

# Uganda's Revealed Comparative Advantage in COMESA

Miriam Katunze<sup>1</sup> & Annette Kuteesa<sup>1</sup>

<sup>1</sup> Department of Trade, Regional and Multilateral Agreements, Economic Policy Research Center, Kampala, Uganda

Correspondences: Miriam Katunze, Department of Trade, Regional and Multilateral Agreements, Economic Policy Research Center, Kampala, Uganda. Tel: 256-788-116-480. E-mail: mkatunze@eprcug.org; miriam.katunze@gmail.com

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## Abstract

Most recently, Uganda increased its trade engagements with COMESA as demonstrated by its submission of accession instruments to COMESA Secretariat in order to access the Free Trade Area (FTA). It is envisaged that trade with COMESA can compensate for the low export demand elsewhere by enabling diversification of the export basket and facilitating value addition to traditional exports. It is also expected to enhance producer competitiveness and consumer welfare. Full exploitation of this requires information on where and in what commodities Uganda's trade niche lies. This study assesses the country competitiveness within COMESA based on the concept of Revealed Comparative advantage (RCA). The paper also evaluates the stability of Uganda's RCA in COMESA from 1997-2014 using HS6-digit level export and re-exports data obtained from the World Integrated Trade System. Findings reveal that Uganda's RCA is in all 16 industries at the product chapter level. It is stable in exports of animals, vegetables, food production, wood, textiles, & cloth, stone & glass and metals. Policies for further development of these sectors should aim at addressing sectoral challenges including the low productivity, marketing, and processing capacity in the animal sector, low capacity to test phytosanitary and sanitary certification in the vegetable sector. Additionally, tackling market and low production challenges for the textile sector and, high costs of production for the metals sector will further boost exports to the region.

**Keywords:** regional integration, revealed comparative advantage, competitiveness, Uganda, COMESA

## 1. Introduction

Regional trade agreements are known to be important drivers of economic growth and development. This is because they minimize trade barriers thereby augmenting trade movements among member states (Rodrik, 2001). For this major reason, agreements such as the European Union (EU), North American Free Trade Area (NAFTA), and Association of Southeast Asian Nations (ASEAN) have been formed. In a similar light Uganda has followed suite by becoming a member of the East African Community (EAC) in 2000 and has established bilateral trade relationships with the European Union (EU), the United States through the Africa Growth Opportunity Act, among others. Most recently in December 2014, Uganda increased its trade engagements with COMESA as demonstrated by its submission of accession instruments (Note 1) to COMESA Secretariat in order to access the FTA.

According to various frameworks, trade within COMESA can compensate Uganda for the low export demand elsewhere. Specifically, The National Development Plan 2015/16-2019/20 (NDP) II acknowledges that COMESA is Uganda's main export destination that offers growth opportunities for small-scale exporters. It can enable diversification of the export basket and enables the adding of value to traditional exports. As such, the plan prioritizes to leverage the country's growth opportunities and honor partnership obligations at the regional level such as COMESA (GOU, 2015).

Arguably, the COMESA-Uganda engagement benefits Uganda in several ways. First, COMESA is a wide market with a combined population of 467 million people and a combined Gross Domestic Product (GDP) of US\$ 799.2 billion (COMESA Strategic plan, 2010). Second, there is an expected increase in producer competitiveness and consumer welfare. This means that imports of inputs that previously attracted a four percent import tax (as well as other internal trade tariffs) reduce. This also means consumers spend more on consumer imports thereby increasing their welfare (Odhiambo 2014, Barigaba, 2012). Third, exports are projected to increase by 50 percent,

in line with the ongoing trend of growing export volumes to the COMESA region. These arguments can be supported given the recent trends in exports. Figure 1 shows that over the last five years COMESA has provided market for approximately 57 percent of Uganda's exports. This upwelling in export volumes suggests that Uganda earns approximately US \$ 1.3 billion in export revenue per annum.

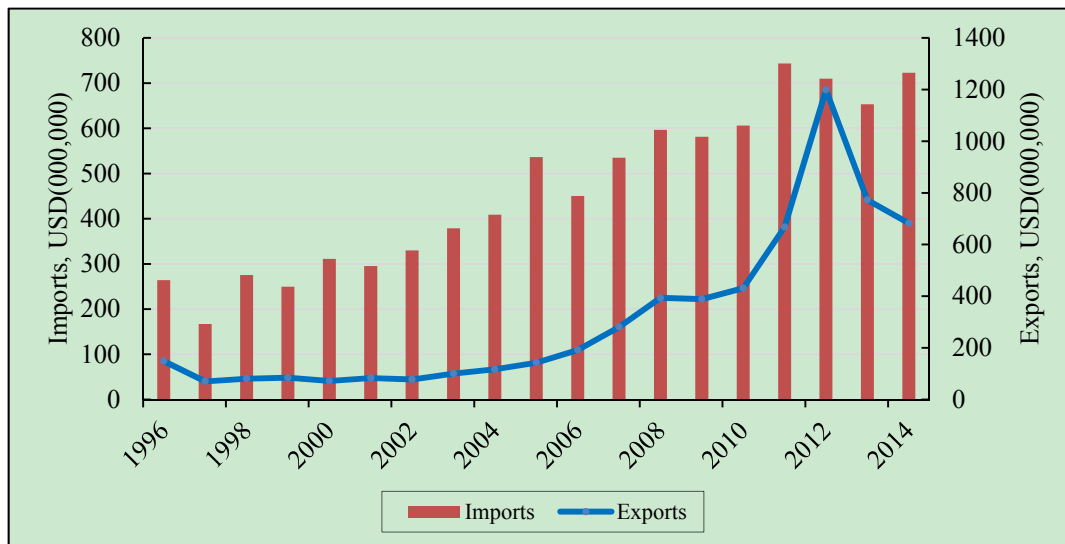


Figure 1. Uganda's Trade Value in COMESA 1997-2014

Source: Author's compilation based on COMSTAT Database

Other policy frameworks in acknowledgement of COMESA such as the National Industrial Policy of Uganda specify strategies that will enable Uganda take advantage of this volume opportunity. These strategies include encouraging manufacturers to invest in skills development and practices that boost quality and lower the cost of production (GoU, 2010). Furthermore, although the National Trade Policy acknowledges significant trade volumes between Uganda and COMESA, it points out that the country may not have sufficient capacity to take advantage of its trade opportunity with COMESA. This is attributed to policy inconsistencies, the lack of complementary policies necessary for the effectiveness of trade policies and, the persistent lack of sectoral policies (GOU, 2007). Specifically the limited knowledge on where and what Uganda's competitiveness lies further compounds the problem.

