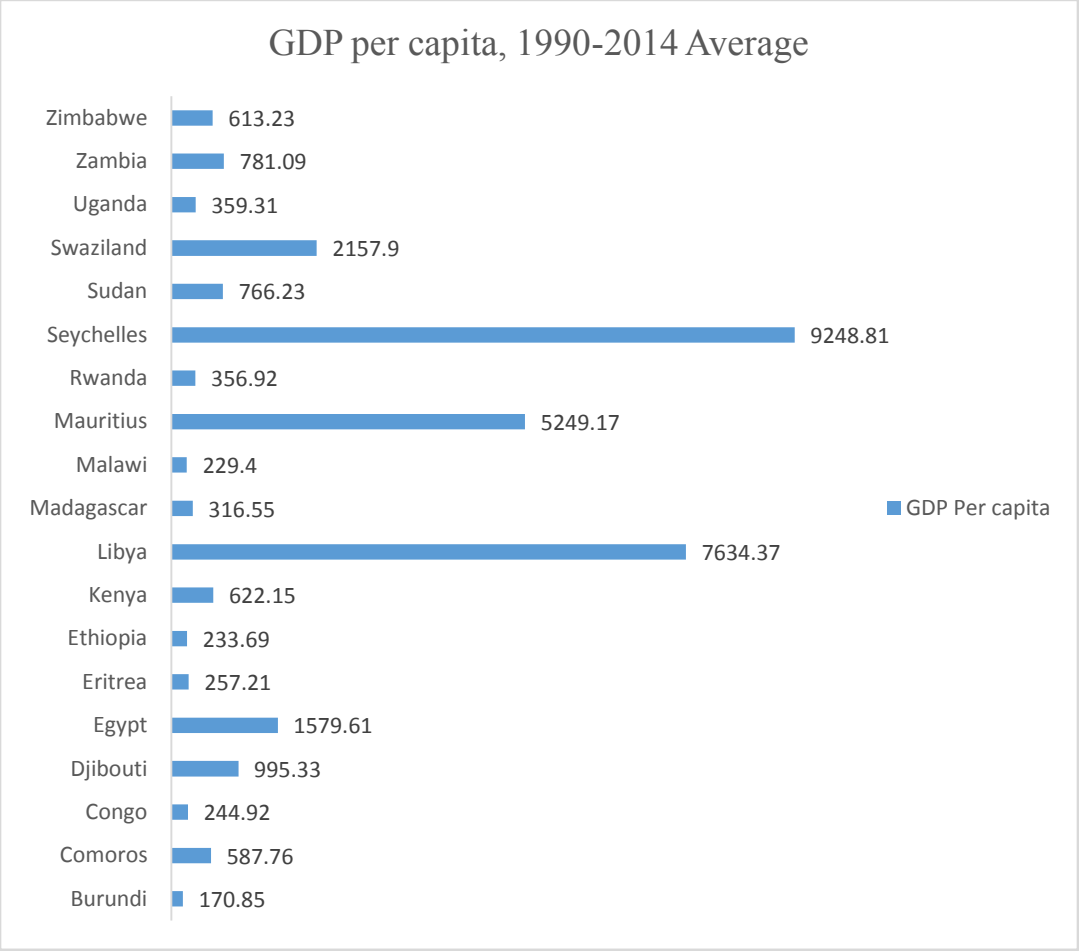
No	Country	Growth Rate	No	Country	Growth Rate
1	Burundi	1.43	11	Malawi	4.21
2	Comoros	2.28	12	Mauritius	4.49
3	D.R. Congo	0.68	13	Rwanda	5.46
4	Djibouti	1.74	14	Seychelles	3.8
5	Egypt	4.22	15	Sudan	4.8
6	Eritrea	3.78	16	Swaziland	3.32
7	Ethiopia	6.43	17	Uganda	6.7
8	Kenya	3.53	18	Zambia	4.69
9	Libya	3.66	19	Zimbabwe	0.53
10	Madagascar	2.34			

Source: World Bank Data, World Development Indicators, 2015

Table 2 shows that Uganda and Ethiopia are the fastest growing economies, 6.7 and 6.4 percent on average respectively for the period 1990-2014. D.R. Congo and Burundi are the slowest growing economies; 0.68 and 1.43 percent respectively

The relationship between GDP per capita and export diversification has been a much researched issue. Carrere et al (2007) researched this issue and concluded that Low and Middle income countries mainly diversify along the extensive margin while high income countries diversify along the intensive margin and then concentrate on a few products. The turning point from diversification to concentration occurs at around 24,000 USD of GDP per capita.

