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Trade Integration and Revealed Comparative Advantages of Sub-Saharan Africa and Latin America & Caribbean Merchandise Export

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This study examined the revealed comparative advantage (RCA) of sub-Saharan Africa (SSA) and Latin America & Caribbean (LAC) on the export of five merchandise subsectors (during 1995 to 2010) using the World Development Indicators database. Despite improvements observed, SSA’s and LAC’s trade share and economic integration are low. LAC has stronger RCA than SSA in export of food items though the gap in their competitiveness is not wide. The SSA region has higher RCA in export of agricultural raw materials, fuel, and ores and metals than LAC. Both regions have revealed comparative disadvantage in the export of manufactures, though lesser in LAC.

KEYWORDS revealed comparative advantage, sub-Saharan Africa, Latin America and Caribbean, merchandise subsectors, trade share, economic integration

I. INTRODUCTION

Relative price and non-price factors are considered to determine a country’s or region’s export structure. Balassa’s (1965) definition of revealed comparative advantage (RCA) is the most widely used method to examine the comparative advantage of a country or region on a specified commodity export in the world. In fact, Balassa’s method was limited to manufactured
goods because possible distortions that may happen in primary product trade do not reflect a nation’s comparative advantage.

Ricardo (1817) argued that the relative cost of the production of goods and services is among the reasons that countries engage in foreign trade. The classical trade theorists emphasized the comparative advantage of countries based on their relative cost differences. To sustain trade between countries and gain from it, the country that has comparative advantage in a specified product is required to produce it in surplus and export to the country that has comparative disadvantage. On the other side, the exporting country is also required to import a product for which it has a comparative disadvantage, so that import and export transactions happen in each country, with an effect of net gain from trade. Even though a country has an absolute advantage in the production of two or more goods, Ricardo stated that both the trading countries can gain provided that the relative comparative advantages are not the same.¹

Kowalski (2011) asserts that reliance on the concept of comparative advantage is increasing, owing to the significant influence it poses for policy issues on international trade. Its importance has been acknowledged, especially by the adoption of the General Agreement on Tariffs and Trade (GATT) and the establishment of international organizations that promote free trade, such as the World Trade Organization (WTO). The promoters of free trade base their arguments on the competitiveness of firms and countries that are free of trade barriers and distortions. The ideas of free trade induce countries to focus on those products for which they have comparative advantage. However, in the era of significant resource mobility and fast information communication, the appropriateness of the theory of comparative advantage is becoming doubtful. Changes in resource mobility and information technology have significant influence on production costs and trade patterns of the world. Furthermore, studies by the Organisation for Economic Co-operation and Development (OECD 2009) and Kowalski and Cepeda (2011) support the argument that the theory of classical comparative advantage is not adequate to explain the prevailing world trade.

This study investigates the revealed comparative advantages of sub-Saharan Africa (SSA) and Latin America and the Caribbean (LAC) based on the concepts that underlie the theories of international trade. This study provides evidence for the revealed comparative advantages that each of the two regions has in the export of food, agricultural raw materials, fuel, ores and metals, and manufactures.

It is noted that after Ricardo, who argued that country’s competitiveness is influenced by natural and physical factors, economists have given

¹ See Deardorff (2011) for a thorough discussion.
importance to technological factors and human factors. The literature review indicates that, from Mill (1844) and Marshall (1872) to Heckscher (1919), Ohlin (1933), and Samuelson (1949), scholars have extended the theory of the bases for nations to trade to the concept of comparative advantage. Furthermore, the theories of comparative as well as absolute advantages did not specify the reasons why a nation has absolute or comparative advantage over other nations in international trade. This gap has been filled by Heckscher and Ohlin who extended the theory of comparative advantage and stated that factor endowment is the basic reason for a nation to have comparative advantage over other nations.²

The validity of the conceptualization of Heckscher (1919) and Ohlin’s (1933) theory as applied to practical trade has been examined; among the cited studies is the Leontief (1965) paradox. In contrast to the theory of endowment, Leontief found that U.S. export industries are largely labor intensive, while its imports are labor intensive in relation to its trade partners: Canada, West Germany, and Japan. Harkness (1975) and Kenen (1965), who studied this contentious issue, revealed a contrasting finding that restored the theory of endowment. Their findings proved that Heckscher and Ohlin’s factor endowment hypothesis is applicable for the trade of the United States, Canada, West Germany, and Japan. They arrived at this conclusion because the methodology that they applied differentiated the skill levels and used a three-factor model that included human capital, physical capital, and raw labor inputs.³ Furthermore, Krugman (1990) has supported the findings of Harkness and Kenen that the endowment hypothesis is applicable to specified countries. However, Krugman has pointed out that the theory of factor endowment is not adequate to explain the existing pattern of international trade in the world.

In order to examine the actual advantages of the two regions, SSA and LAC, and their competitiveness in the international trade arena, this study adopts the commonly used approach proposed by Balassa (1965). The model used for this particular study is customized to fit the regional trade scenario and reflect the regions’ revealed comparative advantages. It computes the revealed comparative advantages indices of each region as a whole. Hence, it does not follow the conventional approach, which limits analysis to the country level.

A country’s or region’s development needs be supported by the provision of inputs based on research that uncovers its objective realities. This study tried to link the analyses of revealed comparative advantage of the

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² See Goldin (1990) for detailed analysis of theory and its application of comparative advantage in developing country’s agriculture.

³ See for Leontief (1965) for thorough analysis of the factor proportions and structure of U.S. trade; Harkness (1975) on factors that influence the United States’ comparative advantage; and Kenen (1965) on nature, capital, and trade.
regions under consideration with global trade and economic trends. The economic integration of these regions in the world in relation to their proportionate population is assessed. In addition, the status of each region in integrating with the world as compared with the average economic integration status of low- and middle-income economies is examined.

To analyze the competitive situation of SSA and LAC, the study pursued four steps. First, the revealed comparative advantage indices (RCA indices) of each region in each of the merchandise subsectors are computed. The computed values indicate whether the region has a comparative advantage or disadvantage in each subsector. Scores greater than unity ($RCA > 1$) reveal comparative advantage, while scores less than unity ($0 \leq RCA < 1$) reveal comparative disadvantage. Second, the trend of the revealed comparative advantage of each region with respect to each subsector is analyzed. Third, the trend in the difference of the RCA of the two regions is computed. This enables us to examine the gap in their competitive strength in each subsector. Fourth, the degree of each region’s RCA and its improvement status in each subsector is defined and summarized.

This study is a first attempt, to the best of the researcher’s knowledge, to investigate transregional RCA with a special focus on the SSA and LAC regions. Even though there have been studies undertaken to examine the RCA of various countries, this study differs as it attempts to compare two important regions. The findings of this study are supposed to contribute to the regional policy direction of the two regions.