Consequently, this study seeks to provide this knowledge through the concept of the Revealed Comparative advantage (RCA). Understanding the RCA enables policy makers to know well as to who is exporting what and where and therefore make appropriate policies. Specifically, this paper examines Uganda's RCA concerning the goods trade in COMESA region. The paper also evaluates the stability of Uganda's RCA in COMESA from 1997-2014. To attain these objectives, the symmetric revealed comparative index approach is applied to HS6-digit level export and re-exports data obtained from the World Integrated Trade System (WITS, COMTRADE). The paper attempts to fill the gap in knowledge on this issue as prior attempts to examine Uganda's RCA have stopped at the EAC and the Rest of the World (ROW) (Shinyekwa and Othieno 2011; Sebaggala, 2008; Siggel and Semwogerere, 2004).

The results reveal that although Uganda's RCA is evident in all 16 industries at the product chapter level, it is most stable at animals, vegetables, food production, wood, textiles, & cloth, stone & glass and metals. Additionally Uganda's RCA is stable in 2007, 2008, 2011, 2013 and 2014 at all product chapters. Across markets, Uganda has an RCA with Burundi, DRC, Kenya, Rwanda, and Sudan in all sixteen-product chapters, a pattern that is absent with other COMESA states. At HS6 level, results reveal that first 10 positions of commodities with a stable RCA are occupied by chemicals, metals, vegetables, and wood. These are combination of semi-processed and primary commodities, with the majority of them being re-exports that use Uganda as a transit route to other destinations.

The rest of the paper is organized as follows: section two offers a background on the COMESA region and Uganda's engagement in this bloc, section three examines the relevant literature and provides the theoretical context for the study, section four presents the methodology, section five, presents, and discourses the findings,

and section six provides a conclusion and some policy recommendations.

## 2. A Synopsis of Uganda's Engagement in COMESA

This chapter details the background and history of COMESA as a trading bloc and Uganda's engagement in the bloc. The chapter highlights COMESA's integration journey and the status of trade with the ROW and highlights the status of Uganda's trade in the bloc. The aim of this chapter is to assess and examine whether COMESA is a bloc with sufficient potential for Uganda to be heavily reliant on.

### 2.1 COMESA Free Trade Area

Countries in East and Southern Africa first conceptualized the idea of a regional economic group among themselves in the 1960s. In 1981, a group of East and Southern African states formed a Preferential Trade Area (PTA) which subsequently led to the formation of a trade bloc known as the Common Market for East and Southern Africa (COMESA) in December 1994. Founding members for the COMESA bloc were Burundi, Ethiopia, Kenya, Madagascar, Malawi, Mauritius, Rwanda, Somalia, Tanzania, and Zambia. Over time, the membership has grown to include Comoros, the DRC, Djibouti, Egypt, Eritrea, Libya, Seychelles, Sudan, Swaziland, Uganda, and Zimbabwe, bringing the number of COMESA member countries to 19.

However, certain countries have left the bloc, for example Angola (2007) (Note 2), Lesotho (1997), Mozambique (1997), Namibia (2004) and Tanzania (2001) (COMESA Strategic Plan, 2010) as these were members of other regional groups. Overlapping memberships often result in the stretching of negotiation resources such as membership fees, administrative costs, and operation capacity that most countries cannot afford. This also leads to conflicting objectives among rival arrangements hence the withdrawal of membership from COMESA by the aforementioned countries (Khandelwani, 2004).

COMESA's major objective is to provide a large economic and trading unit capable of overcoming trade barriers faced by the individual states. COMESA offers its members and partners with :i) preferential trade policies, ii) free movement of goods and services in a wide, harmonized and competitive market, and iii) a single investment area and financial market with uniform regulatory ambience and an integrated market (COMESA, 2010). COMESA aims at becoming a fully functioning regional trade bloc with a single currency by 2025. Table 1 provides the highlights of the integration process.

Table 1. COMESA integration process time line

Level of Integration	Planned	Actual
Initial proposal of trade grouping	1965	1965
Recommendation for the creation of a sub-regional PTA	1978	March 1978
PTA treaty signed	1981	1981
PTA transformation into COMESA	1993	1994
Free trade area(FTA)-beginning of the removal of barriers	2000	2000
Customs Union (CU) with free movement of skilled labor	2004 moved to 2010	Not yet
CU with a Common External Tariff (CET)	2004 moved to 2010	Not yet
CU with a transitory 3 year period	2000	2010 <sup>2</sup>
Full Monetary Union	2025	Not yet

Note. <sup>2</sup>Yet to become full CU

Source: Author's own compilation based on Global Edge, 2014

At present, the bloc has not integrated as scheduled above given that it is still at the FTA stage. The following are member states of the FTA; Burundi, Comoros, DRC, Djibouti, Egypt Eritrea, Ethiopia, Kenya, Libya, Madagascar, Malawi, Mauritius, Rwanda, Seychelles, Sudan, Swaziland, Zambia, and Zimbabwe (Barigaba, 2012). According to Khandelwani (2004), reasons for the delays in the integration process include indecisiveness in the agreed EAC tariff structure. The EAC first agreed to eliminate all tariff barriers. This means that although the EAC first agreed to eliminate all tariff barriers, a tariff of 10 was introduced, which became 25 later on. This

led to postponement of the discussion on COMESA’s CET, as it would conflict with interests of some member states of the EAC, which also belong to COMESA such as Uganda and Kenya. Furthermore, resistance from member states over the classification of raw materials, capital goods, intermediaries, and finished goods has also caused delays.

