

Trade Integration and Revealed Comparative Advantages of Sub-Saharan Africa and Middle East and North Africa Merchandize Export

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To provide an input for policy makers on issues of economic integration, this study has been conducted to assess the “revealed comparative advantage” (RCA) of the two regions: sub-Saharan Africa (SSA) and Middle East & North Africa (MENA), on merchandise goods export (Manufactures, Ores & Metals, Fuels, Agricultural Raw Materials, and Food) for the period 1995 to 2012.

It is disclosed that SSA has revealed comparative advantage in ores & metals, fuels, food, and agricultural raw materials ranked in order of their strength of competitiveness. However, SSA region’s economic integration through merchandise trade in the world is lower than the average economic integration of low and middle income countries. MENA has revealed disadvantage in all sub-products except in fuel export, while MENA has stronger integration in the world. In contrast to MENA, the population growth in SSA is not accompanied by commensurate economic integration in the world. The study uncovers the existence of immense potential for the two regions to integrate each other in food, ores & metals, and agricultural raw materials trade.

Keywords: Economic integration, merchandise export, Middle East & North Africa, revealed comparative advantage, sub-Saharan Africa, trade share

JEL Classifications: F14

1. Introduction

The concept of revealed comparative advantage has been introduced by Liesner (1958). Later the concept is refined by Balassa (1965), which is widely used to examine and identify the export products of countries that have revealed comparative advantage. Balassa’s index is further

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enhanced through conceptual framework developed by Hillman (1980), expressed in the form of necessary and sufficient conditions. It is stated that an increase in a country's exports of specified commodity results in an increase in the concomitant Balassa index, if and only if the Hillman condition is met (Hinloopena and Marrewijk, 2008).

The pattern of commodity export reflects the relative price and non-price factors that determine the structure of export of a country or region. If the net export of the specified commodity in a product group export is large, then it will be considered that country has revealed comparative advantage in the export of the specified commodity in the world. In fact, when Balassa method to examine countries' export competitiveness was limited to manufactured goods. This was for the reason that whenever it is evident, distortion happens in trade with primary products. Using trade under such condition fails to reflect the real comparative advantage of a nation (Balassa, 1965).

Ricardo argued that despite the fact that a country happens to have an absolute advantage, from the bundle of goods, in two or more of them, by focusing on the one with the highest advantage while importing others can gain from trade (Deardorff, 2011).

2. Literature Review: RCA Theory and Previous Studies

Revealed Comparative Advantage²

Revealed comparative advantage (RCA) has been introduced by Bela Balasa. It is highly popularized concept and commonly used economists tool that uses the trade pattern of countries. The model is applied by countries or regions interested to specify the sectors, product categories, or commodities that have comparative advantage. Based on the theory, basically, the ideal method of computing comparative advantage requires the utilisation of relative prices of the commodities of interest under the condition that there is no trade between the countries. However, as data on relative prices of commodities is not readily available, it becomes cumbersome to strictly rely on the assertions of the

²The same concept and its definition of revealed comparative advantage as depicted in this study is similarly applied by the author for computing RCA index values of comparative studies of sub-Saharan Africa versus South Asia, East Asia and the Pacific, and Latin America and the Caribbean regions.

theory so as to measure the comparative advantage. This necessitated for measuring it indirectly using a proxy model. Hence, a model is adopted that can measure indirectly a country's or a region's comparative advantage. Under this backdrop and absence of the requisite data (factor input prices) to compute relative prices, Balassa developed a method that is widely used for computing a country's revealed comparative advantage. According to Balassa, an indication can be made on the situation of a country's competitiveness based on the computed values of comparative advantage taking in to account the trade performance of individual economies. In fact, Balassa has used the model of RCA only for one part of international trade that is export (Balassa, 1965).

The original formula developed by Balassa, which serves as a tool for measuring the revealed comparative advantage (RCA) is as shown below (Balassa, 1977; 1979; 1986).

$$RCA = \left[\frac{\left(X_{ij} / \sum_i X_{ij} \right)}{\left(\sum_j X_{ij} / \sum_j \sum_i X_{ij} \right)} \right]$$

Where,

X_{ij}	denotes exports of sector "i" at country "j",
$\sum_i X_{ij}$	denotes total exports of country "j",
$\sum_j X_{ij}$	denotes "world" exports of sector "i", (sum of countries sector's "i" exports),
$\sum_j \sum_i X_{ij}$	denotes total "world" exports.

The range of the RCA indices value is between zero (0) and positive infinite ($+\infty$). If the computed value of RCA of a country exceeds unity, it is assumed that the country has revealed comparative advantage in the sector.

3. Literature Review on Comparative Advantage and Economic Performance

A number of studies have been carried out using revealed comparative advantage. In the investigation whether Swaziland has comparative advantage on its exports to Southern African Development Community (SADC), Southern Africa Customs Union (SACU) Common Market for Eastern and Southern Africa (COMESA), and the rest of the world, revealed comparative advantage approach of assessment is followed by Karambakuwa and Mzumara (2013). It is revealed that Swaziland has higher revealed comparative advantage in 449 product lines, which is greater or equal to one. They suggested that Swaziland's comparative advantage can be improved by enticing FDI through transnational corporations, discovery and extraction of other new resources.

Based on revealed comparative advantage (RCA) indices, Botswana has revealed comparative advantage in the export of natural resources (diamond and copper) as well as from farming in the export of meat of bovine animals in 1999 and 2004 (Makochekanwa, 2007).

Anthony and Hasson (2012), investigated the role of industrial policy in South Africa related to the situation of unemployment. They pointed out the possibility of achieving economic shift without the pursuit of comparative advantage shift. To alleviate the employment problems, South Africa need to engage in producing those products that involve the abundant labour resource. This enables South Africa's products to become competitive and will result in a growth path characterized by labour absorption.

ATPC (2010) examined future potential of African market that attracts African exporters. The study has attempted to compare the relative advantages of Africa with those supply sources outside the continent. It is explained that there exists the potential of intra-Africa trade, which strengthens regional integration in the continent. One of the formidable challenges cited in Africa for intra-African trade is the similarity of products to trade with, as well as relative competitiveness of African exporters.

It is stated that one of the factors for weak integration among sub-Saharan African countries through international trade is that most of the

countries are small fragmented economies and poor. Fragmentation becomes a barrier for scale of economies in production and transportation of commodities from and within the region. Furthermore, significant number of countries (about 15 countries) in the region are landlocked, which adversely affects their trading activities which raise their transaction costs (McCarthy, 2010).

McCarthy (2010:6) states that "... regional integration remains an economic arrangement that must be justified in economic terms. A regional integration arrangement is a political construct held in place by economic cement. If the 'cement' is weak the construct collapses."

Even though various regional integration blocks are established in Africa, none of these integration arrangements have cropped up to customs union. This is exacerbated by the underdeveloped intraregional infrastructure facilities in the continent (McCarthy, 2010). This is buttressed by Hartzenberg (2011) who suggested for trade facilitation activities should be taken seriously by the member states of regional blocks including the small and land locked countries.

Haddad (n.d) examined the comparative advantage of exports of Middle East & North Africa Region beyond oil. It is found that the region had descended downwards the ladder of comparative advantage, due to the pressure from China's export to Eastern European countries. Moreover, it is indicated that ten of the fifteen countries of MENA region mainly export primary products. More than 50 per cent of the region's export is concentrated on three commodities. The region's export diversification is also low. Even though efforts to improve the competitiveness of non-oil products are not vivid, noticeable efforts are done by GCC countries to diversify and upgrade exports.

Al-Kawaz (2008) examined the economic diversification of Kuwait. It is stated that trade openness, liberalisation, domestic protection, or orthodox trade liberalisation do not necessarily result in diversification and economic growth. This is because of the fact that absolute protection erodes the competitive power of the firms, and unmanaged trade openness leads to financial and trade crisis. It is suggested that trade diversification should be undertaken for specified sectors in the short and medium terms.

