The Competitiveness of East African and South American Coffee in the World Market

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Abstract

The purpose of this study was to investigate competitiveness of coffee of East African countries relative to South Americans in the world market. The study used Normalized Revealed Comparative Advantage (NRCA) and Relative Trade Advantage (RTA) indexes as a measure of competitiveness based on secondary data from ITC trade database covering between 2001 and 2018. The findings show that East African countries and South Americans coffee has competitive advantage in the world coffee market. In addition, the study found that, all East African and South American countries achieved consistent competitiveness trend with the exception of the Ecuadorian coffee. The findings of this study give managers powerful evidence on how their industry competitiveness changes over time and rank of their respective country. The coffee competitiveness among the East African and South American countries is believed to inform the practitioners in the coffee industry to make necessary adjustments that might be needed. It is the first study to investigate the coffee competitiveness at two regions and used NRCA and RTA indexes together

Keywords: Coffee, competitiveness, export, import, performance

Introduction

In this highly competitive global economy, the issue of competitiveness has been the center of research attention (Boansi, 2013; Jafta, 2014; Van Rooyen, Esterhuizen & Stroebel, 2011) as it indicates the relative position of countries. Specifically, for commodities like coffee, competition is becoming eminent and increasing from time-to-time. This is because coffee became an important commodity in global trading where almost all countries in the world are involved in coffee trading in the international market (Ismail, Raja, MohdNur & Muhammad, 2017).

Porter (1998) has argued that competitiveness can be evaluated at various levels: Product, Company, Sector/industry, or Country. Prior studies (Bojnec & Ferto, 2016; Kostoska & Hristoski, 2018; Winarno & Harisudin, 2018) were conducted in examining the competitiveness at product, company, sector/industry, or country levels and provided evidence on which countries have competitive advantage or disadvantage. However, these studies

focused on analyzing competitiveness between trading partners (between producers and consumers) and a single country (Torok, Jambor & Mizik, 2017). Besides, Torok et al. (2017) noted that a relatively small number of researches were dealing with a broad analysis of competitiveness among the most important coffee producers. This limits our understanding of competitiveness among producers themselves in the world coffee market.

The extant research provided evidence on export performance of individual East African as well as South American countries (Bellemare, Barrett & Just, 2013; Boansi & Crentsil, 2013; Chiputwa, Spielman & Qaim, 2015; Erkan & Saricoban, 2014; Feleke, 2018; Jaramillo, Muchugu, Vega, Davis, Borgemeister & Chabi-Olaye, 2011; Minten, Tamru, Kuma & Nyarko, 2014; Ndayitwayeko, Odhiamb, Korir, Nyangweso & Chepng'eno, 2014). However, these studies adopted a single measure and narrower perspective of international competitiveness. Thus, they offered less importance in the globalized business world and global commodity coffee. As a consequence, little is known about the international competitiveness of coffee in East African countries compared with their South American counterparts. At this time, it is very significant to show the international competitiveness of coffee growers in the world market which this study aims for.

Several models have long been applied to study competitiveness among countries mainly using product and industry level. One of those models is Porter's (1980; 1985; 1986; 1990) model which suggested factors shaping the competitiveness of industries and nations. However, porter's focus is on global high-tech industries and hence, may not be used for less advanced economies like East African countries (Abei, 2017; Angala, 2015; Boonzaiaer, 2015; Jafta, 2014; Van Rooyen & Boonzaaier, 2016). Other alternative models like Balassa's index (1965) have been applied till recently (Erkan & Saricoban, 2014; Feleke, 2018) although it suffers from both theoretical foundation and empirical distribution weaknesses (Leromain & Orefice, 2013). Leromain and Orefice argued that Balassa's index fails to match the original Ricardian theory of comparative advantage (Bowen 1983; Vollrath 1991 as cited in Leromain & Orefice, 2013). Also, Balassa's index emanates from poor empirical distribution characteristics (De Benedictis & Tamberi, 2004; Hinloopen & Van Marrewijk, 2001 as cited in Leromain & Orefice, 2013): (i) it does not have a stable distribution over time (which is a crucial property given the ex-ante nature of Ricardian comparative advantage) and (ii) it provides poor ordinal ranking property (UNIDO, 1982; Yeats, 1985). Those studies that used Balassa's index didn't provide how their study addressed the mentioned limitations of the index. Thus, this study aims to fill this gap by diagnosing the methodological shortcoming of past studies in coffee competitiveness analysis.

This study aims to make the following contributions. First, this study introduces competitiveness analysis using the comparative advantage concept for comparing between inter-continental coffee-producing countries. It applies Yu, Cai and Leung (2009) Normalized Revealed Comparative Advantage and the Vollrath (1991) Relative Trade Advantage (RTA) to investigate the current level of international competitiveness of East African and South American coffee-producing countries. The outcome of such a study is important to the international coffee business as two regions constitute top coffee producers in the world. Therefore, this study provides crucial information to the theoretical understanding of international competitiveness in comparative and competitive analysis and the practical world concerning the international competitiveness of East African and South American coffee-producing countries.