Nevertheless, COMESA has enjoyed impressive growth performance due to an increasing demand for its commodities. Figure 2 and 3 show a steady growth in total COMESA trade and Intra-COMESA trade, especially after 2000. Prior to 2000, some countries that had joined COMESA in 1995 left, such as Angola, Namibia, Tanzania, and others, which negatively affected trade volumes. As such, in 1998, total trade was low until 2000. It is likely that the memberships of this bloc were precarious prior to 2000 leading to low trade flows. It is possible that the attainment of the FTA brought confidence, leading to a positive trend after 2000. Overall, there has been substantial trade creation among COMESA partner states following the establishment of the COMESA FTA. Despite the steady growth in trade, the bloc is a net importer as shown by the negative trade balance in figure 2

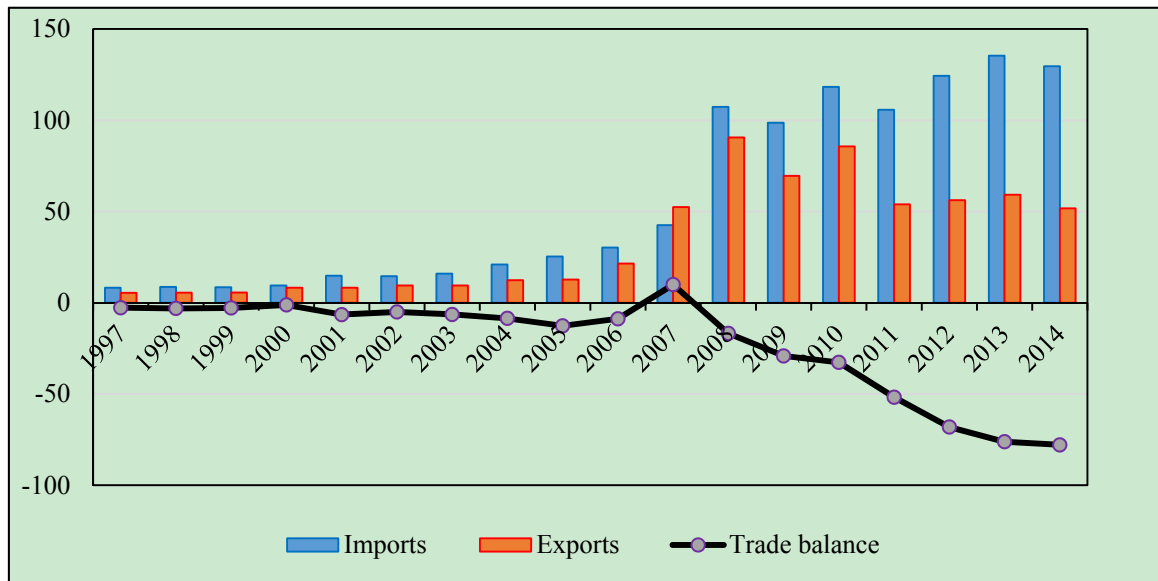


Figure 2. Total COMESA Trade with ROW, in US\$ Billions, 1997-2014

Source: COMTRADE database

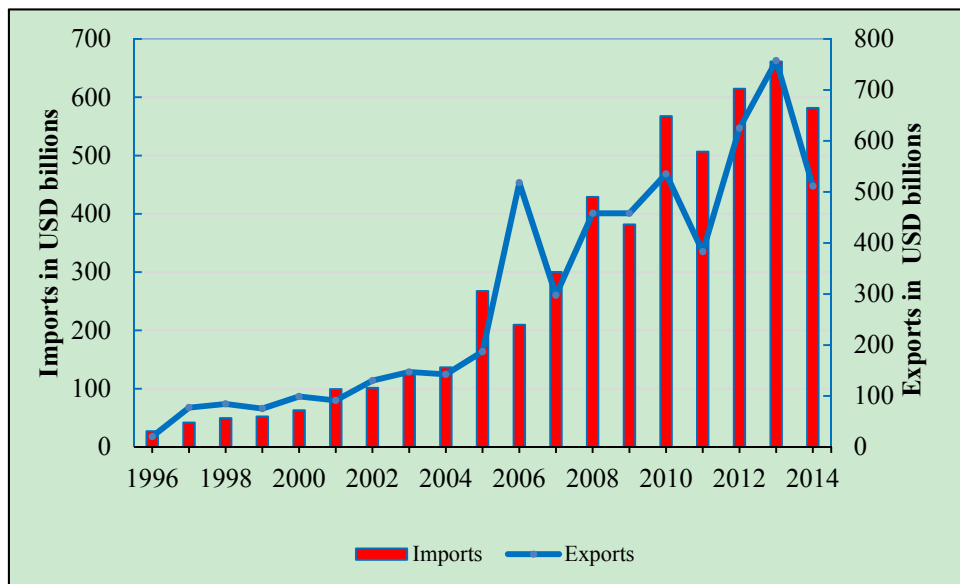


Figure 3. Intra-COMESA Trade 1997-2014

Source: COMTRADE Database

### 2.2 Uganda's Engagement in COMESA Trade

In comparison with other COMESA states, Uganda's intra-COMESA trade as a percentage of total trade for 2003-2012 is high (Table 2). Although it is generally higher than all other countries, there was a drastic drop from 22 percent in 2011 to 14 percent in 2012. This is attributed to a similar drop in Uganda's imports from COMESA. In 2011, Uganda's share of trade accounts for 9.4 percent of exports and 7.9 percent of imports of intra-COMESA trade, translating to a rank of sixth and fifth respectively among 19 COMESA countries (COMESA, 2012). In 2012, Uganda ranked fifth exporter and sixth importer among all COMESA countries (COMESA, 2013).

From 2000 to 2011, Uganda traded mostly with Sudan, Kenya, Democratic Republic of Congo (DRC), Rwanda, and Burundi (Figure 4). Major imports sources include; Kenya, Egypt, Swaziland, DRC, Mauritius, Rwanda, Sudan and Zimbabwe. In 2011, Uganda's exports to COMESA were mainly coffee to Sudan; Portland cement to Rwanda, DRC, and Sudan; and black tea to Kenya. Other exports from Uganda to the region include: soap, beverages, tobacco, plastics, dairy products, eggs, honey, cereals, flour, milling products, electronic and electric equipment, iron, steel, coffee, tea, machinery, furniture, oil seed, fish, wood, etc. (COMESA Business Council, 2012). Imports from this region are mostly; fuels, minerals, chemicals, plastics, electronics, and metals (WITS, COMTRADE database). This is an indication that Uganda is variedly involved in COMESA trade.

