GDP Official Exchange Rate and GDP Purchasing Power Parity Comparison: East African Community (EAC): A Comparative Study

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Abstract

"The strength of the book is that it is comprehensive, well written and accessible to students who don't have an in depth- understanding of formal economics."(Matthew Cole, Birmingham University)

The main objectives of this Review paper is to answer three questions in easy and soft language for an in depth understanding. which country is more advanced in East African community (EAC) using comparison of GDP Official exchange rate (GDP OER) and GDP Purchasing power party (GDP PPP), Is Rwanda contributing more to global Economy than other countries member of EAC, and the last one is the average person income or wealthier in Rwanda compared to other countries member of East African community, all these issues are being addressed in this review paper.

The methodology used in this paper was a Descriptive study, where EAC members where described based on historical data published from world bank, IMF, NISR, and then compared where comparison was based on GDP official exchange rate, PPP, expenditures partners, Trade per capita, exports, imports and worldwide governance indicators.

The result showed that Kenya is the most advanced country in EAC members, with highest Nominal GDP in US dollar, times more than one point five of Tanzania, two point five times of Uganda, seven times of Rwanda and twenty times of Burundi. Even though country like Kenya is one step ahead of Tanzania in terms of GDP per capita, Tanzania had spent much in gross fixed capital formation compared to Kenya and all other EAC members. And in terms of governance Rwanda is a head of its counterparts EAC members. Kenyans are wealthier in EAC and Kenya contributes more in global economy in terms of exports and imports.

Keywords: GDP OER, GDP PPP, EAC, Global economy, Governance and Advanced.

1. Introduction

The calculation of measures of regional and global GDP growth requires levels of GDP to weigh the growth rates of individual countries and regions by their size of GDP. The most straightforward way to obtain such weights is to use exchange rate-converted GDP in dollar terms.

According to Robert Costanza *et al.*.(January 2009),For more than a half century, the most widely accepted measure of a country's economic progress has been changes in its Gross Domestic Product (GDP). GDP is an estimate of market throughput, adding together the value of all final goods and services that are produced and traded for money within a given period of time. It is typically measured by adding together a nation's personal consumption expenditures (payments by households for goods and services), government expenditures (public spending on the provision of goods and services, infrastructure, debt payments, etc.), net exports (the value of a country's exports minus the value of imports), and net capital formation (the increase in value of a nation's total stock of monetized capital goods).

GDP is based on estimates and survey data maintained in a country's System of National Accounts (SNA). These consist of detailed economic census data collected at regular intervals. Annual and quarterly GDP estimates are extrapolated from the census data combined with annual economic survey data such as retail sales, housing starts, and manufacturer shipments (Marcuss and Kane 2007).

The current quota formula is a weighted average of GDP (weight of 50 percent), openness (30 percent), variability (15 percent), and international reserves (5 percent). For the formula, GDP is measured as a blend of GDP based on a market exchange rates (weight of 60 percent) and on PPPs (40 percent). Both market exchange and PPP GDP weights are an average of the last 3 years data: the 2008 data set therefore requires GDP data for 2006–2008. A compression factor of 0.95 is applied to the linear combination of the four variables to reduce the dispersion of calculated quotas.(IMF, November 2010).

While more than 80 percent of the world's people live in developing countries, their economies in 2003 produced goods and services worth $7.1 trillion, about one-fifth of the world's total output ... To make comparisons between countries, local currencies must be converted to a common value ... Valuations based on exchange rates better measure the tradable value of a country's output and a country's relative importance in the global economy (Ian Castles and David Henderson,).

The concept of purchasing power parity (PPP) has two applications in economics. The first use is as a conversion factor to transfer data from denomination in one national currency to another. The data are generally in a national accounts framework, but the level of detail can range from the gross domestic product (GDP) itself to highly disaggregate categories of expenditure. This use of PPP boasts a body of theory (mainly index-number theory) and applications (predominantly to inter-country comparisons of GDP and its components) that have steadily improved over the years, and path breaking studies in the area continue to appear. There is now general recognition that, for certain purposes of data conversion, it is

preferable to use PPPs rather than current exchange rates. (LAWRENCE H. OFFICER, IMF Paper)

Figure 1.1 shows simply the five Partner States members of East African Community: Burundi, Kenya, Rwanda, Tanzania and Uganda. Admission to the Community is guided by criteria spelt out in Article 3 of the EAC Treaty. The EAC is home to 145.5 million citizens, of which 22% is urban population. With a land area of 1.82 million square kilometres and a combined Gross Domestic Product of US$ 147.5 billion (EAC Statistics for 2015), its realisation bears great strategic and geopolitical significance and prospects for the renewed and reinvigorated EAC.