Figure 11: GDP per capita of COMESA members, 1990-2014 Average

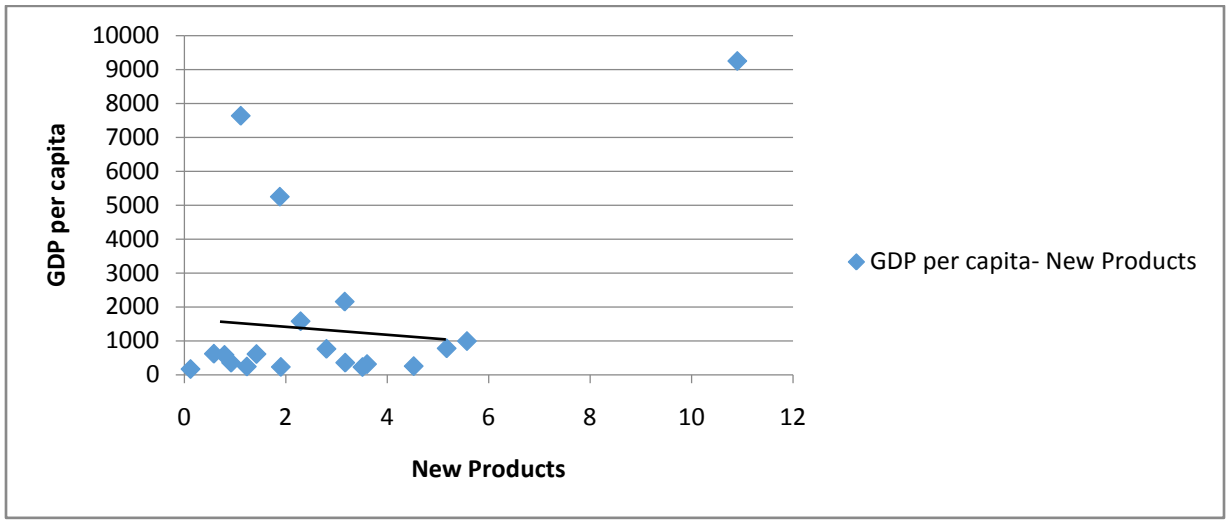


Source: own calculation based on World Bank Data, World Development Indicators

As we can see from figure 11 above, Seychelles has the highest average GDP per capita over the study period. The country had a per capita GDP of 9200 USD, followed by Libya, with a per capita GDP of 7600 USD and Mauritius with a per capita GDP of 5200 USD. Burundi, Malawi and Ethiopia had the lowest GDP per capita; 170, 229 and 233 USD respectively

According to our calculation countries that have the highest GDP per capita do not necessarily export the largest number of products. In fact the correlation between GDP per capita and total number of exports was found to be -0.02, indicating a weak negative relationship might exist. This is also true for new export lines; correlation coefficient between new export lines and GDP per capita was found to be – 0.005.

Figure: 12 GDP per capita-New Products correlation



Source: own calculation based on World Development Indicators and International Trade Statistics

5.2 ECONOMETRIC ANALYSIS

We use a panel of 19 countries over 16 years to investigate the relationship between diversification and FDI. This gives us 304 data points with which to work. The analysis presented from here on out was done on Stata 12. The variables we use in our model are:

Herfindahl Index: - it is used to measure diversification at the intensive margin with values ranging from 0 to 1. The closer the value is to zero the more diversified is the export structure

New Products: - it is used to measure diversification at the extensive margin. New products are defined as those products that were not exported in at least the past two years; are being exported in the year of consideration and will remain active for at least two consecutive years.

Trade Openness: - is the ratio of the sum of exports and imports to GDP; the higher this ratio the more open is the economy considered. This is expected to have a positive relationship with diversification. This is because in more open economies firms are better capable to take advantage of entrepreneurial opportunities arising in the international market leading to diversification

Telephone Subscription: - this is used to proxy infrastructure development level. Countries with better infrastructure are generally expected to have diversified export structures. This variable was used in (Bebczuk and Berrettoni, 2006) to proxy infrastructure development; contrary to common belief it was found to have a negative effect on diversification.

Inflation: - is an indicator of microeconomic stability. In an unstable macroeconomic environment it is difficult for firms to venture in every possible opportunity and make the most of it; so even if there are options to diversify few firms will choose those options. Therefore inflation is expected to have a negative relationship with diversification

GDP per Capita: - per capita GDP is expected to be positively related to diversification in the early stages of development; this is what papers like Carrer (2007) confirmed empirically. In later stages countries are expected to restructure their exports to concentrate on a few products

Foreign Direct Investment: - the relationship between FDI and diversification is the main investigation of this paper. Theoretically FDI is supposed to enhance diversification through productivity and market spillovers. Empirically there is no consensus among researchers with findings varying geographically and according to methodology. It is hypothesized in this paper that FDI will diversify the export structure.