Table 2. Intra-COMESA Trade as a % of Total Trade by Country for 2003-2012

Country	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Burundi	22	21	18	17	26	22	26	25	19	19
Comoros	3	4	3	9	3	5	5	8	5	19
DR Congo	16	13	8	12	18	17	22	21	22	24
Djibouti	14	6	9	1	8	4	18	28	37	5
Egypt	3	2	2	2	2	4	4	4	3	3
Eritrea	3	1	9	13	5	13	17	33	13	13
Ethiopia	6	4	6	8	5	5	4	5	5	4
Kenya	15	16	16	12	11	11	11	12	12	11
Libya	1	0	1	1	1	2	3	3	3	4
Madagascar	4	5	6	4	5	3	5	7	5	5
Malawi	13	13	14	13	15	9	10	13	14	15
Mauritius	5	4	4	4	5	5	5	4	5	5
Rwanda	24	25	32	48	38	40	37	33	29	34
Seychelles	2	4	2	2	3	4	6	4	12	3

Sudan	10	7	5	5	5	4	4	5	6	9
Swaziland	4	3	2	5	9	9	6	4	3	1
Uganda	25	25	28	20	22	20	21	21	21	14
Zambia	15	13	13	9	12	16	16	17	17	19
Zimbabwe	3	6	13	5	10	7	6	7	5	7

Source: COMESA, 2013

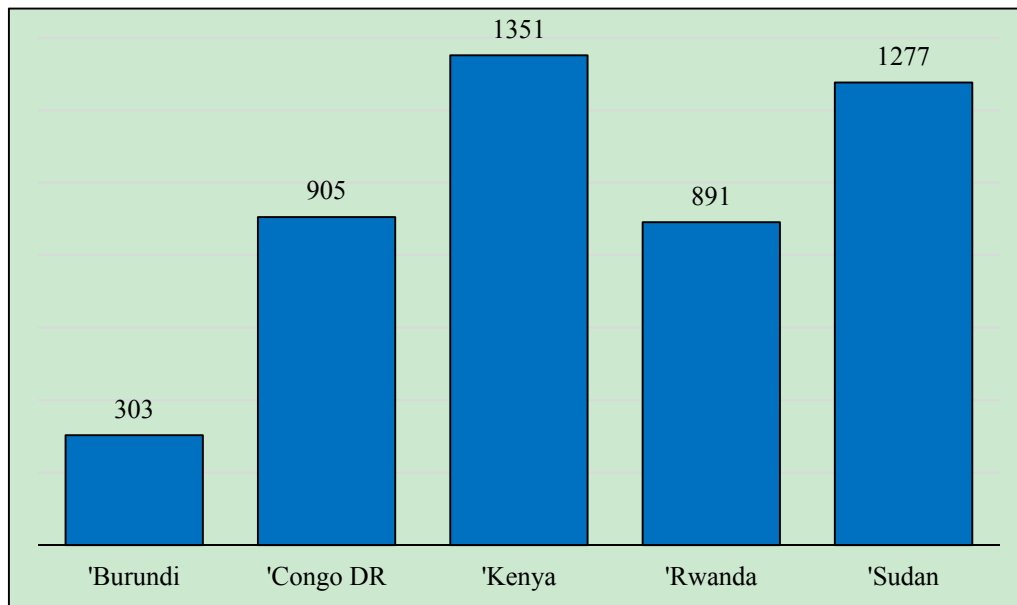


Figure 4. Uganda's Total trade (1997-2012) with COMESA, Per Market

Source: COMESA COMSTAT Database

Empirical studies on COMESA and Uganda reveal that COMESA's small but positive effects on trade volumes appear to be associated with trade creation (Mayda and Steinberg, 2007). Karingi, Siriwardana and Ronge (2002) find that Uganda stands a good chance of maximizing its gains from the CU where value added in the long-run shows growth in food manufacturing, textiles, leather, and chemicals. They also find that Uganda will gain US\$ 46.1 million worth of welfare benefits and will improve terms of trade in other crop sectors. Other general COMESA studies also contend that there are benefits for some countries and negative effects for others. They however do not mention whether Uganda is one of the countries that benefits or is negatively affected (Dimaranan and Mevel, 2008). Despite the fact that COMESA is a net importer with the ROW, the bloc has potential and Uganda can rely on it. Nonetheless, the bloc must expand its membership to harness its trade opportunities.

### 3. History of Comparative Advantage and Suggestions from Empirical Evidence: A Literature Review

#### 3.1 The Evolution of the Concept of Comparative Advantage

A country has Comparative Advantage (CA) over other countries in a good if the cost of producing that good is lower than if collaborating countries produce the same good. Internationally, this implies the expectation that countries are exporters of goods for which their autarky (no trade) relative prices are lower than in other countries. Theories that support this notion include the Ricardian theory of 1817 that relies on the productivity of labour and labour costs as determinants of comparative advantage (Golub and Hsieh, 2000). Labour is homogeneous within the home country but heterogeneous across countries. The theory assumes zero transportation costs therefore labour can relocate between countries at no cost. However, the theory assumes differences in production technology across countries that lead to differences in prices, thereby causing trade. Each country exports the good in which it has the highest CA and imports the reverse.

Heckscher and Ohlin later modified the idea in 1933 to incorporate factor movements. According to the H-O

theory, a country has CA in a good if its factor endowment differs from another country. This means that if a country has abundant labour, then it exports goods that require abundant labour and vice versa for a country with abundant capital. However, if one country satisfies this theorem, and the other country does not, then the theorem is flawed.

It was against this basis that Jones (1971) modified the H-O model. Jones (1971) modified the H-O theory by saying that capital is specific for industries but labour is mobile and produces both commodities. However, an increase in price of one commodity raises wages of labour of that commodity and this leads the labour of the other commodity to transfer to the more productive industry. The theory makes parallel income distribution effects with industries rather than factor endowments (Sunanda, 2010).

Vernon (1966, 1979) further expands the conceptualization of CA based on product cycle development. According to this theory, there are four stages of producing a commodity, i.e. introduction, growth, maturity, and decline. This means that when a product is introduced at the development stage, it will be consumed in the home country as well as exported to countries with similar needs and preferences. At the growth stage, copy product is introduced in the home country and elsewhere. At maturity stage, a low cost country is contracted and once revenue from the product starts to drop in value. At the decline stage, its production is left to the least developed countries (LDCs).

CA has also been tied to competitiveness; in his work, Siggel (2007) demonstrates that the most consistent interpretation of competitiveness is the microeconomic view of cost, which is also related to CA. Siggel (2007) further points that the two concepts differ in their conceptualization. This means that the conceptualization of CA constitutes many price alterations in output worth and expenses while competitiveness is based on actual aspects alone.