The work of the EAC is guided by its Treaty which established the Community. It was signed on 30 November 1999 and entered into force on 7 July 2000 following its ratification by the original three Partner States - Kenya, Tanzania and Uganda. The Republic of Rwanda and the Republic of Burundi acceded to the EAC Treaty on 18 June 2007 and became full Members of the Community with effect from 1 July 2007. (EAC, 2016).
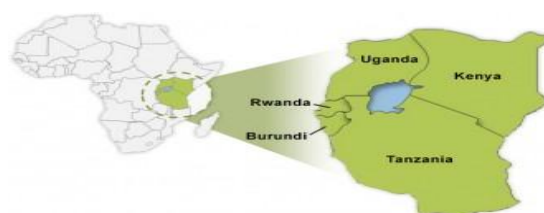

Table 1.1 EAC Partner States Strategic Visions

Partner State	Time Frame	Strategic Vision	Priority Areas
Kenya	Vision 2030	Globally competitive and prosperous Kenya with a high quality of life.	To achieve sectoral objectives including meeting regional and global commitments
Uganda	Vision 2035	Transform Ugandan society from peasant to a modern prosperous country.	Prominence being given to knowledge based economy
Tanzania	Vision 2025	High quality of life anchored on peace, stability, unity, and good governance, rule of law, resilient economy and competitiveness.	Inculcate hard work, investment and savings culture; knowledge based economy; infrastructure Development; and Private Sector Development.
Rwanda	Vision 2020	Become a middle income country	Reconstruction, HR

		by 2020	development and integration to regional and global economy
Burundi	Vision 2025	Sustainable peace and stability and achievement of global development commitments in line with MDGS.	Poverty reduction, reconstruction and institutional development.
EAC	Treaty	Attain a prosperous, competitive, secure and politically united East Africa	widen and deepen economic, political, social and cultural integration at regional and global levels

While the Partner States visions and strategies were prepared independently, they are in line with the objectives of the Community which is meant to develop policies and programmes aimed at widening and deepening co-operation among the Partner States in political, economic, social and cultural fields, research and technology, defence, security and legal and judicial affairs, for the Partner States' mutual benefits. All the Partner States share in the dream of achieving a middle income status by 2030. The fourth development strategy will in its unique regional character and priority programmes contribute to these aspirations.

Figure 1.2 shows that each of the EAC partner states belongs to at least two of the eight regional economic communities (RECs) recognized by the African Union. The six RECs have different structures but all share the common objectives of reducing trade barriers among partner states, coordinating and harmonizing policies, and creating a larger unified economic space.
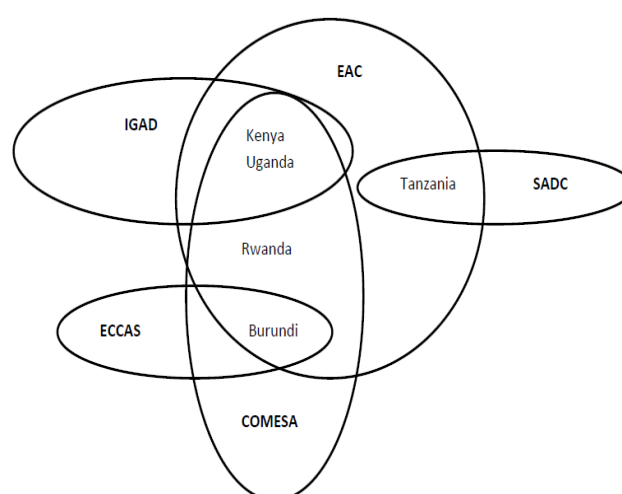
Source: East African Community Report, January 2012 Reshaping Economic Geography of East Africa: From Regional to Global Integration, Report No. 65699-AFR.

2. Theoretical Framework

According to Rudiger Dornbusch (National Bureau of Economic Research, March 1985), Versions of the PPP theory have been traced to the Salamanca school in 16th century Spain and to the writings of Gerard de Malynes appearing in 1601 in England. The Swedish, French and English bullionists in the second part of the 18th and in the early 19th century present further statements of PPP. Particularly noteworthy is the Bulion Report in England (1810, p. cxi).

"whether this 13 1/2 per cent, which stands against this country by the present exchange on Lisbon, is a real difference of exchange, occasioned by the course of trade and by the remittances to Portugal on account of government, or a nominal and apparent exchange occasioned by something in the state of our currency, or is partly real and partly nominal, may perhaps be determined by what your committee have yet to state."

During the 19th century classical economists, including in particular Ricardo, Mil, Goschen and Marshal, endorsed and developed more or less qualified PPP views. This history is reviewed and discussed in Viner (1937), Schuinpeter (1954), Holmes (1967) and Officer (1984).

Even though PPP theory was well established by the time of World War I, the forceful use and development of the theory by the Swedish economist Gustav Casel, has made him the outstanding protagonist of the theory.

