REPUBLIC OF TURKEY
YILDIZ TECHNICAL UNIVERSITY
GRADUATE SCHOOL OF SOCIAL SCIENCES
DEPARTMENT OF ECONOMICS
PH.D. ENGLISH PROGRAM IN ECONOMICS

DOCTORAL THESIS

THE RELATIONSHIP BETWEEN WORLD AND AFRICAN EMERGING ECONOMIES: TRADE AND FDI PERSPECTIVES

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2018

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ABSTRACT

THE RELATIONSHIP BETWEEN WORLD AND AFRICAN EMERGING ECONOMIES: TRADE AND FDI PERSPECTIVES
Abdulkadir Wahab Aman
May, 2018

This study investigates the key determinants of trade and FDI positions between African emerging economies (AEE) and the world major emerging economies (WEE) by using the gravity model. The main objective is to identify the core macroeconomic and socio-cultural factors of bilateral trade and FDI between both sides. Besides, the study investigates the intra-industry trade to further intricate the type and nature of their bilateral trade. The WEE are those which are commonly recognized by all rating institutions and the AEE are identified by developing an index consisting of various criteria. Importer and exporter-fixed effect is used in order to efficiently test the impact of many dummy variables. The results illustrate that factors of trade and FDI are diversified. But, generally, the core form of the GM – GDP and distance – explains the bilateral trade and FDI positions. In the bilateral trade model, minerals production rather than petroleum production affects the level of bilateral trade. Moreover, sharing a common religion and a common language has a positive impact whereas ODA size, economic freedom, and overall trade volume are not statistically significant. Furthermore, more corrupted AEE have higher bilateral trade with some WEE than less corrupted AEE. In the FDI model, to some extent, both petrol and mineral production attracts FDI from the WEE. In addition, countries sharing similar language and religion have higher FDI positions than the others whereas higher per capita income is positively linked with FDI positions. Furthermore, AEE which signed investment agreements are hosting more FDI positions of the WEE. Additionally, the linkage between FDI positions and bilateral trade is detected. However, trade has a stronger impact on FDI than FDI's impact on trade.

Keywords: African Emerging Economies, Bilateral Trade, FDI, Gravity model, IIT

ÖZ

DÜNYA VE AFRIKA GELIŞEN EKONOMILERI ARASINDAKI İLIŞKI: TICARET VE DYY PERSPEKTIFLERI
Abdulkadir Wahab Aman
Mayıs, 2018

Bu çalışma, Yerçekimi Modelini kullanarak Afrika'nın gelişmekte olan ekonomileri (AEE) ve dünyanın önde gelen gelişmekte olan ekonomileri (WEE) arasındaki ticaret ve DYY pozisyonlarının belirleyicilerini araştırıyor. Temel amaç, ikili ticaretin ve her iki taraf arasındaki doğrudan yabancı yatırımın çekirdek makroekonomik ve sosyo-kültürel faktörlerini tanımlamaktır. Ayrıca, çalışma ikili ticaretinin türünü ve niteliğini daha da karmaşık hale getirmek için endüstri içi ticareti araştırıyor. WEE, tüm derecelendirme kuruluşları tarafından yaygın olarak kabul edilen ve AEE, çeşitli ölçütlerden oluşan bir endeks geliştirilerek tanımlanmaktadır. Birçok kukla değişkenin etkisini etkin bir şekilde test etmek için ithalatçı ve ihracatçı sabit efekt kullanılır. Sonuçlar, ticaretin ve doğrudan yabancı yatırım faktörlerinin çeşitlendiğini göstermektedir. Fakat, genel olarak, GM'nin temel şekli - GSYİH ve mesafe - ikili ticareti ve DYY pozisyonlarını açıklıyor. İkili ticaret modelinde, petrol üretimi yerine mineral üretimi, ikili ticaret düzeyini etkiler. Dahası, ortak bir din ve ortak bir dil paylaşımı olumlu bir etkiye sahiptir; ODA boyutu, ekonomik özgürlüğü ve genel ticaret hacmi istatistiksel olarak anlamlı değildir. Dahası, daha bozuk AEE bazı WEE ile daha az bozulmuş AEE'den daha fazla ikili ticarete sahiptir. DYY modelinde, bir dereceye kadar, hem petrol hem de mineral üretim, WEE'den doğrudan yabancı yatırım çekmektedir. Buna ek olarak, benzer dili ve dini paylaşan ülkeler diğer ülkelerden daha yüksek DYY pozisyonlarına sahipken, kişi başına düşen yüksek gelir DYY pozisyonlarıyla olumlu bir şekilde bağlantılıdır. Ayrıca, yatırım anlaşmaları imzalayan AEE, WEE'nin daha DYY pozisyonlarına ev sahipliği yapıyor. Buna ek olarak, DYY pozisyonları ve ikili ticaret arasındaki bağlantı tespit edilmiştir. Bununla birlikte, ticaret, DYY üzerinde ticaret üzerindeki etkisinden daha güçlü bir etkiye sahiptir.

Anahtar Kelimeler: Afrika Gelişen Ekonomileri, İkili Ticaret, DYY, Yerçekimi Modeli, Endüstri-içi Ticaret.

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May, 2018 Abdulkadir WAHAB

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ABBREVIATIONS

AEE	: African Emerging Economies
BT	: Bilateral Trade
ELI	**:** Export-Led Industrialization
EM	: Emerging Market
FDI	: Foreign Direct Investment
FPI	: Foreign Portfolio Investment
FT	: Foreign Trade
GDP	: Gross Domestic Product
GL	: Grubel – Lloyd
GM	: Gravity Model
HIIT	: Horizontal Intra-Industry Trade
H-O	: Heckscher – Ohlin
H-O-S	: Heckscher – Ohlin – Samuelsson
IFDI	: Inward Foreign Direct Investment
IIT	: Intra-Industry Trade
ISI	**:** Import-Substitution Industrialization
LDC	**:** Least Developed Country
OFDI	: Outward Foreign Direct Investment
PI	: Per capita income
SSA	: Sub-Saharan Africa
UN COMTRADE	: United Nations Commodity Trade Statistics Database
UNCTAD	: United Nations Conference on Trade and Development
UV	: Unit Value
VIIT	: Vertical Intra-Industry Trade
WEE	: World Emerging Economies

1. INTRODUCTION

This chapter is allocated to bring in the introductory parts of the study. Starting from the concise review of the rationale of the study, it prolongs by presenting the major and specific objectives of the study. Additionally, in this chapter, the scope of the study, and the emerging economies studied are presented. At the end, the overall content and structure of the thesis is outlined.

1.1 Rationale

Economically and politically the influence of emerging countries, especially BRICS, is rapidly increasing. Their shares in international trade and FDI positions have also remarkably increased. They have been engaged in official and non-official development cooperation with many countries in the last couples of decades even though their position as development actors has been recently acknowledged. Moreover, the terms emerging markets, emerging economies or emerging countries are not clearly defined. Since the inception of the term in the 1980s by a World Bank economist Antonie Van Agtmael, emerging markets are defined and more characterized by what they are not rather than what they are (Tiku, 2014). Some label these countries based on quantitative factors, such as GDP or GDP per capita, population statistics or growth rates whereas others put forward qualitative factors such as governance and level of democracy or socioeconomic factors such as literacy, health, and the status of women and children. By and large, it indicates markets that are growing fast and may “emerge” and become richer soon (Ciravegna et al., 2013). But, they are certainly not developed markets like North America, Japan, and Europe.

They are mostly characterized by faster growth than developed nations but they have less developed and less transparent political and financial institutions and lack of governance predictability. Most of these nations have also less record of rule-of-law and limited property rights, and a widely perceived risk of doing business (Tiku,

2014; Logue, 2011; Booth, 2014). But they are more attractive for investors with vast economic opportunities and more profitable than most developing economies. In simple words, “emerging economies are low-income and rapid-growth countries using economic liberalization as their primary engine of growth” (Hoskisson et al., 2000).

On the other side, when Farida Khambata, an Indian economist at the International Finance Corporation (IFC), coined the term Frontier Markets in 1992 to describe countries of the same potential as emerging economies but at an earlier stage of economic development, the majority of countries belonging to this group were characterized by instability, less market accessibility, and low liquidity but with bright future opportunity (Blanco, 2013). These markets have good opportunities for investors who can take risks because they have few opportunities for now, but they could become really interesting in the near future as a result of underexploited natural resources, increasing population and consumption, and high return to investment (Logue, 2011; Senay, 2015). Frontier markets are sometimes called “pre-emerging markets.” These are countries with equity markets that are less established. Representing more than 1.2 billion people, they are also placing increasing demands on the world’s resources as they are becoming intensive consumers of basic commodities (Goncalves and Alves, 2015).

Fast economic growth is the core indicator of a country’s status. Recently, countries which recorded fast economic growth and multidimensional changes in their economy have joined the emerging economies or emerging markets club. Based on the statistics taken from the UNCTAD, (2016), from 2001 to 2015, the world average economic growth was around 2.55% while the average rate for developing economies was 5.42%. Developed economies, on the other side, recorded a growth of 1.48%. However, the average growth of emerging economies was 5.31%. Back to 1990s, developing countries, developed countries, and emerging countries recorded GDP growth of 4.82%, 2.60%, and 3.28% respectively. Specifically, China and India recorded an average of 9.61% and 7.32% economic growth rates in the last 15 years while the United States and EU recorded 1.78% and 1.27% growth rates in the same period respectively. The other WEE such as Philippines (5.16%), Turkey (4.14%),

Russia (3.68%), South Africa (3.02%) and Brazil (2.74%) also had higher growth rates than the world average. This proves that developing countries, in general, had higher economic growth rate than developed economies, and emerging economies had better performance than the other developing economies.

In terms of foreign trade (FT), for instance, the exports of developing economies in total increased by 102% in the last decade while the same account for developed economies increased only by 42%. However, emerging markets (EM) have also augmented their export in 11 years by around 100% in the same period. Correspondingly, the import of goods and services of developing economies have increased by 122% from 2005 to 2015 whereas the imports by developed economies have increased by 35%. EM import increased by 115%. The average growth rate of imports and exports show that developing economies exports grew by 9.93% while that of developed economies grew by 5.49% on average in between 2001 and 2015. Imports have also expanded by almost similar proportion in the same years. The developing economies' share of export of merchandise trade was 32% in 2000. In 2015, it reached 44% while developed economies share declined from 66% to 53%. Similarly, the share of export of EM reached 46% in 2015 from 31% in 2000. BRICS share of merchandise trade (export), for example, increased from 7% in 2000 to 19% in 2015. These show that the FT amount of EM has increased by a rate more than the other developing economies in the last couple of decades.

On the other hand, the IFDI stock of developing economies has increased by nearly 5 folds in the last 15 years whereas the IFDI stock of developed economies has increased only by nearly 3 folds. Likewise, EMs' OFDI stock has increased by 4.8 folds. BRICS countries, EU and the USA's IFDI stock have increased by nearly 5.6, 3.4 and 2.18 folds in between 2001 and 2015. In contrast, the OFDI stock of developing economies has increased by nearly 6 folds in the last 15 years whereas the FDI of developed economies has doubled itself. Similarly, EMs' OFDI stock has increased by 6.4 folds. BRICS countries, EU and US's OFDI stock increased by nearly 12.6, 2.2 and 1.2 folds in the same period. In order to make it more clear, the world share of developing economies' OFDI stock reached 21% marking 11% share increase within 15 years. Developed economies' world share of OFDI stock declined

by 13% to reach 77% in 2015. Emerging economies contributed 22% of world OFDI stock in 2015. Similarly, these indicate that emerging economies have a better record of inward and OFDI positions than the rest developing economies.

When we see the African economies, many African countries have also realized a significant economic progress since 2001 even though it is not equivalent to BRICS. The average economic growth of the continent in the last 15 years was around 4.53%. This is because of a steep economic growth achieved by several African countries. Some countries, classified as either emerging or frontier markets, such as Ethiopia, Rwanda, and Mozambique have recorded a ridiculous economic growth. Their 15 years' average economic growth was 8.95%, 7.83%, and 7.77% respectively. Moreover, a total of 52 African countries have above the world average economic growth rate (2.55%) in the specified time span.

On the other hand, the total exports of goods and services of Africa to the world market have increased by 30% from 2001 to 2015. The imports of the continent have also augmented by 113% in these years. Specifically, the export size of Rwanda, Sao Tome and Principe, Ghana, Tanzania, Uganda, and Ethiopia have significantly multiplied; at least increased by 300%. Similarly, the imports of some countries such as Rwanda, Ethiopia, Mozambique, Sao Tome and Principe, and Uganda have increased by four times. Such increments are more than the rates of China, India and the other WEE did in the last 15 years.

In terms of FDI, a striking progress has been recorded within Africa. For example, the IFDI stock in Burkina Faso was only 27 million dollars in 2000 and then increased by 60 folds to reach 1.8 billion dollars in 2015. IFDI in Sao Tome and Principe, Mali, and Rwanda has also increased by 30, 23 and 20 folds respectively. The biggest economies of the continent such as Nigeria, Egypt, South Africa and Ethiopia have also significantly increased their IFDI flows in the last decade. Moreover, their OFDI has increased even though it is not equivalent to the IFDI.

Generally, in the last couple of decades some countries have emerged; both in the world and in Africa. In parallel to the incredible growth of the world emerging economies (WEE), such as the BRICS countries, their economic partnerships with

Africa has also increased. Their imports from African economies and exports to African economies have increased. For example, the total export share of BRICS, Turkey, Mexico, and the Philippines to Africa was only 11.7% in 2000. However, this share reached 33% in 2015 while the share of US plus EU declined from 55% to 37%. Moreover, the FDI of the WEE in Africa has also increased. China's FDI, for example, reached 2.5 billion in 2012 from less than 75 million dollars in 2003. These created a new World Emerging – African Emerging economic partnership.

Therefore, these notable and mounting economic ties make the topic an important area of study. Even though the South-South trade or economic cooperation is relatively well addressed in the literature, the relationships between WEE and AEE from the perspectives of trade and FDI are not investigated. Thus, by using an index to identify the AEE and employing the GM, the major economic, socio-cultural, and political determinants of trade and FDI are assessed.

1.2 Objectives of the Study

In the last couple of decades, it is clearly observed that the trade and FDI shares of the World Emerging Economies (WEE) in Africa are increasing and the shares of advanced economies such as the USA and EU is declining. But the trade and FDI positions of the WEE are not evenly distributed throughout Africa. Considering this economically vital fact, the primary objective of the study is to identify the major determinants of BT, intra-industry trade (IIT) and the FDI positions of the WEE in the major African economies or the identified African emerging economies (AEE). This may illustrate how the economic relationships between the WEE and AEE from foreign trade and FDI perspectives are affected by various factors. Under this major objective, one of the focal specific objectives is to identify the number, features, and characteristics of the AEEs. To do so, an index is developed to categorize all African countries into various levels and those outperforming are considered as AEE. In order to explicitly distinguish these economies, some indicators of economic growth and economic development are used as the major measurements in the index in addition to their foreign trade and FDI performance.

Moreover, using the structural GM, the major determinants of BT and FDI between the identified AEE and WEE are studied. As a matter of fact, many advanced economies have been engaged in Africa for centuries to utilize the vast natural resources of the continent. Their BT and FDI mainly target these resources. However, the same is true for the new-generation economic partners of the continent. Therefore, the need for African natural resources is one of the major reasons for the ever-increasing BT and FDI partnership between the AEE and the WEEs ***(H1).*** The study also aims to assess this imperative issue in the literature.

In addition, the engagement of the major WEE with African economies is not evenly distributed among economically similar countries. This means there are other issues beyond the major economic factors integrated into the intuitive GM such as socio-cultural factors which shape the BT and FDI**.** These socio-economic and cultural factors, such as language and religion are affecting the trade and investment flows between the AEE and the WEEs ***(H2).*** An attempt is made to assess these factors under the GMs.

Besides, the economic freedom in the emerging economies can affect BT and FDI positions. In fact, the major African economies have improved their level of economic freedom and competitiveness in the last decades. This, in return, has enhanced their economic performance to some extent. It is predicted that their improvement in economic freedom has increased their BT and FDI positions from the new partners by enhancing their national competitiveness ***(H3).*** Additionally, previous studies indicate that there is a strong linkage between BT and FDI. Thus, we predict that the trade of WEE is linked with their FDI positions in the AEE and vice versa ***(H4).***

In order to analyze the FT more, an IIT (IIT) between both sides is assessed. In modern-day international trade, both horizontal and vertical IIT is continuously increasing. Countries are exporting products that also import at the same time. Likewise, we predict that the trade between AEE and WEE is mainly not characterized by IIT since Africa is an exporter of raw materials to the world market and the major WEE are exporting manufactured products into Africa, ***(H5).*** Assessing

the IIT between both sides helps deeply understand the type or structure of their BT. Identifying the overall BT may not give a clearer picture of their relations. Rather, the IIT analysis shows what they are trading, its quality level, and quantity.

Therefore, under the foremost objectives of assessing the chief BT and FDI determinants and identifying the AEE, the study focuses on the basic form of the GM – economic size and distance – socio-cultural factors, the search for natural resources, economic freedom and linkage between FDI and trade which are established as hypotheses of the study.

1.3 Scope of the Study

Considering the ever-rising presence of WEE in Africa, the study covers only BT and FDI positions in AEE. The trade part covers the annual merchandise trade volumes of countries while FDI covers only FDI positions of the WEE in the AEE. The study also covers only emerging and frontier economies from Africa and the leading emerging economies of the world. Moreover, it is limited to trade and FDI figures of 15 years (2001-2015). This is because, in 2001, the term emerging economies or EM became very illustrious as a result of the BRIC's incidence. It is after this period that the term EM got an attention and a series of studies started to be conducted on it.

Additionally, the study used a simpler approach of categorization of world-level emerging countries. The countries categorized in these groups by the major rating institutions are used to distinguish the major WEE. With a clear divergence in the criteria of classifying countries into emerging or not, the most common categorizations are made by IMF, FTSE (The Financial Times-Stock Exchange), MSCI (Modern Index Strategy Indexes), S&P, Dow Jones, Russell and Columbia University EMGP. Currently, at least 37 nations are classified as emerging by either of these organizations. The main factor which makes a country emerging or frontier and often used by the rating institutions is its continued economic growth and size. In this study, only the commonly categorized countries as emerging economies by all the rating organizations stated above are taken in the world emerging economies (WEE) group. These are Brazil, China, India, Mexico, Philippines, Russia, South

Africa, and Turkey. These are *BRICS plus Turkey, Mexico, and the Philippines*. They can be simply abbreviated as BRICS + TPM in this study.

However, on the African side, in the major categorizations stated above, only Egypt, Mauritius, Nigeria and South Africa are the only African emerging economies accepted by either of the rating agencies. However, the famous rating institutions accept 12 African economies as frontier than emerging economies. For instance, FTSE categorizes Botswana, Ivory Coast, Kenya, Mauritius, Nigeria, and Tunisia as frontier economies. MSCI categorizes Kenya, Mauritius, Morocco, Nigeria and Tunisia in the same category. On the other hand, Dow Jones, categorizes, Kenya, Mauritius, Nigeria, and Tunisia while S&P rates Botswana, Ivory Coast, Ghana, Kenya, Namibia, Mauritius, Nigeria, Tunisia, and Zambia as frontier economies. Moreover, Russell includes Egypt, Gabon, Namibia, and Zambia into its frontier economies category.

Additionally, Radelet (2010) mentioned 17 countries as emerging and top in Africa. Generally, the frequently recognized countries as both AEE and frontier are 23 including South Africa.

Taking into consideration the lack of clear classification of AEE in the literature, in this study, an index is introduced by using latest data to identify the AEE. The major criteria used in the index are mainly economic growth or economic development indicators; economic size/GDP, income, FDI flow, export diversification, health, education, employment, commercial infrastructure, corruption, political stability, level of household and government consumption, and economic freedom. These criteria are identified from the very simple definition of the term emerging economies and the idea of economic development. The values are also given accordingly. Moreover, the criteria used by various organizations are integrated. Besides, the approaches of Radelet (2010) and Cavusgil (1997) are pursued.

Thus, 15 African countries have higher rates than the others to be considered as AEEs. Therefore, in this study, the term AEE refers *to Egypt, Mauritius, Nigeria, South Africa, Botswana, Burkina Faso, Cape Verde, Ethiopia, Ghana, Namibia, Morocco, Rwanda, Seychelles, Tanzania, and Zambia*. Hence, South Africa is

considered as a member of both the AEE and the WEE. Therefore, in estimating all the equations for South Africa, the number of partner AEE becomes 14.

Table 1.1: List of AEE and WEE

African Emerging Economies (AEE)				World Emerging Economies (WEE)	
1.	Botswana	9.	Namibia	1.	Brazil
2.	Burkina Faso	10.	Nigeria	2.	Russia
3.	Cape Verde	11.	Rwanda	3.	India
4.	Egypt	12.	Seychelles	4.	China
5.	Ethiopia	13.	South Africa	5.	South Africa
6.	Ghana	14.	Tanzania	6.	Turkey
7.	Mauritius	15.	Zambia	7.	Mexico
8.	Morocco			8.	The Philippines

1.4 Structure of the Study

This report is presented in six chapters. Chapter 1 deals with the introductory parts of the study – the rationale of the study, objectives of the study, and scope of the study. Chapter 2 covers the theoretical background of the study. It generally introduces the basics of trade and investment and their contribution to the economic growth and development of developing economies. Besides, it introduces the GM and its common variables; theoretical background, forms and applications, and the common variables in trade and investment models. In Chapter 3, which covers literature review part, the major studies done on the trade of WEE with Africa, the FDI flow of emerging economies into Africa, the linkage between FDI and trade and the overall linkage of WEE and African economies are reviewed.

Chapter 4 is fully allocated for methodology and data of the study. The trade, IIT and FDI models with specific variables are presented in this chapter. In Chapter 5, the economic, social and political characteristics of emerging and frontier economies, the list of countries accepted as emerging and frontier are described. Moreover, the index

used to identify AEE is presented. Besides, this chapter gives a clear picture of the study's foundation by explicating the countries studied and introducing their trade and FDI characters. This part has a great benefit to single out the international trade behavior and distribution of FDI in the AEE. Using these data, the GM is estimated and presented in Chapter 6. The determinants of BT, IIT and FDI of each country are analyzed and presented in this chapter.

2. THEORETICAL BACKGROUND

This chapter introduces the central theoretical background of the study. It covers mainly the role of foreign trade and investment in enhancing economic growth and development of developing countries. This is very connected with the fundamental justification of the study. It also introduces the idea of IIT and nature of FDI. The IIT analysis gives a clue on the nature of the BT between WEE and AEE. Besides, the basic foundation of the GM and the common variables in all GM-oriented trade and FDI studies including IIT are presented. This also helps identify the common variables in the model and shows how the variables in this study are integrated. Generally, this part mainly helps understand how the study is established on the GM to identify the BT and FDI determinants and how the variables of the study are identified.

2.1 Foreign Trade

These days, one of the burning issues regarding developing economies, in general, is the relationship between trade and their economic growth and development. In emerging economies' trade, as part of the developing world, the same issue is debatable. Similarly, in the AEE-WEE economic relationships, one of the critical issues are their trade and investment and how it is affecting their economic growth and development while determined by various factors included in the GM.

2.1.1 Trade as Engine of Growth

Even though many economists argue on the magnitude of the relationships between trade and economic growth, their linkage is proved to be tangible. In the endogenous growth theory, introduced by Romer (1986) and Lucas (1988), a thorough theoretical basis is provided for the positive connection between international trade and long-run economic growth and economic development. In recent times, in the new theory of endogenous growth, it is postulated that minimizing trade barriers can speed up

economic growth and then economic development in the long-run by allowing developing nations to absorb new technologies developed by advanced nations, by increasing the benefits from international research and development, by creating larger economies of scale, by reducing price distortions, and increasing greater specialization and efficiency (Salvatore, 2013).

Recently, there is a concurrence in the literature that trade, income, and productivity levels are positively and strongly correlated (Love and Lattimore, 2009). The gains from trade can be static, that is arising through the reallocation of resources as economies engage in specialization and exchange, or it can be dynamic. The dynamic gain from trade arises from the side of supply or called as productivity approach or from the side of demand or called as a vent for surplus. These relations indicate that there is a direct relationship between trade and per capita national income. This, in return, led us to conclude that there is a direct linkage between trade and growth or trade is an engine of growth. However, the question of the sequence is not clearly answered by economists so far. There are cases in which trade creates growth and some other cases in which growth promotes trade (Ingham, 2004).

Practically, when we examine the nature of developing economies' trade in general, we find that they are still highly dependent on the advanced economies. A majority of developing countries exports go mainly to Europe and USA, and most developing-nation imports originate from the advanced nations. It is a very recent phenomenon that trade among the developing nations is relatively improving. Additionally, the dominant exports from developing nations are primary products; agricultural goods, raw materials, and fuels. The recently improving manufactured sector in these economies is labor-intensive and uses low-scale technology and produce cheap products. Therefore, the role of trade for economic growth in developing economies is mostly not as much as expected.

There may be many reasons behind this problem. These reasons may include macroeconomic issues, trade policies, productivity, physical geography, education, health, and culture (Love and Lattimore, 2009). Ingham (2004) identified three major reasons. The first one is foreign-owned firms invested in developing countries are

tended to send back their profits to the shareholders abroad. This is called as a leakage of national income to foreign nations. This leakage affects the spread effects of growth since profits are not reinvested in that developing country. Secondly, the technologies used by many foreign enterprises are suitable for the resources endowment in the developing countries. These enterprises come to developing nations with capital-intensive production techniques while the countries are labor-abundant. Therefore, they import a capital and managerial skill which create less local employment and affects the balance of payments. Consequently, the developing economies do not learn new techniques of production to use their resource endowments. The third reason is that developing nations mainly export agricultural goods and raw materials but import manufactured goods. This creates weak terms of trade for them. Moreover, relatively the demand for primary products has grown more slowly than manufactured goods and there is higher price volatility for primary products in the world market.

2.1.2 Trade Policies of Developing Countries

As a result of the failure to get enough benefits for their growth and development from trade, developing economies have implemented different policies principally since the 1970s. These can be classified in to two main categories. In the first category, there were some countries which export primary products and import manufactured goods. They depend on the ratio of prices of primary to manufactured goods. Some countries, such as Botswana which exports diamonds, succeeded but most others got into trouble. Consequently, many countries such as the OPEC members and most SSA countries', economic growth critically affected and real PPI declined. In the second category, some developing nations escaped from the reliance on primary product exports to start labor-intensive manufactured goods. Through time, they started to export more skill-intensive and capital-intensive products. These countries have achieved rapid economic growth as a result of such type of trade. This group includes Taiwan, South Korea, Hong Kong, Singapore (Gang of Four) and later followed by Thailand, Indonesia, Malaysia and China (Dunn and Mutti, 2000).

Countries in the first category, which mainly include most African nations, export large amounts of a few product types which keep their export earnings very limited. Moreover, their dependency on few products makes their earnings very volatile. The prices of oil and gas, for example, have affected many economies in this group as result of its price volatility and uncertainty.

Consequently, the governments of many of these developing economies have started implementing various policies to minimize the problems and the dependencies of their economies on primary products exports. The most known policies were the import substitution and export-led growth.

From the 1950s to 1970s, import substitution policy was well known. The governments of many LDCs have tried the *Import Substitution Industrialization* (ISI) through which imported products are intended to be replaced by domestically produced ones. The basic rationale behind this policy was the belief that the economy should at least be able to provide for itself – self-sustenance. Therefore, under such motivation high tariffs are imposed to protect the local industry which is expected to provide a range of goods and services for the nation. Even though the industries in developing economies do not become efficient, they make profits because of the policy incentives (Thompson, 2001).

An ISI strategy has some advantages. The first one is that risks are reduced in forming an industry to replace imports since the industrial products are already in the market. Second, it is simpler for developing nations to protect their market against the other competitors than to force the advanced economies to lower trade barriers against their exports. Finally, foreign producers are induced to establish tariff factories to overcome the tariff limits of the LDCs. However, the ISI has also its own limitations or disadvantages. First of all, the domestic industries are allowed to grow accustomed to protection from competitors and have no motivation to become efficient. Secondly, the system does not allow local industries to have economies of scale since they are inefficiently producing a small number of products. Finally, it becomes very difficult and costly to replace capital-intensive and technology-oriented

products of advanced nations. Therefore, only a few countries have been successful by using this policy in selected infant industries (Salvatore, 2013).

Later on, in the 1970s, the idea of Export-Led Growth or *Export-Led Industrialization (ELI)* has appeared as a result of the failure of the developing economies to grow by implementing the ISI. Therefore, some countries started to remove their protectionist policies but to target foreign markets as destinations of their products. This was also known as "outward-oriented" trade policy. The best exemplary countries were the Four Tigers or Gang of Four. Later some other countries – Thailand, Indonesia, Malaysia, and China – followed the same approach. Recently, Mexico, India, and Brazil have also followed similar policy. These all countries export highly labor-intensive manufactured goods, using their abundant resources as the Heckscher-Ohlin (H-O) theory predicts (Krugman and Obstfeld, 2009; Thompson, 2001). However, China and India have started to export capital and skill-intensive products too.

The ELI also has advantages and disadvantages. It overcomes the problems of economies of scale by targeting various advanced and vast economies. It also creates efficiency in the manufacturing sector especially when such goods are used as an input for the others. Moreover, this policy promotes industrialization even if the local economy is very small. However, this policy could not work for all developing nations as result of global competition from well-established industries. Besides, developed nations are effective in providing high-level protection for their industries producing labor-intensive commodities which kills the comparative advantage of the developing nations (Salvatore, 2013).

2.2 Intra-Industry Trade (IIT)

At a time when either of the ISI or ELI could not work for most developing nations, the trade among them is increasing. Besides, trade with the advanced economies is not benefiting African economies by exporting few numbers of primary products at very cheap prices. However, the trade with the major emerging economies, such as BRICS +TMP, is continuously increasing. In fact, the trade between AEE and these WEE may not have a different nature from the trade between the AEE and the

advanced economies. The theory of IIT may help identify the nature of the BT between AEE and WEE.

When we come to the very basic idea of the IIT, it is not explained by the neoclassical trade theory in which countries specialize in the production and export of goods with a comparative advantage. In the neoclassical trade model, the reason behind having a comparative advantage can be natural resource endowments such as arable land or labor. This results in the specialization of countries and one-way trade. For example, Kenya exports tea to Egypt but imports electrical products from Egypt. This means there is no an exchange of similar goods exported in the opposite direction. Such type of trade was assumed and prevailing in the literature. However, recently it is proved that most global trade is in fact dominated by the exchange of similar goods produced in different countries using comparable factors of production, which is not explained by comparative advantage or the H-O theory.

As a result, much intention has been given to the two-way trade of products which are in the same industry. This is simply called IIT. Earlier works on this type of trade assumed that the structures of production in each country are being determined by relative factor endowments. Products are produced with comparable factor intensity under product-specific increasing returns to scale. The scale economies make firms in each nation to focus on a limited subset of products of the same industry in order to achieve efficient scale operations (Dixit and Stiglitz, 1977; Krugman, 1980; Lancaster, 1980; Dixit and Norman, 1980; Helpman, 1981; Ethier, 1986).

IIT can be classified into two major categories. The first one is a horizontal IIT. This type of trade is made by firms which aim to attain economies of scale in their production processes by efficiently replicating their activities in different countries. They make this if they can gain from producing and selling locally by avoiding tariffs, reducing transport costs and plant-specific fixed costs. The second type of IIT is vertical. In this type of trade, firms produce inputs and finished goods in different places. Different stages of production take place in diversified countries. In practice, high-value and more capital-intensive production remain in high-income countries whereas less capital-intensive and labor-intensive production stretch across low-

income or middle-income economies. Vertical IIT was initially defined by Falvey (1981) but later Krugman (1981), Greenway (1992) and Abd-el Rahman (1991) clearly distinguished it from the horizontal one (Manger, 2012).

There are some well-known measurements of IIT. But the most common is the Grubel – Lloyd Index (GL) which was first introduced in 1971. According to this index, the IIT of any country is calculated as:

$$GL_i = \frac{(X_i + M_i) - |X_i - M_i|}{X_i + M_i} = 1 - \frac{|X_i - M_i|}{X_i + M_i}; 0 \leq GL_i \leq 1$$

where X denotes exports and M the imports of goods i.

If $GL_i = 1$, it means there is only IIT in the country with zero inter-industry trade. It implies that the country exports as much as it imports of the same good. Contrary, if $GL_i=0$, it means there is no any IIT in the country or its trade is totally inter-industry. It implies that the country is solely exporting or importing good i.

