

The Turn towards Regional Trade Agreements: Is EAC Welfare Enhancing to Partner States?

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Abstract

This study attempts to assess the welfare effects of EAC on partner states in the backdrop of multiple memberships in different Regional Trade Agreements. Using UN COMTRADE database at 6 digit level of aggregation with HS96 nomenclature, we estimate a number of trade indicators with a view to evaluating the composition of trade structures, trade flows, the degree of openness of the economies, and the potential for trade diversion or creation, all of which have critical implications for EAC's integration process. On the basis of these indicators, we find that EAC is welfare enhancing to partner states.

Keywords: Regional Trade Agreement (RTA), East African Community (EAC), Revealed Comparative Advantage (RCA)

1. INTRODUCTION

An important consequence of the failure of multilateral trade negotiations, from Seattle 1999, Doha, 2001 and Cancun 2003, is the proliferation of Preferential Trade Arrangements, actualized through Regional Trade Arrangements (RTAs). This renewed enthusiasm is fuelled in part by the change in trade strategies by key members of WTO, particularly the USA, towards regionalism and away from its traditionally favoured multilateral trade system. This policy shift from the USA has consequently spawned two diametrically opposed approaches to trade liberalization globally, namely; the multilateral approach and the regional approach. A natural offshoot of this scenario is that today, almost each and every country participates in an RTA in one way or another.

East African Community (EAC) partner states have not been spared the rampant proliferation of Preferential Trade Arrangements, which are currently being actualized globally through Regional Trade Arrangements. In East

Africa, partner states have membership spanning three different RTAs. Kenya, Uganda, Tanzania, Rwanda and Burundi belong to East African Community (EAC). All except Tanzania belong to Common Market for Eastern and Southern Africa (COMESA), and Tanzania belongs to Southern Africa Development Cooperation (SADC). SADC and COMESA are Free Trade Areas while EAC is a customs union. Other existing arrangements are cooperation agreements such as the Cross Border Initiative.

RTAs by their very nature are discriminatory and therefore have the potential to impact trade either positively or negatively. However, opinion is divided on the exact impact of RTAs on trade. Proponents of regional approach to trade liberalization argue that the positive effects far outweigh the negative ones. On the other hand, opponents argue that RTAs generate limited benefits or even losses for the participating countries, implying that they have the potential to undermine multilateral trade system thereby slowing down global trade liberalization. To the best of our knowledge, no study has been done so far to situate

the East African Community (EAC) in this debate.

RTAs have several potential benefits. These include increased competition, which provides opportunities for enhancing efficiency, access to enlarged markets which can foster growth through economies of scale in domestic production. RTAs can also lead to increased investment and higher total factor productivity growth due to better access to technology. As a result of this, partner states are likely to benefit from a lower price of capital goods thereby stimulating investment. Besides, RTAs can also lead to more rational tariff regimes which may encourage greater partnership and foreign investment. Smaller countries in an RTA are likely to face an improvement of their TFP owing to a positive externality effect from the more technologically developed countries' advanced technical knowhow.

Other benefits include increased intra-regional trade along with inflows of foreign capital, which can help to boost industrial development and increase diversification of the export base. RTAs can also promote convergence wherein the poorer partner states are facilitated to catch up with the richer ones through the process of trade. Besides, RTAs can serve a useful economic purpose by providing a platform for reducing uncertainty and improving credibility which may be conducive to a better environment for the private sector to plan and invest.

It is the belief of partner states that some or all of these potential benefits are bound to accrue to each member individually and to all members collectively. This, in our opinion is what is providing the impetus for integration of the East African Countries into an economic community. Experience and robust economic theory however identifies certain indicators which are likely to drive the direction and magnitude of outcomes of such integration arrangements and which should therefore inform any trade potentials expected from such a process. In this paper, we estimate some of these indicators with a view to determining

the welfare effects of the EAC integration process.

1.1 EAC IN PERSPECTIVE

The first attempt at regional integration in East Africa dates back to 1917 when Kenya and Uganda first formed a customs union that was later joined by Tanzania in 1927. This attempt was followed by the formation of the East African Common Services Organization in 1961 which collapsed in 1967. Formal attempt at forming an East African Community started in 1967 between Kenya, Uganda and Tanzania. The Community collapsed in 1977 following disagreements between the three founding countries on a number of political and economic issues.

