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Revealed Comparative Advantage and Sustainable Export Competitiveness of Firms in the East African Community

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ABSTRACT: The purpose of this paper is to examine the influence of revealed comparative advantage as a determinant of the sustainability of export competitiveness of firms in the East African Community (EAC). The study adopted the Balassa's measure of Revealed comparative advantage index model. The researcher computed the major trade outcome indicator of competitiveness on the data from 2003 to 2022. The study based on the top ten exports for each country to assess the competitiveness of a country`s overall basket of products as well as the specific sectors. Data was obtained from World Bank International Trade Centre (ITC) and World Bank development indicators. The results indicate that overall, the EAC countries have Revealed Comparative advantage in natural resource and primary products though the composition could be changing. The low RCA in other sectors reflect the lack of structural transformation which could explain a given considerable proportion of trade diversion and potential welfare losses in the EAC countries, reducing the sustainability of export competitiveness of firms in the foreign markets. Exporting countries need to take deeper reforms as regards structural transformation to enable firms to integrate into the Global Value Chains (GVCs) to enable them to increase their productivity by reviewing the existing policies to match the changes in the market. There is a need to examine the complicated nature of the EAC economy to further this study's findings. This study explains the complex nature of the revealed comparative index as an indicator of sustainability of competitiveness in the EAC using quantitative data and that this complexity has an effect on the export competitiveness in import-oriented countries with less harmonization in their trade policies.

KEYWORDS: Export competitiveness**,** Revealed Comparative Advantage index, East African Community.

1.0 BACKGROUND

The composition of EAC trade is dominated by agricultural commodities, like coffee, tobacco, cotton, rice, maize, wheat and tea (Umuhoza, and Wang, 2021). More so, manufactured goods such as cement, petroleum, textiles, sugar, confectionery, beer, salt fats and oils, steel and steel products, paper, plastics and pharmaceuticals are also traded across the region. This has led to the increase in EAC intra-regional trade, imports grew by 13.9% to USD 2.8 billion from USD 2.5 billion in 2017. Intra-regional exports grew by 5.6% to USD 3.2 billion in 2018 from USD 2.9% in 2017 (EAC, 2018). Export competitiveness is construed as the ability of a country or firm to produce and sell goods and services in foreign markets at price and quality that ensure long-term viability and sustainability (Adriana, 2010; Gaglio, 2015). It is considered a key indicator of the success of firms through increased export of value-added goods and services (Atkinson, 2013). Nevertheless, developing countries are recording more import volumes than export volumes compared to developed countries (UNCTAD, 2020). For example, in 2019 developed countries exported goods amounting to US$10.5 trillion, and services worth US$4.1 trillion. Whereas developing countries exported up to US$8.5 trillion in goods and US$2 trillion in services (UNCTAD, 2020). The enormous variations in exports between developing and developed countries clearly show that the export competitiveness of developing countries is still low which leads to a negative balance of payments positions (Arvis et al., 2018). EAC Partner States have performed poorly on merchandise trade over the period 2009-2018, with each country posting a growing trade deficit. All other EAC countries trade deficit grew over the period with Rwanda's growing by an average 129%, Kenya 97%, Tanzania 33%, and Uganda 36%.(EAC, 2020). In addition, the EAC import share with itself has declined from 10% in 2000 to 7.5% in 2020 and exports have remained a constant at around 17% (Krantz, Sebastian, 2024). This implies that the comparative advantage of EAC partner states is low and it also produces the same products thereby restricting intra-EAC trade which reduces the sustainability of export competitiveness. Thus, a need for an improvement of the

revealed comparative advantage index to change the current export position in the EAC countries in increase the sustainability of export competitiveness.

2.0: THEORETICAL MOTIVATION.

Theoretically, we suggest that concentration on production of certain products may affect the level of export competitiveness due to the following reasons. First, specialization enables the country to produce at lower costs than other countries (Nadeau, and Casselman, 2008). Second, being known for certain products increases the countries recognition in the global marketplace (Paul, J., & Dhiman, 2021). Access to larger markets increases the market size of firms which results into increasing economies of scale and increased return to scale of firms thereby improving revealed comparative advantage index of participating firms and hence, export competitiveness of firms increases (UNCTAD ,2013). Ricardo (1817) modified the theory of absolute advantage with the introduction of the theory of comparative advantage to explain that potential gains from international trade were not purely based on absolute advantage (Sunanda, 2010). According to this theory, it is comparative differences in costs that determine trade relations between the two countries (Fletcher, 2011; Krugman & Obstfeld, 2003; Smit, 2010). Comparative advantage theory was considered both necessary and sufficient in bringing about gainful trade across nations based on complete specialization in a commodity in terms of man hours per unit of output (Sunanda, 2010). This theory shows that to maximize total output requires full employment of all resources, allocate the resources within countries according to the comparative advantage of that country and allow countries to trade freely to enable raise the welfare in both countries despite differences in productivity. Thus, comparative advantage becomes a cost-based notion of a county`s export based on fixed factors of production. Hence, the country may gain export competitiveness if it is able to export goods and services at a relatively cheaper price and grab a larger export market size (Siggel, 2007). The theory of comparative advantage explains why nations form various regional schemes to minimize distortions in trade flows. This is so because productive efficiency is enhanced if nations undertake economic production in areas where they have comparative advantage to others, hence rationalizing costs and prices which results into export competitiveness. In this study, the revealed comparative advantage index is considered as the possible explanation of export competitiveness as there is scant evidence as to whether there is a direct relationship between these indices and export competitiveness in EAC in liberalized international trade at large. Yet, revealed comparative advantage increases the efficiency, productivity and profitability that make firms enter new markets by increasing their competitiveness (Sachitra & Chong, 2015). Indeed, the growth and competitiveness of firms in economies are largely dependent on the application and implementation of science, technology and innovation activities that increase the comparative advantage of products exported by a country. This makes the exporting firms more competitive in the foreign markets by producing more sophisticated products that may not lose value so easily. Uyar & Oralhan (2017) indicate that innovation was more important for exporting nations than for importing nations leading to increased export competitiveness. However, Fassio (2018) argues that the foreign demand effect of exporting activities affects firms` strategies by increasing the potential output. The study argues that the technological learning effect has a positive effect on the introduction of brand-new product innovation while the demand effect of exporting activity induces innovation strategies directed towards efficiency since it is very sensitive to the increase of the volume sold.

A critical analysis of the existing studies on export competitiveness show no study linking the revealed comparative advantage to export competitiveness in a combination developing landlocked, and majorly agricultural countries like Uganda, Burundi, Rwanda and sea coast countries of Tanzania and Kenya of the EAC in a liberalized international trade. While most studies have examined the comparative advantage of individual EAC countries, they have not addressed the effect of the revealed comparative advantage on the export competitiveness in the community jointly. Mkenda, (2022) only explored how the revival of the Community impacted comparative advantage and intra-regional trade over time in the EAC. The study recommended further studies to explore other aspects of restoring intra-regional trade to post-Community levels through significant reductions in trade barriers. Thus, the current study examines the impact of the revealed comparative advantage on export competitiveness in EAC countries by addressing the following research question:

RQ: What is the influence of the revealed comparative advantage on export competitiveness?