Moreover, the Unit Value (UV) of goods is used to analyze if any level of IIT is vertical or horizontal. Initially used by Abd-el-Rahman (1991) and it was later used frequently and improved (Ercan and Dilek, 2016). Fertö and Hubbard (2002) have developed a simple formula for calculating vertical IIT for low-quality products ($VIIT_{LQ}$), vertical IIT for high-quality products ($VIIT_{HQ}$) and horizontal IIT (HIIT). This can be expressed as follows:

$$HIIT = 1 - \alpha \leq \frac{UV_i^x}{UV_i^m} \leq 1 + \alpha$$

UV_i^x and UV_i^m stand for the unit value of imports and exports for the country in consideration respectively. Besides α is the percentage we are willing to assume about the quality difference. In this study, as used in most similar studies, it is assumed as 15%. So, any result in between 0.85 and 1.15 indicates that there is a HIIT otherwise it is a vertical one. Similarly, VIIT for low-quality products ($VIIT_{LQ}$) and high-quality products ($VIIT_{HQ}$) is calculated as follows;

$$VIIT_{LQ} = \frac{UV_i^x}{UV_i^m} \leq 1 - \alpha$$

and

$$VIIT_{HQ} = \frac{UV_i^x}{UV_i^m} \geq 1 + \alpha$$

Accordingly, if the result is below 0.85, the product exported is low-quality and if it is above 1.15 the exported product is high-quality.

2.3 Foreign Direct Investment (FDI)

The International Monetary Fund (2009) defines a foreign direct investment as a direct investment which arises when an investor living in one country makes an investment in another economy which allows him/her to control or influence the management of the enterprise. Accordingly, FDI can be a flow or position that arises between parties in direct investment relations. In an operational term, defined by the IMF, a 10% and more voting power is sufficient to say an investor has a direct influence or control on the enterprise.

According to the OECD Benchmark Definition of Foreign Direct Investment (2008); foreign direct investment is a cross-border investment made by residents in one country, called direct investor, with an aim of creating a lasting interest in the organization, the direct investment enterprise that is living in a country other than that of the direct investor. The direct investor has a motivation to directly control the enterprise for long-term benefits. This implies that the aim of the foreign direct investment is different from that of portfolio investment in which the investor is unable to influence the management of the enterprise. The direct investor may be an individual, group of individuals, a corporation, a government body, a public or private enterprise, a trust of societal organization or a combination of these.

FDI gives a direct control over the firm by the foreign investor with an interest of benefiting for the future. In this sense foreign direct investment is a type of investment whereby a resident of a country acquires ownership of assets for the purpose of controlling the whole management of a firm in another country, the host nation (Moosa, 2002). This shows that the foreign investor is interested in general

influence the production, distribution and other managerial issues and decisions of the established organization.

FDI and foreign portfolio investment (FPI) are the two common types of international investment. *"Portfolio investment includes investments by a resident entity in one country in the equity and debt securities of an enterprise resident in another country which seek primarily capital gains and do not necessarily reflect a significant and lasting interest in the enterprise*" (UNCTAD, 2009). Foreign investment in bonds, notes, money market instruments and financial derivatives are examples of FPI.

2.3.1 Types of FDI

Foreign direct investment has some forms. One of the common classifications is the one suggested by Markusen and Markus (2003). By reviewing many prior researches on the topic, they mainly discussed two major types of foreign direct investment – vertical and horizontal FDI. They note that the preference between vertical and horizontal investment structures depends on country distinctiveness, for instance, relative size and relative endowment differences, plus trade and investment costs. They concluded that most FDI is the horizontal type.

2.3.1.1 Vertical FDI

Vertical FDI is an investment in which the investing firm engages in value adding production by expanding vertically. It does not directly duplicate what it is producing in the home nation. Rather, such firm fragments the production process into various stages according to the factor intensities of nations and factor price differences. This type of FDI has two main motives for locating plants and headquarters in different places. First, it follows fragmentation which implies that the location of knowledge-based assets is fragmented from production. Costs of supplying services of the asset to the foreign nationals are very small since it is fragmented. Second, knowledge-based assets are skilled-labor-intensive in comparison to the final production. Therefore, such plants always try to locate their plants in the foreign nation at a low cost or use technology transfer cost because they cannot use the same labor and technology they have in the main plant.

2.3.1.2 Horizontal FDI

Horizontal FDI is an investment in which the firm produces the same products or services in many countries in the parallel home country. By doing so, they meet the demand of all markets they operate in by providing domestically produced goods. These firms are less involved in the foreign trade of final goods since they produce locally to the local markets. They use join approach in managing the services of knowledge-based assets. Inputs are managed jointly in all plants both the one at home and the foreign nations. This makes the cost of adding a firm in other nation relatively low. Horizontal FDI is more common than the vertical one.

2.3.2 FDI and Economic Development

One of the major challenges of production in developing economies is lack of capital. As a result, many of them have been designing many investment attraction programs and policies. Doing so, they could also accumulate capital equipment and machinery for their domestic industries. This FDI also develops the human capital and through time increases the national income. Therefore, as the foreign trade does, FDI is positively linked with economic growth and development. The experiences in the *Four Tigers* countries and those followed them later, are the best examples of this relationship. In these countries, as the export increase, many foreign Multinational Corporations were attracted to invest. This FDI, in return, accelerated foreign trade, growth and economic development (Thompson, 2001).

Furthermore, FDI accelerates economic growth by raising total factor productivity and, more generally, the efficiency of resources utilized in the hosting economy. This works through three mechanisms. Firstly, since FDI and foreign trade flows are directly linked, an increase in FDI increases trade and national earnings. Secondly, FDI has various externalities to the economy and the business sector of the host economy. It has a potential to generate other business opportunities in the country. Finally, FDI has a direct positive impact on the infrastructural development of the host economy. Thus, by and large, it generates employment, high productivity, competitiveness, and technology spillovers and so promotes growth and economic development (Denisia, 2010; OECD, 2008).

In a nutshell FDI has a benefit for the national economy and for the investing companies or corporations. In a national economy sense, there is a strong relationship between FDI and the national or regional economic growth. Some amount of FDI inflow is needed for a country to achieve a certain rate of annual economic growth. In the corporation side, it gives a benefit by extending their markets, providing relatively cheap labor force, proving natural resources or inputs and benefits based on the favorable investment policies of the countries they invest

Consequently, firms in the developed world and EM are putting their investment not only by analyzing what the optimal stock of capital is but also by deciding in which country to invest and maximize their benefits. In the last few decades, corporations in industrialized economies have moved a significant proportion of their capital overseas and the economies they live in have been exchanging more capital in terms of OFDI and IFDI. This can be proved by the huge increase in the stock of the FDI in some industrialized nations in the last few years. After all, it was a FDI which made the United States an industrial superpower in the 19th century (Miles and Scott, 2005). However, developing countries are still not significant destinations of FDI.

2.4 The Gravity Model (GM)

2.4.1 The Meaning of Gravity Model

The GM is a model of bilateral interactions in which size and distance affect the economic relationship between countries. The reason for its name is because of its origin from Newton's law of gravity. Newton's law states that as the gravitational attraction between any two objects is proportional to the product of their masses and diminishes with distance. Accordingly, the GM implies that the trade between any two countries is, other things equal, proportional to the product of their GDPs and diminishes with distance (Krugman and Obstfeld, 2009).

The model defines one of the most fascinating relationships in economics. It proved that the interaction between large economies is stronger than between smaller economies and nearby countries exert a pull on each other than far-away countries. Even though it has a little bit vague implications in international trade and capital

flows, the model also showed how consumers move from shopping mall to another mall and patients between hospitals and so on. Moreover, the meaning of distance in economic applications of the model was changed through time. Initially, it was to show the real physical distance between two places, but over time transportation issues were integrated (Bergeijk and Brakman, 2010). In general terms, the model showed that large economies have a larger propensity to spend large amounts of money on imports because they have high-income levels. They also attract large shares of other countries' spending since they produce a wide range of products. So, the trade between any two economies gets larger, as the larger their economy is.

2.4.2 Theoretical Background of the Gravity Model

The GM is recognized as one of the best ones to describe very stable relationships in economic relations: economic ties between large economies are stronger than between smaller economies and nearby countries attract each other better than the far-off countries. It has been repeatedly employed by many researchers in various fields of studies (Bergeijk and Brakman, 2010). However, its theoretical background is criticized as weak and vague (Anderson, 1979; Bergstrand, 1985; Huff, 1962; Bergeijk and Brakman, 2010; and Cochrane, 1975). Even though there were many attempts to link the model with a theory, the recognized works are very few.

The first attempt was made by Anderson (1979) in which he analyzed the model based on the assumption of goods differentiated by country of origin. His formulation stems from the rearrangement of a Cobb-Douglas expenditure system which assumes that each nation strictly specializes in the production of its own specific good. Therefore, each country has one product and no tariffs and transport costs exist. However, this theoretical contribution to the model does not work in countries where trade and tax structures are similar and traded-goods preferences are similar.

Bergstrand (1990) did another crucial contribution to the theoretical foundation of the model. This work initially linked the model with some forms of the H-O-S model, the Linder Hypothesis, and the Determinants of Bilateral IIT. Bergstrand argues that a GM of BT flow is not GM if the income of the exporter and importer economies is not included as exogenous variables. One of the postulations of his work is the

assumption of identical utility and production functions across countries and the parameters in the model are constant across all partner countries. This assumption makes it consistent with H-O-S model. Moreover, Deardorff (1998) argued that the GM has never been vague and without theoretical background. He supported the argument of Bergstrand (1990) to claim that the H-O model can be expressed by using the GM.

The other well-known contribution was made by Anderson and Wincoop (2003). They primarily highlighted that BT is determined by relative trade costs. They found that border or distance reduces bilateral national trade levels significantly. They developed a theoretical GM accordingly. Later, the concept of distance in the GM was analyzed not only in terms geographic distance but also considered as a "mental" distance between partners which increases with physical distance. This type of distance includes language similarities, cultural differences, colonial ties, membership of preferential trade areas, technological differences, legal differences, and many other intangible differences or similarities (Bergeijk and Brakman, 2010). Moreover, Helpman et al. (2008) linked the model with another theory. They developed a GM which can explain empirical occurrences such as zero trade flows between trade partner countries and a larger number of economies which was one of the critical problems in the GM. By doing so, they showed how to introduce all trade resistance measures into the model.

2.4.3 Forms of the Gravity Equation

The types or forms of the GM are explicitly divided into five (Yotov et al, 2016). The first model is the very intuitive one which predicts BT between two countries is proportional to their economic sizes and inversely proportional to the distance between them. The second one is a structural GM with solid theoretical foundations which is usually used to assess specific effects such as quantifying policy effects. The third model is a realistic general equilibrium environment which integrates many countries, many sectors or firms. This is usually employed to study the impact of a change in one market on the others. The other type is a very flexible structure which can be integrated with other equilibrium to study relations among trade, labor

markets, FDI and etc. The last one is the predictive type of GM which is commonly employed to predict trade flows.

Anderson and Wincoop (2003) developed the well-known GM which is frequently used in recent studies. Their work was recognized as an effective attempt to give the model a theoretical background based on Cobb-Douglas and CES functions. They started from a simple gravity equation commonly used in the literature:

$$\mathrm{In}X_{ij} = \propto_1 + \propto_2 \mathrm{In}\, y_i + \propto_3 \mathrm{In}\, y_j + \propto_4 \mathrm{In}\, d_{ij} + \propto_5 \mathrm{In}\, REM_i + \propto_5 \mathrm{In}\, REM_j + \propto_5 \mathrm{In}\, \delta_{ij} + \varepsilon_{ij}$$

where X_{ij} stands for BT, y stands for GDP and REM represents remoteness and is:

$$REM_i = \sum_{m \neq j} d_{im} / y_m$$

Using a CES expenditure system, they integrated three intuitive parts in the trade resistance; the BT barriers between country i and j, country i's resistance to trade with all partners, and country j's resistance to trade with all. Furthermore, they assumed that, first, all goods are differentiated by place of origin, and, second, there are homothetic preferences expressed by CES utility function. Therefore, assuming C_{ij} as consumption in country j of goods from country i, consumers in country j maximize:

$$\left(\sum_i \beta_i^{(1-\sigma)/\sigma} C_{ij}^{(\sigma-1)/\sigma} \right)^{\sigma/(\sigma-1)}$$

Subject to the budget constraint of:

$$\sum_i P_{ij}\, C_{ij} = y_j$$

σ is the elasticity of substitution among all goods, β_i is a positive distribution parameter, y_j is the nominal income of country j's residents and p_{ij} is the price of country i goods for country j consumers. Here, they assumed that prices are different between countries due to the cost of trade but not directly observable. Therefore, they set p_i denote the exporter's supply price and t_{ij} the trade cost factor between two

countries. Then $p_{ij} = p_i t_{ij}$. Consequently, the nominal value of exports from j to i and total income of country i are $x_{ij} = p_{ij} c_{ij}$ and $y_i = \sum_j x_{ij}$.

The nominal demand for goods of country i by consumers of country j is:

$$x_{ij} = \left(\frac{\beta_i p_i t_{ij}}{P_j}\right)^{(1-\sigma)} y_j$$

Where p_j is the consumer price index of country j and expressed as:

$$P_j = \left[\sum_i \left(\beta_i p_i t_{ij}\right)^{1-\sigma}\right]^{1/(1-\sigma)}$$

The market clearance general equilibrium is:

$$y_i = \sum_j x_{ij}$$

$$= \sum_j \left(\beta_i t_{ij} p_i / P_j\right)^{1-\sigma} y_j$$

$$= (\beta_i p_i)^{1-\sigma} \sum_j \left(t_{ij}/P_j\right)^{1-\sigma} y_j, \forall i$$

Putting the world nominal income as $y^W \equiv \sum_j y_j$ and income shares as $\theta_j \equiv y_j / Y^W$ gives:

$$x_{ij} = \frac{y_i y_j}{y^W}\left(\frac{t_{ij}}{\Pi_i P_j}\right)^{1-\sigma}$$

$$\text{Where } \Pi_i = \left(\sum_j \left(t_{ij}/P_j\right)^{1-\sigma} \theta_j\right)^{1/(1-\sigma)} \text{ or}$$

$$P_j = \left(\sum_j \left(t_{ij}/\Pi_j\right)^{1-\sigma} \theta_i\right)^{1/(1-\sigma)} \text{ these imply } \Pi_i = P_i \text{ and}$$

$$P_j^{1-\sigma} = \sum_i P_i^{\sigma-1} \theta_i t_{ij}^{1-\sigma} \forall_j$$

This equation gives a solution to the price indices as a function of barriers of BT and income shares. Therefore, the GM becomes:

$$x_{ij} = \frac{y_i y_j}{y^W}\left(\frac{t_{ij}}{P_i P_j}\right)^{1-\sigma}$$

The price indices are called as multilateral resistance. This indicates BT between two countries is not only determined by their economic size but also by relative trade barriers. Here, one of the practical challenges in the literature is finding the values of the multilateral terms. Anderson and Wincoop (2003) used Iterative Customs Nonlinear Least Squares Programming. But others have used a reduced form of the GM and many recently have used exporter and importer fixed effects (see Yotov et al., 2016).

2.5 The Variables of Gravity Model in Foreign Trade and FDI

Many studies on innumerable economic issues have employed the GM. However, the explanatory variables, the dataset, and techniques used vary according to the objective of the studies. Some of those done on international trade and FDI are reviewed and presented below and the common variables are specified.

2.5.1 The Variables of Foreign Trade Gravity Models

The model is more employed to assess foreign trade and its determinants. Trade and economic integration, regional trade determinants, currency union and trade, and IIT factors are some of the major issues studied by using the GM in its various forms. These studies vary from the global trade patterns to single country trade determinants. The EU, the USA, China and many regional blocs are quite often studied areas using the model.

To start with the general application of the model in trade, Chen and Novy (2011) employed the model to study the overall gravity, trade integration, and heterogeneity across industries. They used the simplified version of the model with a micro-founded specification monopolistic competition framework and included fixed effects for each industry in each year in order to control the unobservable multilateral resistance variables for partner countries. Martinez-Zarzoso (2003) has also employed the GM to study the determinants of BT flows among 47 countries with particular emphasis on preferential agreements between economic blocs and areas. The study mainly targeted the EU, North-American Free Trade Area (NAFTA), Caribbean Community (CARICOM), Centro-American Common Market (CACM) and the Mediterranean

countries (MEDIT). By taking the panel data of the years between 1980 and 1999, the model included variables such as GDP, distance, adjacency, population and common language.

Besides, Yu (2010) used the gravity equation to study the relationship between trade and democracy. He specified a model with various variables which include both artificial and natural trade costs (bilateral distance cost, common land border and number of island countries), import tariffs (a function of importer's democratization), regional trade agreements, general system of preference (GSP), GDP of both sides, GDP per capita, distance, consumer price index, institutional quality of partners, democracy index, infant mortality rate and currency union.

Likewise, Serlenga and Shin (2007) studied the intra-EU trade using the GM. They used a gravity equation of panel data for the years 1960-2000 of 15 EU member countries. They included variables such as GDP, population, distance, common language, common border, free-trade areas and currency union memberships. Moreover, they also integrated similarities and differences in relative factor endowments of trading countries.

In addition, Natale et al. (2015) employed the GM to analyze the determinants of international seafood trade. In their model, they included common variables used in similar models such as, population, income, GDP, trade agreements and geographic distance as well as primary products production and food consumption. The study used data on world exports for the period 1990-2010. Likewise, Fracasso (2014) employed the GM to analyze the determinants of virtual water trade. The model included variables such as GDP, per capita income, distance, common border, common culture and several water resources related variables of 145 both developed and developing nations in the year 2006.

Ulengin et al. (2015) employed GM to assess the effects of quotas on Turkish foreign trade. Similarly, Edmonds et al. (2008) studied China's trade based on the GM. Yu (2009) also used the same model of assessment to show the link between exchange rates and BT of China. Narayan and Nguyen (2016) used the gravity equation to

study the trade of Vietnam with its 54 partners. They also tested the common explanatory variables of the GM in this case. As well, Abidin et al. (2013), employed GM to study the determinants of exports between Malaysia and the OIC member countries. Soori and Tashkini (2012) studied the trade of Iran with its regional blocs by using the same approach. Rahman (2010) studied the factors affecting Bangladesh's exports. Sohn (2005) analyzed how the GM fits Korea's trade patterns based on Korea's FTA policy and North-South Korean Trade. Doumbe and Belinga (2015) have also assessed the trade between Cameroon and 28 European Union countries. Generally, even though, there are some similarities on the core variables, most of them used various variables related to their topics and the conceptual frameworks behind.

Table 2.1: Variables in GM-Based Foreign Trade Studies

Year	Author/s	Objectives	Datasets	Explanatory Variables
2003	Martinez-Zarzoso	To assess the determinants of BT	Panel data from 47 countries from 1980 to 1999	GDP, distance, adjacency, population size and common language
2005	Sohn	To assess the implication of the GM on the trade of Korea	Cross-sectional data of 30 countries in 1995	GDP, per capita GDP, distance, adjacency, common language and colonial relations
2007	Serlenga and Shin	To assess the impact of selected variables of GM on Intra-EU trade	Panel data of 15 EU members for the years 1960-2000	GDP, population, distance, common language, common border, free-trade areas and currency union memberships
2008	Edmonds et al.	To assess China's trade with the world	Panel data of 1999 to 2007	GDP, distance, population, same boundary, landlocked, contiguousness, islands, common language, colony,
2010	Yu	To study the link between democracy and trade	Time Series data of 157 countries during the years 1962–1998 by	Cost, GDP, GDP per capita, import tariffs, trade agreements, distance, CPI, institutional quality, democracy index, infant mortality rate, currency union
2010	Rahman	To assess the factors of Bangladesh's	Panel data of 31 countries for the	GDP, exchange rate, total import, import/GDP,

		exports	years 1972-1999	trade/GDP, and distance
2011	Chen and Novy	To assess the trade integration and heterogeneity across industries	Cross-sectional data of 163 manufacturing industries in EU	Distance, policy, costs of transport and controls
2012	Soori and Tashkini	To assess the trade between Iran and regional blocs	Panel data of EU, ECO, GCC and ASEAN (1995-2009)	GDP, distance, FDI and per capita income,
2013	Abidin et al.	To assess the determinants of exports between Malaysia and IIC members	Panel data of OIC members for the years 1997-2009	Economic size, level of openness, inflation rates, exchange rates, distance and institutions enhancing trade
2014	Fracasso	To study the determinants of virtual water trade	Cross-sectional data of 145 countries in 2006	GDP, per capita income, distance, common border, common culture and several water resources related
2015	Natale et al.	To analyze the determinants of seafood trade	World exports from 1990 to 2010	Distance, GDP, food consumption, primary production, population, and income
2015	Ulengin et al.	To study the effects of road transport quota on Turkish trade with EU	Panel data of EU and Turkey for the years 2005 to 2012	GDP, exports by road, size similarity, factor endowment, number of trucks allowed, and textile exports
2015	Doumbe and Belinga	To assess the trade between Cameroon and EU countries	Panel data of EU-28 for the years 2008-2012	GDP, per capita GDP, distance, common language and common colony
2016	Narayan and Nguyen	To study Vietnam's trade with her partners	Panel data of 54 countries in the years 1986-2010	GNP or market size, distance, proxy of transportation cost, population, tariffs, quotas and technological restrictions affect trade

2.5.2 The Variables of FDI Gravity Models

Even though most of the studies employing the GM are done on trade and related topics, the model is now also used in FDI analysis too. To review some exemplary studies for the purpose of identifying the common variables included, Balnc-Brude et al. (2014) studied the FDI location decision from distance perspective. In their equation, they included GDP, industrial output for foreign-invested enterprises, government expenditure on science, the distance between a city and the nearest coast, exports, wage, government revenue and city population living in rural surroundings.

In this context, geographic distance is not considered as the best measure of distance. They also considered economic distance and administrative distance in terms of policy expenditure.

On the other side, Kahouli and Maktouf (2015) used a GM to study the determinants of FDI and the impact of economic crisis on regional trade agreements. They developed static and dynamic GM to test the determinants of FDI between 39 hosting nations and 14 investor nations for the years 1990 to 2011. Their equation included GDP, GDP per capita, size similarity in GDP, real bilateral exchange rate, total trade, inflation rates, tertiary education, number of internet users, distance, common language, common border, colonial links and economic crisis.

Similarly, Chenaf-Nicet and Rougier (2016) studied the impact of macroeconomic instabilities on FDI flows by using GM. They estimated a GM of FDI flows from Europe and the Mediterranean region to the four main receipts of FDI in the MENA (the Middle East and North Africa) region for the years from 1985 to 2009. Likewise, Fung and Garcia-Herrero (2012) used the GM to investigate the FDI outflows from China and India. They developed an augmented gravity equation which includes variables such as GDP, distance, GDP per capita, common border, corruption index, law-and-order, trade as proportion of GDP, free trade agreement, capital control index, share of food in total exports, share of fuel in total exports, share of ores and metals in total exports, research and development spending, information technology expenditure and bilateral exchange rate.

On the other hand, Hejazi (2009), studied if China is receiving more regional FDI than the GM suggests. The major variables of the model are GDP, distance, exchange rate, and regional bloc membership such as the Asia Pacific, North America, and EU. Ledaeva and Linden (2006) too employed the GM to assess the determinants of the uneven distribution of FDI across Russian regions. They integrated some additional variables into the common GM. They included agglomeration effect, natural resources abundance, skilled labor abundance, capital city advantages, cultural closeness and common language. Additionally, Ngouhouo (2013) employed the modified GM to assess the determinants of FDI in Central African countries of the

Economic and Monetary Community of Central Africa (EMCCA). He included variables such as GDP, distance, level of infrastructural development, natural resource endowment, population size, openness, inflation rate, interest rate, exchange rate, debt levels and country political risk.

Like the models in the FT, the studies in the FDI also included various variables related to the theories or concepts of the respective studies. However, the major variables of the GM are still consistently used.

Table 2.2: Variables in GM-Based FDI Studies

Year	***Author/ s***	***Objectives***	***Datasets***	***Explanatory Variables***
2000	Stone and Jeon	To investigate the relationship between Trade and FDI	Cross-sectional data at different years (1987-1993)	GDP, population, distance, regional membership and FDI/Trade
2006	Ledaeva and Linden	To investigate the determinants of FDI inflow to Russian regions	Cross-sectional data of 6 investor nations into 76 regions in 2002	GDP, distance, agglomeration effect, natural resources abundance, skilled labor abundance, capital city advantages, cultural closeness and language.
2009	Hejazi	To investigate the FDI inflow into China	Panel data of 1995-2005	GDP, distance, exchange rate and regional blocs membership
2012	Fung and Garcia-Herrero	To investigate the FDI outflow from China and India	Panel data for the years 1991-2008	GDP, Distance, trade agreement, common border, and many host country characterizing variables
2013	Ngouho uo	To investigate the factors of FDI inflow into Central African nations	Time series data of the years from 1970-2005	GDP, distance, infrastructure, natural resources, population, openness, inflation rate, interest rate, exchange rate, debt levels and country political risk
2014	Balnc-Brude et al.	To assess the FDI location factors	Panel data of 268 cities for the years from 1996 to 2008	GDP, industrial output for foreign-invested enterprises, expenditure on science, distance, exports, wage, government revenue and city population in rural areas
2015	Kahouli and Maktouf	To assess the determinants of FDI and the impact of economic crisis on RTAs	Panel data of 14 investors and 39 hosting nations for the year 1990-2011	GDP, GDP per capita, size similarity in GDP, real bilateral exchange rate, total trade, inflation rates, tertiary education, internet usage, distance, language, border, colonial links and economic

				crisis.
2016	Chenaf-Nicet and Rougier	To assess the impact of macroeconomic instability on FDI flows	Time series data of 1985-2009 for 32 countries	GDP, distance, source instability, host instability, RTAs, BITs and institutional profile

Generally, in various trade-related studies, including IIT, and FDI studies, the variables are much diversified. However, the main GM variables such as GDP, distance, income, common boundary, common language, population, natural resources, and agreements are the most common variables in nearly all models.

3. REVIEW OF RELATED LITERATURE

In the previous chapter, the theoretical background of the study is presented. How the GM is employed in studying foreign trade and FDI is discussed by including the various variables integrated into its extended forms. In this chapter, some of the recent studies on the trade and FDI between selected WEE, such as China and India, and Africa are reviewed. Mainly, works on the general topic of Africa – world major emerging countries economic relationships are addressed. The chapter starts with the trade between both sides and continues with FDI inflows from the major emerging economies into African countries. The next section also deals with works on the connection between emerging economies' trade and FDI, and economic performance of Africa. Finally, the studies on non-trade and non-FDI economic relationships of both partners such as Official Development Assistance and technology transfer are briefly reviewed. The reason why works on African countries rather than African emerging economies are reviewed is that there is no any related study on the topic or it is not accessible for the time being.

3.1 Trade between Selected World Emerging Economies and Africa

One of the basic characteristics of emerging economies was their continuous growth rate and enriched engagement in international trade especially since the beginning of this century. They are now competing with advanced economies in the areas of foreign trade by producing relatively cheaper products. As a result, they are becoming important trade partners of African countries. In this part, some studies conducted on the trade between the WEE and African states are reviewed. However, it is important to remind that most of the studies conducted on this topic address the overall economic partnerships of Africa and the emerging economies rather than specifically assessing the trade connections.

Didier and Hoarau (2013) studied the determinants of BT between the BRIC countries and SSA using several augmented gravity equations. They specifically aimed to assess the different and leading roles of China in the region. They found six results; first distance and geographical remoteness in the African countries is a barrier to trade with BRIC countries. Second, the trade of Sub –Saharan Africa with Russia and India is relatively more diversified than with China and Brazil. Third, natural resources endowment in the African countries is a positive factor of BT with China but not the others. Forth, they found that the improvement in the terms of trade on the African side positively affects exports due to the exports concentration in raw materials. Fifth, for Brazil and China, there is a negative relation between democracy and BT. This implies that both countries trade more with countries of low records of democracy. Finally, they showed that there is a positive link between the former African colonies of Britain and India's trade.

Similarly, Ndambendia (2015) assessed Africa's trade and investment with BRIC economies with a special emphasis on China. A descriptive approached used to show how the trade and investment among the African economies and BRIC countries is increasing through time. However, the dominant role of China and its geographically diversified trade and investment in the continent is singled out. It is also identified that African countries are exporting primary products such as mineral oil, mineral, fuel and other similar products which the BRIC countries are exporting back mainly manufactured products.

Nowak (2016) studied the China-Africa and India-Africa trade between 2000 and 2014. The results show that China and India's trade with 54 African nations has increased 21 and 13 times respectively in the study period. The main reasons for such big increment are first the development of South-South Cooperation, second, the intensified diplomatic relations with the continent, and finally linking trade with development assistance. She argues that the increasing economic diplomacy and political support of China for many African countries since the time of struggle for independence have paved the way for China to create a strong economic tie with the continent. China has cooperated with many African countries without any consideration for their democratic institutional development and human right records.

Similarly, she argues that India followed the same approach to create economic cooperation with Africa. The country supported some countries politically and economically through its credit and grant scheme.

Adolph et al., (2016) studied how the trade of African countries with China is affecting their labor; they called it the *Shanghai Effect*. Their study is mainly on how the exports from Africa to China are affecting labor practices in Africa. They defined the *Shanghai Effect* as an indicator of how trade with China is pushing African countries to follow the lower labor standards of China. Methodically, the study assessed the regulatory standard changes in Africa because of exports to China. They used a data of 49 African countries' exports to China from 1985 to 2010. They argue that exports of these countries to China have a negative impact on their labor practices and they presented it to support their argument that the practices of export destinations affect labor standards of the exporting nations. They supported their conclusion by using Liner Panel Data Model Estimation on a country's aggregate exposure to export partner's labor standards effects on its own standards and a similar estimation on what conditions and in which countries is this effect significant.

In a similar way, Villoria (2009) studied the relationship between China's export expansion and the manufacturing terms-of-trade of selected African countries. The study deals with two major issues; first how China affected global prices of manufactured goods and second the opportunity that China created for many countries to import lower-priced goods. By selecting some African countries, the study analyzed the balance of both side; the negative impact and opportunities created for African countries by the expansion of China's manufacturing. He argues that China has significantly reduced the prices of major goods such as textile, wearing apparel and footwear. This, in return, affected the exports of many African countries. On the contrary, they also get price benefits of importing Chinese goods. However, his estimation shows that the terms of trade of African countries have declined higher than the decrease in import prices.

3.2 FDI Outflow of Major World Emerging Economies into Africa

Regarding the FDI inflow into Africa, most of the studies conducted are again on China's FDI in the continent. Some are available on the general cases of BRICS countries as a group. Indian or China-India comparative studies are also available on some related topics implying both nations recently as the biggest investors in Africa. Similar studies on the other emerging economies are not available. Considering these facts, some studies are reviewed below.

Garcia (2017), for example, specifically studied the main characteristics of the FDI treaties between BRICS and African countries. The study also covered the details of BRICS investment positions in the African economies. According to this study, China is the leading country with many investment treaties with African economies followed by South Africa and India. Brazil has the least number of investment treaties with African economies. Chinese BITs started in the late 1980s while South Africa, India, and Russia's treaty started in the late 1990s. Brazil signed investment treaties with few African countries in 2015.

Regarding the overall significance of BRIC countries' FDI positions, Mlachila and Takebe (2011) studied the role of their FDI in promoting economic growth in developing economies. They took the cases of Angola, Sudan, Zambia and Liberia to demonstrate how the BRIC's FDI is supporting economic growth. They concluded that the BRIC's FDI share in LICs is very small but has a major impact on growth. This is mainly because of the FDI is linked with other development financing approaches. However, they insisted that the developing economies are not yet strong enough to utilize the opportunities and use their natural resources extractions for economic development. LICs can improve their business environment to attract more FDI from BRIC countries and promote development further. They suggest that a flattering policy can be the major tool to do so.

Moreover, Chakrabarti and Ghosh (2013) studied the similarities and dissimilarities in the pattern of developmental cooperation between Africa and China and India. They also investigated the specific outcomes of Indian and Chinese FDI for the economic development of African economies. They identified that the development

cooperation between advanced economies and Africa has been declining mainly since the 2008 global economic crisis. As a result, a big opportunity was created for India and China to cooperate with African economies further. This, in return, allowed these nations to take a better share in trade and FDI in the whole continent in general. However, they argue that both countries attracted many resource-rich African countries with a tough competition between themselves to gain a strategic advantage in the continent.

Their study has also indicated the development cooperation and economic engagement model of China and India in Africa. The traditional development cooperation which mainly targets aid as a tool has been diverted by both countries. They emphasized that China and India's model of cooperation do not follow the rich donor - poor recipient approach of the western countries. According to them, both nations have focused on long-term capacity building, working together in consultation giving priorities the need of African sides, addressing sustainable development and creating smooth interdependence. This is the model through which both nations have invested a lot in the whole continent and supported the economic development of Africans. Their FDI outflow into Africa, they argue, helped an increase in GDP, rapid industrialization, and diversification of imports for African states.

Carike et al. (2012) investigated the status of Chinese FDI in Africa. Their investigation mainly deals with the nature and impact of Chinese FDI in the continent even though the study was limited to the data of the years from 2003 to 2008. In this period, they identified that, Chinese FDI flow into Africa was concentrated in medium economic growth performers in which South Africa took the leading share. The major sectors in which the Chinese FDI targeted were mining, oil, and infrastructural development. In investing in these sectors, they assessed, that the major determinants were the availability of agricultural land, availability of oil and market size of the African economies. This implies that Chinese investment was high in countries with bigger economic size than the smaller ones. As a result, they indicated that Chinese investment has supported the economic development of African countries. On the other side, they concluded, China invested in Africa

regardless of infrastructural development and level of corruption in the hosting nations.