Kenya, Uganda and Tanzania renewed attempts at regional co-operation by forming the Permanent Tripartite Commission for East African Co-operation in 1993. This led to the subsequent signing of the Treaty for the establishment of EAC by the three countries in 1999. The Treaty entered into force in 2000. In 2007, Rwanda and Burundi signed treaties of accession to the EAC.

The roadmap of the EAC envisaged a gradual progression from a customs union to a common market, monetary union, finally culminating into a political federation. The customs union was established in 2005. This was followed by the signing of a protocol for the establishment of a common market in 2009 and a subsequent launch of the same in 2010. A monetary union is envisaged to enter into force in 2012.

1.2 EAC TRADE PERFORMANCE: 2001-2009.

There is evidence that intra-EAC trade has continued to expand over the years. Value added products and pooling of resources for investment arising from integration have greatly boosted business and upped employment creation in the region. In 2009, trade vol-

umes between partner states increased to Ksh315 billion. This rose slightly to Ksh324 billion in 2010. In 2011, the community is projecting intra-trade at about Ksh342 billion and 360 billion in the subsequent financial year.

At the country level, export volumes to EAC for Uganda shot up from a net of USD 87.2 million in 2001 to USD 398.8 million in 2009. Over the same period, Tanzania's export volumes rose from USD 58.6 million to 323.5 million, while Kenya's exports almost doubled from USD 622.5 million to USD 1167.1 million. Rwanda and Burundi have however, not registered significant growth in their export volumes. In 2006 for instance, Rwanda's exports to EAC stood at a net worth of USD 33 million and Burundi's at USD 5.5 million. In 2009, these figures stood at USD 47.3 million for Rwanda, and USD 6 million for Burundi.

The low export growth figures for Rwanda and Burundi are more than compensated for by massive growth in import volumes. In 2006 for instance, import flows from EAC stood at USD 143 million for Rwanda, and USD 60.9 million for Burundi. In 2009, these figures stood at USD 449 million and USD 129 million respectively. This reverse trend is notable for Kenya, Uganda and Tanzania as well. Despite having massive growth in export volumes, the growth in import volumes is muted, despite having higher values. In 2002, import volumes for the three countries stood at USD 19.1, 415 and 97.9 million respectively. In 2009, the same figures stood at USD 162.2, 547 and 316.9 million respectively.

Overall, Kenya is dominant in the intra-EAC trade, accounting for almost half the total value of trade and registering a surplus in its trade accounts with each of the partner states. Uganda remained the largest importer in intra-EAC trade, accounting for about half of the total imports, and Burundi the smallest. Over the period of analysis, Tanzania registered the highest growth rates in intra-EAC exports.

It is evident that the intra-trade performance presents mixed results to the various partner states and this then begs the key ques-

tion of whether there is trade potential in the RTA for all the partners. This is the question that the present study seeks to address.

2. ANALYTICAL FRAMEWORK

The potential for trade within an RTA can be inferred from underlying structural similarities or dissimilarities within partner countries. Welfare gains and losses that accrue to partner states in EAC are therefore likely to depend on the existing and expected trade patterns among them as well as their own individual trade structures. In order to gauge the potential welfare gains and the need for increasing intra-EAC trade for partner states, we rely on the Sussex framework to calculate a number of complementary trade indicators which robust economic theory and experience suggest are likely to reveal the underlying trade structures and also give an indication of the direction and outcome of integration. These include Trade Concentration Index, Revealed Comparative Advantage Index and Finger Kreinin Index. Data for computing all the indices has been obtained from UN Comtrade database while the Systematic and Integrated Framework for Trade Analysis (TradeSift) software is used for the analysis.

The degree of openness of countries in an RTA is a basic indicator of trade liberalization. It is measured as the share of trade (exports plus imports) in the GDP expressed in current prices.

$$O P N_i = \frac{X_i + M_i}{G D P_i}$$

The indicator ranges from zero (for an economy that is completely closed) to infinity (for an economy that is completely open). An RTA is more likely to be welfare enhancing if trade is a small share of GDP.