The aforementioned research question was answered by using secondary data for a period from 2003 to 2022. The findings indicate that revealed comparative advantage is an influencer of export competitiveness in developing countries. The present study results are important in several ways. Firstly, the results inform policy on how the EAC can improve comparative advantage to increase productivity in terms of value creation and addition to increase the competitiveness of EAC exports. Secondary, the study contributes to the existing literature on export competitiveness by evaluating the contribution of revealed comparative advantage index which had remained an empirical question in most economies. The rest of this paper is organized

as follows. The next section is the literature review and hypotheses development. Next is the methodology section which is then followed by the results. The discussion section then follows and finally, a summary and conclusion are provided.

3: LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

A number of scholars, have found this theory relevant in explaining EC (Bhattacharyya (2020), Fink et al. (2005), Dhiman and Sharma (2017a, b, 2019); Hilland and Devadoss (2013), Fetscherin et al. (2012), Huang et al. (2008), Bernard et al. (2007a, b) and Hummels (2007). However, these studies have mainly been conducted at firm or country level. Also, most of the studies have been conducted in developed nations with already established comparative advantages. More still, these studies offer mixed and inclusive results as some of them show that comparative advantage positively influence EC while others found a negative relationship hence a need to further explore the usefulness and applicability of the comparative theory more so in a country without established comparative advantage of exports.

Both internal and external trade is viewed as a stimulus for economic growth whose policies are aimed at promoting exports among others (DENIVA, 2005). Trade influences a country`s growth rate by impacting upon the level of economic activities and facilitating the transmission of technology (Sunanda, 2010). Expanding international trade is an important avenue for growth in many developing countries (Brenton *et al*, 2009). Therefore participation in trade is a key indicator of a firm`s export competitiveness (Alon *et al.*, 2011).

Competitiveness is a diffuse concept with no one agreeable definition. Klaus, (2013) define competitiveness as the set of institutions, policies and factors that determine the level of productivity of an economy, which in turn sets the level of prosperity that the economy can achieve. Similarly, WEF (2014) suggests that competitiveness is a set of factors that include policies, institutions, strategies and processes that determine the level of sustainable productivity of a region, nation, industry or firm. They argue that competitiveness centers on productivity, which is the result of efficiency with which an economy uses available inputs to produce outputs. On the other hand, UNCTAD, (2005) argues that competitiveness is the ability of the firm to consistently and profitably deliver products and services which customers are willing to purchase in preference to those of competitors. Gaglio (2015) concludes that competitiveness is the ability to produce goods and services that meet the test of international competition while the citizens enjoy a standard of living that is both rising and sustainable. However, the meaning of competitiveness varies according to firm, industry, sector or country as the level of analysis of trade flow. Atkinson (2013) shows that export competitiveness is the ability of a firm or country to export more value-added terms than imports.

Hermiyanty & Wandira, (2012), conceived competitiveness as a field of economic theory which analyses the facts and policies that shape the ability of a nation to create and maintain an environment that sustains more value creation of its enterprises and more prosperity for its people. Hermiyanty & Wandira, (2012), further notes that competitiveness is thus the most powerful concept in modern economics thinking. Ketels, (2010), states that competitiveness is the level of productivity that companies can achieve in a location given the full breadth of conditions that can affect their activities. Ketels (2010) adds the export competitiveness is the ability of firms to sell domestically produced goods and services on global markets. Farole, Reis & Wagle (2010) add that competitiveness is normally achieved by entrepreneurs exploiting sources of comparative advantage that are unique to a location. Competitiveness implies the process of identifying the producer, competitiveness factors and circumstances which will lead to reaching the necessary level of export competitiveness (Raicevic, Ignatijevic & Matijasevic, 2012). Sargsyan (2018) indicates that competitiveness is an elusive concept and it refers to a country securing and maintaining a trade advantage over others in the world.

Porter, (2012) argues that a nation or region is competitive to the extent that firms operating there are able to compete successfully in the global economy while supporting rising wages and living standards for average citizens. Porter further argues that competitiveness depends on the long-term productivity with which a nation or region uses its human, capital and natural resources. However, Porter, (2012) contends that it is not what the industries compete in that matter but how productively a firm competes in those industries and therefore competitiveness is not a zero sum game. Neuman, (2012) argues that competitiveness is not an equilibrium concept but it represents a position at a point in time or it changes over time since adjustments on the product supply side is likely to be very slow. For instance, it takes a long time to acquire technical competence, establish production facilities and develop export market. Neuman, (2012) further states that export competitiveness refers to a period of disequilibrium when a firm can increase its share of the export market; therefore, it refers to dynamic perspectives.

Clipa (2011) posits that export competitiveness is based on a higher proportion on productivity, the quality or the innovative aspects and not the economic policies such as excessive subsidies for export and devaluation of national currency. This is in line with Porter, (1990) who argues that companies achieve competitive advantage through acts of innovation which could be manifested in a product design, a new production process, a new marketing approach or a new way of conducting training. Porter adds that companies gain advantage against the world`s best competitors because of pressure and challenge; they benefit from

having strong domestic rivals, aggressive home-based suppliers and demanding local customers. Cameron & Caldecott,(2011) add that the level of productivity determines the rate of the returns experienced by investments in the economy which in turn are fundamental drivers of its growth; hence a more competitive economy is one likely to grow faster.

However, Latruffe, (2010) argues that there is no agreement on the term competitiveness but it is the ability to sell products that meet demand requirements and at the same time ensure profits over time that enable the firm to survive, hence it is a relative measure. Atkinson, (2013) argues that the true definition of competitiveness is the ability of a region or firm to export more in value added terms than it imports. Hategа (2012) posits that the concept of competitiveness can be reported considering the level of discussion to a product, firm, Industry or sector, region, nation, commercial block or to a global aspect and there is a close connection or relationship between all these levels of competitiveness. UNCTAD, (2004) adds that since an enterprise does not produce in a vacuum, its competitiveness can only be measured within various types of market territories at the sub national, national and supra-national levels. The optimization of its capital resources (finance, technology, labor) commands its ability to penetrate each of these three market territories. USAID (2005) noted that to stay actively competitive in global markets, nations rapidly adopt technological improvements which improve rates of productivity and employment growth. For this study, Export Competitiveness will be defined as the ability of a firm to produce and sell goods and services in foreign markets at prices and quality that ensure long-term viability and sustainability (Adriana, 2010; Hausmann, 2007). Therefore, competitiveness at firm level means a firm being able to consistently and profitably supply a commodity or service which consumers are readily willing to buy in preference to the commodity or service provided by other firms in the same market (UNCTAD, 2005) .

Revealed comparative advantage may be defined as an index used in international economics for calculating the relative advantage or disadvantage of a certain country in certain goods or services as evidenced by trade flows. It is a concept of calculating the relative competitiveness of a certain country in certain class of goods and services. The underlying assumption is that trade flows can reveal comparative advantage. It is defined in terms of ratios of two shares. The numerator being the share of a country`s total export of a commodity of interest in its total exports and the denominator being the share of world export of the same commodity in total world export. It takes on a value between 0 and positive infinity and a country is said to have RCA when the value exceeds unity (Balassa & Noland, 1989). Miteva-Kacarski, (2018) indicates that the concept of Revealed comparative advantage refers to the ability of a country to produce some goods or services not only with higher productivity but also higher product differentiation than other countries in the same area.