The following section explains the theoretical arguments for the concept of comparative advantage in relation to trade and economic integration. This gives an understanding of the basic arguments on the issue of comparative advantage and competitiveness. The next section then deals with the actual studies done on similar areas of concern. This enables us to identify the scope of the previous studies and understand the causes of success and failure, the prospects and challenges in world trade. Moreover, the analysis of the previous works enabled me to identify the gap in the research. Following this is a section that discusses the conceptual framework of the current study in order to show that the operational definitions and computations have a theoretical base. The findings and analysis section discusses the results of

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4 If the region’s computed revealed comparative advantage is found to be greater than unity, the region is considered to be in better position in the international trade on the specified product. Therefore, it will be recommended for that region to upgrade the product further and set policies that enhance the revealed advantage and reap gain from world trade. In contrary, if the region’s computed RCA index is less than unity (comparative disadvantage), the region needs to investigate the reasons for and take policy measures to improve its status. Moreover, to integrate through trade, each region has to focus on those products that it has better comparative advantage and make trade with each other (provided that both regions do not have the same comparative advantage on same products) so that both the trading regions will better off.
the study, followed by a concluding section that concisely summarizes the overall findings and discussion of the study.

II. LITERATURE REVIEW

Balassa first introduced the conceptual application of comparative advantage in the form of revealed comparative advantage (RCA). Comparative advantage is a commonly used economics tool that makes use of trade patterns to identify the specific sectors, product groups, or commodities for which a country or region has comparative advantage. On the basis of the theory, the ideal form of determining comparative advantage is by computing the relative prices in the absence of trade. However, it poses some challenges and difficulties to measure comparative advantage purely on the basis of the theory’s assertions due to the absence of data on relative prices. This necessitated an indirect way of measuring comparative advantage of a country or region through the adoption of models that define the situation. Therefore, in a situation where there is an absence of sufficient data on the factor input costs, Balassa introduced the method of revealed comparative advantage as a tool to indicate the country’s comparative advantage. Balassa stated that by examining the trade performance of individual economies, each economy’s revealed comparative advantage can be indicated. Basically, Balassa used the RCA model for the export part of trade (Balassa 1965).

Balassa (1977, 1979, 1986) stated that to identify the sectors that have revealed comparative advantage, one needs to compare country of interests’ trade profile with the world average. The RCA index is, thus, the ratio of two shares: country specific and worldwide. The model specifies that the numerator is the country’s total exports of a given commodity as a share of its total exports, and the denominator is the total world exports of the same commodity as a share of its total world exports. Moreover, studies on RCA show that Balassa has transformed RCA several times. The original formula suggested by Balassa, which is used to measure the revealed comparative advantage (RCA) index, is defined as in Equation 1.

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

(1)

Where $X_{ij}$ signifies the exports of sector $i$ in country $j$, $\sum_i X_{ij}$ signifies the total exports of country $j$, $\sum_j X_{ij}$ signifies the world exports of sector $i$, and $\sum_j \sum_i X_{ij}$ signifies the total world exports.
The RCA index value ranges between zero (0) and positive infinitive (+∞). If the computed RCA value of a country exceeds unity, the country is considered to have a revealed comparative advantage in the specified sector.

Several studies have been done using the RCA index to investigate the competitiveness in export of goods and services in the world. The scope of these studies has varied. Some have been done with a special focus on a specific country, region, continent, or transregional area.

Country-Level Review of RCA

Some of the studies on RCA have limited their scope to the country level. These studies, specifically, can have a particular importance to the policymaking activities related to trade patterns at the country level. To examine the gap this study attempts to fill, some of the studies that have been done in the SSA and LAC regions are reviewed as follows.

Makochekanwa (2007) used RCA indices to examine the competitiveness of Botswana in world trade for the period 1999 to 2004. That study found that, among other products, Botswana had RCA in the export of diamonds, copper matte, and the meat of bovine animals. It also pointed out that the dynamic nature of the comparative advantage of the economy is reinforced by changes exhibited over time in RCA. Furthermore, it revealed that Botswana had an improvement in competitiveness in sugar and copper ores and concentrates, which had comparative disadvantage. However, it lost competitiveness on downstream products, such as coal gas and water gas.

In the case of LAC, the study of Bonelli and Pinheiro (2008) revealed that the comparative advantage and economic policy of Brazil have played a significant role in the emergence of new export activities. In addition, economies of scale have been important determinants of competitiveness, while having a well-known brand contributed to narrowing the gap of information asymmetry and facilitated participation in the export market.

From the context of unemployment in South Africa, Black and Hasson (2012) explored the role of industrial policy. They noted that an economic shift can be achieved without a corresponding shift in comparative advantage. In addition, they suggested that South Africa has to focus on competing with goods and services that demand more labor as an input to alleviate the unemployment problems. This results in growth characterized by labor absorption.

An assessment was done on the competitiveness of the European-27 markets between 2001 and 2009 in select agricultural products. The revealed comparative advantage (RCA) indices and comparative export performance (CEP) methods were applied to examine their competitiveness. The study found that South Africa is competitive in fish and crustaceans, vegetable and fruit foods, fruits, and beverages in the European-27 markets. However, for products such as cereals, sugar, and tobacco, South Africa has a
comparative disadvantage. In addition, South Africa has comparative advantage in the beverage industry over Australia; in the fish and crustacean, fruit, and beverages industries over Brazil; and in the vegetable and fruit, sugar, and tobacco industries over Chile. However, Brazil has a stronger comparative advantage in vegetable and fruit foods, cereals, sugar, and tobacco over South Africa, and Chile has a greater comparative advantage than South Africa in cereals and beverages, fish and crustaceans, and fruit industries.\(^5\)

The RCA of South Africa has been found to be, paradoxically, on capital intensive goods, even though it has an abundance of unskilled people with massive unemployment, as asserted by Black and Hasson (2012). They further noted that the economy of South Africa is characterized by the availability of a significantly large unemployed and unskilled labor force. In addition, they pointed out that it is difficult to conclude that South Africa does not have a competitive potential in labor-intensive sectors for two principle reasons. First, South Africa is competing in sectors with differentiated factor endowments. In some cases, the resource endowments are even contradictory, such as sectors endowed with natural resources, such as minerals and agricultural commodities; capital- or energy-intensive large-scale processing industries; skill- and high technology-intensive niche-market oriented sectors; and labor intensive sectors, such as clothing and tourism.

Second, Black and Hasson (2012) disclosed that there is a distortion in South Africa’s RCA for three basic reasons. First, black education is systematically undermined, which has constrained the supply of skilled labor relative to demands of the sectors in the situation of the on-going skill crisis. This posed a challenge to the competitiveness of the sectors that demand skilled labor resources. Second, the pricing decisions on raw and semi-processed goods (such as upstream producer sectors like steel and chemicals) are conspired by market power against sectors that are predominantly labor intensive. The conspiracy of the dominant sectors has adversely affected the competitiveness of labor-intensive sectors. Third, the subsidy that has been extended to capital- and energy-intensive projects has increased their profitability, but at the cost of market distortion.

On the basis of a study conducted on South Africa’s agricultural exports, Ortmann (2005) suggested interventions that should be considered to improve the competitiveness in agricultural exports. These are the commitment by concerned parties for the realization of good governance in government and industries’ managerial levels; encouragement of entrepreneurship and innovation at the small-scale farmer and commercial levels; adoption of new technological outputs from research by encouraging farmers; and improvement in the quality of education, with a special focus on mathematics, science, and skill training.