Turkey's competitiveness position as compared to its non-EU-15 competitors in the EU-15 market has been examined by Özçelik and Erlat (2013). Their study applied Balassa's model of RCA. With respect to the region, it is revealed that the countries have heterogeneous products that have comparative advantage. However, in relative terms, with respect to the contribution of those exports that have revealed comparative advantage to total export earnings, the countries' exports are homogeneous.

Sayan (2003) conducted a study on the role of free trade in relation to water resources of Middle East and North Africa. The revealed comparative advantage and net trade indices are computed for 13 sectors in the countries considered on the study. The study found that the Heckscher–Ohlin theory is applicable in the region. It asserted that free trade will make countries with relative endowment in water to specialize and export on water intensive products, while those with scarce water resource specialize in other products which require less water.

Noland and Pack (2007), cited in Lee and Gohar (2010), explained that the intra and inter regional trade in the Arab region is found to be “under traded” in the export of manufacturing export.

A study by DeRosa (1995) done on international trade, regional integration and food security in the Middle East found that greater improvement in food security results from non-discriminatory trade liberalization. Moreover, intra-regional trade yields in an improvement in food security in the region with the exception of wheat and other cereals. Wheat and other cereals are imported both commercially and through bilateral and multilateral food aid programs.

Furthermore, Al-Kawaz (2008) citing IMF (2006) explained that, even though Saud Arabia had set the largest plan of diversification in the region, the result was limited. The share of the output of manufacturing industry on GDP has shown a modest increment from 5.9% in 1980 to 8.1% in 2004. According to Looney (1994), cited in Al-Kawaz (2008), the lower diversification pace is attributed to exaggerated cost of infrastructure and continued investment on infrastructure resulted the prices of the manufactured goods to become higher, despite significant subsidies provided to the manufacturing sector.

A study on the impact of regional trade agreements on North African countries' foreign trade and economic welfare has been examined that covered a 10-year period (2000-2010). It is revealed that even though the regional membership resulted in the creation of trade leading to an increase in economic welfare, it is not adequate to resolve the export related challenges and regulate trade in the region (Haddoud et al., n.d).

Ghani (2011) finds that trade liberalization favourably influences economic growth. It is evidenced that trade liberalization in OIC has improved the rise in GDP per capita in the medium term. However, trade liberalization did not increase the trade of the OIC countries. In other words, no improvement has been observed in export and total export of the region because of trade liberalization.

Bilquess et al. (2011) examined the effect of trade openness, capital flows, and institutions on financial development of D-8 countries (includes Bangladesh, Egypt, Indonesia, Iran, Malaysia, Nigeria, Pakistan, and Turkey) though Iran is excluded in their study. It revealed that these factors have positive and significant impact on the financial development of D-8 countries. In accordance with the findings of their study, they recommended for developing countries to promote foreign capital flows, trade openness, enhancing institutions, and economic growth to improve financial development in the D-8 countries.

Uslu and Polat (2012) in their assessment of the impact of international trade on employment found that trade (import and export) positively influences employment and economy. They suggested for countries to promote export as it creates job opportunities. Tariff reduction policies are supposed to be implemented in selected sectors as long as the importation has positive role on employment and with due attention paid to competitiveness of domestic firms.

Khasawneh et al. (2012) disclosed the long term interrelationship between real export and economic growth in the non-oil exporting countries of MENA, while the oil-exporting countries economic growth pace is determined by other factors such as capital inflow.

Tsen (2007) investigated the interrelationships among export, domestic demand and economic growth in the countries of Middle East region. The finding indicated that export, domestic consumption and investment significantly influence economic growth and vice versa.

Anthony and Hasson (2012) argued that in the case of South Africa, it is a paradox to see in this unskilled labour abundant country with massive unemployed has comparative advantage revealed in commodities that are capital intensive. South Africa's economy is characterised by some pockets of technological sophistication with high skilled labour. However, also there exists a massive unskilled labour force.

Ortmann (2005) suggested that to improve the competitiveness of South African agricultural exports, the existence of good governance at all management levels of the government and industry, enhancement of institutional innovations at small-scale farmers and commercials, encouraging farmers to adopt new technological outcomes of research and development and the improvement of quality of school education with due and special emphasis on science, mathematics and skill training.

So far it can be observed from the reviewed literature that no studies have been undertaken that explore the comparative advantage of sub-Saharan Africa vis-à-vis Middle East & North Africa. Though few studies made an attempt to assess and explore the revealed comparative advantage of the African continent and Middle East at country level and also at disaggregated product classification level. From this one can note that the African continent and the Middle East region in general's comparative advantage are unexplored areas this study aimed to examine. Furthermore, this study examined the revealed comparative advantages with an emphasis on the broader product classification of merchandise trade, specific on export. The merchandise trade included product categories, such as, Manufactures Export, Ores and Metals Export, Fuels Export, Agricultural Raw Materials Export, and Food Export of sub-Saharan Africa and Middle East & North Africa. Furthermore, in order to examine the proportion and trend of export of sub-Saharan Africa and Middle East & North Africa regions with the world trend, the size of the population along with the regions' respective shares are assessed.

4. Conceptual Framework of the Study³

The commonly used tool of measuring suggested by Balassa (1965), revealed comparative index, is adopted in this study to investigate the revealed comparative advantage of sub-Saharan Africa as compared to Middle East & North Africa. Basically, the model is constructed to enable examine the status of these two regions (sub-Saharan Africa and Middle East & North Africa) with respect to their comparative advantage in relation to the world export of the five sub-sectors of the merchandise sector. The RCA method adopted in this particular study enabled the examination of the magnitude of each region's comparative advantage on the sub-sectors. The results of the analyses indicate the potential economic integration in between these two regions.

In addition, a benefit can be drawn from the model as it indicates the trading complementarity and competitiveness between the two regions on export of merchandise goods. These goods include various factors intensities of labour, capital and technology and knowledge. The formula adopted, based on Balassa's definition, to compute the respective RCA of the two regions specifically used for this study is defined as given below.

$$RCA = \left[\frac{\left(X_{ij} / \sum_i X_{ij} \right)}{\left(\sum_j X_{ij} / \sum_j \sum_i X_{ij} \right)} \right]$$

Where,

X_{ij} denotes exports of sector "i" of a region (Sub-Saharan Africa or Middle East & North Africa) "j",

$\sum_i X_{ij}$ denotes total exports of region "j",

³The same concept and its definition of revealed comparative advantage as depicted in this study is similarly applied by the author for computing RCA index values of comparative studies of sub-Saharan Africa versus South Asia, East Asia and the Pacific, and Latin America and the Caribbean regions.

$\sum_j X_{ij}$ denotes “world” exports of sector “i”, (sum of countries sector’s “i” exports),

$\sum_j \sum_i X_{ij}$ denotes total “world” exports.

Vollrath (1991) has developed a modified revealed comparative advantage that some authors adopt it along with the commonly used RCA, which is denoted by RCA #. It is used to examine the revealed comparative advantages of the two regions this study has specified (sub-Saharan Africa and Middle East and North Africa). The utilization of the modified method, which is suggested by Vollrath is assumed appropriate as some agree in the literature especially for a group of economies that pose greater influence at a global level than a single country poses. Basically, this study deals with regions that contain group of countries (the countries in sub-Saharan Africa as a group and the countries in Middle East & North Africa as a group). The basic difference between the two methods of computing revealed comparative advantage indices is that Vollrath’s method avoids double counting. The original form of RCA# suggested by Vollrath intended to examine the revealed comparative advantage of a specific country vis-à-vis the world in the export of commodities in a specified sector. This study has customized the analysis of RCA# approach that suits the aim of the study that attempts to examine from regional rather than country perspective. Thus RCA# method is utilized in this study and the index values are computed for each region’s sub-Saharan Africa or Middle East & North Africa) export in the specified sectors.