According to Balassa (1965) revealed comparative advantage is a measure of a country`s export of a commodity relative to its total export and to the corresponding exports of all countries in the world. Utkulu & Seymen, (2004) posit that revealed indexes are employed as a measure of the relative ability of a country to produce a good compared to its trading partners. It is one of the measures of competitiveness and it has gained general acceptance in international trade literature. They add that revealed comparative advantage is a determinant of specialisation in international trade, which measures the efficiency of scarce resource and welfare. Therefore, a better understanding of how the RCA pertains to the actual world is very useful for identifying the consequences on economic welfare. Katunze & Kuteesa (2016) note that understanding the RCA enables policy makers to know the exporter of a given product and to which markets, which help make appropriate policies in regard to international trade in the economy. Utkulu & Seymen, (2004) further show that RCA helps to identify the overall direction and thrust in which a country`s investment strategy and trade should take in order to exploit differences in products. Balassa & Noland (1989) argue that comparative advantage could be revealed through examination of real-world commodity trade patterns because actual exchange reflects relative costs as well as differences in non-price factors.

However, Miteva-Kacarski, (2018) adds that exchange rates, trade barriers and economic shocks might introduce distortions which might affect the measures of comparative advantage. According to Balassa (1965) revealed comparative advantage is a measure of a country`s export of a commodity relative to its total export and to the corresponding exports of all countries in the world. Therefore, comparative advantage in revealed if the index is 1 to infinity. Utkulu & Seymen, (2004) posit that revealed indexes are employed as a measure of the relative ability of a country to produce a good compared to its trading partners. It is one of the measures of competitiveness and it has gained general acceptance in international trade literature. They add that revealed comparative advantage is a determinant of specialisation in international trade, which measures the efficiency of scarce resource and welfare. Therefore, a better understanding of how the RCA pertains to the actual world is very useful for identifying the consequences on economic welfare. Katunze & Kuteesa (2016) note that understanding the RCA enables policy makers to know the exporter of a given product and to which markets, which help make appropriate policies in regard to international trade in the economy. Utkulu & Seymen, (2004) further show that RCA helps to identify the overall direction and thrust in which a country`s investment strategy and trade should take in order to exploit differences in products. Balassa & Noland (1989) argue that comparative advantage could be revealed through examination of real-world commodity trade patterns because actual exchange reflects relative costs as well as differences in non-price factors.

Jagdambe, (2019) argues that recently, the reduction in trade barriers and transport costs have increased the growth in the international trade. This reduction has a positive effect on the comparative advantage of a country, creating more competitive pressures, transfer of factors of production, resulting in productivity and welfare gains from trade. A country`s comparative advantage may be influenced by differential changes in accumulation of factors of production and increased trade integration. Jagdambe (2019) further says that economic conditions which vary across countries, determine international patterns of comparative advantage, which relies of the pattern of international trade, production and consumption. Beyene (2017) argues that the patterns of commodity exports reflect the price and non-price factors that determine the structure of export of a country. He further explains that if the net export of a particular commodity in a product group is large, then there is RCA in the export of that commodity in the world.

Latruffe, (2010) indicates that comparing sectors or firms within an economy allows a considerable exploitation of factors that may not be visible at the aggregate level, as the competitiveness of nations depends on the capacity for innovation and capabilities of the industries. Sachitra & Chong, (2015) add that when considering competitiveness, it is important to focus on specific sectors or industries which can be measured by the RCA index. The RCA index can be used to distinguish between the concepts of comparative and competitive advantage based on cost comparisons of market prices. Siggel, (2007) shows that when costs are measured in terms of market prices, it explains competitive advantage and when measure in terms of equilibrium prices, it explains comparative advantage. RCA index is the most widely used indicator of competitiveness of export sectors and industries in an economy.

4. METHODOLOGY

4.1 Research design and data source

This study used secondary panel data for indicators of competitiveness for a period from 2003 to 2022 because there is already an existing body of data on the variables under study. Specifically, the researcher obtained the data for the EAC exports from the World Bank International Trade Centre (ITC). The study focused on export competitiveness since exports provide a link between the internal and external performance of a country. The exports help to determine the ability of firms established in a country. In addition, the study based on the top ten exports for each country. The study was descriptive mainly focusing on the quantitative aspect of the study that involved obtaining information and making statistical explanations about the situation that exists (Kumar, 2014). The researcher also computed the major trade outcome indicator of competitiveness; the Revealed Comparative Advantage Index, to review the country level performance of exports which gives a fairly comprehensive picture of export competitiveness of firms in the region.

4.2 Analysis

The study adopted Balassa's measure of Revealed Comparative Advantage to determine the competitiveness of selected products of EAC in foreign export markets. This is based on the following model of Revealed comparative advantage index

$RCA1_{ij} = (X_{ij}/X_i) / (X_{wj}/X_w)$ …… **(1)**

Where,

RCA1ij = Revealed comparative advantage Index for country *i* in product *j*.

Xij = value of country *i*'s export of product *j*;

X*i* = value of country *i*'s total exports;

Xwj = value of world export of product *j*;

Xw = value of world total exports;

The RCA Index ranges between 0 and infinity and where it is greater than 1, it implies that the country has a comparative advantage and hence competitive in that commodity or sector. Various definitions of the product can be used to compute the value of the index. For purposes of this study the Standard International Trade Classification (SITC) was used because it allows products to be defined at various levels of aggregation. The analysis spans a ten-year period from 2003 to 2022 and the data were obtained from World Bank International Trade Center (ITC) trade data base. The study used Balassa's measure of Revealed Comparative Advantage to determine the export competitiveness of selected products of EAC in foreign export markets. However, the RCA has a difficulty in that much as the upper bound is stable across countries; it varies across sectors and time. It is asymmetric, meaning that it has no limited upper bound for products with RCA but lower bound at 0 for those that do not have the RCA. This implies that the mean value of a country`s RCA is the same, which means that the same RCA will signify different levels of RCA for different products or countries. This makes it not suitable for comparison across sectors and time. For this reason, we had to normalize the index using a more suitable alternative version, which is an approximation of the log transformation of the RCA index. This was based on the following model

$RCA = (RCA - 1) / (RCA + 1)$ …… (2)

This ranges between -1 and 1 where an index less than 0 means revealed comparative disadvantage and an index greater than 0 means revealed comparative advantage. The normalization means that the index is suitable for cross country, cross sector and cross time comparison. The RCA is useful in identifying in which industries or sectors a country has a comparative advantage and in which industries or sectors the comparative advantage is increasing or declining. It is also helpful to know in which export industries or sectors the country appears to be competitive.

4.3 Measurement of variables

Competitiveness is a broad concept and there is no agreement on how to measure it precisely (Latruffe, 2010). However, export competitiveness was mainly measured using adapted measurement dimensions, items and scales in line with this dependent variable's components as reflected in the conceptual framework used in other studies (Utkulu & Seymen, 2004). The revealed comparative advantage index (RCAI) based on Balassa (1965) was used to measure the relative ability of a country to produce a good compared to its trading partner. This was to capture the level of specialization in international trade (Utkulu & Seymen, 2004). Intra-industry trade was measured based on the Grubel-Lloyd index to evaluate the simultaneous import and export of products of the same industry in line (Ruffin, 2015). Trade concentration was measured based on the Hirschmann-Herfindahl index to assess the degree of concentration or diversification of a country`s export as applied by (Makonnen, 2012).