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\(^5\) See the study made by Department of Agriculture, Forestry and Fisheries (2011) on competitiveness of selected South African agricultural products in the European Union market.
Regional-Level Review of RCA

The assessment of competitiveness has also been undertaken at a relatively wider scope that extends beyond a single country. The research outputs of such studies have made their own contribution to policies designed at the regional level. Worrell, Greenidge, and Lowe (2012) used both price and non-price competitiveness measures to examine the competitiveness of the Caribbean countries. In contrast to an earlier study that, using price as its sole indicator, concluded that Caribbean countries had lost their international competitiveness, Worrell et al. found that most of the Caribbean countries were competitive in price, and smaller Caribbean islands enhanced their competitive advantage in the export of goods and services, as well as in international finance.

Also from the regional perspective, Karambakuwa and Mzumara (2013) conducted a study using the RCA approach to investigate Swaziland’s comparative advantage in its exports to the Common Market for Eastern and Southern Africa (COMESA), the Southern African Development Community (SADC), the Southern Africa Customs Union (SACU), and the rest of the world. For 449 product lines, Swaziland had an RCA index value of greater or equal to one. The study suggested that Swaziland’s comparative advantage can be improved by attracting foreign direct investment by means of transnational corporations and exploration of new resources.

Similarly, Fullerton, Sawyer, and Sprinkle (2011) conducted a study to estimate the level of intra-industry trade (IIT) for the world and for the Western Hemisphere countries. Using the same standard index formula (method), they estimated the IIT for ten Standard International Trade Classification (SITC) product categories. They found that IIT is lower than the world average for most industries of Latin America and the Caribbean. They also pointed out that there is significant variation IIT across countries, as well as from industry to industry.

Studies have also been done at a larger geographic scope, such as that conducted by LaFleur (2011), who focused on a proposed trade liberalization of environmental goods in the LAC region. LeFleur’s study aimed at identifying the trends, risks, and opportunities for both the importers and exporters given increasing competition in manufactured goods in the world. LeFleur revealed that the LAC region is in a position to gain by implementing policies that reduce trade barriers on environmental goods. The gain is both for the environment and for productive and export diversification. This in turn enables the region to cope up and compete with more added strength through export diversification as there are countries that are well-established and leaders in the global market for environmental goods. The study asserted that this will enable the region to expand its diversification capacity and enhance the regions’ competitiveness with those countries already engaged in the trade. However, there are also risks from developing countries that
are given preferential access, as well as significant manufacturing capacity differences that adversely affect domestic firms’ key technologies.

Likewise, at a continental level, the African Trade Policy Center (ATPC 2010), in its assessment of the potential for African exporters to supply African markets, examined using RCA in relation to the sources of supply that exist outside the continent. The study uncovered that, despite the existence of a potential for intra-Africa trade that reinforces regional integration, this trade is challenged by the similarity of export and imports, and by the relative competitive status of African exporters. The cause for these challenges in Africa is attributed to weak infrastructure, productivity, and trade facilitation activities. Furthermore, the study recommended that Africa needs to go beyond liberalization to alleviate the supply-side constraints it faces. Therefore, Africa should strive to provide infrastructure and improve its competitiveness by intensifying trade facilitation and export diversification endeavors.

Furthermore, competitiveness of a region is examined by considering a variable that does not figure out as an important variable in policy formulations and agreements, such as transportation cost. Moreiral, Volpe, and Blyde (2008) have done a study on the impact of transportation cost on the LAC region. They focused on this issue because transportation cost has emerged to have an unprecedented strategic importance for LAC competitiveness for three reasons: the success of trade reforms, which have significantly changed the relative importance of policy and non-policy issues; the increasing production of goods in geographically fragmented areas and time sensitivity of trade; and the growth of labor-intensive goods and resource-scarce markets. The authors conclude that, instead of focusing on the traditional trade barrier issues, the region should give due consideration to the costs associated with transport-related infrastructure.

Mandel and Wright (2012), in their study of the dynamics and differentiation of agricultural exports in Latin America, examined the factors that contributed to the steady rise in market share of LAC agricultural exports. They adopted different methods of classifying products as upstream and downstream to examine the causes for the unveiled trend. They found that both types of products have significantly contributed to the steady rise of LAC’s world market share in the export of agricultural products.

Trans-Regional RCA

The scope of studies on competitiveness can be expanded beyond a specified region to assess its status vis-à-vis other regions in the world. The performance of manufacture exports in Asian and Latin American economies over the period 1981–97 was examined by Bender and Li (2002) through the use of RCA indices. They asserted that the RCA tool is not able to distinguish the causes of performance in the economy, whether factor endowments or
trade policy, but argued that, despite the inability to distinguish the effects, RCA helps to examine the direction in the movement of a region’s comparative advantage. They found that even though East Asian economies have experienced strong export performance, they are losing their comparative advantage to lower-tier economies of Latin America and Southeast Asia.

In another trans-regional study, Carolan, Singh, and Talati (1997) assessed the composition of trade between the United States and eight Asian Pacific economies from 1962 to 1992. In their study, they found that there were significant changes in the trade pattern, implying that there has been a change in the comparative advantage because of changes in factor proportions, technology transfers, and product cycles. In the trade between two countries, there had been an increased specialization that Japan primarily exports to the four tigers, Korea, Taiwan, Singapore and Hong Kong, and then to Malaysia, Indonesia and Thailand.

III. METHODOLOGY

It can be observed from the literature review that most studies deal with competitive advantage at a country level, specifically in relation to a given product group and within a sub-region with defined partner countries that are allied through some agreements. Other studies have compared trading practices within a continent, the effects of liberalization on a specified region, and intra-industry trade within a specified region to world trade. Still others have dealt with the effects of non-policy factors on the trading practice of specified regions, the dynamism of specific sectors and their competitiveness (most of them dealing with the agricultural sector), an assessment of the comparative advantage of a bloc with a specified country in Europe, the composition of trade of select countries of a region in relation to major markets (such as the United States), and the competitiveness of a single sector in a single country.

However, the studies that explore regional comparative advantages are not sufficient to reveal their competitive areas and complementarities. An in-depth regional comparative study enables each region to specifically identify the product in which it has a comparative advantage over another region. This will in turn help policy makers of the regions and the countries within each region to consider the research findings in their trade-related decisions. This study specifically deals with the assessment of the comparative advantages of sub-Saharan Africa and Latin America and the Caribbean.

It is evident that some studies have attempted to explore the RCA of Africa and Latin America and the Caribbean on a country basis and at a disaggregated product classification. However, the comparative advantage of sub-Saharan African region as a whole as compared to Latin America and the Caribbean is one of the unexplored areas that the present study examines.
In addition, this study attempts to examine the RCAs of these regions with respect to the subsector categories of the merchandise trade sector. The merchandise trade sector includes the following product categories: food export, agricultural raw materials export, fuel export, ores and metals export, and manufactures export. In order to examine the proportion and trends of exports from the SSA and LAC regions in relation to world trends, the regional population size and their respective shares of world population are examined.

Conceptual Framework of the Study

To investigate the RCA of the SSA and LAC regions, the commonly used measuring tool suggested by Balassa’s (1965) revealed comparative index is adopted in this study. The model is constructed to examine the status of the two regions with respect to their comparative advantages in relation to the world export of the five subsectors of merchandise sector. The computed RCA indices also indicate the potential for economic integration between the specified regions. Moreover, it gives an indication of the complementarity and competitiveness of the two regions for export of merchandise goods, including labor-intensive, capital- and technology-intensive, and knowledge-intensive goods. The formula adopted to compute the respective RCA specifically used for this study is given in Equation 2.6

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

Where,

- \(X_{ij}\) signifies the exports of sector \(i\) for region \(j\) (SSA and LAC),
- \(\sum_i X_{ij}\) signifies the total exports of region \(j\),
- \(\sum_j X_{ij}\) signifies the world exports of sector \(i\), and
- \(\sum_j \sum_i X_{ij}\) signifies total world exports.