Agricultural Exports: - the denser is a country's export space around agricultural exports, the less likely it is able to diversify to products of higher value added; this relationship is also expected to hold in the present paper.

Landlocked Dummy: - landlocked countries usually are expected to have inferior performance in diversification than coastal countries. Because of their geographical positioning, landlocked countries will have limited access to the international market than coastal counterparts.

WTO Dummy: - WTO members are generally expected to have a more diversified export structure than non-members. Usually members of the WTO agree to avoid trade barriers and restrictions. There are various beneficial trade agreements that membership of the WTO confers to the members. These provide opportunities to diversify.

Oil Rich Dummy: - Oil rich countries usually are expected to have a more concentrated export structure. This is because domestic and foreign firms operating in these countries are generally attracted to this sector while other sectors do not get much attention.

Our econometric analysis starts from investigating the stationarity of our variables. Accordingly we present the results of the Madalla and Wu (1999) and Choi (2001) test in the following table.

Table 3 Fisher type unit-root tests

NO	Variable Name	P Statistic	p-value
1	Herfindahl	154.7	0.00
2	New Products	60.7	0.01
3	Trade Openness	83.6	0.00
4	Telephone Subscription	118.6	0.00
5	Inflation	102.4	0.00
6	GDP per capita	120.2	0.00
7	FDI	158.9	0.00
8	Agricultural Exports	144.9	0.00
9	Official Exchange Rate	79.2	0.00
10	Landlocked dummy	74.4	0.00
11	WTO dummy	24.9	0.03

Source: own calculation based on World Bank and UNCTAD data

According to the Fisher type test, since all the P statistics are large we can reject the null hypothesis that all panels contain unit roots. This means that at least some of our panels are stationary. To the best of our knowledge there are no stationary tests which can identify which panels are stationary and which are not. All our variables are stationary after inclusion of a drift

term. After confirming the stationarity of our variables we move on to estimations. The fixed effect and random effects results are presented in the following tables

Table 4 Fixed effect regression results of Herfindahl index on model explanatory variables

herfindahl	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
tradeopennes	.0007417	.0001752	4.23	0.000	.0003955	.0010879
telephonesubscription	-.0072409	.0015755	-4.60	0.000	-.0103546	-.0041273
inflation	-.001407	.0003712	-3.79	0.000	-.0021407	-.0006734
gdppercapita	-7.14e-06	2.85e-06	-2.51	0.013	-.0000128	-1.51e-06
fdi	-.0009091	.0008887	-1.02	0.308	-.0026654	.0008472
agriculturalexports	.0005608	.0009685	0.58	0.563	-.0013532	.0024749
officialexchangerate	-.0000423	.0000123	-3.43	0.001	-.0000667	-.000018
landlockeddummy	0	(omitted)				
wtodummy	0	(omitted)				
oilrichdummy	0	(omitted)				
_cons	.805987	.0143432	56.19	0.000	.7776398	.8343341
sigma_u	.08846315					
sigma_e	.02911513					
rho	.90226566	(fraction of variance due to u_i)				

F test that all u i=0: F(12, 146) = 52.80 Prob > F = 0.0000

Source: own calculation based on World Development Indicators and International Trade Statistics

Table 5 Random effect regression results of Herfindahl index on model explanatory variables

Wald chi2(10) = 77.41
corr(u_i, X) = 0 (assumed) Prob > chi2 = 0.0000

herfindahl	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
tradeopennes	.0006917	.0001672	4.14	0.000	.000364	.0010194
telephonesubscription	-.0061176	.0014607	-4.19	0.000	-.0089804	-.0032547
inflation	-.0014424	.0003745	-3.85	0.000	-.0021764	-.0007084
gdppercapita	-6.76e-06	2.84e-06	-2.38	0.017	-.0000123	-1.19e-06
fdi	-.0009914	.0008987	-1.10	0.270	-.0027529	.00077
agriculturalexports	.0002716	.0009771	0.28	0.781	-.0016435	.0021866
officialexchangerate	-.0000376	.0000116	-3.26	0.001	-.0000603	-.000015
landlockeddummy	.0030764	.0400227	0.08	0.939	-.0753666	.0815194
wtodummy	-.1060981	.0456743	-2.32	0.020	-.1956182	-.0165781
oilrichdummy	-.019886	.0439918	-0.45	0.651	-.1061082	.0663363
_cons	.890137	.0494292	18.01	0.000	.7932575	.9870165
sigma_u	.06233977					
sigma_e	.02911513					

Source: own calculation based on World Development Indicators and International Trade Statistics

The above two tables present the fixed effects and random effects regression models. To choose between these models the Hausman test was used. The chi-square value was found to be 1.49 with prob> chi square = 0.98. This leads to a failure to reject the null hypothesis that random effects model is appropriate.