5.0 RESULTS

Revealed Comparative Advantage Index for Uganda

The results in table 4.1 indicate that, Uganda gained comparative advantage in the production and trade of Dairy produce; birds' eggs; natural honey; edible products of animal origin, not elsewhere; in 2010 with the highest value in 2022. Uganda has a comparative advantage in the production and trade of Coffee, tea, maté and spices throughout the period of study with most of the values very closer to 1. The data indicates that Uganda has comparative advantage in the production and trade of cereals apart from the three years of 2004, 2005& 2022 which indicate a comparative disadvantage. There is comparative advantage in the production and trade in Beverages, spirits and vinegar in Uganda, this was gained in 2005. In 2003& 2004, Uganda had a revealed comparative disadvantage in the production and trade in Beverages, spirits and vinegar.

Uganda has a revealed comparative disadvantage in the production and trade in Ores, slag and ash in 18years of the study and a revealed comparative advantage in Ores, slag and ash in two years i.e. 2005&2006. The table indicates that Uganda has a revealed comparative disadvantage in the production and trade in pharmaceutical products, Plastics and articles thereof, Paper and paperboard; articles of paper pulp, of paper or of paperboard, Articles of apparel and clothing accessories, knitted or crocheted, Footwear, gaiters and the like; parts of such articles and Ceramic products but indicates a revealed comparative advantage in 2006 for all these products and 2015 in production and trade in Paper and paperboard; articles of paper pulp, of paper or of paperboard. The table shows a change from revealed comparative advantage to revealed comparative disadvantage and vis versa in the production and trade in Natural or cultured pearls, precious or semi-precious stones, precious metals, metals clad, at the beginning of the study period in 2003, Uganda had a revealed comparative advantage but was lost in 2004 and 2005 then later gained in 2006 and lost in 2008 to 2015 and finally gained in 2016 to 2022. The table also indicates that Uganda has a revealed comparative advantage in the production and trade in Articles of iron or steel in only 8 years out of 20years of the study and a revealed comparative disadvantage in 12years out of 20years of the study. Uganda has a revealed comparative disadvantage in the production and trade in Vehicles other than railway or tramway rolling stock, and parts and accessories thereof and Furniture; bedding, mattresses, mattress supports, cushions and similar stuffed furnishings; but the table also indicates a revealed comparative advantage in both commodities for the year 2006.

Table 5.1 RCA for Uganda

code	Item	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
04	Dairy produce; birds' eggs; natural honey; edible	-0.53	-1.00	0.53	-0.85	-0.81	-0.22	-0.05	0.37	0.28	0.33	0.36	0.43	0.59	0.66	0.70	0.67	0.61	0.56	0.66

	products of animal origin, not elsewhere ...																		
'09	Coffee, tea, maté and spices	0.99	0.29	3.37	0.99	0.98	0.98	0.98	0.98	0.98	0.97	0.98	0.98	0.97	0.97	0.97	0.97	0.96	0.96	0.97
'10	Cereals	0.54	-0.90	-0.60	0.69	0.48	0.32	0.56	0.69	0.47	0.70	0.71	0.74	0.82	0.81	0.83	0.83	0.70	0.57	0.31
'22	Beverages, spirits and vinegar	-0.15	-0.98	0.15	0.35	0.60	0.69	0.62	0.56	0.47	0.62	0.61	0.53	0.38	0.28	0.26	0.36	0.38	0.44	0.59
'26	Ores, slag and ash	-0.93	-1.00	0.93	0.41	0.21	0.14	-0.09	-0.57	-0.92	-0.87	-0.84	-0.70	-0.80	-0.83	-0.87	-0.86	-0.90	-0.98	-0.67
'30	Pharmaceutical products	-0.65	-1.00	0.65	-0.88	-0.85	-0.82	-0.86	-0.83	-0.87	-0.74	-0.71	-0.73	-0.69	-0.51	-0.71	-0.61	-0.79	-0.70	-0.59
'39	Plastics and articles thereof	-0.84	-0.99	0.85	-0.73	-0.67	-0.58	-0.61	-0.63	-0.53	-0.43	-0.37	-0.33	-0.38	-0.59	-0.60	-0.53	-0.56	-0.67	-0.49
'48	Paper and paperboard; articles of paper pulp, of paper or of paperboard	-0.71	-0.99	0.72	-0.70	-0.54	-0.51	-0.41	-0.26	-0.25	-0.12	-0.08	0.00	0.11	-0.16	-0.20	-0.14	-0.25	-0.38	-0.20
'61	Articles of apparel and clothing accessories, knitted or crocheted	-0.67	-1.00	0.67	-0.86	-0.81	-0.96	-0.94	-0.83	-0.90	-0.96	-0.98	-0.96	-0.86	-0.87	-0.84	-0.87	-0.92	-0.96	-0.96
'64	Footwear, gaiters and the	-0.95	-1.00	0.95	-0.88	-0.35	-0.54	0.25	-0.27	-0.48	-0.54	-0.50	-0.45	-0.69	-0.73	-0.78	-0.70	-0.73	-0.81	-0.46

	like; parts of such articles																		
'69	Ceramic products	-0.98	-1.00	0.98	-0.90	-0.10	-0.77	-0.83	-0.63	-0.67	-0.65	-0.68	-0.62	-0.82	-0.52	-0.80	-0.51	-0.28	-0.10	0.15
'71	Natural or cultured pearls, precious or semi-precious stones, precious metals, metals clad ...	0.50	-0.90	-0.56	0.71	0.37	-0.01	-0.55	-0.21	-0.82	-0.82	-0.94	-0.98	-0.42	0.54	0.59	0.67	0.82	0.83	0.74
'73	Articles of iron or steel	-0.21	-0.98	0.21	-0.20	0.07	0.13	0.09	0.08	0.06	0.09	0.02	-0.06	-0.16	-0.24	-0.26	-0.16	-0.29	-0.37	-0.16
'87	Vehicles other than railway or tramway rolling stock, and parts and accessories thereof	-0.77	-1.00	0.77	-0.60	-0.51	-0.50	-0.33	-0.36	-0.41	-0.33	-0.40	-0.56	-0.58	-0.65	-0.75	-0.73	-0.71	-0.71	-0.60
'94	Furniture; bedding, mattresses, mattress supports, cushions and similar stuffed furnishings; ...	-0.87	-0.99	0.87	-0.43	-0.40	-0.40	-0.48	-0.16	-0.40	-0.43	-0.40	-0.56	-0.51	-0.52	-0.50	-0.60	-0.77	-0.75	-0.62

Revealed Comparative Advantage Index for Kenya

Table 4.2 shows comparative dis advantage in the production and trade of Dairy produce; birds' eggs; natural honey; edible products of animal origin, not elsewhere; for most the years but it gained comparative advantage in 2015 and 2016. Kenya also

has a comparative advantage in the production and trade of Coffee, tea, maté and spices in most of the years but with positive values not greater than 0.05 and a revealed comparative advantage in some years i.e. 2003, 3004, 2020 and 2021.

The data indicates that Kenya has a revealed comparative disadvantage in the production and trade of cereals but with positive values closer to zero.

There is revealed comparative disadvantage in the production and trade in Beverages, spirits and vinegar, Ores, slag and ash ,Footwear, gaiters and the like; parts of such articles , Ceramic products Natural or cultured pearls, precious or semi-precious stones, precious metals, metals clad ,Articles of iron or steel, Vehicles other than railway or tramway rolling stock, and parts and accessories thereof and Furniture; bedding, mattresses, mattress supports, cushions and similar stuffed furnishings; in Kenya throughout the period of study.

