Comparison of Macroeconomic Performanceand Volatility in Kenya, Rwanda and Ethiopia: Time Series Evidence

Antony Kimondo Wanjau

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Approval of the Institute of Graduate Studies and Research

Prof. Dr. Elvan Yılmaz
Director

I certify that this thesis satisfies the requirements as a thesis for the degree of Masters of Business Administration.

Assoc. Prof. Dr. Mustafa Tümer
Chair, Department of Business Administration

We certify that we have read this thesis and that in ouropinion it is fully adequate in scope and quality as a thesis for the degree of Masters of Business Administration.

Prof. Dr. SerhanÇiftçioğlu
Supervisor

Examining Committee

1. Prof. Dr. SerhanÇiftçioğlu
2. Assoc. Prof. Dr. Mustafa Tümer
3. Assist. Prof. Dr. İlhanDalcı

ABSTRACT

The aim of the thesis is to analyze the macroeconomic performance and volatility of selected fundamental macroeconomics of Kenya, Rwanda and Ethiopia over the period of 1980-2010 and in the sub-period of the same interval. The first goal of this thesis is to look at each individual country's macroeconomic variables and study the pattern for each country .The main focus is to look at periods of fluctuation, gradual incline and decline, highest and lowest records of the variables. This thesis will try the causes for such patterns.

The second goal of this thesis is to compare each economic variable to the three subject countries, with a description of which country out performs or has highest and lowest volatility in the whole period of study comparing it to the rest of the other countries.

Keywords: Macroeconomic Performance, Macroeconomic Volatility, Comparative Analysis

ÖZ

Bu tez,Kenya,Rwanda, veEthiyopya’nin 1980-2010 yillariarasindakimakroekonomikperformanslariniincelemeyiamaclamaktadir. Arastirmalarimizdaoncelikle her ulkeninmakroekonomikdegiskenlerinin her birinenasiletkilerioldugunuvebuulkeleringeleceginenasiletkileryapacaginiinceledik.Asilod aklandigimiznoktaisebelirtilenzamanaraligindakimakroekonomikdegiskenlerin en yuksekve en alt noktadaolduguzaman,ulkelerenasiletkileryaptiginivebuverilerindalgaliolduguzamanlarda bile ne gibietkilerioldugunuvenelerdenetkilendikleriniincelemekoldu.

Ikinciolarakise, tezimizbuuculkeninekonomikgostergelerininbirbiriilekarsilastirilmasioldu.Bunabagliolara kdigerulkelerile de bazikarsilastirmalaryaptik.

AnahtarKelimeler :MakroekonomikPerformans, MacroekonomikVolatalite,

KarsilastirmaliAnaliz

To my family

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Finally, I want to thank my family for the unlimited support and inspiration they have offered during this period of study.It is my goal to make use of all those opportunities that have been offered and be an independent and successful individual in this competitive world.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF GRAPHS

Chapter 1

INTRODUCTION

Distinguishing and understanding factors that affect both in short run and long run behavior of macroeconomics time series of developing countries has been among the main areas that economist have been recently interested on.

Most of the previous research paid attention more on the industrial economies as compared to developing economies. The reasons for this were the limitation on the quality and frequency of data. Second, developing nations tend to be prone to crisis and marked gyration in macroeconomic variable, often making it difficult to discern any type of cycle or economic regularities.

Macroeconomic performance and Volatility in a country is what determines the financial and social position of a country in the world and how the country is performing in accordance to other countries. This research mainly will investigate selected macroeconomic variables of Kenya, Rwanda and Ethiopia.

The objective of this thesis is to compare macroeconomic performance of fundamental macroeconomics in Kenya, Rwanda and Ethiopia over a period of 1980- 2010.this thesis will comparison of macroeconomic and volatility of selected macroeconomic indicators of the same countries over the same time period of 1980- 2010.

The structure of the study shall take the following form; Chapter 2, will contain literature review and will give an overview of theoretical back ground of economic growth, determinants of economic growth and macroeconomic performance ,determinants of macroeconomic volatility with the emphasis on developing nations.

In chapter 3, the main focus will be on data and data methodology that will be used in our study. The research is built on a time series data collection figure which all is collected from the World Bank database. The selected variables will be used to analyze each individual country and also as a group. Analysis will take in the form of individual and group analysis or macroeconomic performance and volatility.

Chapter 4 covers the comparative analysis which will consist of line graphs for each individual country and as a group. Each graph will be analyzed individually.There will also be tables of simple averages,when analyzing the countries as a group for each individual variable.The tables will contain a summary of the results of the whole period of our study and the sub periods.

Chapter 5 will consist of tables that contain the summary of results of the standard deviations for the whole period of study and the sub periods. The use of graphs showing the pattern of the standard deviation for the whole period of study, 1980-2010 will be used to help analyze the macroeconomic volatility of these countries as a group.

In chapter 6, will be a detailed conclusion and findings for the last three chapters. Looking at each individual country and as a group based on the comparative analysis for macroeconomic performance and volatility.

Chapter 2

LITERATURE REVIEW

This chapter reviews other studies and research that are related to the field of interest. The main goal for this section is to widen the readers mind and inform them of previous studies and what their findings and conclusion are.

Macroeconomics performance in most developing countries such the countries of interest Kenya, Rwanda and Ethiopia have not a failing but a recurring poor macroeconomic performance, which means any effort to attain a positive growth will still lead to a declining state of negative value of output. Most African countries have had a low performance due to retarding policies, lack of institutional qualities, and closed system of trade and government intervention. This was due to most African leaders making policies and decisions that only serve their interest and not the interest on development of the economy at large. Also ethnic diversity also has caused more havoc to growth of these countries (Jeven 2010).

According to Jean limbs (2002), the relationship between macroeconomic volatility and growth is an old and important issue .He states that the relationship between macroeconomic volatility and growth can flow both ways positive on one hand and negative on the other.

Developing countries have a larger effect of volatility and they also face more macroeconomic volatility than industrial countries. The three main reasons are: Developing countries receive huge exogenous shocks that may come from the financial markets in the form of sudden stops of capital inflows. Which also might come from changes of price of goods in the market that affect theinternational terms of trade. Second, developing countries seem to experience domestic shocks due to the intrinsic instability of the development process and self inflicting policy mistakes. Third is simply because developing countries have a weaker shock absorber hence the external fluctuations have higher effect. With macroeconomic policies instead of providing stabilization often amplify volatility in developing countries. (Loayza et al, 2007).

According to Sach and Larraine (1993), on savings rate and economic performance and growth, they found out that savings lead to faster economic growth and at the same time it had zero impact on it. How is it possible? In Solow model, savings rate has no effect on the steady state of rate of growth, no matter what the value is, the economy grows at a constant proportion rate in the long run. But savings rate can affect growth in the short run and also affect the level of per capita income in the long run steady state.

Higher savings rate increases availability of capital for investment which then increases capital accumulation hence affecting growth positively. (Çıftçıoğlu et al 2005)

According to J W Prinslou (2000) high level of savings is important for the rapid growth in capital stock, which can be invested in the economy and can lead to economic growth. In simple terms, savings and investment go hand in hand and there is no country that has been able to grow without achieving high investment rate. Prinslou also stated that high investment required high savings rate and that in a closed economy, investment and savings rate are equal. For an open economy that cannot be the case. If there is an imbalance between domestic investment and domestic savings then a country has to import savings in order to meet the deficit.

According to Countinho and Giampiero (1991), came to the conclusion that public investment plays a major role especially in reviving /revitalizing private investment, but at the same time public investment can have a downside especially if both public and private investments are competing for scarce resources, or if its financing leads to the increase in interest rate or reduction of credit availability for the private sector. They found out that both kinds of investment play a major role in the economy.

RauolPrebusch and Han singer (1950) stated that developing countries have experienced both decline in terms of trade and stagnating income. He added that developing countries are those that exported primary products mostly and imported manufacturing products.

Han singer (1950) proposed that fluctuations of terms of trade dramatically affected funds available in developing countries Capital formation and hence growth. Han singer (1950) noted that volume of trade and value of foreign trade led to be important in underdeveloped countries because their surplus income over subsistence is dependent on exports revenue and investment is in turn dependent on these sources.

Most developing countries GDP, is affected by the term of trade and in specific the fluctuation of prices that the developing countries export which are usually primary goods according to Christian Bruda and Cedric Tille (2000) . According to them economic theory offers a clear and widely accepted interpretation of the role of exchange rate regime. In a country with a flexible exchange rate fluctuations in terms of trade will be offset by movement in the exchange rate, eliminate much of the impact on economic activity. In simple terms economic theory, predict that a country with a fixed exchange rate regime will adjust to terms of trade shock by contraction in output meaning reduction in investment and expansion of businesses.

Baxter and Kouparitsas (2000) suggested that terms of trade are twice as large in developing countries. This is attributed to the developing countries that are relying on exports that have high volatile prices as compared to manufacturing goods.

Bruda (2000) also found that developing countries have no much influence on the price of good they export. Developed countries have a much influence on the goods that they export such as oil so, developing countries terms of trade are largely exogenous or out of their control.

Some Economists agree that the rise of inflation causes problem in economic performance others disagree with this statement. Bruno and Easterly (1998) stated and demonstrated that some countries have had inflation of 20 % and even 30% inflation and have suffered no consequence. According to VikeshGokal (2004) and SubrinaHarif (2004), inflation imposes negative externalities on the economy’s efficiency.

According to fisher (1993), negative association between inflation and growth in pooled cross section, time series regression. He argued that inflation impedes the efficiency allocation of resources by obscuring, the signal role of relative price changes, that most important guide to efficient economic decision making.

In Min li (2002) research conclusion, there is a non linear relationship between economic growth performance and inflation. Min li found that at 0-14% inflation actually leads to economic growth and that hyper inflation doesn't have a hyper effect on economic growth and same in the case of hyper reduction of inflation.

With trade balance it gives the status of the economies current trade deficit. A positive trade deficit means that a country has more export more than imports hence hardening the home currency and vice versa when the trade deficit is negative. According to Wang (2002), the higher the export usually has a positive impact to the economic growth. The main question for Wang's research was, If relying on export lead growth will the result in sustained long run economic growth in developing economies due to volatility and unpredictability in international markets. Wang found that both export led economic growth and demand led economic growth were both very important for economic growth. Wang concluded that there is no evidence that shows which of the two is more important or dominant in economic growth.

Current account balance significance stems from the fact that the current account balance reflects on savings investment ratio which is closely related to the state of fiscal balance and private savings which are key factors of economic growth. The current account balance determines the evolution over time of a country stock of net claims on the rest of the world; it reflects the decision of residence. AleksanderAristarnik (2006).

In Were's (2001), study of the impact of external debt on economic growth found that Kenya's debt was on a constant rise for the period 1970-1995 and this was deteriorating the economic performance and at the end resulted in accumulation of debt which has a negative effect on growth and private investment.

Athukorala (2003), research on FDI and economic growth of Sri- Lanka, found out that performance of an economy and FDI had a positive relationship. But increase in FDI doesn't necessarily assure economic growth but other factors have to be considered such as governance, corruption, political instability and poor institutional setup.

Relationship between trade openness and growth in a closed economy will lead to a higher risk of crisis which means there is a positive relationship between economic growth and performance and trade openness. (Alexander and Ellin 2009).

2.1 Economic History of Kenya

Kenya is the commercial and financial hub of East Africa. It is also one of Africa's major tourist destinations. The country has a market-based economy with a liberalized foreign tradepolicy.

Kenya's economic history can be divided into two phases from 1963 to early 1980's and after independence. The first phase of Kenya's economic history is a positive economic performance and a huge gain in social outcome. The second phase is from 1980 to today. A period characterized by a slow or rather a negative growth. This is due to losses in social welfare, trade shocks,government dominance, structural change and poor economic responses, increased role of political over economic policy which led to a significant rising in poverty .(Legovini 2002).

2.2 Economic history of Rwanda

Rwanda is a poor rural country with about 85percent of the population engaged in mainly subsistence agriculture and some mineral and agro-processing.

Rwanda’s economic history can be looked at in two phases before 1994 and after 1994.In 1994; Rwanda experienced a civil war and genocide which lasted for months. After 1994, Rwanda consolidated in social development and acceleration of growth.

In recent years Rwanda’s economy has been growing at a fast pace, Rwanda’s economic performance was given an International Monetary Fund approval under the poverty reduction and growth facility. (Congress research service, Ted Dagne 2011)

According to Bisten and Isaksson (2008), Rwanda is one of the best performing countries in Africa an example of success of a country after the civil war. This is due to efforts of the government embarking on extensive transformation and reconstruction program based on economic policies, peace and stability.

The 1994 genocide, made the economy of Rwanda fragile, severely impoverishing thepopulation and stalling the country's ability to attractprivate and external investment.

2.3 Economic history of Ethiopia

Ethiopia's economy is based on agriculture, which accounts for 46% of GDP and 85% of total employment. Coffee has been a major export crop. The agricultural sector suffers from poor cultivation practices and frequent drought.

The 1974 revolution resulted to nationalization and restructuring of the Ethiopian economy. As of 1978-1980, the economy began to recover as the government took power and brought reforms .Ethiopia’s economy grew and performed well due to good weather and agricultural production. As of 1980- 1985, Ethiopian economic growth declined, this was due to drought, Ethiopia being an economy that relies on agricultural sector. Currently, the growth base is also broadening with increasing contribution of service and manufacturing sector. (FekadDerejeGiruma, 2012)

Chapter 3

DATA AND DATA METHODOLOGY

This data is based on time series analysis for the three countries. Chapter 4 covers the sources of data in the thesis, selection criteria of data, methodology in evaluating, and some indicators used for the comparative analysis.

3.1 Data

Data in this work is derived from the electronic World Bank database of the development indicators. The data is from the year 1980-2010.By using Microsoft excel, simple averages are calculated for the analysis of selected macroeconomic indicators that will be used to compare the macroeconomic performance in each individual country and as a group. Microsoft excel is used to get the standard deviations of the selected indicators in order to measure the volatility of this selected indicators.

Some of the variables data used in the analysis of macroeconomic performance are investment rate as a percentage of GDP, growth of GDP as percentage, savings rate, inflation rate, ratio of export to import as a percentage, current account balance as a percentage of GDP, ratio of external debt to GDP and Export as a percentage of GDP. All this variables are analyzed based on each individual country and also as a group.

The period of analysis is from 1980- 2010, there is also the analysis of short term periods which are three sub periods. They include 1980-1989, 1990-1999 and 2000- 2010.

Table1, below, includes a list of all economic indicators that are taken from the World Bank page or derived after some calculations. The column on the left is the indicators and the paper terms used in the research while those in the right are the data terms used in the World Bank data base.