Before we move on to interpreting the model we have to check for heteroskedasticity.

To test heteroskedasticity the present paper uses the likelihood ratio test. The null hypothesis for this test is that our errors are homoskedastic, while the alternative is that our errors are heteroskedastic. The chi-squared statistic was found to be 97.5 with prob> chi-squared=0.000. This result leads to rejection of the null; rejection of homoskedasticity.

In this case what we have to do is use the heteroskedasticity robust random effects regression model. Table 6 presents the results of that model.

Table 6 Heteroskedasticity robust random effects regression of Herfindahl index on model explanatory variables

```
                                        Wald chi2(10)      =    348.79
corr(u_i, X)   = 0 (assumed)            Prob > chi2        =    0.0000

                              (Std. Err. adjusted for 13 clusters in countrycode)
------------------------------------------------------------------------------
             |               Robust
  herfindahl |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
  tradeopennes |   .0006917   .0001684     4.11   0.000     .0003617    .0010218
telephonesubscription |  -.0061176   .0010632    -5.75   0.000    -.0082014   -.0040337
     inflation |  -.0014424   .0005871    -2.46   0.014    -.0025931   -.0002917
 gdppercapita |  -6.76e-06   3.65e-06    -1.85   0.064    -.0000139    3.89e-07
          fdi |  -.0009914   .0006298    -1.57   0.115    -.0022259     .000243
agriculturalexports |   .0002716   .0017043     0.16   0.873    -.0030688    .0036119
officialexchangerate |  -.0000376    .000019    -1.98   0.047    -.0000748   -4.22e-07
landlockeddummy |   .0030764   .0489179     0.06   0.950    -.0928009    .0989537
      wtodummy |  -.1060981   .0531426    -2.00   0.046    -.2102557   -.0019406
  oilrichdummy |   -.019886   .0457592    -0.43   0.664    -.1095723    .0698003
         _cons |    .890137   .0563306    15.80   0.000      .779731    1.000543
-------------+----------------------------------------------------------------
       sigma_u |  .06233977
       sigma_e |  .02911513
           rho |  .82093323   (fraction of variance due to u_i)
------------------------------------------------------------------------------
```

Source: own calculation based on data

Now that we have estimated the appropriate model let us investigate our results. From table 6 we can see that 6 of our 10 variables are significant. As expected telephone subscription has a negative and significant coefficient. As the country becomes more connected, which also can be

indicative of infrastructural development, exports diversify. So we can say infrastructural development helps COMESA countries diversify at the intensive margin. GDP per capita also has the significant negative coefficient expected; similar to (Parteka and Tamberri, 2011). This means that as countries develop they become more diversified. Since COMESA countries are still at the lower stage of development, the positive relationship between diversification and GDP per capita is not surprising; as we saw from the descriptive analyses these countries are still below the level of per capita GDP after which concentration of exports occur i.e. 23 thousand USD according to Carrer et al (2007).

Official exchange rate was also found to be significantly and positively related to diversification at the intensive margin; as the currency of the country depreciates against the dollar it creates an incentive for exporters to sell more products both in terms of quantity and kind.

As expected being a WTO member also leads to diversification at the intensive margin. The table shows that WTO members are 10 percent more diversified than non-members. This is because they take advantage of the different opportunities, like trade agreements, membership brings. This finding is similar to the finding in (Parteka and Tamberi, 2011). Although it doesn't use a WTO dummy, this paper use a Regional Trade Agreement dummy to show that trade agreements have a significant positive effect on diversification.

Now moving on to our main variable of interest we can see that FDI has an insignificant positive effect on diversification. This means that FDI does not help COMESA countries diversify their exports at the intensive margin. This finding is similar to studies like (Bebczuk and Berretoni, 2006), (Iwamoto and Nabeshima, 2012). Both studies find that FDI has a statistically insignificant effect on export diversification. This means that the export activities of MNCs in host countries do not have a significant effect on exports of those countries. Now theoretically spillovers from FDI like market spillovers, technology spillovers, etc. should help domestic firms export new products and diversify. But the existence of these spillovers doesn't guarantee that domestic firms will utilize them. Without the appropriate institutional support this spillovers will simply go to waste; in this regard FDI might not diversify host country exports.

