Comparative Analysis of Macroeconomic Performance and Volatility in Egypt, Morocco and Tunisia: Time Series Evidence

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ABSTRACT

The aim of this thesis is to carry out a comparative analysis of macroeconomic performance and volatility of Egypt, Morocco and Tunisia over the period 1980-2010 and in the sub-periods of the same period. To this end, the thesis studies the pattern of each individual country by looking at each country macroeconomic indicators. In addition, it looks at fluctuations, changes in main macroeconomic variables and try to investigate the causes for these patterns. The conclusion is that countries could achieve higher growth rates if they eliminate trade barriers and increase their exports, invest in risk management. Central banks should be more independent from the government. Encouraging investment and create a competitive and dynamic business environment. Governments should reinforce people confidence in the political system.

Keywords: comparative analysis, macroeconomic volatility, macroeconomic performance.

ÖZ

Bu tezin amacı 1980-2010 döneminde ve bu dönemin kendi içindeki belirli zaman aralıklarında Mısır, Fas ve Tunus'un makroekonomik performanslarının ve istikrarlarının karşılıklı bir mukayesesini yapmaktır. Bu amaca yönelik olarak her ülkenin belirli makroekonomik göstergeleri analiz edilmektedir ve bu bağlamda temel makroekonomik değişkenlerdeki dalgalanmaların boyutları incelenmekte ve bunların sebepleri analiz edilmektedir. Bu tezin ana sonuçları arasında bu üç ülkenin büyüme hızlarını artırabilmeleri için dış ticarete ilişkin engellerin azaltılarak ihracatlarını ve risk yönetimine ilişkin yatırımlarını artırmaları yer almaktadır. Merkez bankalarının hükümetlerden daha bağımsız olması ve yatırımların teşvik edilerek daha rekabetçi ve dinamik iş ortamının geliştirilmesi de önemlidir. Son olarak hükümetlerin halkın politik sisteme olan güveni artırmalarının önemine işaret edilmektedir.

Anahtar Kelimeler: Mukayeseli analiz, Makroekonomik istikrar, makroekonomik performans.

ACKNOWLEDGMENT

I am thankful to Prof. Dr. Serhan Çiftçioğlu for his support. Without his encouragement and guidance, my efforts would be shortsighted. To the professors and friends that was near during the hard times, thank you. Finally, I would like to thank my family for their love and support that gave me the strength to go this far in my journey.

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Chapter 1

INTRODUCTION

Understanding the policies applied by developing countries to gain long-term growth and stability is significantly important for its implications on the lives of billions that live in poverty in these countries.

An increasing interest in analyzing economic growth and stability has started in the mid-80s of the last century. In the middle of the 70s, the world scale of economic growth started to slow down, and continued through the 80s. Developed countries had slight improvement on standard of living, while developing countries suffered from recession. The notable economic growth achieved in a number of Asian countries has encouraged economists again to study economic growth and indicators influencing it.

The main goal of this thesis is to make comparative analysis of macroeconomic performance and volatility in Egypt, Morocco and Tunisia in the period of 1980-2010. However, to the best of our knowledge there is no study or research investigating this issue. Therefore this thesis is unique in the sense that it is the first research which intends to explore the factors that affecting both short and long-term behavior of macroeconomics of the selected countries. In this regard, it is expected to provide important implications to the policy makers such as politicians and economists.

Thesis structure will be in the following form: Chapter 2 will go through literature review on economic growth, macroeconomic performance and economic growth determinants, macroeconomic volatility determinants in developing countries.

Chapter 3 will focus on data and research methodology. The study is based on time series data that is collected from the IMF library and the database of World Bank. Selected indicators will be analyzed for each country individually and for them as a group.

In chapter 4, there will be the comparative analysis containing graphs for individual countries and as a group. The graphs will be analyzed individually. Tables of simple averages for each indicator will be presented when analyzing the group together.

Chapter 5 discusses the macroeconomic volatility comparison for the selected countries as a group. There will be tables providing a summary of the standard deviations for the study period as a whole and sub periods. Beside tables, there will be graphs that will show the volatility of the indicator over the period 1980-2010.