Vollrath (1991) developed a modified RCA model, which is denoted as RCA#. Some authors use that model along with the commonly used RCA. The RCA# model is used to examine the RCA of the regions specified in this study. Use of the modified model suggested by Vollrath is considered especially appropriate for a group of countries that have greater influence at the world level than a single country has. It is used in the present study because this study does not deal with a specific country but with regions that contains

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6 A similar RCA index is used by Beyene (2014).
groups of countries. The difference between the two methods (Balassa’s and Vollrath’s) is that RCA#, unlike RCA, avoids double counting while calculating the indices of RCA. RCA#, when used in its original form as given by Vollrath, considers the significance of a country’s exports in a specified sector and at the world level. In this study, RCA# is customized to consider the significance of a region’s exports in the specified sectors and at the world level.

For the specified subsectors, this study intends to examine their respective RCA based on the RCA# model as given in Equation 3. The notations for the variables indicated in the equation are as given in Equation 2.

To investigate the RCA of the SSA and LAC regions, this study computes the RCA indices for each subsector (food, agricultural raw materials, fuel, ores and metals, and manufactures). Apart from revealing the comparative competitiveness, the computed indices consider the intrinsic endowment of the particular region in relation to the specified subsector of merchandise exports.

In addition, to compare the values of the RCAs of the two regions, the differential values of the two regions are considered. These values help to examine the extent of the difference in the strength of RCA in the regions. To capture the magnitude of the gap that prevails on competitiveness on the export of the specified subsectors across the two regions, Equation 4 is used.

\[ \text{RDRCA (SSA and SA)} = \text{RCA}_{\text{SSA}} - \text{RCA}_{\text{LAC}} \]  

Where,

- RDRCA refers to the revealed difference in the RCA of the SSA and LAC regions,
- SSA refers to sub-Saharan Africa, and
- LAC refers to Latin America and the Caribbean.

This can be expressed in an expanded equation form as given in Equation 5.

\[ \text{RDCA} = \left[ \left( \frac{X_{ij}/\sum_i X_{ij}}{\sum_j X_{ij}/\sum_i \sum_j X_{ij}} \right) \right]_{\text{SSA}} - \left[ \left( \frac{X_{ij}/\sum_i X_{ij}}{\sum_j X_{ij}/\sum_i \sum_j X_{ij}} \right) \right]_{\text{LAC}} \]  

It should be noted that, despite the undeniable contribution in examining the pattern of international trade, the RCA method has a limitation in that RCA analysis does not consider possible improvements in factor endowments and the design and implementation of appropriate economic and trade policies in the region as a whole and in particular countries within the region.

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7 This study considers Sub-Saharan Africa and Latin America and the Caribbean as economic regions.

8 Similar methodological approach is adopted by Beyene (2014)
implies that the indices can be affected by policies, such as tariff and non-tariff barriers, or other activities that distort the trade pattern of the countries in the regions under consideration and in the world at large.

As a supplement of the analysis of the RCA of the regions, their respective share in world trade vis-à-vis their respective population size is examined. This, in fact, provides insight and helps us understand the results of the analysis by taking into consideration the population size of the regions. The data used in this study are secondary data collected from the various issues of the World Development Indicators (WDI) published by the World Bank.

IV. RESULTS AND DISCUSSION

The population proportions of the regions classified as low and middle income and high income are shown in Table 1. Moreover, the population proportions for the subcategories within the low and middle income category are presented in Table 1. As can be seen, the overwhelming majority of the world’s population (more than 80%) is in the regions classified as low and middle income, while the minority of the world’s population is in the high income group. The trend shows that the growth of the population proportion of the low and middle income group and that of the high income group has been stable, with small changes during the period under consideration. Interestingly, over the past two decades (from 1990 to 2010), while the population proportion of low and middle income countries increased by 2.22 percentage points, the population in high income countries decreased by the same amount. This indicates equal but opposite proportionate trends are followed by the two regions in the years considered in this study (1990 and 2010).

The proportion of the world population as revealed in Table 1 indicates that the wealth of the world, as defined by income, is distributed unevenly and with extreme polarization between the two economic regions.

### Table 1: Percentage of World Economic Regions Population, 1990–2010

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<tbody>
<tr>
<td><strong>Low &amp; Middle Income</strong></td>
<td>81.43</td>
<td>82.84</td>
<td>84.50</td>
<td>84.22</td>
<td>84.30</td>
<td>84.24</td>
<td>84.04</td>
<td>83.52</td>
<td>83.65</td>
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<tr>
<td>East Asia &amp; Pacific</td>
<td>30.30</td>
<td>29.65</td>
<td>29.57</td>
<td>29.37</td>
<td>29.29</td>
<td>29.04</td>
<td>28.81</td>
<td>28.69</td>
<td>28.45</td>
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<td>Europe &amp; Central Asia</td>
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<td>6.51</td>
<td>7.53</td>
<td>7.42</td>
<td>7.33</td>
<td>7.04</td>
<td>6.62</td>
<td>5.97</td>
<td>5.88</td>
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<tr>
<td>Latin America &amp; Caribbean</td>
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<td>8.41</td>
<td>8.49</td>
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</table>

This implies that the largest part of the world’s wealth pie is under the possession of the minority of people. In contrast, the vast majority of the population, more than 80%, are far from possessing a proportionate share of the world’s wealth.

The population proportion in 1990 of SSA and LAC are 9.75% and 8.25%, respectively. Table 1 reveals that the population proportion of LAC has been almost constant, increasing by 0.2 percentage points to 8.45% in 2010. However, the population proportion of SSA has consistently increased throughout the two decades, rising 2.65 percentage points to 12.38% in 2010. Thus the increase the in population proportion of the low and middle income category is due to population growth in SSA.

The proportion of the population and the respective trade share for SSA and LAC in the periods 2005 and 2010 are shown in Table 2. In this study, trade is considered as the aggregate of total export and total import of goods and services in a year for each region. In 2005, the 11.54% of the world population who lived in SSA had a very low trade share—just 1.74%. The trade share of SSA increased by 0.33 percentage points to 2.07% in 2010. This is accompanied by a disproportionate rise (0.84 percentage points) in its population share. The trade share in 2005 of SSA, in terms of its population proportion in the world, is lower by 6.63 times. When this is compared with the average of the lower and middle income countries, whose trade share decreased by 3.1 times over the same time period, SSA’s

<table>
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<th>Economic Region</th>
<th>2005</th>
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<th>2010</th>
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<td>% in World</td>
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<td>2.93</td>
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<td>Sub-Saharan Africa</td>
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<td><strong>High Income</strong></td>
<td>15.70</td>
<td>73.21</td>
<td>16.35</td>
<td>69.52</td>
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</table>

*Source: World Bank (n.d.) based on World Development Indicators (WDI) data, various issues of the World Bank. Trade refers to the total export and import of goods and services.