For the specified sub-sectors, this study has computed their respective relative revealed comparative advantages based on the given formula below. Conceptually, RCA# is defined as given below. The notations given for the variables are similar to that of Balassa’s modified model specified for this study as defined and described in above.

$$RCA_{\#} = \left[\frac{\left(\frac{X_{ij}}{(\sum_i X_{ij}) - X_{ij}} \right)}{\frac{((\sum_j X_{ij}) - X_{ij})}{((\sum_j \sum_i X_{ij}) - (\sum_j X_{ij})) - ((\sum_i X_{ij}) - X_{ij})}} \right]$$

5. Data and Methodology⁴

To investigate the revealed comparative advantages of sub-Saharan Africa and Middle East & North Africa, as described above in the conceptualization of the frame work of the study, the commonly used tools are adopted. The application of RCA in merchandise export sub-sectors (Manufactures, Ores and Metals, Fuels, Agricultural Raw Materials, and Food) has the significance of assessing the endowed factor endowment of each region in relation to the specified sub-sectors of the merchandise export.

To evaluate the gap of competitiveness between the two regions, the difference of the RCAs of the two regions is considered. To capture the differential values, the following equation is specified.

$$\text{RDRCA (SSA and MENA)} = \text{RCA}_{\text{SSA}} - \text{RCA}_{\text{MENA}}$$

Where,

RDRCA refers to the Revealed difference in the RCA of sub-Saharan Africa and Middle East & North Africa

SSA refers to sub-Saharan Africa, and

MENA refers to Middle East & North Africa

The expanded form of the equation specified above is shown as given below.

$$\text{RDCA} = \left[\frac{\left(\frac{x_{ij}}{\sum_i x_{ij}} \right)}{\left(\frac{\sum_j x_{ij}}{\sum_j \sum_i x_{ij}} \right)} \right]_{\text{SSA}} - \left[\frac{\left(\frac{x_{ij}}{\sum_i x_{ij}} \right)}{\left(\frac{\sum_j x_{ij}}{\sum_j \sum_i x_{ij}} \right)} \right]_{\text{MENA}}$$

⁴The same concept and its definition of revealed comparative advantage as depicted in this study is similarly applied by the author for computing RCA index values of comparative studies of sub-Saharan Africa versus South Asia, East Asia and the Pacific, and Latin America and the Caribbean regions.

Revealed comparative advantage is widely applied concept as it focuses determining the relative productivity differences among countries of internationally traded goods. The larger the relative productivity differences, the higher the gains from trade. Despite undisputable advantages the theory of comparative advantage has, it is not free of limitations. The theory of comparative advantage does not account changes that result from suitable international trade policy implementation, and upgrading of factor endowments in the regions/countries considered. Thus the established trade pattern of countries or regions can change because of the trade and economic policies that affect the sources of comparative advantage. Kowalski (2011) identifies physical capital, quality of education and average time to complete, energy supply, availability of finance and credit, and governance quality as determinants of a country's comparative advantage.

To have an overview of the whole picture, the analysis commences revealing the reality of the regions' population and trade shares in the world. The study attempted to assess the relative population shares vis-à-vis trade shares of the economies of the world categorised into regions. Data published by World Bank, specifically, World Development Indicators data is used for analyses.

6. Finding and Analysis

The population proportion in the world, given in a statistical summary of the economic regions known as *low and middle income*, and *high income economies*, is presented in Table1. As can be seen from the Table, more than 80 percent of the world population lives in the low and middle income, while the minority that accounts to 20 percent lives in the high income economies. It is shown that in the past two decades (1990-2010), the population proportion has decreased by 2.22 percent in high income economies, while it increased by the same percent in low and middle income economies. However, in 2013 the population proportion of the high income economies as well as the low and middle income economies is somehow reinstated in 2013 to the proportion it had in 1990 (slightly higher, by 0.24 percentage point, for low and middle income economies; slightly lower, by the same percentage point, for the high income economies). This further implies that over the past two decades, the disproportionate possession of the world wealth is

aggravated as evidenced by the increment in the population proportion of low and middle income economies.

As far as the population proportion of the sub-sectors of the low and middle income categories is concerned, in 1995 it accounts to 4.31 and 9.75 percent for the Middle East & North Africa and sub-Saharan Africa respectively. The proportion has increased by 0.54 percent and 3.39 percent in 2013 for the Middle East & North Africa and sub-Saharan Africa respectively. The rate of increment by Middle East & North Africa is a little bit higher than the increase shown by low and middle income economies that is 0.24 percent. In contrast, sub-Saharan Africa has increased by 3.39 percent which is higher than the increase sustained by low and middle income economies in general. The population size of sub-Saharan Africa is larger, which was 2.26 times higher than Middle East & North Africa in 1990 has grown further and become 2.71 times larger in 2013.

The trade share and proportion of the population of the respective sub-Saharan Africa and Middle East & North Africa regions for periods 2005 and 2013 are shown in Table 2 (the data for trade share is for the year 2012). In this study trade refers to the aggregate of total export and import of goods and services in a year. The Table shows that while 11.54 percent of world population lives in sub-Saharan Africa, the region has very low trade share in the world that accounts to 1.74 percent in 2005. The trade share of sub-Saharan Africa rose by 0.47 percentage point and become 2.21 percent in 2012. This is accompanied with a rise in its population share in the world by 1.60 percentage points in 2013. The trade share when it is evaluated in terms of population proportion, sub-Saharan Africa trade share is lower by 6.63 times in 2005 than the average of the low and middle income countries whose trade share is lower by 3.1 times. Comparatively with 2005, some progress is shown by sub-Saharan Africa that its trade share in relation to its population proportion in the world is lower by 5.95 times in 2012. However, this is still much lower than the average of the low and middle income countries' whose trade share is lower by 2.62 times in 2012. It can be concluded that, in relation to the population size, sub-Saharan Africa region's share in world trade is significantly lower than the average share of the lower and middle income countries. From this one can deduce that economic integration of sub-Saharan Africa

region is weaker than the average economic integration of low and middle income countries.

Table 1: Percentage of World Economic Regions Population during 1990-2013.

Economic Region	1990	2000	2003	2004	2005	2006	2008	2009	2010	2013
Low & middle income	81.43	82.84	84.50	84.22	84.30	84.24	84.04	83.52	83.65	81.67
East Asia & Pacific	30.30	29.65	29.57	29.37	29.29	29.04	28.81	28.69	28.45	28.15
Europe & Central Asia	7.43	6.51	7.53	7.42	7.33	7.04	6.62	5.97	5.88	3.82
Latin America & Caribbean	8.25	8.41	8.49	8.58	8.56	8.51	8.45	8.45	8.45	8.25
Middle East & N. Africa	4.31	4.53	4.97	4.72	4.75	4.75	4.86	4.88	4.81	4.85
South Asia	21.38	22.85	22.71	22.73	22.83	22.93	23.07	23.14	23.69	23.45
Sub-Saharan Africa	9.75	10.89	11.23	11.40	11.54	11.96	12.23	12.39	12.38	13.14
High income	18.57	17.16	15.50	15.78	15.70	15.76	15.96	16.48	16.35	18.33
World	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

Source: Author's computation (2015) based on WDI data, published by World Bank

The lag in economic integration of sub-Saharan Africa can be evidenced by McCarthy's(2010) study. It revealed that the existing economic size of sub-Saharan Africa is smaller than India. Even if the envisioned sub-Saharan Africa integration becomes successful, the market size remains small. To expand the market size, it is suggested that the integration process should go beyond the African continent that entails the global market.