Sanfilippo (2010) studied the FDI of China in Africa by taking a data of 1998-2007 for 41 African states. He concluded that Chinese FDI flow into Africa is attracted by the availability of natural resources and pushed by the growing demand for natural resources in China. As a result, China created suppliers of crude petroleum and other natural resources to its ever-growing demand. He also supported that such attachment helped the country to engage in strong political and developmental cooperation with African countries. Moreover, he investigated that Chinese FDI outflow to Africa is affected by the assumption of China about African states as a good market potential for its low-cost production. Chinese Multinational Corporations got an advantage because of the engagement of the nation in multidimensional developmental cooperation with the continent. He also described the Chinese investment in Africa as an investment which ignores the economic instability, risk and the weak political conditions of the host countries. This argument is similar to the other studies discussed above. However, this strategy is not special for Africa. Rather, he stated that China used 'going out' strategy considering principally resources endowment and market potential which was planned by the Chinese government.

Cheung et al. (2012) also supported the claim that China's FDI in Africa is mainly determined by the market size of the hosting African side. Their study showed that African countries with strong trade and economic cooperation with China have received higher FDI than the others. They also proved the claim that Chinese FDI in Africa is not affected by corruption and risks. China ignored the undemocratic nature, poor human rights records and political crisis of many nations in Africa. Similarly, they also accepted that Chinese investment in Africa is mainly motivated by the need for natural resources, specifically mineral and oil to satisfy the increasing demand in the Chinese economy. However, its FDI is not only limited in countries with natural resources. China has reached almost all African countries also to meet the unexploited consumer market through its cheap products. Its FDI in Africa created a new market outlet for its resources-oriented industries. Furthermore, they also claim

that such engagement of China in Africa has supported the continent to get capital for its economy.

Kolstad and Wiig (2012) strongly support the debate on the nature of Chinese FDI in Africa. They argue that the worse the institutional environment of the host African country, the more is Chinese FDI attracted by the nation's natural resources. This shows that China is not only ignoring the undemocratic nature or human rights violations in the African countries but using it as an open space to invest and utilize natural resources. They claim that China is exploiting countries with poor institutions and large natural resources by investing more in these countries. Accordingly, to them, this is the policy of the nation since most of the companies engaged in such environment are government owned. This makes the FDI outflow of China into Africa different from other advanced and emerging economies' FDI outflow.

Regarding India's FDI outflow into Africa, on the other hand, Fung and Herrero (2012), investigated the determinants of FDI outflows from China and India in general. Even though a study on India's FDI in Africa is very limited, their study gives a clue on the overall determinants of both nations' FDI outflow by using the GM. They found three sets of results. First, they accepted the claim of Kolstad and Wiig (2012) that Chinese investment is more directed to more corrupt countries whereas India is attracted to less corrupt countries. They investigated that this clearly works especially in African economies. Based on their conclusion, for the purpose of oil or petroleum, the Chinese government is supporting a lot of projects in African states which are said to be undemocratic and corrupt. Secondly, they identified that Chinese FDI is going to countries with larger economies but smaller GDP per capita while Indian investment is mainly in smaller but richer countries. This may be because of Chinese investment in nearby nations, unlike India. Finally, just like many similar studies, they concluded that China and India are investing in developing economies to seek fuels but not technology or any other reason.

3.3 The Linkage between Trade and FDI, and Growth in Africa

In addition to the specific studies on trade with or FDI of emerging economies in Africa, there are few studies done on the linkage between trade and investment and their impact on economic growth of Africa. As a matter of fact, most of the studies are on China or India's trade and investment in Africa.

For example, Clus-Rossouw, Viviers, and Loots (2015) assessed the impact of BRIC countries' FDI contribution to the SADC region's exports. They used a simple regression model to analyze the link between FDI and export volume. They found that BRIC's investment in the SADC region is boosting their exports both the BRIC countries themselves and to the world in general. Moreover, they showed that FDI is accelerating economic growth in the hosting economies of Africa by increasing the export volumes. They also used the Granger Causality test to assess the causal relationships between FDI and exports. They found that there is a bi-directional relationship between BRIC countries' FDI size and SADC countries' exports to the world but the opposite is true for SADC economies' exports to BRIC.

Renard (2011) assessed the overall trade and investment of China in Africa starting from the historical development of its engagement and its policy. The study primarily shows the comprehensiveness but at the same time the concentration of Chinese trade with Africa. China's import and exports are concentrated in few countries and the imports from Africa are mainly oil and agricultural products. However, the study indicates that China's FDI in Africa is strongly linked with trade and development assistance. Accordingly, as the investment of China increased in the continent, the trade was also increasing in parallel. Chinese investment in selected African countries has created a great deal of trade too. He argues that China, with its state-owned firms, is investing in Africa for the purpose of re-exporting and utilizing the local market. Thus it is creating investment and increasing trade volume at the same time. Moreover, Chinese investment and trade have a benefit in creating industrialization and economic growth but created a tough competition for many African countries to export their products except raw materials.

Likewise, Samake and Yang (2014) investigated that there is a strong link between trade, investment and economic growth in between BRICS and low-income countries (LICs). They used a global vector autoregression (GVAR) model to investigate business cycle transmission from BRICS to LICs through trade, FDI, technology and exchange rates mean. They found that BT and FDI have strong linkage with economic growth of LICs in general and Africa in particular in a persistent manner. Especially, commodity-exporting countries are benefiting more in such transaction. However, they suggest that the impact of BRICS countries on the continent needs attention since its impact in the long-run may not be predictable. Macroeconomic changes in these emerging economies may influence the economic growth of African countries.

In the contrary, Kaplinsky (2013) argues that China's FDI and trade in Africa are the main reasons why both absolute and relative poverty have been grown in Sub – Saharan African Countries in the last couple of decades. He supported his claims by some reasons. First, he believes that, because of China-induced commodities price boom, African countries are being forced back once again into commodities-dependence. These countries are forced only to concentrate on ores, minerals, oil and gas which are characterized by very capital-intensive and have historically proved few spread-effect to the wider economy. Second, some of these commodities in Africa are easily misappropriated and have led to widespread conflicts and civil wars in many African economies. Third, it made states to be dependent on that income and forget tax collection thus lost popular legitimacy. Finally, he argues that the supposition of Chinese economic engagement on corruption in the continent has enabled African governments to be more corrupted and govern without rule of law. Tan-Mullins et al. (2010) have also supported this criticism. However, he also investigated the positive impact of Chinese FDI and trade in Africa in terms of creating economic opportunities and poverty reduction in the continent.

3.4 Africa – World Emerging Economies Relations beyond FDI and Trade

The economic interrelationship between African states and emerging economies is not only in terms BT and foreign direct investment. They also have a

multidimensional relationship which can directly or indirectly affect their trade and investment volume. These include technology transfer, skill development, aid and donation, economic diplomacy and so on even though the impact on the development of the continent is debatable. Moreover, diplomatic efforts are also high to strengthen their political linkage and maximize their gains and win global competition. However, limited research works are done on these topics.

For instance, Vickers (2013) assessed that, with the coming of new economic world powers such as the BRIC countries, Africa has been in changing circumstances of economic cooperation in the last couple of decades. BRIC and other raising powers are hoping to gain access to Africa's abundant resource and growing markets in order to facilitate their own economic progress. However, Brazil, China, and India are in competition with the established powers to gain better status and influence and thus critically need the fellowship of African states. Therefore, he argues that the relationship between African and the emerging economies is not only economic but also important in diplomatic viewpoint.

Kragelund (2011) also studied the donation of BRIC countries to Africa. His analysis of the non-traditional donors to Africa specifies the new strategies of these nations into Africa by integrating donation and trade and investment. He argues that the old donors of Africa had also the similar approach of engagement in Africa. Old donors, such as Britain and France, have been engaged in infrastructural development and aid. The only difference between the old donors and the new donors – EMs – is the manner how they manage their projects and the requirement they set. The traditional donors have a lot of criteria to donate including human rights, democratic institutional development and a lot of policy-related requirements, unlike China or India.

On the other side, Elu and Price (2010) investigated the technological impact of China's presence in SSA. They argue and accepted the idea of Geda and Meskel (2008) that the growth of China's exports is harming Africans. Besides, trade openness with China has no effect on the growth rate of total factor productivity for SSA firms. Accordingly, they argue that trade with China is not a long-term living standard changing factor for Africans. However, they believe that productivity-

enhancing technology transfer is one of the benefits Africa is gaining from China's economic presence. But they do not accept that FDI inflow into Africa from China is enabling technology transfer but only at selected sector and only at firm levels.

In contrary, Hanauer and Morris (2014) did their study on Chinese engagement in Africa. According to them, Chinese engagement in Africa is not only natural resources-oriented. Its interest also includes trade, security, diplomacy and soft power. It is also argued that the high-level donation of China to Africa is poorly understood and misquoted in the press. Even though Chinese engagement is a friendlier model, based on equality, mutual respect, and benefits, it is facing criticism. However, African citizens and governments hold positive views towards Chinese works in Africa with special emphasis on infrastructural development. They also argue that Chinese and the US interests are not contradicting in Africa. Rather, Chinese engagement helps African and US investors even though US investment is in high technology. Schiere (2011) also supports the engagement of China in Africa and its role in industrialization and infrastructure development in the continent.

In a similar manner, Cabral et al. (2016) investigated the nature of Brazil's influence in agricultural development in Africa under the concept of South-South cooperation beyond trade and FDI in Africa. They specifically assessed Brazil's development cooperation program called More Food International (MFI). They asked why family-farming of Brazil could not expand into the continent and benefit Africans. Their answer based on the cases of three African countries shows that family farming is effective in Brazil because it is determined by history, geography and class-based power struggles. Moreover, it is supported by modern technology, commercial opportunities, and political advocacy. In Africa, on the other hand, countries adopt their own interpretations of family farming and the whole MFI development cooperation program of Brazil in Africa. However, the success of the program, in general, is not yet studied.

On the other hand, Özkan (2010), argues that Turkey started to cooperate with African states as part of its strategy to diversify allies. According to him, the country is paying attention to decrease economic reliance on traditional trade partners such as

the EU and Russia. He believes that Turkish opening to Africa is happening because of domestic transformation and global political economy changes. He argues further that after the economic crisis in 2009, Turkey's economic relations with Africa gained a new momentum in order to reduce the impact of the crisis. In terms of development cooperation, Turkey is strongly supporting African countries through the Turkish Cooperation and Coordination Agency (TIKA).

To summarize, there is a limited work on the Africa and emerging nations economic relations, in general and no study is available or inaccessible on AEE and WEE's FDI and FT. The major studies, some of them using the GM, on FDI, foreign trade, economic growth and overall development cooperation are reviewed and summarized in the table below.

Table 3.1: Summary of Reviewed Related Literature

Year	Areas of Study	Title	Authors
2009	Foreign Trade (FT)	China and the Manufacturing Terms-of-Trade of African Exporters	Nelson B. Villoria
2010	FDI	Chinese FDI to Africa: What Is the Nexus with Foreign Economic Cooperation?	Marco Sanfilippo
2010	Development Cooperation	Redefining 'Aid' in the China–Africa Context	May Tan-Mullins, Giles Mohan, and Marcus Power
2010	Development Cooperation	Does China Transfer Productivity Enhancing Technology to SSA? Evidence from Manufacturing Firms	Juliet U. Elu and Gregory N. Price
2010	Development Cooperation	Turkey's Rising Role in Africa	Mehmet Özkan
2011	Development Cooperation	Back to BASICs? The Rejuvenation of Non-traditional Donors' Development Cooperation with Africa	Peter Kragelund
2011	FT and FDI	China's Trade and FDI in Africa	Mary-Françoise Renard
2012	FDI	What determines Chinese OFDI?	Ivar Kolstad and Arne Wiig
2012	FDI	Chinese foreign direct investment in Africa: Making sense of a new economic reality	Claassen Carike, Loots Elsabé, and Bezuidenhout Henri

2012	FDI	China's Outward Direct Investment in Africa	Yin-Wong Cheung, Jakob de Haan, Xingwang Qian, and Shu Yu
2012	FDI	Foreign Direct Investment Outflows From China And India	Fung and Garcia-Herrero
2013	FDI, FT, and Growth	What Contribution Can China Make to Inclusive Growth in SSA?	Raphael Kaplinsky
2013	Development Cooperation	Africa and the rising powers: bargaining for the 'marginalized many'	Brendan Vickers
2014	FDI	FDI in Africa: A Comparison of the Indian and Chinese Experience	Sukalpa Chakrabarti, and Ishita Ghosh
2014	FDI, FT, and Growth	Low-income countries' linkages to BRICS: Are there growth spillovers?	Issouf Samake and Yongzheng Yang
2015	FT	China-Africa and India-Africa trade in the years 2000-2014	Wioletta Nowak
2016	FT	The Shanghai Effect: Do Exports to China Affect Labor Practices in Africa?	Christopher Adolph, Vanessa Quince and Aseem Prakash
2016	Development Cooperation	Brazil's Agricultural Politics in Africa: More Food International and the Disputed Meanings of ''Family Farming"	Li´Dia Cabral, Arilson Favareto, Langton Mukwereza and Kojo Amanor

4. METHODOLOGY AND DATA

This chapter deals with the methodological background of the study. It covers the foreign trade, the IIT and foreign direct investment gravity equations with their explanatory variables, and limitations of the study and data sources of the study.

In nutshell, in order to meet the major objective of the study, a mixed approach with some steps is used. First, the countries which are recognized as world emerging by all the major rating agencies are identified. Second, the AEE are identified by using an own index with various measurements which are also used by other similar studies. This method helps to identify the group of AEE. Third, a GM is employed to assess the factors and determinants of BT and FDI between both sides. This method clearly answers the major questions of the study. Furthermore, fourthly, an IIT method is used to further assess the nature of their BT. The Grubel – Lloyd Index (GL) is used and estimation is made to assess the factors of IIT.

4.1 Gravity Models of the Study

In this study, the structural GM is employed. This model helps to assess the main determinants of trade and investment between the AEE and WEE. The basic form of the gravity equation is as follows:

$$x_{ij} = \frac{GDP_i^{\alpha} GDP_j^{\beta}}{D_{ij}^{\theta}}$$

Where, x_{ij} indicates BT between country *i*, and *j or* FDI flows between country *i* and *j*; GDP_i and GDP_j indicate the economic size of country *i and j*, and D_{ij} indicates the bilateral distance between the two countries. The parameters α, β, and θ are often estimated in a log-linear reformulation of the model (Bergeijk and Brakman, 2010). In this study, improved GMs of FT, IIT and FDI are used by using mainly fixed

effects in favor of the multilateral resistance suggested by Anderson and Wincoop (2003) (see, Yotov et al., 2016).

Foreign Trade Model

$$lnBilTrade_{WAt} = \beta_0 + \beta_1 lnGDP_{Wt} + \beta_2 lnGDP_{At} + \beta_3 lnDist_{WA} + \beta_4 lnPI_{Wt} + \beta_5 lnPI_{At} + \beta_6 lnOTW_{Wt} + \beta_7 lnOTW_{At} + \beta_8 lnEFI_{Wt} + \beta_9 lnEFI_{At} + \beta_{10} InPetrol_{At} + \beta_{11} InMineral_{At} + \beta_{12} CoEcIntg_{WA} + \beta_{13} InODA_{Wt} + \beta_{14} CoLangDummy_{WA} + \beta_{15} CoRelgDummy_{WA} + \beta_{16} \ln \mathrm{CPI}_{\mathrm{At}} + \beta_{17} \ln FDIPos_{Wt} + \mu_i + \delta_j + \gamma_t + \varepsilon_{ijt}$$

Intra-Industry Trade Model

$$lnIIT_t = \beta_0 + \beta_1 lnGDP_{Wt} + \beta_2 lnGDP_{At} + \beta_3 lnDist_{WA} + \beta_4 lnPI_{Wt} + \beta_5 lnPI_{At} + \beta_6 lnOTW_{Wt} + \beta_7 lnOTW_{At} + \beta_8 lnEFI_{Wt} + \beta_9 lnEFI_{At} + \beta_{10} InPetrol_{At} + \beta_{11} InMineral_{At} + \beta_{12} CoEcIntg_{WA} + \beta_{13} InODA_{Wt} + \beta_{14} CoLangDummy_{WA} + \beta_{15} CoRelgDummy_{WA} + \beta_{16} \ln \mathrm{CPI}_{\mathrm{At}} + \mu_i + \delta_j + \gamma_t + \varepsilon_{ijt}$$

Foreign Direct Investment Model

$$lnFDIPos_{WAt} = \beta_0 + \beta_1 lnGDP_{Wt} + \beta_2 lnGDP_{At} + \beta_3 lnDist_{WA} + \beta_4 lnOutTFDIPos_{Wt} + \beta_5 lnINTFDIPos_{At} + \beta_6 lnEFI_{Wt} + \beta_7 lnEFI_{At} + \beta_8 Invtagg_{WAt} + \beta_9 InPetrol_{At} + \beta_{10} InMineral_{At} + \beta_{11} BilInvAgr_{WA} + \beta_{12} InODA_{Wt} + \beta_{13} CoLangDummy_{WA} + \beta_{14} CoRelgDummy_{WA} + \beta_{15} InCPI_{At} + \beta_{16} \ln BilTrade_{WAt} + \beta_{17} \ln IIT_{WAt} + \mu_i + \delta_j + \gamma_t + \varepsilon_{ijt}$$

Where $lnBilTrade_{WAt}$, $lnIIT_t$ and $lnFDIPos_{WAt}$ are the dependent variables of each model and μ_i and δ_j *are* country-specific fixed effects while γ_t is year-specific fixed effects. Moreover, the independent variables of the FT and IIT are almost the same.

Theoretically, the GDP size or per capita income and distance constitute the intuitive GM. Distance is not only the geographic one. It also indicates differences or having a

common language, a common religion and bilateral agreements (see, Anderson and Van Wincoop, 2003). Furthermore, the factor-endowment is denoted by petroleum and minerals production (see, Borrman et al, 2005; Janicki et al. 2005).

In the first model, $lnBilTrad_{WAt}$ (log of BT between WEE and AEE at year t), is the dependent variable. It is the indexed exports of merchandise goods of both the WEE and AEE. These statistical data are taken from the UNCTAD data. The same step is followed for each WEE and each AEE. In the second modal,$lnFDIPos_{WAt}$, is the dependent variable. It is the log of OFDI positions of WEE in the AEE. The major sources for these data are the IMF and UNCTAD databases.

The first essential explanatory variable is GDP – $lnGDP_{Wt}\ and\ lnGDP_{At}$ (log of Gross Domestic Product of WEE and AEE at year t) – of both sides. In all GMs GDP of both partners is expected to be directly related with trade and FDI. Big nations in economic size have bigger foreign trade and FDI size between each other (Krugman and Obstfeld, 2009). They also have the capacity to attract large shares of other countries' spending because of their range of product types. Accordingly, large emerging economies likely spend large amounts of imports because of their high incomes. In this study, GDPs of both the WEE and AEE are used. The World Bank DataBank is the core source of these figures.

Moreover, according to the GM, it is expected that as distance ($lnDist_{WA}$) increases, the trade, IIT and FDI levels between any two countries, other things equal, diminishes. Distance between the capital city of the WEE and AEE in miles is calculated. Since both sides do not share common borders, distance between the capital cities versus the commercial cities does not make any difference in the model. Similarly, sharing no border between both sides minimizes the distance and border related limitations of the GM described by Anderson and Wincoop (2003).

The other independent variable on all models is the per capita income of the WEE and AEE. $lnPI_{Wt}\ and\ lnPI_{At}$ represent the per capita income of WEE and AEE respectively. Population is used in many similar studies such as Stone and Jeon (2000), Martine-Zarzoso (2003), Serlenga and Shin (2007), Edmonds et al. (2008), Natale et al. (2015), Narayan and Nguyen (2016) and many others. But since per

capita income indirectly explains population size, it is omitted from the model. The World Bank DataBank is used as a source for PI figures.

In the FT and IIT models, the $lnOTW_{Wt}\ and\ lnOTW_{At}$ stand for Overall Trade with the World for both the WEE and the AEE respectively. This variable is included in to the model to test if the increase in the BT is caused because of the increasing trade of the nation with the world and to check if it is proportionally growing or declining in comparison to other nations. In similar manner, $lnOutTFDIPos_{Wt}\ and\ lnINTFDIPos_{At}$ (Total OFDI positions of WEE and total IFDI positions of AEE at year t) are incorporated within the FDI model. Figures are taken from World Bank and UNCTED databases.

The other variable is the overall score of Economic Freedom Index of both sides ($lnEFI_{Wt}\ and\ lnEFI_{At}$). This variable helps to test if economic freedoms, including property rights, fiscal freedom, government spending, business freedom, trade freedom and some other issues have an impact on the BT, IIT and FDI positions. This variable may affect the partner countries as pointed out in the studies of Yu (2010), Soori and Tashkini (2012), Abidin et al. (2013) and Narayan and Nguyen (2016). The scores of Index of Economic Freedom by the Heritage Foundation are used.

In all models, $InPetrol_{At}\ and\ InMineral_{At}$ represent petroleum-production and mineral-production in the African emerging economy at year *t*. The need for natural resource in general and petroleum and minerals in particular is considered as the major determinant of FDI flow into Africa both from the old and new partners (Fung and Garcia-Herrero 2012; and Ngouhouo 2013). Accordingly, the level of determination of these factors on FDI and trade between WEE and AEE is tested.

$\mathrm{CoEcIntgDummy_{WA}}, \mathrm{CoLangDummy_{WA}}, \mathrm{CoRelgDummy_{WA}}$, and $BilInvtAgr_{WAt}$ are dummy variables which stand for a common economic integration or agreement, a common language, a common religion and an investment agreement. Even though the possibility of participating in a common economic union is less for the WEE and an African emerging economy, there are some trade agreements or investment agreements between both sides. China and Turkey, for example, have free trade

and/or investment agreements with several countries. The impact of having a common major language is expected to affect trade and FDI insignificantly since the major WEE do not share the same language with AEE. However, sharing the same religion may have positive impact on trade and FDI flows. Marinez-Zarzoso (2003), Sohn (2005), Serlenga and Shin (2007), Edmonds et al. (2008), Yu (2010), Fracasso (2015) and many others included these variables and estimated.

$\ln ODA_{Wt}$ represents the Official Development Assistance from the world emerging economy to the African emerging economy in a specific year. This helps to analyze if the direct financing of many projects in African nations by international banks and financial institutions of major donors including the emerging ones has an impact on trade and FDI flows between them. This figure is taken from the World Bank DataBank.

Likewise, $\ln CPI$ stands for a log of corruption perception index of the AEE at a specific year *t*. Fung and Garcia-Herrero (2012) concluded that Chinese investment is attracted to more corrupted nations, unlike India. Accordingly, it is expected that some WEE have higher FDI or trade in AEE with high corruption levels than others. These figures are taken from the Corruption Perceptions Index of Transparency International which shows how corrupt public sectors of a nation are.

$\ln FDIPos_{WAt}$ and $\ln BilTrade_{WAt}$ denote the log of FDI positions of the WEE in the AEE and log of BT between both sides are in the trade and FDI models respectively. This is to show if there is any relationship between FDI and Foreign Trade. Stone and Jeon (2000), Rahman (2010), Soori and Tashkini (2012), Brude et al. (2014) and Kahouli and Maktouf (2015), included these variables in their GM.

Finally, in the IIT equation, the GM is used to estimate the determinants the IIT between the AEE and WEE. As used in similar studies (Rose, 2000; Manger, 2012), the common variables are almost similar with the FT model. However, in the IIT model the dependent variable is the GL index rate.

Table 4.1: Summary of Variables of the Models and their Meanings

Model	Variable	Stands for	Meaning
All	GDP_{Wt}	GDP of WE	The impact of GDP of WEE on trade and FDI of between both sides
All	GDP_{At}	GDP of AE	The impact of GDP of AEE on trade and FDI between both sides
All	$Dist_{WA}$	Distance	Distance between capital cites
FT&IIT	PI_{Wt}	PI of WE	The impact of PI level of WEE on trade
FT&IIT	PI_{At}	PI of AE	The impact of PI level of AEE on trade
FT&IIT	OTW_{At}	Overall trade with the world of AE	The impact of overall trade of the AEE on trade with WEE
FT&IIT	OTW_{Wt}	Overall trade with the world of WE	The impact of overall trade of the WEE on trade with AEE
All	EFI_{At}	Economic Freedom Index of AE	The impact of EFI of AEE on trade and FDI of WEE
All	EFI_{Wt}	Economic Freedom Index of WE	The impact of EFI of WEE on trade and FDI in AEE
All	$Petrol_{At}$	Petroleum production in AE	The impact of petroleum production on the AEE in attracting FT and FDI from WEE
All	$Mineral_{At}$	Minerals production in AE	The impact of minerals production on the AEE in attracting FT and FDI from WEE
All	$CoEcIntg_{WA}$/ PTA	Common Economic Integration	The impact of having common economic integration/partnership on trade and FDI
All	$CoLangDm_{WA}$	Common language	The impact of having common language on Trade and FDI
All	$CoRelgDm_{WA}$	Common Religion	The impact of having common religion on Trade and FDI
All	ODA_{Wt}	Official Development Assistance	The impact of ODA from WEE to AEE on trade and FDI
All	$\mathrm{CPI_{At}}$	Corruption perception index	The impact of corruption in AEE on trade and FDI
FT	$FDIPos_{Wt}$	FDI of WE in AE	The impact of FDI on Trade with AEE
FDI	$OutTFDIPos_{Wt}$	Total OFDI positions of WE	The impact of overall FDI stock on FDI in AEE
FDI	$InTFDIPos_{At}$	Total IFDI positions in the AE with the world	The impact of overall FDI stocks in AEE on FDI from WEE
FDI	$BilInvAgr_{WAt}$	Bilateral investment agreement	The impact of having an investment agreement on FDI
FDI	$BilTrade_{WAt}$	Bilateral Trade	The impact of BT on their FDI in AEE
FDI	IIT_{WAt}	IIT	The impact of IIT levels on FDI of WEE in AEE

4.2 Limitations of the Study

The first limitation of the study is related to the sampling. In the WEE side, the commonly accepted nations as emerging by the major rating agencies are included whereas an index is developed to identify the AEE. However, it needs to consider that the ratings by the rating institutions change every time because of many reasons hence some countries may be dropped and others come up. Moreover, on the African side, there are not enough studies on the categorization of countries as emerging or frontier in general and African economies in particular. This forced the study to use some broad-spectrum own measurements in the index.

The other limitation is related to data unavailability. Indeed, because of the coming of the term '*emerging'* in the beginning of the century, only the data from 2001 to 2015 is used. However, the data on FDI positions or flows are not available in most cases or significantly vary from source to source. Therefore, these limitations mainly affected the FDI models in general and FDI models of Mexico, Russia and the Philippines in particular. Moreover, economic freedom index is missing for some nations of Africa for some years. Besides, ODA data is presented in general but not specifically where it is originated from. Furthermore, the status of investment agreements or trade-related agreements is not clear whether they are enforced or not.

4.3 Data Sources

The major secondary data sources are the *World Bank DataBank*, *IMF Database*, United Nations Conference on Trade and Development *(UNCTADSTAT)*, *UN COMTRADE*, CEPII database, and various similar sources. Moreover, the investment agreements are taken from UNCTAD Investment Policy HUB, distance from Distance Calculator, and the regional trade agreements are taken from the WTO. Furthermore, the Economic Freedom Index figures are taken from the Heritage Foundation. The detail sources of data for each variable are presented in Appendix 1.

5. EMERGING ECONOMIES AND THE AFRICAN EMERGING ECONOMIES INDEX

In the previous chapters, the concept of the GM, its application in trade and FDI, and related works on the partnerships between Africa and emerging economies are presented. How the GM with its inclusiveness nature of diversified variables is preferable to analyze the BT and FDI flows is also discussed. This chapter introduces emerging economies in general and AEE and WEE in particular. Starting from the characteristics of emerging economies, it covers their classifications, list of countries in each category and the diversified bases of classifications used by the well-known rating organizations. At the end of the chapter, all countries recognized as emerging and frontier economies are listed down. The index used to categorize AEE is also presented. Based on this index, the general economic backgrounds of the AEEs; such as the demographic characteristics, the economic size, economic growth rate, and other important indicators of their economic situations are presented. Besides, the national competitiveness of these economies and the easiness of doing business are discussed. Finally, the trade, FDI and IIT of AEE are presented.

5.1 Characteristics of Emerging and Frontier Economies

The coming of some new countries in the new global order happened as a result of multidimensional transformations. Especially, in the last couple of decades, the world emerging countries, the BRICS for instance, have performed well to dominate the world economy. What makes them common is, in the last decades, their economic performance improved substantially. They spent more time and effort in expansion and faced smaller economic challenges than industrialized nations. Especially, in the last 20 years, their progress was mainly associated with their good policies and a lower incidence of both internal and external shocks. But commonly, better policies account for more than half of their improved performance (Abiad et al., 2015).

By and large, these emerging economies are countries classified by the World Bank as “upper middle income” and “lower middle income”, which uses GDP per capita as a metric. However, this does not mean that all emerging or frontier markets have low income than developed nations. In fact, some emerging or frontier markets such as Qatar, Kuwait and Oman have higher per capita income than many advanced countries. This by itself does not make a country a better market (Booth, 2014). However, emerging nations are those which are achieving industrialization and modernization in addition to their rapid economic growth (Cavusgil et al., 2014 and Logue, 2011). These can be expressed in terms of having a transitional economy and society with favorable policy, low-level but improving economic development, having huge room for the future which can be explained by improving Purchasing Power Parity and high rate of continuous growth at least 5% per year (Sunje and Çivi, 2012).

Most emerging economies have passed through the process of changes in their economic sectors. Taking the BRICS+TPM as an example, employment in agriculture has commonly declined and employment ratios in industry and services have significantly increased. China, Russia, Turkey, Mexico and South Africa’s employment in agriculture has declined by more than 50% in the last two decades. Similarly, the GDP per person employed has increased in these countries. This also implies an increase in productivity. Besides, governments of these countries have commonly increased their expenditure on education and health with a higher emphasis on tertiary education. Therefore, these show that emerging economies have achieved improvement in their employment level and nature, productivity, education, health and many other facets.

However, all countries categorized by various analysts as emerging countries diverge in many features such as in their population size, GDP size, easiness of doing business, economic freedom, natural resource endowment, export diversification, level of economic development, political atmosphere and level of democracy and many other issues. In terms of population size, for instance, China and India are the most populated nations in the world both with more than 1.3 billion people while Cabo Verde has almost half a million population. In terms of GDP size, China, India,

and Brazil are on the list of top ten countries whereas Mauritius is ranked above 120^{th}.

5.2 Countries Classified as Emerging and Frontier Economies

In the last few decades, especially, since 2000, a lot of classifications of nations as emerging economies or emerging markets based on various criteria have been materialized. Since the inception of the term, many groupings of emerging economies such as BRICS, MINT, and N-11 (Next Eleven) became branded. However, recently the most common classifications of nations into emerging markets are done by the International Monetary Fund (IMF), Financial Times Stock Exchange (FTSE), Standard and Poor's (S&P), Don Jones & Company, Russell Investments, Morgan Stanley Capital International (MSCI), Banco Bilbao Vizcaya Argentaria (BBVA), Columbia University and the Goldman Sachs investment bank (BRICS + Next Eleven).

The MSCI Market Classification Framework consists of three major criteria: economic development, size, and liquidity as well as market accessibility. Countries are classified as frontier, emerging or developed based on these standards. Under the first criterion, economic development, the only indicator is the sustainability of economic development which is not a requirement for both frontier and emerging economies but required for developed ones. The second one is the size and liquidity requirement which includes specific criteria of the standard index; company size, security size and security liquidity. All these specific criteria are a requirement for all frontiers, emerging and developed nations with different degrees. Emerging markets have better company size, security size and security liquidity than frontier markets and less than developed markets. The last criterion is market accessibility criteria which include four specific criteria; openness to foreign ownership, ease of capital inflows/outflows, the efficiency of the operational framework, and stability of the institutional framework. In all these criteria, developed countries have very high levels while emerging countries have significant levels in the first two criteria. The rest have the modest or partial fulfillment of the requirements (MSCI, 2014).

The Financial Times (2015) classifies world markets into four major categories; Developed (25 Markets), Advanced Emerging (10 Markets), Secondary Emerging (11 Markets), and Frontier (26 Market). It uses some guiding principles for market classification. The first principle is quality of market - the quality of regulation, the dealing landscape, custody and settlement procedures, and the presence of a derivatives market. The second one is materiality – a country needed to be of a material size to warrant inclusion in a global benchmark. The third one is consistency and predictability in which countries are continuously assessed to be promoted or demoted based on predictions.