PAPER TERMS	**WORLD BANK PARAMETER**
Investment rate	Gross Capital Formation %of GDP
Average of Growth of GDP	Average of Growth of GDP
Savings rate	Gross Savings Rate % of GDP
Inflation rate	Consumer Price annual%
Ratio of export import	Net barter Terms of Trade
Current account balance	Current Account Balance
Ratio of external debt to GDP	External Debt Stock to Export of Goods Service and Income
Ratio of budget balance to GDP	Cash Surplus/Deficit(% of GDP)
Ratio of stock of public debt to GDP	Central government debt, total (%of GDP)
Unemployment rate	Unemployment total
Real GDP	GDP in 2000 dollars
Real private consumption	Household Final Expenditure Constant 2000 us
Real private investment	Private Capital Flow
Growth rate of GDP	Growth Rate of GDP
Growth rate of inflation rate	Growth Rate of Inflation
Trade openness	Ratio of Import +Export/GDP

Table 1: Data and its Abbreviations.

Chapter 4

COMPARATIVE ANALYSIS OF KENYA, RWANDA AND ETHIOPIA'S MACROECONOMIC'S PERFORMANCE.

The most challenging themes for economists is to explain how countries become rich. According to Adam Smith some nations are richer even if not all individuals in the society are working while others are poorer even though all the individuals are working.

Capital accumulation and productivity changes are important in explaining the diversity of growth patterns in developing nations .Trade policies are also an important factor in explaining the contrast in growth rates in developing countries especially its disparities export promotion policies certainly work positively for productivity .(Hiroki Kawas 1994).

In this chapter, the data is analyzed from selected variables for each individual country and also do a comparison for the countries as a group. Table 2 in the next page shows a summary of the averages of the variables from the year 1980-2010.

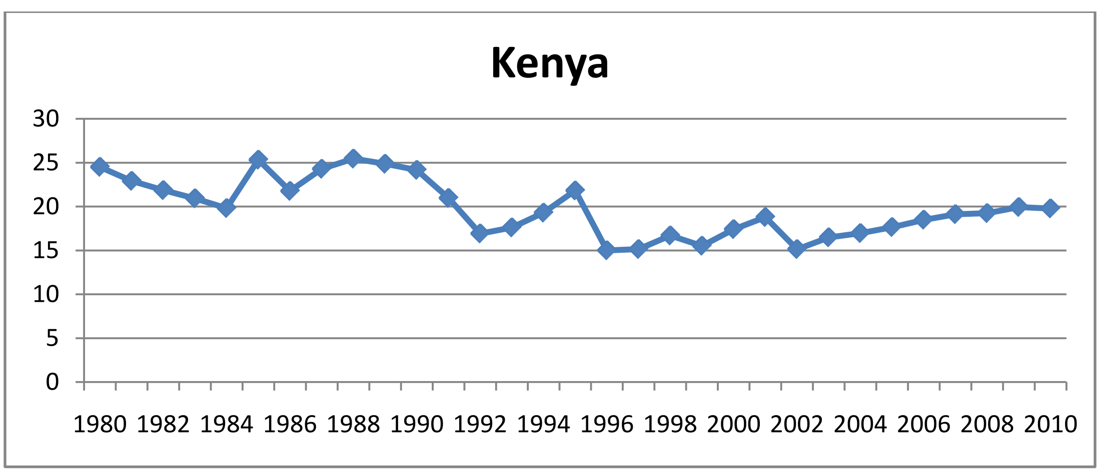
Historical Averages	KENYA	RWANDA	ETHIOPIA
Investment Rate %Of GDP	19.8%	15.43%	18.59%
Growth Of GDP (Annual Percentage	3.44%	4.57%	4.70%
Savings Rate Percentage Of GDP	18.01%	12.34%	16.00%
Inflation Rate	10.25%	8.64%	7.46%
Export/GDP Percentage	27.7%	9.4%	11.8%
Current Account Balance Percentage of GDP	-5.77%	-3.76%	-2.94%
Ratio Of External Debt to GDP Percentage	52.73%	48.77%	142.53%
Ratio of Export /Import * Percentage	83.4%	39.2%	68.7%

Terms Of Trade (Import+Export)/GDP Percentage	52%	18%	18%

Table 2: Summary of Variables and there Historical Averages for the Period 1980-2010.

4.1 Comparative Analysis of Investment rate % of GDP.

4.1.1 Analysis of Investment Rate Percentage of GDP in Kenya.

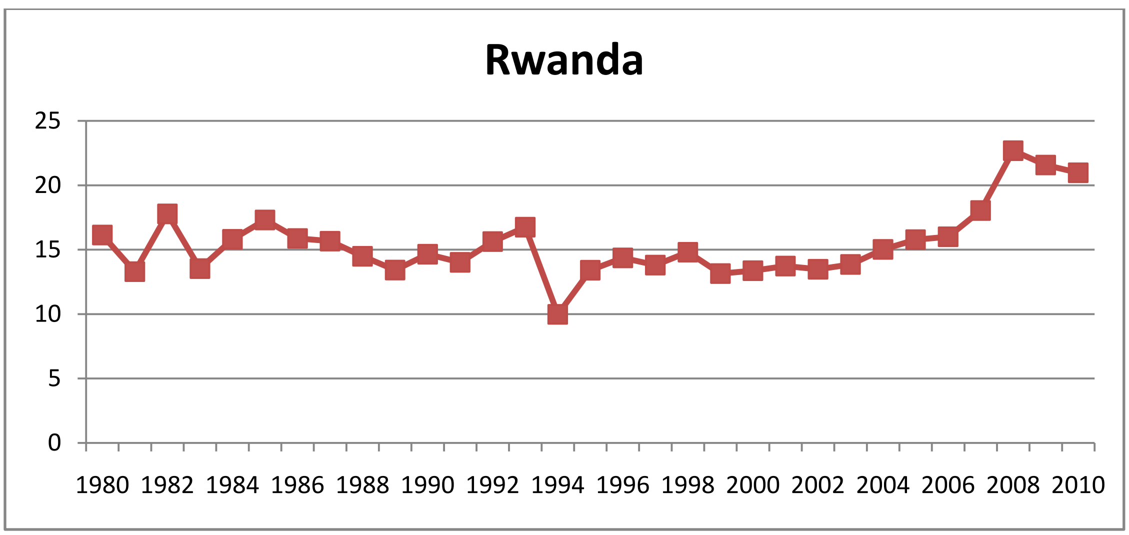


Graph 1: Kenya’s Investment Rate Percentage of GDP

From the above graph, Kenya's interest rate has been on a down ward trend from the year 1980-1984 from a 25 % to 19%.In 1985, there was a small spike from a 19% to 25%.

Something to note is the gradual increase of investment from the year 2002 -2010.In the years 1986 and 1988 Kenya recorded highest investment rate as a percentage of GDP.While 1996 and 2002, Kenya recorded the lowest investment rate percentage of GDP at 15%.

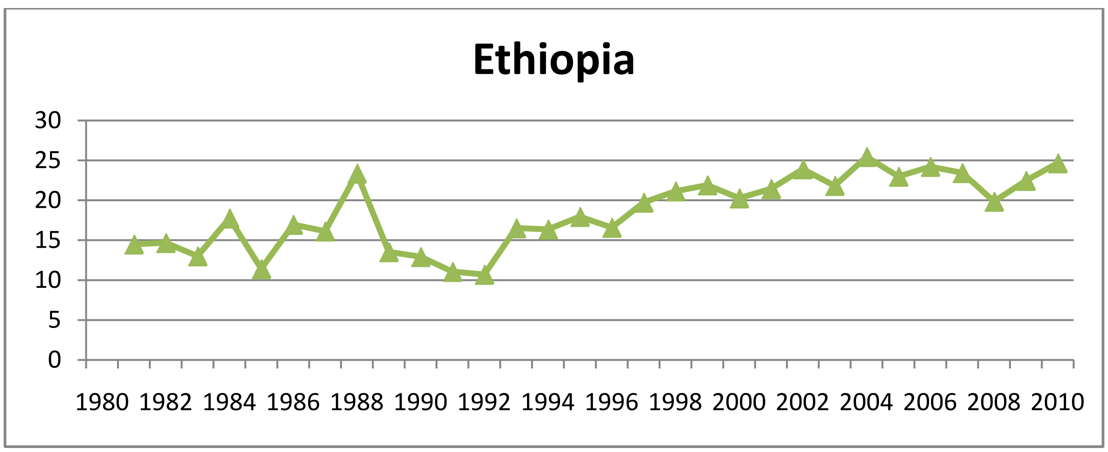
4.1.2 Analysis of Investment Rate Percentage of GDP in Rwanda.



Graph 2: Rwanda's Investment Rate Percentage of GDP

From Graph 2, Rwanda has had some gradual growth since 1994-2008, experiencing a 9% in 1999 and in 2008 Rwanda had a 23% in the 2008 recording the highest investment rate ever recorded by Rwanda at 23%.In 1994, the year Rwanda experienced the genocide, its investment rate dropped to a record low of 9%.

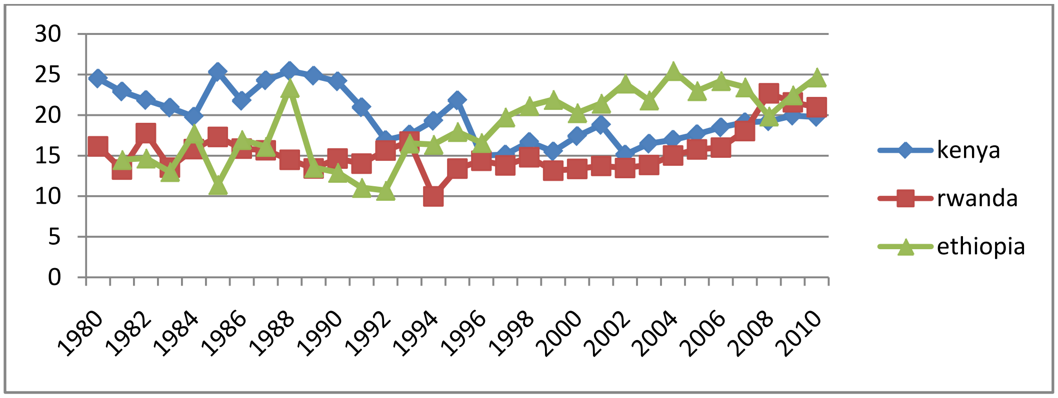
4.1.3 Comparative Analysis of Investment Rate Percentage of GDP in Ethiopia.



Graph 3: Ethiopia Investment Rate Percentage of GDP

From the graph 3 above, Ethiopia had some few abnormal spikes as from 1980 to 1990, with one of the spike in investment rate recording highest investment rate ever experienced in Ethiopia in 1988 at 23% thereafter investment rate was on a declined trend till the year 1992, this was the lowest investment rate Ethiopia had experienced in history at 10.7%.As from 1992, Ethiopia has had a gradual incline in its investment rate with some not so notable downs.

4.1.4 The Comparative Analysis on Investment Rate for Kenya, Rwanda and Ethiopia.



Graph 4: Investment Rate Percentage of GDP for Kenya, Rwanda and Ethiopia

	Sub-period	Kenya	Rwanda	Ethiopia
Gross capital formation(% of GDP)	1980-1989	23	15	15
Gross capital formation(% of GDP)	1990-1999	18	14	16
Gross capital formation(% of GDP)	2000-2010	18	16	22
Average	1980-2010	19	15	18

Table 3: Averages of Investment Rate as a Percentage of GDP.

As from 1980-2010, Kenya on average has had the highest investment rate of 20%, Ethiopia in second place with an average of 19 % and Rwanda in third place with a average investment rate of 15%.From the graph 4, clearly Kenya is on the lead in investment rate as from 1980-1996. In 1996 it drastically dropped and Kenya couldn't continue with the leading trend. From the table, the statement is supported by the periodic averages of the three countries over the three decades.

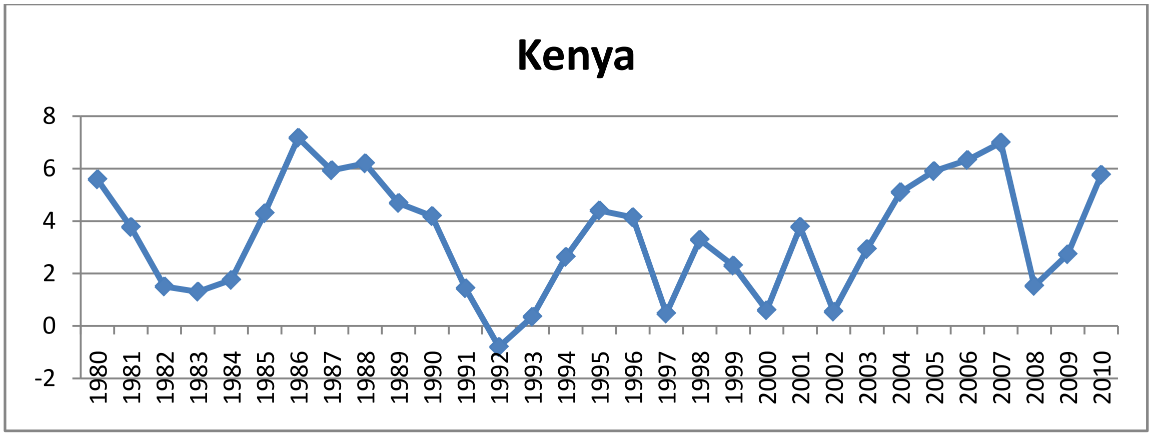
In the first period and second period of our study, as shown in table 3 in the previous page, 1980-1989 and 1990-1999 Kenya had the highest investment rate of 23% and 18% respectively. While Ethiopia coming in second in both periods with averages of 16% and 17% respectively. Rwanda in both periods had the lowest investment rates of 15 % and 14% respectively.

In the third period 2000-2010, Ethiopia was on the leads with a 23% average, Kenya in second with an 18% and finally the country with the least investment rate was Rwanda with a 17%.

It's good to note that Ethiopia is the only country of three that has had a consistent increase in its periodical average increase in each period.

4.2 Comparative Analysis of Growth of GDP

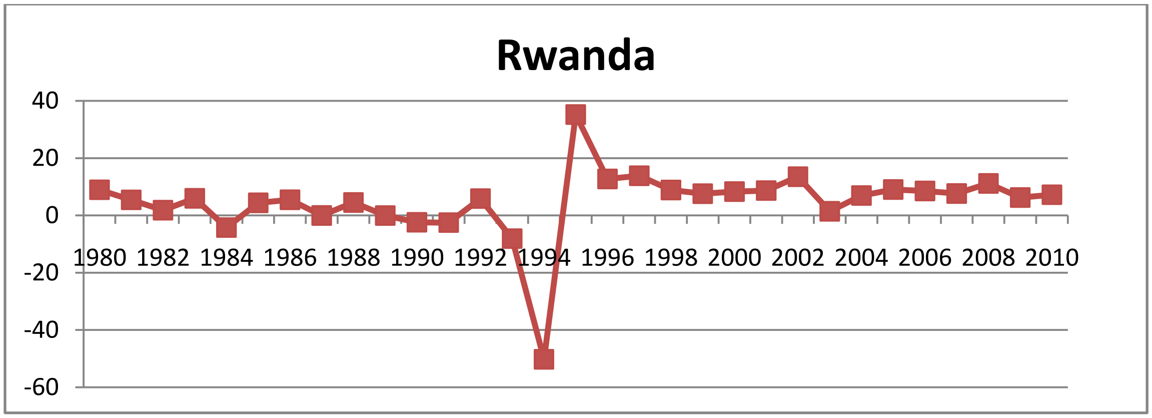
4.2.1 Analysis of Growth of GDP in Kenya



Graph 5: Growth of GDP in Kenya

The figure above, shows Kenya's growth of GDP over the period of 1980-2010, In general the growth of GDP in Kenya is not consistent. With high fluctuations between the years 1980- 1992, during this period of time Kenya recorded both the highest growth of GDP and the lowest too. In 1986, it had a GDP of 7.2% and gradually with time the growth of GDP drop till in 1992, Kenya had -0.7% growth of GDP. Lowest ever recorded. In 2002-2007, the growth of GDP was gradually constant, until 2008where it drops drastically.