Furthermore, Osabuohien and Efobi (2014) explained that most of the world countries' economic and financial systems are adversely affected

because of the 2007/2008 global economic crisis. Consequently, it is evidenced by the fact that there was shrinkage in FDI inflow to sub-Saharan Africa that has been flowing in an increasing trend by more than 85 percent FDI to GDP ratio in 1995-1999 to 48 percent in 2008. Likewise, sub-Saharan Africa's export of merchandise as a proportion to GDP has reduced by 17.9 percent in 1995 to 2008.

The trade share of Middle East & North Africa, unlike sub-Saharan Africa has squeezed by 0.73 percentage point in 2012 accompanied by a rise in its population proportion by 0.10 percentage points in 2013. In relation to the population proportion, in contrast to sub-Saharan Africa, this region has a higher trade share than its population proportion in the world. In fact, during 2005 to 2012, Middle East & North Africa region has shown a decline in its trade share from 2.93 to 2.20 in 2005 to 2012. In terms of population proportion, Middle East & North Africa has much higher trade share than the average share of low and middle income countries. Therefore, it can be concluded that, in terms of population proportion of Middle East & North Africa, the region has higher economic integration in the world in the form of trade than the entire low and middle income economies.

The findings of Gundogdu (2009) shows that in 1995-2007 trade within the OIC countries and with the rest of the world has increased because of the unilateral actions taken and their commitments to trim trade barriers to meet trade requirements of regional blocs such as COMESA, ECOWAS, and the like. Furthermore, it is suggested that improvement of infrastructure facilities and service delivery facilities and mitigation of financial constraints among the OIC countries boost economic integration within the region and the rest of the world.

In comparative terms, in 2005 the population size of sub-Saharan Africa is 2.43 times larger than Middle East and North Africa, but the trade share of Middle East and North Africa is 1.68 times higher than sub-Saharan Africa. Moreover, in 2013, the population size of sub-Saharan Africa has grown and become 2.71 times larger than Middle East & North Africa, and the trade share of Middle East & North Africa has become almost the same as that of sub-Saharan Africa. From this it can be inferred that, despite the low trade share sub-Saharan Africa has in relation to its population proportion, in absolute terms the region has shown positive improvement attaining a status of trade share with

slightly higher than Middle East & North Africa in 2012. Even though modest improvement is revealed by sub-Saharan Africa, in contrast to Middle East & North Africa, the population growth in sub-Saharan Africa is not yet accompanied by commensurate economic integration in the world.

Hence, when economic integration is evaluated in terms of population proportion, unlike the average low and middle income countries in general and sub-Saharan Africa region in particular, its economic integration is very low. On the other hand, Middle East & North Africa region has stronger integration in the world than the whole low and middle income economies.

In the past two decades, the success in reducing poverty significantly by the emerging countries, such as Brazil, China, and India is attributed to the determined commitment and execution of accelerated structural transformation process. However, in Africa structural transformation is at its infant and formative stage (African Economic Outlook, 2013).

UNECA (2010) identified that high transaction cost has put Africa at a disadvantage as compared to the rest of the world. It is suggested that policies be set that enhance the competitiveness of African exports by reducing costs, and encourage marketing activities that link rural farmers with the global trade supply chain. These entail the provision and expansion of roads, and market information networks. It emphasised the importance of reduction of transaction cost to boost Africa's regional integration, especially trade among land locked countries.

Though the infrastructure barrier for intra-Africa trade is much stronger, the tariff and non-tariff barriers to trade also pose formidable deadlocks. The existence of significant population land locked that accounts to about 35 percent of African population as compared to 1 percent of the world average, worsens the trade challenges Africa face. In addition, delays due to cumbersome procedures in customs clearance and crossing of borders adversely affected Africa's competitiveness in international trade as compared to other regions (UNECA, 2010, citing Njinkeu and Fosso, 2006).

Table 2: Population and Trade Share* of Sub-Saharan Africa, Middle East & North Africa, Low and Middle Income, and High Income Economies during 2005 and 2013.

Economic Region	Percent in World Population	Percent in World Trade	Percent in World Population	Percent in World Trade
	2005		2013	
Sub-Saharan Africa	11.54	1.74	13.14	2.21
Europe & Central Asia	7.33	3.16	3.82	3.64
Latin America & Carib.	8.56	4.44	8.25	5.49
Middle East & N. Africa	4.75	2.93	4.85	2.20
Low & Middle income	84.3	27.19	81.67	31.14
High Income	15.7	73.21	18.33	68.81

Source: Author's computation (2015) based on WDI data, published by World Bank

*Trade refers to the total export and import of goods and services. Moreover, the data for trade refers to the year 2012.

The revealed comparative advantage of sub-Saharan Africa and Middle East & North Africa during 1995 to 2012 on the sub sectors of the merchandise export are shown in Table3. Figure-1 shows RCA trends of the sub-sector, food export. Sub-Saharan Africa has revealed comparative advantage on food export during the whole period, 1995 to 2012. However, its trend shows that it has been rising consistently and peaked at an RCA index value of 2.29 in 2004 followed by consistent decline afterwards.

Alves et al. (2009) underpinned that despite Africa's comparative advantage in agriculture and agro processed commodities, its exports are facing difficulty in reaching a target market due to high tariff, and non-tariff barriers imposed by advanced countries. Furthermore, the subsidies role on local producers of similar products of advanced countries undermines Africa's exports and the value expected from farm products.

In the case of Middle East & North Africa, in contrast to sub-Saharan Africa, it has a comparative disadvantage during the whole period, 1995 to 2012. However, the trend is similar to sub-Saharan Africa that it had consistent improvement and peaked in 2004 followed by a decline trend afterwards.

The gap in revealed comparative advantage between the two regions is wide that ranges from an RCA index value of 0.77 to 1.57. This gap implies that sub-Saharan Africa's competitiveness in the export of food is higher by at least more than one fold times than Middle East & North Africa.

Table3 and Figure2 show the summary of statistical results of RCA values of the two regions (SSA and MENA) in Agricultural Raw Materials export. It is disclosed that the revealed comparative advantage of sub-Saharan Africa is strong in the export of agricultural raw materials in the world. This advantage has been highest and stable at an RCA index value of 2.5 during 2000 to 2006. Then a decline to an RCA index value of 1.5 happened in 2008 followed by a rise to 2.45 in 2012. In general, sub-Saharan Africa region never had the experience of comparative disadvantage in export of agricultural raw materials in the world during 1995 to 2012.

This sector is considered crucial for structural transformation in Africa as revealed in African Economic Outlook (2013). It is found that the employment in the primary sector serves as a preliminary booster for structural transformation in Africa. This is associated for the fact that it links to higher value added adjacent activities, a pool for employment of low skilled labour, and as generator of demand for new products.