Another explanation for the insignificant effect could be the type of FDI that comes into COMESA. As COMESA is a common market it could be argued that a significant proportion of

the FDI that comes in is market seeking. As we discussed in chapter two, market seeking FDI usually substitutes exports since their major goal is producing for the domestic market and not exports. This means market seeking FDI does not diversify host country exports.

But before pursuing these arguments a little too far, why don't we investigate if FDI helps diversify at the extensive margin. For this we will use the Poisson regression model.

Table 7 and 8 present the fixed and panel effects regression results

Table 7 Fixed effect regression results of New Products on model explanatory results

```
                                        Wald chi2(6)      =     22.28
Log likelihood  = -249.24296            Prob > chi2       =    0.0011
```

newproducts	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
tradeopennes	.0104324	.0037527	2.78	0.005	.0030773	.0177875
telephonesubscription	-.0921451	.0362654	-2.54	0.011	-.1632239	-.0210662
inflation	-.0074593	.0072726	-1.03	0.305	-.0217133	.0067946
fdi	.0374168	.0180054	2.08	0.038	.0021269	.0727067
agriculturalexports	.0220625	.0204463	1.08	0.281	-.0180115	.0621364
officialexchangerate	-.0007649	.0002446	-3.13	0.002	-.0012443	-.0002854

Source: own calculation based on WDI

Table 8 Random effect regression of New Products on model explanatory variables

Wald chi2(9) = 14.75
Log likelihood = -307.97469 Prob > chi2 = 0.0982

newproducts	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
tradeopennes	.007745	.0036257	2.14	0.033	.0006388	.0148512
telephonesubscription	-.0734752	.0305749	-2.40	0.016	-.1334009	-.0135494
inflation	-.0062062	.0073178	-0.85	0.396	-.0205488	.0081364
fdi	.0348736	.0178987	1.95	0.051	-.0002072	.0699544
agriculturalexports	.012253	.0209848	0.58	0.559	-.0288764	.0533824
officialexchangerate	-.0005411	.0002387	-2.27	0.023	-.0010089	-.0000734
wtodummy	-.6960144	.7716071	-0.90	0.367	-2.208336	.8163076
landlockeddummy	.0193818	.6877793	0.03	0.978	-1.328641	1.367405
oilrichdummy	-.5746673	.6981169	-0.82	0.410	-1.942951	.7936167
_cons	1.675771	.8756723	1.91	0.056	-.0405155	3.392057
/lnalpha	-.1727504	.4049421			-.9664222	.6209215
alpha	.8413476	.340697			.3804417	1.860642

Likelihood-ratio test of alpha=0: chibar2(01) = 83.17 Prob>=chibar2 = 0.000

Source: own calculation based on WDI

The above two tables present the fixed and random effect regressions in the Poisson regression model. To choose between these models the Hausman test was used. The chi-squared statistics that Stata returned was 3.28 with prob>chi-squared 0.7728. This will lead to a failure to reject the null hypothesis that random effects is the appropriate model

Before we jump to interpreting the model we have to check for heteroskedasticity.

To test for heteroskedasticity we use the likelihood ratio test; the procedure we follow is the same as we did for the linear regression. The chi-squared statistic came back 132.82 with prob>chi-squared =0.000. This leads us to strongly reject the null hypothesis of homoskedasticity. Similar to the linear model we will have to use heteroskedasticity robust random effects model. Table 9 presents the results of this model

Table 9 Heteroskedasticity robust regression results of New Products on model explanatory variables

```
                                              Wald chi2(9)       =     15.58
corr(u_i, X)   = 0 (assumed)                  Prob > chi2        =    0.0762

                                (Std. Err. adjusted for 13 clusters in countrycode)
```

newproducts	Coef.	Robust Std. Err.	z	P>|z|	[95% Conf.	Interval]
tradeopennes	.0108954	.0148222	0.74	0.462	-.0181556	.0399465
telephonesubscription	-.212201	.1124829	-1.89	0.059	-.4326635	.0082616
inflation	-.0024714	.0288443	-0.09	0.932	-.0590052	.0540624
gdppercapita	.0003805	.000197	1.93	0.053	-5.51e-06	.0007666
fdi	.0777291	.0405006	1.92	0.055	-.0016506	.1571087
officialexchangerate	-.0010669	.000536	-1.99	0.047	-.0021174	-.0000164
landlockeddummy	-.208845	1.586092	-0.13	0.895	-3.317528	2.899838
wtodummy	-.178914	.8832553	-0.20	0.839	-1.910063	1.552235
oilrichdummy	-1.044309	.8030581	-1.30	0.193	-2.618274	.5296564
_cons	2.779757	1.393532	1.99	0.046	.0484841	5.51103