According Frederic A. Vogel, purchasing power parity (PPP) is a price index very similar in content and estimation to the consumer price index, or CPI. Whereas the CPI shows price changes over time, a PPP provides a measure of price level differences across countries. A PPP could also be thought of as an alternative currency exchange rate, but based on actual prices. The CPI is, though, easier to understand because it is based on the national currency, which remains the same over time.

To compare the GDP of countries with different currencies, it is necessary to convert to a "common denominator" using an *exchange rate*, which is the value of one currency in terms of another currency. Exchange rates are expressed either as the units of country X's currency that need to be traded for a single unit of country Y's currency (for example, Rwandan Francs common denominated as FRW per Kenyan Shilling), or as the inverse (for example, Kenyan shilling per Rwandan Francs). Two types of exchange rates can be used for this purpose, *market exchange rates* (called also OER) and *purchasing power parity* (PPP) equivalent exchange rates. Market exchange rates vary on a day-to-day basis depending on supply and demand in foreign exchange markets. PPP-equivalent exchange rates provide a longer run measure of the exchange rate. For this reason, PPP-equivalent exchange rates are typically used for cross country comparisons of GDP. Both are being well discussed in the next paragraphs.

3. Methodology

The purchasing power parity between two countries is defined as either the ratio of the

countries' price levels (absolute PPP) or the product of the exchange rate in a base period and the ratio of the countries' price indices (relative PPP). Let A and B be two countries, t the current time period, and o a base period. Then, by definition

$$PPP^{abs} = PL_t^B / PL_t^A \text{ and } PPP^{rel} = \frac{P_t^B}{P_t^A} . Ro \qquad \text{Where}$$

PL_j^i = price level in country i in period j

P_j^i = price index in country i in period j, with base period o

PPP_j^{abs} = absolute PPP in period j (number of units of country B's currency per unit of Country A's currency)

PPP_j^{rel} = relative PPP in period j (number of units of country B's currency per unit of Country A's currency)

R_j = actual exchange rate in period j (number of units of country B's currency per unit of country A's currency)

PPP theory consists of two definitions and two propositions, all involving equilibrium exchange rates. The short-run equilibrium exchange rate is defined as the rate that would exist under a freely floating (i.e., unmanaged) exchange rate system. The long-run equilibrium exchange rate is defined as the fixed exchange rate that would yield balance of payments equilibrium over a time period incorporating any cyclical fluctuations in the balance of payments (including those related to business cycles at home and abroad). Furthermore, the latter definition assumes the absence of special policies to avoid balance of payments disequilibrium (e.g., the use of monetary and fiscal restraint or trade and payments restrictions to prevent or suppress a deficit). The balance of payments concept used is an inclusive one, generally the official settlements or basic balance, rather than the current account or trade balance.

The propositions of PPP theory are (1) that the short-run equilibrium exchange rate is a function of the long-run equilibrium exchange rate in the sense that the former variable tends to approach the latter, and (2) that the PPP is either the long-run equilibrium exchange rate or the principal determinant of it. Then PPP theory in its most general form is

$$RS_t = f(ppp_t, \dots) \text{, where}$$

RS_t = short-run equilibrium exchange rate in period t (number of units of country B's Currency per unit of country A's currency)

$$PPP_t = PPP_t^{abs} \, or \, PPP_t^{rel}$$

$f =$ An arbitrary increasing function with respect to the explicit independent variable, with the   ellipsis denoting space for additional explanatory variables.

PPP is not a single theory but rather consists of many alternative theories. One can consider a three-way classification of these theories. First, the absolute form of PPP is distinguished from the relative form. Second, a variety of product-price or factor-cost measures may be used in the definition of PPP. Examples (for absolute or relative PPP, respectively) are the GDP price level or the GDP deflator; the cost of living (COL) price level or COL price index, that is, the consumer price index (CPI); a wholesale price level or wholesale price index (WPI); and wage rates, unit labour cost (ULC), or unit factor cost (UFC), the last three measures in either absolute-level or index-number form.

The third dimension of any PPP theory is the form of the f function.