Second, the study's use of trade flow data, for the analysis of international competitiveness of coffee-producing countries, is believed to significantly contribute research on comparative and competitive advantage. In support, Brakman and Marrewijk (2015) argue that gross trade flows (gross import and export) provide sufficient information to analyze the

structure of international trade, for example, comparative advantage. As noted by Brkic (2020) contemporary theory introduces a broader and multidimensional concept of international competitiveness, connecting it with the supply and demand side, exports and imports, a nation, and an industry/product. This is more meaningful for products like coffee as it is the most commonly traded agricultural product in the world. Thus, this study used to import and export data for East African and South American coffee producing countries from the ITC database to investigate the competitiveness of countries in the two regions.

Third, the study contributes to comparative advantage and international competitiveness literature by applying Yu et al. (2009) Normalized Revealed Comparative Advantage and the Vollrath (1991) Relative Trade Advantage (RTA). Even though studies to date have used Yu et al. (2009) Normalized Revealed Comparative Advantage and the Vollrath (1991) Relative Trade Advantage (RTA), research on competitive coffee-producing countries would certainly contribute to validate the model application. Thus, this study provides valuable information on the use of new models or frameworks in competitiveness analysis.

Past studies on coffee focus on determinants of export performance (Aimable & Wondmagegn, 2020; Bellemare, Barrett & Just, 2013; Boansi & Crentsil, 2013; Chiputwa et al., 2015; Erkan & Sarıçoban, 2014; Feleke, 2018; Jaramillo et al., 2011; Minten et al., 2014), market-specific (Nguyen, 2016), and market or production as well (Mutandwa, Kanuma, Rusatira, Kwiringirimana, Mugenzi, Govere & Foti, 2009; Volsi, Telles, Caldarelli & Camara, 2019) mainly either based on evidence from a single country or comparing a country with countries in a specific region only (i.e., EU, Asia, Africa, and the like). In contrast, the current study investigates competitiveness from a broader perspective among leading coffee producers in two continents: Eastern Africa and South American countries. Therefore, this study aims to investigate the level and trend of coffee competitiveness among the countries in the two continental regions.

Literature review
Comparative and competitive advantage
Comparative advantage, which basis on Ricardian Model, is a classical economic theory which compare a country to another are interdependent and can mutually benefit each other, and one of which is the economic benefit(Fakhrudin & Hastiadi, 2016). Thus, a country or a group of countries needs to benefit from international trade, specifically, in the case of analyzing various aspects of global products like coffee. In addition, comparative advantage promise whether a person, a region, or a nation has an advantage or disadvantage in producing a particular good (coffee in this study case) compared to the another good that can be produced. However, Porter (1990; 1998) noted that a sustained long-term competitive performance, relying only on comparative advantage positions- positions based on agro-ecological advantages and favorable resource endowments - is generally viewed as problematic and unviable. Hence, economic units should find a competitive advantage.

According to Porter (1990), a nation's success/prosperity through trade is not "inherited". It does not depend on the nation's endowment of resources or the exchange rates. A nation's prosperity is "created" by the nation's firms that are successful in the world markets. Porter argued that a nation's competitiveness depends on the capacity of its industry to innovate and upgrade compared to other nations.

International competitiveness
The term international competitiveness does not have a generally accepted definition as a result of the explanation comes from different disciplines – economics, management, politics, culture, etc (Brkic, 2020). The word competitiveness has been defined in different ways; however, it

depends on the unit of analysis product, firm, company, or national level. The definitions in this study mainly focus on competitiveness at the industry level or coffee industry in studied countries.

According to the definition by Fagerberg (1988), competitiveness is the country's ability to achieve the fundamental goals of its economic policy, such as growth and employment, without incurring difficulties with its balance of payments. With a similar definition, Jones and Teece (1988) competitiveness refer to the degree to which an economy in a world of open markets produces goods and services that meet the requirements of these markets and simultaneously expands its GDP and GDP per capita at least as fast as its business partners do. Consistent with the above definitions, Chikan (2008) defined the term as the ability of a national economy to create, produce, distribute, and/or service products meeting the requirements of international trade in a way that the return on its factor endowments increases in the meantime. In support, Fajnzylber (1988) and Onsel, Ulengin, Ulusoy, Aktaş, Kabak and Topcu (2008) mentioned competitiveness as the extent to which it can, under free and fair market conditions, produce products that meet the standards of global markets while simultaneously expanding the real income of its citizens and thus, improving citizen's quality of life.

Moreover, competitiveness can be defined as the overall economic performance of a nation measured in terms of its ability to provide its citizens with growing living standards on a sustainable foundation and creating broad access to employment for those willing to work (European Union, 2010). Besides, a country can realize central economic policy goals, especially growth in income and employment, without running into the balance of payments difficulties (Bloch & Kenyon, 2001). This definition is also supported by Atkinson (2013) who noted competitiveness as the ability of a region or country to export more in value-added terms than it imports.