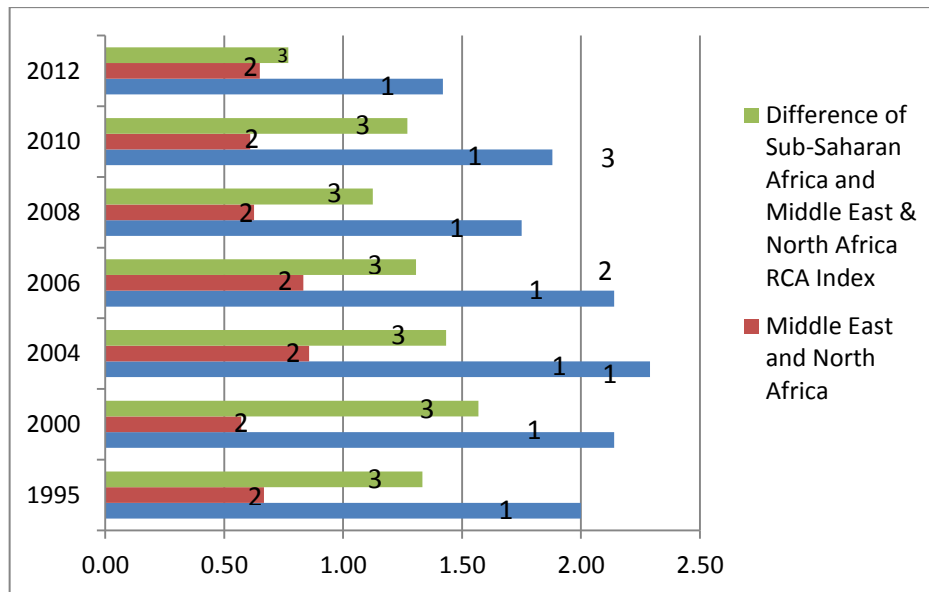
Table 3: Revealed Comparative Advantage of Sub-Saharan Africa and Middle East & North Africa

Year	Food Export		Agricultural Raw Materials Export		Fuels Export		Ores and Metals Export		Manufactures Export	
	Sub-Sah. Africa	Middle East & North Africa	Sub-Sah. Africa	Middle East & North Africa	Sub-Sah. Africa	Middle East & North Africa	Sub-Sah. Africa	Middle East & North Africa	Sub-Sah. Africa	Middle East & North Africa
1995	2.00	0.67	2.33	0.33	5.14	10.43	2.67	1.00	0.37	0.22
2000	2.14	0.57	2.50	0.50	3.70	7.70	2.33	0.67	0.41	0.21
2004	2.29	0.86	2.50	0.50	4.75	8.75	3.33	0.67	0.40	0.26
2006	2.14	0.83	2.50	0.00	3.60	6.91	3.33	0.50	0.44	0.21
2008	1.75	0.63	1.50	0.00	3.00	6.25	4.00	0.50	0.46	0.23
2010	1.88	0.61	2.00	0.00	2.67	5.21	3.60	0.38	0.45	0.23
2012	1.42	0.65	2.45	0.00	2.87	4.48	2.74	0.59	0.38	0.32

Source: Author's computation (2013) based on WDI data, published by World Bank

Notes: Scores greater than unity ($RCA > 1$) reveal a comparative advantage, while scores less than unity ($0 \leq RCA < 1$) reveal a comparative disadvantage.

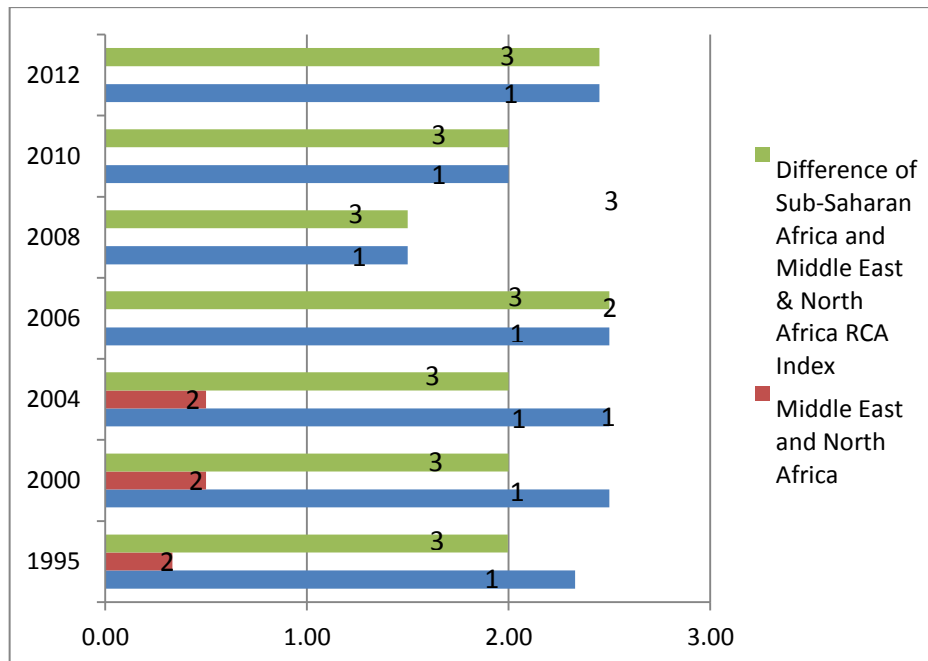
Figure 1: RCA and RDCA of Food Export of Sub-Saharan Africa, and Middle East & North Africa



Source: Author's computation (2015) based on WDI data, published by World Bank
 Notes: Scores greater than unity ($RCA > 1$) reveal a comparative advantage, while scores less than unity ($0 \leq RCA < 1$) reveal a comparative disadvantage.

In the case of Middle East & North Africa, had comparative disadvantage in the export of agricultural raw materials throughout the period considered in the study with much lower records in the latter periods, 2006 to 2012. It is disclosed that, the gap in competitiveness between the two regions shows that sub-Saharan Africa has higher competitive position over Middle East & North Africa by about two folds in the export of agricultural raw materials.

Figure 2: RCA and RDCA of Agricultural Raw Materials Export of Sub-Saharan Africa, and Middle East & North Africa

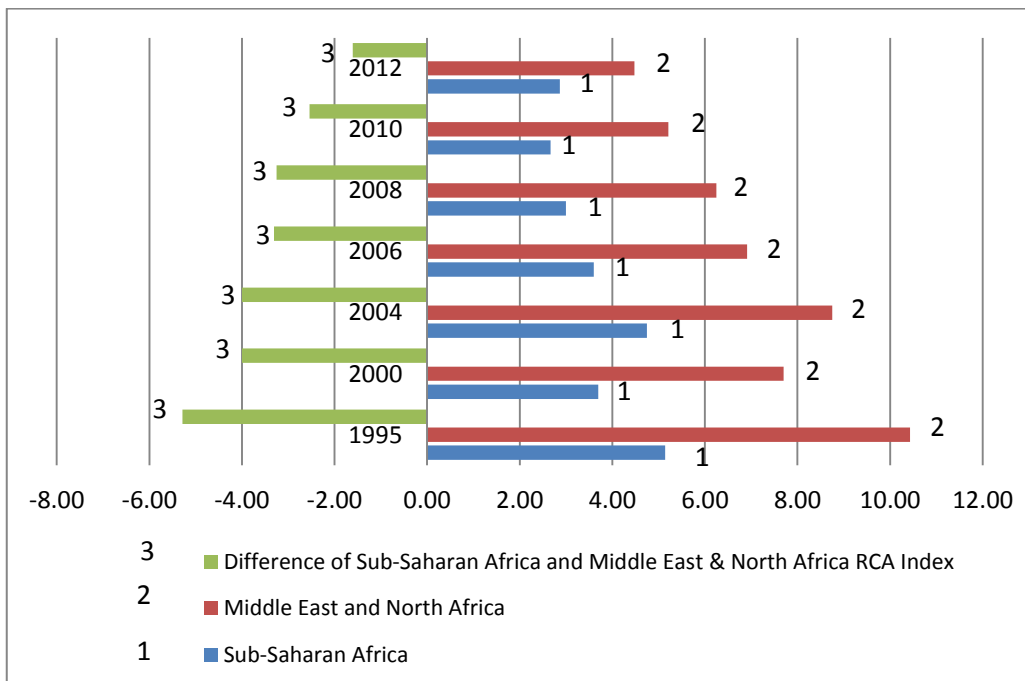


Source: Author's computation (2015) based on WDI data, published by World Bank
 Notes: Scores greater than unity ($RCA > 1$) reveal a comparative advantage, while scores less than unity ($0 \leq RCA < 1$) reveal a comparative disadvantage.