Note: To evaluate the degree of the prevailing trade share status of a region, trade is compared with the region’s population proportion. This comparison assumes that a country that has 20% of the world’s population is in normal condition if its share of world trade is also 20%. However, if its trade share is below 20%, it is considered that its trade share is low and vice versa. SSA’s trade share in 2005 was 1.74%, whereas its population proportion was 11.54%. Therefore, it can be said that SSA’s trade share is 6.63 times lower (11.54/1.74 = 6.63) than its population proportion.
decrease is far greater. In 2010, some progress is seen in SSA; its trade share is 5.98 times lower than its population proportion, whereas overall the lower and middle income countries’ trade share is 2.75 times lower than the populations proportion. Therefore, it can be concluded that SSA’s trade share in the world is lower than the average trade share of the lower and middle income countries. This implies that economic integration of the SSA region with the world is also lower than the average of the lower and middle income region.

The trade share of LAC increased by 0.95 percentage points, while its population proportion shrunk by 0.11 percentage points in 2010 (see Table 2). In relation to the population proportion, the trade share of this region was 1.93 times lower in 2005, which is better than the average of the lower and middle income region, whose trade share was 3.1 times lower. The LAC region showed an improvement in 2010; its trade share as compared to its population proportion was 1.57 times lower. Even though the trade share in relation to the region’s population share is still lower than that of high income countries, the region has shown vivid improvement. Moreover, this region is in a better situation in relation to the average of the lower and middle income countries, whose trade share is 2.74 times lower than its population proportion in the world. In relation to the average trade share of the low and middle income category, LAC has shown an improvement in 2010. This implies that despite improvement in trade share, the economic integration of the region is lower than the population proportion it has in the world. It can be concluded that both regions, SSA and LAC, have lower economic integration, but it is worse in the case of SSA.

The trade share of the high income countries has shrunk by 3.69 percentage points, declining to 69.52% in 2010. The region has experienced an increase in its population proportion by 0.65 percentage points, rising to 16.35%. This indicates that nearly 70% of world trade is undertaken among the high-income economies, while 30% is undertaken by low and middle income countries. This implies that economic integration is very weak for the countries that contain an overwhelmingly majority of the world population and very strong among a small population.

The RCAs of LAC and SSA during the period 1995 to 2010 in the subsectors of the merchandise export sector are presented in Table 3. The trends in RCA for the food export subsector are shown in Figure 1. SSA experienced a rise in its RCA in food exports from 1995 to 2006, but started to weaken afterwards. In the case of LAC, it had almost a constant comparative advantage in food exports until 2006, followed by a decline and then a stable trend. LAC

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10 The trade share of the low and middle income countries was 27.19% in 2005, with a corresponding population proportion in the world of 84.30%. This implies that trade share of the low and middle income countries was 3.1 times lower than its population proportion. When the comparison is between SSA and the low and middle income countries, trade share is lower in the case of SSA.
<table>
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<th>Year</th>
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<th>SSA*</th>
<th>LAC**</th>
<th>SSA*</th>
<th>LAC**</th>
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<td>2004</td>
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<tr>
<td>2008</td>
<td>1.75</td>
<td>2.00</td>
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<td>2010</td>
<td>1.88</td>
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<td>2.00</td>
<td>1.00</td>
<td>2.67</td>
<td>1.75</td>
<td>3.60</td>
<td>2.00</td>
<td>0.45</td>
<td>0.74</td>
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</table>

*Source: World Bank (n.d.) based on World Development Indicators (WDI) data, various issues of the World Bank.*

*Notes: Scores greater than unity (RCA > 1) reveal a comparative advantage, while scores less than unity (0 ≤ RCA < 1) reveal a comparative disadvantage. *SSA signifies sub-Saharan Africa region. **LAC signifies Latin America and Caribbean region.*

**FIGURE 1** RCA and RDCA of food export of sub-Saharan Africa and Latin America and Caribbean. Scores greater than unity (RCA > 1) reveal a comparative advantage, while scores less than unity (0 ≤ RCA < 1) reveal a comparative disadvantage. World Development Indicators (WDI) data (World Bank). *Source: World Bank (n.d.) based on World Development Indicators (WDI) data, various issues of the World Bank.*

had a stronger RCA than SSA did on the export of food items during 1995 to 2010. However, the gap in their competitiveness is not wide, ranging from 0.00 RCA index value in 2004 to 0.36 RCA index value in 2006. It can be understood from **Figure 1** that the gap of comparative advantage between the two regions had a rising trend up to 2006, followed by a narrowing trend.
from 2006 to 2010. In the most recent period (2010), the gap has narrowed down to a 0.12 point RCA index value.

The narrowing of the gap in the RCA in the export of food is attributed to solely to the rising trend exhibited in the RCA of SSA over time. In other words, the gap has increased in the later period because of the continuous increase in RCA of SSA, whereas the RCA of LAC was constant over this period. This implies that while the competitiveness of SSA has increased in the export of food, that of LAC remained constant. Therefore, unless some intervention is done in trade policies to change the constant trend in competitiveness of food exports in the LAC region, it is more likely that the competitiveness will be overtaken by the SSA region. However, it should be noted that, in terms of competitiveness in the world, as the computed RCA values indicate, both regions have strong revealed comparative advantage in the export of food.

The RCA values of the two regions for their respective export of agricultural raw materials are shown in Table 3 and Figure 2. The study found that SSA has a strong RCA in the export of agricultural raw materials in the world. From 2000 to 2006, it had an RCA index value of 2.5, followed by a decline to a lower RCA index value of 1.5. Then, its RCA rose in 2010 to an RCA index value of 2.00. Overall, the SSA region has a higher revealed advantage and did not experience comparative disadvantage in the export of agricultural raw materials in the world throughout the period of 1995 to 2010.

![FIGURE 2](image-url)  
**FIGURE 2** RCA and RDCA of agricultural raw materials export of sub-Saharan Africa, and Latin America & Caribbean. Scores greater than unity (RCA > 1) reveal a comparative advantage, while scores less than unity (0 ≤ RCA < 1) reveal a comparative disadvantage. Source: World Bank (n.d.) based on World Development Indicators (WDI) data, various issues of the World Bank.
Unlike the trend in SSA, LAC had a constant trend from 1995 to 2010. The study reveals that the LAC region has neither a comparative advantage nor disadvantage in the export of agricultural raw materials.

In comparative terms, SSA has a greater RCA in the export of SSA and LAC has been constant, averaging about an RCA index of 1.5. In other words, SSA’s RCA is higher than that of LAC by at least more than one fold in the export of agricultural raw materials. The variation in the gap of competitiveness between the two regions is explained by the variation in competitiveness of the SSA region. This is owing to the fact that there was no change in RCA exhibited by LAC.

The revealed trend shows that competitiveness in the export of agricultural raw materials will keep on increasing in the case of SSA and will be indifferent for the LAC region. This implies that to be competitive in the export of this product, the LAC region needs to give attention to the causes for its indifferent position. Moreover, SSA should enhance its current commitments in encouraging exports of agricultural raw materials.