4.2.2 Analysis of Growth of GDP in Rwanda.

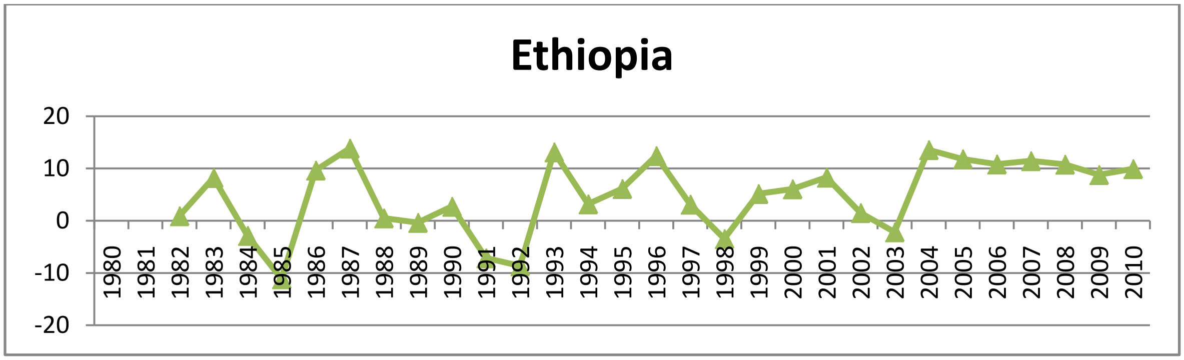


Graph 6: Growth of GDP in Rwanda

From the graph above, we see in general that, Rwanda's GDP has had small fluctuations with the difference between its highs and lows being quite small.

Rwanda's lowest GDP growth rate was in the year 1994 at -50% and its highest was the next year at 35% .thereafter growth of GDP has been almost constant.

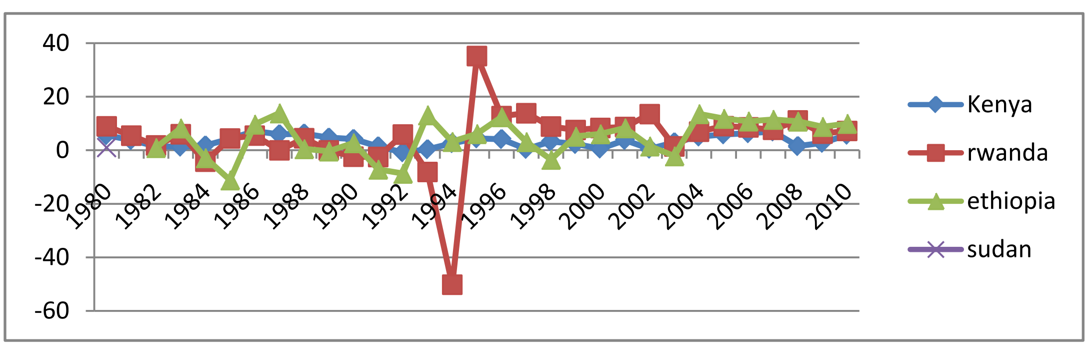
4.2.3Analysis of Growth of GDP in Ethiopia



Graph 7: Growth of GDP in Ethiopia

From the graph above it shows Ethiopia's growth of GDP trend. Ethiopia lowest GDP growth rate was in the year 1985 at -11% and highest growth rate was in 1987 at 14%. Ethiopia growth of GDP is seen to be gradually declining from the year 20004 at 13% to 2007 at 9%. Ethiopia in general has had continuous fluctuation as of 1980-2004.

4.2.5 Comparative Analysis of Growth of GDP for Kenya, Rwanda and Ethiopia.



Graph 8: Growth of GDP in Kenya, Rwanda Ethiopia 1980-2010

Table 4: Averages of Growth Rate of GDP.

INDICATOR NAME	YEAR	KENYA	RWANDA	ETHIOPIA
GDP GROWTH (ANNUAL %)	1980-1990	4.2	2.7	2.4
GDP GROWTH (ANNUAL %)	1991-2000	1.9	3.2	3
GDP GROWTH (ANNUAL %)	2001-2010	4.1	8.0	8.5
AVERAGE	1980-2010	3.4	4.6	4.7

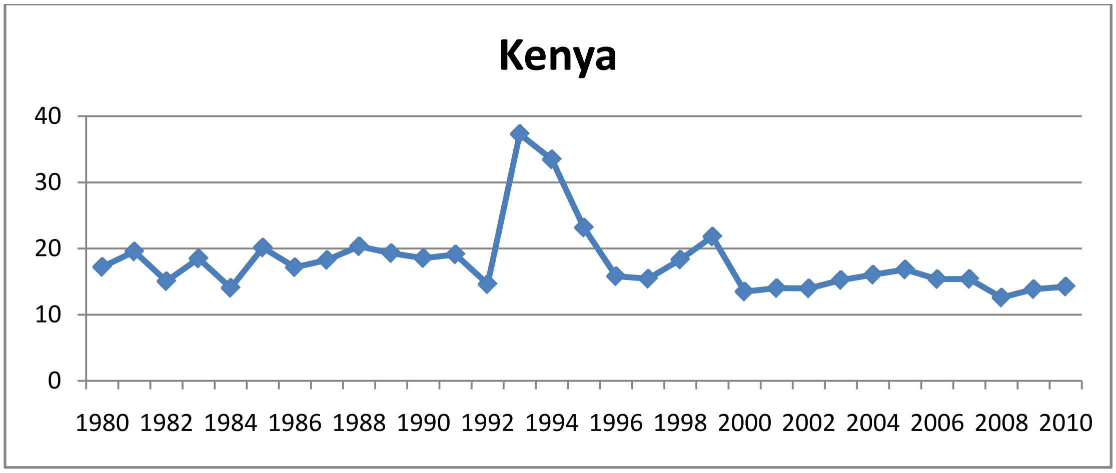
According to graph 8 and table 4, Ethiopia average growth of GDP over the period of 1980-2010 was the highest of the three countries with a 4.7% growth while Rwanda came in second with a 4.5% growth and Kenya was in third place with a 3. 4% growth.

When looking at the averages periodically as shown in the above table it's clear that in the first period of our study 1980-1989, Kenya's Average growth of GDP was the highest 4.2.In the second periodKenya's growth of GDP dropped to 1.9, Rwanda was leading with a 3.1%.In the third period Ethiopia was leading in average growth of GDP at 8.4%.

In general Ethiopia and Rwanda's average growth of GDP increasing over the period of study.

4.3 Comparative Analysis of Savings rate

4.3.1 Analysis of Savings Rate in Kenya

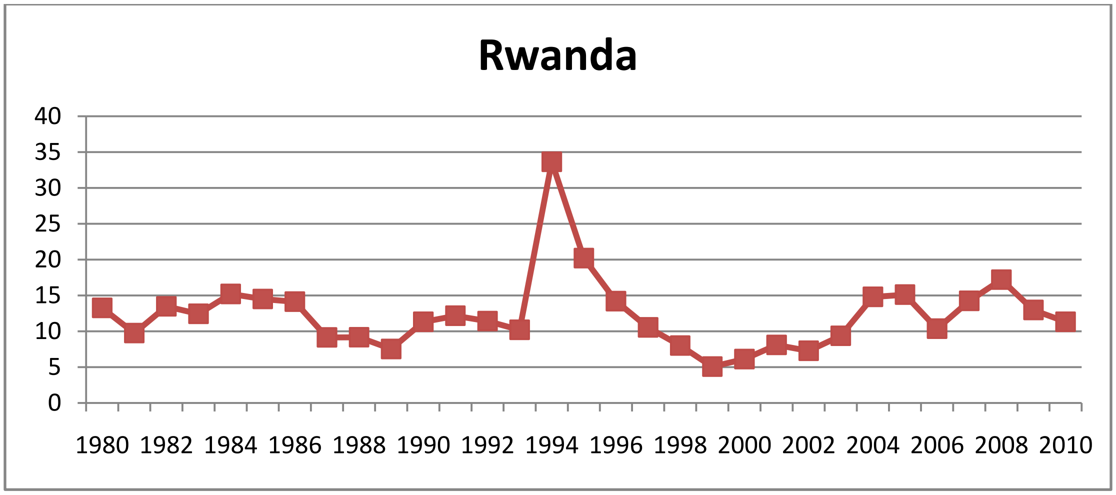


Graph 9: Savings Rate in Kenya

Savings rate in Kenya is seen to have not so intense fluctuations with small difference between the highs and lows of rate between the years of study. From the figure above, in 1993, Kenya had the highest savings rate at 37%.it gradually dropped later till 1997 at 15%.

As from 2000 savings rate was stable and increased and decreased gradually till the year 2010. The difference between highest savings rate and the lowest was small.

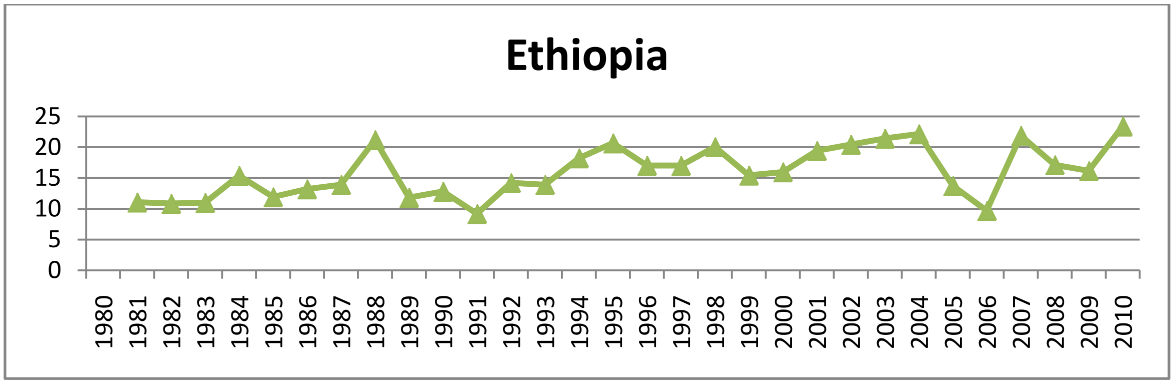
4.3.2 Analysisof Savings Rate in Rwanda



Graph 10: Savings Rate in Rwanda

Rwanda’s savings rate from the figure above seems to be consistent with no or very small fluctuations. In 1994 , the year Rwanda experienced Genocide, the was a spike in savings rate and was the highest savings rate in history of Rwanda at 33% .there after it gradually dropped to a low of 8% in the year 2000.As of 2001 -2005 it gradually rose to a 15%.

4.3.3 Analysis of Savings Rate in Ethiopia

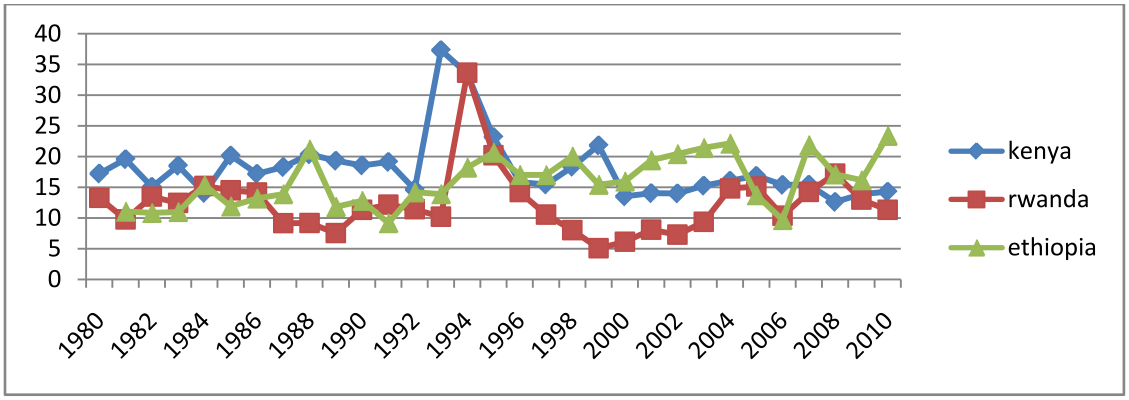


Graph 11: Savings Rate in Ethiopia

Ethiopia's savings as shown above, in general has not been consistent and stable with fluctuations be common factor. Highest savings rate witnessed by Ethiopia was in the year 2010 at 23% and lowest savings rate was in the year 2006.

The only duration Ethiopia had a consistent incline or decline was after the year 1999 to 2004 where Rwanda experienced an incline, in 1999 it had a low of 15% and in 2004 it had a high of 22%.

4.3.4 Comparative Analysis of Savings Rate for Kenya, Rwanda and Ethiopia.



Graph 12: Savings Rate in Kenya, Rwanda and Ethiopia

Table 5: Averages of Gross savings

INDICATOR NAME	YEAR	KENYA	RWANDA	ETHIOPIA
GROSS SAVINGS (% OF GDP)	1980-1989	18	11.9	13.4
GROSS SAVINGS (% OF GDP)	1990-1999	21.8	13.7	15.9
GROSS SAVINGS (% OF GDP)	2000-2010	14.7	11.6	17.8
AVERAGE	1980-2010	18.0	12.3	16.0

According to graph12 and table 5, in the period of study 1980-2010, the average savings rate of Kenya was highest at 18%, in second place was Ethiopia with a 16% and finally Rwanda was the country with the least savings rate at 16%.

From the graph and table above , its clearly Kenya had a good savings rate as compared to the rest in the first ten decades of our study with an average of 18%.Ethiopia was second with 13% and finally Rwanda with a 12%.