Source: own calculation based on WDI

Now let us interpret the model. As we can see the coefficient of FDI is significant and positive. This leads us to believe that foreign direct investment leads to diversification at the extensive margin; even though its contribution to diversification at the intensive margin is insignificant as we learned from the linear random effects model. This means that for the large part FDI helps COMESA countries through exporting new products than through exporting more traditional exports. This finding is similar to (Tadesse and Shukrall, 2013). This paper uses parametric and semi-parametric econometric methods to find that an increase in FDI enhances horizontal diversification; measured by number of products exported. Moreover the paper states that typical countries in which FDI contributes to diversification have a GDP per capita of 1500 USD, a relatively large population size and a manufacturing industry share that grows at 3.25 percent. It is also found that the contribution of FDI to diversification depends on where on the diversification spectrum countries are located; countries that are already highly diversified have little to gain from FDI and countries that are too concentrated also have little to gain.

GDP per capita is again positively and significantly related to diversification confirming the findings we had for the linear random effects model.

The findings of the present paper show that FDI has differing effects on diversification at intensive and extensive levels. It has a positive insignificant effect at the intensive level and a positive significant effect at the extensive level. This means that FDI helps COMESA countries export new products but doesn't significantly affect the structure of their traditional exports. If the new products that these countries end up exporting are still a very small proportion of their export earnings then the traditional export structure will remain unaffected. Just because a country started exporting new products doesn't necessarily mean its shifting away from the dominant traditional exports; there might not be a significant change in the share of this traditional exports. This might be the explanation behind the differing effect on the two levels.

Through our empirical investigation we have found that FDI enhances diversification at the extensive margin but not at the intensive margin; proving that FDI is important to expand COMESA's export basket. Other variables like GDP per capita, official exchange rate and WTO membership were also found to contribute to diversification at the intensive margin.

CHAPTER SIX: CONCLUSION AND RECOMMENDATION

6.1 CONCLUSION

Structural transformation is the new challenge in many African countries. It is inherent in the development path that these countries want to take and this is also true for COMESA. This paper tried to examine if FDI inflows to COMESA impact the transformation of the export basket of its members. It identified two levels of diversification; intensive and extensive and employed appropriate measures for each; Herfindahl index and new products. To investigate the effect FDI has, appropriate panel data econometric tools were used. Specifically linear random effects model and random effects Poisson regression models were used as per the choices of a Hausman test. FDI and the diversification variables were analyzed together with a set of control variables like GDP per capita, telephone subscription, official exchange rate, WTO membership, Landlocked dummy, trade openness, agricultural exports, and inflation.

The results were different for the two margins of diversification. While FDI was not seen to significantly contribute to diversification at the intensive margin, it had a statistically significant positive effect on diversification at the extensive margin. These findings were similar to those of (Bebczuk and Berretoni, 2006), (Iwamoto and Nabeshima, 2012) and (Taddesse and Shukrall, 2013). Like FDI other variables also have different impact on different levels; official exchange rate has a positive impact on intensive diversification but not on extensive diversification; WTO membership had a positive impact on diversification at the intensive margin but not on the extensive margin. GDP per capita had a positive impact on diversification at both levels.

The main value added by this paper is the fact that it uses measures of extensive and intensive diversification at the same time. This helps us to investigate at which margin FDI is more effective in diversifying the export structure of COMESA. Most studies in the area limit themselves to only one margin. Looking at the results the following recommendations are made.

6.2 RECOMMENDATIONS

The following policy recommendations are made in light of the results obtained

- ✓ COMESA member countries should continue to pursue FDI favorable policies as this could help them expand their export basket. These include streamlining the registration

and license process for new investors, tax holidays, allowing duty free imports, investor services and so on

- ✓ As GDP per capita had a positive impact on diversification, COMESA countries should recognize the complementarities between development and export diversification and should adopt policies accordingly; this means trade policies should reinforce growth policies
- ✓ WTO membership contributes significantly to intensive diversification which means non-members in COMESA should give accession to WTO due emphasis; Among the 19 members 5 countries are not yet members. These are Comoros, Eritrea, Ethiopia, Libya and Sudan.
- ✓ Telephones subscription had a significant positive effect on intensive diversification indicating that infrastructural development is key in transforming COMESA exports.
- ✓ Official exchange rate was seen to contribute significantly to diversification at the intensive margin but not at the extensive margin. Given the concerns of new exporters are market entry and network costs, it might not be surprising that exchange rate is not their primary concern; in this case exchange rate might not affect diversification by way of new products. However it is recommended that exchange rate are kept at a competitive and stable level. This is because exporters and foreign direct investors closely follow the exchange rate of countries to determine the stability of the macro economy.