The table indicates that Kenya has a revealed comparative advantage in the production and trade in pharmaceutical products with a very high value of 0.09 in 2008, the table also shows that Kenya has a comparative disadvantage in 2003, 2004 and 2005.

Kenya gained comparative advantage in Plastics and articles thereof, in 2005 but fluctuating with most of the values lower than 0.05, Kenya gained comparative advantage in production and trade Paper and paperboard; articles of paper pulp, of paper or of paperboard in 2005 to 2015 and lost in 2016 till 2022.

Table 5.2 RCA for Kenya

Product code	Product label	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
'04	Dairy produce; birds' eggs; natural honey; edible products of animal origin, not elsewhere ...	-1.00	-0.99	-0.36	-0.46	-0.18	-0.51	-0.50	-0.05	-1.27	-0.32	-0.09	-0.09	0.03	-0.07	0.00	-0.03	-0.06	0.02	-0.12	-0.63
'09	Coffee, tea, maté and spices	-1.00	-0.99	-0.33	0.18	0.32	0.32	0.41	0.41	0.55	0.44	0.46	0.46	0.41	0.28	0.16	0.14	0.05	-0.09	-0.03	0.10
'10	Cereals	-1.00	-1.00	-1.00	-0.96	-0.98	-0.95	-0.94	-0.92	-6.35	-0.81	-0.90	-0.90	0.37	0.44	0.46	0.52	0.45	0.41	0.38	0.55
'22	Beverages, spirits and vinegar	-0.99	-0.99	-0.37	-0.32	-0.18	-0.21	-0.37	-0.34	-0.78	-0.06	-0.11	-0.11	-0.19	-0.12	-0.16	-0.17	-0.25	-0.29	-0.29	-0.26

'26	Ores, slag and ash	-0.98	-0.99	-0.18	-0.08	-0.12	-0.04	-0.10	-0.09	-0.08	-0.01	-0.02	-0.02	-0.10	-0.17	-0.20	-0.27	-0.28	-0.28	-0.28	-0.24	
'30	Pharmaceutical products	-0.98	-0.97	-0.08	0.03	0.07	0.09	0.02	0.04	0.16	0.13	0.15	0.15	0.01	0.02	0.03	0.09	0.13	0.05	0.04	0.14	
'39	Plastics and articles thereof	-1.00	-1.00	0.09	0.16	0.19	0.27	0.22	0.31	0.56	0.28	0.33	0.33	0.14	0.11	0.26	0.24	0.19	0.19	0.31	0.32	
'48	Paper and paperboard; articles of paper pulp, of paper or of paperboard	-0.98	-0.97	0.09	0.19	0.30	0.15	0.08	0.11	0.12	0.13	0.09	0.09	-0.11	-0.15	-0.18	-0.14	-0.10	-0.05	-0.15	-0.39	
'61	Articles of apparel and clothing accessories, knitted or crocheted	-1.00		-0.99		-0.50	-0.43	-0.37	-0.51	-0.50	-0.52	-2.19	-0.49	-0.49	-0.49	-0.69	-0.66	-0.49	-0.43	-0.26	-0.33	-0.25	0.05
'64	Footwear, gaiters and the like; parts of such articles	-1.00		-1.00		-0.72	-0.74	-0.21	-0.81	-0.61	-0.12	-1.85	-0.21	-0.49	-0.49	-0.88	-0.88	-0.84	-0.84	-0.78	-0.88	-0.82	-0.73
'69	Ceramic products	-0.99		-0.99		-0.32	-0.16	-0.18	-0.20	-0.21	-0.18	-0.28	-0.11	-0.12	-0.12	-0.27	-0.25	-0.35	-0.37	-0.35	-0.	-0.	-0.

																			38	29	05
'71	Natural or cultured pearls, precious or semi-precious stones, precious metals, metals clad ...	-1.00	-1.00	-0.76	-0.72	-0.73	-0.72	-0.56	-0.66	-3.48	-0.69	-0.63	-0.63	-0.75	-0.73	-0.79	-0.70	-0.69	-0.82	-0.74	-0.69
'73	Articles of iron or steel	-1.00	-0.99	-0.45	-0.28	-0.38	-0.45	-0.32	-0.24	-0.99	-0.26	-0.32	-0.32	-0.44	-0.44	-0.48	-0.51	-0.42	-0.60	-0.59	-0.52
'87	Vehicles other than railway or tramway rolling stock, and parts and accessories thereof	-1.00	-1.00	-0.76	-0.72	-0.73	-0.72	-0.56	-0.66	-3.48	-0.69	-0.63	-0.63	-0.75	-0.73	-0.79	-0.70	-0.69	-0.82	-0.74	-0.69
'94	Furniture; bedding, mattresses, mattress supports, cushions and similar stuffed	-1.00	-0.99	-0.45	-0.28	-0.38	-0.45	-0.32	-0.24	-0.99	-0.26	-0.32	-0.32	-0.44	-0.44	-0.48	-0.51	-0.42	-0.60	-0.59	-0.52

	furnishings; ...																				

Revealed Comparative Advantage Index for Tanzania

Table 4.3 shows that there is revealed comparative advantage in the production and trade of Coffee, tea, maté and spices in Tanzania throughout the period of study. The results table also shows that there is revealed comparative disadvantage in the production and trade in Dairy produce; birds' eggs; natural honey; edible products of animal origin, not elsewhere, Pharmaceutical products, Plastics and articles thereof, Articles of apparel and clothing accessories, knitted or crocheted, Footwear, gaiters and the like; parts of such articles, Articles of iron or steel, and Vehicles other than railway or tramway rolling stock, and parts and accessories thereof and Furniture; bedding, mattresses, mattress supports, cushions and similar stuffed furnishings; in Tanzania throughout the period of study. Tanzania registered revealed comparative advantage in the production and trade in cereals in most of the years of the study but in some years such as 2004, 2009,2011,2015,2016 and 2017, the results indicated revealed comparative disadvantage in the production and trade in cereals. Production and trade in beverages, spirits and vinegar indicated a revealed comparative disadvantage with again in comparative advantage in 2019 and 2022 but with RCA values closer to zero. The results for Ores, slag and ash in Tanzania fluctuate but show a revealed comparative advantage with revealed comparative disadvantage in 2004, 2008 to 2019.

Paper and paperboard; articles of paper pulp, of paper or of paperboard indicated a revealed comparative disadvantage. However, there was gain comparative advantage in some years for example 2010, 2013, 2017 to 2019, 2021 to 2022.Production and trade in Ceramic products indicated a revealed comparative disadvantage with again in comparative advantage in 2015 and 2018 to 2022 but with RCA values closer less than 0.5. Tanzania registered revealed comparative advantage in the production and trade in Natural or cultured pearls, precious or semi-precious stones, precious metals, metals clad, in 19 years of the study though it also registered a loss in comparative advantage in just one year (2004).