The summary of the RCA in fuel exports of the two regions is presented in Table 3 and Figure 3. During 1995 to 2010, SSA had a strong RCA for fuel exports. The highest RCA index value of 5.14 was reached in 1995, followed by a decline in the year 2000 to an RCA index value of 3.7. In 2004, the RCA of this region rose to a 4.75 index value, followed by a drop to its lowest RCA index value of 2.67 in 2010. It can be concluded that in the export of fuel, despite a declining trend, the SSA region has a strong RCA.

In the export of fuel in the world, LAC also had a high RCA in 1995 to 2010. It had a strong revealed advantage in 1995, followed by a drop in its

![FIGURE 3](https://example.com/figure3.png)

**FIGURE 3** RCA and RDCA of fuel export of sub-Saharan Africa and Latin America & Caribbean. Scores greater than unity (RCA > 1) reveal a comparative advantage, while scores less than unity (0 ≤ RCA < 1) reveal a comparative disadvantage. *Source: World Bank (n.d.)* based on World Development Indicators (WDI) data, various issues of the World Bank.
degree of competitiveness in 2000, but bounced back in 2004. The highest RCA index value of 2.38 was reached in 2004, followed by a consistent decline to 2010. It can be concluded that in the export of fuel, despite a declining trend, LAC has a high RCA.

Both SSA and LAC have a revealed comparative advantage in the export of fuel in the world, albeit with a declining trend. However, the strength of the RCA is greater in SSA than in LAC. The gap in comparative advantage between these two regions has ranged from 0.92 RCA index points to 3.00 during 1995 to 2010. However, the trend shows that the gap in competitiveness is shrinking over time, mainly due to the decline in the RCA of sub-Saharan Africa. To strengthen competitiveness in the export of fuel exports and reverse the trend, SSA needs to identify the causes for the consistent decline in its RCA and make adjustments accordingly. Similarly, LAC needs to identify the causes of its decline in RCA, followed by an invigorating action.

Table 3 and Figure 4 show that in the export of ores and metals, SSA had a strong RCA throughout the period 1995 to 2010. Moreover, the RCA was characterized by a rising trend, with an index value ranging from 2.33 in 2000 to 4.00 in 2008. It can be concluded that SSA has a high RCA characterized by a rising pattern. Similarly, LAC had a strong RCA throughout the period 1995 to 2010. Its trend shows up and down periods, but it became stable from 2008 to 2010.

The gap in the degree of RCA in the export of ores and metals between SSA and LCA is wider in the later period, ranging from 1.00 to 2.00 RCA index value. The gap between the two regions is characterized by a widening trend.

**FIGURE 4** RCA and RDCA of ores and metals export of sub-Saharan Africa and Latin America & Caribbean. Scores greater than unity (RCA > 1) reveal a comparative advantage, while scores less than unity (0 ≤ RCA < 1) reveal a comparative disadvantage. Source: World Bank (n.d.) based on World Development Indicators (WDI) data, various issues of the World Bank.
The widening gap in the competitiveness of the two regions is attributed mainly to the increasing trend in SSA and to some extent also to the declining trend in LAC. This indicates that SSA has a higher RCA than LAC does. SSA’s revealed comparative advantage was higher than that of LAC by at least more than one RCA unit in the export of ores and metals in the later period of 2004 to 2010. To sustain competitiveness in the export of ores and metals, the SSA region should pursue enhancing its current commitments, while LAC should investigate the causes for the decline in its competitiveness.

With regard to the export of manufactures, the RCA of LAC and SSA is summarized in Table 3 and Figure 5. Despite small improvements, both of these regions have a revealed comparative disadvantage throughout the period 1995 to 2010. While the trend in LAC is somewhat stable, it is rising for SSA. The gap in competitiveness between the two regions shows that the RCA in LAC is higher than in SSA by at least more than 1.6 times throughout 1995 to 2010. The gap, however, shrank from 1995 to 2010. Moreover, the degree of RCA is defined in intervals that range from very high to very low. In this respect, while the comparative advantage of LAC falls under the low category, SSA falls in the very low category.

It can be summarized that both regions have a revealed comparative disadvantage in the export of manufactures. In other words, the two regions have a comparative disadvantage in the export of high-value-added goods. However, in relative terms, the revealed comparative disadvantage was less in LAC than in SSA during the whole period (1995 to 2010). Of the subsectors of the merchandise product category, the only product for which both

**FIGURE 5** RCA and RDCA of manufactures export of sub-Saharan Africa and Latin America and Caribbean. Scores greater than unity (RCA > 1) reveal a comparative advantage, while scores less than unity (0 ≤ RCA < 1) reveal a comparative disadvantage. Source: World Bank (n.d.) based on World Development Indicators (WDI) data, various issues of the World Bank.
regions had a comparative disadvantage is in manufactures exports. Both regions to realize structural transformation and step up to the upstream of the ladder of products arranged based on their technology and knowledge intensity, they need to focus on the bottlenecks that deterred them from climbing up and compete in more value added goods export.

Four intervals for RCA or RCA# are defined as given below to examine the relative strength of revealed comparative advantages in the subsectors of the merchandise export sector.

Very High: RCA or RCA# > 2.00  
High: 2.00 > RCA or RCA# > 1.00  
Low: 1.00 > RCA or RCA# > 0.50  
Very Low: RCA or RCA# < 0.50.

For convenience of making the analyses that follow, the above four intervals are written in the tables without changing the meaning of the intervals as given below:

RCA or RCA# > 2.00, Very High  
RCA or RCA# > 1.00, High  
RCA or RCA# > 0.50, Low  
RCA or RCA# < 0.50, Very Low

To examine and detect a region’s change in its competitive position in a subsector during the earlier (1995–2005) and later (2006–2010) periods, the use of these intervals will be helpful. This study has computed both the RCA and RCA# values. However, in this section it has used RCA instead of both RCA and RCA# to be consistent in the analysis of the changes in the RCA of the two regions in the subsectors of merchandise exports. To further examine the extent of RCA by using the values of RCA#, the computed indices are presented in the Appendix. To examine the direction of change in RCA, the time period is divided into two periods, 1995 to 2005 and 2006 to 2010. The comparative analyses are done on the basis of the computed average value of the RCA indices for each subsector. The results of the average RCA indices computation are shown in the Tables 4 and 5.

The ranking of the RCA indicates that, for SSA, exports of fuel and ores and metals had the highest RCA index values, while manufactured goods exports had the lowest index value during the period 1995–2010. The competitiveness of these subsectors has remained very high, and the ores and metals subsector has grown from second rank to first rank, which indicates an improvement in its competitive position. On the other hand, fuel exports declined to a second position, indicating that it has been outdone by ores and metals in the latter period. Moreover, the study revealed that there is a deterioration in competitiveness of food exports, which has slipped down from a very high to a high competitive strength.
### TABLE 4

<table>
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</tbody>
</table>

**Notes:** Scores greater than unity (RCA > 1) reveal a comparative advantage, while scores less than unity (0 ≤ RCA < 1) reveal a comparative disadvantage. A = food export of the region; B = agricultural raw materials export of the region; C = fuels export of the region; D = ores and metals export of the region; and E = manufactures export of the region. Source: World Bank (n.d.) based on World Development Indicators (WDI) data, various issues of the World Bank.