REFERENCES

Abual-Foul, B., Soliman, M. (2008), "Foreign Direct Investment and LDC Exports", Emerging Markets Finance and Trade, Vol, 44, No, 2, Page 4-14

Ahmad, H., Alam S., Butt M., Harron Y., (2003), "Foreign Direct Investment, Exports and Domestic Output in Pakistan", the Pakistan Development Review, Vol, 42, No, 4, Page 715-723

Azmeraw, A., (2013), "The role of Government Policy Package in Boosting Export- A comparative study of Ethiopia, South Korea and Vietnam", IFSMRC AIJRM, Vol, 1, No, 1, Page 1-24

Banga, R., (2003), "The export Diversifying Impact of Japanese and US Foreign Direct Investments in Indian Manufacturing Sector", Indian Council for Research of International Economic Relations, Working Paper No 110

Bebczuk, R., Berettoni, N., (2006) "Explaining Export Diversification: An empirical analysis" CAF research program on development issues

Bonaglia, F., Fukasaku, K., (2003) "Export Diversification in Low income countries: An International challenge after Doha" OECD development center, Working Paper No 209

Calvet, A., (1981), "A Synthesis of Foreign Direct Investment Theories and Theories of the Multinational Firm", Journal of International Business Studies, Vol, 12, No, 1, Page 43-59

Carneiro, J., Rocha, A., Silva, J., (2007), "A Critical Analysis of Measurment Models of Export Performance", Brazilian Administration Review, Vol, 4, No, 2, Page 1-19

Carrere, C., Strauss-Kahn, V., Cadot, O., (2007), "Export Diversification: What's Behind the Hump?", mimeo, Lausanne

COMESA, (2015), "Inclusive and Sustainable Industrialization", Annual Report

Denisia, V., (2010), "Foreign Direct Investment Theories: An overview of the main FDI theories", Academy of Economic Studies, Bucharest, Vol 2, Issue 2

Dunning, H., (2001), "The Eclectic (OLI) paradigm of International Production: Past, Present and Future", International Journal of the Economics of Business, Vol 8, No 2, PP 173-190

Gorg, H., Greenaway, D., (2003), "Much Ado About Nothing? Do Domestic Firms really benefit from Foreign Direct Investment", IZA Discussion paper No 944

Hausmann, R., Klinger, B., (2006) "Structural Transformation and Patterns of Comparative Advantage in the Product Space" Center For International Development, Working Paper No 128

Helpman, E., (2006), "Trade, FDI and the Organization of Firms" NBER, Working Paper No 12091

Hesse, H., (2008), "Export Diversification and Economic Growth", Commission on growth and development, Working Paper No 21

"Histroy of COMESA" Common Market for Eastern and Southern Africa, COMESA Secretariat, 28 June. 2012, Web. 30 March 2016

Hymer, S., (1976), "The international Operations of National Firms: A study of Direct Foreign Investment", the MIT press, Cambridge, Massachusetts, and London, England

IMF, (2009). "Balance of Payments and International Investment Position Manaual", IMF multimedia services division, Washington, D.C.

Iwamoto, M., Nabeshima, K., (2012), "Can FDI promote Export Diversification and Sophistication of Host Countries: Dynamic Panel System GMM analysis", Institute of Development Economics, No 347

Kamuganga, D., (2012), "What Drives Africa's Export Diversification?" , Graduate institute of International and Development studies, WP No 15/2012

Khandelwal, P., (2004). "COEMSA and SADC: Prospects and Challenges for Regional Trade Integration", IMF Working Paper 04/227

Majeed, T., Ahmed, E., (2006), "Determinants of Exports in Developing Countries", the Pakistan Development Review, Vol, 45, No, 4, Page 1265-1276

Markusen, J., (2000), "Foreign Direct Investment and Trade", Center for International Economic Studies, Policy Discussion Paper No 0019

Meneyechel, E., (2008), "The effect of Foreign Direct Investment on Export: The case of Ethiopia", Addis Ababa University, School of Graduate Studies, Addis Ababa, Ethiopia

Nayak, D., Choudhury, R., (2014), "A selective review of Foreign Direct Investment Theories", Asia-Pacific research and training network on trade, Working Paper No, 143