Krugman and Obstfeld (2009) differ from all other views when they argue that intra-industry trade does not reflect CA. This is because economies specialize to take advantage of the returns and not because they have an endowment in a specific factor of production. Krugman and Obstfeld's (2009) conclusion is considered a weakness of the notion of CA. They demonstrate the need for the empirical analysis of CA.

The concept of revealed comparative advantage (RCA) was the first attempt to calculate CA (Balassa, 1965). In this case, RCA is a microeconomic concept based on market share and scores past trade patterns of a country relative to the trading partners. Other RCA modifications are multi-dimensional indicators, as based on the market share and price ratios as argued in Durand and Giorno (1987), Turner and Gollup (1997), among others. Additionally prior research indicates that there have been efforts to estimate CA at the macro level including the World Competitiveness index, computed and published yearly by the World Economic Forum/Institute of Management Development (WEF/IMD). The first report detailing this index can be traced as far back as 1995 (WEF/IMD, 1995). Other literature on RCA includes works from Lipschitz & McDonald (1991), Marsh & Tokarich (1994), among others. Similarly, Markusen (1992) proposed the net export ratio that emphasizes the performance of a country's exports is synonymous with its comparative advantage.

While the RCA technique serves various benefits of assessing trade competitiveness, it receives several criticisms mainly because of its static nature (Vollrath, 1991). An earlier version like the Balassa Index (1965) receives disparagement for bearing technical problems when it comes to ordinal and cardinal comparisons (Bowen, 1983; Dalum, Laursen and Villumsen, 1998). In addition, Balassa indices are not symmetric, making it difficult to have cross-country and cross-sector analyses (Sanidas and Shin, 2010; Laursen, 1998).

### 3.2 *What Evidence Suggests*

Many studies have applied the RCA concept in a bid to explore existing trade advantages of different countries. Using Balassa and Vollrath (1991)'s RCA indices, Utkulu and Seymen (2004) find that Turkey has RCA with the EU in 7 out of 63 product groups at SITC Revision 3. They also find that RCA over the period 1990-2003 was relatively stable in all the seven indices used. Bagaria, Santra and Kumar (2014) studies variations in the RCA of trade between China and India over the period of 2002-2012. Based on SITC revision on export products, the authors find that some commodities' RCA remained stable throughout the study period whereas others have large variations. They also find that India and China's trade is complementary in some commodities while in others they compete.

Hercui (2013) measures Romania's international competitiveness by using Porter's diamond and the Balassa index, but unlike other authors, results show that the nation has more competitive disadvantage than advantage in the agricultural sector. Akhtar et al., (2008) and Mohamood and Nishat (2005) establish that Pakistan has RCA in footwear and other non-agricultural products. While the former link the findings to the country's shift in RCA

from a position of disadvantage to advantage from 1996 to 2003, the latter authors reveal that Pakistan has a dominant RCA, especially in non-agricultural products. The latter also reveal that Pakistan has failed to move from low value added un-skilled labour intensive manufacturing to technology-intensive high value added manufacturing.

In Sub-Saharan Africa, Karim and Ismail (2007) study RCA between Sudan, Kenya and Egypt and find that they generally have a high RCA for dominant export products such as sesame seed, groundnuts, beans, oranges, pineapples and tea, but differ greatly in the pattern of specialization, indicating a great potential for expanding intra-regional trade. Makochekanwa (2007), cited in Chingarande, Mzumara, and Karambakuwa (2013) examines Botswana's RCA with the ROW for the period 1999 and 2004. He finds that Botswana gained CA in sugar, and copper ores and concentrates in which it previously had a disadvantage.

Yeats (1992) investigates the validity and strength of economic theory, which postulates that Sub-Saharan African countries should have a CA in labor-intensive products in their trade with developed countries. Results reveal that the factor proportion theory's labor-intensive variable only accounts for 28 percent of developing countries' RCA and other factors explain the other 72 percent. The author calls for finer research to examine these variations. Relatedly, Wood and Mayer (2001) apply the H-O Model in order to ascertain CA for Sub-Saharan African countries. Their findings reveal that Africa's CA relates to low-level skills per worker and high level of land per worker. This implies that Africa's CA is in unprocessed primary products.

Karingi et al., (2002) reveal from their findings that contrary to trade theory, competitive and comparative advantage exist in some manufacturing sub-sectors of the COMESA such as in Tanzania. They make use of the disaggregated analysis of the de-industrialization hypothesis. This is contrary to theory, which hypothesizes that only countries with a developed manufacturing sector have both competitive advantage and CA.

In the East African region, Chingarande et al., (2013) assess the RCA of individual EAC member states. They find that Kenya takes the lead with 778 product lines that reveal a CA, Tanzania follows with 471 product lines, Uganda takes third position with 437 product lines, then Rwanda with 272 product lines, and Burundi with 152 product lines at HS six digit level. They recommend that the EAC-COMESA-SADC tripartite should continue as scheduled because it will bring numerous benefits such as improved welfare especially in income for the EAC. The East African coffee exporters of Uganda, Ethiopia, and Tanzania have stronger relative CA than the Ivory Coast (Pearson and Meyer, 1974). The authors applied a domestic resource cost ratio and used ranks in order to determine the country with the smallest ratio as having the strongest CA.

In Uganda, studies have focused on the EAC, China and the rest of the world. For example, Shinyekwa and Othieno (2011) study Uganda's RCA with EAC and China using the Balassa Index, relative export and import advantage indices, and an index proposed by Simsek, Seymen, and Utulu (2004). They find that Uganda has an advantage in products like agricultural processed and unprocessed goods, and cement and electricity with the EAC, and a few agricultural and industrial products (such as foods, raw materials, scrap, and waste) with China. They recommend that Uganda should adopt an industrialization strategy similar to one stipulated by the EAC., adopt policy options that address supply constraints and use its strategic inland location to re-export imported products to Rwanda, Burundi, South Sudan and DRC. Sebaggala (2008) examines Uganda's RCA with the ROW using the Balassa Index and finds that aboriginal sectors like food and live animals, beverages and tobacco, crude materials, vegetable oils, and animal fats constitute Uganda's RCA. He calls for government efforts in improving business-working environments, for the provision of incentives that stimulate production at competitive levels, and for programs that strengthen the sectors that have recorded competitiveness.