(LAWRENCE H. OFFICER, IMF)[6]

GDP (Official Exchange rate)[7] This entry gives the gross domestic product (GDP) or value of all final goods and services produced within a nation in a given year. A nation's GDP at official exchange rates (OER) is the home-currency-denominated annual GDP figure divided by the bilateral average US exchange rate with that country in that year. The measure is simple to compute and gives a precise measure of the value of output. Many economists prefer this measure when gauging the economic power an economy maintains vis-à-vis its neighbours, judging that an exchange rate captures the purchasing power a nation enjoys in the international marketplace. Official exchange rates, however, can be artificially fixed and/or subject to manipulation - resulting in claims of the country having an under- or over-valued currency - and are not necessarily the equivalent of a market-determined exchange rate. Moreover, even if the official exchange rate is market-determined, market exchange rates are frequently established by a relatively small set of goods and services (the ones the country trades) and may not capture the value of the larger set of goods the country produces. Furthermore, OER-converted GDP is not well suited to comparing domestic GDP over time, since appreciation/depreciation from one year to the next will make the OER GDP value rise/fall regardless of whether home-currency-denominated GDP changed

4. Empirical and Review Research

Using the exchange rate to convert GDP from one currency to another, Say that the issue is to compare Rwanda's GDP in 2013 of 5.25 trillion Rwandan Francs with the Kenya GDP of 4.76 trillion Kenya shillings for the same year.

Step1. Determine the reference currency, this can be one of the two countries being compared (here: either Kenya shilling or Rwandan Francs), or any other international currency

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[6] The Purchasing-Power-Parity Theory of Exchange Rates: A Review Article by LAWRENCE H. OFFICER
http://www.palgrave-journals.com/imfsp/journal/v23/n1/pdf/imfsp19761a.pdf
[7] The World Fact book- https://www.cia.gov/library/publications/the-world-factbook/fields/2195.html

recognised as international reserve currency either American Dollar, Euro, Pound, Yen and Yuan Renminbi, in our case let's consider American Dollar

Step2: Determine the exchange rate for the specified year. In 2013, the exchange rate was 669.756 FRW = $1 And 86.309 KSh =$1.

Step3. Convert Rwanda's GDP into U.S. dollars, and Kenya's GDP into U.S. dollars

Rwanda's GDP in $ US= Rwanda's GDP in FRW/Exchange rate (FRW/$) =5.25 trillion FRW/669.756 = $7.8 billion

Kenya's GDP in $ US= Kenya's GDP in Shillings/Exchange rate (KSh/$) =4.76 trillion KSH/86.309 = $55.2 billion

Step3. Compare the values for two countries in the same currency ($), the Kenya GDP was $55.2 billion in 2013 which is seven times that of GDP in Rwanda in 2013.

Step4. View **Table1.1 which shows the size of GDPs of EAC members in 2013, all expressed in U.S. dollars. Each is calculated using the process explained above.**

No	Country	GDP in Trillions of Domestic currency	Symbol	Domestic's Currency/US Dollars(PPP equivalency)	GDP in Billions of US Dollars ($)
1	Kenya	4.76	KSH	86.309 KSH /1$	55.2
2	Rwanda	5.25	FRW	669.756 FRW / 1$	7.8
3	Uganda	54.279	UGX	2525.8247 UGX / 1$	21.49
4	Tanzania	52.811	TZS	1589.285 TZS /1$	33.23
5	Burundi	4.181	BIF	1540 BIF / 1$	2.715

Fig 1.2 GDP Comparisons in EAC 2013
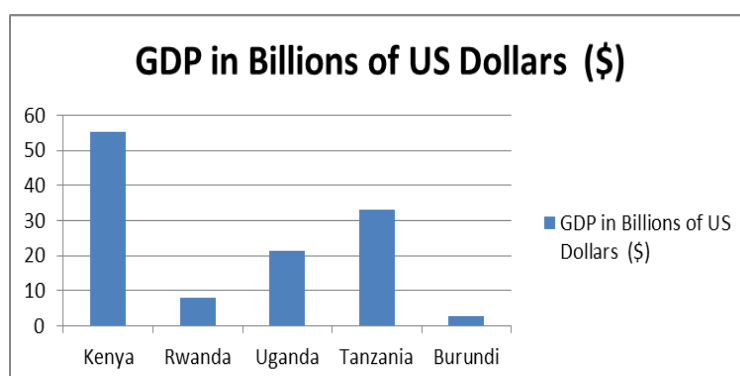
GDP comparison in East African community clearly showed that Kenya is having highest Nominal GDP in US dollar, times more than one point five of Tanzania, two point five times of Uganda, seven times of Rwanda and twenty times of Burundi.

However, the use of exchange rates provides a little misleading representation of the size of economies relative to each other because it is based on the assumption that price levels in Countries are identical. In other words, using exchange rates implies that one dollar buys the same basket of goods and services in Rwanda, Kenya, Burundi, Tanzania, and Uganda. This is obviously an incorrect assumption, and it is especially erroneous for countries at different levels of development (e.g. Kenya Is lower-middle income country and remaining countries in EAC are low-income country with less than $ 1045). Using exchange rates typically understates the size of lower-income economies because prices are lower in these economies, especially for non-tradable goods and services.