The next principle is cost limitation which is the cost of implementing a change. Stability is the next principle which shows that a country is considered as emerging or a promotion occurs if there is a permanent change in market status and global acceptance. Market access is the last categorizing principle which shows that international investors should be able to invest and be able to withdraw at any time in a secure manner and at a fair cost. Accordingly, Brazil, Czech Republic, Hungary, Malaysia, Mexico, Poland, South Africa, Taiwan, Thailand, and Turkey are advanced emerging economies. Similarly, Chile, China, Columbia, Egypt, India, Indonesia, Pakistan, Peru, Philippines, Russia, and UAE are secondary emerging economies. The frontier market category includes African and Asian states whereas the first category, the advanced one, is dominated by western countries.

The BBVA classifies countries as EAGLEs (Emerging and Growing-Leading Economies) and Nest. The EAGLEs are emerging economies those expected to contribute more than the average of the G6 countries to world growth in the next ten years. The Nest group, on the other hand, is formed by those emerging economies expected to contribute less than the average of the G6 countries to world growth in the next ten years but more than the average of non-G7 developed countries. The economic achievements are revised each year and countries are reclassified accordingly. Based on the 2015 report, China, India, Indonesia, Russia, Mexico, Nigeria, Saudi Arabia, Brazil, Turkey, Philippines, Pakistan, Iraq, Bangladesh and Thailand are in the EAGLEs category while Malaysia, Egypt, Colombia, Vietnam,

Poland, UAE, Iran, Myanmar, Kazakhstan, Qatar, Algeria, Peru, Argentina, South Africa, Chile, and Sri Lanka are Nest countries (BBVA, 2015)

The other famous classification or acronym of countries is the BRICs, later became BRICS, and Next Eleven (N-11) which is first coined by Goldman Sachs Investment Bank and economist Jim O'Neill. The term was introduced in 2001 to indicate Brazil, Russia, India, and China. These countries with their huge population size are believed to overtake the developed nations. The N-11 nations, similarly, have a high potential of becoming along with the BRICS. The N-11 countries are Bangladesh, Egypt, Indonesia, Iran, Mexico, Nigeria, Pakistan, the Philippines, Turkey, South Korea and Vietnam. The major criteria that Goldman Sachs used for both BRICs and N-11 are macroeconomic stability, political maturity, the openness of trade and investment policies, and the quality of education (O'Neill, 2001 and O'Neill et al., 2005). Moreover, another combination of Colombia, Indonesia, Vietnam, Egypt, Turkey, and South Africa countries, dubbed CIVETS is also becoming well known. Although it is not certain who created the acronym, either HSBC's chief executive Michael Geoghegan or Economist Intelligence Unit, it is expected that this new bloc is becoming the next big bloc for growth, foreign investments, and global policy influence (Goncalves and Alves, 2015)

Similarly, the International Monetary Fund classifies countries into two major categories; advanced economies and emerging market and developing economies. But such classification is not based on strict criteria of economic or else. The seven largest economies in terms of GDP based on market exchange rates and 30 others are categorized as advanced. The group of emerging market and developing economies includes 152 countries which are not classified as advanced economies (IMF, 2015)

Table 5.1: List of Emerging Markets

	Recognition as Emerging by Groups/Organizations of Analysts/Indexes								
Country	**FTSE**	**MSCI**	**S &P**	**EMBI**	**Dow Jones**	**Russell**	**EMGP**	**BRICS+ N-11**	**IMF**
Argentina									
Bangladesh									
Brazil									
Bulgaria									

Chile									
China									
Colombia									
Czech Rep.									
Egypt									
Greece									
Hungary									
India									
Indonesia									
Iran									
Israel									
Malaysia									
Mauritius									
Mexico									
Nigeria									
Oman									
Pakistan									
Peru									
Philippines									
Poland									
Qatar									
Romania									
Russia									
Slovenia									
S. Africa									
S. Korea									
Taiwan									
Thailand									
Turkey									
Ukraine									
UAE									
Venezuela									
Vietnam									

Sources: extracted from respective websites and compiled

Even though 37 nations are considered or graded as emerging by either of the analyst groups, the commonly accepted countries as emerging economies are only 8. These are the BRICS countries (Brazil, Russia, India, China and South Africa) and Mexico, Philippines and Turkey. However, another six markets are considered as emerging by the majority of the analysts - they are evaluated as non-emerging only by one analyst group. These are Chile, Colombia, Hungary, Indonesia, Poland, and Thailand. Chile, Colombia, Poland, Hungary, and Thailand are not included in the BRICS plus N-11 group while Indonesia could not fulfill the EMGP standards to be considered as an emerging market.

In addition to these, Egypt, Malaysia, and Peru are evaluated as emerging by most of the analysts. Egypt, a member of N-11 group, does not fulfill the IMF and Russell's standards to be emerging whereas Malaysia and Peru are not in the N-11 group and lost EMGP grades. On the other side, eleven nations are considered as emerging only by 1 or 2 evaluators. Iran, Slovenia, Bulgaria, Mauritius, and Oman are accepted only by one evaluator while Vietnam, Venezuela, Ukraine, Romania, Nigeria, and Israel are accepted only by two organizations as emerging. In general, the majority of the countries which are not fully accepted as emerging are considered as frontier markets.

Table 5.2: List of Frontier Markets

Country	FTSE	MSCI	S &P	Dow Jones	Russell	Country	FTSE	MSCI	S &P	Dow Jones	Russell
Argentina	✓	✓	✓	✓	✓	Macedonia	✓			✓	✓
Bahrain	✓	✓	✓	✓	✓	Malta	✓			✓	✓
Bangladesh	✓	✓	✓	✓	✓	Mauritius	✓	✓	✓	✓	✓
Botswana	✓		✓		✓	Morocco		✓			
Bulgaria	✓	✓	✓	✓		Namibia			✓		✓
Ivory Coast	✓		✓			Nigeria	✓	✓	✓	✓	✓
Croatia	✓	✓	✓	✓	✓	Oman	✓	✓	✓	✓	✓
Cyprus	✓		✓	✓	✓	Pakistan		✓	✓	✓	✓
Egypt					✓	Papua New Guinea					✓
Ecuador			✓			Panama			✓		
Estonia	✓	✓	✓	✓	✓	Qatar	✓		✓	✓	✓
Gabon					✓	Romania	✓	✓	✓	✓	✓
Ghana			✓		✓	Serbia	✓	✓		✓	✓
Jamaica			✓		✓	Slovakia	✓		✓	✓	✓
Jordan	✓	✓	✓	✓	✓	Slovenia	✓	✓	✓	✓	✓
Kazakhstan		✓	✓	✓	✓	Sri Lanka	✓	✓	✓	✓	✓
Kenya	✓	✓	✓	✓	✓	Trinidad and Tobago		✓	✓		✓
Kuwait		✓	✓	✓	✓	Tunisia	✓	✓	✓	✓	✓
Kyrgyzstan					✓	Ukraine		✓	✓	✓	✓
Latvia			✓	✓		UAE			✓	✓	
Lebanon		✓	✓	✓		Vietnam	✓		✓	✓	✓
Lithuania	✓	✓	✓	✓	✓	Zambia			✓		✓

Sources: extracted from respective websites and compiled

Similarly, 44 countries are considered as frontier markets by either of the evaluators out of which only 16 countries are commonly accepted by the major evaluators reviewed in this study. These include Tunisia, Slovenia, Sri Lanka, Romania, Nigeria, Oman, Mauritius, Lithuania, Kenya, Jordan, Estonia, Croatia, Bulgaria, Bangladesh, Bahrain, and Argentina. Seven of these countries such as Slovenia, Romania, Oman,

Mauritius, Bulgaria, Bangladesh, and Argentina are recognized as emerging markets by some evaluators. In contrary, Panama, Papua New Guinea, Morocco, Kirgizstan, Gabon, Ecuador, and Egypt are recognized less as frontier markets.

5.3 African Emerging Economies Index

In order to categorize African countries into emerging and non-emerging or frontier economies, a set of criteria is used. One of the methods to categorize countries based on criteria is developing an index in a similar way used by Cavusgil (1997). In this index, economic size, export, education, employment to population ratio, health, consumption, commercial infrastructure, economic freedom and political stability are the general decisive factors used. Most of these criteria are similar to the criteria used by Cavusgil (1997).

The measures are set considering two broad but crucial points; the very basic nature and definition of emerging and frontier economies which is the economic growth and economic development. All the detailed criteria arise from these two general points. Specifically, since the introduction of the concept of emerging economies, the reason was the observation of some fast-growing economies such as China and India but structurally different from developed economies (Logue, 2011). Then emerging economies were considered as countries which are mainly recording fast economic growth and may "emerge" and become richer soon (Ciravegna et al., 2013). Therefore, the primary criterion should be economic growth. Since emerging economies are mainly characterized by their economic or market size, their GDP size and its growth rate are taken as major criteria. Recently, Nigeria, Egypt, South Africa, Algeria, Morocco, Sudan, Angola, and Ethiopia are the biggest economies in Africa. However, in the last 10 years, Ethiopia, Angola, Rwanda, Mozambique, Ghana, Zambia, Uganda, Tanzania and the Democratic Republic of Congo have recorded the highest economic growth in the continent.

Similarly, emerging economies are those which can improve the income and the living standards of citizens through time and expected to improve more in the near future. They have already forced the G-8 group to be G-20 through their economic

power created in the last couple of decades (Goncalves and Xia, 2014). Accordingly, next to their economic size, GDP per capita income and its growth in the last few years is considered an important factor. Practically, economically smaller African countries such as Seychelles, Mauritius, Equatorial Guinea, Gabon, Botswana, and Namibia have a higher income than the others. However, Ethiopia, Equatorial Guinea, Rwanda, Mozambique, Nigeria, Chad, and Sudan increased their GDP per capita income at a rate higher than the rest in the last 10 years.

Moreover, emerging economies are characterized by an increasing consumption of durable goods and housing, improved children's health and mortality rate, increasing youth school enrollment, and women's role (Young, 2012). Even though some have still a high rate of poverty, their consumers have huge and increasing demand for basic consumer products (Logue, 2011). Consequently, an improvement in consumption is an indicator of an economy's status in this regard. Household consumption expenditure, general government expenditure and the population size are the specific indicators included. Obviously, more populated countries have higher consumption levels. However, it is linked to the consumption level of households and the government for better evaluation of the domestic market potentials. Nigeria, South Africa, Uganda, Tanzania, Egypt, Congo, and Ethiopia have the highest domestic consumption potentials.

Higher consumption in an economy may attract more production and investment. As a result, emerging economies have attracted high FDI share in the world in the last couple of decades. Because of their constant economic growth and an increasing middle-class population, FDI in these countries has shown a significant increment. Consequently, it is used as important criteria to categorize a nation into emerging. Nigeria, South Africa, and Egypt are the leading countries in this regard by far followed by Morocco, Mozambique, Ghana and Congo.

The educational level and health status of the population are included in the index in a similar manner. In the education category, adult literacy rate and higher education expansion and quality (5^{th} pillar in the Global Competitiveness Index) are assessed. In the last few years, South Africa, Cabo Verde, Botswana, Algeria, and Tunisia have

recorded high improvement in the educational status of their population. In the health aspect, life expectancy, mortality rate, and the 4th pillar of primary education and health in the Global Competitiveness Index are evaluated. Accordingly, Mauritania, Angola, Cabo Verde, Botswana, and Morocco have reached better status than the other African states.

Furthermore, income and consumption are increasing as a result of huge trade and globalization since they are exploiting their human potential by using technology and natural resources (Tiku, 2014). This implies that if there are high consumption, production, and investment, it is directly linked to trade. In fact, emerging economies such as China and India have proved these by dominating the world trade recently. Therefore, trade is also an important aspect in understanding the nature of countries' emergence. However, export product diversification index is used as a clear indicator whether a country's fast economic growth happened because of a single product export such as petroleum oil or some minerals. Countries with better export diversification may be engaged in vast economic growth which is independent of a single product. This measurement gives a factual image of the nature of trade. In this measurement, the biggest African economies have less product diversification than Botswana, Zambia, Rwanda, Niger, Seychelles and many others.

Besides, emerging economies are characterized by a transition of exploiting their potential and achieving higher income and consumption as a result of economic, political, social and demographic changes (Logue, 2011). This demographic change determines the employment to population ratio. Integrating this issue into the index gives an insight where the economic growth is coming from. Countries with higher ratio may have lower wage rates which attract higher FDI and generate more exports. This, in return, leads to higher economic growth. In this aspect, Madagascar, Uganda, Rwanda, Burundi, Burkina Faso, Zimbabwe, Eritrea, and Guinea are the leading nations. Again the major African economies, South Africa, Egypt, and Nigeria, have very low employment to population ratio.

However, economic size, FDI, education or health does not make any country to be an emerging economy without infrastructural development (Cavusgil, 1997).

Therefore, commercial infrastructural development is taken as one of the criteria. This includes fixed telephone subscriptions, mobile cellular subscriptions, and access to electricity of the population, individuals using the internet, roads, rail lines and air transportation. South Africa, Seychelles, Mauritius, Morocco, Tunisia, Egypt, and Algeria have a better status in this regard.

The other indicator for emerging economies is the depth of their economic and political institutions (Mody, 2004). In fact, the magnitude that these institutions affect the economy is very important. Therefore, corruption and economic freedom are integrated into to the set of criteria. The availability of institutions which minimizes corruption and promotes economic freedom is very important for the economic growth and development. Moreover, countries with less corruption level and better economic freedom are suitable for investment and international trade. Corruption perception index of the Transparency International and Economic Freedom index of the Heritage Foundation are used to measure corruption and economic freedom of countries respectively. Botswana, Cabo Verde, Mauritius, Rwanda, and Namibia or the leading countries in the corruption index while Mauritius, Botswana, Rwanda, Ivory Coast, Namibia, South African, and Seychelles have better economic freedom.

Most emerging nations in the world are known for less but improving political stability and adequate rule-of-law (Tiku, 2014 and Logue, 2011). Therefore, political stability and rule of law are included to observe how African economies are performing. This is because countries with high economic growth and infrastructural development are no more emerging economies if there is no political stability and rule of law. Even though market risks are common in all emerging economies, instability, and lack of rule of law can demolish any type of economic achievement at any time. Unfortunately, most African countries have law records of political stability and rule of law. Mauritius, Burkina Faso, Cabo Verde, Seychelles, Namibia, Ghana, and Rwanda have positive rates in this index while all the others have negative rates.

Table 5.3: The Criteria and Values used in the AEE Index

	Criteria	Value (%)
1.	**Economic Size**	25%
1.1.	GDP size, current	40%
1.2.	GDP growth rate (in the last ten year, average)	60%

2.	**Income**	10%
2.1.	GDP per capita income, current	50%
2.2.	GDP per capita income growth	50%
3.	**FDI inflow** (in the last 10 years, average)	10%
4.	**Export Diversification (Export Diversification Index)**	5%
5.	**Employment to population ratio, 15+ (EPR)**	5%
6.	**Education**	5%
6.1.	Adult literacy rate, 15+	40%
6.2.	Higher education (5^{th} pillar in the Global Competitiveness Index)	60%
7.	**Health**	5%
7.1.	Life expectancy at birth	25%
7.2.	Mortality rate	50%
7.3.	Health (4^{th} pillar in the Global Competitiveness Index)	25%
8.	**Commercial Infrastructure**	10%
8.1.	Fixed Telephone Subscriptions	10%
8.2.	Mobile Cellular Subscriptions	20%
8.3.	Access to Electricity of the Population	30%
8.4.	Individuals Using the Internet	20%
8.5.	Rail Lines	10%
8.6.	Air Transportation	10%
9.	**Corruption** (Corruption Perception Index,2016-2017)	5%
10.	**Consumption (Domestic Market Potential)**	10%
10.1.	Household consumption expenditure	30%
10.2.	General government expenditure	30%
10.3.	Population size	40%
11.	**Political Suitability (PS)**	5%
11.1.	Political Stability	50%
11.2.	Rule of Law	50%
12.	**Economic Freedom** (Economic Freedom Index, 2016-2017)	5%

Source: retrieved from the World Bank DataBank and compiled

The values are given based on the basic characteristics of emerging economies discussed above. The highest value, 25% of overall, is allotted to economic size in which growth rate covers 60% while the GDP size covers the rest. This is because an emerging economy is defined mainly in terms of economic growth or a continuously expanding economic size (Logue, 2011; Ciravegna et al., 2013). This is also applied similarly by most rating agencies such as FTSE, MSCI, S&P, EMBI, as well as the International Monetary Fund in classifying economies.

The other important indicators of emerging economies are GDP per capita income, FDI inflow, commercial infrastructure, and consumption which cover 40% in total. The rest 35% is covered by employment, export diversification, education, health,

corruption, political suitability, and economic freedom - 5% each. In the education category, higher education covers 60%. This is because higher education promotes innovation, technology transfer and higher productivity. Similarly, in the health category, the mortality rate is given higher emphasis. It is assumed that mortality rate, one of the important elements in the Human Development Index, indicates the level of some famous diseases, epidemics, and conflicts which determines natural resources utilization and thus economic growth and development.

In a similar manner, under the commercial infrastructure criterion, access to electricity has the highest value. Electricity, as part of energy, affects the living standards, investment or production more than the others. Communication, measured by mobile cellular subscriptions and internet usage, is also valued higher than transportation. Lastly, population size takes 40% of the consumption category while political stability and rule of law are kept equal.

Table 5.4: The Results of AEE Index

		Economic Size	**Income**	**FDI inflow**	**EDI**	**EPR**	**Education**	**Health**	**Commercial Infrastructure**	**Corruption**	**Consumption**	**PS**	**EFI**	**Total Indexed Value**
	Countries	25%	10%	10%	5%	5%	5%	5%	10%	5%	10 %	5%	5%	100%
1.	South Africa	10.9	2.9	9.8	3.4	2.3	4.7	3.2	8.6	3.8	4.3	-0.3	4.2	100.0
2.	Nigeria	17.7	4.2	10.0	4.4	3.2	3.1	3.0	4.6	2.3	4.4	-8.1	3.8	91.1
3.	Egypt	14.8	2.8	9.9	3.1	2.6	3.7	3.7	6.7	2.8	3.1	-4.7	3.5	90.2
4.	Mauritius	6.8	6.1	0.5	4.0	3.3	3.1	3.0	7.4	4.5	0.1	4.8	5.0	84.2
5.	Ghana	11.0	3.4	3.7	4.2	4.3	4.0	3.5	4.7	3.6	0.7	0.4	3.8	82.1
6.	Morocco	8.6	3.4	4.4	3.9	2.6	3.8	3.9	6.9	3.1	1.3	-1.0	4.1	78.0
7.	Rwanda	11.5	4.4	0.2	4.8	4.9	3.6	3.8	2.1	4.5	0.6	0.0	4.5	77.7
8.	Ethiopia	16.8	5.2	1.3	4.5	4.6	2.8	3.6	2.2	2.8	2.3	-4.9	3.5	77.6
9.	Cabo Verde	5.5	3.4	0.2	4.0	3.6	4.5	3.9	6.0	4.9	0.1	3.6	3.8	75.6
10.	Seychelles	7.3	6.9	0.3	4.7	0.0	4.0	3.1	7.6	2.6	0.2	2.3	4.1	74.6
11.	Botswana	7.1	4.3	1.0	5.0	3.7	4.3	3.9	5.0	5.0	0.2	-1.7	4.7	73.7
12.	Burkina Faso	8.3	2.3	0.3	4.5	4.8	2.8	3.5	2.0	3.5	0.7	4.4	4.0	71.1
13.	Namibia	7.1	3.8	1.2	4.3	2.6	4.0	3.4	3.8	4.3	0.2	2.1	4.2	71.1
14.	Tanzania	10.7	3.1	2.4	4.3	4.5	3.4	3.3	1.6	2.7	3.2	-2.3	3.9	70.4
15.	Zambia	10.1	3.2	2.1	4.8	4.1	3.7	3.3	2.5	3.2	0.5	-0.5	3.7	70.4
16.	Algeria	8.2	2.8	2.6	4.1	4.3	2.3	3.5	2.8	6.3	1.8	-3.1	3.1	67.0
17.	Uganda	10.2	2.6	1.4	4.1	3.3	4.9	3.4	2.1	1.9	3.8	-3.1	4.1	66.9
18.	Angola	13.7	3.9	0.3	4.6	3.5	3.8	4.0	1.5	2.2	1.3	-5.0	3.2	64.4
19.	Tunisia	5.4	3.0	2.6	3.1	4.3	2.4	3.8	3.4	6.8	0.5	-2.3	3.7	63.7
20.	Mozambique	10.4	3.7	4.2	4.1	2.7	3.5	3.1	2.3	2.0	0.7	-3.9	3.3	62.6
21.	S.T. & Principe	7.5	2.6	0.1	3.4	3.9	3.1	3.3	3.8	3.8	0.4	-1.9	3.7	58.5

22.	Kenya	9.5	2.1	0.6	3.6	4.1	3.5	3.4	2.2	3.8	1.5	-4.6	3.6	58.0
23.	Gabon	4.9	2.1	1.0	4.6	3.7	2.4	3.6	2.9	5.5	0.2	-1.5	3.9	57.7
24.	Senegal	6.3	1.4	0.5	4.1	3.3	3.1	3.4	3.8	3.8	0.7	-0.9	3.7	57.6
25.	Lesotho	6.6	2.6	0.1	4.7	3.6	2.9	3.2	3.3	2.6	0.1	-0.8	3.6	56.3
26.	Cote d'Ivoire	7.9	1.3	0.7	4.0	3.1	3.6	3.3	2.8	4.1	1.4	-3.9	4.2	56.3
27.	Malawi	8.1	1.3	0.5	4.5	3.1	4.5	3.5	2.6	1.2	0.5	-1.1	3.5	55.5
28.	Equatorial Guinea	3.5	7.8	1.8	4.2	4.0	4.5	3.6	0.0	3.6	0.2	-4.5	3.0	54.8
29.	Sierra Leone	8.0	2.6	0.5	3.8	2.7	3.8	3.7	2.5	1.5	0.8	-2.9	3.5	53.0
30.	Sudan	9.2	4.1	3.3	4.4	3.2	2.5	3.5	1.2	3.3	1.1	-8.7	3.3	52.4
31.	Mauritania	7.0	1.7	0.9	4.6	4.1	2.5	4.4	2.3	2.8	0.1	-4.0	3.6	52.2
32.	Cameroon	6.6	1.3	0.8	4.0	3.8	4.3	3.6	2.2	3.5	1.1	-5.2	3.5	51.0
33.	Swaziland	4.6	2.3	0.1	4.2	3.8	2.3	3.2	2.5	4.0	0.1	-1.9	4.1	50.8
34.	Congo, Rep.	6.1	1.4	3.4	4.5	3.7	3.7	3.3	1.7	2.9	0.2	-4.3	2.7	50.4
35.	Congo, Dem. Rep.	10.0	1.9	2.6	4.4	3.4	4.1	3.4	1.8	1.4	2.3	-9.8	3.8	50.4
36.	Togo	6.2	0.6	0.3	4.1	3.4	4.5	3.5	2.7	2.5	0.3	-2.8	3.6	49.7
37.	Niger	8.3	1.1	0.8	4.7	2.4	3.7	3.5	2.9	1.1	0.6	-4.1	3.4	49.3
38.	Benin	6.4	1.2	0.2	4.3	2.8	4.2	3.6	3.0	2.4	0.5	-4.6	4.0	48.4
39.	Gambia, The	4.9	0.2	0.1	4.2	3.3	3.2	3.2	2.2	3.7	0.0	-1.9	3.6	46.5
40.	Mali	6.5	1.8	0.5	4.5	2.6	3.6	3.2	2.7	2.9	0.7	-6.2	3.9	46.0
41.	Madagascar	4.5	0.1	1.1	4.3	3.2	5.0	3.3	2.2	1.3	0.6	-3.0	3.8	45.6
42.	Liberia	8.0	0.0	0.8	4.1	2.7	3.5	3.0	3.1	1.4	0.1	-4.3	3.3	44.5
43.	Djibouti	6.8	1.9	0.2	3.4	2.0	2.9	3.5	2.5	2.3	0.0	-3.7	3.1	43.2
44.	Chad	5.7	3.6	0.6	4.4	2.3	4.0	3.6	1.7	0.8	0.6	-5.8	3.3	42.8
45.	Zimbabwe	5.6	-0.9	0.3	4.1	3.8	4.6	3.5	1.8	2.6	0.4	-5.4	2.9	41.0
46.	Comoros	3.0	0.0	0.0	4.2	3.6	2.7	3.6	2.0	3.2	0.0	-2.7	3.7	40.4
47.	Guinea	3.7	0.5	0.4	4.2	2.6	4.5	3.6	2.3	2.0	0.3	-4.5	3.2	39.7
48.	Guinea-Bissau	5.0	0.6	0.0	4.2	3.2	4.0	3.5	1.3	1.5	0.1	-4.9	3.8	38.7
49.	Burundi	4.8	-0.1	0.0	4.2	3.3	4.9	3.6	1.7	0.9	0.3	-7.5	3.6	34.0
50.	Eritrea	0.7	-0.5	0.1	4.6	3.5	4.6	3.3	1.5	1.5	0.0	-6.3	2.8	27.6
51.	C.A.R	-0.3	-0.5	0.1	4.3	2.8	4.3	3.8	1.7	0.8	0.1	-10.1	3.5	17.9
52.	Libya	-5.6	-1.5	2.6	4.4	3.9	2.5	3.1	1.2	5.9	0.4	-10.3	0.0	11.5
53.	Somalia	0.2	0.1	0.3	4.1	2.0	3.0	3.8	0.8	1.3	0.7	-12.8	0.0	6.1
54.	South Sudan	-4.0	-2.6	-0.1	0.0	2.7	0.0	3.5	0.9	1.0	0.4	-11.1	0.0	-16.2

Source: Own calculations

The results of the index clearly reflect the gap among the African countries' level of overall performance. It earmarks some African leading economies and became consistent with the works of Radelet (2010) in which he identified 17 Africa's major economies. The results also point out that all the 54 African countries can be classified into four general categories. The first category contains three countries; South Africa, Nigeria, and Egypt. These countries have a clear outstanding performance than the other 51 countries. South Africa is a member of BRICS group, Nigeria is a member of BRICS + N-11 group and recognized as emerging economy by EMBI while Egypt is also categorized as emerging by all rating agencies except by

Russell and IMF. Therefore, these countries can be categorized as a *World Class African Emerging Economies.*

In the second category, there are 12 countries with comparatively impressive economic performance. Many of these countries have recorded high economic growth, improved infrastructure, expanded education and health services in the last decade even though their records in the other indicators are diverse. Mauritius, Morocco, Botswana, Ghana, Namibia, and Zambia are categorized as frontier economies by various rating agencies. Therefore, countries in this category can be classified as *World Class African Frontier Economies*.

In the third category, there are 11 countries with above average score; Algeria, Uganda, Angola, Tunisia, Mozambique, Sao Tome and Principe, Kenya, Gabon, Senegal, Lesotho and Ivory Coast. These countries are not too far to be an AEE. They lag a little bit to cope up with the other leading 15 economies. Therefore, they have a chance to join the first group if they make some economic accomplishment soon. They can be categorized as *African Frontier Economies.*

The remaining 28 countries are in the fourth category of simply *African Developing Economies*. They have below the average record in the index. They are not expected to join the foremost groups soon. Burundi, Eritrea, Central African Republic, Libya, Somalia and South Sudan are in the bottom of the table with the lowest score.

Therefore, at African level, we can categorize both the *World Class African Emerging Economies and World Class African Frontier Economies* groups as African Emerging Economies. These 15 countries are the leading African economies to dominate the continent's economy and take a higher economic role in the global economy in the near future.

5.4 Characteristics of the African Emerging Economies (AEE)

According to the result of the index, 15 countries are identified as AEEs. These countries are the representatives of the AEE in this study. Consequently, their background is presented briefly below.

5.4.1 Socio-Economic Background of Africa

Africa is the second most populous and the second largest continent in the world. It covers nearly 20% of the earth's surface with 30.3 million square kilometers area. Its more than 1.2 billion people (2016) speak 1250-3000 various native languages. It has five interlinked regions with a total of 55 countries. The North Africa region (7 countries) lies north of the Sahara Desert and to the Mediterranean coasts. West Africa (15 countries) contains most of the Sahara desert south to North Africa. The East Africa region (14 countries) stretches along the red sea, Horn of Africa to Madagascar. In the center of the continent, Central Africa region (9 countries) covers the largest mass. In the south, the Southern Africa region (10 countries) stretches from southern Congo to the tip of the continent.

Figure 5.1: The Map of Africa

Source: National Geographic Society

African economy is dependent on agriculture. Climatic factors greatly influence its agriculture, which is considered the continent's single most vital economic activity. It employs nearly two-thirds of the continent's working population and covers almost half of every nation's GDP. In addition to agriculture, Africa is a major producer of

important metals and minerals such as uranium which is used to produce nuclear energy; platinum, used in jewelry and big industrial processes; nickel, used in stainless steel magnets, coins, rechargeable batteries and many other applications; and also aluminum ore, and cobalt. Hence, gold and diamonds are the most profitable minerals in the continent. South Africa, Ghana, Guinea, Mali, and Tanzania are the famous producers of gold while Botswana, Angola, South Africa, Democratic Republic of Congo and Namibia are the major producers of diamonds. However, the continent has been in series of conflicts caused and funded by groups involved in these sectors (National Geographic Society, 2017).

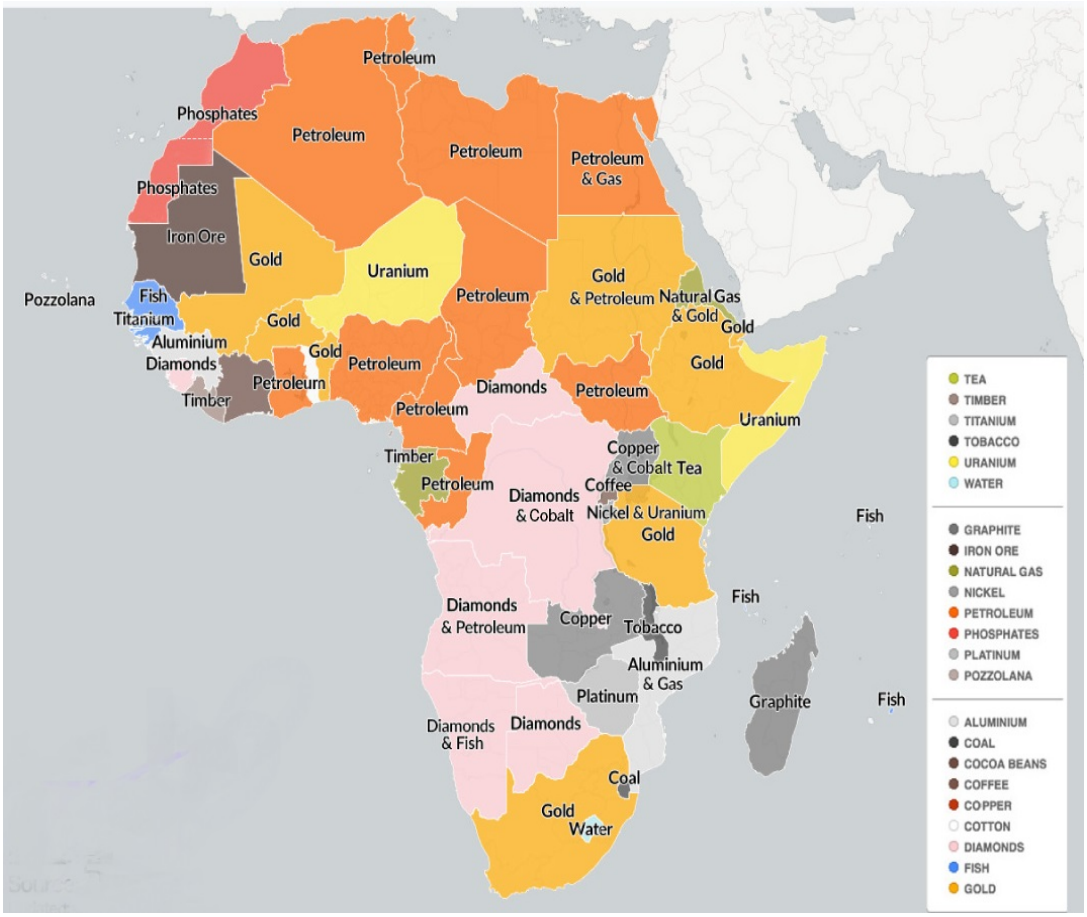

Figure 5.2: The Distribution of Minerals and Metals in Africa

Source: Al Jazeera

Africa is also a home for many petroleum-producing economies. Malawi, Morocco, Mauritania, Niger, Nigeria, Democratic Republic of Congo, Ivory Coast, Tunisia, Ghana, Cameroon, Chad, South Africa, Gabon, Congo Republic, Sudan, South

Sudan, Equatorial Guinea, Libya, Egypt, Algeria, and Angola are all petroleum producers. Additionally, some East African countries such as Kenya, Tanzania, and Uganda have projects in progress to produce petroleum in the near future.