In general, the concept of competitiveness does not have one comprehensive universal definition (Carraresi & Banterle, 2015). Usually, it is interchangeably used with competitive or comparative advantage although this is not entirely correct (Siggel, 2006). As explained above, it is necessary to determine whether we are examining it from a micro (firm-level) or macroeconomic (country or national level) perspective, as the indices to measure it are different. This study focuses on the assessment of competitiveness at the industry but cross country level which helps to reach, conserve, and increase market share overtime against other competitors (East African and South American countries) in the international market (Bojnec & Ferto, 2009; Latruffe, 2010; Traill, 1998; van Rooyen et al., 2011).

Competitiveness measures
In the extant literature, various measures of competitiveness have been suggested by different authors. Some of them are Revealed Comparative Advantage, Relative Trade Advantage, Net Export Index (NXi), Porter Diamond model, Real exchange rate, Foreign Direct Investment, The Growth-Share matrix, Unit labor costs, Business confidence indexes, etc (Abei, 2017; Esterhuizen, 2006). However, the application of these measures varies with the type of data used in the analysis of a study. For example, the Porter Diamond model and Business confidence indexes are mostly used in the analysis of primary data (Angala, 2015; Boonzaaier, 2015; Esterhuizen, 2006; Jafta, 2014; Van Rooyen & Boonzaaier, 2016; Van Rooyen et al., 2011) while Revealed Comparative Advantage, Real exchange rate, Foreign Direct Investment, Growth-Share matrix, Unit labor costs, and Relative Trade Advantage are used for the analysis of secondary data (Angala, 2015; Boansi, 2013; Boonzaiaer, 2015; Dlamini, 2012; Jackman, Lorde, Lowe & Alleyne, 2011; Jafta, 2014).

The most commonly used competitiveness measures are Revealed Comparative Advantage (RCA) introduced by Balassa (1965) and Relative Trade Advantage (RTA). But Balassa's index (1965) has been criticized for problems related to its relative order (Yeats, 1985). Alternative RCA measures were introduced so far to solve the weaknesses of RCA such as BRCA log (Vollrath, 1991), Symmetrical Revealed Comparative Advantage (SRCA) (Laursen, 2015), Weighted Revealed Comparative Advantage (WRA) (Proudman & Redding, 1998), Additive Revealed Comparative Advantage (ARCA) (Hoen & Oosterhaven, 2006 as cited in Fakhrudin & Hastiadi, 2016). As noted by Fakhrudin and Hastiadi (2016) none of those indices could be the one that can be generally applied to the comparison between spaces (commodities, state, or region) and time. Therefore, the current study uses Normalized Revealed Comparative Advantage (NRCA) by Yu et al.(2009) and Relative Trade Advantage (RTA) by Vollrath (1991).

NRCA

NRCA index is developed by Yu, Cai, and Leung (2009) as a model that estimates the degree of deviation of actual export over a period from a neutral level i.e., comparative advantage. The noteworthy part of NRCA is its symmetrical distribution and independence of cross-product and country analysis. The current study uses NRCA for cross country analysis. The NRCA index is shown as follows:

$$NRCA_{ij} = E_{ij}/E - E_j E_i/EE$$

Where,
$NRCA_{ij}$ = Normalized Revealed Comparative Advantage of product j of country i
E_{ij} = export of product j of country i
E_j = total world export of same j product
E_i = total export of country i, and
E = total world export

$NRCA_{ij}$ has both positive and negative signs, while the neutral point is zero. If NRCA has a positive value that means comparative advantage and negative indicates the comparative disadvantage in products or sectors. Its symmetrical distribution property represents magnitude or scores of NRCA which has ranging from $-1/4$ (disadvantage) to $+1/4$ (advantage). The higher the positive value stronger will be the advantage and the higher the negative value stronger will be the disadvantage.

RTA

Vollrath (1991) suggested an alternative specification of revealed comparative advantage, called the relative trade advantage (RTA), which accounts for exports as well as imports. RTA is calculated as the difference between Relative Export Advantage (RXA) and its counterpart, Relative Import Penetration Advantage (RMA):
This method is computed as follows;

$$RCA_{ij} = RXA_{ij} = \frac{\left[\frac{X_{ij}}{X_{ik}}\right]}{\left[\frac{X_{nj}}{X_{nk}}\right]} \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots (1)$$

Then, RMA:

$$RMA_{ij} = \left[\frac{M_{ij}}{M_{ik}}\right] / \left[\frac{M_{nj}}{M_{nk}}\right]\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots (2)$$

In this case, M denotes imports. A positive value of RTA reflects the status of competitive advantage.

$$RTA_{ij} = RXA_{ij} - RMA_{ij} \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (3)$$

Any value of RTA above one suggests that a nation has a competitive advantage in the considered commodity or service, and an index below zero indicates a competitive disadvantage, whereas index values between zero and one reveal that a nation is marginally competitive in that particular product. The numerators in the model above demonstrate a nation's exports or imports in a particular commodity relative to the exports or imports of the commodity by all other countries. The dominators show the exports or imports of all commodities or services by reflecting the product in terms of the percentage of all other country's exports or imports of all commodities or services.