Now, let's turn to GDP purchasing power parity (PPP), The measurement of PPPs has a long tradition of at least half a century, and they are now commonly used by the Organisation for Economic Co-operation and Development (OECD), the World Economic Outlook Database of the International Monetary Fund (IMF), and the World Development Indicators of the World Bank to measure the size of economies and per capita incomes. PPP is an economic theory that estimates the amount of adjustment needed on the exchange rate between countries in order for the exchange to be equivalent to each currency's purchasing power, to understand PPP, one needs to price a representative basket of goods and services across countries in this case across EAC members. In the interspatial case, however, this becomes difficult to implement, as the different countries can have very different expenditure patterns.

The availability of common representative products is dependent on the number of countries, the extent to which their markets and expenditure patterns are similar, and the type of specification used to define selected products. Even between economies as similar as the United States and Canada, there remain important differences in expenditure patterns due to differences in climate, tastes, packaging, regulations, and the like. Therefore, the initial groundwork for calculating PPPs is to determine a list of goods and services and their detailed specifications for pricing by each country. The final lists for the 1996 comparison contained both traded and nontraded goods and services that covered around 4,000 items, including about 2,900 consumer goods and services; 800 pharmaceuticals; 186 capital goods;

50 motor vehicles; 34 government, education, and health services; and 20 construction projects (Michelle A. Vachris & James Thomas, 1990)

The second component needed to calculate purchasing power parities is the expenditure patterns for the participating countries. These figures, expressed in same currency, S dollar, are derived from the national accounting data for each country. Then trade per capita, exports and imports were all reported and allowed to make EAC members comparison.

The third component needed was the governance score as computed by worldwide governance indicators.

Table 1.2: Comparison of nominal expenditure patterns EAC, 2013, Million (M) US Dollars

no	Country	Expenditure on GDP (Nominal)	Government consumption	Private consumption	Gross fixed capital formation	Net Exports
1	Kenya	19579	2970	15596	5346	(3758)
2	Rwanda	7155	893	4665	1597	(831)
3	Uganda	22755	1970	17773	5448	(2436)
4	Tanzania	33284	6333	22049	10893	(5991)
5	Burundi	2721	394	2053	540	(565)

EAC Facts and Figures 2014.

Fig 1.3: Nominal expenditure patterns EAC, 2013, Million US Dollars.
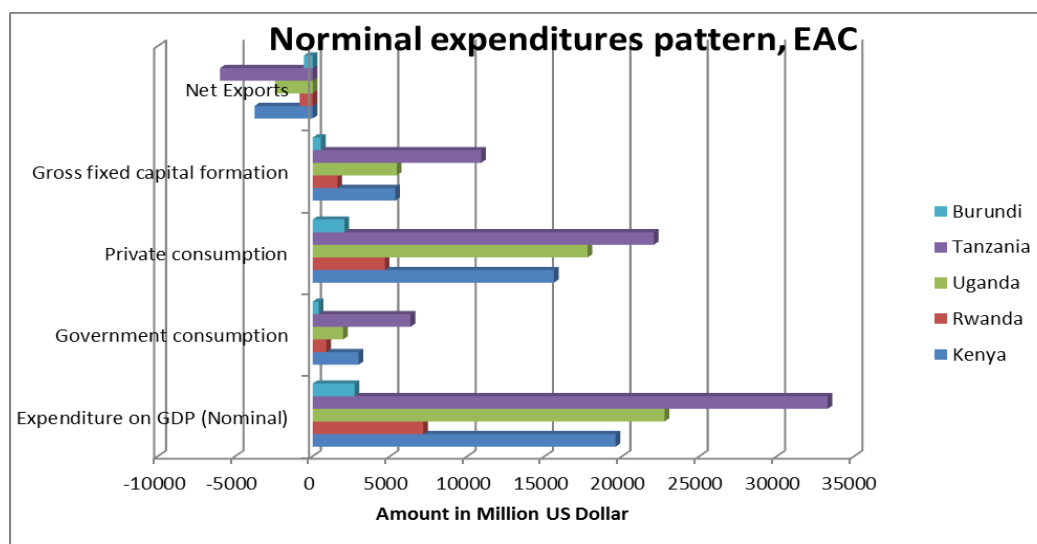
Even though country like Kenya is one step ahead of Tanzania, Tanzania had spent much in gross fixed capital formation compared to Kenya and all other EAC members,

Rwanda is the 156th largest export economy in the world. In 2013, Rwanda exported $934M and imported $1.85B, resulting in a negative trade balance of $919M. Tanzania is the 112th largest export economy in the world and the 97th most complex economy according to the

Economic Complexity Index (ECI). In 2013, Tanzania exported $5.59B and imported $13B, resulting in a negative trade balance of $7.45B. Burundi is the 191st largest export economy in the world. In 2013, Burundi exported $78.2M and imported $377M, resulting in a negative trade balance of $299M. Uganda is the 134th largest export economy in the world and the 77th most complex economy according to the Economic Complexity Index (ECI). In 2013, Uganda exported $2.66B and imported $5.76B, resulting in a negative trade balance of $3.1B. Kenya is the 114th largest export economy in the world and the 86th most complex economy according to the Economic Complexity Index (ECI). In 2013, Kenya exported $5.22B and imported $15.8B, resulting in a negative trade balance of $10.6B.