Table 5.3 RCA for Tanzania

CODE	ITEM	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
'04	Dairy produce; birds' eggs; natural honey; edible products of animal origin, not elsewhere ...	-0.65	-1.00	-0.79	-0.81	-0.87	-0.67	-0.87	-0.89	-0.80	-0.89	-0.94	-0.96	-0.91	-0.98	-0.96	-0.94	-0.87	-0.84	-0.86	-0.89
'09	Coffee, tea, maté and spices	0.95	-0.39	0.95	0.94	0.95	0.92	0.93	0.89	0.89	0.90	0.92	0.87	0.86	0.88	0.88	0.90	0.88	0.84	0.88	0.87
'10	Cereals	0.55	-0.86	0.67	0.68	0.62	0.01	-0.56	0.18	-0.03	0.39	0.17	0.60	-0.09	-0.06	-0.56	0.44	0.46	0.62	0.80	0.71
'22	Beverages, spirits and vinegar	-0.53	-0.99	-0.38	-0.33	-0.36	-0.30	-0.37	-0.34	-0.57	-0.36	-0.21	-0.31	-0.50	-0.33	-0.18	-0.10	0.00	-0.06	0.15	0.38
'26	Ores, slag and ash	0.86	-0.70	0.80	0.84	0.83	0.85	0.89	0.88	0.88	0.85	0.75	0.82	0.79	0.77	0.16	-0.98	-0.98	0.61	0.09	0.43
'30	Pharmaceutical products	-0.91	-1.00	-0.93	-0.95	-0.93	-0.91	-0.85	-0.95	-0.95	-0.96	-0.96	-0.98	-0.99	-0.98	-0.98	-0.96	-0.95	-0.93	-0.97	-0.98
'39	Plastics and articles thereof	-0.87	-1.00	-0.63	-0.16	-0.21	-0.44	-0.57	-0.21	-0.36	-0.57	-0.44	-0.67	-0.72	-0.58	-0.66	-0.56	-0.70	-0.76	-0.57	-0.68

'48	Paper and paperboard; articles of paper pulp, of paper or of paperboard	-0.96	-1.00	-0.73	-0.47	-0.35	-0.14	-0.21	0.21	-0.16	-0.22	0.07	-0.17	-0.17	-0.01	0.05	0.17	0.08	-0.20	0.09	0.01
'61	Articles of apparel and clothing accessories, knitted or crocheted	-0.52	-0.99	-0.61	-0.82	-0.69	-0.71	-0.69	-0.69	-0.70	-0.71	-0.55	-0.54	-0.63	-0.59	-0.50	-0.41	-0.48	-0.70	-0.68	-0.50
'64	Footwear, gaiters and the like; parts of such articles	-0.69	-0.99	-0.57	-0.41	-0.47	-0.75	-0.63	-0.69	-0.87	-0.85	-0.85	-0.55	-0.58	-0.99	-0.98	-0.96	-0.91	-0.82	-0.67	-0.82
'69	Ceramic products	-0.89	-1.00	-0.90	-0.91	-0.51	-0.73	-0.86	-0.15	-0.65	0.00	-0.90	-0.30	0.10	-0.32	-0.12	0.40	0.20	0.25	0.38	0.40
'71	Natural or cultured pearls, precious or semi-precious stones, precious metals, metals clad ...	0.91	-0.63	0.88	0.88	0.85	0.82	0.81	0.79	0.83	0.78	0.77	0.72	0.73	0.79	0.83	0.85	0.86	0.85	0.85	0.85
'73	Articles of iron or steel	-0.94	-1.00	-0.67	-0.83	-0.68	-0.69	-0.67	-0.39	-0.57	-0.58	-0.51	-0.80	-0.64	-0.36	-0.66	-0.40	-0.69	-0.63	-0.57	-0.55
'87	Vehicles other than railway or tramway rolling stock, and parts and accessories thereof	-1.00	-1.00	-0.88	-0.83	-0.82	-0.91	-0.86	-0.85	-0.90	-0.93	-0.82	-0.90	-0.96	-0.97	-0.86	-0.81	-0.80	-0.87	-0.83	-0.84
'94	Furniture; bedding, mattresses, mattress supports, cushions and similar stuffed furnishings; ...	-0.95	-1.00	-0.92	-0.84	-0.79	-0.12	-0.86	-0.30	-0.72	-0.70	-0.81	-0.32	-0.40	0.12	-0.91	-0.85	-0.92	-0.94	-0.91	-0.90

Revealed Comparative Advantage Index for Rwanda

The results from table shows that Rwanda has Revealed comparative advantage over the period of study in Coffee, tea, maté and spices fluctuating between 1 and 0.58 and Ores, slag and ash which were fluctuating over the years, registering a revealed comparative disadvantage in 2004.The results table also shows that there is revealed comparative disadvantage in the production and trade in pharmaceutical products, Plastics and articles thereof, Paper and paperboard; articles of paper pulp, of paper or of paperboard, and Articles of apparel and clothing accessories, knitted or crocheted in Rwanda throughout the period of study. The results table ,shows comparative dis advantage in the production and trade of Dairy produce; birds' eggs; natural honey; edible products of animal origin, not elsewhere ... for most the years but it gained comparative advantage in 2014 -16 and 2018 .Production and trade in Cereals indicated a revealed comparative disadvantage with again in comparative advantage from 2013 to 2021 . Rwanda registered revealed comparative disadvantage in the production and trade in Beverages, spirits and vinegar in 12 years of the study though it also registered a gain in comparative advantage in 8years of the study. Production and trade in Footwear, gaiters and the like; parts of such articles, Ceramic products, Articles of iron or steel, Vehicles other than railway or tramway rolling stock, and parts and accessories thereof and indicated revealed comparative disadvantage with an improvement in 2010 ,2014, 2013 ,2009 and 2015 respectively but with RCA value less than 0.5. The study results indicate again revealed comparative advantage in the production and trade in Furniture; bedding, mattresses, mattress supports, cushions and similar stuffed furnishings; from 2015 to 2022.

Table 5.4 RCA for Rwanda

CODE	ITEM	2003	2004	2005	2006	**2007**	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
'04	Dairy produce; birds' eggs; natural honey; edible products of animal origin, not elsewhere ...	-0.2755	-0.9900	-0.2229	-1.1011	-0.9336	-0.9933	-0.9997	-0.9688	-0.8489	-0.8666	-0.1866	0.0422	0.2111	0.0488	-0.0955	0.1455	-0.2388	-0.2223	-0.0233	-0.1666
'09	Coffee, tea, maté and spices	0.9933	0.5777	0.9911	1.0044	0.9889	0.9911	0.9888	0.9887	0.9883	0.9887	0.9744	0.9733	0.9633	0.9577	0.9644	0.9700	0.9644	0.9553	0.9588	0.9866

'10	Cereals	0.044	-1.000	-0.872	-0.614	-0.010	-0.832	-0.504	-0.609	-0.757	-0.155	0.572	0.588	0.698	0.773	0.701	0.694	0.658	0.557	0.545	-0.886
'22	Beverages, spirits and vinegar	-0.988	-0.985	-0.481	-0.122	0.108	0.865	0.254	0.433	0.448	-0.382	0.747	-0.073	-0.066	0.026	-0.038	0.027	-0.095	-0.286	-0.050	-0.898
'26	Ores, slag and ash	0.965	-0.129	0.966	1.025	0.962	0.949	0.929	0.939	0.933	0.931	0.930	0.929	0.915	0.883	0.840	0.855	0.754	0.565	0.685	-1.000
'30	Pharmaceutical products	-0.899	-1.000	-0.916	-0.069	-0.855	-0.936	-0.966	-0.938	-0.742	-0.932	-0.967	-0.986	-0.971	-0.974	-0.966	-0.987	-0.979	-0.976	-0.987	-0.991
'39	Plastics and articles thereof	-0.969	-1.000	-0.940	-0.063	-0.815	-0.781	-0.847	-0.779	-0.762	-0.642	-0.642	-0.790	-0.848	-0.859	-0.870	-0.825	-0.828	-0.762	-0.425	-0.857
'48	Paper and paperboard; articles of paper pulp, of paper or of paperboard	-0.966	-0.999	-0.977	-0.062	-0.958	-0.981	-0.956	-0.257	-0.974	-0.860	-0.555	-0.454	-0.465	-0.185	-0.383	-0.363	-0.268	-0.382	-0.328	-0.778
'61	Articles of apparel and clothing	-1.000	-1.000	-0.983	-0.005	-0.984	-0.991	-0.999	-0.974	-0.993	-1.000	-0.991	-0.947	-0.807	-0.767	-0.731	-0.610	-0.730	-0.691	-0.837	-0.880