Historically, the whole Africa, except Ethiopia and Liberia, was under colonization of few European countries for many decades. Starting from the 1870s, France and Britain were the main colonizers in Africa followed by Italy, Belgium, Germany, Spain, and Portugal. France colonized Mauritania, Senegal, Gambia, Mali, Guinea, Gabon, Algeria, Morocco, Comoros, Ivory Coast, Niger, Burkina Faso, Chad and some others now demarcated differently. Britain also colonized Egypt, Sudan, Kenya, Uganda, Tanzania, South Africa, Nigeria, Namibia and other smaller states. The other European colonizers had few African colonies each.

5.4.2 Demographic Characteristics of AEE

Out of the total 55 countries from all regions, 15 countries are identified as emerging economies. These countries have different demographic characteristics and historical background. In terms of population size, Nigeria is the most populous nation in the continent with more than 182 million people. Ethiopia (99.39 million) and Egypt (91.51 million) are the other two populous nations both in the continent and in the AEE group. Seychelles, Cabo Verde, and Mauritius are the least populated nations in the group with less than 2 million population sizes. Entirely, all the 15 AEE cover around 50% of the total 1.19 billion population of the continent.

Based on the 2015 figures, World Bank DataBank, the average annual population growth of the group is 2.08%. Tanzania and Zambia dominate the group with above 3% population growth whereas Mauritius has only 0.13% population growth rate. On average, almost 35.5% of the population is in the range of 0-14 years old which indicates the domination of the youth now and the near future. Six out of 15 countries have above 40% of their population in this age group. Besides, on average around 45.6% of their population live in urban area. Tanzania (31.6%), Rwanda (28.8%) and Ethiopia (19.5%) from Eastern Africa and Burkina Faso (29.9%), from Western Africa, have the least number of people living in urban areas. Additionally, above 77% of the AEE's adult population is literate. This figure has been increased in recent

years. Burkina Faso and Ethiopia have the lowest rate of below 50% literacy rate. Seychelles and South Africa have the highest rate of adult literacy.

Table 5.5: Demographic Characteristics (2015) and Former Colonizers of AEE

	Population				Adult Literacy Rate in %	Former Colonizers
	Size	Growth	Urban in %	Age 0-14 in %	(>15 Age)	
Botswana	2.26	1.90	57.44	32.00	88.22	Britain
Burkina Faso	18.11	2.89	29.86	45.57	37.75	France
Cabo Verde	0.52	1.28	65.53	29.65	88.47	Portugal
Egypt	91.51	2.13	43.14	33.16	75.84	Britain
Ethiopia	99.39	2.48	19.47	41.44	49.03	Not colonized
Ghana	27.41	2.30	54.04	38.82	76.58	Britain
Mauritius	1.26	0.13	39.67	19.32	90.62	Britain
Morocco	34.38	1.34	60.20	27.22	71.71	France
Namibia	2.46	2.30	46.66	36.69	90.82	Germany
Nigeria	182.20	2.63	47.78	43.99	59.57	Britain
Rwanda	11.61	2.34	28.81	41.05	71.24	Belgium
Seychelles	0.09	1.63	53.89	23.45	95.32	Britain
South Africa	54.96	1.65	64.80	29.24	94.60	Britain
Tanzania	53.47	3.13	31.61	45.20	80.36	Britain
Zambia	16.21	3.07	40.92	45.91	85.12	Britain
Total/Average	595.84	2.08	45.59	35.51	77.02	

Source: World Bank DataBank

All countries except Ethiopia have passed through colonization history of European countries from the end of 19th century to the end of 20th century when South Africa became free. Nine out of 15 nations were former colonies of Britain, 2 colonies of France, 1 colony of Portugal, 1 colony of Germany and 1 colony of Belgium. The highly populated and big AEE such as Nigeria, Egypt and South Africa were colonies of Britain. The other major colonizer in the continent, France, was the colonizer of only Burkina Faso and Morocco from the AEE group.

5.4.3 Economic Characteristics of AEE

One of the critical indicators of becoming an emerging or frontier economy is the fast-growing economy of the nation. In the last 15 years, all AEE have recorded high economic growth. Their GDP has significantly increased within a short period. Nigeria's GDP, for instance, was around 46 billion dollars in 2000. This figure reached near to 568 billion in 2014 and then 481 billion in 2015. Similarly, the GDP

of Ghana and Ethiopia have increased from around 5 and 8 billion dollars to 38 and 62 billion dollars respectively in between 2000 and 2015.

AEE in a group takes the biggest share of the continent's economy. The total GDP of 15 AEE was only 368 billion dollars in 2000 which is equal to the GDP of the whole SSA economy but only 1% of the world economy. However, in 2015, their share reached 1.46 trillion dollars by recording a significant increase. This is equivalent to 91% of the Sub-Saharan economy and 2% of the world economy. The major factor is the economic size of Nigeria, Egypt and South Africa in addition to the remarkable economic growth of all emerging economies.

Table 5.6: GDP, GDP growth and GDP per capita of AEE, 2000-2015

Country	GDP, 2015, in Bln USD	GDP growth, 2000-2015	GDP PI, 2015 (current $)	GDP per person employed, 2014 (constant 2011 PPP $)
Botswana	14.43	4.21	15,839.00	37,481.00
Burkina Faso	11.15	5.51	1,696.00	3,711.00
Cabo Verde	1.57	5.14	6,556.00	14,158.00
Egypt	332.70	4.16	10,913.00	36,557.00
Ethiopia	64.46	8.99	1,629.00	3,008.00
Ghana	37.54	6.26	4,210.00	9,399.00
Mauritius	11.68	4.37	20,085.00	40,924.00
Morocco	100.59	4.46	2,847.00	22,613.00
Namibia	11.49	4.92	10,411.00	30,734.00
Nigeria	481.07	7.54	6,004.00	19,511.00
Rwanda	8.26	7.66	1,762.00	2,938.00
Seychelles	1.44	3.16	27,177.00	..
South Africa	317.41	3.11	13,195.00	44,047.00
Tanzania	45.63	6.60	2,673.00	3,640.00
Zambia	21.15	6.52	3,836.00	8,623.00
Total/Average	1,460.58	5.51	8,588.87	19,810.29

Source: World Bank DataBank

In terms of the rate of economic growth, the biggest AEE recorded relatively lower rate than the majority of the others in the group. Ethiopia, Rwanda and Nigeria are the top countries in recording highest rate in the last couple of decades. These countries were, in fact, in the top list of the world's fast-growing economies. Tanzania, Zambia, and Ghana had also almost similar progress.

The next question is how the economic growth is distributed to the mass. The results are different from the GDP growth rate figures. Smaller or less populous emerging

economies have higher GDP per capita income rates. Seychelles, Mauritius, and Botswana are the leading economies of the emerging economies group and the whole continent. The average per capita income of the group is 8,589 dollars which is almost double of the SSA average and half of the world average. However, this figure has a little bit different nature if we consider the GDP per person employed. South Africa, Mauritius, Botswana, and Egypt have the highest rates in the group.

When we see the trend of their GDP per capita growth, many AEE recorded an increasing change at increasing rate throughout the last two decades. Seychelles, Mauritius, Botswana, South Africa, Egypt, and Namibia are the leading examples of such remarkable progress. The per capita income of Seychelles reached above 27,177 dollars in 2015 from about 14,500 dollars in 2,000 dollars and 20,000 dollars in 2010. Similarly, Mauritius's per capita income reached above 20,000 dollars in 2015 from nearly 8,700 dollars in 2000. Even though the per capita income of the other emerging economies is relatively very low, they recorded a speedy increase in the last decade. Within 16 years, the group's per capita income has increased by more than 130% with the highest percentage increment recorded in Ethiopia.

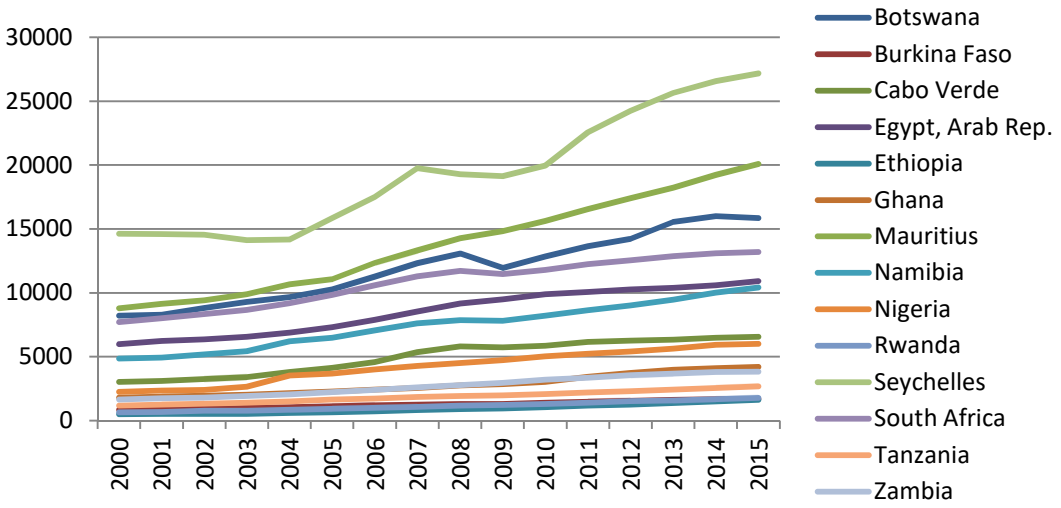

Figure 5.3: GDP per Capita Income of AEE, 2000 - 2015

Source: World Bank DataBank

The structure of the economy shows that the service sector is the main contributor to the economy. Even though the rate is relatively low, this trend is similar to the world

economy in general and the WEE in particular. On average, the industry sector is in the second place. However, Ethiopia, Burkina Faso, Rwanda, and Tanzania have the highest agricultural sector contribution to their GDP even though its share is slowly declining. Botswana, South Africa, Mauritius, and Zambia have the lowest share of agriculture to their GDPs.

Such difference in the contribution of sectors to the economy has a direct relationship to their export items and their endowments. All AEE have higher natural resources rents share to their GDP than the world average. Ghana, Zambia, and Ethiopia have the highest share of natural resources rents shares to their GDP in the group. Moreover, Zambia, Ghana, Botswana, South African and the other emerging economies from Western and Southern Africa have higher mineral rents share to their GDP than others.

5.4.4 Competitiveness and Doing Business in AEE

One of the best ways of understanding and comprehensively presenting the overall status of a country is its competitiveness. The world economic forum publishes an annual global competitiveness index. The index covers 12 pillars from institutions to the innovativeness of nations. According to the 2015-2016 editions, most of the AEE have better rankings than other African economies. In this regard, the top African emerging economy is Mauritius. Here, comparing these African economies with the major WEE gives a clearer picture. Mauritius is ranked 46th in the overall Global Competitiveness Index while Russia is ranked 45th. Moreover, Mauritius has better ranks in Goods Market Efficiency (25th), institutions (34th), Financial Market Development (34th) and Business Sophistication (34th). This implies that Mauritius has better ranks than all WEE except China.

Similarly, South Africa (49th) and Rwanda (58th) are the other top countries in the group. Their overall competitiveness rate is generally equivalent to the major WEE . Rwanda is ranked 8th in the Labor Market Efficiency pillar and 28th in the Financial Market Development pillar. These ranks are better than all other emerging economies by far. Some other AEEs, such as Botswana (71st), Namibia (85th) Zambia (95th) and Seychelles (97th), are in the top 100 ranks of the index. If we take the average of all

pillars for the AEE and WEE and take them as a single economy each, AEE would be ranked 89th and the WEE ranked 64th.

Beyond the variation in competitiveness ranks, their rates in doing businesses are also different. For example, it takes 69.3% of income per capita to start a business in Ethiopia while it takes only 0.2% in South Africa. Rwanda, Burkina Faso, and Zambia are the other countries with higher rates. In contrast, Mauritius and Egypt follow South Africa with a lower cost to start a business. Moreover, in Namibia, it takes 66 days to start a business while it takes only 4 days in Rwanda. South Africa and Ethiopia are the other countries where business establishment takes a longer period.

One of the most important factors of new investment and business is getting a land or facilities. In this sense, the quality of land administrative index of Rwanda and Seychelles is 28 and 18.5 out of 30 respectively whereas it is 6 in Ethiopia and 7 in Egypt. Similarly, they differ in the strength of governance structure index. Nigeria and South Africa have a rate of near to 6 out of 10.5 while Tanzania has below 3. South Africa and Nigeria have a higher rate of the strength of investor protection index than the others. Most of the others are in between 4-6 except Sao Tome and Principe.

As emerging economies, the other important indicator may be tax system and simplicity of import and export. But still, there is a huge gap in the group in these aspects too. The percentage of profit tax, for instance, is the highest in Egypt and lowest in Zambia. The time to prepare and pay taxes indicates a high level of variation in the group. It takes more than 900 hours in Nigeria but only 85 hours in Seychelles to prepare and pay a tax. In a similar trend, it takes 131 hours in Nigeria but 9 hours in Mauritius to finalize documentary steps to export. The similar procedure to import takes 256 hours in Egypt but only 3 hours in Namibia.

If we compare AEE with BRICS+TMP, there are some indicators of doing business in which the African nations are in better position. For example, the time required to start a business in AEE is, on average, 24 days but it is 28.8 days in BRICS+TMP. Similarly, time to prepare and pay taxes is 262 hours in AEE but it is 449 hours in the

WEE. Moreover, the profit tax on the African side is 32% whereas in the WEE it is more than 51% on average. However, the cost of starting a business in AEE is 22.6% of income per capita whereas it is near to 9% in BRICS+TMP. Furthermore, the number of hours to process imports and exports in the WEE are less than AEEs. In the other indicators, they have almost similar rates.

5.5 Foreign Trade and the African Emerging Economies (AEE)

5.5.1 Exports of African Countries

The overall export volume of goods from Africa to the world was not more than 145 billion dollars in the beginning of the century. This amount increased by 270% and reached 388 billion in 2015. Comparing the 2000 figures with 2014, the increment is far more than of this. Taking the 2015 figures, Easter Africa countries recorded the highest improvement of 414% from 2000 to 2015 followed by Central African nations with 383%. However, Northern Africa and Western Africa countries had the highest volume of total exports. These countries exported relatively high-value products such as petroleum oil, other types of oils, natural gas, cocoa, gold, and others. Central Africa countries have also exported nearly similar items whereas South African countries exported mainly expensive minerals such as silver, platinum, and precious stones. Eastern Africa countries, on the other hand, are relatively dealing with agricultural products of tobacco, coffee, tea, and vegetables in addition to some minerals such as copper, gold, and aluminum.

Table 5.7: Export Volume and Items of Africa

Regions	Total Exports, in billion USD				Major Export Items
	2000	2015	Average 2000/15	Change in folds	
Eastern Africa	9.6	39.7	25.7	4.1	Copper, unmanufactured tobacco, coffee, non-monetary gold, tea, aluminum, and vegetables.
Central Africa	17.1	65.5	68.5	3.8	Petroleum oil, oils from bitumin, pearls, precious stones, copper, natural gas, wood, and ores.
Western Africa	30.4	94.1	89.5	3.1	Petroleum oil, oils from bitumin Oils, cocoa, natural gas, gold, cotton, fruits and nuts, and natural rubber
Southern Africa	31.5	82.4	71.4	2.6	Silver, platinum, pearls, precious and semi-precious stones, coal, motor vehicles, and ore

Table 5.7 – continued

Northern Africa	54.9	106.1	130.7	1.9	Petroleum oil, oils from bitumin, natural gas, liquefied propane and butane, articles of apparel of textile fabrics, equipment for distributing electricity and fertilizers
Africa	143.6	387.7	385.8	2.7	Petroleum oil, oils from bitumin, natural gas, gold, pearl, precious and semi-precious stones, silver, platinum, and cocoa.

Source: UNCTADSTAT database

The export items of Africa reach many countries of the world; both advanced and emerging economies are the dominant destinations. EU (28) is the leading destination of African exports with an average annual volume of 142 billion dollars in between 2000 and 2015. USA and China are the other major destinations with an average export volume worth of 55 and 37 billion dollars respectively. This implies that, from the average exports of the continent in the last 15 years, 37% was to EU countries, 14% to the USA and 10% to China. BRIC and BRICS + TMP in a group received around 17% and 20% of African exports on average respectively.

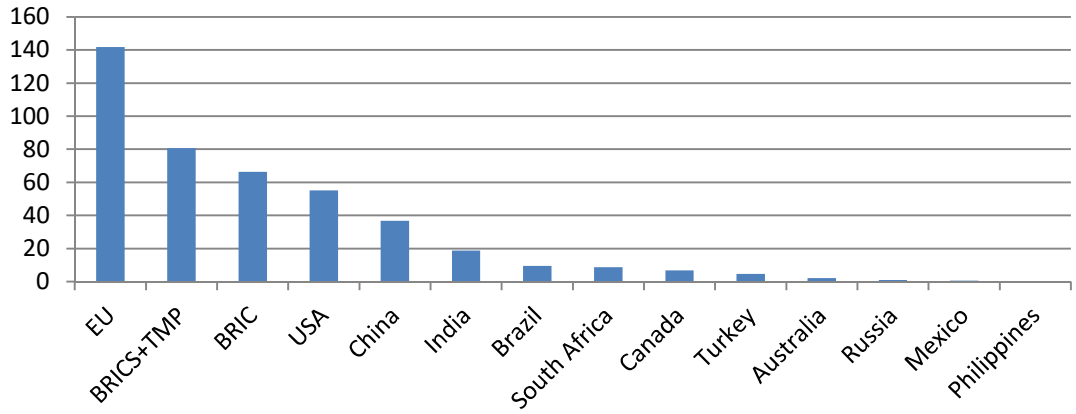

Figure 5.4: Major Destinations of African Exports, 2000 – 2015 (Bln USD)

Source: UNCTADSTAT database

Considering the sharp decline in export volume in 2015, mainly as a result of oil price declines, the export trend of Africa to the world increased by 170% within 16 years. However, it faced some deviations in its destination markets. The major destinations have been in fast changes. The export volume to EU increased from 68 billion in 2000 to 200 billion dollars in 2014 and then 135 billion in 2015.

Table 5.8: Exports of Africa to Major Destinations, 2000 - 2015

Destination	Volume of Export, in billion USD					
	2000	**2015**	**Total 2000-2015**	**Average 2000 -2015**	**Export Share in %**	**Change in folds**
World	143.56	387.72	6,172.82	385.80	100.00	2.7
Brazil	2.72	8.67	152.98	9.56	2.48	3.2
Russia	0.29	1.46	16.84	1.05	0.27	5.1
India	3.65	27.14	274.76	17.17	4.45	7.4
China	4.20	41.18	590.97	36.94	9.57	9.8
South Africa	1.59	10.60	125.52	7.85	2.03	6.7
BRICS Total	12.46	89.04	1,161.08	72.57	18.81	7.1
Turkey	2.56	5.17	77.72	4.86	1.26	2.0
Mexico	0.39	0.67	12.24	0.76	0.20	1.7
Philippines	0.09	0.11	1.70	0.11	0.03	1.3
BRICS+TMP Total	15.49	95.00	1,252.74	78.30	20.29	6.1
EU	67.54	135.07	2,307.84	144.24	37.39	2.0
USA	23.81	23.81	888.44	55.53	14.39	1.0
Canada	1.64	3.85	96.70	6.04	1.57	2.4
Australia	0.58	2.08	38.65	2.42	0.63	3.6
Advanced Economies Total	93.57	164.81	3,331.63	208.23	53.97	1.8

Source: UNCTADSTAT database

Nevertheless, one of the decisive changes in the destinations of African exports is the phenomenon of new destinations – BRICS + TMP – and declining share of advanced nations mainly the USA. The share of Brazil, China, India, South Africa and Turkey increased remarkably in the last decades while the share of USA was stagnant. BRICS+TMP is now the second biggest trade partner of Africa next to EU. The export of Africa to advanced economies and to BRICS+TMP countries has increased by 1.8 and 6.1 folds respectively from 2000 to 2015. In this period, the export to China was multiplied almost by 10 times while exports to EU were doubled and exports to the USA were at the same level.

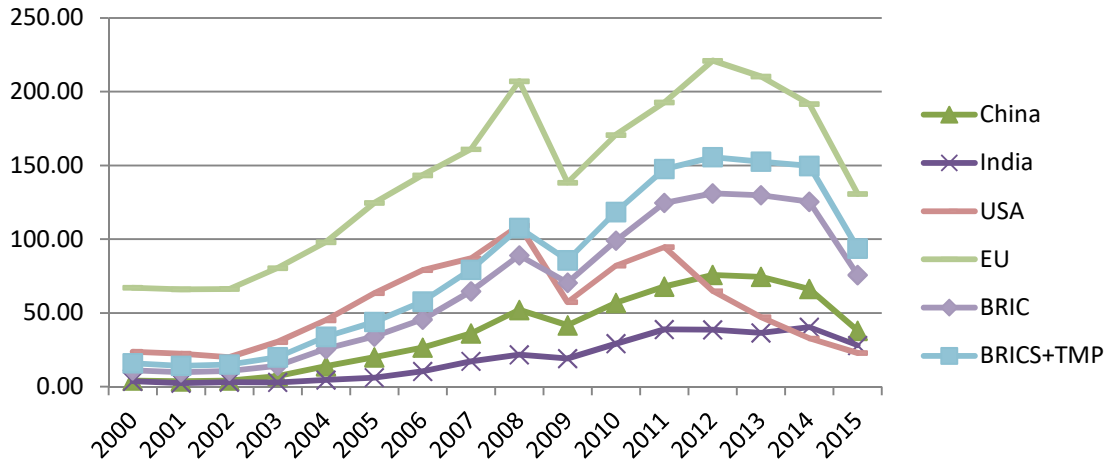

Figure 5.5: Trend of African Export to the EU, USA and BRICS Countries, 2000-2015 (Bln USD)

Source: UNCTAD STAT database

The trend shows some critical changes. First of all, there is a decline in the overall exports of Africa in the last three years. Secondly, the BRICS and BRICS+TMP's share started to be above the share of the USA's since 2008. Moreover, China and India's share became higher than USA's since 2012 and 2014 respectively and continued to expand the gap. Finally, it is also observed that the gap in the share of the EU and the emerging economies is significantly declining since 2014. Besides, as indicated in Figure 5.6, there a sharp decline in the exports of Africa to Australia and Canada while the exports to South Africa, Brazil and Turkey is replacing also declining but getting higher than Canada and Australia's share.

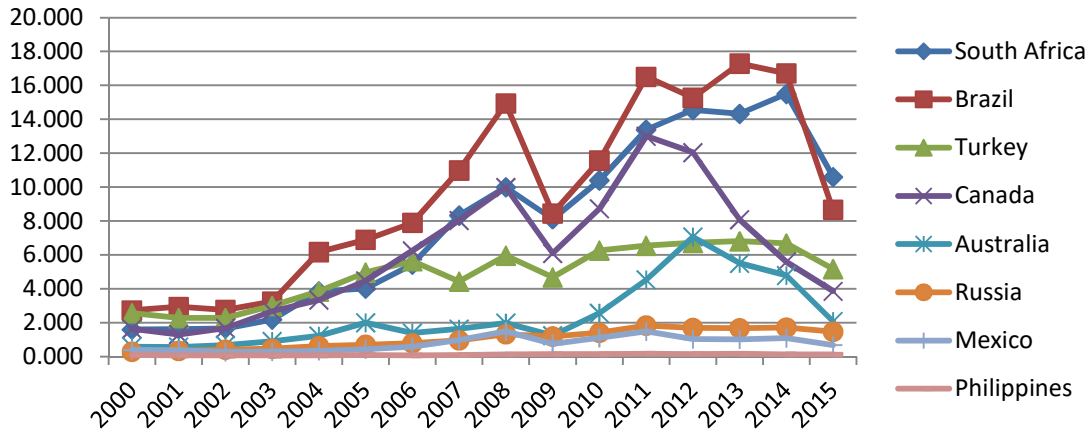

Figure 5.6: Trend of African Export to Selected Emerging and Advanced Economies, 2000-2015 (Bln USD)

Source: UNCTAD STAT database

5.5.2 Imports of African Countries

The major imports of African countries are petroleum oil, telecommunication equipment, construction equipment and motor vehicles both for persons and goods. Even though the leading export item of Africa is petroleum, its imports are also dominated by petroleum oils. This is because, first, countries which do not produce petroleum are importing it immensely and second, most of the petroleum producing countries are exporting crude petroleum oil and importing a processed one. Construction materials, telecommunication equipment, and motor vehicles can be related to the urbanization growth of the continent and the expansion of technology.

In comparison to the exports of Africa, imports to Africa have increased by 4.32 folds within 16 years from 2000 to 2015 while exports increased by 2.7 folds. This rate is still high in Central and Eastern Africa countries.

Table 5.9: Imports of Africa, 2000 - 2014

Regions	Total Imports, in billion USD				Major Import Items
	2000	2015	Average 2000/15	Change in folds	
Eastern Africa	16.58	95.35	52.41	5.75	Petroleum oils, oils from bitumen, telecommunication equipment and parts, motor vehicles for goods, medicaments, motor vehicles and fertilizers.
Central Africa	7.54	53.38	33.90	7.08	Construction equipment, ships and boats, petroleum oils, motor vehicles for goods and for persons

Northern Africa	48.52	196.68	136.89	4.05	Petroleum oils, wheat, motor vehicles, telecommunication equipment and parts, and medicaments
Southern Africa	32.19	98.86	80.46	3.07	Petroleum oils, motor vehicles, telecommunication equipment and parts, automatic data processing machines and medicaments.
Western Africa	21.02	99.54	67.57	4.73	Petroleum oil, motor vehicles, rice, telecommunication equipment and parts, ships and boats, and wheat.
Africa (Total)	125.85	543.81	371.23	4.32	Petroleum oils, oils from bitumen, motor vehicles, telecommunication equipment and parts, motor vehicles for goods, wheat, medicaments, and construction equipment.

Source: UNCTADSTAT database

The overall imports of Africa from the world reached 543.81 billion dollars in 2015 from 125.85 billion dollars in 2000. On average, Africa imported goods worth of 371.23 billion dollars in this span. The share of the EU was the highest with around 34.7% and the share of China was 11.6% followed by the USA with 6.5%. BRICS+TMP countries' import to Africa, as a group, covered 26.2% whereas the share of the major advanced economies was 42.7%. This shows the increasing share of emerging economies' trade with African nations.

Distinctively, Chinese imports into Africa multiplied by 23 times in 16 years. Indian and Turkish imports were also raised by 12.2 and 11.4 times respectively in the same period. While the imports from all over the world increased by 4.3 times, South Africa (3.1 times) and the Philippines (3.8 times) have a lower rate of trade expansion than this rate. Imports from Brazil, Russia, and Mexico increased by 6.2 times, 5.2 times and 5 times respectively which is above the world average in between 2000 and 2015. On average, the imports of Africa from BRICS+TMP increased by 9.4 folds while those of advanced economies increased only by 3 folds.

Table 5.10: Imports of Africa from the Major Partners

Destination	Volume of Imports, in billion USD				Share of Imports in %	Change in folds
	2000	2015	Total, 2000-2015	Average, 2000 -2015		
World	125.85	543.81	5,939.67	371.23	100.0	4.3
Brazil	1.42	8.82	118.50	7.41	2.0	6.2

Russia	1.56	8.12	84.56	5.28	1.4	5.2
India	2.04	24.96	223.12	13.94	3.8	12.2
China	4.29	98.88	689.76	43.11	11.6	23.0
South Africa	8.47	26.33	313.87	19.62	5.3	3.1
BRICS Total	17.78	167.11	1,429.80	89.36	24.1	9.4
Turkey	1.15	13.20	111.02	6.94	1.9	11.4
Mexico	0.24	1.22	12.58	0.79	0.2	5.0
Philippines	0.08	0.29	3.35	0.21	0.1	3.8
BRICS+TMP Total	19.25	181.82	1,556.76	97.30	26.2	9.4
EU	55.59	169.83	2,063.44	128.97	34.7	3.1
USA	10.73	30.42	386.47	24.15	6.5	2.8
Canada	1.25	3.44	43.68	2.73	0.7	2.7
Australia	1.47	2.38	41.96	2.62	0.7	1.6
Advanced Economies Total	69.05	206.08	2,535.56	158.47	42.7	3.0

Source: UNCTADSTAT database

The trend of imports shows that the overall volume was continuously increasing except for the years 2009 and 2015. However, throughout the whole period, the imports from emerging economies incessantly increased without major changes even in 2009 and 2015. As a result, recently, the imports of BRICS+TMP became equivalent with EU's. For example, in 2015, the imports from EU to Africa reached near to 170 billion from 56 billion in 2000 whereas the imports from BRICS+TMP was approximately 19 billion in 2000 but it became 182 billion in 2015 to topple the EU's figures. This means the imports from BRICS+TMP were more than that of EU's by about 12 billion and roughly 6 times of USA's. This is largely because of the continuous rise of Chinese exports to Africa.

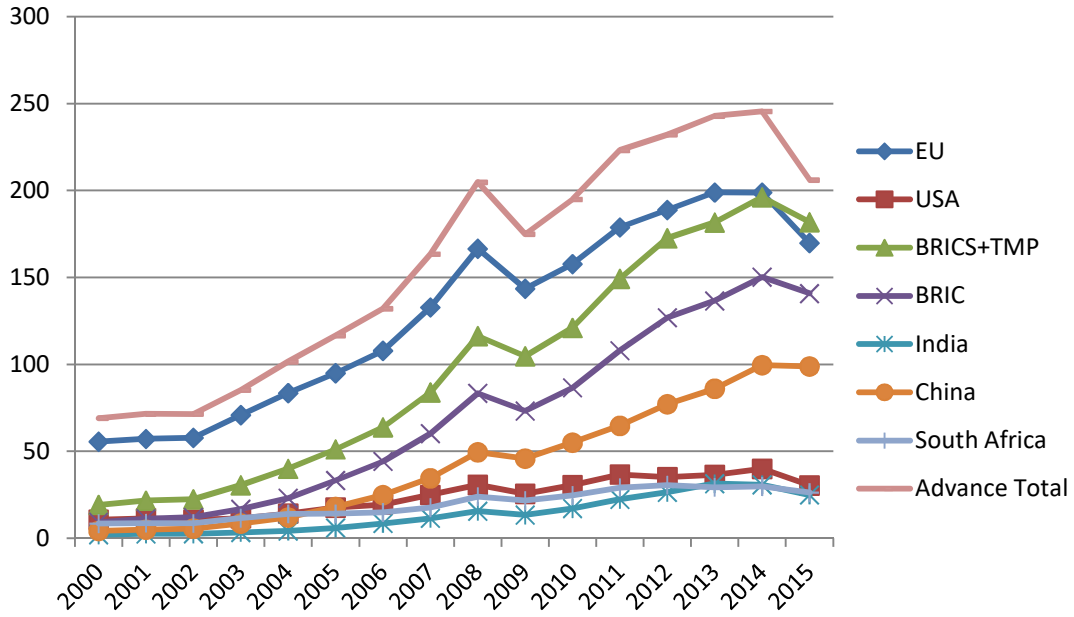

Figure 5.7: Trend of African Imports from the EU, USA and BRICS Countries, 2000-2015 (Bln USD)

Source: UNCTADSTAT database

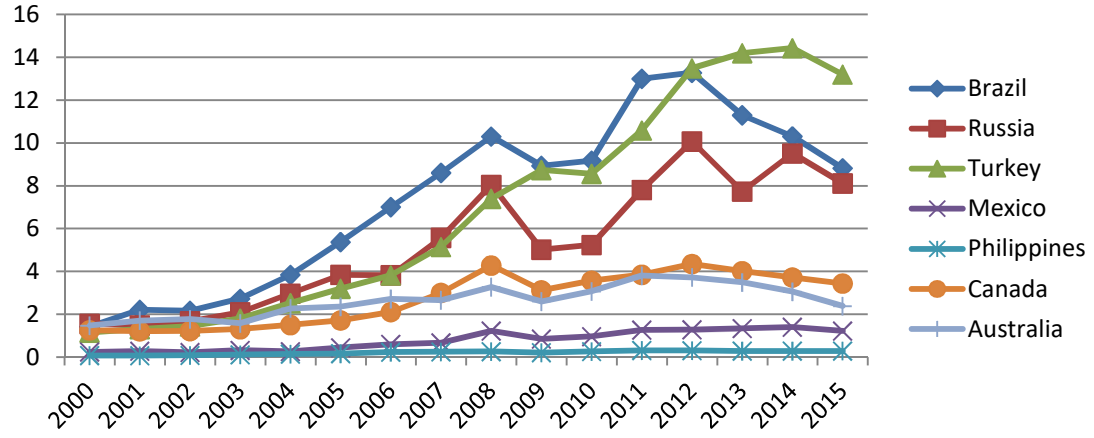

Figure 5.8: Trend of African Imports from Selected Emerging and Advanced Economies, 2000-2015 (Bln USD)

Source: UNCTADSTAT database

Generally, there is a stable and an increasing trend in the imports of Africa in comparison to its exports. The trends show some major changes. First, the import

from BRICS+TMP is sharply increasing and started to be above that of the EU since 2014. Second, the import from the USA is becoming equivalent to the individual emerging economies such as India and South Africa. Finally, it is visible that the import from Turkey into Africa has continuously increased to dominate the imports from Canada, Australia, Brazil and Russia.