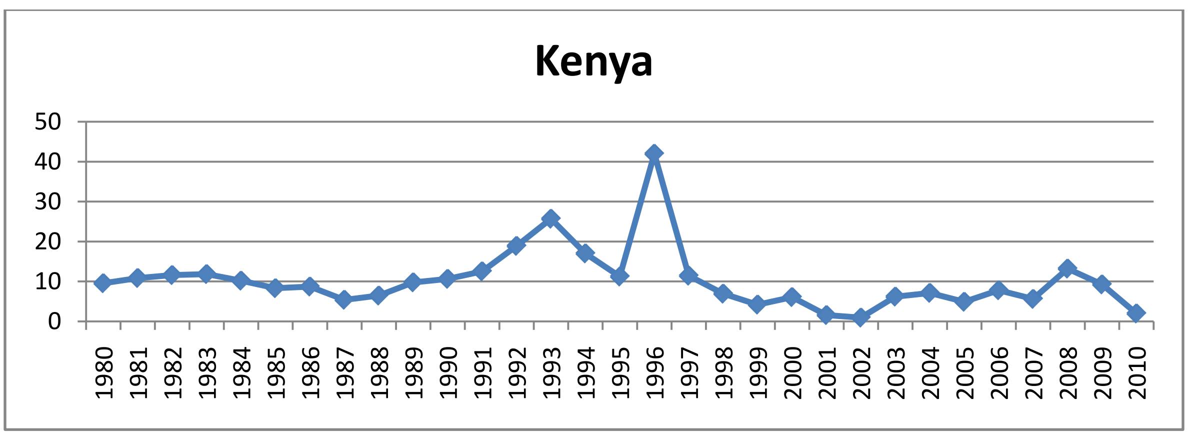
In the second decade, 1990-1999, Kenya's savings rate grew from 17% previous period to 21% in the second period. It is good to note that all the three countries had an increase in savings rate in the second decade.

In the third decade, Savings rate for Ethiopia was at 17 % and was the highest in that period; Kenya was second with a 15% and third was Rwanda with a 12%.

It is good to note that over the three periods Ethiopia's savings rate has been consistently rising as compared to the counter parts.

4.4 Comparative Analysis Inflation for Kenya, Rwanda and Ethiopia.

4.4.1 Analysis of Kenya's Inflation Rate



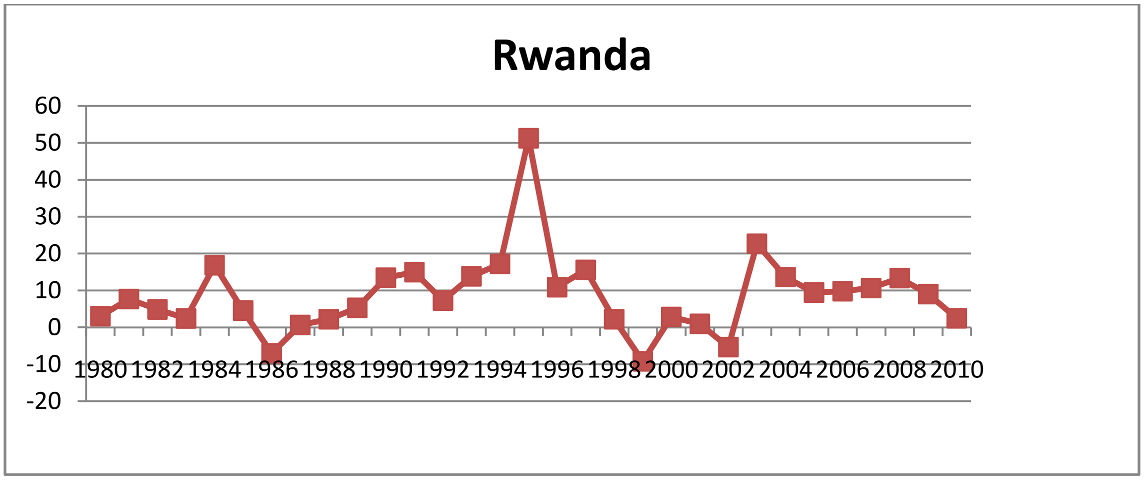
Graph 13: Inflation Rate in Kenya

From the figure above, Kenya’s inflation rate, something remarkable is the few or minimal fluctuations Kenya has had over the years and only fluctuations are in the year 1993 at 26% and the year 1996 at 42%.

Kenya has had gradual decline and incline of inflation; this is clearly seen between the years 1980 to 1992 in that whole period there is an incline, decline and finally an incline. The lowest inflation rate was the year 1987 at 5 % and the highest was the year 1993 at 26%

Kenya’s highest inflation ever recorded was in the 1996 at 42% and from then on it gradually dropped and hit the lowest inflation rate ever recorded in the year 2002 at 0.93%.

4.4.2 Analysis of Rwanda's Inflation rate

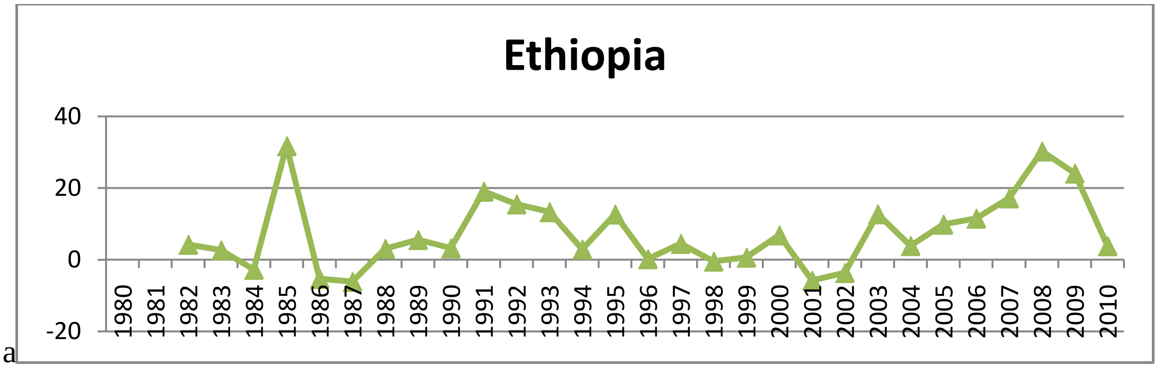


Graph 14: Inflation rate in Rwanda

From the Graph 14 , Rwanda's inflation rate over the period of 1980-2010 has been not stable and difficult to speculate and only shows consistency of incline in 1986-1991.There is also consistent decline as from 2003-2010.

In 1992, Rwanda experienced the highest inflation rate in its history of 51% and there after Rwanda's inflation rate was on a decline and in 1999 Rwanda witnessed its lowest inflation rate of -10%.

4.4.3 Analysis of Ethiopia’s Inflation Rate.



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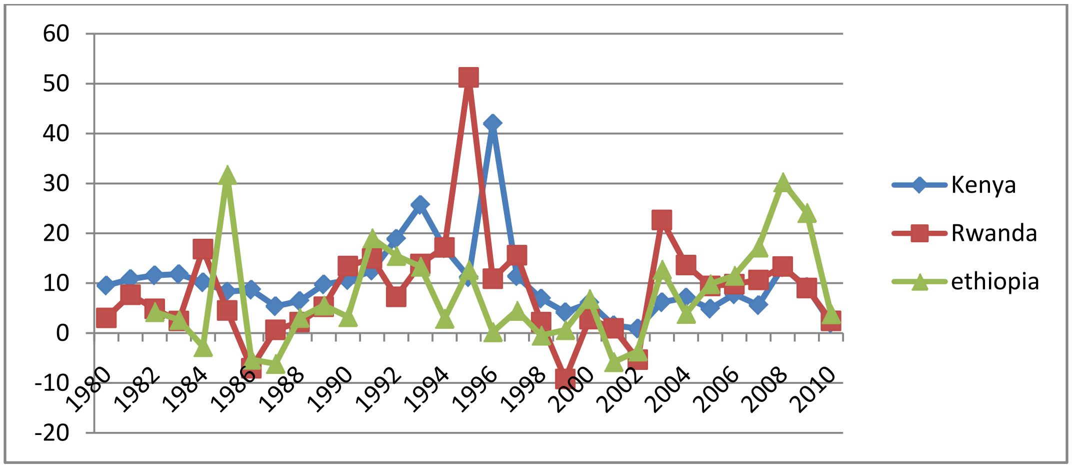
Graph 15: Inflation Rate in Kenya from 1980-2010

From graph 15, that general, Ethiopia’s inflation rate is unpredictable with numerous fluctuations over the period of 1980-2010.

The highest inflation rate experienced or recorded was in the year 1985 at 32% and the lowest was in the year 1987 at -6%.

4.4.4 Comparative Analysis of Kenya, Rwanda and Ethiopia's Inflation Rate.



Graph 16: Inflation Rate in Kenya Rwanda and Ethiopia from 1980-2010

Table 6: Averages of Inflation Rate.

Indicator Name	Year	Kenya	Rwanda	Ethiopia
Inflation, GDP deflator (annual %)	1980-1989	9.3	4.1	4.2
Inflation, GDP deflator (annual %)	1990-1999	16.1	13.8	7.2
Inflation, GDP deflator (annual %)	2000-2010	5.9	8.2	10.1
AVERAGE	1980-2010	10.3	8.4	7.5

From Table 6 and Graph 16, Kenya has the highest average inflation rate for the whole period of study 1980-2010; in second place is Rwanda with an 8% and finally Ethiopia with a 7%.

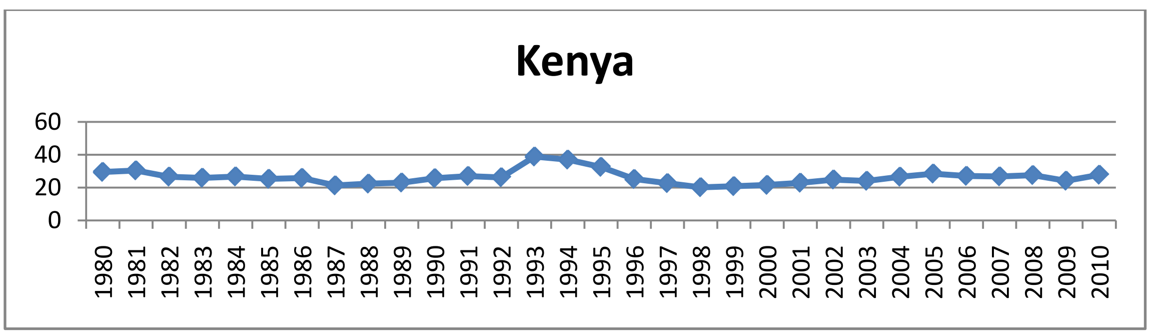
According to the graph and table above, Kenya had the highest inflation rate in the period 1980-1989 with a 9% while both Rwanda and Ethiopia having a 4% inflation rate. In the second period the average inflation rate of all the three countries rose with Kenya on the led with a 16%, Rwanda in second place with a 13% and finally Ethiopia with a 7%.

In the third period 2000-2010, Ethiopia had an increase in inflation compared to the previous period of 10% leading in this period, Rwanda came in second with 8% and Kenya had the lowest inflation rate of 5%.

It is good to note that Ethiopia's average inflation for each period has been on a consistent rise as compared to the other two countries.

4.5 Comparative Analysis of Ratio of Export to GDP in Percentage

4.5.1 Analysis of Kenya's Export to GDP.

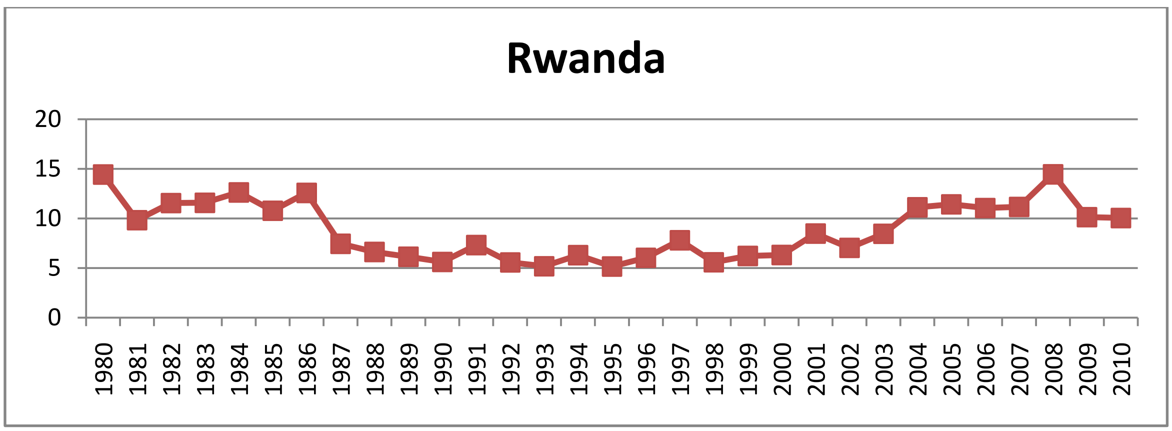


Graph 17: Ratio of export to GDP in Kenya from 1980-2010

According to Graph 17, Ratio of export to GDP ratio over the period 1980-2010, is that which is consistent and with minimal fluctuations except for the year 1992 which spiked up to about 39%.which was the highest percentage ratio Kenya has ever experienced.

From 1980-1986 the ratio of export to GDP is on the decline, in 1987 to 1994 the trend changed and was now on the inclined. From 1994-1999 there was a decline again. There after Kenya experienced a gradual increase in the ratio of exports to GDP. As of 2000-2010 it has gradually increases and almost remains constant at the end. In 1998, the ratio of export to GDP hit a record low of 20%.

4.5.2 Analysis of Rwanda's Export to GDP.

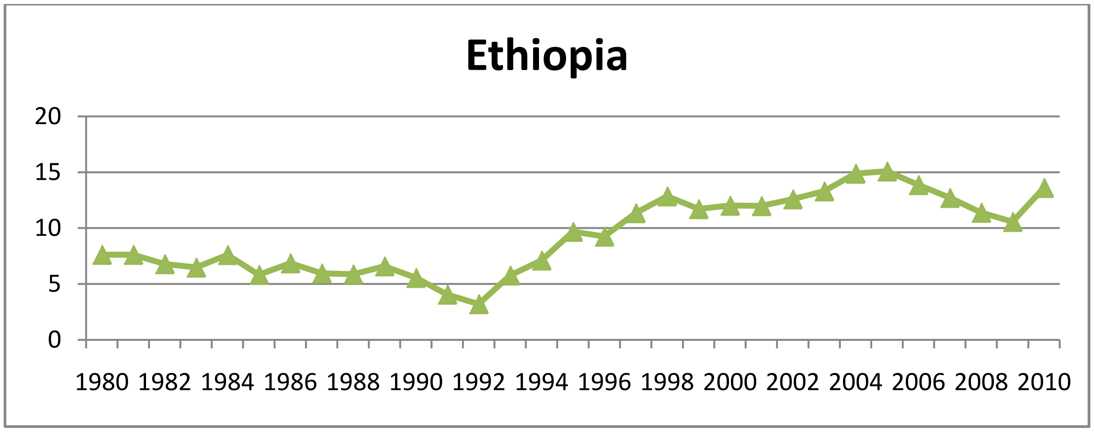


Graph 18: Ratio of export to GDP in Rwanda from 1980-2010

Rwanda has had small fluctuations over the period1980-2010. The ratio of export to GDP in Rwanda has somehow a down ward trend as of 1980-1995 and an upward trend from 1996 to 2008.

The highest ratio of export to GDP in Rwanda's history was in the years 1980 and 2008 at 15%.The lowest periods in Rwanda's history were on the year 1993 and 1995 at 5%.