The summary of the revealed comparative advantage on *Fuel* export of the two regions, sub-Saharan Africa and Middle East & North Africa, is presented in Table-3 and Figure-3. During the whole period under consideration, it is revealed that both sub-Saharan Africa and Middle East & North Africa have strong revealed comparative advantage in export of fuel in the world (1995 to 2012). The highest revealed comparative advantage has been recorded for each region in 1995 with an RCA index value of 5.14 and 10.43 for sub-Saharan Africa and Middle East & North Africa respectively. However, the two regions have exhibited similar declining trend in their respective RCA indices. In comparative terms, even though both regions have very strong revealed comparative advantages, it is higher for Middle East & North Africa. The gap of their competitiveness is also characterised by a consistent declining trend that ranges from an RCA index value of 5.29 in 1995 to 1.61 in 2012.

Therefore, despite the shrinking trend of the gap of revealed comparative advantages between the two regions, Middle East & North Africa's competitiveness is stronger than sub-Saharan Africa.

Figure 3: RCA and RDCA of Fuels Export of Sub-Saharan Africa, and Middle East & North Africa



Source: Author's computation (2015) based on WDI data, published by World Bank
 Notes: Scores greater than unity ($RCA > 1$) reveal a comparative advantage, while scores less than unity ($0 \leq RCA < 1$) reveal a comparative disadvantage.

It is depicted in Table3 and Figure4 that the revealed comparative advantage of sub-Saharan Africa in export of ores and metals is characterised by a rising trend. The RCA index ranges from 2.33 in 2000 to 4.00 in 2008. It can be concluded that sub-Saharan Africa has higher revealed comparative advantage characterised by a rising pattern. Middle East & North Africa, on the other hand has a consistent revealed comparative disadvantage in almost the whole period, 1995 to 2012.

This can be supported by the evidence that, while 80 percent of Africa's export is resource based raw material and semi-processed good, it is 60

percent in the case of Brazil, 40 percent in India and 14 percent in China. In addition, because of the relative comparative advantage Africa has in natural resources enhanced by its significant land abundance and scarcely populated feature, most of green field foreign direct investment (FDI) inflows of Africa had been applied on resource related activities. Besides, it is disclosed that as compared to other regions, Africa has less diversification in the export of natural resources (African Economic Outlook, 2013).

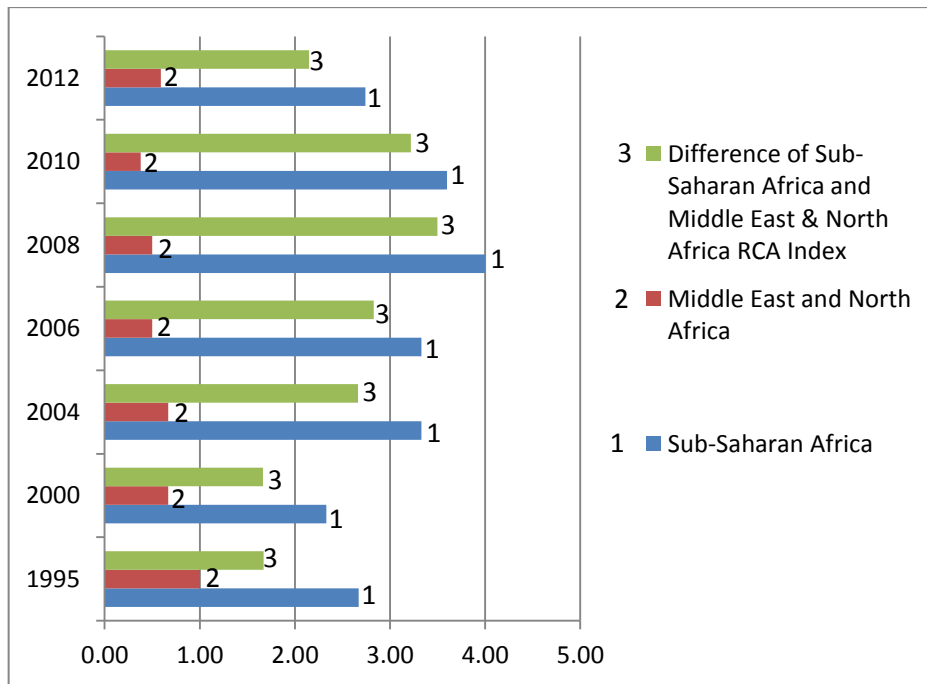
The trend shows that while more of a rising trend is observed for sub-Saharan Africa, a consistent declining trend is observed in the case of Middle East & North Africa. These opposite trends made the gap in the degree of revealed comparative advantage between the two regions to widen overtime. This gap ranges from 1.66 to 3.50RCA index value during 1995 to 2012.

The comparative advantage of Africa on natural resources and its promising future potential for foreign direct investment can be reinforced by the fact that the cost of exploration per square kilometer is 5 US dollar while it is 65 US dollar in Canada (Ncube, 2012 cited in African Economic Outlook, 2013). Furthermore, the mineral asset share of Africa in the world has declined from 10.3 per cent in 1995 to 5.2 per cent in 2005. This implies much has to be done to attract investors to extract the huge latent natural resource remains untapped.

The summary of the statistical result of the revealed comparative advantage of export of manufactured goods in the world for sub-Saharan Africa and Middle East & North Africa is presented in Table3 and Figure5. Even though sub-Saharan Africa assumed a comparative disadvantage in the whole period, 1995 to 2012, it has an improvement trend in its revealed comparative advantage in export of manufactured goods. In fact, the improvement is low that ranges from an RCA value of 0.37 in 1995 to 0.45 in 2010, though a reminiscent decline is exhibited in 2012 to 0.38 index.

One of the barriers that discourages Africa's move towards up stream of the supply chain is the tariff escalation of advanced countries on Africa's export of industrial goods. This practice has the implication that African countries confine themselves to export of primary products (Alves et al. 2009).

Figure 4: RCA and RDCA of Ores and Metals Export of Sub-Saharan Africa and Middle East & North Africa



Source: Author's computation (2015) based on WDI data, published by World Bank
 Notes: Scores greater than unity ($RCA > 1$) reveal a comparative advantage, while scores less than unity ($0 \leq RCA < 1$) reveal a comparative disadvantage.

With regard to Middle East & North Africa, similarly, it has revealed comparative disadvantage during the whole period, 1995 to 2012. The study revealed that this region's comparative advantage is lower than sub-Saharan Africa and demonstrated more of declining trend. Due to the rising trend in sub-Saharan Africa and declining trend in Middle East & North Africa made the gaps in between these two regions to widen over time.

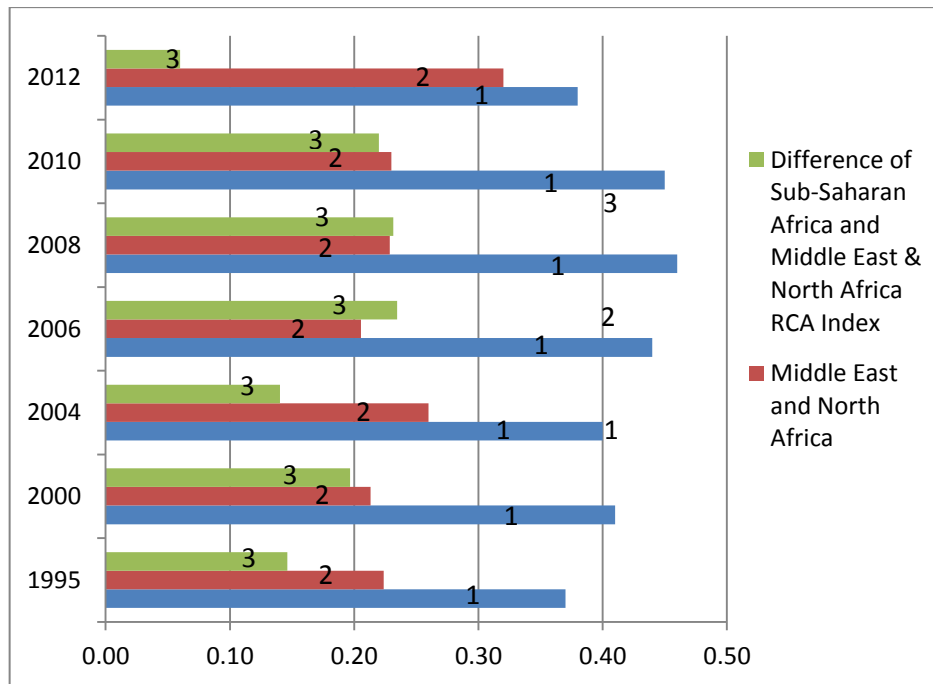
The reality in Africa (including North Africa) is that it is an importer of capital goods, manufactures and services from advanced countries. The flow of FDI to Africa is mainly on extraction of natural resources, which reinforces Africa's dependence on primary commodity exports (Alves et al. 2009).