In the import-export shares analysis, the African export shares of Brazil, India, EU, USA, and Canada are higher than their imports into the continent while China, Turkey, South Africa, Russia, Philippines, Mexico and Australia have a high share of exporting their products into Africa than receiving African goods. The highest share imbalance is that of the USA which receives 14.4 % of African goods but exports only 6.5% of the total goods. As a group, the share of BRICS+TMP in the export and import sector of Africa is 20.3% and 26.2% respectively. In contrary, the share of advanced economies is 54% in export and 42.7% imports. This shows that African countries are exporting more to advanced nations than emerging and vice versa.

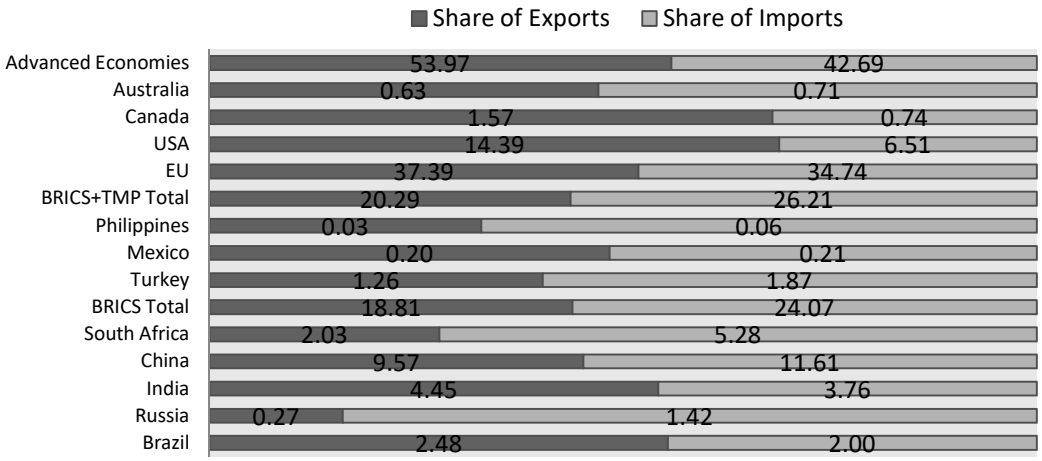

Figure 5.9: Share of Imports and Exports of Africa's Major Trade Partners

Source: UNCTADSTAT database

5.5.3 Exports from AEE

5.5.3.1 Export Volume and Items of AEE

AEE have exported various products to the world in the last 16 years. Their exports vary based on their location on the continent. East African emerging economies such

as Ethiopia, Tanzania, and Rwanda exported a lot of agricultural products of coffee, tobacco, tea, and vegetables. EM of the other regions mainly exported natural resources such as gold, aluminum, pearls, metals, and petroleum. North African EM (Egypt and Morocco) export equipment of electricity distribution, vehicles, and fertilizers. However, in countries of all regions, the export volume has been significantly increased from 2000 to 2015. The export size of Rwanda and Ethiopia, for example, increased by 13 and 10 folds respectively. With the least increment of Mauritius, the average export volume of all AEE has increased by more than 3 folds. This shows that it took them only 5 years to double their exports.

Table 5.11: Exports of African Emerging Economies, 2000 - 2015

AEE	Total Exports, in billion USD				Major Export Items
	2000	2015	Average 2000/15	Change in folds	
Botswana	2.76	6.32	4.68	2.29	Pearls, precious stones, and nickel
Burkina Faso	0.21	1.87	1.09	8.94	Gold, cotton, oilseeds, and fruits
Cabo Verde	0.01	0.05	0.03	4.87	Fish, petroleum oils and trailers
Egypt	5.28	21.97	18.54	4.16	Petroleum oils, natural gas, and fertilizers
Ethiopia	0.48	5.03	1.98	10.43	Coffee, vegetables and oil seeds
Ghana	1.67	9.52	6.29	5.7	Cocoa, gold and petroleum oils
Mauritius	1.49	2.48	2.19	1.67	Articles of apparel, sugar, and textile
Morocco	7.43	22.06	15.15	2.04	Equipment for distributing electricity, vehicles and fertilizers
Namibia	1.33	4.02	2.92	3.03	Pearls, precious stones, fish, and uranium
Nigeria	20.98	56.03	63.67	2.67	Petroleum oils, natural gas, liquefied propane and butane and cocoa
Rwanda	0.05	0.68	0.3	13.15	Base metals, coffee, tea and petroleum
Seychelles	0.19	0.47	0.38	2.45	Fish, petroleum oils and medical instruments
South Africa	26.3	69.63	61.47	2.65	Silver, platinum, coal and iron ore
Tanzania	0.66	5.85	2.94	8.93	Gold, precious metals an tobacco
Zambia	0.89	6.96	4.86	7.8	Copper, tobacco and base metal
African Total	143.6	387.7	385.5	2.7	
Total of AEE *(Share in %)*	*81.9 (48%)*	*248.5 (55%)*	186.5 *(48%)*	*3.1*	

Source: UNCTADSTAT database

The leading exporters in the group are Nigeria and South Africa followed by Egypt and Morocco. Nigeria's primary exports are petroleum oils, natural gas, liquefied propane and butane and cocoa whereas South Africa exports mainly silver, platinum

and coal, and iron ores. They exported more than 63 and 61 billion dollars respectively on average each year between 2000 and 2015. With relatively lower volume, Egypt and Morocco exported 18 and 15 billion dollars respectively in the same period. The principal exports of Egypt are petroleum, natural gas, and fertilizers while the major export items of Morocco are equipment for distributing electricity, vehicles, and fertilizers.

The flow of AEE' trade shows that there is a significant step up since the beginning of the millennium. This trend has declined in the global economic crisis period. Later it continued the same trend of augmentation. The biggest exporters of the continent, Nigeria, South Africa and Egypt had the same trend with a relatively stable improvement in the Egyptian exports and a sharp decline of Nigeria and South Africa's exports in the last 3 years. This reduces the total volume of exports from AEE while the others' exports are still increasing except in 2015.

5.5.3.2 Exports from AEE to BRICS+TMP

Specifically, AEE have, on average, exported around 186.43 billion dollars, annually in the last 15 years. EU is the leading receiver with 57.86 billion dollars (31%) followed by the USA with 26.02 billion (13.9%) and India with 13.57 billion dollars (7.3%). While EU covered 31% of the total, BRICS+TMP covered 19.3% of the total average exports from 2000 to 2015.

Table 5.12: Exports of AEE to WEE and Advanced Economies, in billion USD

Partners	Total	2000	2015	Average 2000-2015	Change in folds
Brazil	98.59	0.91	6.23	6.16	6.87
Russian	10.68	0.11	1.02	0.67	9.27
India	217.11	3.05	22.92	13.57	7.51
China	136.88	0.71	11.67	8.56	16.42
South Africa	74.34	0.80	6.18	4.65	7.71
BRICS	537.59	5.58	48.02	33.60	8.60
Turkey	27.36	0.36	2.56	1.71	7.06
Mexico	9.46	0.23	0.53	0.59	2.31
Philippines	1.21	0.04	0.09	0.08	2.31
BRICS+TMP Total	575.62	6.21	51.19	35.98	8.24
EU	925.75	27.13	61.86	57.86	2.28

United States	416.26	13.09	10.96	26.02	0.84
Australia	26.16	0.53	1.06	1.63	1.98
Canada	30.06	0.70	2.49	1.88	3.56
Advanced Economies Total	1,615.52	45.77	91.35	100.97	2.00
World	2,982.88	69.7268	212.4256	186.43	3.05

Source: UNCTADSTAT database

However, the trend demonstrates that China was the leading nation to increase its imports from AEE by more than 16.4 times within 16 years. Russia is the second importer which increased the volume by 9.2 times in the same period. In comparison to the world average of (total global export size of AEE), 3.05 folds, EU could increase only by 2.28 times. The most significant trend is the decline in the export of AEE to the US. It declined from around 13.09 billion in 2000 to 10.96 billion dollars in 2015. The change in the exports to Canada is also below the world average. On the other hand, the exports of AEE to BRICS+TMP increased by more than 8 times even though the figures of Mexico and the Philippines are low. The overall trend is indicated in Fig 5.10.

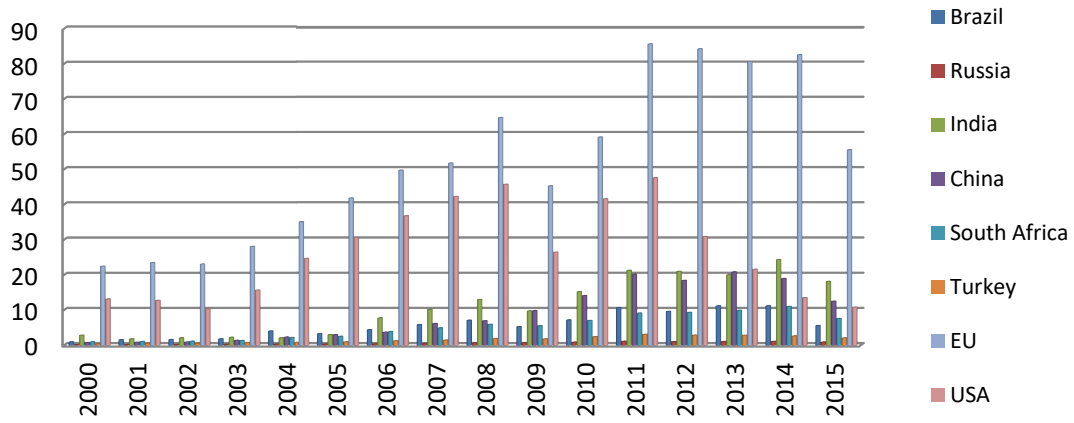

Figure 5.10: Trend of Exports from AEE to BRICS+TMP, EU and the USA

Source: UNCTADSTAT database

The nature of the exports to these nations indicates that crude petroleum oil is still the most dominant item. It is the highly exported product from AEE to Brazil, India, South Africa and EU and USA. Gold and other precious products are the other leading export items. Russia imports fruits, nuts, cocoa, and vegetables from AEE.

Besides, Mexico and the Philippines import maize. These show that AEE economies are exporting raw materials and agricultural products to advanced economies and WEE. The only odd product here is the export of vehicles to the USA.

Table 5.13: Export Items of AEE to BRICS+TMP and Major Economies

Importing Economies	Major Export Items from AEE in Ranks
Brazil	Crude petroleum oils, bituminous minerals and natural gas
Russia	Fruits and nuts, Cocoa and Vegetables
India	Crude petroleum oils, Coal and Gold
China	Iron ore and concentrates, Ores and concentrates of base metals &Copper
South Africa	Crude petroleum oils, Gold, and Copper
Turkey	Coal, Cocoa, and Gold
Mexico	Natural gas, Maize and Flat-rolled products of alloy steel
The Philippines	Maize, Flat-rolled prod., iron, non-alloy steel, coated, clad & fertilizers
The USA	Crude petroleum oils, Silver, platinum, other metals of the platinum group and Motor vehicles for the transport of persons
EU	Crude petroleum oils, Pearls, precious & semi-precious stones and Natural gas

Source: UNCTADSTAT

5.5.4 Imports of AEE

5.5.4.1 Import Volume and Items of AEE

The import of AEE has a similar trend to the whole African imports. In 12 out of 15 emerging economies, petroleum is the highly imported item in the last 16 years from 2000 to 2015. In the rest 3 nations, it is the second highly imported item. This similarly implies that while most of these nations are exporters of crude petroleum, they are again importing processed petroleum from other countries. In addition to petroleum, telecommunication equipment, construction materials, medicines, and vehicles are the commonly imported products into AEE in the same period.

Table 5.14: Imports to AEE, 2000-2015

AEE	Import Volume, in billion USD				Major Import Items
	2000	2015	Average 2000/15	Change in folds	
South Africa	26.77	79.59	68.00	2.97	Petroleum, vehicles, telecommunication equipment and automatic data processing machines
Egypt	13.96	60.53	39.33	4.33	Petroleum, wheat, telecomm. equipment, and propane
Nigeria	8.72	48.00	33.22	5.50	Petroleum, vehicles, telecomm.

					equipment and wheat
Morocco	11.53	34.55	29.43	3.26	Petroleum, vehicles and crude petroleum oil
Ghana	2.93	13.47	8.97	4.59	Petroleum, vehicles, construction materials and ships
Ethiopia	1.26	25.82	8.38	20.48	Petroleum, vehicles, telecommunication equipment and wheat
Tanzania	1.59	10.79	6.56	6.80	Petroleum, telecommunication equipment, vegetable oils and vehicles
Botswana	2.07	7.63	4.71	3.68	Pearls, precious stones, petroleum, and vehicles
Zambia	0.89	8.45	4.67	9.52	Copper ores, petroleum, construction equipment and vehicles
Namibia	1.43	8.23	4.44	5.74	Petroleum, vehicles, copper ores and ships
Mauritius	2.08	4.46	3.83	2.14	Petroleum, fish, telecommunication equipment and textile yarn
Burkina Faso	0.61	2.98	1.91	4.88	Petroleum, medicines, construction materials and fertilizers
Rwanda	0.21	2.25	1.14	10.65	Telecommunication equipment, petroleum, construction materials and medicines.
Seychelles	0.34	0.98	0.78	2.85	Petroleum, fish, ships and aircraft
Cabo Verde	0.24	0.61	0.58	2.56	Petroleum, milk products, construction materials and beverages
African Total	125.84	543.8	371.00	4.32	
AEE (African Share)	74.63 (59%)	308.3 (57%)	215.95 (58%)	*4.13*	

Source: UNCTADSTAT database

Based on the average imports from 2000 to 2015, South Africa is still the dominant importer in the group followed by a much more less volume of imports by Egypt, Nigeria, and Morocco. South Africa imported, on average, 68 billion dollars worth of various items dominated by petroleum, vehicles, telecommunication equipment, and automatic data processing machines. Taking petroleum as a default leading item, Egypt imported wheat, telecommunication equipment and propane worth of 39 billion dollars on average, Nigeria imported vehicles, telecommunication equipment and wheat worth of 33 billion dollars and Morocco imported vehicles and crude petroleum oil worth of 29 billion dollars on average.

5.5.4.2 Imports to AEE from BRICS+TMP

AEE imported around 215.45 billion dollars annually on average from 2000 to 2015. Like the export figures, EU is the major exporter to these economies with 69.16 billion dollars on average. China is the next one by exporting goods worth of 25.45 billion dollars. As a group, the BRICS+TMP exported 55.97 billion dollars which is still lower than the EU's exports. However, the trend shows that the BRICS+TMP export to Africa started to be above EU's exports in the last few years. In 2015, for example, BRICS+TMP countries exported 99.45 billion while EU exported 88.24 billion. Out of the total exports to Africa in 2015, 78% of Australia's, 69% of Russia's and 67% of USA's exports were to AEE. EU's 53% and BRICS+TMP's 57% exports to Africa also had the same destinations.

Table 5.15: Imports to AEE from WEE and Major Economies

Partners	Total (2000-2015)	2000	2015	Average 2000-2015	Change in Folds
Brazil	68.39	0.95	4.77	4.27	5.00
Russian	57.81	0.91	6.10	3.61	6.71
India	130.49	1.34	13.11	8.16	9.80
China	407.23	2.87	53.31	25.45	18.60
South Africa	168.96	4.11	15.19	10.56	3.69
BRICS Total	832.89	10.18	92.47	52.06	9.09
Turkey	52.63	0.49	6.07	3.29	12.26
Mexico	7.32	0.10	0.70	0.46	7.22
Philippines	2.64	0.07	0.20	0.16	3.10
BRICS+TMP Total	895.48	10.84	99.45	55.97	9.18
EU	1,106.57	30.84	88.24	69.16	2.86
United States	274.37	7.61	21.90	17.15	2.88
Canada	26.67	0.71	2.46	1.67	3.47
Australia	32.31	1.25	1.94	2.02	1.56
Advanced Economies Total	1,612.52	45.82	126.63	100.78	2.76
World	3,447.13	74.65	305.18	215.45	4.09

Source: UNCTADSTAT

Chinese imports to AEE increased by 18.6 times in 16 years. Turkey could also increase its exports to AEE by almost 12.26 times from 0.49 billion in 2000 to 6.07 billion in 2015. India has also followed the same trend to increase its exports from 1.34 to 13.11 billion dollars. The total increase in export of BRICS+TMP to AEE was 918% while the increase of the major advanced economies was only 276%. This

shows that the share of the trade of WEE is increasing in the continent in general and AEE in particular.

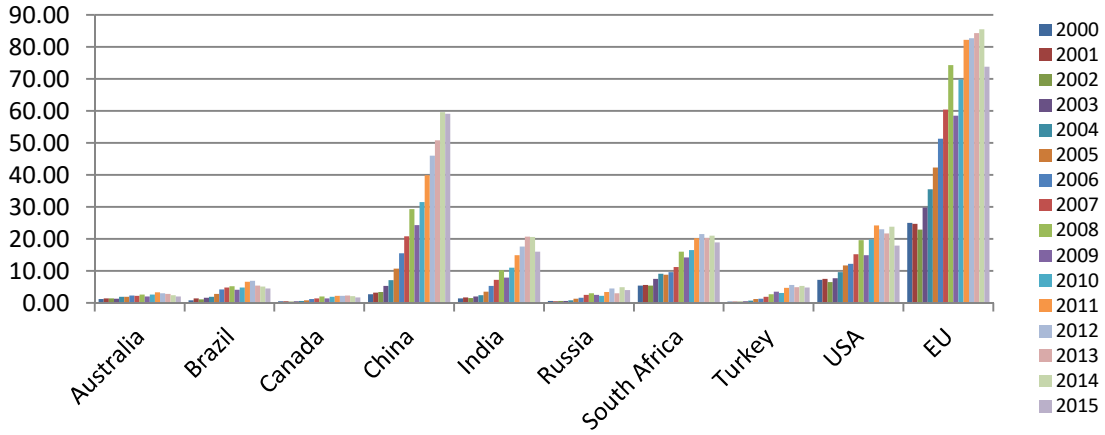

Figure 5.11: Trend of Import to AEE from BRICS+TMP, EU and the USA

Source: UNCTADSTAT database

The EU, Russia, South Africa, and India primarily export petroleum to AEE. USA and Turkey also export petroleum as their 3rd and 2nd major export item to these countries respectively. China and Mexico mainly export telecommunication equipment whereas Brazil exports mainly agricultural products such as sugar and meat. A motor vehicle is the other item commonly exported by India, EU, USA, Mexico, Turkey and South Africa. The Philippines' major export is machine parts whereas the primary export of Turkey is iron and steel bars or related products.

Table 5.16: Major Import Items from WEE to AEE

Partners	Major Import Items to AEE in Ranks
Brazil	Sugar, molasses and honey, Meat of bovine animals, other meat, and Maize
Russia	Petroleum oil, Wheat, ingots iron and fertilizers
India	Petroleum oils >70% oil, Medicaments, Motor vehicles & rice
China	Telecommunication equipment, footwear & data processing machines
South Africa	Petroleum oils >70% oil, Motor vehicles for good & for persons
Turkey	Iron & steel bars, rods, angles, shapes & sections, Petroleum oils >70% oil, and motor vehicles
Mexico	Telecommunication equipment, Motor vehicles and Tubes, pipes & hollow profiles, fittings, iron, steel
The Philippines	Machine parts, Construction materials & Electric power machinery
The USA	Wheat, Motor vehicles, and Petroleum oils >70% oil
EU	Petroleum oils >70% oil, Motor vehicles and Telecommunication equipment

Source: UNCTADSTAT

5.6 Intra-Industry Trade and the African Emerging Economies (AEE)

5.6.1 Overall Intra-Industry Trade of AEE

Based on the GL index results, overall, the IIT of AEE is very high. This implies that these countries are exporting but also importing the major primary products such as petroleum oil, minerals, and agricultural products. Specifically, Egypt, South Africa, Namibia, Rwanda and Ghana are the leading economies in the group with a higher rate than the African average in 2015. These countries are importing similar products equivalent to their export volume. In the same year, the lowest rates are recorded by Nigeria, Cabo Verde and Mauritius. It is depicted in the following figure.

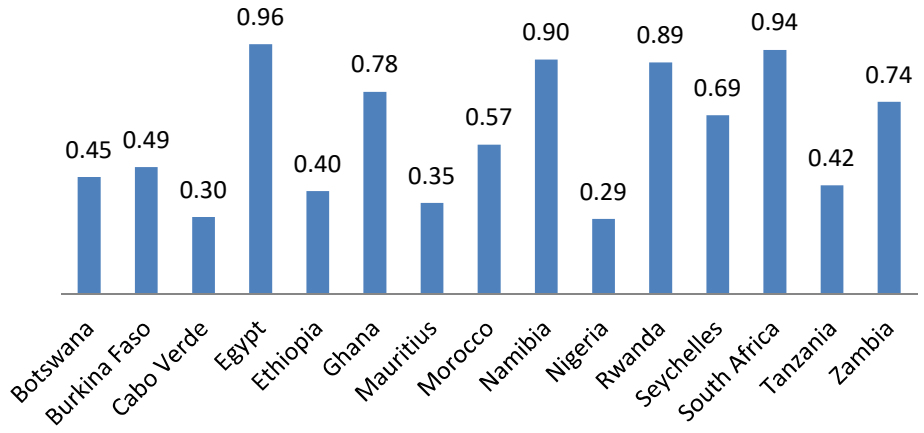

Figure 5.12: GL Index Results of African Emerging Economies, 2015

Source: Own Calculation

Now we can use the formula for calculating the nature of the IIT.

$$HIIT = 1 - \alpha \leq \frac{UV_i^x}{UV_i^m} \leq 1 + \alpha$$

UV_i^x and UV_i^m stand for the unit value of imports and exports for the country in consideration respectively. As well α is the percentage we are willing to assume about the quality difference of goods exported and imported. Assume it is 15%. So, any result in between 0.85 and 1.15 indicates that there is a HIIT between the two trading nations otherwise it is a vertical one. Correspondingly, the formula for VIIT is;

$$VIIT_{LQ} = \frac{UV_i^x}{UV_i^m} \leq 1 - \alpha$$

and

$$\mathrm{VIIT_{HQ}} = \frac{\mathrm{UV_i^x}}{\mathrm{UV_i^m}} \geq 1 + \alpha$$

Therefore, we can conclude that if the result is below 0.85, the exported product is low – quality and if it is above 1.15, the exported product is high – quality.

Here, the GL index is calculated using the data of selected products. The highly and commonly exported products from Africa are selected based on the Standard International Trade Classification (SITC) Revision 3 codes. These products, generally categorized as primary products, are beverages and tobacco (SITC 1), non-ferrous metals (SITC 68), fuels (SITC 3), pearls, precious stones and non-monetary gold (SITC 667), food and live animals (SITC 0), crude materials, inedible, except fuels (SITC 2), animal and vegetable oils, fats and waxes (SITC 4). These data is collected from UN COMTRADE AND UNCTADSTAT.

Table 5.17: Unit Values of Selected Traded Goods by AEE

	Product Code	Botswana	Burkina Faso	Cabo Verde	Egypt	Ethiopia	Mauritius	Morocco	Namibia	Rwanda	South Africa	Tanzania	Zambia	Average
Live goats	040110	0.9	0.2	--	--	--	--	--	0.3	1.3	1.3	--	0.1	0.7
Live poultry	010420	--	0.8		1.5	--	1.5	0.1	0.1	1.5	1.5	0.3	0.2	0.8
Dairy produce	010511	4.9			0.8	--	1.2	3.9	2.3	0.8	0.7	0.5	0.9	1.8
Coffee - not roasted	090111	0.5	0.3	3.5	1.0	1.3	--	0.8	2.8	1.0	1.2	9.7	1.5	2.1
Coffee - roasted	090121	7.5	0.3	1.9	1.2	4.4	0.3	0.9	1.1	1.1	0.3	0.6	1.2	1.7
Sugars	170191	1.1		--	1.0	--	0.2	1.5	0.8		2.3		0.3	1.0
Tobacco	240110	0.7		--	0.9	--	--	--	0.4	0.9	1.2	0.8	0.5	
Meat of goats	020450	--		1.5	--	0.7	0.9	--	--	--	2.7	14.6	--	
Live plants	060110	7.0			1.0	--	1.0	1.6	0.1	--	1.0	35.8	--	
Bituminous Coal	270112	18.8		--	0.7	--	--	--	0.0	--	0.6	--	0.7	4.1
Oils - petroleum oils, crude	270900	0.3		--	1.0	--	--	--	4.3	1.0	1.4	--	2.5	1.8

Petroleum bitumen	271320	--	1.0	--	--	--	--	1.0	--	0.9	0.9	1.5	0.8	1.0
Residues of petroleum oils	271390	0.5	--	--	--	--	--	2.2	0.5	1.2	160.1	0.1	7.3	24.6
Fuel wood	440110	128	--	--	0.6	--	--	0.0	0.4	--	0.7	0.5	0.2	18.6
Cotton - not carded or combed	520100	--	6.9	--	0.9	--	1.0	0.8	12.2	--	1.0	0.9	10.3	4.2
Footwear	640110	0.4		1.9	1.0	--	1.0	2.7	0.1	1.0	1.0	2.3	0.4	1.2
Aluminum	760110	--	--	--	1.0	--	1.4	0.8	43.9	--	0.7	1.1	0.9	7.1
Average		**14.2**	**1.6**	**2.2**	**1.0**	**2.1**	**0.9**	**1.4**	**1.8**	**1.1**	**11.1**	**5.6**	**1.9**	3.7
		$VIIT_{HO}$	**$VIIT_{HO}$**	**$VIIT_{HO}$**	**HIIT**	**$VIIT_{HO}$**	**HIIT**	**$VIIT_{HO}$**	**$VIIT_{HO}$**	**HIIT**	**$VIIT_{HO}$**	**$VIIT_{HO}$**	**$VIIT_{HO}$**	**$VIIT_{HO}$**

Source: own calculation

The unit value (UV) of exported and imported product analysis, clearly indicates that AEE are mainly trading vertically differentiated products. Only Egypt, Mauritius, and Rwanda are on average trading horizontally differentiated products with the world. This indicates that most AEE are importing products valued less than they export. In other words, they are importing low – quality or cheaper products than they export.

5.6.2 Intra-Industry Trade in-between AEE and WEE

In a similar manner, we can see the IIT between African emerging and WEE. Considering only primary products, all the WEE group have below 50% IIT with AEE. For example, all the AEE import 44% of similar products from China which is the highest in the group. On average the IIT between the world and AEE is around 33%.

The average IIT rate is very low in comparison to the world average which is 69%. It is below the African average too. Besides, there are many cases in which the IIT ratio, based on the GL index, between both emerging economy groups is near to 0%. This implies that AEE are exporting primary products but importing different manufactured products from WEE or simply they have an inter-industry trade than IIT. However, since the primary products in consideration are the most dominant products exported from AEE, it is also impossible generally to conclude that there is an inter-industry trade between both groups of nations.

Contrarily, there are many specific cases in which the rate is above 75% which indicates a strong IIT. For instance, Burkina Faso has a 94% GL rate with Turkey, Cabo Verde has a 93% GL index rate with Russia while Egypt's trade has 85%, 87%, 82% and 90% GL index rate with China, India, the Philippines and South Africa respectively. The trade between Ethiopia and China, Ghana and Mexico, and Tanzania and India is also strongly expressed by IIT. Such variations occur as a result of the difference in the import-export items. Therefore, even though many of the cases are expressed as inter-industry trade, there are also concrete results which indicate the availability of IIT between the AEE and WEE. The results are presented in Table 5.18.

Table 5.18: GL Index Results of AEE trade with WEE

	Brazil	**China**	**India**	**Mex.**	**Phil**	**Russ.**	**S.A**	**Turkey**	***Average***	**World**
Botswana	0.03	0.07	0.04	0.02	0.00	0.00	0.35	0.00	*0.06*	0.66
Burkina Faso	0.00	0.66	0.23	0.01	0.00	0.00	0.14	0.94	*0.25*	0.62
Cabo Verde	0.00	0.20	0.65	0.71	0.00	0.93	0.00	0.30	*0.35*	0.19
Egypt	0.05	0.85	0.87	0.36	0.82	0.31	0.90	0.62	*0.60*	0.77
Ethiopia	0.02	0.96	0.53	0.35	0.51	0.23	0.42	0.49	*0.44*	0.92
Ghana	0.69	0.34	0.10	0.93	0.54	0.33	0.24	0.38	*0.44*	0.52
Mauritius	0.00	0.38	0.02	0.00	0.10	0.32	0.04	0.09	*0.12*	0.64
Morocco	0.71	0.78	0.60	0.80	0.68	0.29	0.11	0.48	*0.56*	0.63
Namibia	0.04	0.49	0.74	0.03	0.22	0.22	0.65	0.03	*0.30*	0.82
Nigeria	0.31	0.90	0.05	0.18	0.67	0.04	0.12	0.23	*0.31*	0.50
Rwanda	0.28	0.46	0.25	0.02	0.00	0.40	0.27	0.20	*0.24*	0.85
Seychelles	0.00	0.00	0.01	0.00	0.08	0.53	0.02	0.06	*0.09*	1.00
S. Africa	0.37	0.22	0.59	0.51	0.67	0.96	0.00	0.35	*0.46*	0.66
Tanzania	0.00	0.24	0.99	0.65	0.10	0.53	0.28	0.81	*0.45*	0.87
Zambia	0.77	0.05	0.41	0.00	0.38	0.19	0.71	0.00	*0.31*	0.66
Average	*0.22*	*0.44*	*0.41*	*0.30*	*0.32*	*0.35*	*0.28*	*0.33*	*0.33*	*0.69*
Africa	0.78	0.24	0.47	0.90	0.62	0.30	0.96	0.89	*0.65*	0.76

Source: own calculation

As a result of mainly their low rate of IIT with WEE, the unit value analysis in this part lacks enough figures. This is because to calculate the UV, there must be an import and export volume figures in details. The available ones are indicated below.

Table 5.19: UV of Selected Traded Goods between Some AEE and WEE

	Products	Codes	South Africa	Egypt	Tanzania	Burkina Faso	Zambia	Botswana	Namibia	Average
China	Cotton	520100	---	0.91	0.59	3.54	0.74	---	---	1.44
China	Aluminum	760110	0.91	0.97	---	---	---	---	---	0.97
India	Wool	510111	---	1.36	---	---	---	---	---	1.36
India	Cotton	520100	---	---	5.79	---	---	---	---	5.79
Turkey	Cotton	520100	---	0.91	---	---	---	---	---	0.91
Turkey	Aluminum	760120	---	0.97	---	---	---	---	---	0.97
South Africa	Dairy produce	040110	---	---	---	---	43.97	---	1.56	22.77
South Africa	Aluminum	760120	---	---	2.47	---	---	---	---	2.47
South Africa	Coffee; not roasted	090111	---	---	---	---	1.57	0.19	19.65	7.14
		Average	0.91	1.03	2.95	3.54	15.42	0.19	10.61	4.87
			HIIT	HIIT	$VIIT_{HQ}$	$VIIT_{HQ}$	$VIIT_{HQ}$	$VIIT_{LQ}$	$VIIT_{HQ}$	$VIIT_{HQ}$

Source: own calculation

Again, there is a clear clue that the restricted IIT between AEE and WEE is a vertical one. However, the biggest economies in the group, South Africa, and Egypt have a horizontal IIT. The others have a type of trade with the WEE and similar to what they have with the whole world. These imply that South Africa and Egypt are exporting horizontally differentiated products or products with similar standards, to the WEE while the others are exporting vertically differentiate or less quality products. This happens as result of the overall productivity and competitiveness of the economies.

5.7 FDI and the African Emerging Economies (AEE)

5.7.1 Overall FDI in AEE

In between 2000 and 2015, Africa received more than 38.6 billion dollars of foreign direct investment annually on average. Around 72% of it was in the Sub – Saharan African region. The OFDI was only 6.8 billion dollars on average in the same period out of which 71% was from the Sub – Saharan Africa. The remaining was covered by Northern Africa countries. AEE, on the other side, were the destination of around 70% of the total foreign direct investment in the continent and 51% of the outward investment of the continent. In both inward and outward investment, Nigeria, Egypt

and South Africa are the leading economies by far. These countries covered 36% of IFDI and 43% of OFDI directed to the continent in between 2000 and 2015.