Ndoricimpa, A., (2009), "Foreign Direct Investment, Exports and Economic Growth in COMESA countries: A Heterogeneous Panel Causality Approach", University of Burundi, Department of Economics

Nimesh, S., (2010), "Effect of Regional Integration Agreement on Foreign Direct Investment: A theoretical perspective", Asian Development Bank Institute, Tokyo, Japan

Parteka, A., Tamberi M., (2011), "Export Diversification and Development : An Empirical Assessment", Universita Politecnica della Marche, Faculty of Economics, Ancona, Italy

Prebisch, R., (1950), "The Economic Development of Latin America and its Principal Problems", United Nations Department of Economic Affairs, Lake Success, New York

Remla, K., (2012), "The Impact of Foreign Direct Investment on Poverty Reduction in Ethiopia: A cointregrated VAR approach", Addis Ababa University, School of Graduate Studies, Addis Ababa, Ethiopia

Salomon, S., "A Primer on Export Diversification: Key concepts, Theoretical Underpinnings and Empirical Evidence". Growth and Crisis Unit, World Bank Institute

Shasheen, J., (2009), "Foreign Direct Investment and Export Diversification in Low Income Nations", the University of South Wales, Australian School of Economics

Tadesse, B., Shukralla, E., (2013), "The impact of foreign direct investment on horizontal diversification: empirical evidence", Applied Economics, Vol 45, Page 141-159

Toye, J., Toye, R., (2003), "The Origins and Interpretation of the Prebisch-Singer thesis", Histroy of Political Economy, Vol, 35, No, 3 Page 347-367

UNCTAD (2015), "Reforming International Investment Governance" United Nations Publication, Genva,

UNCTAD (2005), "Determinants of Export Performance", United Nations Publication

Urata, S., Kawai, H., (2000), "The Determinants of the location of Japanese Foreign Direct Investment by Japanese Small and Medium-sized Enterprises", Small Business Economics 15, 79-103

Vernon, R., (1966). "International Investment and International Trade in the Product Cycle"

Appendices

Linear Models Diagnostics Tests

Hausman Test

```
                    b = consistent under Ho and Ha; obtained from xtreg
     B = inconsistent under Ha, efficient under Ho; obtained from xtreg

  Test:  Ho:  difference in coefficients not systematic

              chi2(7) = (b-B)'[(V_b-V_B)^(-1)](b-B)
                      =        1.49
            Prob>chi2 =      0.9826
            (V b-V B is not positive definite)
```

Heteroskedasticity Test

Likelihood-ratio test	LR chi2(11) = 97.51
(Assumption: homosk nested in hetero)	Prob > chi2 = 0.0000

Autocorrelation Test

```
Wooldridge test for autocorrelation in panel data
H0: no first-order autocorrelation
    F(  1,      11) =      0.171
          Prob > F =      0.6868
```

Multicollinearity Test

Variable	VIF	1/VIF
gdppercapita	8.09	0.123679
telephones~n	5.81	0.172187
wtodummy	2.86	0.350084
tradeopennes	2.23	0.448582
landlocked~y	1.74	0.576195
officialex~e	1.64	0.610818
agricultur~s	1.53	0.651663
fdi	1.36	0.736532
oilrichdummy	1.32	0.758384
inflation	1.22	0.822825
Mean VIF	2.78	

Poisson Model Diagnostics Test

Hausman Test

```
                b = consistent under Ho and Ha; obtained from xtpoisson
     B = inconsistent under Ha, efficient under Ho; obtained from xtpoisson

  Test:  Ho:  difference in coefficients not systematic

              chi2(6) = (b-B)'[(V_b-V_B)^(-1)](b-B)
                      =        3.28
            Prob>chi2 =      0.7728
            (V b-V B is not positive definite)
```

Heteroskedasticity Test

```
Likelihood-ratio test                                 LR chi2(10) =    132.82
(Assumption: homosk nested in heterosk)               Prob > chi2 =    0.0000
```

Autocorrelation Test

```
Wooldridge test for autocorrelation in panel data
H0: no first-order autocorrelation
    F(  1,      11) =      1.067
          Prob > F =      0.3238
```

Multicollinearity Test

Variable	VIF	1/VIF
gdppercapita	8.04	0.124435
telephones~n	5.33	0.187574
wtodummy	2.86	0.350131
tradeopennes	2.19	0.457147
landlocked~y	1.70	0.589659
officialex~e	1.64	0.610887
fdi	1.34	0.744208
oilrichdummy	1.28	0.780514
inflation	1.21	0.828618
Mean VIF	2.84	