A more concentrated export structure suggests that imports into an RTA are met by third party countries, while a more diversified structure indicates high potential of complementarity in trade. The structure of ex-

ports of most countries in Sub-Saharan Africa tends to be highly concentrated in a few products many of which are not important in the other African countries. This acts to limit the potential flow of imports among partners in an RTA. It is important to test whether EAC is afflicted by the same problem. Using diversification of exports as a proxy for output diversification, we measure diversification of export structure by calculating a Trade Concentration Index (TCI).

When calculated by product;

$$T C I_{ij}^k = \sum_k \left(\frac{X_{ij}^k}{X_{ij}} \right)^2$$

Where:

K = product

I = reporting country

J = partner country

X = total exports

Trade Concentration Index decreases with the level of diversification. When TCI = 1, this implies that a given country is exporting only a single product. The closer it is to zero, the more diversified is the export structure. TCI is sensitive to the level of aggregation. In this study, we therefore aggregate at the 6 digit level.

A complementary method of evaluating trade flows and the potential of complementarity among partner states in an RTA is to calculate an index of Revealed Comparative Advantage (RCA). RCA shows the share of product *k* in total country *i* exports relative to the share of product *k* in total world trade. A country has Revealed Comparative Advantage when its share of exports of a good exceeds the equivalent share of exports of the world. In the context of RTAs, the presumption is that partner states that have a narrower range of RCA indices particularly in similar products are less likely to find grounds for sustained exporting as a result of an RTA.

The method used in this study is based on the Balassa Index which estimates RCA with

respect to total world trade. The general form of this framework is expressed as follows;

$$R C A_{iw}^k = \left(\frac{X_{iw}^k}{X_{iw}} \right) / \left(\frac{X_{ww}^k}{X_{ww}} \right)$$

The Sussex framework², provides an alternative version of this index which is normalized for purposes of making cross-sectoral comparisons possible. The normalized version is given as;

$$\text{Normalized RCA} = (RCA - 1) / (RCA + 1)$$

From this framework arise two versions of RCA; bilateral RCA1 and bilateral RCA2. In this study, we compute the former. RCA1 uses the exports of a selected comparator country - country *j* as the denominator. The RCA1 is then calculated by comparing the share of exports of country *i* to the world to the share of exports of country *j* to the world.

$$B R C A 1_{iw}^k = \left(\frac{X_{iw}^k}{X_{iw}} \right) / \left(\frac{X_{jw}^k}{X_{jw}} \right)$$

It ranges from zero (no exports in that product) to infinity. If RCA > 1, then the country has a revealed comparative advantage in the product in question.

Trade can be used as an imperfect proxy for production structures (when calculated by destination). To test for potential for trade diversion or trade creation in the EAC, we calculate Finger-Kreinin Index (FKI) by source. FKI shows how similar the structure of imports or exports is or how similar the structure of production is between two countries.

$$F K I_{ij}^k = \sum_i \min \left[\left(\frac{x_{i,j}^k}{X_{i,j}} \right), \left(\frac{x_{i_2,j}^k}{X_{i_2,j}} \right) \right]$$

FKI ranges between 0 and 1. A value of zero indicates that the two countries have trade structures that are completely different and the products that country *i* exports are completely different from the ones that country *j* exports

and vice-versa. This is a sure recipe for trade diversion. A value of 1 show that the two structures are identical and the countries in question export the same products with the same level of intensity. This implies that there is scope for trade creation between the two countries since both countries can choose to import from the more efficient producer between them. In this study, we calculate FKI by source.

3. RESULTS AND DISCUSSION

Table 1 reports the Openness Indicator for each of the partner states in EAC.

their exports to the rest of the world. Uganda has the most diversified export base and Burundi the least. In its trade with EAC, Burundi's exports are the least diversified, with its exports to Kenya narrowing down to a handful of commodities. Kenya's trade with EAC is the most highly diversified followed by Uganda's. Rwanda and Tanzania follow closely in that order. An overall analysis shows that there is sufficient basis for trade hence partner states should be able to exploit the full potential of the different economies along the lines of comparative advantage.