Wood and Mayer (2001) argued that the existence of land abundance in Africa will continue to play its role being more suitable for primary sector than for the manufacturing as compared to Asia or Europe. This is associated with the fact that Africa's land-to-skill ratio is higher than Asia or Europe. This implies that the lower land-skill ratio is a constraint for Africa's transformation from simple to complex manufacturing sector, which takes time to match that of Asia or Europe. One of the reasons that holds back Africa is not attributed to the large share of the primary sector per se, but the underutilization of the sector. The non-transformation of the agriculture sector and extracting natural resources below the potential are observed factors that make Africa lag behind other regions. However, the recent phenomenon of price boom associated with a rising demand from the emerging markets in the East and South Asia has favourably influenced the growth of the primary sector.

Venables and Collier (2008) underpinned that the political fragmentation of Africa to more than 50 small countries has made African citizens incur cost. This fragmentation deterred Africa from using its comparative advantage on the sectors where economies of scale are important for its competitiveness such as manufacturing and services.

It is added that the creation and development of capacities through entrepreneurial skills help Africa's structural transformation to take off. The development of entrepreneurship in Africa has the merit of combining job creativity and a rise of productivity (African Economic Outlook, 2013).

Figure 5: RCA and RDCA of Manufactures Export of Sub-Saharan Africa and Middle East & North Africa



Source: Author's computation (2015) based on WDI data, published by World Bank
 Notes: Scores greater than unity ($RCA > 1$) reveal a comparative advantage, while scores less than unity ($0 \leq RCA < 1$) reveal a comparative disadvantage.

The following definitions are set under four ranges for each RCA or RCA# index values as given below. The specified ranges help to examine the relative magnitude and strength of revealed comparative advantages of the respective regions in the sub-sectors of the merchandise export.

- Very High for $RCA \text{ or } RCA\# > 2.00$,
- High for $2.00 > RCA \text{ or } RCA\# > 1.00$,
- Low for $1.00 > RCA \text{ or } RCA\# > 0.50$, and
- Very Low for $RCA \text{ or } RCA\# < 0.50$.

To enhance convenience the above four ranges are redefined maintaining the meaning of the discretely specified ranges. Thus, the

analysis that follows the Tables will be based on the following definitions.

RCA or RCA# > 2.00, to signify Very High,

RCA or RCA # > 1.00, to signify High,

RCA or RCA# > 0.50, to signify Low, and

RCA or RCA# < 0.50, to signify Very Low

This interval helps to examine and detect the sub-sector's competitive status during the later period (2006-2012) as compared to the regions' competitiveness during the former period (1995-2004). For the sake of analyses, interpretation and consistency of the computed results, the current study discusses at length using RCA indices than both (RCA and RCA#). Thus, the comparative analysis on the changes that took place in competitiveness in the specified export categories of merchandise export of the two regions is consistently discussed. The study has also provided the computed revealed comparative advantage values using Vollrath's method (RCA#) in a separate appendix section. The time period covered in the study are divided into two scenarios, 1995 to 2005 and 2006 to 2012. To avoid the problem of ups and downs in the values of RCA across each year, computed average values for the two scenarios are used. This helps to compare the changes in RCA during the two periods in the export of merchandise goods. Table 4 and Table 5 present the results of the computed average RCA indices.

As per the rankings of the revealed comparative advantage of sub-products, fuel, and ores & metals exports are the two items for sub-Saharan Africa that their RCA index values are the highest ones. However, it is revealed that export of manufactured goods ranked the least during 1995–2012. Their competitiveness and rank has been maintained at a status of very high with the exception of ores and metals that has shown an improvement and stepped up from second to first rank. On the other hand, fuel export has descended to a second rank that indicates it is out competed by the export of ores and metals in the later periods, 1995–2012. The trend uncovered food export's competitiveness strength deterioration which slide down from a *very high* to a *high*.

In the case of Middle East & North Africa, during 1995–2004, has high revealed comparative advantage in only one sub-product, fuel export.

However, it had low competitiveness ores & metals, and food export; and very low competitiveness in the export of agricultural raw materials, and manufactures. The status of competitiveness of the region can be concluded that it has maintained the competitiveness of fuel. However, its competitiveness changed unfavourably in the later period as depicted by deterioration in ores and metals.

Ghani (2007) pointed out that the total trade volume of OIC countries is small owing to the smallness of their GDPs. It is suggested that to increase OIC countries trade, it demands the improvement of the quality of their institutions and governance systems, and reduce the likelihood of conflict that erupts in their borders.

Lee and Gohar (2010) posits that, despite series of regional agreement and negotiations undertaken in the Arab region, the result tuned out to be for a short term and insignificant. The factors responsible for ineffectiveness of the regional trade integration are lack of complementarities on the goods to be traded; underdevelopment of the region's capital market; wider disparity in the per capita income between the lowest (Sudan at \$ 600) and the highest (Kuwait at \$12,710); highly protecting trade policy that discriminated prioritised exports from de-prioritised ones; overwhelmingly larger government institutions that inhibit the economic strength and activities of private firms.

It is suggested that to boost Africa's trade integration serious attention should be paid to enhance the capacity of supply side factors. These include expansion of economies of scale and scope, and trade facilitation measures (Alves et al. 2009).

Table 4: Ranking of Average Revealed Comparative Advantage of Sub-Saharan Africa and Middle East & North Africa

Rank	1995-2004		Rank	2006-2012	
	RCA			RCA	
	Sub-Saharan Africa	Middle East & North Africa		Sub-Saharan Africa	Middle East & North Africa
1	C > 2.00	C > 2.00	1	D > 2.00	C > 2.00
2	D > 2.00	D > 0.50	2	C > 2.00	A > 0.50
3	B > 2.00	A > 0.50	3	B > 2.00	D < 0.50
4	A > 2.00	B < 0.50	4	A > 1.00	E < 0.50
5	E < 0.50	E < 0.50	5	E < 0.50	B = 0.00

Source: Author's computation (2015) based on WDI data, published by World Bank
Notes: Scores greater than unity ($RCA > 1$) reveal a comparative advantage, while scores less than unity ($0 \leq RCA < 1$) reveal a comparative disadvantage.

A – signifies Food Export of the region,

B – signifies Agricultural Raw Materials Export of the region,

C – signifies Fuels Export of the region,

D – signifies Ores and Metals Export of the region, and

E – signifies Manufactures Export of the region.

Table 5 presents the competitive position, described range of competitiveness defined in above from very low to very high. The study disclosed that sub-Saharan Africa which had four of the five sub-sectors in a very high competitive position has maintained in three of them throughout the time period 1995 to 2012. It is uncovered that the competitiveness of the region in food exports has come down from very high to high status

Middle East & North Africa, with the exception of fuel export, other sub-sectors fall either in the low or very low competitiveness spectrum during the whole period considered in the study, 1995 to 2012. It is revealed that the competitiveness of the region in ores and metals export reduced from low to very low status. In other words, the competitiveness status in the merchandise exports during 1995 to 2005 of Middle East & North Africa that has been maintained in the latter period (2006 to 2012), with the exception of ores and metals.