While the RXA and RMA indexes are exclusively calculated using either export or import data, only the RTA considers both export and import activities. This is advantageous when looking at the perspective of trade theory, mostly due to the increase in intra-industry trade (Frohberg & Hartmann, 1997). Several scholars, notably Pitts, Viaene, Traill, and Gellynk (1995) and Batha and Jooste (2004) argue that it is crucial to consider both import and export values because if one takes into account only exports (RXA), for instance, some countries act as a transit and the RXA values might reveal high levels of competitive advantage that would be purely false.

Research methods

This study was carried out about the competitiveness of East African and South American countries' coffee in the world market. The study was descriptive research in nature with a quantitative approach. As explained by Kothari (2004), descriptive research design refers to describing the characteristics of a particular phenomenon. In this study a descriptive design was used to describe the current level and trend of competitive performance of East African countries such as Ethiopia, Uganda, Tanzania, and Kenya; and South American coffee producing countries including Brazil, Colombia, Peru, and Ecuador using quantitative data.

According to Creswell (2012), quantitative research emphasizes describing a research problem through a description of trends based on past and current data. The author also argued that quantitative research must be based on collecting numeric data using different techniques. The study used secondary data obtained from the ITC database covering the time between 2001 and 2018. ITC data is more comprehensive, providing data for about 5, 300 harmonized systems, and coded products including both agricultural and other products collected from about 220 countries ranging from 2001 to 2018. The collected data was analyzed using two popular measures of competitiveness: Normalized Revealed Comparative Advantage (NRCA) and Relative Trade Advantage (RTA).

Results and discussion

The study sought to investigate the competitiveness among East African and South American coffee producing countries using NRCA and RTA computed based on the data from the ITC database. Figure 1 below presents coffee export of East African and South American countries used in the analysis of NRCA and RTA.

As shown in figure 1, East African and South American countries have achieved a steady increment in coffee export except for inconsistency by Brazil, Ethiopia, and Uganda. Brazil, for instance, has recorded an increase in coffee export from 2001 to 2008 but in the years between 2009 and 2014 the country has volatile export by value. Since 2015 Brazil's coffee export showed continued to decline until 2018. Comparatively, countries like Colombia, Peru, Ecuador, Kenya, and Tanzania have recorded a continuous increase in coffee export in the years ranging from 2001 to 2018. In the case of Ethiopia and Uganda, the coffee export

showed an inconsistent trend between 2001 and 2018. More interestingly, except Tanzania, all other counties experienced a decline in coffee export in 2018 from 2017. Therefore, it can be concluded that most East African and South American countries have achieved similar export trends in the study periods (2001 to 2018) although some disparity with inconsistent countries like Brazil, Ethiopia, and Uganda. Thus, such countries with similar export characteristics deserve competitiveness comparison among themselves.
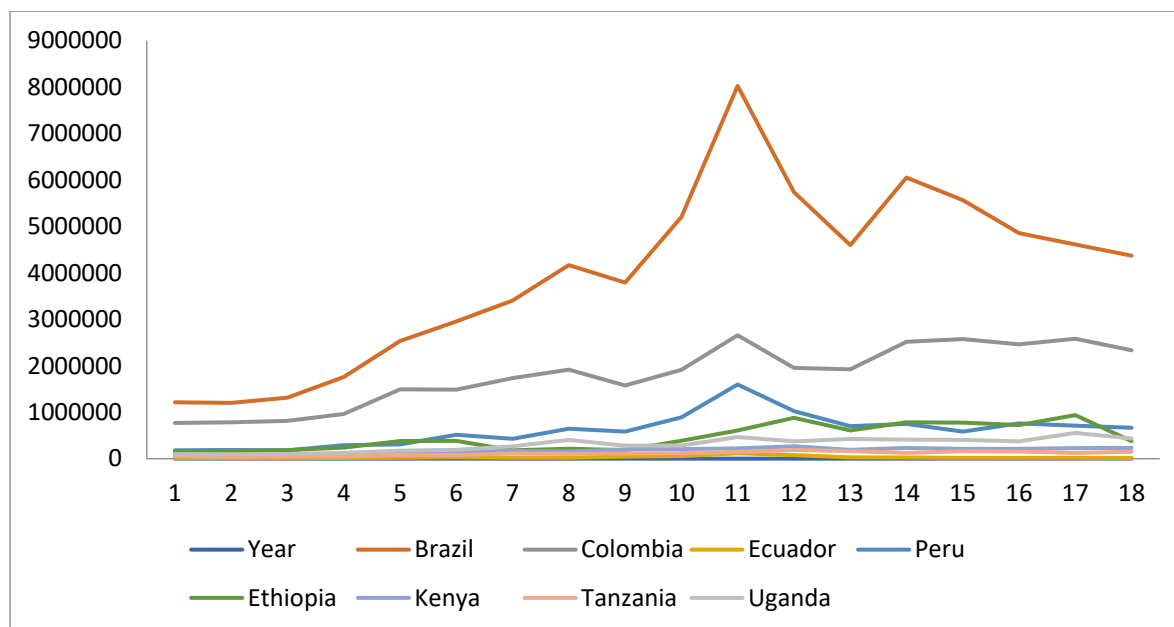

Figure 1: Coffee export of East African and South American countries (USD in thousands)
Source: ITC (2020)

Based on the above data from the ITC database, the following sections provide the analysis of competitiveness among East African and South American countries starting with the NRCA result under table 1 here.