Table 1
Degree of Openness of EAC Partner States

Reporter \ Year	2003	2004	2005	2006	2007	2008
Burundi	0.35	0.38	0.47	0.62	0.59	0.39
Kenya	0.40	0.41	0.49	0.48	0.48	0.46
Rwanda	0.17	0.20	0.22	0.22	0.24	0.25
Uganda	0.28	0.27	0.27	0.35	0.38	0.40
Tanzania	0.32	0.34	0.34	0.44	0.47	0.54

Source: Own computations

The table shows a relatively low level of openness for all the EAC countries. Although all countries register a persistent rise in this indicator over the period analyzed, Rwanda and Uganda are shown to be the least open. Kenya is, on average the most open. These results suggest that within EAC, trade is only a small share of GDP hence integration is bound to be welfare improving.

Using UN Comtrade data for 2009, we computed the Trade Concentration Index by product for each of the partner states. Results are reported in Table 2. From Table 2, it is evident that each of the five countries exhibit highly diversified structures with respect to

In order to evaluate trade flows and the potential of complementarity among EAC partner states, we compute an index of Bilateral Revealed Comparative Advantage. For each set of EAC partner states, we calculate BRCA1 for the top ten exports to the world. For all the five EAC countries combined, top ten exports yields 31 products in which at least one country has a revealed comparative advantage. black tea, portland cement, coffee (Not roasted), beer made from malt, petroleum oils and oils obtained from bituminous and transmission apparatus are common export items to all the five countries in which each partner has an RCA greater than one. Table 3 reports BRCA1 by

Table 2
Trade Concentration Indices 2009

Country Partner	Burundi	Kenya	Rwanda	Uganda	Tanzania
World	0.1851	0.0536	0.1265	0.0465	0.0874
Burundi	-----	0.0619	0.1386	0.1003	0.1194
Kenya	0.7509	-----	0.8073	0.0849	0.0639
Rwanda	0.2045	0.0233	-----	0.0877	0.1922
Uganda	0.4097	0.0365	0.0815	-----	0.1548
Tanzania	0.2620	0.0147	0.0810	0.0534	-----

Source: Own computations

product for the country with the highest index against relevant competing partner.

From a list of 50 products, 31 had BRCA1 greater than one. The rest showed mixed results with some countries posting BRCA1s that are far less than one. Table 3 shows wide differences in comparative advantage over a large number of export products, ranging from 2460.44 for Kenyan exports of fresh produce to the world against Uganda's to 3.08 for Uganda's exports of stemmed tobacco to the world against Kenya's. This is likely to provide grounds for sustained exporting between the EAC countries thereby leading to a welfare improving RTA, provided that the initial tariffs are not too high.

To determine the potential for trade diversion or trade creation in the EAC, we test for similarities in the structure of exports of two countries into a given market by computing the Finger-Kreinin Index (FKI) by source using data for 2009. When computed in this manner, the FKI then simply compares the degree of similarity of the reporter country's and a first partner country's exports into a second partner country's market. Table 4 reports the FKI computations.

From the table, it is evident that the structure of exports within EAC is, on average more dissimilar than similar, with a score range of 0.00 – 0.56 on the FKI scale and with the latter scores being the outliers. Exports of Kenya/World, Kenya/Rwanda, Kenya/Uganda, Kenya/Tanzania to the world and the rest of EAC show on average, the highest range of FKI scores, with a minimum score of 0.26 and a maximum score of 0.45. This shows a fair dose of similarity in export structure of Kenya and these partners which suggests remote possibilities for trade creation, since all these countries can choose to import from the most efficient producer

Exports of Uganda/World, Uganda/Burundi, Uganda/Kenya and Uganda/Rwanda to the World and the rest of EAC is the only other set of export structures that show some remote semblance with Uganda/Burundi exports to Rwanda registering the highest FKI score (0.56). This implies that what Uganda exports to Rwanda are not very different from what Burundi exports to Rwanda, thereby suggesting possibility of trade creation. The exports of Rwanda/Burundi to Kenya are also shown to be totally different (FKI score of