In general, it can be summarized that the competitiveness position of sub-Saharan Africa is higher than Middle East & North Africa in all merchandise export with the exception of fuel export in the world.

Consistent with the findings of this study Gundogdu (2009) suggested that, apart from its dominance of oil based integration, OIC region should look into other areas in which it can integrate through trade with small OIC countries especially with those countries in the sub-Saharan Africa region. To enhance trade with sub-Saharan Africa, involving in trade financing, developing single window custom clearance, capacity development and trade cooperation endeavours, and on product development that has strategic significance are important activities that demand attention by the region.

Table 5: Intervals of Revealed Comparative Advantage (RCA)

Sub-Saharan Africa	Average Value, 1995-2004				Average Value, 2006-2012			
	Very High	High	Low	Very Low	Very High	High	Low	Very Low
A	A					A		
B	B				B			
C	C				C			
D	D				D			
E				E				E
Middle East & North Africa								
A			A				A	
B				B				B
C	C				C			
D			D					D
E				E				E

Source: Author's computation (2015) based on WDI data, published by World Bank

Notes: A – signifies Food Export of the region,

B – signifies Agricultural Raw Materials Export of the region,

C – signifies Fuels Export of the region,

D – signifies Ores and Metals Export of the region, and

E – signifies Manufactures Export of the region.

7. Conclusion

It is revealed that more than 80 percent of the world population lives in the low and middle income, while the minority that accounts to 20 per cent lives in the high income economies. It is shown that in the past two decades, it is disclosed that the population proportion that has been

recorded in 1990 is maintained in 2013 with slight increment (by 0.24 percentage point) in low and middle income economies and slight decline (by the same percentage point) for the high income economies. This further underpins the disparity in the wealth distribution between these two economic regions.

The population proportion of Middle East & North Africa in 1995 accounts to 4.31 per cent, while 9.75 percent for sub-Saharan Africa. This proportion has increased by 0.54 per cent and 3.39 per cent in 2013 for the Middle East & North Africa and sub-Saharan Africa respectively. The rate of increment by Middle East & North Africa is slightly lower than the increase shown by low and middle income economies that rose by 0.24 per cent. In contrast, sub-Saharan Africa has increased by 3.39 per cent, which is higher than low and middle income economies. The population size of sub-Saharan Africa is larger, which was 2.26 times higher than Middle East & North Africa in 1990, and grew further and become 2.71 times larger in 2013.

It is uncovered that, while the population size of sub-Saharan Africa is 2.43 times larger than Middle East and North Africa in 2005, the trade share of Middle East and North Africa is 1.68 times higher than sub-Saharan Africa. Moreover, after two decades, in 2012, the population size of sub-Saharan Africa has grown and become 2.71 times larger than Middle East & North Africa in 2013, and the trade shares of Middle East & North Africa sub-Saharan Africa have become almost the same. Hence, when economic integration is evaluated in terms of population proportion, the average economic integration of low and middle income countries as a whole and sub-Saharan Africa region in particular are very low. In terms of population proportion, Middle East & North Africa has stronger economic integration in the world as compared to low and middle income countries. Despite the improvement in sub-Saharan Africa's trade share, it faces huge gap that should be narrowed through extensive economic integration to reach to equity in trade share equivalent to its population share in the world.

The study unveiled that in the export of food, while sub-Saharan Africa has revealed comparative advantage, Middle East & North Africa has comparative disadvantage during the whole period considered in this study (1995 to 2012), with similar trend. The gap in revealed

comparative advantage between the two regions is wide that ranges from an RCA index value of 0.77 to 1.57.

It is disclosed that the RCA of sub-Saharan Africa in the world is strong in export of agricultural raw materials, and has not ever experienced comparative disadvantage during the whole period.

During the whole period under consideration, it is revealed that both sub-Saharan Africa and Middle East and North Africa have very strong revealed comparative advantage in export of fuel in the world (1995 to 2012). In comparative terms the revealed comparative advantage is higher for Middle East & North Africa. The gap in their competitiveness is characterised by consistent declining trend that ranges from an RCA index value of 5.29 in 1995 to 1.61 in 2012.

In the export of ores and metals, the study disclosed that sub-Saharan Africa has revealed comparative advantage with RCA indices that range from 2.33 to 4.00 in the later period. In contrast, Middle East & North Africa region has revealed comparative disadvantage in the export of ores and metals in the whole period, 1995 to 2012. The trend shows that while more of rising trend is observed for sub-Saharan Africa, consistent declining trend is observed in the case of Middle East & North Africa. These opposite trends made the gap in degree of revealed comparative advantage between the two regions widen overtime. This gap ranges from 1.66 to 3.50 RCA index value during 1995 to 2012.

Both Middle East & North Africa (MENA) and sub-Saharan Africa regions (SSA) have revealed comparative disadvantage in the export of manufactures. Despite the disadvantage in competitiveness, sub-Saharan Africa has revealed an improvement trend. However, Middle East & North Africa unveiled more of declining trend. Due to the rising and improvement trend in sub-Saharan Africa and declining trend in Middle East & North Africa made the gaps in between these two regions widen over time.

The study disclosed that fuel, and ores and metals export are the two items for sub-Saharan Africa that their RCA index values are the highest ones, while manufactured goods export is the least. The study disclosed that sub-Saharan Africa, which had four of the five sub-sectors in a very

high competitive position, has maintained three of them in a very high status in the latter period (2006 to 2012).

It is uncovered that Middle East & North Africa has high revealed comparative advantage in only one sub-product, fuel export. However, it had low competitiveness in ores & metals and food export; and very low competitiveness in export of manufactures. Moreover, in the later period, 2006 to 2012, the competitiveness of the region in fuel export is maintained. However, the region's competitiveness in ores and metals export reduced in the latter period (2006 to 2012).

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Appendix

Table A: Ranking of Average Revealed Comparative Advantage

Rank	1995-2004		Rank	2006-2012	
	RCA#			RCA#	
	Sub-Saharan Africa	Middle East & North Africa		Sub-Saharan Africa	Middle East & North Africa
1	C > 2.00	C > 2.00	1	C > 2.00	C > 2.00
2	E > 2.00	E > 2.00	2	E > 2.00	E > 2.00
3	A > 2.00	A > 0.50	3	D = 2.00	A > 0.50
4	D > 1.00	D < 0.50	4	A < 2.00	D < 0.50
5	B > 0.50	B < 0.50	5	B > 0.50	B = 0.00

Source: Author's computation (2015) based on WDI data, published by World Bank
Notes: Scores greater than unity ($RCA > 1$) reveal a comparative advantage, while scores less than unity ($0 \leq RCA < 1$) reveal a comparative disadvantage.

A – signifies Food Export of the region,

B – signifies Agricultural Raw Materials Export of the region,

C – signifies Fuels Export of the region,

D – signifies Ores and Metals Export of the region, and

E – signifies Manufactures Export of the region.

Table B: Intervals of Revealed Comparative Advantage (RCA#)

Sub-Saharan Africa	Average Value, 1995-2004					Average Value, 2006-2012		
	Very High	High	Low	Very Low	Very High	High	Low	Very Low
A	A					A		
B			B				B	
C	C				C			
D		D			D			
E	E				E			
Middle East & North Africa								
A			A				A	
B				B				B
C	C				C			
D				D				D
E	E				E			

Source: Author's computation (2015) based on WDI data, published by World Bank

Notes: A – signifies Food Export of the region,

B – signifies Agricultural Raw Materials Export of the region,

C – signifies Fuels Export of the region,

D – signifies Ores and Metals Export of the region, and

E – signifies Manufactures Export of the region.

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