Table 1: NRCA of Brazil, Colombia, Peru, Ecuador, Ethiopia, Uganda, Kenya, and Tanzania

| Year | Country | | | | | | | |
	Brazil	Colombia	Ecuador	Peru	Ethiopia	Kenya	Tanzania	Uganda
2001	0.000187369	0.000123347	0.00167991*	0.028209*	0.0232088*	0.0152964*	0.00892412*	0.0158562*
2002	0.000177409	0.000119866	0.000812821*	0.0280599*	0.0250612*	0.00524841*	0.00533979*	0.0149668*
2003	0.000165876	0.000106964	0.000654269*	0.0229786*	0.024452*	0.0118354*	0.00650162*	0.0133181*
2004	0.000182511	0.000104072	0.000762489*	0.0304414*	0.026044*	0.0100841*	0.00532377*	0.0135785*
2005	0.000231179	0.000141853	0.00105681*	0.0276139*	0.0365854*	0.0119543*	0.00750184*	0.0166272*
2006	0.000232821	0.000121859	0.00136431*	0.0406287*	0.031914*	0.0111904*	0.00616089*	0.0157786*
2007	0.000232258	0.000123054	0.000368589*	0.02839*	0.0129075*	0.0116287*	0.00823371*	0.019163*
2008	0.00024414	0.000116868	-0.000156584*	0.0377329*	0.0133295*	0.0091422*	0.00630458*	0.0251029*
2009	0.000287292	0.000123303	0.00200654*	0.0438795*	0.0147133*	0.0157231*	0.00894591*	0.0224949*
2010	0.000323511	0.000122589	0.00188535*	0.0551078*	0.0254322*	0.0132008*	0.00734509*	0.0186374*
2011	0.000415442	0.000140586	0.00393517*	0.083169*	0.0333287*	0.0116042*	0.00758404*	0.0255419*
2012	0.000288357	0.000100445	0.00175945*	0.0511159*	0.0475103*	0.0139341*	0.00966106*	0.0199999*
2013	0.00022441	0.0971902*	-0.000430377*	0.0336599*	0.0319184*	0.00964576*	0.00828909*	0.0223471*
2014	0.000300982	0.000128632	-0.000970788*	0.0363009*	0.0413526*	0.0117261*	0.00604681*	0.0215578*
2015	0.000315427	0.000151895	-0.000837158*	0.0316617*	0.0466063*	0.0121278*	0.00892112*	0.0241047*
2016	0.000281044	0.000149927	-0.0007926*	0.0430201*	0.044935*	0.0125811*	0.0090163*	0.0228892*
2017	0.000238126	0.000142029	-0.000995887*	0.0355365*	0.0527103*	0.0123835*	0.0067056*	0.0310894*
2018	0.000205528	0.000116685	-0.00101176*	0.0305615*	0.0192482*	0.0114277*	0.00732049*	0.0221633*

*the numerical values are in "000"