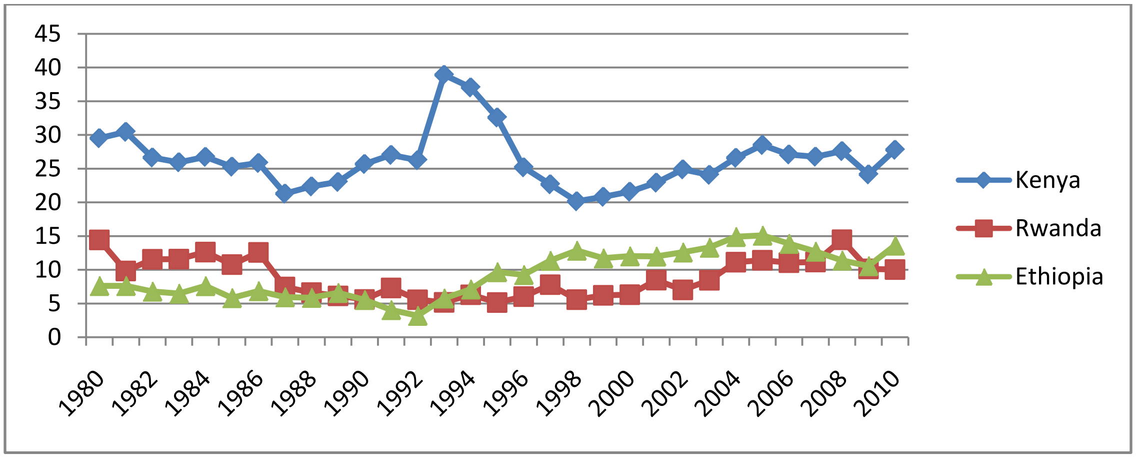
4.5.3 Comparative Analysis of Ethiopia's Export to GDP.



Graph 19: Ratio of Export to GDP in Ethiopia from 1980-2010

From the graph above, the ratio of export to GDP is consistent with almost zero fluctuations. As of 1980 to 1992 the trend was a declining one. In 1992 Rwanda witnessed its lowest ratio of export to GDP of 3%.there after 1993 TO 2005 the trend was that which on a gradual incline. As of 2006 the trend was on the decline until 2009.In 2010, is increased. Highest ratio of export to GDP was witnessed by Ethiopia in 2005 at 15%.

4.5.4 Comparative Analysis of Ratio of Export and GDP in Kenya, Rwanda and Ethiopia.



Graph 20: Ratio of export to GDP in Kenya Rwanda and Ethiopia from 1980-2010

Table 7: Averages Ratio of Export and GDP.

EXPORT/GDP IN US CURRENT	1980-1989	25.72	10.4	6.73
EXPORT/GDP IN US CURRENT	1990-1999	27.64	6.08	8.07
EXPORT/GDP IN US CURRENT	2000-2010	25.64	9.97	12.9
AVERAGES	1980-2010	26.31	8.84	9.36

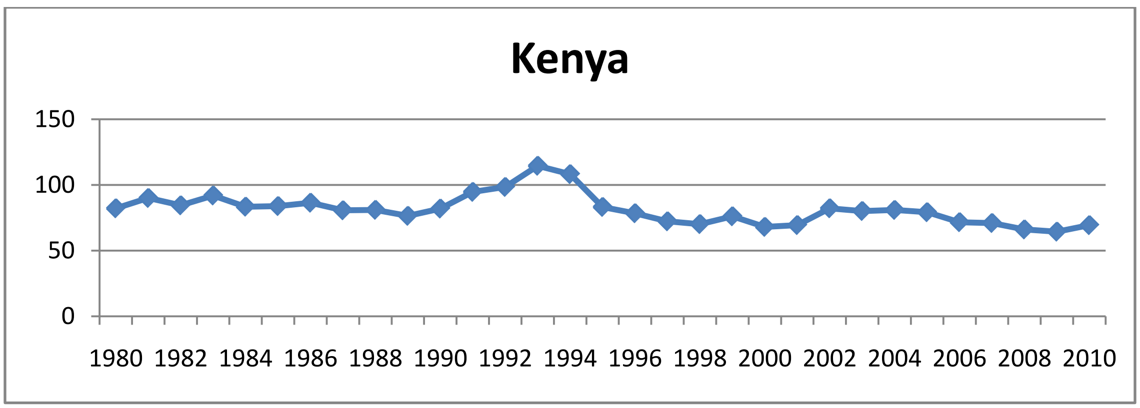
The average of the ratio for the period 1980-2010, Table 7 and graph 20 shows, Kenya has the highest ratio of exports to GDP of 26% while Ethiopia comes in second with a 9.3 while Rwanda has an 8.8%.

From graph 20, Kenya's export to GDP ratio is the higher of the other two countries with no country having a higher ratio of export to GDP. From the table above, Kenya has the highest ratio of over 25% in all the three periods. Ethiopia comes in last in the first period but in second period the ratio increases and Ethiopia moves to second position.

Something to note, is that Ethiopia has a constant increase in the ratio in all the three periods something the other two countries have not experienced.

4.6 Ratio of export to imports in percentage

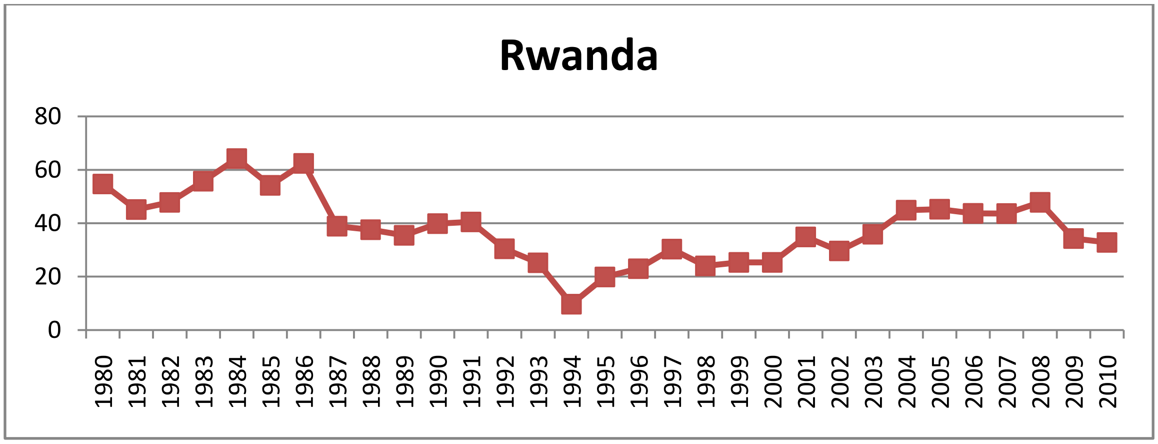
4.6.1 Analysis of Kenya's Export to Import



Graph 21: Ratio of export to import in Kenya from 1980-2010.

From the graph above, Kenya has had almost zero fluctuations. There is also a decline in the ratio of exports to imports in the year 1983-1989, there after there was a gradual increase of the ratio and by 1993 it had reached the highest ratio ever recorded of 114%.There after there was a gradual decrease of the ratio to almost 68%.In 2009, Kenya experienced the lowest ratio of export to import of 64%.

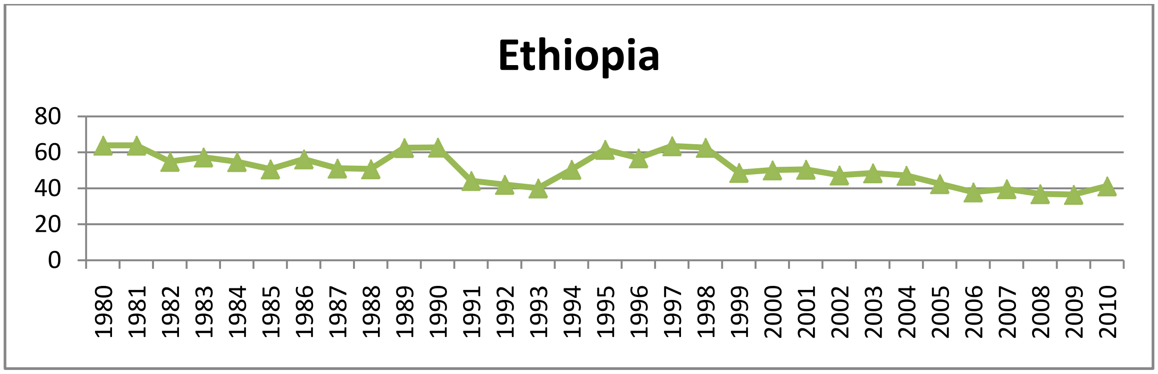
4.6.2 Analysis of Rwanda Export to Import.



Graph 22: Ratio of Export to Import in Rwanda from 1980-2010

From the above graph, Rwanda's export import ratio fluctuates and is quite had to speculate. In 1984 Rwanda's ratio of export to import was highest ever recorded at 64%, while in 1994 the year Rwanda had the genocide, it had a low never experienced before by Rwanda of 9.7%.There after, Rwanda having a gradual increase in the percentage ratio, until 2008.

4.6.3 Analysis of Ethiopia's Export to Import.

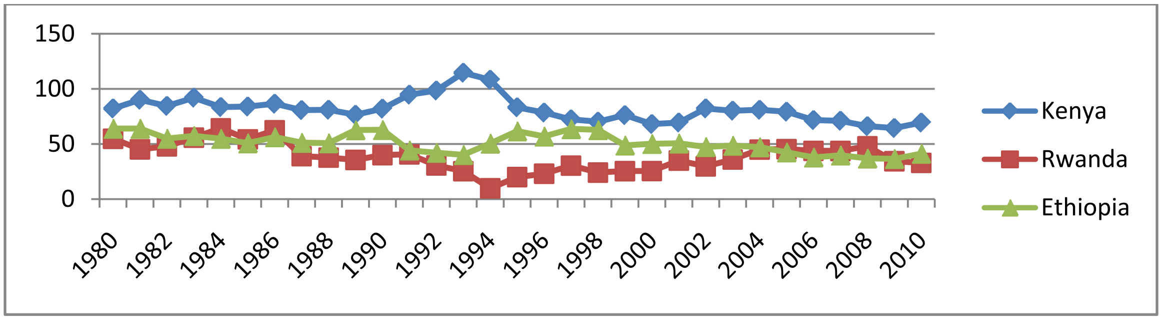


Graph 23: Ratio of Export to Import in Ethiopia

From the above graph, the period 1980- 1990, its clear that Ethiopia percentage ratio of export to import has been on the decline, Ethiopia has some fluctuations between the years 1988-1995 with the highest percentage ratio being experienced in the year 1990 at 63%.

From the year 2000-2010 the trend of the export import ratio has been on the decline with the lowest year being 2009 at 36%.

4.6.4 Comparative Analysis in Kenya Rwanda and Ethiopia for Export/Import



Graph 24: Ratio of export to import in Kenya, Rwanda and Ethiopia

Table 8: Averages of ratio of export to import

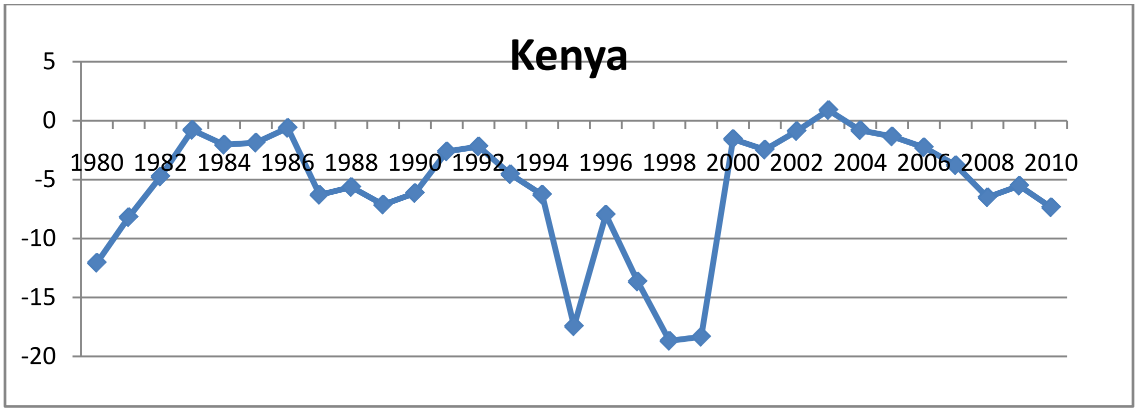
Indicator Name	Year	Kenya	Rwanda	Ethiopia
export/import %	1980-1989	84.1	49.6	56.7
export/import %	1990-1999	87.8	26.9	53.4
export/import %	2000-2010	73	38.1	43.5
averages	1980-2010	81.4	38.2	51

Graph 24 and Table 8, shows that from the average of the ratio of export/import percentage for the period of 1980-2010, Kenya has the highest average ratio for the period of study of 81%, Ethiopia coming second with an average of 51% and finally Rwanda with an average of 38%.

In all the three periods, Kenya having the highest periodic average ratio, while Ethiopia coming second in all the three periods while in third place is Rwanda in all the three periods.

4.7 Comparative Analysis Current Account Balance (% of GDP)

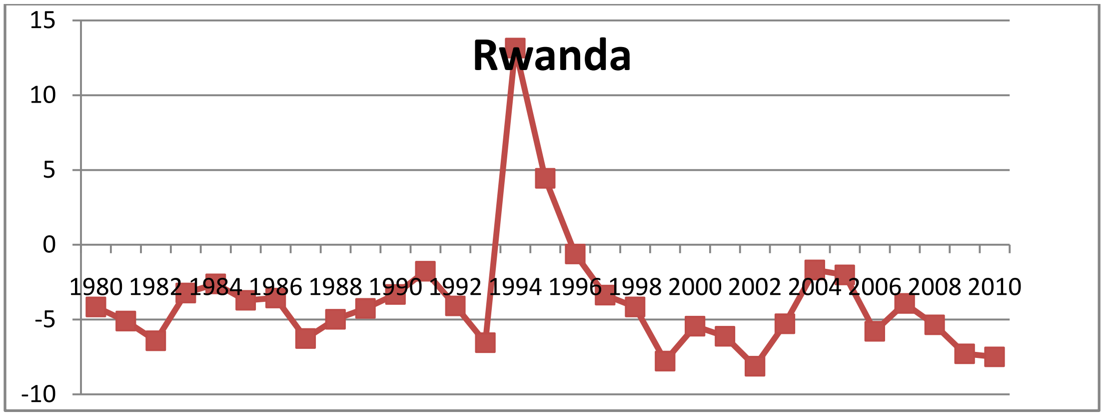
4.7.1 Analysis of Kenya's Current Account Balance



Graph 25: Current Account Balance in Kenya

On average Kenya has a current account balance of -6%.From graph 25, most of the figures are below zero and only in 2003 was the figure above 0.this was the highest % Kenya had ever experienced in history at 0.9%.Fluctuations are occurring the in first being experienced in the year 1987 where it dropped from -0.6 to -6 % in the year 1986-1987.the other fluctuations occurred in between the year 1994 to 2000.Between this period Kenya experienced the lowest % of current account to GDP. In 1998 it reached a low of -18.7%.