### TABLE 5

<table>
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**Notes:** Scores greater than unity (RCA > 1) reveal a comparative advantage, while scores less than unity (0 ≤ RCA < 1) reveal a comparative disadvantage. A = food export of the region; B = agricultural raw materials export of the region; C = fuels export of the region; D = ores and metals export of the region; and E = manufactures export of the region. *Signifies that the revealed comparative advantage is neither high nor low. Source: World Bank (n.d.) based on World Development Indicators (WDI) data, various issues of the World Bank.

LAC, during the period 1995 to 2004, had very high RCA in the top three subsectors: food, ores and metals, and fuel. However, it had an indifferent position for the export of agricultural raw materials and low competitiveness in manufactures exports. During 2006 to 2010, the competitiveness scenario remained unchanged, with the exception of fuels exports, which deteriorated from *very high* status to a *high* status.

Table 5 presents the summary of the competitive positions, as explained by the defined intervals from *very high* to *very low*. SSA, which has very high...
competitive position in four of the five subsectors, has maintained its position throughout the time period under consideration (1995 to 2010).

LAC, which had a very high competitive position in three out of five subsectors, declined in its position in the latter half of the period, with two subsectors at a very high position and one subsector at a high position in 2006–2010. However, there was neither an improvement nor deterioration in the competitive position of agricultural raw materials and manufactures export.

It can be summarized that SSA has a higher competitive position than LAC in all merchandise export subsectors, with the exception of manufactured goods.

V. DISCUSSION

The consistent superiority of SSA’s RCA in agricultural raw material export is supported by Chatterjee (2014) and the World Bank (2013). The global yield of other countries in the world declined sharply since 1980 due to exhaustion of the Green Revolution technology, reduction in many countries’ spending on research and development, an increase in water scarcity, and continual land degradation. One of the main reasons for SSA’s higher RCA is that cultivated area of land has increased by at least 50% in many SSA countries from 1990 to 2011. Agricultural output has grown in SSA since 1990, not as a result of higher productivity, but because of resource expansion. The productivity in SSA is much lower than in LAC. SSA’s low yield level is attributed to poor irrigation, very low application of fertilization, lack of adequate infrastructure, insecure land tenure, less encouraging price policies, lack of supportive research in agriculture, crop failure due to natural factors, conflicts, and HIV. Thus, for example, a small application of fertilizer in SSA results in a radical increment in yield.

Chatterjee (2014) also states that LAC has potential uncultivated land area of about 120 million hectares. Mandel and Wright (2012) revealed that LAC exporters tilted their specialization toward the downstream part of the value chain. Caballero O’Connor, and Amado (2011) found that LAC is almost dependent on one country, China, for its agricultural raw materials exports. However, China has set a long-term plan to substitute its agricultural raw materials and oil imports by 2020. This further worsens the future prospect for LAC’s export of agricultural raw materials. Hence, LAC should attempt to diversify its markets and move more toward the value-added part of the chain. Moreover, both SSA and LAC need to develop efficient transportation infrastructure, integrating the small-scale farmers with the supply chain and market.

Food exports linked with the agricultural performance are limited in SSA, as compared to LAC. Improvements in agricultural performance are
attributed to the liberalization of markets, restoration of macroeconomic stability, better exchange rate management, and relative peace (Rodrick 2014). The low trend shown in the export competitiveness of SSA in relation to LAC could be attributed to underdevelopment of the value chain of agribusiness. LAC’s higher comparative advantage in food exports can be attributed to its higher level of downstream integration in the value chain (Chatterjee 2014). Furthermore, Piñeiro et al. (2010) and Chatterjee (2014) note that both SSA’s and LAC’s food trade is vulnerable to global price changes owing to their limited capacity to generate foreign exchange through exports. Dinh et al. (2012) and the World Bank (2013) stressed that Africa’s best potential for structural change for growth and development is in the agribusiness sector. To realize this structural transformation, the potential challenges include developing downstream and upstream activities, encouraging commercial agriculture, and linking small holders and small business firms to the supply chains (World Bank 2013; African Economic Outlook 2013).

Africa is endowed with huge natural resources, and it has become one of a handful regions in the world that has witnessed an increase in FDI for mineral extraction and exploration (Ecobank Research 2013). Attempts to accelerate industrialization in Africa have not been accompanied by capacity building (African Economic Outlook 2013). This implies that Africa should give due consideration to capacity building to reap the benefits of its latent ores and mineral deposits.

Mandel (2011) has found that Latin America has moved toward intermediate and finished production of metal away from low-value ores. This resulted in the region’s market share increasing for the last thirty years. Latin American Economic Outlook (2014) noted that the growth exhibited by many emerging and developing nations, including LAC, has been enhanced as a result of sustained strong demand for natural resources from China and India. The main factor that deterred LAC from producing higher valued-added goods is its low level of productivity. The gap in productivity with advanced countries has continued rising.

Tissot (2012) states that Latin America is the second highest region in terms of oil reserves, after the Middle East. In the past decade, the consumption of energy has increased. Domestic consumption of fuel oil has increased in the region mainly due to the rapid growth of vehicles. LAC is the fastest growing vehicle market in the world, and this booming demand is expected to continue in the future. There has been a surge in vehicle demand, while production of diesel and gasoline stagnates. This results in significant reduction in the fuel export, which becomes a formidable challenge intensified by price surges likely to continue. LAC is investing in oil production to meet the evergrowing demand. In the future, it is anticipated that LAC’s booming market will attract U.S. exports of oil, as demand in North America is anticipated to stagnate. LUKOIL (2013) showed that in the next decade North America is predicted to lead in the production of liquid
hydrocarbon oil. The depreciation in dollars currency, population growth, and the high growth rate of automotive demand are expected to raise the price of oil in the medium term. Though production of oil also increases at some rate, the price of oil is predicted not to fall below $100/bbl.

Rodrick (2014) adds that SSA lies on the lower end of the technological sophistication spectrum. Moreover, SSA’s competitiveness in light industries is weak. This is attributed to the tougher global competition its faces to sell its products in both domestic and global markets (Dinh et al. 2012). In relative terms, the level of industrialization of LAC is higher than that of SSA, but LAC’s competitiveness is lower than that of South East Asia (World Bank 2010). Markets remain unconnected within the region. Evidence shows that SSA’s structural transformation is quite limited. The contribution of the manufacturing sector to the GDP has largely remained constant since 1970. Moreover, more than two-thirds of the labor force is absorbed by the agricultural sector. In terms of competitiveness as a whole, Africa trails Southeast Asia and LAC, with conspicuously bigger gaps in the quality of institutions, infrastructure, macroeconomic stability, education, and information communication technologies (ICTs) (World Economic Forum 2013).

To sustain development in the region, Africa needs to emphasize the agriculture sector and develop nonagriculture sectors’ productivity as well (Rodrick 2014). More than half of the region’s exports are natural resources, rendering it vulnerable to potential commodity shocks (World Economic Forum 2013). For both SSA’s and LAC’s exports to be resilient, commodity and market diversification should be pursued. In addition, they have to reorient their direction to tap their respective within-region and emerging Asian markets. To enhance growth, significant investment should be made in trade-related infrastructure and trade facilitation activities (World Economic Forum 2013; International Trade Centre 2012). In addition, Rodrik (2013) argues, growth can be ensured through movement of the labor workforce from low-to high-productivity sectors, as well as improvement of productivity within sectors. In fact, LAC will continue to enjoy better RCA than SSA will because of its relative higher level of industrialization (World Bank 2010).