As reviewed above, all the studies on Uganda's RCA were within the context of the EAC, China and the ROW and none on COMESA. This study intends to add to existing literature by examining Uganda's RCA within the context of COMESA. Additionally, prior studies emphasize the Balassa index as the main methodology and compare with other indices given that the Balassa index has many flaws. This study intends to not only to use the Balassa index but also to compare it with the Symmetric index.

#### 4. Methodology

##### 4.1 Method

We examine RCA by using the Revealed Symmetric Comparative Advantage Index (RSCA) or Symmetric Index (SI), which solves the problem of asymmetry and expressed as follows:

$$SI_{ij} = \frac{BI_{ij}^{-1}}{BI_{ij}^{+1}} \quad (1)$$



This index was first adopted by Laursen (1998), which ranges from -1 to 1 (-1=comparative disadvantage; +1= CA and 0 = comparative advantage-neutral point). It is advantageous to use this index because it solves the problem of asymmetry. However, this index is not comparable across sectors and countries (Sanidas and Shin, 2010). Based on literature, the paper derives SI from the Balassa Index (BI) proposed by Balassa (1965), expressed as follows:

$$B_{ijt} = \frac{X_{ijt}}{X_{ict}} \quad (2)$$

$X_{ijt}$  is the share of product  $i$  in country  $j$ 's total exports at time  $t$  and  $X_{ict}$  is the share of the same good in total COMESA exports to the rest of the world at time  $t$ . According to this index, values greater than unity are taken to reveal a CA in good  $i$  by country  $j$ . In reverse, values less than unity reveal a comparative disadvantage.

The BI is advantageous because it analyses trade patterns, conforms to available data, and its outcomes are less susceptible to policy-induced distortions. However, the BI has two main limitations/disadvantages. First, the index lacks normality as it takes values between zero and infinity with a weighted average of 1.0 (Laursen, 1998). Secondly, this index lacks the statistical component of asymmetry.

The analysis starts from the most disaggregated level HS 6 (commodity level). Average SI of products at HS 6 is calculated to get the equivalent at product chapter (aggregated level). The paper analyses the stability of Uganda's RCA at all levels of aggregation. At the most aggregated level, the paper tries to assess if Uganda has a RCA throughout the study period at all product chapters. This means that if a particular year exhibits RCA at all product chapters, then Uganda's RCA is stable for that particular year. Similarly, if a particular product chapter exhibits a RCA throughout the study period, then Uganda's RCA is stable at that particular product chapter. At the most disaggregated level, a consistent RCA is one that appears in at least five years of the period study. The paper reports results based on the SI due to the bulkiness of the BI. The application of SI enables us to consider products lines with an index of 1. We ignore products lines exhibiting an SI of zero and negative. The paper presents results from the most aggregated level to the most disaggregated level.

#### 4.2 Data

The paper takes advantage of the COMTRADE database of the World Bank Group. This database complies and contains merchandise trade exports and imports detailed by commodity and partner country data. The database includes information on more than 170 countries reported to the United Nations since 1962. The data provided by this database is highly reliable and accurate with little inconsistencies as it is recorded subject to information provided by the Uganda Bureau of Statistics (UBOS) and the Uganda Revenue Authority (URA). Recording of trade statistics is according to internationally recognized trade and tariff classifications. The paper uses the Harmonized System (HS) classification version 1996 at the six-digit level.

The nature of data used for this paper includes trade values in 1000 USD. Particularly, this paper considers export and re-exports data from Uganda and to other COMESA countries and from COMESA region's exports (net of Uganda's export values). To obtain this data, we create a group of COMESA countries, excluding Uganda. We then query the database for export and re-export values in USD on COMESA group of countries to the ROW, then query for export, and re-export values on Uganda to other COMESA countries. We base the two queries on the period 1997-2014. The focus on this period stems from it having the year 2000, in which the bloc transitioned into an FTA. We therefore consider this year as an anchor for analysis.

We then export the queries to a Microsoft Excel (MS Excel) file where the data is stored and analyzed. We do not subject the data to any further modifications in Excel and analyze as is exported from the COMTRADE database. As such, we ensure that the data's quality, accuracy, and reliability is maintained. The paper also assesses RCA in a static perspective and therefore ignores missing observations. The implication of having a static perspective is that it will not be possible to analyze changes in the RCA of a particular commodity.

## 5. Results and Discussion

### 5.1 Product Chapter (Note 3)

Table 3 provides average SI and rank in terms of product chapters or industries between Uganda and the rest of COMESA. The Top five industries include chemicals, vegetables, miscellaneous, stone & glass and animals. The bottom five industries include wood, fuels, footwear, minerals and hides & skin. Generally, RCA is evident in all the 16 industries. Table 4 provides the stability of Uganda's RCA at product chapter by year. Results reveal that industries that maintain a stable RCA throughout the study period include; animals, vegetables, food production, wood, textiles, & cloth, stone & glass and metals. The rest of the industries show gaps. However, taking stability

by year, Uganda's RCA is stable in 2007, 2008, 2011, 2013 and 2014 at all product chapters.

Table 3. Uganda's RCA by product chapter in the COMESA region

Product code	Product description	SI	Rank**
28-38	Chemicals	0.81	1
06—15	Vegetables	0.81	2
90-99	Miscellaneous	0.80	3
68-71	Stone & Glass	0.80	4
01--05	Animal	0.80	5
72-83	Metals	0.80	6
86-89	Transport	0.80	7
50-63	Text Cloth	0.79	8
16-24	Food prod	0.78	9
84-85	Mechanics and Electronics	0.78	10
39-40	Plastics	0.78	11
44-49	Wood	0.77	12
27-27	Fuels	0.76	13
64-67	Foot wear	0.75	14
25-26	Minerals	0.73	15
41-43	Hide & skin	0.72	16

Notes. \*\* Ranks from SI. An SI closer to one indicates that Uganda has an RCA in that product chapter

Source: Author's own computations based WITS-COMTRADE Dataset

Appendix table A1 shows ranked RCA averages at product chapter with 16 COMESA states. Across markets, the RCA pattern shows that while Uganda enjoys an RCA with Burundi, DRC, Kenya, Rwanda and Sudan in all 16 product chapters, the same pattern is absent with the rest. Insights in Uganda's trade with the aforementioned countries reveal that close proximity to Uganda could have stimulate trade between the two parties, which is not the case with other COMESA states. Additionally, there have been new developments across border posts like the single customs territory of the EAC, which have made it less costly to trade with neighboring states than it is to trade with markets farther off. Distance is partly attributed to the Revealed Comparative Disadvantage for Uganda with Mauritius and Comoros. In terms of rank per market, Uganda enjoys an advantage first in fuels with Kenya and Sudan, stone and glass with Burundi and DRC and footwear with Rwanda. Other key industries are vegetables with Djibouti, metals with Egypt, animals with Eritrea and Madagascar, textiles with Malawi, electronics with Seychelles, chemicals with Swaziland, transport with Zambia and miscellaneous items with Ethiopia, Libya, and Zimbabwe.