Table 5.20: Average FDI flow of AEE in million dollars, 2000-2015

Economy	Average Flow of FDI 2000-2015			Economy	Average Flow of FDI 2000-2015	
	Inward	**Outward**			**Inward**	**Outward**
Nigeria	4,831	766		Botswana	426	-5
Egypt	4,730	401		Mauritius	240	65
South Africa	4,329	1,807		Seychelles	142	12
Morocco	2,197	307		Burkina Faso	139	21
Ghana	1,569	0.2		Rwanda	137	2
Tanzania	1,034	-		Cabo Verde	108	-2
Zambia	980	15		AEE Total	22,055	3,394
Ethiopia	618	-		S.S. Africa	27,751	4,880
Namibia	575	5		Africa	38,613	6,864

Source: UNCTADSTAT

The whole IFDI into Africa only represents a share of 3.11% of the world IFDI in the same period whereas OFDI covers only a share of 0.49%. AEE took 1.56% of the IFDI and 0.22% the OFDI share and the remaining goes to the other countries. Moreover, the total IFDI of Africa is on average 10% of its total merchandise trade. However, the IFDI of AEE is on average 46.7% of their total merchandise trade. This happened because of huge investment by some economies in the smaller AEE in the last few years. Similarly, AEE got an IFDI which is around 4.4% of their GDP while Africa's average is 2.5%. Generally, Africa's FDI relativity to trade and GDP is near to the world average, AEE have received higher than these rates.

Table 5.21: Share of African Economies' FDI in terms of Trade and GDP

Economies	Percentage of Total World (2000 – 2015)		Percentage of Total Merchandise Trade (2000 – 2015)		Percentage of Gross Domestic Product (2000 – 2015)	
	Inward	**Outward**	**Inward**	**Outward**	**Inward**	**Outward**
AEE Total	1.56	0.22	46.71	0.72	4.35	0.25
Sub-Saharan Africa	2.26	0.36	10.73	1.83	2.62	0.42
Northern Africa	0.99	0.14	9.39	1.37	2.41	0.38
Africa Total	3.11	0.49	10.08	1.66	2.52	0.41
World Total	100	100	10.35	9.96	2.30	2.25

Source: UNCTADSTAT

5.7.2 FDI between World Emerging Economies and AEE

To analyze the sources of FDI into Africa, the WEE engagement in the continent gives a clearer image. BRICS+TP had a total of 41 billion dollars worth of direct investment positions in SSA and 1.2 billion dollars in Northern Africa in 2015. Mexico had no any recorded direct investment position in 2015. In total, the WEE excluding Mexico had an investment position of around 33 billion dollars across all AEE. This is almost 78% the direct investment positions in Sub – Saharan Africa. Moreover, it covers almost 4% of BRICS+TMP's OFDI positions worldwide.

Based on the 2015 statistics, the WEE had no any direct investment positions in Burkina Faso and Cabo Verde. The highest stock of investment worth of about 26 billion dollars from the WEE is located in Mauritius followed by Ghana and Nigeria with a total stock of 2.1 and 1.9 billion dollars. Adding up the average of all WEE's stock in the AEE, South Africa, Rwanda and Morocco have the lowest stock of direct investment. Chinese disinvestment in 2012 made the total IFDI in South Africa negative and the lowest in the group.

Even though the data for China in 2015 is missing and the data of 2012 is used, South Africa is the biggest investor in the Sub – Saharan Africa region covering almost 48% of the whole direct investment positions of the WEE. India is the second emerging economy with 39% of the total. Other emerging economies such as China (6% based on 2012 statistics), Brazil (2%), Russia (2%), Turkey (1%) and Philippines (1%) have a low rate of investment. However, while South Africa's investment is fairly distributed in most of the region, India's investment is highly concentrated in Mauritius. Turkey's investment in the Sub – Saharan Africa region is also highly concentrated in Ethiopia (65%) and Nigeria (20%).

Table 5.22: BRICS+TMP OFDI in AEE in million dollars, 2015

	Brazil	Russia	India	China	S. A	Turkey	Philip.	Total
Botswana	-	-	-3	21	1,302	-	-	1,320
Egypt	13	61	4	119	4	279	-	406
Ethiopia	0	1	21	122	-	242	-	385
Ghana	49	1	9	208	1,970	1	-	2,188
Mauritius	181	24	15,322	58	9,974	-	471	25,825
Morocco			74	-	-	33	-	107
Namibia	-	1	1	25	1,251	-	-	1,277
Nigeria	1	-	290	333	1,212	74	-	1,909

Rwanda	-	-	4	5	-	-	-	9
Seychelles	129	-195	-	53	122	-	-	175
South Africa	73	33	368	-815	-	3	-	-444
Tanzania	-	1	14	120	544	-	-	678
Zambia	14	-	44	292	304	-	-	640
AEE Total	460	-73	16,151	520	15,381	632	471	33,155
North Africa	73	65	256	365	4	649	-	1,412
S.S. Africa	788	761	16,655	2,517	21,416	375	475	42,987
World	145,043	286,583	84,826	87,804	154,683	34,761	6,324	800,024

Source: IMF (2015) and UNCTADSTAT (2012) databases

In the contrary, Turkey covers around 46% of the total direct investment positions of WEE in the Northern Africa region. China covers 26% followed by India which covers 18%. Brazil and Russia have each near to 5% share in the region. However, the share of South Africa in the region is almost zero even though it is the major investor from emerging economies in the Sub – Saharan region. Similarly, out of the total direct investment stock of WEE in 2015 in the AEE, 92% comes from two emerging economies; 48% from India and 46% from South Africa. However, again the data for China is from 2012 positions and the investment of India concentrates in a single African nation – Mauritius.

6. ESTIMATION RESULTS AND DISCUSSION

In Chapter 4, an AEE index is developed using 12 major measurements; economic size, income, consumption, FDI, trade, employment, education, health, commercial infrastructural development, corruption, political stability and rule of law, and economic freedom. These measurements are included based on (i) the very basic definition of emerging economies – growth – (ii) economic development indicators, and (iii) based on the classifications of economies by well-known organizations such as the IMF. Accordingly, South Africa, Nigeria, Egypt, Mauritius, Ghana, Morocco, Rwanda, Ethiopia, Cabo Verde, Seychelles, Botswana, Burkina Faso, Namibia, Tanzania, and Zambia.

Providentially, there is a resemblance to the list of countries identified by Radelet (2010) as AEE which is the only work so far on the topic. However, it is important to remark that his work only concentrates on the Sub Saharan African countries rather than the whole continent. All North African countries such as Egypt and Morocco are not addressed in his work.

In this chapter, the results of the GM estimation of the identified 15 AEE and the major WEE (BRICS+TMP) are presented. Three estimations are made for different models; first the foreign trade, second the IIT and finally the FDI model. The foreign trade and intra-industry models are estimated for all BRICS+TMP countries separately. Nonetheless, for the case of Russia, Mexico, and the Philippines, the FDI models could not be estimated because of either a limited FDI positions in the AEE group or enough data is unavailable. In all the other estimations, there is a perceptible discrepancy in the determinants of trade and investment. In the trade models, OLS with importer and exporter dummy fixed effects and in the FDI models OLS with host and investing economy dummy fixed effects are estimated by using STATA 13. Using the *Breusch-Pagan Test, a heteroskedasticity* is assumed in some of the

models. Therefore, *robust standard errors* are used in all models to minimize the problem. Moreover, in order to minimize any suspected autocorrelation a *vce(robust)* procedure is followed.

6.1 Determinants of Foreign Trade

In the FT estimation, primarily, the results indicate that the core concept of the GM habitually articulates the nature of trade between AEE and WEE. An increase in the GDP size of Russia, India and South Africa created additional trade with AEE whilst an increase in the GDP size of the Philippines is in the contrary. A 1% increase in the GDP of Russia, India and South Africa generates more than 26%, 17% and 5% extra trade with the AEE respectively with weaker level of significance in the later. Contrarily, a 1% increase in the GDP of the Philippines reduces its trade with AEE by more than 17%. On the other hand, an increase in the GDP size of the AEE shrinks a trade with China and South Africa but increase a trade with Brazil. A 1% increase in the GDP of the AEE side creates 0.6% less trade with China and 1.3% less trade with South Africa but 0.7% extra trade with Brazil. This implies that there is a possibility to conclude that China and South Africa's trade is higher in smaller economies than the biggest AEE.

Distance, which is another vital factor in the core GM, has mostly the expected negative coefficients. This indicates that as distance increases between two partners, their BT declines. There is very strong evidence to hold up that far-away AEE are making a lower BT than the others with Russia, India, China, Turkey, and the Philippines. When the distance from Russia, India, China, Turkey and the Philippines increases by 1%, the trade of the AEE declines by 39%, 13.9%, 57.8%, 0.6% and 92% respectively with 10% level significance in the cases of India and the Philippines. Contrarily, there is evidence that shows Brazil and South Africa have higher BT with African countries near to them. A 1% increase in distance between both sides is linked with an increase in trade by 87% in the case of Brazil and 2.5% in the case of South Africa. There is no evidence to conclude about Mexico's BT.

Nevertheless, in Russia, India, South Africa's cases, the per capita income is inversely associated with trade volume while GDP is positively and significantly related to trade volume. A percentage change in per capita income of Russia, India and South Africa creates 25.7%, 19.2% and 4.9% less trade with the AEE respectively. This has two connotations. The first one is that the WEE are trading more with AEE of bigger size regardless of their per capita income level. Secondly, and most notably, when the GDP and per capita income of the WEE have positive and negative signs respectively, the elasticity of substitution of the importable goods exceeds unity (see, Bergstrand, 1985; Chen; Novy, 2011). Its economic inference is simply when the GDP of the WEE increases, their per capita income increases. This in return might force them to prefer to trade more with other countries than Africa with better income and preferences. This is consistent with the findings of Martinez-Zarzoso (2003). Therefore, their trade with Africa is not growing proportionally to their income.

In the other side, a step up in the per capita income of the AEE is negatively linked with the BT of Turkey and Mexico and positively associated with South Africa's BT volume. A 1% increase in the per capita income of the AEE reduces the BT with Turkey and Mexico by 0.68% and 1.38% respectively while the same percentage change increases the BT with South Africa by 1.19%. Its economic implication is Turkey and Mexico are trading more with less income AEE than the others while the opposite is true for South Africa. However, China, India, Brazil, Russia and the Philippines's trade is not related to the income level of the AEE.

The other noteworthy factor of trade is the endowment and production of natural resources. There is a little bit weak statistical evidence to support BT is determined by the level of petroleum production. This is one of the most unexpected results. This can be because of the predetermined amount of petroleum production in the AEE. Since their daily or monthly production of petroleum seems to be unchanging in the last decade, it could not be a direct factor for the overall BT volume. Therefore, petroleum production and overall trade are not interlinked.

On the other hand, minerals production is strongly linked with the BT of India, Turkey, and Mexico. These countries BT significantly increases while the mineral production of the African partner increases. A percentage change in the mineral production of the AEE creates 3.99%, 6.56% and 1.03% extra trade with India, Turkey, and Mexico respectively. Besides, considering the positive but statistically insignificant coefficients of mineral production in the cases of China, South Africa, and the Philippines, we can say that natural resource is one of the determinants of BT between WEE and AEE. This also leads us to accept the argument that China, India and other emerging economies are engaged in Africa for the purpose of getting minerals and petroleum. The works of Chakrabarti and Ghosh (2013), Fung and Garcia-Herrero (2012), Cheung et al. (2012), and Vickers (2013) also found such economic relationships.

Preferential trade agreements or any other economic agreement at any level may also determine the BT. In this aspect; however, it has a mixed result. South Africa and Turkey have higher trade with AEE which signed a bilateral agreement though Brazil and the Philippines's agreements with AEE have an opposite outcome. South Africa has 3.5% and Turkey 2.8% extra trade volume with AEE which entered into agreement. Contrarily, Brazil has 14.9% and the Philippines has 10% less trade with AEE which signed agreement. This may be because of their relatively recent engagement into the African markets. In other words, the agreements between Brazil and the Philippines with AEE are newly signed and hence did not bear a fruit so far. Consequently, they are trading more with AEE which do not sign an agreement. China and Russia have no any trade agreement with AEE and there is no evidence for the cases of India and Mexico.

It is also hypothesized that culture may also affect BT ; for example, sharing the same religion or language. There is strong statistical evidence that Brazil has higher trade with AEE having the same language but different religion. At 1% level of significance, AEE sharing the same language with Brazil have 83.6% extra BT . In the contrary, countries dominantly speaking the same language with the Philippines have less BT by 26.6% at 5% level of significance. However, AEE practicing the same religion similar to Brazil have 28.4% less BT with the country. Russia and

Turkey do not share the same language but trade more with religiously different African countries than those share similar religion. Russia and Turkey have less BT by 17.4% and 0.4% respectively with countries practicing the same religion with them. Besides, sharing the same religion is a factor for South Africa's BT with the other AEE. Those dominantly practicing the same religion attract 2.2% extra trade from South Africa. China shares no religion and no common language with its African associates. But generally, these results weakly support the point of view of Anderson and Wincoop (2003) that trade is determined not only by geographic distance but also by language, sharing boundaries, religion and other similar socio-cultural differences or similarities.

Finally, corruption is noticed to be a significant trade determinant. At least at 10% level of significance, AEE which improved the level of corruption in the last decades had higher BT volume with Brazil and China but not Mexico. A 1% improvement in the AEE level of corruption reduces BT with Brazil and China by 1.3% and 0.9% respectively but increases BT with Mexico by 1.4%. Generally, Brazil, Russia, China and the Philippines's BT seem to be higher with more corrupted AEE than the less corrupted ones while the other WEE' trade is in the contrary. This is consistent with the findings of Sanfilippo (2010), Kolstad and Wiig (2012), and Fung and Garcia-Herrero (2012) which investigated that the presence of the major emerging economies, such as China, in Africa is high in more corrupted countries.

For the other variables such as the overall trade, economic freedom index, and ODA there is no statistical evidence indicating they are determinants of BT between AEE and majority of the WEE.

To summarize, Brazil's BT with AEE is largely determined by GDP, per capita income, economic agreement, common language, and common religion. Russia's trade is also determined by GDP, distance, per capita income and religion. Besides, Indian BT is mainly affected by GDP, per capita income, mineral production, and ODA while China's BT is determined by GDP, distance, and level of corruption. This result is very analogous to the conclusion of Fung and Garcia-Herrero (2012). GDP, distance, economic agreement, and religion are the principal determinants of South

Africa's BT with the other AEE while Turkey's trade is affected by distance, per capita income, overall trade volume, economic freedom, mineral production, economic agreement, and religion. Economic agreement also affects Philippines's trade in addition to language, distance, per capita income and distance. Mexico's BT is less explained by the GM. Moreover, China's less number of factors in the estimation indicates that the country is expanding its trade regardless of socio-economic factors. The details of the estimation are presented in Table 6.1.

Table 6.1: Estimation Results of Bilateral Trade

Independent Variables	Dependent Variable (logTrade)							
	Brazil	**Russia**	**India**	**China**	**S. A.**	**Turkey**	**Mexico**	**Philp.**
logGDP_WE	0.189	26.454**	17.255***	20.281	5.039*	6.726	0.696	-17.095*
	(4.383)	(10.204)	(4.976)	(16.241)	(2.904)	(4.127)	(3.351)	8.802
logGDP_AE	0.733*	0.204	-.0560	-0.613**	-1.360**	0.009	0.974	0.938
	(0.438)	(0.476)	(0.370)	(0.288)	(0.606)	(0.113)	(0.736)	(0.981)
logDist	87.809***	-39.04***	-13.886*	-57.77***	2.512**	-0.551**	330.638	-92.188*
	(25.810)	(10.457)	(7.897)	(12.070)	(0.819)	(0.212)	(326.894)	(47.635)
logPI_WE	0.141	-25.67**	-19.19***	-20.402	-4.997*	-6.825**	-1.102	20.404*
	(4.469)	(10.227)	(5.821)	(16.734)	(2.748)	(3.325)	(3.548)	(10.351)
logPI_AE	0.225	-0.688	-0.205	0.458	1.197*	-0.678***	-1.379*	-0.686
	(0.480)	(0.587)	(0.417)	(0.323)	(0.625)	(0.204)	(0.816)	(1.032)
logOTW_WE	---	2.376	-2.629	-8.015	-0.315	-5.386**	-----	1.058
		(5.054)	(1.669)	(6.226)	(1.627)	(1.708)		(1.138)
logOTW_AE	---	0.682	-0.435	0.547*	-0.319	0.438*	----	-0.103
		(0.483)	(0.359)	(0.312)	(0.328)	(0.187)		(0.604)
logEFI_WE	-2.877	-1.685	-3.566*	0.927	-0.969	-0.143	-2.232	3.812
	(3.346)	(2.886)	(2.001)	(1.367)	(1.986)	(1.315)	(2.983)	(4.055)
logEFI_AE	-0.426	1.159	0.466	1.231	-1.944	-4.969***	3.433	2.398
	(1.714)	(1.642)	(1.024)	(0.850)	(1.584)	(1.335)	(2.359)	(2.367)
logPetrol	0.062	-0.032	0.032	0.012	0.041	-0.022	-0.056	-1.623
	(0.052)	(0.051)	(0.028)	(0.028)	(0.038)	(0.031)	(0.057)	(2.143)
logMineral	-0.481	-2.069	3.989**	8.927	2.064	6.560***	1.026*	1.704
	(1.089)	(4.677)	(1.749)	(6.503)	(1.626)	(1.161)	(0.543)	(2.197)
EcoInt_Dum	-14.86***	----	-1.182	----	3.515**	2.794***	-11.256	-10.014**
	(3.093)		(1.159)		(1.260)	(0.355)	(10.094)	(4.095)
logODA	----	-0.085	-3.328**	0.065	-0.096	0.086	----	0.081
		(0.128)	(1.674)	(0.100)	(0.103)	(0.120)		(0.194)
CoLan_Dum	83.571***	----	-0.071	----	1.269	----	----	-26.592**
	(24.260)		(0.122)		(1.658)			(9.589)
CoRel_Dum	-28.389**	-17.39***	---	----	2.158***	-0.448**	-45.273	-29.667
	(10.106)	(3.261)			(0.557)	(0.199)	(52.804)	(21.313)
logCPI_AE	-1.2682*	-0.402	0.037	-0.972**	0.005	0.830	1.407*	-0.242
	(0.593)	(0.520)	(0.414)	(0.379)	(0.545)	(0.523)	(0.718)	(1.059)
Observations	426	422	424	424	394	415	426	424
R^2	0.897	0.8603	0.9189	0.9512	0.8901	0.8379	0.8046	0.7604

Source: own calculation

6.2 Determinants of Intra-Industry Trade (IIT)

Like the overall BT, the IIT has a mixture of determinants. The first one is GDP size. As the GDP size of the WEE increases, their IIT level with the AEE rises except in Brazil and India's case. At 5% level of significance, a 1% improvement in GDP of Russia, Turkey and the Philippine is linked with a 5.2%, 1.8% and 3.2% increase in the IIT level respectively but a 1% increase in the GDP of brazil is linked to 1.5% decrease in the IIT. Conversely, as the GDP of the African side climbs, the level of IIT with South Africa and Turkey declines. The IIT between South Africa and Turkey, and the AEE declines by 0.2% and 0.5% respectively as the GDP of the later increases by 1%. For that reason, there is an intimation to say GDP increase in the WEE increases the level of IIT while GDP increase in the African states decreases the IIT. The rationale behind may be as the GDP of the AEE augments, they are shifting from producing primary products to semi-processed or manufactured products. However, there is no as much as necessary statistical evidence to conclude distance shapes the IIT except the mixed results in the estimations of Brazil and Turkey.

Secondly, per capita income of the WEE has a negative coefficient in the estimation of Russia, Turkey, the Philippines, Mexico, and China even though it is not statistically significant in the last two countries. The IIT is inversely related to their per capita income. A rise in the per capita income of these countries is a negative factor for the improvement of IIT with AEE. As the GDPs of Russia, Turkey and the Philippines increase by 1%, their IIT with the AEE declines by 4.3%, 1.8% and 4.1% respectively at 5% level of significance. However, a 1% enlargement in the GDP of Brazil creates 1.7% improvement in the level of its IIT with the AEE. In the case of the AEE's GDP, the coefficient is mixed but by and large statistically insignificant.

The other factor is natural resources production. Petroleum and minerals production is most directly related to the level of IIT. Except in India and the Philippines's cases, indeed both statistically significant, petroleum production is generally positively interrelated with IIT. A percentage change in petroleum production in the AEE reduces the IIT with India by 0.025% and with the Philippines by 0.75%. Nevertheless a 1% change in petroleum production increases the IIT level between

the AEE and Brazil by 0.015%. Similarly, minerals production is positively linked with IIT except in the cases of Brazil, Russia, and South Africa. A 1% increase in the mineral production of the AEE pushes up the IIT with China, Mexico and the Philippines by 3.4%, 1.2% and 0.79% respectively. India and Turkey's IIT with AEE also have positive coefficients. For that reason, it is evident that petroleum and minerals production increases IIT between AEE and WEE. This result is anticipated since many of the AEE are exporters and, at the same time, importers of petroleum and related products.

Besides, WEE with a trade agreement of any type such as Brazil and Turkey have weak IIT with the partner AEE. The AEE signed trade agreements with Brazil and Turkey have 1.9% and 0.3% less IIT rates than the others. However, the IIT of South Africa is higher with AEE which signed trade agreements. Furthermore, sharing a common language and religion have mixed results; positive in some cases and negative in the other cases. AEE sharing the same language with India and the Philippines have less IIT by 0.6% and 2.4% respectively while those sharing the same language with Brazil have 9.3% higher IIT. Besides, AEE practicing similar religion with Brazil and Turkey have weaker IIT rates by 3.4% and 5.1% respectively. However, it is essential to note that in most cases, all statistically significant, IIT declines when the overall trade of the AEE increases. This implies that either the AEE are exporting primary products to the world by reducing imports of the same products or they are reducing importing of the same products from the WEE.

To recapitulate, Brazil's IIT with AEE is influenced mainly by GDP, distance, per capita income, petroleum production, economic/trade agreement, common language, and religion while Russia's IIT is affected by GDP and per capita income. India's IIT is determined by petroleum production, common language, and corruption level while China's IIT has no any strong determinant. GDP, distance, per capita income, economic agreement, and common religion affect Turkey's IIT whereas Mexico's IIT is influenced by GDP, economic freedom, and mineral production. The main determinants of Philippines's IIT with AEE are GDP, per capita income, economic freedom, petroleum production, and minerals production.

Table 6.2: Estimation Results of IIT

Independent Variables	Dependent Variable (GL index)							
	Brazil	**Russia**	**India**	**China**	**S. A.**	**Turkey**	**Mexico**	**Philp.**
logGDP_WE	-1.513** (0.555)	5.192** (2.104)	-1.118 (1.003)	4.277 (4.118)	0.253 (0.462)	1.873** (0.838)	0.381 (1.359)	3.187** (1.081)
logGDP_AE	0.075 (0.058)	-0.137 (0.122)	0.019 (0.099)	0.126 0.089	-0.241** (0.120)	-0.494*** (0.116)	0.291** (0.144)	0.221 (0.134)
logDist	9.845** (3.105)	-0.229 (2.046)	1.076 (1.854)	4.014 (3.037)	0.021 (0.169)	-10.178*** (1.752)	-69.928 (51.640)	-7.744 (7.006)
logPI_WE	1.705** (0.578)	-4.338** (2.117)	1.366 (1.193)	-4.354 (4.245)	-0.373 (0.428)	-1.760** (0.682)	-1.00 (0.912)	-4.07*** (1.267)
logPI_AE	-0.056 (0.073)	0.042 (0.128)	0.065 0.107	-0.039 (0.103)	-0.145 (0.114)	0.637*** (0.119)	-0.184 (0.144)	0.072 (0.143)
logOTW_WE	0.385 (0.357)	-0.683 (1.173)	-0.210 (0.354)	-3.492 (1.737)	0.554 (0.340)	-0.625 (0.602)	0.375 (0.470)	-0.097 (0.168)
logOTW_AE	0.084* (0.048)	-0.156* (0.094)	-0.106* (0.060)	-0.099** (0.0717)	0.17*** (0.057)	-0.159** (0.068)	-1.242*** (0.382)	-0.188** (0.061)
logEFI_WE	-0.138 (0.318)	-0.475 (0.490)	0.682 (0.474)	0.352 (0.409)	-0.165 (0.354)	-0.275 (0.214)	1.277** (0.500)	-2.01*** (0.525)
logEFI_AE	-0.177 (0.176)	0.400 (0.391)	-0.089 (0.259)	-0.145 (0.256)	0.364 (0.221)	-0.112 (0.258)	-0.003 (0.287)	0.676** (0.280)
logPetrol	0.015** (0.006)	0.008 (0.011)	-0.025*** (0.009)	0.002 (0.006)	0.002 (0.006)	0.001 (0.007)	0.005 (0.009)	-0.754** (0.331)
logMineral	-0.596 (0.363)	-0.045 (1.123)	0.316 (0.362)	3.439* (1.772)	-0.442 (0.325)	0.601 (0.554)	1.204*** (0.375)	0.793** (0.334)
EcoInt_Dum	-1.91*** (0.352)	---	----	---	0.374* (0.214)	-0.333*** (0.0819)	1.793 (1.541)	-0.899 (0.588)
logODA	0.001 (0.014)	-0.009 (0.025)	0.011 (0.016)	-0.002 (0.022)	.091*** 0.021	-0.062** (0.030)	-0.009 (0.027)	-0.009 (0.024)
CoLan_Dum	9.33*** (3.0640	---	-0.599*** (0.119)	---	0.345 (0.344)	----	----	-2.432* (1.403)
CoRel_Dum	-3.358** (1.387)	0.868 (0.587)	----	----	0.139 (0.124)	-5.134*** (1.005)	11.636 (8.566)	-2.369 (3.193)
logCPI_AE	0.041 (0.068)	-0.032 (0.146)	-0.298*** (0.111)	0.054 (0.109)	-0.243** 0.099	0.031 (0.126)	-0.014 (0.114)	0.083 (0.102)
Observations	424	424	424	424	394	432	424	424
R^2	0.6596	0.3735	0.5865	0.6452	0.7377	0.5154	0.3516	0.5592

Source: own calculation

6.3 Determinants of FDI

In the FDI gravity model, the estimations are only for five WEE which has FDI positions (accumulation of IFDIs) in the AEE. The remaining three countries – Mexico, Russia, and the Philippines – do not have enough FDI positions or data are unavailable. Thus, it becomes impractical to estimate. The estimations for five countries provide yet again very mixed results.

First of all, we can check if the basic form of the GM works in these cases. In the cases of Brazil and India, as their own GDP increase their FDI position in the AEE is increasing. In the other three countries – China, South Africa, and Turkey – FDI

positions are related to their economic size. In the contrary, the GDP size of the AEE attracts more FDI positions of China, South Africa, and Turkey. While the FDI positions of these countries are determined by the GDP size of their African partners, the FDI positions of India and Brazil are more determined by their own GDP size. A 1% increase in the GDP of Brazil and India is creating above 86% extra FDI position in the AEE whereas the same changes in the GDP of the AEE is attracting 1.3%, 0.8% and 0.4% extra FDI positions from China, South Africa and Turkey respectively. Consequently, what so ever whose it is, GDP is one of the major determinants of FDI positions.

However, distance has the expected result in the cases of India, South Africa, and Turkey but statistically significant only in the cases of Turkey. The AEE located far away from Turkey by 1% extra distance have 2.7% less Turkish FDI positions whereas 1% extra distance from Brazil is linked with 6.4% additional FDI positions.

While per capita income of the WEE is not statistically significant in three of the five estimations, the per capita income of the AEE is a determinant of FDI positions of India, South Africa, and Turkey. These countries' FDI positions are higher in countries of higher per capita income than the others. A 1% improvement in the PI of Brazil and India reduces their FDI positions in the AEE by 81% and 55% respectively while a 1% improvement in the PI of the AEE attracts 1.8% Indian, 4.2% south African and 1.8% Turkish extra FDI positions. Neither the PI of the AEE nor its own PI does influence Chinese investment positions.

Additionally, economic freedom progress in India is a factor pushing Indian investors into AEE. There is no evidence to argue internal economic freedom is a motivating factor for the investors of the other EM to invest in the African economies. However, an improvement in the level of economic freedom in the AEE has a positive relationship with the FDI position levels of Brazil, India, China and South Africa.

When we come to the role of natural resources in attracting FDI positions, we got petroleum production a statistically positive but fragile factor for India and South Africa and negative factor for Turkey's FDI positions in the AEE. As the petroleum production rises by 1%, the FDI positions of India and South Africa increase by

0.06% and 0.28% respectively and the FDI positions of Turkey decreases by 0.37%. In addition to Turkey, there is also a tendency that Brazil's FDI is not attracted by petroleum production in the African economies. However, minerals production is a strong factor of FDI positions for Brazil and Turkey. A 1% improvement in mineral production in the AEE attracts 6.5% Brazilian and 1.8% Turkish extra FDI positions. The negative coefficient on petroleum production but positive coefficient on the mineral production for the case of Turkey implies that the country's investment is in mineral-producing AEE than the petroleum-producing ones. The recent huge Turkish investment in Ethiopia is a simple example.

Countries which share a common language with South Africa have very high FDI positions than the others. Even though the common language is not a factor or no common language at all, in the other cases, countries sharing a similar language with South Africa have 3.08% extra FDI positions. Similarly, in two of the five WEE's estimations, AEE of similar religion with South Africa and Turkey host higher FDI positions than the others. AEE with similar religion get 2.7% and 3.6% more FDI positions than the others. This indicates that religion has a higher impact than language on FDI positions. Moreover, having investment agreement is a positive factor for China, South Africa, and Turkey but not Brazil's FDI positions in the AEE. There is very strong statistical evidence which supports this fact. Furthermore, India, China, and Turkey's FDI positions are higher in more corrupted AEE than less corrupted countries. This implies that either these major emerging economies are ignoring the international standards of corruption or the corrupted system in the AEE is creating a favorable environment for their engagements. This is again consistent with the findings of Sanfilippo (2010), Kolstad and Wiig (2012), and Fung and Garcia-Herrero (2012) in which they identified that the existence of the major emerging economies in Africa is high in more corrupted countries.

By and large, Brazil invests in AEE located in close proximity, produces minerals and does not sign any investment agreement whereas India invests in countries with better per capita income, petroleum-producing but more corrupted economies than the others. China's FDI positions, on the other side, are mainly determined by the GDP size of the African economies and investment agreement. South Africa's FDI

positions are in bigger economies with higher income, better economic freedom, petroleum-producers, sharing a common language and religion and signed investment agreement while Turkey's FDI positions are in bigger economies with higher income, mineral but not necessarily petroleum producing countries, sharing a common religion, more corrupted and have an investment agreement.

Table 6.3: Estimation Results of FDI

Independent Variables	Dependent variable (FDIPos)				
	Brazil	**India**	**China**	**S. A.**	**Turkey**
logGDP_WE	86.77*** (23.83)	86.037** (30.65)	-49.287 (167.18)	-41.188 (30.298)	25.964 (18.514)
logGDP_AE	-0.435 (0.319)	-0.662 (2.580)	1.323*** (0.416)	0.829** (0.235)	0.432** (0.196)
logDist	6.369*** (1.589)	-69.951 (52.242)	1.467 (3.213)	-0.442 (0.394)	-2.711*** (0.605)
logPI_WE	-81.36*** (24.03)	-55.16** (35.40)	81.652 (176.03)	39.302 (29.419)	-29.559 (18.417)
logPI_AE	0.811 (0.747)	1.768** (0.797)	-0.219 (1.056)	4.195*** (0.665)	1.784** (0.657)
logEFI_WE	29.372** (11.73)	-4.089 (14.081)	-7.926 (17.042)	5.507 (8.298)	1.851 (4.327)
logEFI_AE	2.109 (5.043)	5.160 (6.158)	11.237* (6.4149)	10.671** (3.700)	-1.583 (3.282)
logPetrol	-0.111 (0.099)	0.0608* (0.121)	0.005 (0.139)	0.276** (0.133)	-0.369*** (0.113)
logMineral	6.475** (2.122)	-1.932 (0.904)	0.787 (2.521)	-1.124 (2.435)	1.810** (0.789)
logODA	-0.729 (0.443)	0.015 (0.503)	-0.943 (0.753)	-0.5029 (0.374)	0.492 (0.351)
CoLan_Dum	-0.546 (2.314)	1.049 (0.827)	---	3.084** (1.101)	---
CoRel_Dum	-2.729 (2.432)	---	---	2.742** (1.187)	3.683*** (0.851)
logCPI_AE	0.3634 (1.830)	-4.928** (2.200)	-4.479* (2.337)	-3.166 (2.618)	-5.046*** (1.523)
BilInvAgrDummy	-3.134** (1.231)	1.4641 (0.981)	3.991** (1.339)	6.804*** (0.757)	2.923*** (0.723)
logInTFDIPos_AE	-0.493 (0.367)	-0.171** (0.432)	-1.232* (0.641)	0.056 (0.452)	-0.015 (0.289)
logOutTFDIPos_WE	-13.12*** (3.38)	-3.025* (1.556)	-17.30*** (4.18)	2.929 (3.443)	-0.599 (1.971)
logBilTrade	0.735*** (0,222)	-1.731** (0.613)	0.769 (0.557)	0.320** (0.105)	-0.156 (0.203)
Observations	426	212	212	177	212
R^2	0.8971	0.6955	0.3814	0.8438	0.7086

Source: own calculation

6.4 The Linkage between Trade and FDI

In this estimation, FDI positions are included into the trade model to estimate its impact on trade and vice versa. Putting FDI positions into the models means the results are only for AEE in which the WEE have FDI positions. Therefore, the number of observations declines in this estimation but it also enables us to see the linkage between FDI positions and BT volume. Accordingly, GDP, for example, is an important factor only for Turkey's BT. But distance has once again a negative sign in 4 of the 5 estimations. Except for South Africa, the other four emerging economies trade declines as distance increases. Therefore, they trade more with nearby countries in which they have FDI positions.