	accessories, knitted or crocheted																				
'64	Footwear, gaiters and the like; parts of such articles	-0.784	-1.000	-0.973	-0.077	-0.262	-0.389	-0.072	0.035	-0.167	-0.684	-0.473	-0.633	-0.453	-0.091	-0.405	-0.378	-0.271	-0.060	0.025	-0.546
'69	Ceramic products	-1.000	-1.000	-0.986	-0.025	-0.969	-0.929	-0.775	-0.703	-0.370	-0.866	-0.853	0.261	-0.854	0.177	-0.682	-0.275	-0.354	-0.307	-0.199	-0.860
'71	Natural or cultured pearls, precious or semi-precious stones, precious metals, metals clad ...	-1.000	-1.000	-0.995	-0.243	-0.923	-0.652	-0.756	-0.952	-0.999	-1.000	-0.997	-0.496	0.174	0.556	0.745	0.703	0.777	0.838	0.716	0.799
'73	Articles of iron or steel	-0.812	-0.998	-0.832	-0.058	-0.419	-0.950	-0.570	-0.766	-0.680	-0.804	0.237	-0.925	-0.896	-0.800	-0.921	-0.759	-0.700	-0.614	-0.410	-0.828

'87	Vehicles other than railway or tramway rolling stock, and parts and accessories thereof	-0.513	-0.996	-0.458	-0.624	-0.398	-0.740	0.154	-0.611	-0.174	-0.276	-0.547	-0.644	-0.433	-0.736	-0.666	-0.719	-0.688	-0.822	-0.830	-0.674
'94	Furniture; bedding, mattresses, mattress supports, cushions and similar stuffed furnishings; ...	-0.915	-0.999	-0.895	-0.013	-0.955	-0.827	-0.467	-0.797	-0.771	-0.672	-0.382	-0.468	0.248	-0.505	-0.573	-0.456	-0.417	-0.642	-0.500	-0.537

Revealed Comparative Advantage Index for Burundi

The results from the table show that Burundi has Revealed comparative advantage over the period of study in Coffee, tea, maté although in 2016 it declined and indicated a loss in revealed comparative advantage. The results table also shows that there is revealed comparative disadvantage in the production and trade in Cereals, Pharmaceutical products, Paper and paperboard; articles of paper pulp, of paper or of paperboard, Articles of apparel and clothing accessories, knitted or crocheted, Footwear, gaiters and the like; parts of such articles, Ceramic products and Articles of iron or steel in Burundi throughout the period of study. Burundi registered revealed comparative advantage in the production and trade in Beverages, spirits and vinegar in 16 years of the study though it also registered a loss in comparative advantage in 4 years of the study (2004, 2006, 2007 and 2015). There is comparative disadvantage in the production and trade Plastics and articles thereof for most the years but there is an improvement which indicated comparative advantage in 2014 in Burundi. The results from the table show that Burundi has Revealed

comparative advantage over the period of study in Natural or cultured pearls, precious or semi-precious stones, precious metals, metals clad, although in 2004 and 2021 it declined and indicated a loss in revealed comparative advantage.

Production and trade Vehicles other than railway or tramway rolling stock, and parts and accessories thereof and Furniture; bedding, mattresses, mattress supports, cushions and similar stuffed furnishings; for most the years but there is an improvement which indicated comparative advantage in 2006 &2009 and 2006&2007 in Burundi.

Table 5.5 RCA for Burundi

'TOTAL	All products	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
'04	Dairy produce; birds' eggs; natural honey; edible products of animal origin, not elsewhere ...	-0.684	-0.988	-0.732	-0.989	-0.788	-0.682	-1.000	-0.982	-0.975	-0.998	-0.953	-0.950	0.137	-1.000	-0.997	-0.871	-0.879	-0.938	0.027	-0.982
'09	Coffee, tea, maté and spices	0.991	0.438	0.991	0.979	0.987	0.987	0.988	0.993	0.987	0.984	0.977	0.989	-0.977	0.987	0.986	0.986	0.984	0.982	0.988	0.985
'10	Cereals	-1.000	-0.997	-1.000	-0.945	-0.156	-0.464	-0.638	-0.463	-0.706	-0.996	-0.999	-0.668	-0.912	-0.995	-1.000	-0.682	-0.989	-0.995	-0.995	-0.996
'22	Beverages, spirits and vinegar	0.441	-0.911	0.331	-0.375	-0.035	0.388	0.335	0.471	0.339	0.341	0.398	0.740	-0.764	0.746	0.751	0.639	0.556	0.784	0.821	0.794
'26	Ores, slag and ash	0.166	-0.973	0.114	0.216	0.159	0.611	0.302	0.386	0.579	0.699	0.421	0.127	-1.000	0.499	0.654	0.754	0.704	0.586	0.779	0.154
'30	Pharmaceutical products	-0.871	-0.999	-0.929	-0.962	-0.789	-0.961	-0.962	-0.937	-0.955	-0.945	-0.998	-0.996	-0.917	-0.714	-0.996	-1.000	-0.949	-1.000	-1.000	-0.999
'39	Plastics and articles thereof	-0.883	-0.999	-0.881	-0.999	-0.941	-0.771	-0.838	-0.937	-0.893	-0.480	-0.958	0.136	-0.777	-0.125	-0.180	-0.623	-0.848	-0.291	-0.046	-0.178
'48	Paper and paperboard; articles of paper pulp, of	-0.994	-1.000	-0.974	-0.848	-0.711	-0.640	-0.782	-0.589	-0.712	-0.824	-0.863	-0.829	-0.960	-0.929	-0.983	-0.953	-0.970	-0.993	-0.983	-0.989

	paper or of paperboard																				
'61	Articles of apparel and clothing accessories, knitted or crocheted	-0.987	-1.000	-0.999	-0.985	-0.997	-1.000	-0.993	-0.972	-1.000	-0.999	-1.000	-0.946	-0.987	-0.998	-0.995	-0.997	-0.973	-0.992	-0.994	-0.977
'64	Footwear, gaiters and the like; parts of such articles	-0.979	-1.000	-0.997	-0.999	-0.987	-0.998	-0.995	-0.881	-1.000	-0.995	-0.999	-0.998	-0.981	-0.998	-0.983	-0.985	-0.994	-0.995	-0.985	-0.982
'69	Ceramic products	-0.297	-0.998	-0.892	-0.749	-0.908	-0.979	-0.908	-0.987	-0.892	-1.000	-1.000	-0.847	-0.981	-0.923	-0.850	-0.876	-0.801	-0.873	-0.819	-0.869
'71	Natural or cultured pearls, precious or semi-precious stones, precious metals, metals clad ...	0.920	-0.539	0.913	0.888	0.872	0.886	0.794	0.581	0.788	0.821	0.850	0.637	-0.234	0.502	0.736	0.807	0.829	0.747	-0.995	0.771
'73	Articles of iron or steel	-1.000	-0.999	-0.895	-0.948	-0.502	-0.996	-0.999	-0.861	-0.692	-0.640	-0.746	-0.652	-0.360	-0.753	-0.802	-0.874	-0.889	-0.845	-0.369	-0.876
'87	Vehicles other than railway or tramway rolling stock, and parts and	-0.770	-0.999	-0.652	0.395	-0.027	-0.152	0.110	-0.682	-0.548	-0.472	-0.924	-0.562	-0.812	-0.532	-0.858	-0.822	-0.681	-0.837	-0.760	-0.733

	accessories thereof																				
'94	Furniture; bedding, mattresses, mattress supports, cushions and similar stuffed furnishings; ...	-0.936	-1.000	-0.957	0.168	0.476	-0.964	-0.828	-0.929	-0.960	-0.969	-0.913	-0.774	-0.684	-0.788	-0.849	-0.908	-0.889	-0.293	-0.253	-0.451