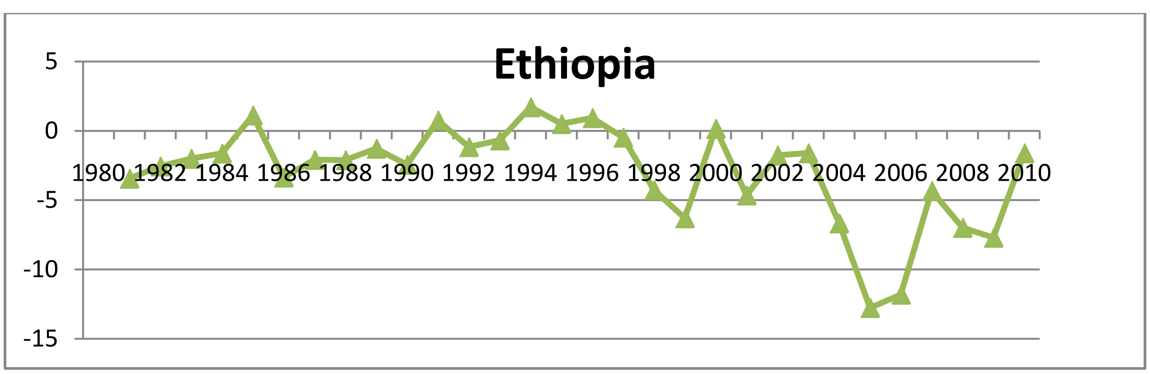
4.7.2 Analysis of Rwanda's Current Account Balance



Graph 26: Current Account Balance in Rwanda from 1980-2010

Rwanda's current account balance on average for the period of study 1980-2010 is at -3.8%.From the graph above, most of the years Rwanda experienced below 0%, except for the year 1994 recording the highest % of 13%, it later drop drastically reaching a low of -7.8% in the year 1999.

4.7.3 Comparative Analysis of Ethiopia's Current Account Balance



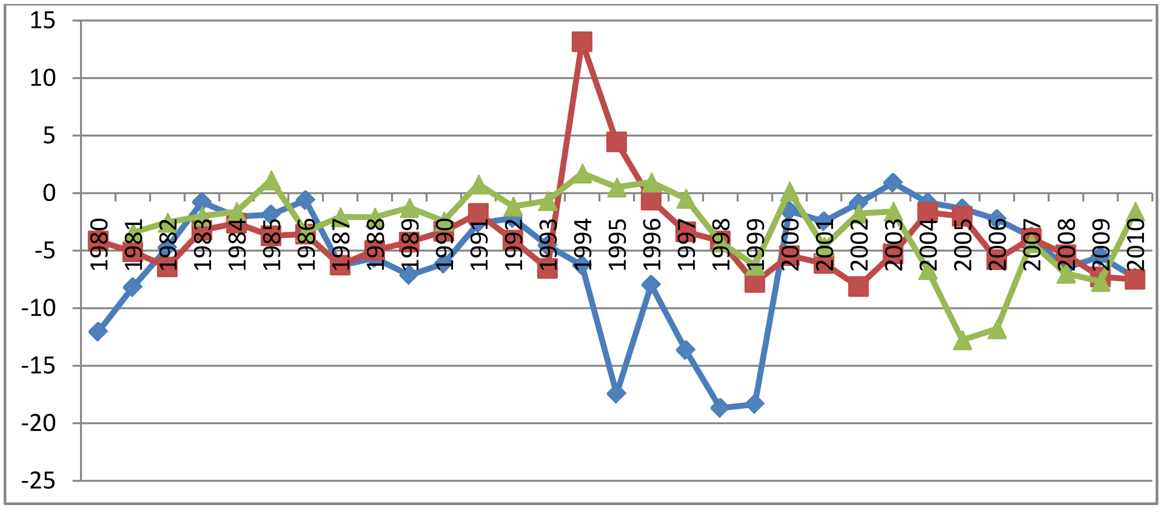
Graph 27: Current Account Balance in Ethiopia

From the above graph 27, thereseveral points that is above the 0% mark. Ethiopia has had several positive current account balances as a percentage of GDP. The following are some of the years and figures that were above the 0% mark 1985 at 1.1%, 1991 at 0.7%, 1994 at1.7%, 1995 at 0.15%, 1996 at 0.94% and finally in the year 2000 at 0.17%.

Average of Ethiopia’s current account balance for the period of study was at -2.9%. In general from the above graph, Ethiopia has numerous fluctuations over the 30 year period. With the highest percentage being in the year 1994 at 1.7% and the lowest percentage ever experienced by Ethiopia was in the year 2005 at -13%.

Few periods if not none have a gradual incline or decline in the percentage of current account balance and that of GDP.

4.7.4 Comparative Analysis of Kenya, Rwanda and Ethiopia's Current Account Balance as a Percentage of GDP.



Graph 28: Current Account Balance in Kenya, Rwanda and Ethiopia from 1980-2010

Table 9: Averages of Current Account Balance % of GDP

Indicator Name	Year	Kenya	Rwanda	Ethiopia
Current account balance (% of GDP)	1980-1989	-4.9	-4.43	-1.9
Current account balance (% of GDP)	1990-1999	-9.8	-1.4	-1.1
Current account balance (% of GDP)	2000-2010	-2.9	-5.32	-5.4
AVERAGE	1980-2010	-5.8	-3.77	-2.9

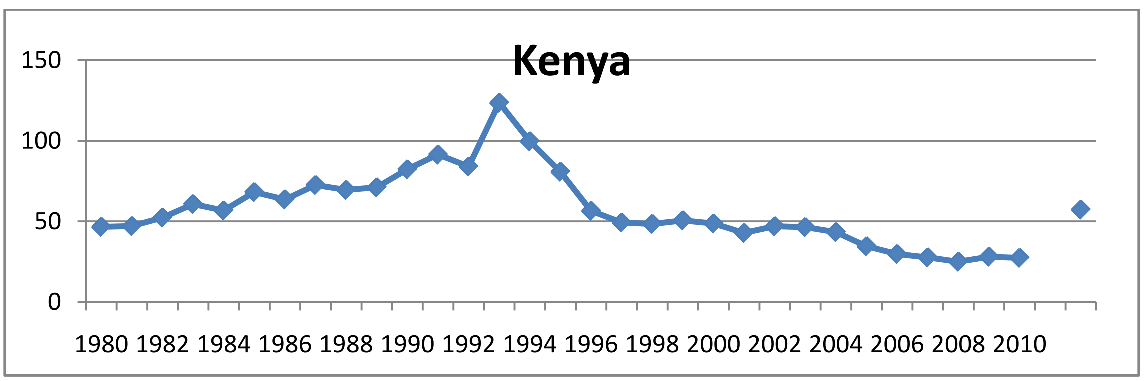
From Table 9 and Graph 28, the average of the current account balance as a percentage of GDP in the whole period of study, Ethiopia had the highest percentage of -3%, in second place was Rwanda with -4% and the country with the least percentage was Kenya with -6%.hence Ethiopia had a higher current account balance as compared to the other countries.

From the periodic table, Ethiopia had the highest percentage in the first two decades of 1980-1989 and 1990- 1999.Rwanda coming second in both period and Kenya last in both the first two periods.

In the third period, Kenya in the lead with the highest current account balance as a percentage of GDP while Rwanda comes in second and last on the list is Ethiopia.

4.8 Comparative Analysis Ratio of External Debt to GDP

4.8.1 Analysis of Kenya Ratio of External Debt to GDP

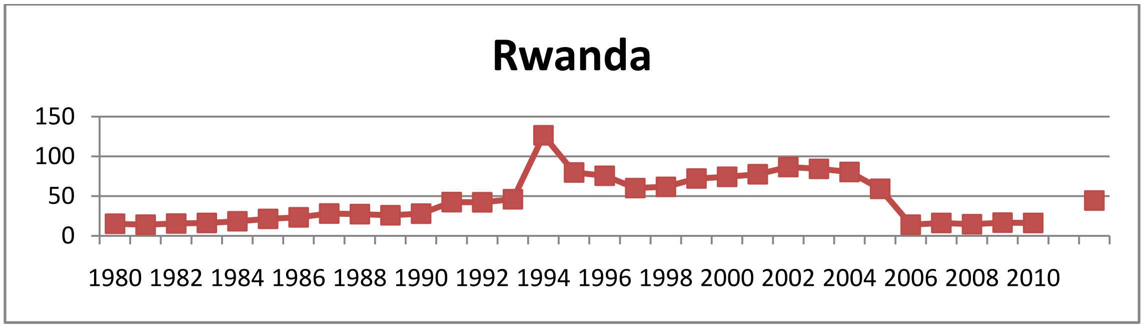


Graph 29: Ratio of External Debt to GDP in Kenya from 1980-2010

From the graph 29, it’s clear that Kenya is having no fluctuations and having a gradual increase of the ratio of external debt to GDP in the first years of our study as from 1980-1993.In 1980 it was at 46.7% and by the year 1993 it had reached a record high of 123%.

Thereafter, there is a clear decline from a 123% in 1993 to a 27% in 2010. With 2010 being the lowest % Kenya has experienced in study

4.8.2 Analysis of Rwanda's Ratio of External Debt to GDP

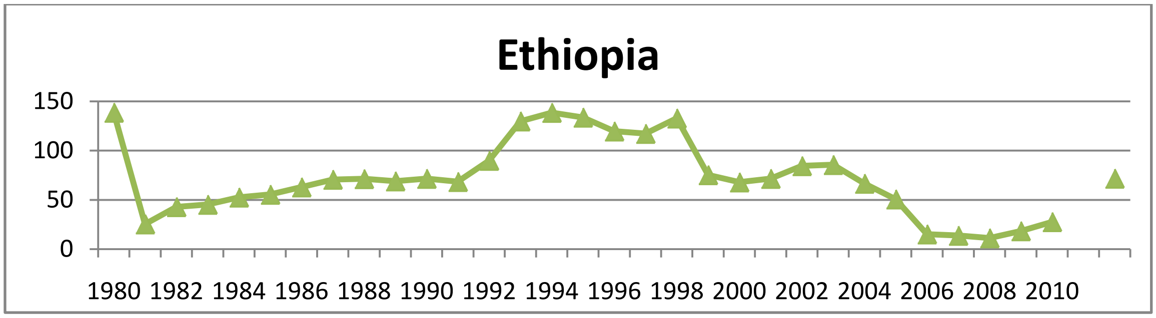


Graph 30: Ratio of External debt to GDP in Rwanda

From Graph 30, its clear Rwanda has had few fluctuations experienced this being in the year 1994 which was at 124% highest in experienced in the records available.

Rwanda has had a gradual rise since 1980 to 1993, and between the year 1997- 2002.it has experienced few gradual decline between 2002 and 2005.there is a stable period which is between the year 2006 – 2010 at 16%.

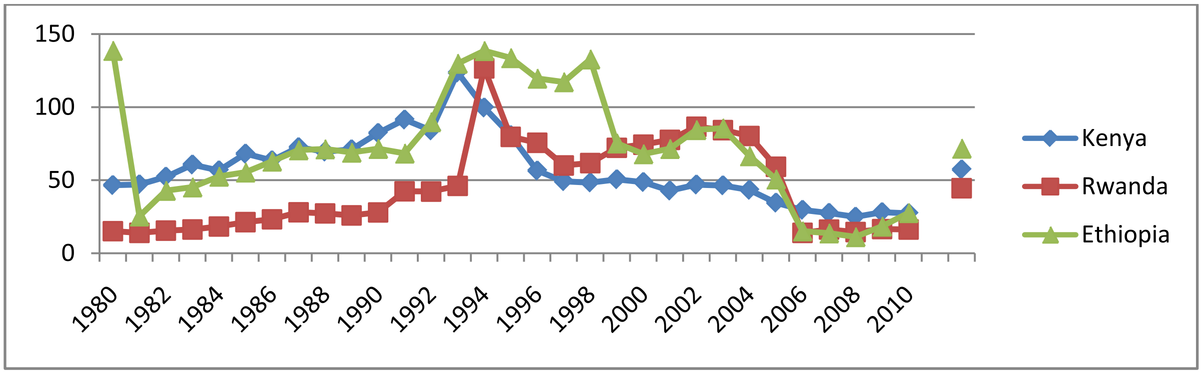
4.8.3 Analysis of Ethiopia's Ratio of External debt to GDP



Graph 31: Ratio of External Debt to GDP in Ethiopia

From the Graph 31, Ethiopia has had one a more gradual graph, this is evident in the period 1982-1994 where it grew gradually from a 25% to a 139%.there after it had a gradual decent from the 139%, which was the highest year for Ethiopia to a 12% in 2008.

4.8.4 Comparative analysis of Kenya, Rwanda and Ethiopia's ratio of External Debt to GDP.



Graph 32: Ratio of External debt to GDP in Kenya, Rwanda and Ethiopia

Table 10: Averages of External Debt as Percentage of GDP

INDICATOR	YEAR	KENYA	RWANDA	ETHIOPIA
External Debt as Percentage of GDP	1980-1989	60.8	20.5	63.4
External Debt as Percentage of GDP	1990-1999	76.7	63.5	107.7
External Debt as Percentage of GDP	2000-2010	36.4	49.0	46.6
AVERAGES	1980-2010	57.2	44.5	71.7

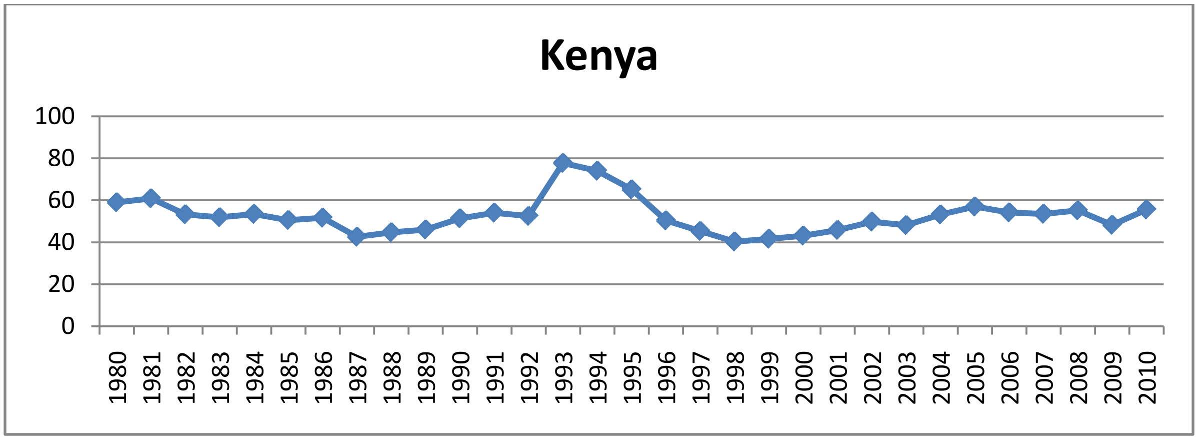
From the Graph 32 and Table 10 in the previous page, Ethiopia has the highest average ratio external debt to GDP for the period 1980-2010 with an average of 71%, in second place is Kenya with an average of 58% and finally an average of 45%.