According to Yu et al. (2009), NRCA has both positive and negative signs, while the neutral point is zero. If NRCA has a positive value that means comparative advantage and negative indicates the comparative disadvantage in products or sectors. Its symmetrical distribution property represents magnitude or scores of NRCA which has ranging from－1/4 (disadvantage) to +1/4 (advantage). The Higher the positive value shows stronger will be the advantage, and the higher the negative value stronger will be the disadvantage. Thus, as per the result in table 1 above, countries such as Brazil, Colombia, Peru, Ethiopia, Uganda, Kenya, and Tanzania have a comparative advantage in coffee as the NRCA value shows positive value. Ecuador has a comparative advantage in the years between 2001 and 2007 as well as between 2009 and 2012. However, in 2008 and from 2016 through to 2018 the country has a comparative disadvantage in coffee. The result of NRCA indicates that none of East African and South American coffee producing countries has either strong comparative advantage or disadvantage. To examine the trend of competitiveness across the countries in the two regions, the NRCA value is depicted using figure 2 as shown below.
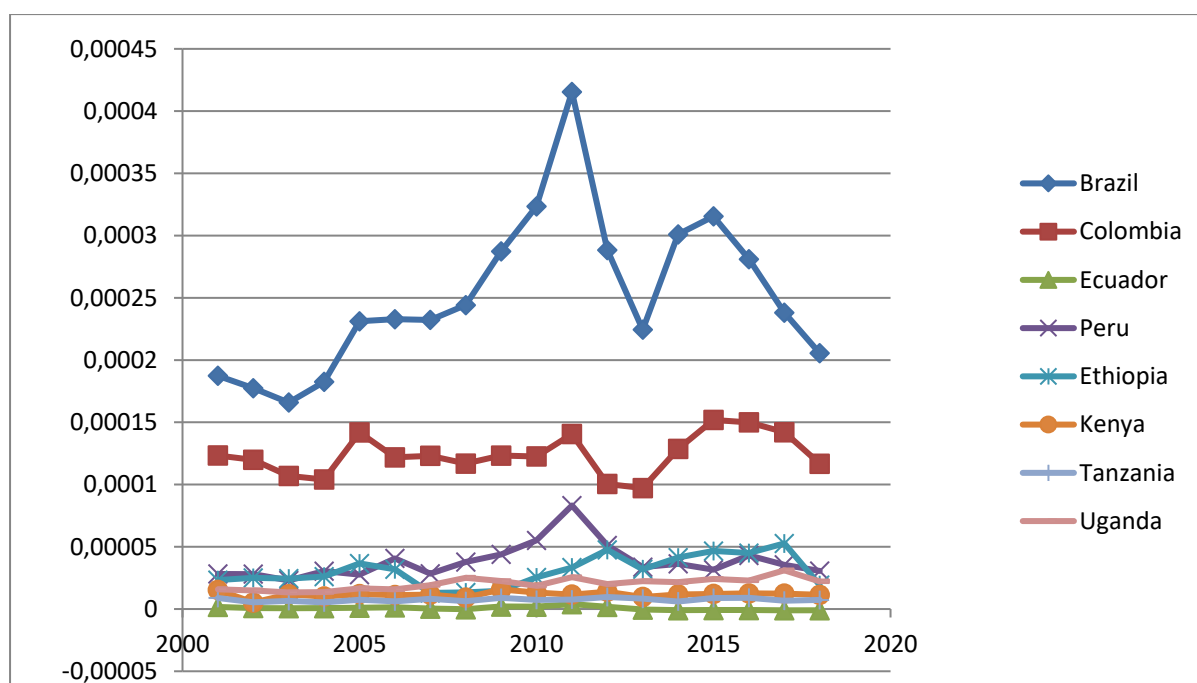

Figure 2: NRCA
Source: ITC (2020)

As shown in figure 2 above, three main groups can be generated based on the NRCA value. The first group consists of Brazil and Colombia with higher inconsistent comparative advantage and the second group includes countries like Peru, Ethiopia, and Uganda. This is due to the volatile export performance of those mentioned countries as shown by export data in figure 2 above. The third group consists of countries like Ecuador, Kenya and Tanzania have relatively stable NRCA values indicating consistent comparative advantage. In addition to NRCA used, in this study, the RTA index was adopted to analyze the competitiveness of East African and South American countries in the coffee trade. The result is presented in table 2 as follows.

Table 2: RTA of Brazil, Colombia, Peru, Ecuador, Ethiopia, Uganda, Kenya, and Tanzania

Year	Country							
	Brazil	Colombia	Ecuador	Peru	Ethiopia	Kenya	Tanzania	Uganda
2001	23.13	67.59	2.97	25.15	540.01	61.33	70.94	253.65
2002	24.05	77.73	2.01	25.30	633.88	25.31	40.00	258.89
2003	21.70	73.24	1.79	20.72	566.84	37.11	45.84	233.06
2004	22.44	67.25	1.90	23.79	640.57	36.50	34.92	235.64
2005	22.56	70.55	1.36	15.40	515.84	32.59	41.85	227.99
2006	21.95	57.61	1.83	18.57	531.44	33.59	34.62	201.79
2007	20.96	53.33	1.27	12.44	250.83	33.59	45.61	198.86
2008	19.26	42.75	0.86	15.88	243.04	23.27	25.65	228.22
2009	19.36	32.53	1.84	14.36	153.15	29.81	25.26	138.06
2010	20.89	33.17	1.87	16.57	250.25	26.48	18.84	135.09
2011	20.75	25.10	2.28	18.84	260.04	20.21	16.24	141.27
2012	16.04	18.10	1.58	12.90	269.99	25.56	19.60	105.44
2013	15.16	23.58	0.70	11.37	208.48	22.71	25.76	145.38
2014	19.78	30.44	0.55	11.91	216.47	23.38	13.11	130.74
2015	19.53	45.99	0.54	9.87	225.17	20.11	15.18	117.51
2016	16.57	49.26	0.54	11.60	208.07	20.57	19.14	93.37
2017	13.30	42.97	0.45	9.02	273.20	22.70	17.37	129.53
2018	13.63	40.18	0.29	9.39	210.30	25.71	26.36	106.99

Source: ITC (2020)

According to Gibba (2017), the positive value of RTA indicates a competitive advantage, and a negative result shows a competitive disadvantage. In another way, this threshold is more described by Momaya (1998) which states that if the RTA index is less than 0, the industry does not have a competitive advantage, if the RTA value is close to 0, an country is labeled as self-balancing, and if the RTA value is greater than 0, the country has a competitive advantage. The result of the RTA index, presented in table 2 above, of each country, revealed that all countries have a competitive advantage in the world coffee market. Specific to Ethiopia and Uganda, the RTA value is larger due to lower import value compared to other countries in Eastern Africa and Southern America studied in this study. This is indicated in Table 3 below which shows the import value of each country based on the data from the ITC database in the years from 2001 to 2018.