Generally, all East African countries have a revealed comparative advantage in natural resource and primary products though the composition is changing. This is because all the EAC countries are agrarian economies where production processes and activities are dependent on the country`s natural endowments for trade and subsistence. In addition, the region possesses significant amounts of extractive resources such as oil, gas, high value minerals and abundant renewable energy.

6. DISCUSSION

The study findings revealed that all East African Countries have a revealed comparative advantage (RCA) in Coffee, tea, maté and spices and the trend show that it has been consistently high in all countries. This indicates that EAC countries have a high level of competitiveness in the export of Coffee, tea, maté and spices than other products. This sector is therefore crucial for structural transformation to improve the competitiveness, create jobs and improve on the general welfare within the region. The results indicate that EAC countries have Revealed Comparative advantage in natural resource and primary products though the composition is changing. This is because all the EAC countries are agrarian economies where production processes and activities are dependent on the country`s natural endowments for trade and subsistence. In addition, the region possesses significant amounts of extractive resources such as oil, gas, high value minerals and abundant renewable energy. The low RCA in most traded products reflects the lack of structural and economic transformation which could explain a given considerable proportion of trade diversion and potential welfare losses in the EAC countries. By forming a trade block, trade diversion will shift trade from a lower cost producer outside the union to a higher cost producer inside the union, which will not benefit consumers within the union. Economic transformation implies moving towards higher-value-added activities with spill-overs and linkages that are able to absorb a large portion of an economy's productive resources. This implies that the EAC firms have not adopted new and modern technologies in the production processes. This is in line with ADB (2019) which shows that structural transformation has remained low in the region with industry averaging 15% and manufactured export average share was 14.6%. Recent empirical evidence demonstrates that manufacturing is still a key engine for economic transformation in both developing and developed economies. The low manufactured export limits the regions participation in the global value chains. This is consistent with the African Competitiveness Report (2017) which shows that the overreliance on primary sectors mainly agriculture and mineral extraction, limited diversification and low productivity reduces the sustainability of export competitiveness of firms. It is also supported by ADB (2018) which shows that the manufacturing value-added exports in EAC countries is still very low compared to the African average, reducing the export competitiveness of firms in EAC. The ADB (2018) further indicates that the EAC countries still depend on the exportation of processed resources and resource based manufactured products which involve relatively low value addition processes, thereby reducing the prices of exported commodities. The reliance on a few commodities could be due to high tariffs and poor infrastructure which increases the transaction costs. This is in line with Jagdambe (2019) who concludes that the reduction in trade barriers and transport costs has a positive effect on the comparative advantage of a country, creating more competitive pressures, transfer of factors of production, resulting in productivity and welfare gains from trade. Indeed, tariff rates in the EAC are high and by 2018 the tariff consisted of 5,685 lines at the HS eight-digit level. The increasing number of tariff lines adds to the complexity of the tariff structure resulting in the reduction of the comparative advantage of firms, thereby reducing

their export competitiveness. The outbreak of COVID-19 Pandemic has weakened the commodity prices in the world market, which has reduced the export competitiveness of firms in EAC due to their over reliance on the export of agriculture and primary products. In addition, recently locusts have invaded several EAC countries mainly Kenya, Tanzania and Uganda destroying crops that are exported, further affecting the export competitiveness of firms. However, the specialisation allows the firms to focus their investments in the sectors that are productive and in which they possess the global comparative advantage. This enables the firms to access the international markets, which allows economies of scale to be realised in those export sectors. This increases firm productivity and sustainable export competitiveness in those export sectors by reducing the average cost of exportation due to increased trade volumes. This lends support to the Comparative Advantage Theory (Ricardo,1817)), which is based on the notion that it is comparative differences in costs that determine trade relations between the two countries (Fletcher, 2011; Krugman & Obstfeld, 2003; Smit, 2010). In summary, to maximize total output requires full employment of all resources, allocate the resources within countries according to the comparative advantage of that country and allow countries to trade freely to enable raise the welfare in both countries despite differences in productivity.

7. CONCLUSION AND IMPLICATIONS

This study was conducted to investigate the effect of revealed comparative advantage index on the export competitiveness of firms in the East African Community (EAC). This study was motivated by the low level of export competitiveness of export firms in EAC partner states, especially for manufactured goods due to the low levels of product transformation and poor or lack of value addition. Also, there is scanty literature on improving exports in import-oriented countries like those in the EAC since current studies have been conducted in export-minded countries such as those in Europe (Puertas et al., 2014). To achieve the purpose of the study adopted the Balassa's measure of Revealed Comparative Advantage Index to determine the sustainability of export competitiveness of selected products of EAC in foreign export markets. The study provides evidence that all the EAC countries have Revealed Comparative advantage in natural resource and primary products though the composition could be changing.

This study contributes to academic research by providing empirical evidence to support the theories that are relevant to explain export competitiveness, but also it has implications for a larger body of knowledge which could benefit other related studies. While the Comparative Advantage Theory emphasizes comparative differences in costs that determine trade relations between the two countries.

Referencing from the study results and the conclusions on the export competitiveness, the EAC partner states need to take deeper reforms as regard to structural transformation to enable firms integrate into the Global Value Chains (GVCs) so as to increase their productivity through increased revealed comparative advantage by reviewing the existing policies to march the changes in the market. Improvement in trade facilitation across East African Countries can enhance increased sustainability of export competitiveness, fostering better integration of the region`s production process to the global value chain.

The EAC partner states need to embrace deep integration by removing the behind the border trade barriers in addition to other trade restrictions, to create a common economic space among member states. This helps implementation of common and harmonized economic policies and regulations, since it involves mutual recognition agreements where countries agree to recognize one another's conformity assessments. This increases revealed comparative advantage of products, productivity and sustainability of export competitiveness of firms in the region.

Further, the EAC partner states are required to implement reforms to improve the structural transformation in the production by adopting value addition methodologies to increase the value of manufactured exports, increase diversification in the production to reduce the reliance on the export of primary products and increase intra-regional trade. This could be achieved by partner states harmonizing policies to transform economic activities from low value-added agricultural production to high value added globally export oriented competitive industrialization as it is the engine of long-term productivity and sustainable export competitiveness.

The study limitations open up opportunities for further research. The study considered only revealed comparative advantage index as the indicator of export competitiveness that include. Further study could consider all the indicators of export competitiveness.

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