SSA and LAC are at par in that they have weak institutional capacities that serve as a barrier to engaging meaningfully in the manufacturing sector. Improving their positions requires commitment to enhancing the capacity of the public sector in order to boost the competitiveness of the regions. The talent pool seems ignored in the regions, implying a slow pace to move down the stream of the value chain (World Economic Forum 2013).

Kaplinsky (2013) noted that unbundling, fracturing, and dispersion of value chains has become a phenomenon across the world. This has hollowed the traditional concentration of manufacturing industries in the North. The process of unbundling resulted in a shift in the center of gravity of manufacturing from North to South. SSA and LAC need to use this new global value chain (GVC) scenario to their advantages by shipping their value-added merchandise abroad.
VI. SUMMARY AND CONCLUSIONS

This study noted that the wealth of the world, as defined by income, is distributed unevenly and with extreme polarization between the two economic regions of low and middle income and high income regions. This implies that the largest part of the world’s wealth pie is in the possession of a small proportion of people. In contrast, the vast majority of the population, more than 80%, are far from possessing their proportionate share of the world’s wealth.

The study revealed that, while the population proportion of the high income economies has declined by 2.22 percentage points in 2010, the population proportion of low and middle income category has grown by the same amount, due predominantly to the growth of the population proportion in SSA.

In relation to the population size of SSA, its trade share and hence its economic integration in the world is lower than the average trade share of the lower and middle income countries.

Despite improvement in the trade share of LAC, its economic integration is lower than the population proportion it has in the world. It can be concluded that both LAC and SSA have low economic integration, but the case is worse in SSA.

LAC had a stronger RCA than SSA does in the export of food items during the period 1995 to 2010. However, the gap in their competitiveness is not wide, ranging from 0.00 to 0.36 RCA index values.

The SSA region had a higher revealed advantage and did not experience comparative disadvantage in the export of agricultural raw materials in the world during 1995 to 2010. The LAC region had neither a revealed comparative advantage nor disadvantage in the export of agricultural raw materials.

SSA had a greater RCA in the export of agricultural raw materials in the world than LCA did, and the gap has been constant. SSA’s RCA was higher by at least more than one unit of RCA index value.

Both SSA and LAC had RCA in the export of fuel in the world, although with a declining trend. However, the strength of the RCA was higher in SSA than in LAC. The gap in comparative advantage between these two regions ranged from 0.92 to 3.00 RCA index points during 1995 to 2010.

In the export of ores and metals, both regions have a revealed comparative advantage; however, it is higher in the case of SSA, where it is characterized by a rising trend. The gap between the two regions has widened overtime. SSA’s revealed comparative advantage is higher than that of LAC by at least more than one unit of RCA index value in the export of ores and metals in the later period of 2004 to 2010.

It can be summarized that both regions have a revealed comparative disadvantage in the export of manufactures. However, in relative terms, the
revealed comparative disadvantage was lesser in LAC than in SSA throughout the period 1995 to 2010. However, while the trend in LAC has been unchanging or stable, it has been rising in SSA. This pattern shrunk the gap between the two regions.

For SSA, fuel and ores and metals exports have the highest RCA index values, while manufactured exports has the lowest value. The study revealed that there is deterioration in the competitiveness of food exports, which has slipped from a very high to a high competitive strength.

LAC, during 1995 to 2004, had very high revealed comparative advantage in food, ores and metals, and fuel exports. However, it had an indifferent position in the export of agricultural raw materials and low competitiveness in manufactures exports. During 2006 to 2010, the competitiveness scenario remained unchanged, with the exception of fuel exports, which deteriorated from very high status to a high status.

SSA, which has very high competitive position in four of the five sub-sectors, maintained its positions throughout the time period under consideration in this study (1995 to 2010).

LAC, which had very high competitive position in three out of five subsectors, was reduced to very high position in two subsectors and high position in one sub in 2006 – 2010. It can be summarized that SSA has a higher competitive position than Latin LAC in all merchandise export subsectors, with the exception of manufactured goods.

Agricultural output has grown in SSA since 1990, not as a result of higher productivity, but because of resource expansion. Both SSA and LAC will benefit by pursuing structural transformation toward the downstream of the value chain. This should be accompanied by efficient transportation infrastructure, trade facilitation activities, integration of small-scale farmers with the supply chain and market, and capacity-building activities. The surge in vehicle demand is anticipated to pose a challenge to each region’s future fuel exports. Commodity and market diversification counteract future challenges, making SSA’s and LAC’s exports resilient. Domestic regional and newly emerging markets are potential future markets that demand due attention. The process of unbundling resulted in a shift in the center of gravity of manufacturing from North to South. SSA and LAC need to use this new scenario to their advantages in shipping their merchandise abroad.

REFERENCES


### APPENDIX

**TABLE A** Ranking of Average Revealed Comparative Advantage

<table>
<thead>
<tr>
<th>Rank</th>
<th>Sub-Saharan Africa</th>
<th>Latin America &amp; Caribbean</th>
<th>Rank</th>
<th>Sub-Saharan Africa</th>
<th>Latin America &amp; Caribbean</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>C &gt; 2.00</td>
<td>E &gt; 2.00</td>
<td>1</td>
<td>C &gt; 2.00</td>
<td>E &gt; 2.00</td>
</tr>
<tr>
<td>2</td>
<td>E &gt; 2.00</td>
<td>C &gt; 2.00</td>
<td>2</td>
<td>E &gt; 2.00</td>
<td>C &gt; 2.00</td>
</tr>
<tr>
<td>3</td>
<td>A &gt; 2.00</td>
<td>A &gt; 2.00</td>
<td>3</td>
<td>D &gt; 2.00</td>
<td>A &gt; 2.00</td>
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<tr>
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<td>D &gt; 1.00</td>
</tr>
<tr>
<td>5</td>
<td>B &gt; 0.50</td>
<td>B &lt; 0.50</td>
<td>5</td>
<td>B &gt; 0.50</td>
<td>B &lt; 0.50</td>
</tr>
</tbody>
</table>

**Notes:** Scores greater than unity (RCA > 1) reveal a comparative advantage, while scores less than unity (0 ≤ RCA < 1) reveal a comparative disadvantage. A = food export of the region; B = agricultural raw materials export of the region; C = fuels export of the region; D = ores and metals export of the region; and E = manufactures export of the region. *Source:* World Bank (n.d.) based on World Development Indicators (WDI) data, various issues of the World Bank.

**TABLE B** Intervals of Revealed Comparative Advantage (RCA#)

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>Very High</td>
<td>Very High</td>
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<tr>
<td>Very High</td>
<td>Very High</td>
</tr>
<tr>
<td>Very Low</td>
<td>Very Low</td>
</tr>
</tbody>
</table>

**Sub-Saharan Africa**

A
B
C
D
E

**Latin America & Caribbean**

A
B
C
D
E

**Notes:** Scores greater than unity (RCA > 1) reveal a comparative advantage, while scores less than unity (0 ≤ RCA < 1) reveal a comparative disadvantage. A = food export of the region; B = agricultural raw materials export of the region; C = fuels export of the region; D = ores and metals export of the region; and E = manufactures export of the region. *Source:* World Bank (n.d.) based on World Development Indicators (WDI) data, various issues of the World Bank.