In the period 1980-1989 and 1990-1999, Ethiopia led with an average ratio external debt to GDP of 63% and 107 respectively; Kenya was in second place in both periods with a 61% and a 76% respectively. Rwanda was in third place with a 20% and 63%.

In the third period 2000-2010, Ethiopia had a lead of 47% in ratio external debt to GDP, in second place was Rwanda with a 49% and finally Kenya in third place with a 36%.

4.9 Comparative Analysis of Trade Openness as a Percentage of GDP.

4.9.1 Analysis of Kenya's Trade Openness as a Percentage of GDP.

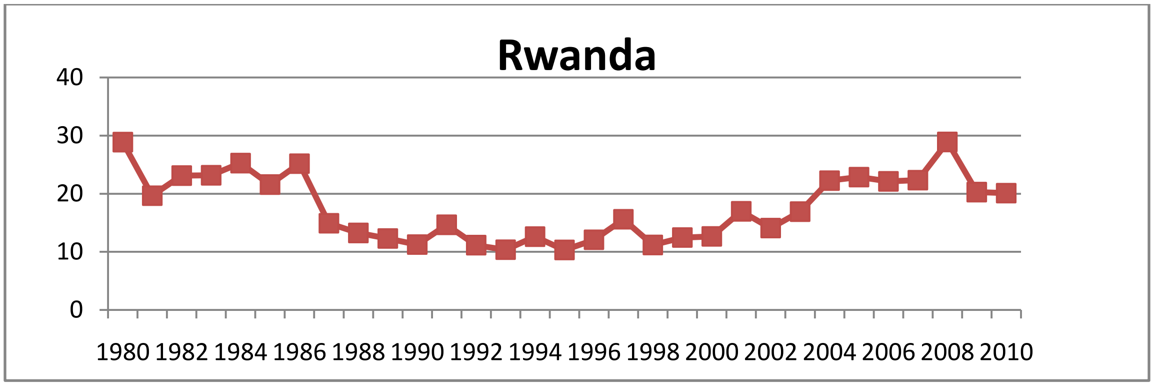


Graph 33: Trade Openness as a Percentage of GDP in Kenya

Graph 33, shows a clear representation of Kenya's trade openness decreasing from the year 1980-1987.the decrease is gradual from 59% - 43%.As from 1987-1991, there is a gradual increase in Kenya's trade openness from 43% in 1987 to a 54% in 1991.In the year 1992- 1993, there was a sudden increase of Kenya's trade openness from a 52% to 77%, thereafter, there was a steep decline from a 77% in 1993 to a 44% in 1998.

The year 1993, was the highest ever recorded in Kenya's history for trade openness, while in 1998 was the lowest record of trade openness in Kenya at 44%.As from the year 1998- 2005, there was a gradual increase of trade openness from 44% to 57%.

4.9.2 Analysis of Rwanda's Trade Openness as a Percentage of GDP.

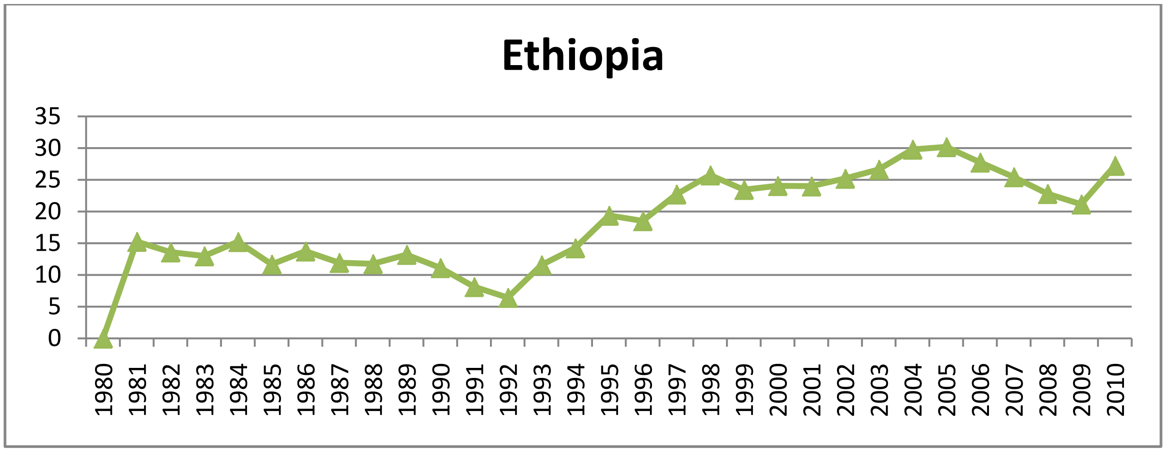


Graph 34: Trade Openness as a Percentage of GDP in Rwanda

From Graph 34, Rwanda's trade openness has minor fluctuations that make it hard to predict. As of the year 1980-1986, Rwanda's trade openness fluctuated between 20%-25%.From the year 1986- 2002, Trade openness fluctuated between 10% - 15% with each year having an unpredictable incline or decline.

From 2002-2008, the pattern changed and Rwanda is seen to have a gradual increase of trade openness from a 14% to a 29%. With 2008 being the highest ever recorded in Rwanda's history at 29%.

4.9.3 Analysis of Ethiopia's Trade Openness as a Percentage of GDP.

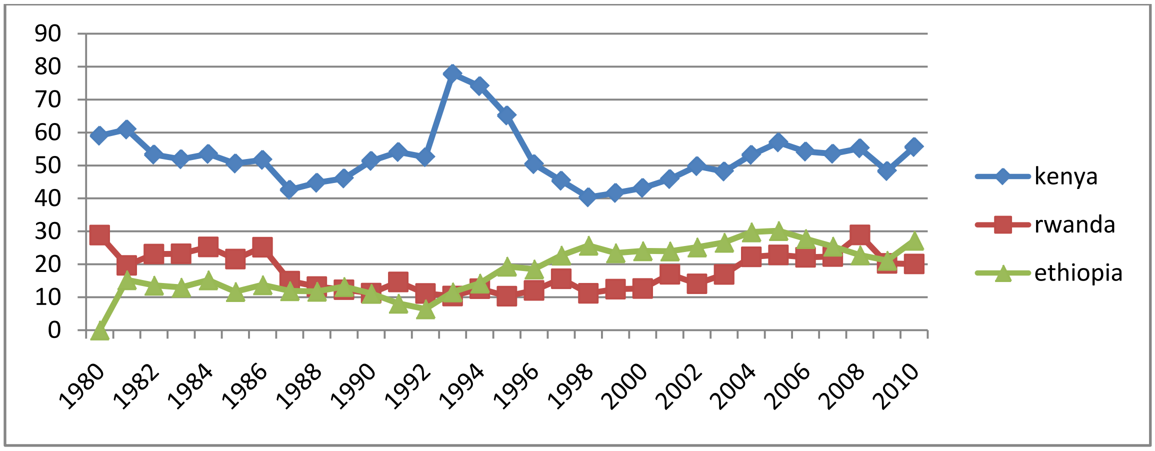


Graph 35: Trade openness as a percentage of GDP in Kenya from 1980-2010

From the figure above, Ethiopia has trade openness with a gradual decline as of the year 1980- 1992, 15% in 1980 and a 6% in 1992.In 1992, was the lowest ever recorded of 6% trade openness for Ethiopia.

As of 1992-2005, Ethiopia trade openness was on a gradual pattern from a 15% to 30% in 2005. The year 2005 was the highest ever recorded. There after the pattern was a declining one till the year 2009 which the trade openness was at 21%.

4.9.4 Comparative Analysis of Trade Openness as a Percentage of GDP.



Graph 36: Trade Openness as a Percentage of GDP in Kenya, Rwanda and Ethiopia from 1980-2010

Table 11: Averages of Trade Openness as Percentage of GDP

Indicator Name	Year	Kenya	Rwanda	Ethiopia
Trade openness	1980-1989	51.4%	20.7%	11.9%
Trade openness	1990-1999	55.2%	12.1%	16.1%
Trade openness	2000-2010	51.3%	19.9%	25.8%
Trade openness	1980-2010	52.6%	17.7%	18.2%

From both the Graph 33 and Table 10 above, it is clear that Kenya dominates in trade openness in both the three sub periods of 1980-1989, 1990-1999, 2000- 2010 with 51 sub period averages of 51.4%, 52% and 51.3% respectively. Kenya still leads on Average for the whole period of study of 1980 to 2010 at 52.6% in Trade openness.

Rwanda came in second in the first sub period in 1980-1989 at 20.7%, while it took third place in the next two periods of 1990-1999 and 2000-2010 with a 12.1 and a 19.9% respectively.

Ethiopia came in third in the first sub period of our study, with a trade openness of 11.9% and came in second in both the second and third sub periods with a trade openness of 16% and 26%.

On average Ethiopia and Rwanda seem to have equivalent trade openness for the whole period of our study from 1980- 2010 with 18% trade openness

Chapter 5

COMPARATIVE ANALYSIS OF MACROECONOMIC VOLATILITY OF KENYA RWANDA AND ETHIOPIA

Comparative analysis of macroeconomic volatility will be investigated by computing the standard deviation of the natural logarithms of real GDP, real private investment and real private consumption. Volatility for growth rate of GDP % and inflation rate will simply be calculated using standard deviation.

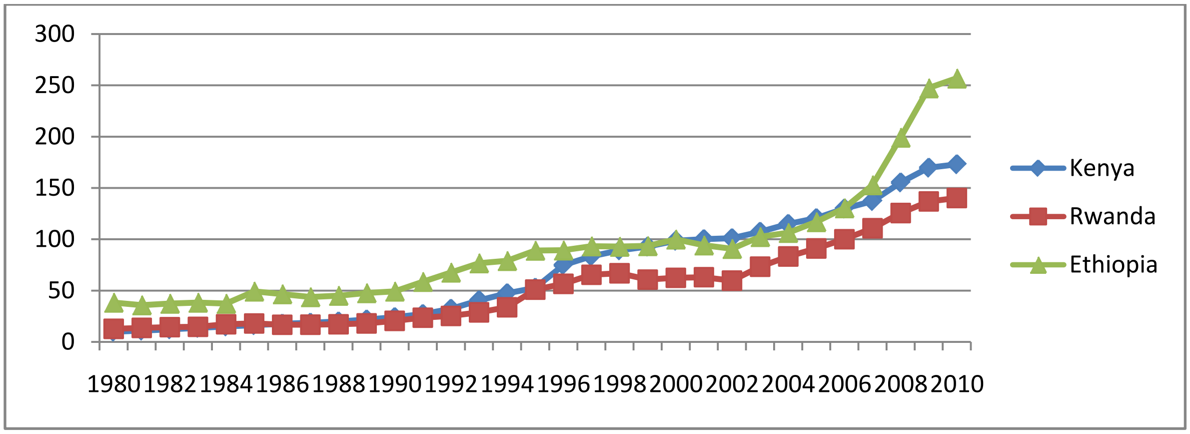
Standard deviation gives information of, how stable or unpredictable an indicator is in the economy and in other words how volatile the indicator is. Table below shows a summary of the standard deviations of the variables of interest.

Table 12: Summary of Macroeconomic Volatility

VOLATILITY	KENYA	RWANDA	ETHIOPIA
REAL GDP/ GDP IN LCU	1.2	1.0	3.7
REAL PRIVATE CONSUMPTION/	O.34	0.34	0.7
REAL PRIVATE INVESTMENT/	18.6	17.2	20.8
GROWTHRATE OF GDP %	2.20	12.59	6.84

INFLATION RATE	7.8	10.8	9.8

5.1 Comparative analysis of volatility of Real GDP in Kenya, Rwanda and Ethiopia.



Graph 37: Volatility of Real GDP for Kenya, Rwanda and Ethiopia

Table 13: Summary of Real GDP's Standard Deviation

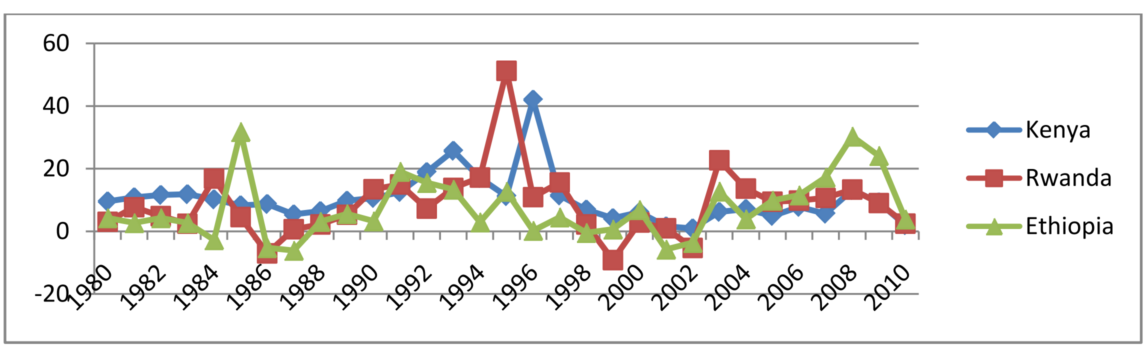
	Year	Kenya	Rwanda	Ethiopia
Real GDP	1980-1989	0.4	0.2	1.0
Real GDP	1990-1999	0.6	0.5	2.0
Real GDP	2000-2010	0.4	0.6	0.5
Standard deviation	1980-2010	1.2	1.0	3.7

From the graph 34 and table 13,the standard deviation of the real GDP of the three countries for the whole period of study, in general Ethiopia is the most volatile of the three countries with a standard deviation of 3.7. Kenya comes in second with a standard deviation of 1.2 while Rwanda is the least volatile country of the three with an average standard deviation of 1.04.

In the period 1980-1989 and 1990-1999, Ethiopia had a 1.01 and 1.9 standard deviation respectively, both periods Ethiopia had the highest standard deviation of real GDP. Kenya in second place in both periods with a standard deviation of 0.4 and 0.5 respectively. While Rwanda had a standard deviation of real GDP of 0.2 and 0.5 respectively.The second period all the countries experienced an increase in the standard deviation of real GDP.

In the third period of study, Rwanda leads the pack with a standard deviation of real GDP of 0.6, Ethiopia coming in second with a standard deviation of real GDP of 0.5 and Kenya having the least standard deviation of 0.3.

5.2 Comparative Analysis of Volatility of Inflation in Kenya, Rwanda and Ethiopia.



Graph 38: Volatility of Inflation rate for Kenya, Rwanda and Ethiopia for period 1980-2010

Table 14: Summary of Inflation rate’s Standard Deviation

Indicator Name	Year	Kenya	Rwanda	Ethiopia
Inflation, GDP deflator (annual %)	1980-1989	2.10	6	11
Inflation, GDP deflator (annual %)	1990-1999	11	15	7
Inflation, GDP deflator (annual %)	2000-2010	4	8	11
standard deviation	1980-2010	7.7	10.8	9.78

From the graph 35 and table 14, for the period 1980-2010, the country that had the highest volatility was Rwanda with an 11 standard deviation of inflation. Ethiopia was in second place with a standard deviation of inflation of 10% while Kenya was the least volatile with a standard deviation of inflation of 7.7.