Table 3: Coffee import of Brazil, Colombia, Peru, Ecuador, Ethiopia, Uganda, Kenya, and Tanzania (USD in thousands)

Year	Country							
	Brazil	Colombia	Ecuador	Peru	Ethiopia	Kenya	Tanzania	Uganda
2001	1,632	4,077	297	14	19	100	37	9
2002	1,608	4,733	65	15	30	63	46	79
2003	907	2,591	142	92	33	79	57	91
2004	1,093	5,294	112	73	9	95	57	39
2005	1,089	25,023	6,680	122	111	189	45	235
2006	1,402	27,481	3,273	166	89,574	239	38	634
2007	2,062	12,897	377	235	332	689	43	105
2008	7,662	20,404	1,083	371	209	432	81	424
2009	13,979	83,498	6,924	380	208	282	205	319
2010	21,518	79,471	5,166	417	584	942	128	2,303
2011	40,584	171,724	17,122	611	513	2,352	331	2,518
2012	35,822	175,236	8,347	873	1,183	666	281	1,741
2013	32,234	51,666	3,343	1,080	533	752	286	1,275
2014	47,920	36,791	1,179	952	873	957	498	17,541
2015	67,073	15,447	1,878	993	968	3,667	284	15,702
2016	53,650	17,129	1,733	1,200	539	2,030	174	9,070
2017	74,618	30,538	1,735	976	797	3,762	146	16,907
2018	60,989	96,061	4,520	1,176	89	5,568	55	7,851

Source: ITC (2020)

Moreover, to examine the trend of competitiveness of countries in East Africa and South America, the RTA value is depicted using figure 3 as shown below.

The pattern result of RTA value shows the trend of competitiveness of East African and South American countries considered in this study such as Brazil, Colombia, Ecuador, Peru, Ethiopia, Uganda, Kenya, and Tanzania. By looking at the trend of RTA value over the considered period presented in figure 3, two groups can be generated. First is Brazil and Uganda with higher inconsistency RTA value which indicates volatile competitiveness. The second group consists of countries such as Colombia, Ecuador, Peru, Ethiopia, Kenya, and Tanzania. These countries' RTA value shows a trend of stability which indicates relative competitiveness consistency throughout considered periods.
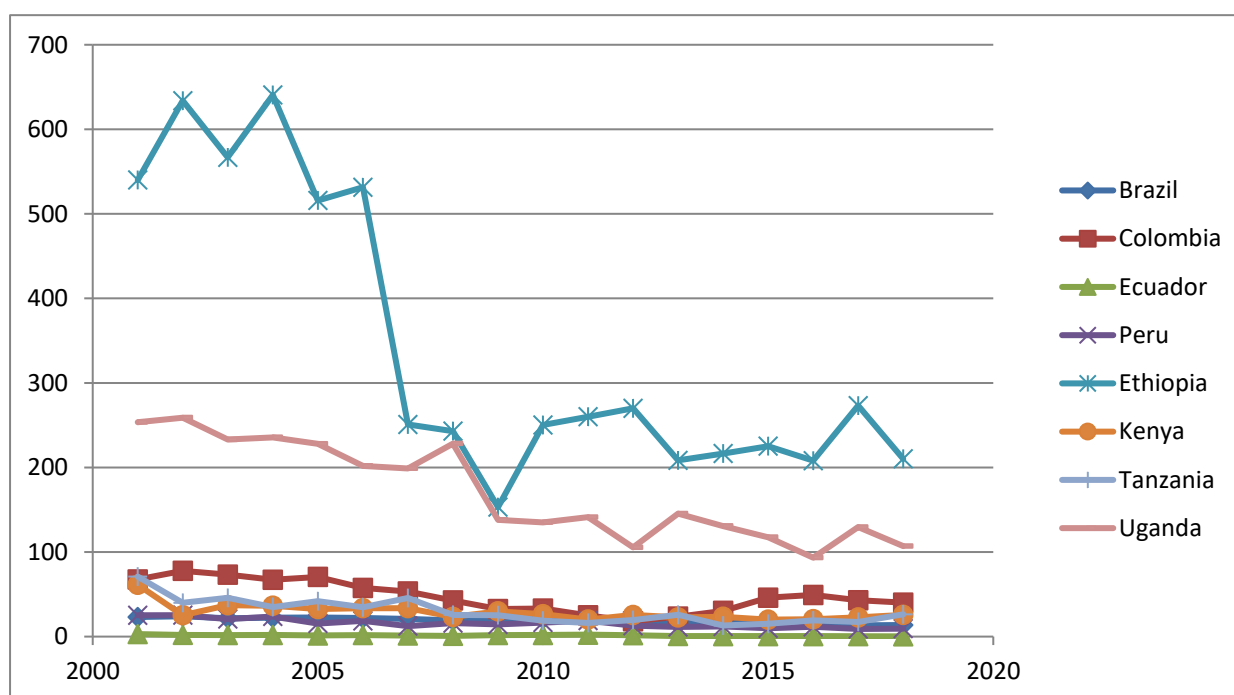