Table1.3: Imports and Exports in EAC, 2013

EAC	Rwanda	Burundi	Kenya	Tanzania	Uganda
Imports partners	China, Uganda , Japan ,India and Kenya	China , Uganda, Belgium, Luxembourg, Tanzania and India	India, China, Japan, South Africa and the United Kingdom.	India, China ,Switzerland ,the United Arab Emirates , and South Africa	India, China, Kenya, the United Arab Emirates and Japan.
Exports partners	Tanzania, the Democratic Republic of the Congo, China, Kenya, and Uganda.	Germany, Sweden, China, Pakistan and Rwanda.	Zambia, Uganda, the Netherlands, the United States and the United Kingdom.	South Africa, India China, Switzerland and Japan.	Kenya, the Democratic Republic of the Congo, Sudan , Rwanda and South Sudan.
Products of imports partner	Cars, Refined Petroleum , Cement , Packaged Medicaments and Human or Animal Blood	Packaged Medicaments, Telephones, Human or Animal Blood, Cement and Plastic Lids.	Refined Petroleum , Cars ,Hot-Rolled Iron, Packaged Medicaments and Wheat	Refined Petroleum , Cars , Wheat , Delivery Trucks and Hot-Rolled Iron	Refined Petroleum , Packaged Medicaments ,Cars, Palm Oil and Telephones
Products of exports partner	Niobium, Tantalum, Vanadium and Zirconium ore,	Coffee , Niobium, Tantalum, Vanadium and Zirconium Ore, Tea,	Tea, Refined Petroleum ,Cut Flowers , Coffee and Legumes	Gold, Raw Tobacco ,Precious Metal Ore, Refined	Coffee, Raw Tobacco , Refined Petroleum , Fish

	Tin Ores , Coffee , Tea and Tungsten Ore	Tungsten Ore and Tanned Goat Hides		Petroleum and Coconuts, Brazil Nuts, and Cashews	Fillets and Cement

Reference to the table no 1.3: China and India are the top two imports partner and top two exports partner of EAC members, EAC members mostly imports Cars, Refined petroleum and packed medicaments, while they export mostly Coffee, tea and minerals

Table 1.4: Trade, Merchandise exports and Merchandise imports

Countries	Population in Million by 2010	Trade per capita, US $ (2012-2014),	Merchandise exports F.O.B million US (2014)	Merchandise imports C.I.F million US $ (2014)
Rwanda	10624005	297	736	2457
Burundi	8382849	100	125	769
Uganda	33424683	338	2274	5874
Tanzania	44841226	442	4645	12390
Kenya	40512682	649	6115	18396

Source: world trade organization and the world bank data

Table 1.4 shows that Kenya is ahead in terms of trade where trade per capita is $ 649, compared to only $ 297 in Rwanda, and Kenya exports more than eight times than of Rwanda, more than twenty times of Burundi and more than three times of Uganda. So Kenyans are wealthier than anyone in EAC.

Figure 1.4 shows that in terms of voice and accountability in EAC members from 2004 to 2014, there is variability over periods, since 2004 to 2014 both Kenya and Tanzania have never scored less than 30%, and in 2014 in EAC members Kenya scored the highest value 42.4 % followed by Tanzania with 41.9 %   while Rwanda scored   last of 17.2
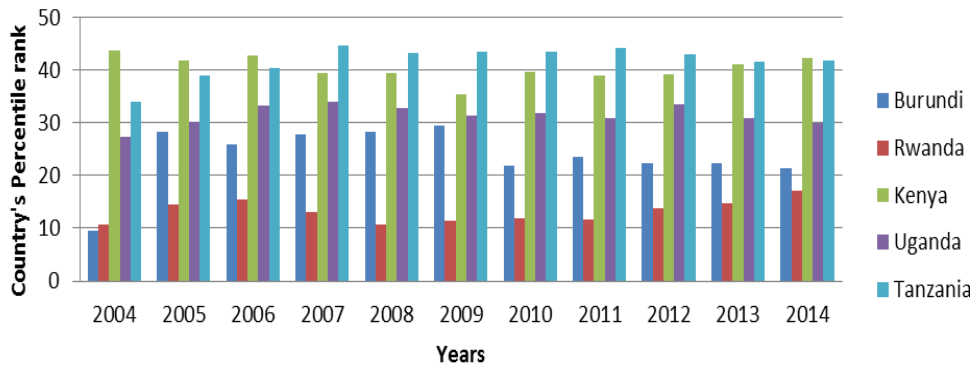
Voice and Acountability

Figure 1.5 shows that in terms of Political stability and absence of Violence/Terrorism in EAC members from 2004 to 2014, there is high variability over periods, since 2004 to 2014, if you take Tanzania, there is an increase from 24.5 % in 2004 to 47.9 % in 2009 and then a slight decrease down to 27.2% in 2014, while Rwanda has been stable, and the value has been increasing from 14.4 % in 2004 up to 42.7% in 2014, and was ranked the first country in EAC members in terms of political stability, while Kenya was ranked last with 8.7 %.