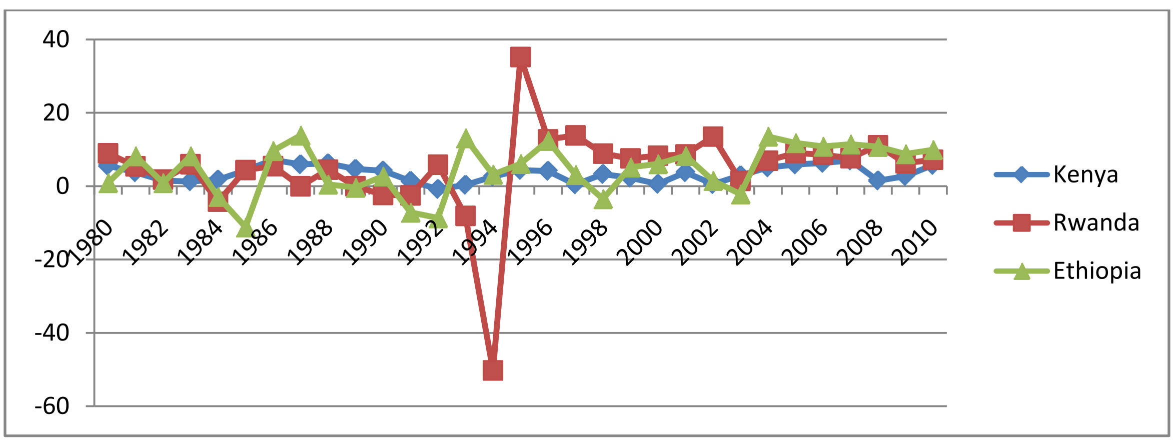
As of 1980-1989, Ethiopia was the most volatile country in regards to inflation with a standard deviation of 11.rwanda was in second place with a standard deviation of 6 and the least volatile country in inflation was Kenya at a standard deviation of 2.

In 1990-1999, the standard deviation for all the three countries increased and the most volatile country at this period was Rwanda with a standard deviation of 15.in second place was Kenya with a 11 standard deviation and finally the least volatile country in this period was Ethiopia with a standard deviation of 7.2 in inflation.

1n 2000-2010 Ethiopia had a standard deviation of inflation of 7, this being the highest in this period. Rwanda came in second with a standard deviation of 8 in inflation and Kenya was the least volatile in this period with a 4 standard deviation of inflation.

The volatility of inflation in all the three countries is high for the whole period this indicates that the inflation rate in these regions is not stable. Rwanda leads the pack with a 10.8 standard deviation, Ethiopia comes in second and Kenya third with a 7.7 standard deviation.

5.3 Comparative Analysis of Volatility of GDP Growth Percentage in Kenya, Rwanda and Ethiopia.



Graph 39: Volatility of GDP Growth Rate for Kenya, Rwanda and Ethiopia

Table 15: Summary of Growth Rate of GDP's Standard Deviation

Indicator Name	Year	Kenya	Rwanda	Ethiopia
GDP growth (annual %)	1980-1989	2.1	3.8	7.3
GDP growth (annual %)	1990-1999	1.8	21.9	7.4
GDP growth (annual %)	2000-2010	2.3	3.0	4.8
STANDARD DEVIATION	1980-2010	2.2	12.6	6.8

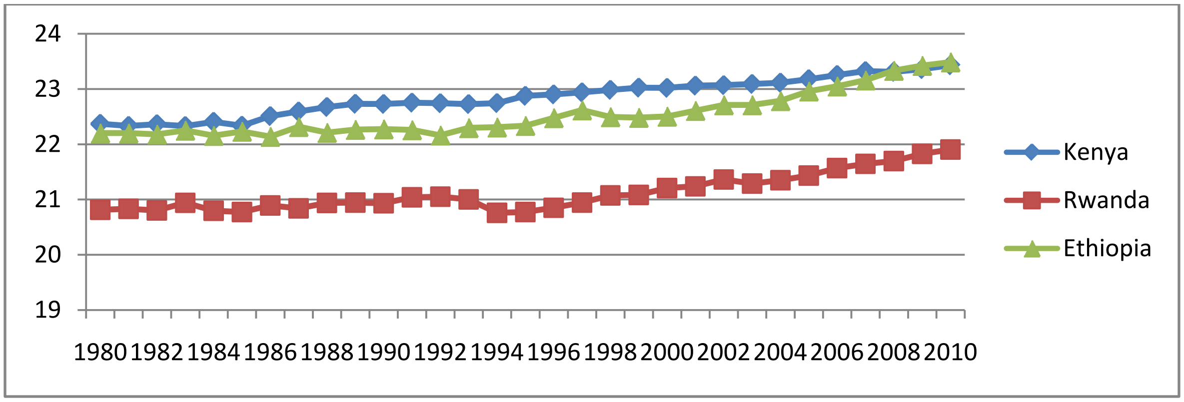
According to the above Table 15 and Graph 36, it’s clear that Rwanda had the highest volatility in growth of GDP for the whole period of study 1980-2010 with a 13 standard deviation. In second place was Ethiopia with a 6.8 and the least volatile country in regards to GDP growth was Kenya at 2.2 standard deviation.

In the period 1980- 1989, Ethiopia led in having the highest standard deviation of 7.while Rwanda second Ethiopia with a standard deviation of 4. The least volatile country was Kenya with a 2.1.

In the period 1990-1999, Rwanda was the leading country that had the highest volatility in GDP growth of 21 while Ethiopia second Rwanda with a standard deviation of 7. The least volatile and stable GDP growth was Kenya with a standard deviation of 1.8.

In the last period of 2000-2010, Ethiopia had a volatility of 5 and, Rwanda was in second place with a standard deviation of 3 and finally Kenya in three consecutive periods was the least volatile with a standard deviation of 2.3

5.4 Comparative Analysis of Volatility of Real Household Consumption in Kenya, Rwanda and Ethiopia.



Graph 40:Volatiliy of Real Household Consumption for Kenya, Rwanda and Ethiopia for period 1980-2010

Table 16: Summary of Household Final Consumption's Standard Deviation

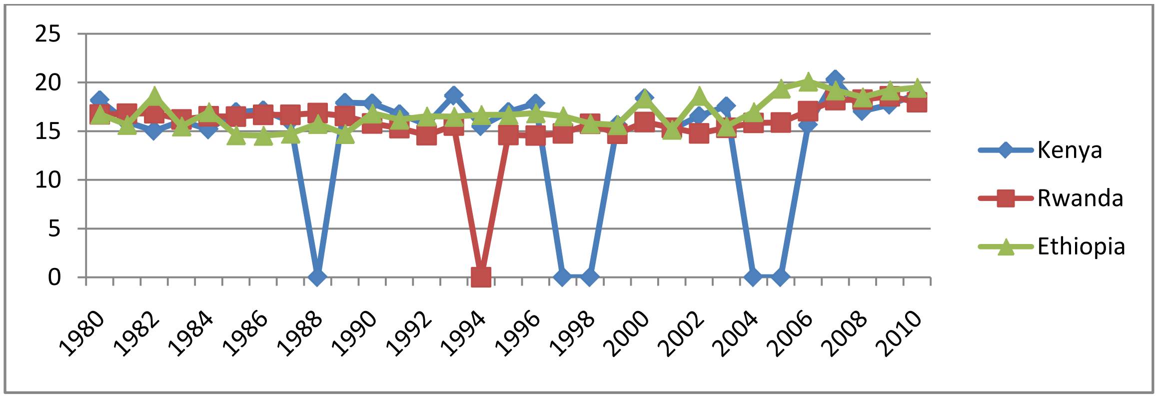
Indicator Name	Year	Kenya	Rwanda	Ethiopia
Household Final Consumption expenditure	1980-1989	0.15	0.06	0.06
Household Final Consumption expenditure	1990-1999	0.12	0.12	0.1
Household Final Consumption expenditure	2000-2010	0.1	0.2	0.3
STANDARD DEVIATION	1980-2010	0.3	0.3	0.4

From Graph 37 and Table 16, from 1980-2010, the standard deviation of household consumption for the period of study is quite interesting, all the three countries standard deviation falls between 0.33 and 0.4. Ethiopia leading with the highest average standard deviation in real household consumption at 0.4 and Kenya having the least standard deviation at 0.34 standard deviation.

In general the standard deviation of the three countries for the three periods is quite low. This showing that the countries had stable house hold consumption and there has been no difference.

The standard deviation of Kenya and Rwanda is similar for the whole period of study 1980-2010, at 0.3 while that of Ethiopia is at 0.4.In conclusion, the three countries have almost the same volatility in the household final consumption and that there is there stability is similar.

5.5 Comparative Analysis of Volatility of Real Private Capital Flow in Kenya, Rwanda and Ethiopia.



Graph 41: Volatility of Real Private Capital Flow for Kenya, Rwanda and Ethiopia

Table 17: Summary of Private Capital Flows Standard Deviation from 1980-2010

Indicator Name	**Year**	**Kenya**	**Rwanda**	**Ethiopia**
Private Capital flows, Total (Bop, current US$)	1980-1989	1.1	0.2	1.3
Private Capital flows, Total (Bop, current US$)	1990-1999	1.1	0.5	0.4
Private Capital flows, Total (Bop, current US$)	2000-2010	1.6	1.3	1.6
Private Capital Flows, Total (BOP, current US$)	1980-2010	1.3	1.1	1.6

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From the table above, Ethiopia has the highest standard deviation for the whole period of study 1980-2010.Kenya comes in second with a 13 standard deviation and least volatile country with regards to private capital flow was Rwanda with a 0.1 standard deviation.

In the second period, 1990-1999, Kenya had the highest standard deviation of 1.19; Rwanda came in second with a standard deviation of 0.5 while Ethiopia had the lowest volatility of 0.4 in this period.

In the period between the year 2000-2010, Ethiopia and Kenya had a high standard deviation of 1.6 an increase from the previous period. Rwanda was the least volatile in this period with a standard deviation of1.3.It is good to note that Kenya's and Rwanda's volatility has been on a stable rise in all the three periods.

For the whole period of study 1980-2010, Ethiopia's private capital flow has a higher volatility of 1.6, meaning that Ethiopia has higher fluctuations of private capital flow as compare to the rest of the two countries. The three countries have a volatility in the range between 1.1 to 1.6.Rwanda has the lowest volatility for the whole period of study.

Chapter 6

CONCLUSION

6.1 Kenya

Kenya's investment rate as a percentage of GDP is that which has been consistent with a gradual increase from the year 2002.Projection of Kenya's investment trend looks good that which has the potential to grow. This may be attributed to change of regime of the government. With the new regime focused on fighting corruption, efficient running of the government and use of resources and focus on broad base economic growth.

Kenya's growth of GDP is that which has been in the past affected by political climate. The year 1992, 1997, 2002 and 2007 are the years Kenya held elections and the uncertainty brought by the election made investment rate in Kenya to go low with 1992 recording the lowest growth rate ever experienced in Kenya's history at -0.7%.As from the year 2002, Kenya's GDP was on a gradual increase this was after a new regime took power and came up with policies that focus on the broad base growth of Kenyan Economy. The regime focused on Economic recovery strategy too so as to promote growth and increase employment. Kenya's economic growth seems to have a positive projection, due to the fact that Kenya has now a new constitution that focus on performance efficient use of resources and separating the politics and economy, which was not the case before. Awhile back Kenya’s economy and politics one entity and could not be separated.

Savings rate in Kenya and other African countries including Rwanda and Ethiopia have been characterized as to be low. The projections of Kenya’s savings rate are low too. Kenya's economic performance is characterized by low savings rate that lead to poor domestic capital formation. The reason for the low savings rate is lack of proper reforms required to speed up increase of savings rate as economic activity picks up.

Kenya’s inflation rate for the whole period of study, that of 10%, inflation rate in the recent years has been on the rise due to price of food and increase in prices of oil. The Kenyan government has not made any intervention on inflation and has let the prices of foods and oil adjusts them fully.

Terms of trade in the recent years in Kenya have been on the rise, indicating Kenya export prices have strengthened hence Kenya can import more with the same of its export. Kenya has come up with policies that encourage the productivity especially in the agricultural sector so as to increase export.

Kenya’s history on current account balance has been a negative one that which has been consistent for a long period. With the building of new infrastructure and also improvement of the current infrastructure in the last ten years has led to a negative deficit in the capital account balance.

Kenya has a liberalized external trade system with a few controls on import based on health, environment and security. As from 2000s, Kenya has been working with it neighboring countries on trade integration and on policies that encourage production and export and also policies that influence the imports quality, quantity and price of goods hence the reason for Kenya's trade openness being on the rise as of the year 2002.

6.2 Rwanda

Investment in Rwanda in the recent years has been on the rise with. the reason for this is due to the high economic growth rate that has attracted investors, robust governance that the government has been working on in order to create an effective efficient and trust worthy region to invest in through fighting corruption and tribalism and finally the increase in investment rate is due to the friendly environment the government has created.

The GDP projections of Rwanda's economy look promising. Rwanda's Growth of GDP is mostly affected by drought and poor harvest as clearly seen in the year 2003 when Rwanda experienced drought that lead to poor output. The 1994 Genocide and civil war that lasted for months affected Rwanda's growth of GDP.

Rwanda's inflation is still on a single digit and is mainly affected by food prices and prices of oil. Just like Kenya and Ethiopia the savings rate of Rwanda is low this is due to lack of policies that would encourage savings rate as the economy grows. There is little focus on domestic savings rate hence there is a shortage of domestic capital formation forcing the government to import capital from other countries.

Total export of Rwanda has been on the rise, Most of Rwanda's export is from the agricultural sector and to be specific coffee and tea. Coffee and tea make up 50% of Rwanda's export. Rwanda's economy is an export based and the government has come up with policies that will affect the export of Rwanda in a positive manner. This has led to Rwanda having a deficit in its current account as Rwanda is expanding its production and facilities. The current account balance of Rwanda will continue with this trend in the near future.

6.3 Ethiopia

Ethiopia's Growth of GDP depends on the agricultural sector, with the agricultural sector responsible for 44% of the Ethiopia's GDP. The growth of GDP in Ethiopia is affected by politics, international prices of agricultural products they export and the weather. Ethiopia's economy has seems been on the rise with a high trajectory. The growth is a broad based similar to that of Kenya.

Ethiopia's current regime is focused on Growth and transformation plan policy and has lead to maximum utilization of resources and has encouraged new ways of doing agriculture in order to have consistent output.

Inflation in Ethiopia in the recent years has not been based on food prices like it counter parts Kenya and Rwanda but it is due to increase in large public debt brought about by the high construction activities Ethiopia has been involved in the recent years and also due to rise in oil prices. This has led to high prices of construction materials, water and energy.

Savings rate and domestic capital formation have been low and like her two counter parts Kenya and Rwanda the reason for the low savings rate has been due to lack of policies that have been able to encourage growth of savings rate.

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