Table 4. Stability of Uganda's RCA at product chapter by Year (1997-2014)

Product code	Product description	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
01--05	Animal	0.9	0.9	0.8	0.9	0.6	0.9	0.8	0.8	0.9	0.9	1	0.9	0.9	0.9	0.9	0.8	0.8	0.8
06--15	Vegetables	0.9	0.9	0.9	0.9	0.9	0.9	0.8	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.8	0.7	0.8	0.8
16-24	Food production	0.9	0.9	0.8	0.8	0.7	0.7	0.8	0.7	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
25-26	Minerals	0.7	0.9	0.7	0.6	0.9	0.9	—	—	0.7	0.8	0.7	0.6	0.7	0.9	0.8	0.7	0.7	0.7
27-27	fuels	0.9	—	—	0.9	0.9	0.9	0.8	0.8	0.6	0.8	0.9	0.6	—	—	0.7	0.8	0.7	0.7

28-28	Chemicals	0.9	0.8	0.9	0.7	0.7	0.8	0.7	0.7	0.7	–	0.9	0.9	0.8	0.9	0.9	0.9	0.8	0.8
39-40	Plastics	0.8	0.9	0.8	0.6	0.7	–	–	0.7	0.5	0.9	0.9	0.8	0.7	0.7	0.8	0.8	0.8	0.8
41-43	Hide skin	–	0.9	–	–	0.8	0.9	–	–	–	–	0.7	0.6	–	–	0.6	–	0.8	0.6
44-49	Wood	<b>0.7</b>	<b>0.9</b>	<b>0.7</b>	<b>0.7</b>	<b>0.7</b>	<b>0.6</b>	<b>0.6</b>	<b>0.6</b>	<b>0.6</b>	<b>0.9</b>	<b>0.9</b>	<b>0.9</b>	<b>0.9</b>	<b>0.9</b>	<b>0.8</b>	<b>0.7</b>	<b>0.8</b>	<b>0.8</b>
50-63	Text Cloth	<b>0.9</b>	<b>0.9</b>	<b>0.9</b>	<b>0.9</b>	<b>0.9</b>	<b>0.9</b>	<b>0.8</b>	<b>0.8</b>	<b>0.8</b>	<b>0.9</b>	<b>0.9</b>	<b>0.8</b>	<b>0.7</b>	<b>0.8</b>	<b>0.8</b>	<b>0.7</b>	<b>0.8</b>	<b>0.8</b>
64-67	foot wear	0.6	0.9	–	–	–	0.6	–	0.8	–	0.7	0.9	0.9	0.9	0.8	0.9	0.8	0.8	0.7
68-71	Stone &Glass	0.9	0.9	0.9	0.7	0.9	0.9	0.9	0.9	0.9	0.8	0.9	0.9	0.7	0.9	0.8	0.6	0.8	0.7
72-83	Metals	0.9	0.8	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.8	0.9	0.9	0.8	0.7	0.8
84-85	Mach Electronics	0.9	0.9	0.9	0.8	0.8	–	0.6	0.7	0.6	0.9	0.8	0.8	0.7	0.8	0.9	0.8	0.8	0.8
86-89	Transport	0.9	0.9	0.9	–	0.7	0.7	0.5	0.7	–	0.8	0.9	0.9	0.9	0.8	0.9	0.9	0.8	0.8
90-99	Miscellaneous	0.9	0.9	0.9	–	0.7	–	0.7	0.8	0.7	0.8	0.9	0.9	0.8	0.8	0.9	0.8	0.8	0.8

Source: Author's own computations based WITS-COMTRADE Dataset

## 5.2 HS6 –Digit Level

Table 5. Top ten commodities with a stable RCA

Product Description	Product code	Av RCA HS6	Av SI HS6	Rank	Burundi	Kenya	Rwanda	Sudan	DRC
Containing penicillin or derivatives thereof, with a penicillanic acid structure, or streptomycin or their derivatives	300410	26.48	0.80	1	x		x		x
Containing at least 99.8 % by weight of magnesium	810411	97.22	0.98	2		x			
Wheat gluten, whether or not dried	110900	65.18	0.96	3		x	x		
Vegetable saps and extracts :-- of hops	130213	76.75	0.96	4		x			
Buckwheat	100810	61.94	0.96	5	x	x	x		
Vat dyes (including those usable in that state as pigments) and	320415	48.85	0.95	6			x	x	x

preparations based thereon						
Rosin and resin acids	380610	52.67	0.95	7	x	x
Saturated chlorinated derivatives						
of Chloromethane (methyl chloride) and chloroethane (ethyl chloride)	290311	37.42	0.95	8		x
Paper and paperboard of a kind used as a base for photo-sensitive, heat-sensitive or electro-sensitive paper or paperboard						
	480220	55.15	0.94	9	x	x
Other :-- Erasers						
	401692	63.54	0.94	10	x	x

Source: Author's own computations based WITS-COMTRADE Dataset

Table 5 shows top ten commodities at HS6 with a stable RCA. Chemicals take up the first, sixth, seventh and eighth position. These include drugs in the penicillin category; vat dyes; rosin, and resin acids; and chlorinated drugs respectively. Magnesium metals take up the second position, and in the third, fourth and fifth position is vegetables including wheat gluten; vegetable saps of hops (Note 4); and buckwheat respectively. Wood products like paper and paperboard occupy the ninth position, while plastic commodities like erasers occupy the tenth position. Overall, Uganda has 318 product lines at HS6 that are have a stable RCA (Note 5). Notably these consist of a combination of semi processed and primary commodities. Given the low levels of manufacturing in Uganda, the semi processed commodities are likely to be re-exports that use Uganda as a transit route. According to World Bank Indicators and Uganda Bureau of statistics, the percentage share of manufacturing value added to Uganda's GDP has stagnated between 9.9 percent in 1998 to 9.3 in 2014 percent (World Bank, 2015; UBOS, 2015).