Political Stability and Absence of violence /Terrorism
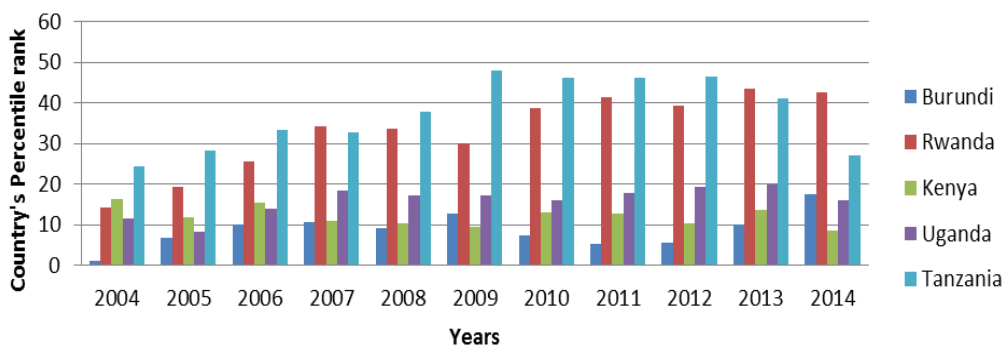
Figure 1.6 shows that in terms of Government effectiveness, Rwanda has been ahead to the EAC members, in 2014 scored 56.3 %, followed by Kenya with 43.3 %, and on last place was Burundi with 14.9%.

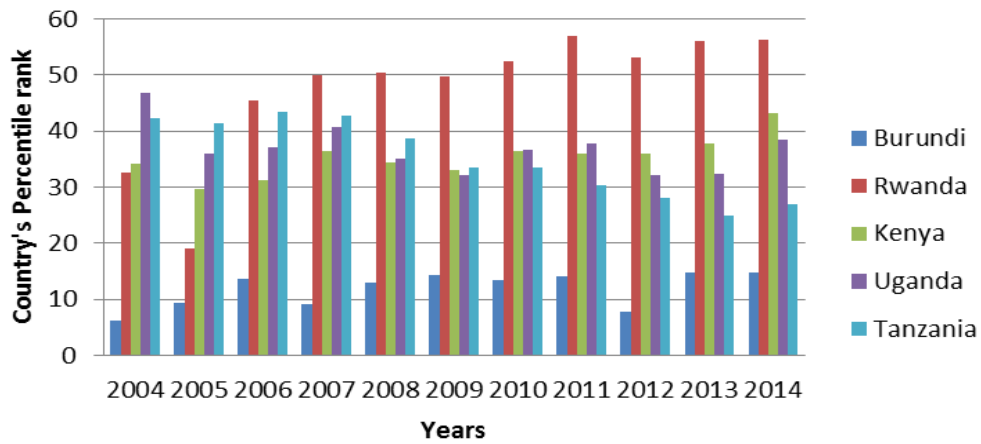## Government effectiveness

Figure 1.7 shows that in terms of Regulatory Quality, also Rwanda has been ahead to the EAC members, in 2014 scored 58.7 %, followed by Kenya with 42.3 %, and on last place was Burundi again with 24.5 %.
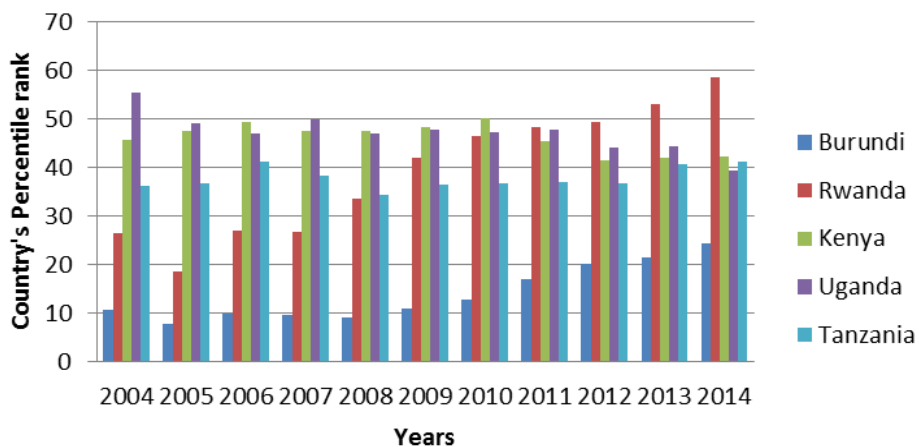
Regulatory Quality