Table 3
Bilateral Revealed Comparative Advantage by Product: 2009

Product	Country	Partner	BRCA1
Other black tea	Uganda	Burundi	123.48
Coffee, not roasted	Burundi	Tanzania	9.42
Beer made from malt	Uganda	Tanzania	13.85
Petroleum oils and oils obtained from bituminous	Uganda	Rwanda	35.24
Other (Product number 060390)	Kenya	Tanzania	31.46
Portland cement	Uganda	Burundi	228.54
Cigarettes containing tobacco	Kenya	Tanzania	16.56
Raw sugar	Uganda	Tanzania	333.66
Other (Product number 283699)	Kenya	Uganda	29.72
Fresh (Product number 060310)	Kenya	Uganda	2460.44
Transmission apparatus	Uganda	Tanzania	238.41
Other (Product number 070990)	Kenya	Rwanda	640.71
Other (Product number 140490)	Kenya	Uganda	1150.36
Fresh or chilled	Uganda	Kenya	23.47
Stemmed tobacco	Uganda	Kenya	3.08
Vegetable fats and oils	Uganda	Tanzania	36.60
Product number 999999	Tanzania	Uganda	14.62
Cashew nuts in shells	Tanzania	Kenya	187.44
Non-monetary, other semi manufactured forms	Tanzania	Rwanda	34.96
Sesamum seeds	Tanzania	Kenya	18.44
Non-monetary, other unwrought forms	Burundi	Rwanda	178.23
Other (Product number 261690)	Tanzania	Rwanda	85.38

Source: Own computations

zero), implying that what Rwanda exports to Kenya is totally different from what Burundi exports to Kenya, suggesting possibility of trade diversion. Overall, the FKI scores suggest more possibilities of trade diversion than creation.

These results (from FKI computations) must however be interpreted with caution, particularly with regard to the welfare effect of EAC. From a simple Vinerian Model, trade

creation is always welfare increasing while trade diversion is always welfare reducing. Evidence from literature suggests some ambiguity in this one-to-one correspondence.

From a practical perspective, if demand is not perfectly price elastic, then both trade diversion and creation would arise because integration would lead to a fall in domestic prices which then leads to an increase in con-

Table 4
Finger-Kreinin Index by Source 2009

Reporter	Partner 1	Partner 2	Fki	
Burundi	Kenya	World	0.10	
		Rwanda	0.01	
		Uganda	0.01	
		Tanzania	0.03	
	Rwanda	World	0.11	
		Uganda	0.03	
		Tanzania	0.02	
	Uganda	World	0.10	
		Tanzania	0.12	
	Tanzania	World	0.12	
		Kenya	World	0.22
			Rwanda	0.30
Burundi			0.33	
Uganda	0.44			
Uganda	World	0.34		
	Burundi	0.26		
	Tanzania	0.45		
Tanzania	World	0.33		
	Burundi	0.33		
Rwanda	World	Kenya	0.34	
	Burundi	World	0.05	
		Kenya	0.00	
		Uganda	0.04	
		Tanzania	0.02	
	Uganda	World	0.19	
		Kenya	0.18	
		Tanzania	0.12	
	Tanzania	World	0.21	
		Kenya	0.07	
	Uganda	World	Tanzania	0.23
		Burundi	World	0.26
Kenya			0.09	
Rwanda			0.56	
Tanzania			0.19	
Kenya		World	0.25	
		Rwanda	0.07	
		Tanzania	0.27	
Rwanda		World	0.27	
		Tanzania	0.27	

Table 4. Cont.

<i>Reporter</i>	<i>Partner 1</i>	<i>Partner 2</i>	<i>Fki</i>
Tanzania	World	Rwanda	0.04
	Burundi	World	0.07
		Kenya	0.10
		Rwanda	0.13
		Uganda	0.27
	Kenya	World	0.20
		Rwanda	0.06
		Uganda	0.23
	Uganda	World	0.11
		Rwanda	0.05

Source: Own computations

sumption in each of the partner states. Such consumption gains enhance welfare thereby increasing effects of trade creation. They can also offset the welfare reducing effects of trade diversion thereby causing trade diversion to be welfare enhancing. In general terms however, trade creation is superior to trade diversion.

4. CONCLUSION

In this paper, we have answered the basic question of whether the EAC is welfare enhancing to partner states by identifying the factors, which are likely to promote trade creation rather than trade diversion. The first set of factors relate to the degree of openness of the region to trade. The openness indicator suggests that overall, trade in EAC is a small share of GDP, and hence trade is welfare enhancing.

The second set of factors is concerned with the degree of overlap between the goods produced by partner states. The Trade Concentration Index shows a considerable overlap between products of each country, which signifies scope for trade creation. The last set of factors relate to differences in production costs between partner states in industries, which they have in common. The BRCA1 shows great differences in costs between partner states, implying potential for greater gains resulting from trade creation.

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