Unlike the first estimation of a restricted model of trade, in this one, as the overall trade of the AEE increases, their trade with India, China, and Turkey increase. This indicates that the AEE' trade expansion is partially towards WEE which have FDI positions. This shows an indirect link between FDI positions and BT. However, there is no statistical evidence to support FDI positions (FDIPos) are determinants of BT. The other variables do not have a consistent sign in all estimations. The details of the estimation are presented in Table 6.4.

In the FDI model estimation results, Table 6.3, BT is also estimated. The results specify that FDI positions in AEE are positively linked with the trade volumes of Brazil, China, and South Africa but not India and Turkey. The implication is that Brazil, China, and South Africa invest in countries with whom they trade more while India and Turkey's investment are in countries with whom they trade less. Generally, there is strong evidence in most cases that FDI positions and trade are interlinked. This is consistent with the literature in a nutshell (Renard, 2011; and Samake and Yang, 2014) and supports the findings of Samake and Yang (2014) in which they proved that BRICS countries trade with Africa is linked with their FDI positions.

Table 6.4: Estimation Results of Trade with FDI Positions

Independent Variables	Dependent variable (logTrade)				
	Brazil	**India**	**China**	**S. A.**	**Turkey**
logGDP_WE	1.503 (5.534)	10.564 (7.934)	6.332 (13.371)	6.332 (3.979)	4.659** (2.262)
logGDP_AE	0.689 (1.39)	-0.429 (0.862)	-0.1063 (0.453)	-2.082* (1.167)	-0.321* (0.181)

logDist	-0.467 (55.427)	-5.553 (15.014)	-36.856** (13.650)	3.038** (1.465)	-0.739*** (0.151)
logPI_WE	-1.612 (5.738)	-11.480 (10.558)	-5.976 (13.833)	-5.520 (3.812)	-3.261* (1.9017)
logPI_AE	-0.392 (1.374)	-0.350 (0.843)	0.088 (0.483)	1.891 (1.251)	-0.732** (0.206)
logOTW_WE	---	-0.742 (3.901)	8.2906 (5.244)	0.412 (2.579)	3.058** (1.465)
logOTW_AE	---	1.449* (0.825)	0.902*** (0.238)	0.071 (0.819)	2.113*** (0.221)
logEFI_WE	-0.784 (3.985)	-7.107 (8.095)	0.921 (1.075)	-1.552 (2.579)	1.655* (0.922)
logEFI_AE	1.9740 (2.833)	-1.758 (2.555)	0.277 (0.849)	-2.504 (2.355)	-0.952 (1.084)
logPetrol	0.180 (0.129)	-0.012 (0.030)	0.001 (0.030)	0.231 (0.164)	-0.082*** (0.024)
logMineral	0.145 (1.143)	1.337 (3.902)	7.851 (5.307)	0.527 (2.927)	-4.668*** (1.419)
EcoInt_Dum	-6.689 (5.697)	1.1064 (2.165)	----	-2.261 (1.506)	0.890* (0.421)
logODA	---	0.0566 (0.209)	-0.111 (0.075)	-0.089 (0.107)	-0.069 (0.087)
CoLan_Dum	---	2.219 (3.128)	---	3.285 (4.758)	----
CoRel_Dum	2.808 (25.763)	---	---	2.339** (1.154)	-1.125** (0.351)
logCPI_AE	-2.585** (1.298)	0.124 (0.798)	-0.655* (0.355)	0.095 (0.939)	0.629 (0.422)
logFDIPos	0.031 (0.025)	0.029 (0.041)	-0.016 (0.031)	-0.094 (0.078)	0.048 (0.052)
Observations	140	161	252	340	144
R^2	0.9657	0.9570	0.09773	0.7984	0.9419

Source: own calculation

Distinctively, trade has a higher impact on FDI than FDI's impact on trade. As indicated in Table 6.3, bilateral trade has a positive and statistically significant impact on the FDI positions of Brazil and South Africa. But FDI position has no any statistically positive impact on any country's bilateral trade. This is very similar result with the findings of Stone and Jeon (2000) in the Asia – Pacific economies. The economic implication is straightforward. Possibly, firms of the WEE are producing in the African economies and exporting to their origin countries. Otherwise, these firms are importing major inputs from their origins to produce in Africa using cheap labor and natural resources and export to the international markets.

7. CONCLUSION AND RECOMMENDATIONS

In the last couple decades, the term emerging economies has become very famous and used frequently in the literature. Especially, since the coining of the term BRIC and later BRICS in the beginning of the millennium, the place of emerging economies in economic, diplomatic or political fields has been improving. In the African continent, on the other hand, there are some economies which recorded fast economic growth in the same period. In fact, some of them are known as frontier markets. However, there are very limited works on the economic relationships between the major WEE, such as the BRICS, and the African major economies. Considering the ever-increasing economic ties between both sides, the gap in the literature signals the importance and rationale of this study.

Under the core objective of studying the trade and FDI relations between the AEE and WEE, in this study, an index is used to identify the AEE based on various criteria arising from the definition of emerging economies and indicators of economic growth and development. Accordingly, 15 African countries are categorized as AEE. These countries are the leading major economies in Africa. It is expected that if they continue the current trend, they have the potential to dominate the continent's economy. They may also become world-class emerging economies and then some join the middle and high-income countries group soon learning from the path of some East Asian economies.

In a nutshell, the purpose of the study is to identify the African emerging economies, to assess their economic background, to assess their FDI and FT with the WEE and to identify the various determinants of FT, IIT and FDI positions of the WEE in the AEE.

It was expected that (i) the economic presence of the WEE is attracted by the availability of natural resources in the African economies, (ii) their partnership is

influenced by socio-cultural factors, (iii) the improvement in economic freedom in the AEE is enhancing the trade and FDI positions of WEE, (iv) there is a strong linkage between BT and FDI positions, and (v) the trade between both sides was not an IIT type. The results indicate that the availability of natural resources is a factor of trade and investment in some cases and socio-cultural factors, such as religion and language, have an impact on the bilateral economic ties. Besides, their BT is largely not well-expressed by IIT except for few cases. However, there is a linkage between BT volumes and FDI positions. Moreover, there is no a strong evidence to support an improvement in economic freedom is attracting more trade and FDI.

Generally, the figures of FT and FDI indicate that the BRICS, Turkey, Mexico and the Philippines are going to be the major trade and investment partners of the AEE. Considering the time these economies took to have a significant share in the continent, it may not take them decades to extensively dominate the trade and FDI share in the AEE.

Based on these conclusions and expectations, some recommendations can be forwarded. First of all, African countries should be careful not to repeat the old type of partnership. A partnership with advanced economies in which the African economies are exporters of cheap natural resources and markets of processed expensive European goods. It is not the responsibility of the WEE to break such unbalanced partnership. It is the duty of the African leaders and policymakers. Similarly, AEE have to take measures in order to be independent of the WEE' strategic policies and practices. The development-oriented financial support and credit to AEE by the Chinese government, for example, may keep the African economies dependent on China and its policies.

Moreover, the AEE should have to work on technology and know-how transfer. To do so, they need to shape their policies favorable for local industries to learn from the investors from the WEE. If they cannot do this, even small industries from China and India may dominate their markets and continue to kill local small-scale and medium-scale industries. At the end, this will keep the Africans dependent on foreign but cheap products.

Furthermore, the only way for AEE to engage in industry and compete is through value-adding practices. If they continue selling raw materials, it may hinder their economic growth. At any level possible, they must have to add value to their raw materials to general more income, create job opportunities and save foreign currency.

Finally, AEE specifically and the whole continent in general must speed up an inter-Africa trade and investment. These may pave the way for African economies to benefit each other and reduce poverty. The vast and diversified natural resources and young population is a big opportunity for Africans to trade and investment among themselves. Therefore, African countries have to work on opening their markets for each other and create suitable macroeconomic policies.

BIBLIOGRAPHY

Abd-el-Rahman, Kamal. 1991. "Firms' competitive and national comparative advantages as joint determinants of trade composition". **Weltwirtschaftliches Archiv**. Vol. 127, No., 1: 83-97.

Abidin, Abu Bakar, Nurulhuda Mohd Satar. 2013. "The determinants of Exports between Malaysia and the OIC Member Countries: A Gravity Model Approach". **Procedia Economics and Finance.** No 5: 12 – 19.

Al Jazeera. "Mapping Africa's Natural Resources: An overview of the continent's main natural resources". http://www.aljazeera.com/indepth/interactive/2016/10/mapping-africa-natural-resources-161020075811145.html [28.10.2016].

Anderson, James, Eric van Wincoop. 2003. "Gravity with Gravitas: A Solution to the Border Puzzle". **American Economic Review.** Vol. 93, No.1: 170-192.

BBVA. "BBVA EAGLEs Methodology". https://www.bbvaresearch.com/en/bbva-eagles-methodology/ [10.06.2015].

Bergeijk, Peter, Steven Brakman. 2010. **The Gravity Model of International Trade: Advances and Applications**. Cambridge University Press, Business & Economics.

Blanc-Brude, Fre´de´ ric; Cookson, Graham; Piesse, Jenifer, Roger Strange. 2014. "The FDI location decision: Distance and the effects of spatial dependence". **International Business Review.** Vol. 23: 797–810.

Booth, J. 2014. **Emerging Markets in an Upside Down World**. New York: Wiley & Sons.

Borrmann, Christina; Rolf, Jungnickel, Dietmar Keller. 2005. "What Gravity Models Can Tell Us About the Position of German FDI in Central and Eastern Europe?" **HWWA Discussion Paper.** No. 328. Hamburg Institute of International Economics.

Cabral, Lidia; Arilson, Favareto; Langton, Mukwereza, Kojo Amanor. 2016. "Brazil's Agricultural Politics in Africa: More Food International and the Disputed Meanings of 'Family Farming'". **World Development** Vol. 81: 47–60.

Carike, Claassen; Elsabé, Loots, Bezuidenhout Henri. 2012. "Chinese Foreign Direct Investment In Africa: Making Sense of a New Economic Reality". **African Journal of Business Management.** Vol. 6, Issue 47: 11583-11597.

Cavusgil, Tamer. 1997. "Measuring the Potential of Emerging Markets: An Indexing Approach". **Business Horizons**. Vol. 40, Issue 1: 87-91.

Chakrabarti, Sukalpa, Ishita Ghosh. 2014. "FDI in Africa: A Comparison of the Indian and Chinese Experience". **Procedia Social and Behavioral Sciences**. Vol. 157: 340 – 352.

Chen, Natalie, Dennis Novy. 2011. "Gravity, trade integration, and heterogeneity across industries". **Journal of International Economics**. Vol. 85, Issue 2: 206-221.

Chenaf-Nicet, Dalila, Eric Rougier. 2016. "The effect of macroeconomic instability on FDI flows: A gravity estimation of the impact of regional integration in the case of Euro-Mediterranean agreements". **International Economics.** Vol. 145: 66–91.

Cheung, Yin-Wong; Jakob, de Haan; Xingwang, Qian; Shu Yu. 2012."China's Outward Direct Investment in Africa". **Review of International Economics**. Vol. 20 No.2: 201–220.

Ciravegna, Luciano; Robert, Fitzgerald; Sumit Kundu. 2016. **Operating in Emerging Markets: A Guide to Management and Strategy in the New International Economy**. New Jersey: FT Press.

Clus-Rossouw, Danielle; Wilma, Viviers; Elsabé Loots. 2015. "Is there a link between BRIC Foreign Direct Investment and SADC Export Performance?" **Development Southern Africa Journal.** Vol. 32, Issue 6: 658-674.

Columbia Center on Sustainable Investment. 2017. **Emerging Market Global Players (EMGP)**. http://ccsi.columbia.edu/publications/emgp/.

Denisia, Vintilă. 2010. "Foreign Direct Investment Theories: An Overview of the

Main FDI Theories". **European Journal of Interdisciplinary Studies**. No. 3: 1-7.

Didier, Laurent, Jean Francoise Hoarau. Oct 2013. "Determinants of bilateral trade between BRICs and Sub Saharan Africa: what the gravity model tells us?" 9th International Conference On the Chinese Economy. France: Clermont-Ferrand.

Dixit, Avinash, Joseph Stiglitz. 1977. "Monopolistic Competition and Optimum Product Diversity". **American Economic Review.** Vol. 67, Issue 3: 297-308.

Dixit, Avinash, Victor Norman. 1980. **Theory of International Trade**. UK: Cambridge University Press.

Doumbe, Eric, Thierry Belinga. 2015. "A Gravity Model Analysis for Trade between Cameroon and Twenty-Eight European Union Countries". **Open Journal of Social Sciences.** Vol. 3: 114-122.

Dunn, Robert, John Mutti. 2001. **International Economics**. Fifth Ed. London: Routledge.

Edmonds, Christopher; Sumner, Croix, Yao Li. 2008. "China trade: Busting gravity's bounds". **Journal of Asian Economics.** Vol. 19: 455-466.

Elu, Juliet, Gregory N. Price. 2010. "Does China Transfer Productivity Enhancing Technology to Sub-Saharan Africa? Evidence from Manufacturing Firms". **African Development Review**. Vol. 22, No. S1: 587–598.

Enwere, Chigozie, Mesut Yilmaz. 2014. "Turkey's Strategic Economic Relations with Africa: Trends and Challenges". **Journal of Economics and Political Economy**. Vol. 1: 216-230.

Ethier, Wilfred. 1986. "The Multinational Firm." **Quarterly Journal of Economics**. Vol. 101, Issue 4: 805-833.

Falvey, Rodney. 1981. "Commercial policy and intra-industry trade". **Journal of International Economics.** Vol. 11, No.4: 495-511.

fDiIntelligence. 2015. **This is Africa: the African Investment Report.** England.

Ferto, Imre, L J Hubard. August 2002. "Intra-Industry Trade in Horizontally and Vertically Differentiated Agri-Food Products between Hungary and the EU". **Xth EAAE Congress 'Exploring Diversity in the European Agri-Food**

System'. Zaragoza: 28-31.

Fracasso, Andrea. 2014. "A gravity model of Virtual Water Trade". **Ecological Economics**. Vol. 108: 215-228.

FTSE Group. September 2017. **FTSE Classification of Markets**. http://www.ftse.com/products/downloads/FTSE-Country-Classification-Update_latest.pdf.

_____. **FTSE Country Classification Process**. http://www.ftserussell.com/sites/default/files/ftse-country-classification-process---sept-2017_0.pdf [Sep. 2017]

Fung, K.C., Alicia Garcia-Herrero. 2012. "Foreign Direct Investment Outflows from China and India". **China Economic Policy Review**. Vol. 1, No. 1: 1-15.

Garcia, Ana. 2017. "BRICS Investment Agreements in Africa: More of the Same?" **Studies in Political Economy: A Socialist Review.** Vol. 98: 24-47.

Geda, Alemayehu, Atnafu Meskel. 2008. "China and India's Growth Surge: Is it a curse or blessing for Africa? The Case of Manufactured Exports". **African Development Review.** Volume 20, Issue 2: 247–272.

Goldman Sachs. 2005. **How Solid are the BRICs?** Global Economics Paper, No: 134. http://www.goldmansachs.com/our-thinking/archive/archive-pdfs/how-solid.pdf

Goncalves, Marcus, Harry Xia. 2014. **Comparing Emerging and Advanced Markets: Current Trends and Challenges.** United States: Business Expert Press.

Goncalves, Marcus, Jose Alves. 2014. **Emerging and Frontier Markets: The New Frontline for Global Trade. United States:** Business Expert Press.

Greenaway, David. 1992. "Trade-Related Investment Measures and Development Strategy". **Kyklos.** Vol. 45:139-160.

Hejazi, Walid. 2009. "Does China receive more regional FDI than gravity would suggest?" **European Management Journal**. Vol. 27: 327– 335.

Helpman, Elhanan. 1981. "International Trade in the Presence of Product Differentiation, Economies of Scale and Monopolistic Competition: A Chamberlin–Heckscher–Ohlin Approach." **Journal of International**

Economics. Vol. 11, Issue 3: 305-340.

Hoskisson, Robert; Lorraine, Eden; Chung, Lau; Mike Wright. 2000. "Strategy in Emerging Economies". **The Academy of Management Journal**. Vol. 43, No. 3: 249-267.

Ingham, Barbara. 2004. **International Economics: A European Focus**. England: Pearson Education Limited.

International Monetary Fund. 2015. **World Economic Outlook: World Economic and Financial Surveys**. Washington DC.

International Monetary Fund. October 2015. **World Economic Outlook:** World Economic and Financial Surveys. http://www.imf.org/external/pubs/ft/weo/2015/02/pdf/text.pdf.

İpek, Volkan, Gonca Biltekin. 2013. "Turkey's Foreign Policy Implementation in Sub-Saharan Africa: A Post International Approach". **New Perspectives on Turkey.** Vol. 49: 121-156.

J.P. Morgan. 2014. **Emerging Markets Bond Index (EMBI)**. https://datamarket.com/data/set/1dme/jp-morgan-emerging-markets-bond-index-embi#!display=table&ds=1dme!x88=k.

Janicki, Hubert; Thierry, Warin, Phanindra V. Wunnava. 2005. "Endogenous OCA Theory: Using the Gravity Model to Test Mundell's Intuition". **Center for European Studies**. Working Paper No. 125.

Kahouli, Bassem, Samir Maktouf. 2015. "The determinants of FDI and the impact of the economic crisis on the implementation of RTAs: A static and dynamic gravity model". **International Business Review**. Vol. 24: 518–529.

Kaplinsky, Raphael. 2013. "What Contribution Can China Make to Inclusive Growth in Sub-Saharan Africa?" **Development and Change**. Vol. 44, Issue 6: 1295–1316.

Kolstad, Ivar, Arne Wiig. 2012. "What determines Chinese outward FDI?" **Journal of World Business.** Vol. 47, Issue 1: 26-34.

Kragelund, Peter. 2011. "Back to BASICs? The Rejuvenation of Non-traditional Donors' Development Cooperation with Africa". **Development and Change.** Vol. 42, Issue 2: 585–607.

Krugman, Paul, Maurice Obstfeld. 2009. **International Economics: Theory and Policy**. 8th Ed. Boston: Prentice Hall.

Krugman, Paul. 1980. "Scale Economies, Product Differentiation, and the Pattern of Trade. **American Economic Review**. Vol. 70, Issue 5: 950-959.

Lancaster, Kelvin. 1980. "Intra-Industry Trade under Perfect Monopolistic Competition. **Journal of International Economics.** Vol. 10, Issue 2: 151-175.

Ledyaeva, Svetlana, Mikael Linden. 2006. "Testing for Foreign Direct Investment Gravity Model for Russian Regions". **Department of Business and Economics**, University of Joensuu.

Logue, Ann C. 2011. **Emerging Markets for Dummies.** Indiana: Wiley Publishing.

Love, Patrick, Ralph Lattimore. 2009. **International Trade: Free, Fair and Open?** Paris: OECD.

Lucas, Robert E. 1988. "On the Mechanics of Economic Development." Journal of Monetary Economics. Vol. 22, Issue 1: 3–42.

Manger, Mark. 2012. "Vertical Trade Specialization and the Formation of North-South PTAs" **World Politics**. Vol. 64, Issue 4:622-658.

Markusen, Jemes, Keith Maskus. June 2001. "A Unified Approach to Intra-Industry Trade and Direct Foreign Investment." **NBER: Working Paper.** No. 8335.

Marr, Julian, Cherry Reynard. 2010. **Investing in Emerging Markets: The BRIC Economies and Beyond.** United States: Wiley.

Martine-Zarzoso, Inmaculada. 2003. "Gravity Model: An Application to Trade between Regional Blocs". **Atlantic Economic Journal.** Vol. 31, Issue 2: 174-184.

McGraw Hills Finance. 2013. **S&P Dow Jones Indices**. http://www.spindices.com/documents/index-news-and-announcements/20131030-spdji-country-classification-results.pdf.

Miles, David, Andrew Scott. 2005. **Macroeconomics - Understanding the Global Economy**. England: John Wiley & Sons.

Mlachila, Montfort, Misa Takebe. 2011. "FDI from BRICs to LICs: Emerging Growth Driver?" **IMF Working Paper**. Working Paper. 11/178.

Mody, Ashoka. 2004. “What Is an Emerging Market?” **International Monetary Fund**. WP/04/177. The United States.

Moosa, Imad. 2002. **Foreign Direct Investment: Theory, Evidence and Practice.** UK: Palgrave Macmillan.

Morris, Lyle, Larry Hanauer. 2014. **Chinese Engagement in Africa: Drivers, Reactions, and Implications for U.S. Policy**. USA: Rand Corporation.

MSCI. 2016. **Market Classification**. https://www.msci.com/indexes.

MSCI. 2014. **Country Classification Framework**. United States: MSCI Index Research.

_____. **Index Methodology.** https://www.msci.com/index-methodology [Nov. 2017]

Narayan, Seema, Tri Tung Nguyen. 2016. “Does The Trade Gravity Model Depend On Trading Partners? Some Evidence from Vietnam and Her 54 Trading Partners”. **International Review of Economics and Finance.** Vol. 41: 220–237.

Natale, Fabrizio; Alessandra, Borrello, Arina Motova. 2015. “Analysis of the Determinants of International Seafood Trade Using Gravity Model”. **Marine Policy**. Vol. 60: 98-106.

National Geographic Society. “Africa: Resources”. https://www.nationalgeographic.org/encyclopedia/africa-resources/ [11.12.2017]

Ndambendia, Houdou. “Africa Trade and Investment with BRIC Nations in a Changing Economic Landscape: The Role of China”. **MPRA Paper.** No. 71675, 2015. https://mpra.ub.uni-muenchen.de/71675/ [11.22.2017]

Ngouhouo, Ibrahim. 2013. “Multidimensional Determinants of Foreign Direct Investment in Central Africa: A Modified Gravity GMM Panel Approach”. **Mediterranean Journal of Social Sciences.** Vol. 4, Issue 1: 575-586.

Nowak, Wioletta. 2016. “China-Africa and India-Africa Trade in the years 2000-2014”. **Procedia Economics and Finance**. Vol. 39: 140 – 146.

O’Neill, Jim. 2001. “Building Better Global Economic BRICs”. Goldman Sachs, **Global Economics Paper.** No 66.

O'Neill, Jim; Dominic, Wilson; Roopa, Purushothaman, Anna Stupnytska. 2005. "How Solid are the BRICs?" Goldman Sachs, **Global Economics Paper**. No. 134.

Organization for Economic Co-operation and Development (OECD). 2002. **Foreign Direct Investment for Development: Maximizing Benefits, Minimizing Costs**. Paris.

_____ 2008. **Benchmark Definition of Foreign Direct Investment**. Fourth ed. Paris.

Ozkan, Mehmet. 2010. "What drives Turkey's involvement in Africa?" **Review of African Political Economy**. Vol. 37, Issue 126: 533-540.

Quince, Adolph, Aseem Prakash. "The Shanghai Effect: Do Exports to China Affect Labor Practices in Africa?" http://dx.doi.org/10.1016/j.worlddev.2016.05.009 [24.01.2016].

Radelet, Steven. 2010. **Emerging Africa: How 17 Countries Are Leading the Way.** Washington, D.C.: Center for Global Development.

Rahman, Mohammad. 2012. "The Gravity Model Analysis of Bangladesh's Trade: A Panel Data Approach". **Journal of Asia-Pacific Business**. Vol. 13, Issue 3: 263-286.

Renard, Mary-Francoise. "China's Trade and FDI in Africa". African Development Bank. Working Paper (2010): 126. http:/www.afdb.org/ [10.10.2016].

Romer, David. 1986. "Increasing Returns and Long-Run Growth**." Journal of Political Economy.** Vol. 94, Issue 5: 1002-1037.

Rose, Andrew. 2000. "One money, one market: Examining the effect of common currencies on trade". **Economic Policy.** Vol. 15, Issue 30: 7-46.

Russell Investments. 2016. **Global Market Outlook**. https://russellinvestments.com/au/insights/market-insights/global-market-outlook.

S&P Dow Jones. **Country Classification Consultation Results.** http://www.spindices.com/documents/index-news-and-announcements/20131030-spdji-country-classification-results.pdf [Nov. 2013]

_____. **S&P Dow Jones Indices.**

http://www.spindices.com/documents/index [Oct. 2017]

Sahbudak, Ercan, Dilek Sahin. 2016. “Measurement of Vertical and Horizontal Intra-Industry Trade in Agricultural Food Products: The Case of China and Brazil”. **International Journal of Social Science**. No. 42: 145-154.

Salvatore, Dominick. 2013. **International Economics**. Eleventh Ed. USA: John Wiley & Sons, Inc.

Samake, Issouf, Yongzheng Yang. 2014. “Low-Income Countries’ Linkages to BRICS: Are there Growth Spillovers?” **Journal of Asian Economics**. Vol. 30: 1–14.

Sanfilippo, Marco. 2010. “Chinese FDI to Africa: What Is the Nexus with Foreign Economic Cooperation?” **African Development Review**. Vol. 22, No. S1: 599–614.

Schiere, Richard. 2010. “Building Complementarities in Africa between Different Development Cooperation Modalities of Traditional Development Partners and China”. **African Development Review**. Vol. 22, No. S1: 615–628.

Serlenga, Laura, Yongcheol Shin. 2007. “Gravity models of intra-EU trade: application of the CCEP-HT estimation in heterogeneous panels with unobserved common time-specific factors”. **Journal of Applied Econometrics.** Vol. 22, Issue 2: 361-381.

Shepherd, Ben. 2012. **The Gravity Model of International Trade: A User Guide**. USA: United Nations publication.

Sohn, Chan-Hyun. 2005. “Does the Gravity Model Explain South Korea’s Trade Flows?” **Japanese Economic Review**. Vol. 56, Issue 5: 417-430.

Soori, Amir, Ahmad Tashkini. 2012. “Gravity Model: An Application to Trade between Iran and Regional Blocs”. **Iranian Economic Review.** Vol. 16, No. 31:1-12.

Stone, Susan, Bang Jeon. 1999. “Gravity-Model Specification for Foreign Direct Investment: A Case of the Asia-Pacific Economics. **Journal of Business and Economic Studies.** Vol.5: 33-42.

_____. 2000. “Foreign Direct Investment and Trade in the Asia-Pacific Region: Complementarily, Distance and Regional Economic Integration”.

Journal of Economic Integration. Vol. 15, Issue 3: 460– 485.

Sunje, Aziz, Emin Çivi. 2012. "Emerging Markets: A Review of Conceptual Frameworks". School of Economics and Business Administration, **University of Sarajevo**.

Tan-Mullins, May; Giles, Mohan; Marcus Power. 2010. "Redefining 'Aid' in the China–Africa Context". **Development and Change**. Vol. 41, Issue 5: 857–881.

The Financial Times. 2015. **The Long View: How Adventurous Are Emerging Markets?** London.

Thompson, Henry. 2001. **International Economics: Global Markets and International Competition.** USA: World Scientific Publishing Co. Pte. Ltd.

Tiku, Pran. 2014. **The Emerging Markets Handbook: An Analysis of the Investment Potential in 18 Key Emerging Market Economies**. Petersfield: Harriman House.

Ulengin, Fusun; Bora, Cekyay; Peral, Palut; Burc, Ulengin; Ozgur, Kabak; Ozay, Ozaydin, Sule Ekici. 2015. "Effects of quotas on Turkish foreign trade: A gravity model". **Transport Policy**. Vol. 38: 1-7.

Vickers, Brendan. 2013. "Africa and the Rising Powers: Bargaining For the 'Marginalized Many'". **International Affairs**. Vol. 89, Issue 3: 673-693.

Villoria, Nelson B. 2009. "China and the Manufacturing Terms-of-Trade of African Exporters". **Journal of African Economies.** Vol. 18, Issue 5: 781–823.

Yotov, Yoto; Roberta, Piermartini; Jose-Antonia, Monteiro, Mario Larch. 2016. **An Advanced Guide to Trade Policy Analysis: The Structural Gravity Model.** World Trade Organization. The United States.

Yu, Miaojie. 2010. "Trade, democracy and the gravity equation". **Journal of Development Economics.** Vol. 91: 289-300.

APPENDIX

Appendix 1: Sources of Data for Specific Variables

Variables	Stands for	Sources of Data
LogDist	Distance	https://www.distancecalculator.net/
LogGDP_AE	GDP of AEE	http://unctadstat.unctad.org/EN/
LogGDP_WE	GDP of world emerging	http://unctadstat.unctad.org/EN/
LogPI_WE	Per Capita income of WEE	http://unctadstat.unctad.org/EN/
LogPI_AE	Per Capita income of AEE	http://unctadstat.unctad.org/EN/
LogAllTrade_We	Overall Trade of WEE	http://unctadstat.unctad.org/EN/
LogAllTrade_AE	Overall Trade of AEE	http://unctadstat.unctad.org/EN/
LogODA_AE	ODA to the AEE	http://databank.worldbank.org/data/home.aspx
LogPetrol	Petroleum production	http://databank.worldbank.org/data/home.aspx
LogMinerals	Mineral production	http://databank.worldbank.org/data/home.aspx
LogEFI_WE	Economic Freedom Index of world emerging	www.heritage.org/index/
LogEFI_AE	Economic Freedom Index of AEE	www.heritage.org/index/
LogCPI_AE	Corruption Perception Index of AEE	http://www.transparency.org
ComReligDummy	Major common religion	https://en.wikipedia.org/wiki/Religions_by_country
BilAgreDummy	Trade/economic agreements	https://www.wto.org/english/tratop_e/region_e/region_e.htm
ComLangDummy	Major common language	https://en.wikipedia.org/wiki/Category:Languages_by_country
LogFDIpos_WE	FDI positions of WEEin African countries	elibrary-data.imf.org and unctad Bilateral FDI report, 2014

CURRICULUM VITAE

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EDUCATION

Degree	Department	University	Date of Graduation
Master	Regional and Local Development Studies	Addis Ababa University	July 2010
Undergraduate	Cooperatives (Business Management)	Haramaya University	July 2006
High School	Preparatory High School – Social Stream	Medhane Alem, Senior Secondary School	June 2003

WORK EXPERIENCE

Year	Corporation/Institute	Enrollment
2006	Haramaya University, Department of Cooperatives	Assistant Lecturer
2010	Haramaya University, Department of Cooperatives	Lecturer

PUBLISHMENTS

Papers

1. Abdulkadir, Wahab, Zeynep Kaplan. 2017. "The determinants of Trade between World Emerging and African Emerging Economies". **Journal of International Business and Economics.** Vol. 5, No: 2: 1-11.

2. Abdulkadir ,Wahab, Zeynep Kaplan. 2017. "The distribution and determinants of Turkey's FDI positions in Africa" **Turkish Economic Review**. Vol. 4, No. 4.

3. Abdulkadir, Wahab; Gonel, Feride, Hassan Karaduman. 2017. Turkey - Africa trade: A gravity model estimation of determinants. **Journal of Economics Library**. Vol. 4, No. 4

Conference Papers

1. Abdulkadir, Wahab, Zeynep Kaplan (2017, October 26-27). *Turkey's FDI Positions in Africa: A Gravity Model Analysis of its Distribution and Determinants,* paper presented at 3rd Annual International Conference on Social Sciences (AICSS), (72-88), Yildiz Technical University, Istanbul, Turkey.
2. Abdulkadir, Wahab (2016, June 2-4). *African Emerging Economies: Are they so Different from other Emerging or Frontier Economies?,* paper presented at 2nd Annual International Conference on Social Sciences (AICSS), Yildiz Technical University, Istanbul, Turkey.
3. Abdulkadir, Wahab (2015, May 21-23). *Turkey-Africa FDI and Trade in the 21st Century*, paper presented at 1st Annual International Conference on Social Sciences (AICSS), (317-332), Yildiz Technical University, Istanbul, Turkey.

Books

1. Abdulkadir, Wahab (2010). *Dairy Cooperatives and Poverty Reduction*, LAP LAMBERT Academic Publishing AG & Co. KG, Köln, Germany.
2. Abdulkadir, Wahab (2011). *Management of Agricultural and Non-Agricultural Cooperatives*, Distance Education Module, Cooperatives Department, Haramaya University, Ethiopia.
3. Abdulkadir, Wahab (2010). *Cooperative Development and Extension*, Distance Education Module, Cooperatives Department, Haramaya University, Ethiopia.
4. Abdulkadir, Wahab (2009). *Cooperative Organization and Management*, Distance Education Module, Department of Agricultural Economics, Haramaya University, Ethiopia.

Projects

1. Member of EDULINK/ValueLead Project, module writer in cooperatives and collective actions (2008 – 2011)
2. National Curriculum Revision, department team leader (2007-2008)

AWARDS

1. Haramaya University, Faculty of Business and Economics, Outstanding Students Gold Medal Co-winner, 2006.