Figure 1.8 shows that in terms of Rule of Law, again Rwanda has been ahead to the EAC members, in 2014 scored 61.1 %, followed by Tanzania far behind with 39.4 %, and on last place was Burundi again with 16.8 %.
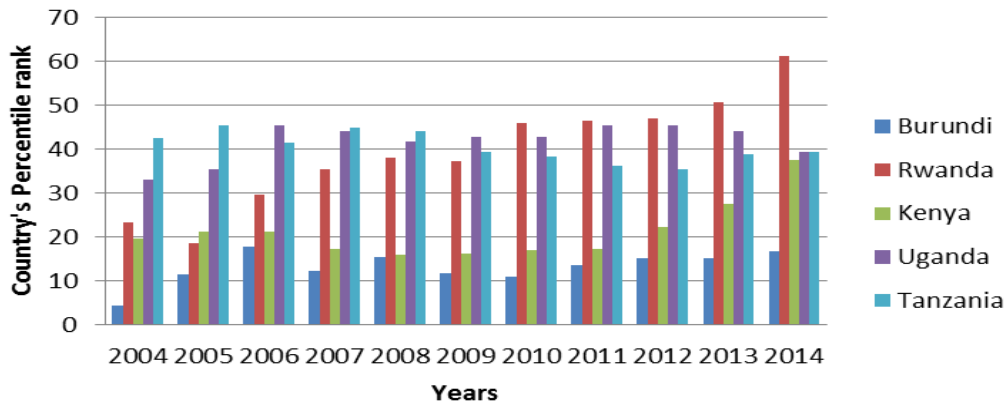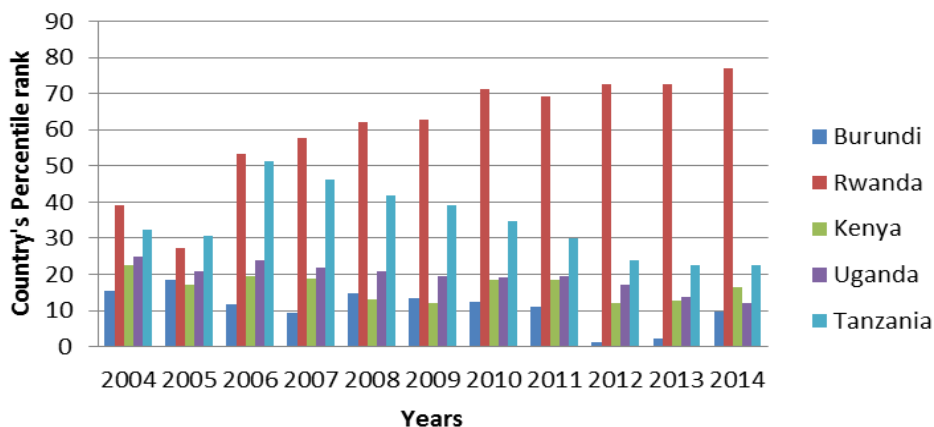
Rule of Law

Figure 1.9 shows that in terms of Corruption Control, now Rwanda has been ahead far to the other EAC members, in 2014 scored 76.9 % as highest more than three times of Tanzania on second place with   22.6 %, and on last place was Uganda and Burundi with 12 % and 9.6% respectively.

Conctrol of Corruprion

Source: Worldwide Governance Indicators

Note: Percentile ranks indicate the percentage of countries worldwide that rank lower than the indicated country, so that higher values indicate better governance scores.

5. Conclusion

The result showed that Kenya is the most advanced country in EAC members, with highest Nominal GDP in US dollar, times more than one point five of Tanzania, two point five times of Uganda, seven times of Rwanda and twenty times of Burundi.

Even though country like Kenya is one step ahead of Tanzania in terms of GDP per capita, Tanzania had spent much in gross fixed capital formation compared to Kenya and all other EAC members.

Kenya is ahead also in terms of trade where trade per capita is $ 649, compared to only $ 297

in Rwanda, and Kenya exports more than eight times than of Rwanda, more than twenty times of Burundi and more than three times of Uganda. So Kenyans are wealthier than anyone in EAC.

And in terms of Control of corruption, rule of law, regulatory quality, government effectiveness and political stability Rwanda is a head of its counterparts EAC members while in terms of voice and accountability was ranked last in EAC.

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