Additionally, Uganda's RCA is stable with only five out of 18 COMESA states, i.e. Burundi, DRC, Kenya, Rwanda, and Sudan. Overall, Uganda has not been able to access other countries due to the low quality of Uganda products, the volatility of regional prices, and the inadequate regional transport system, which is a major trade distortion in Africa (Khandelwal, 2004). In addition, Khandelwal (2004) asserts that distortions in trade regimes and inadequacies in customs and communication infrastructure are major obstacles to trade in the COMESA region. While Uganda's RCA is most stable in the five EAC countries, it is threatened by political instability in the region as seen by civil strife in South Sudan, Burundi and political unrest in the DRC.

## 6. Conclusion and Policy Recommendations

The paper set out to examine Uganda's RCA per product and per market and assess the stability of RCA in merchandise trade with COMESA. In this paper, the symmetric revealed comparative index approach was applied to HS6-digit level of export and re-exports data from Uganda and to other COMESA countries and from the COMESA region to the rest of the world. The data was obtained from the World Integrated Trade System (WITS, COMTRADE), and it covers the period 1997 - 2014.

The results reveal that Uganda's RCA is evident in all 16 industries at the product chapter level. It is stable in exports of animals, vegetables, food production, wood, textiles, & cloth, stone & glass and metals. Policies to further development of these sectors should aim at addressing sectoral challenges. For instance, challenges of low productivity in the animal sector, low capacity to test phytosanitary and sanitary certification in the vegetable sector is critical. Additionally, tackling market and low production challenges for the textile sector and, high costs of production for the metals sector will further boost exports to the region. While Uganda has adopted 305 standards out of 370 of the harmonized standards of the COMESA, compliance with 65 more standard is still outstanding which are needed to trade within the region.

The findings also reveal that Uganda has a RCA at the HS6 level in several re-exports, primarily in chemicals, metals, vegetables, and wood. The implication is that Uganda has the potential to become a distribution hub for a number of commodities being traded within the region. This result points to the development of suitable infrastructure such as storage facilities to accommodate the products. Furthermore, the enhancement and establishment of road networks and trade routes and improvement in customs and handling procedures to reduce

transit time and ensure quality products are delivered could help Uganda harness her niche. It further calls for appropriate E-Systems for tracking and recording of transit goods.

Across markets, Uganda's RCA is mostly with its neighboring countries including Burundi, DRC, Kenya, Rwanda, and Sudan. However, with the exception of Kenya, all other countries are threatened by civil conflict, which is also a threat to Uganda's potential to increase trade in these countries. This calls for Uganda to participate in peace initiatives. As a bloc, COMESA needs to support and enforce regional initiatives aimed at attaining peace, which can strengthen the integration process of the bloc and bilateral trade.

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## Notes

Note 1. These are legal documentation required before joining an FTA.

Note 2. Years of departure for subsequent list of countries in parentheses.

Note 3. The product chapter is the most aggregated level of the HS classification. Commodities are classified according to industry type.

Note 4. These are a type of flower commonly used in beverages like malt ale, beer and stout.

Note 5. Additional results on ranks per commodity are available on request.

## Appendix

Table A1. Ranked RCA Averages at Product Chapter with 16 COMESA States

	01-05	06-15	16-24	25-26	27-27	28-38	39-40	41-43	44-49	50-63	64-67	68-71	72-83	84-85	86-89	90-99	
	Animal	Vegetable	Food prod	Minerals	Fuels	Chemicals	Plastics	Hide skin	Wood	Text cloth	Footwear	Stone Glass	Metals	Electronics	Machinery and	Transport	Miscellaneous
Burundi	0.84(3)	0.82(5)	0.73(14)	0.74(13)	0.67(15)	0.81(7)	0.78(12)	0.66(16)	0.82(6)	0.82(4)	0.80(10)	0.88(1)	0.80(8)	0.80(9)	0.78(11)	0.85(2)	
DRC	0.78(7)	0.84(10)	0.83(13)	0.80(2)	0.77(9)	0.84(12)	0.81(14)	0.81(16)	0.81(15)	0.79(3)	0.80(11)	0.84(1)	0.88(4)	0.77(8)	0.83(5)	0.83(6)	
Djibouti		0.97(1)				0.69(5)								0.84(3)	0.76(4)	0.74(2)	

Egypt	0.80(8)	0.86(10)	0.83(7)			0.82(9)				0.98(2)		0.85(6)	0.98(1)	0.89(4)	0.76(3)	0.87(5)
Eritrea	1.71(1)	0.87(3)								0.89(2)						0.50(4)
Ethiopia	0.60(8)	0.81(2)				0.80(4)	0.51(9)			0.85(3)			0.68(7)	0.84(6)	0.89(5)	0.99(1)
Kenya	0.82(3)	0.83(15)	0.85(14)	0.79(10)	0.86(1)	0.82(16)	0.79(11)	0.79(4)	0.84(9)	0.81(13)	0.8598	0.84(6)	0.86(5)	0.85(2)	0.78(7)	0.84(12)
Libya													0.81(2)	0.82(3)		0.88(1)
Madagascar	0.89(1)									0.65(2)						
Malawi							0.84(5)			0.97(1)		0.53(7)	0.84(3)	0.9(4)	0.68(6)	0.91(2)
Rwanda	0.81(4)	0.80(8)	0.84(14)	0.79(7)	0.82(9)	0.85(12)	0.78(15)	0.78(10)	0.84(11)	0.84(2)	0.87(1)	0.82(5)	0.80(3)	0.81(6)	0.81(16)	0.85(13)
Seychelles										0.61(2)				0.71(1)		
Sudan	0.78(11)	0.79(9)	0.80(7)	0.80(8)	0.93(1)	0.82(3)	0.77(12)	0.63(15)	0.79(10)	0.82(5)	0.75(15)	0.77(13)	0.81(6)	0.83(2)	0.82(4)	0.77(14)
Swaziland						0.86(1)										
Zambia	0.69(8)	0.86(3)				0.86(5)		0.87(4)		0.64(7)			0.89(2)	0.83(6)	0.77(1)	0.63(9)
Zimbabwe				0.53(7)		0.94(2)				0.62(6)			0.83(4)	0.78(5)	0.91(3)	0.97(1)

Notes: Ranks in parenthesis. Source: Author's own computations based WITS-COMTRADE Dataset

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