Figure 3: RTA
Source: ITC (2020)

Conclusions

This study integrated between comparative advantage model of NRCA and the competitive advantage model of RTA to found that East African and South American countries such as Brazil, Colombia, Peru, Ecuador, Ethiopia, Uganda, Kenya, and Tanzania have an advantage in coffee. By using international competitiveness analysis from the international trade concept for comparative and competitive advantage analysis as a measure of coffee competitiveness of East African and South American countries in the world market, this study offers several theoretical contributions. First, it expands prior research discussion on the shortcomings of Balassa's index, the most commonly used competitive index, by adopting Normalized Revealed Comparative Advantage (NRCA) and Relative Trade Advantage (RTA) (Leromain & Orefice, 2013; Brakman & Marrewijk, 2015). Particularly, as noted by Leromain & Orefice (2013) Balassa's index (1965) suffers from both theoretical foundation and empirical distribution weaknesses. The Balassa's index does not have a stable distribution over time and provides poor ordinal ranking property (UNIDO, 1982; Yeats, 1985). Despite such criticism

from the scientific community, some researchers continued to adopt the RCA index for comparative advantage. For example, Torok, Jambor and Mizik (2017) used RCA to analyze the comparative advantage in the global coffee trade. Thus, this study believes that findings from such studies may be misleading and inconclusive. Therefore, using competitiveness models such as NRCA and RTA, the focus of this study, could improve the validity of findings from studies like the current study.

Second, mixed competitive analysis resulting from both import and export data helps to provide strong insight into the international trade concept. in this study, NRCA provides estimates of the degree of deviation of its actual export over time while RTA calculates the difference between relative export advantage (RXA) and its counterpart, relative import penetration advantage (RMA). Thus, the current study provides an important application of the international trade concept with import and export data from the ITC database. In support, Brakman and Marrewijk (2015) argue that gross trade flows (gross import and export) provide sufficient information to analyze the structure of international trade and, for example, comparative advantage.

Third, the broader approach (Meso level) of competitiveness analysis for analyzing international competitiveness analysis, by this study, helps to advance the theoretical understanding of comparative as well as competitive advantage analysis. As noted by Brkic (2020) contemporary theory introduces a broader and multidimensional concept of international competitiveness, connecting it with the supply and demand side, exports and imports, a nation, and an industry/product. This is more meaningful for products like coffee as it is the most commonly traded agricultural product in the world. Besides, using the inter-continental (or cross countries) mechanism for competitiveness analysis of this study helps to add to advance existing literature on competitiveness. These are choosing a single country and competitive analysis between partner countries as a common way of competitiveness analysis. However, this study considered a broader perspective as if the contemporary world trade becomes more global.

The finding that countries such as Brazil, Colombia, Peru, Ethiopia, Uganda, Kenya, and Tanzania have a comparative advantage in coffee, as shown by the NRCA and RTA positive value, is meaningful for managerial application. First, the current study's report on the level and trend of the coffee competitiveness among the East African and South American countries is believed to inform the practitioners in the coffee industry to make necessary adjustments that might be needed. The findings of this study give managers powerful evidence on how their industry competitiveness changes over time and the ordinal rank of their respective countries. This is because the coffee sector continues to play an important role in the social and economic environment of countries in the two continental regions as the livelihood of more than 26 million people depend on coffee farming consisting of mostly small farm holders.

Second, the competitiveness trend analysis for each country provides coffee industry managers to be informed on the extent of coffee performance. Specifically, these study findings showing competitiveness trend analysis, for example, Ecuador's inconsistent competitiveness trend, provides a good lesson for the country's coffee industry managers as well as for other countries too. Furthermore, the study recommends managers to give attention to the sustained comparative as well as competitive strategies and policies needed for countries.

Unlike theoretical and practical contributions, this study may have some limitations. First, the study was based on data concerning the coffee product in general coded 0901 in the ITC database. This means it focused on coffee whether or not roasted or decaffeinated; coffee husks and skins, etc. Therefore, future research on the competitive performance of coffee from East African and South American countries may use classification such as coffee roasted or

decaffeinated; coffee husks and skins, etc. Second, this study is only based on secondary data to examine the current status and does not show what drives the competitive performance of coffee. Thus, future researches should examine the determinants of the competitive performance of coffee using primary data. However, future studies should go beyond the mere level and trend of competitiveness analysis to providing empirical evidence relating to why some countries are competitive while others are not. This means that future studies need to investigate the factors affecting the competitiveness level and trend of countries in the world coffee trade.

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