In chapter 6, the conclusion of the study will be presented. This part will address the factors that influenced the variables to behave that way. Recommendations for the selected countries will be provided for further growth and development.

Chapter 2

LITERATURE REVIEW

This chapter will provide information that will inform the reader on the field, which we gathered from previous studies and resources.

Developing countries face many problems when it is time to manage their economies; first, they are easily affected by external shocks of any type. This is due to both trade and finance, because trade terms moves against them, while interest rates rise and capital flows decrease. As a result of this, we have instability. Unfortunately, stabilization policies are ineffective because of the characteristics and features of developing countries' economies (Bird, 2001).

Macroeconomic volatility is a reason and a result of underdevelopment. Developing countries have been in the top of the charts for the last four decades on any measure of macroeconomic volatility, as a main concern of developing countries. It exists because of several factors, including: external shocks, weak macroeconomic policies, ineffective institutions and microeconomic rigidness. Volatility comes along with direct welfare cost to individuals that are risk-averse, also an indirect cost due to its negative effect on income and development (Loayza et al., 2007).

The 1980s was known as the "lost decade" for most developing countries, because it was a decade with negative growth for almost all developing countries. In this decade, these countries focused on structural adjustments in their economic policies. They had economic measures for stabilization to restore equilibrium both internally and externally. In addition, they implemented changes in institutions and policy structures to make their economies more flexible and efficient, so that they could increase growth (Fischer, 1991).

In addition, as the decade passed and the danger of economic disequilibrium was clear, it was obvious to economists that to sustain growth you have to achieve macroeconomic stability (Fischer, 1991).

Economic growth and political freedom have a positive correlation. Nations can provide a healthy environment for their economies to grow if they choose to have a more politically open government. Thus, political freedom will provide individuals more opportunities to be part of the development process, and will help eliminate poverty. Policymakers that fail to understand this will continue to use repressive policies, which inevitably hurts the economy rather than helping it (Mbaku & Kimenyi, 1997).

Managing an economy is not an easy task. Any positive change in GDP is an indicator for economic growth. In order to maintain a high level of growth, policymakers must sustain a low rate of inflation, high employment rate, and a sustainable trade balance. The performance of any nation's economy should be measured periodically, in order to detect and fix under-achievements/shortcomings immediately (Mohammad & Said, 2011).

One of the best indicators of economic performance is national income. In measuring the output performance of an economy, the GDP is the most common indicator used.

To measure GDP there are two approaches: the cost-income approach, which adds up payments to suppliers for inputs that is used to produce final goods, and the expenditure approach, which is calculating the amount of money spent on final goods or services in a given year (Simpson, 2014).

However, using GDP has some limitations. One of which is that unpaid activity or illegal activities are not included in a nation's GDP. Additionally, GDP cannot account for any reductions in life quality or in losses resulting from natural disasters (Simpson, 2014).

While most economists agree to use GDP as a growth indicator, many do not agree on how economies grow over time. Some of them say that growth is exogenous, meaning the growth is caused by external factors. Others say that it is endogenous, meaning the growth is caused by internal factors (Simpson, 2014).

According to the Solow growth model (1956), in order to increase output, three inputs must be increased: capital, labor and total factor productivity. Labor and capital can be categorized as economic expansion, because if they increase by 4% the aggregate output will increase by 4% as well. However, the standard of living will stay the same. On the other hand, changing total factor productivity will change the standard of living. However, it is a difficult task and takes longer time, because it requires increasing the level of technology, economy deregulation, institution transformation, and improving education. If these factors increase by 2%, and capital and labor hours increase by 4%, the result will be 6% economic growth.

According to Romer (1994), economic growth is a result of internal (endogenous) factors not external (exogenous) factors. It argues that investing in human capital, innovation and knowledge will in return increase economic growth. The theory indicates that the long run growth depends on policy measure. An example of this policy is to offer subsidies for research and development, in order to incentivize innovation, which in turn will increase the growth rate of the country.

The effect of inflation on the economy depends on two factors: first, the institutional structure on the economy, and secondly, the degree to which inflation is or is not anticipated. In addition, we can say that the institutional structure can adapt to inflation, the cost and effect of inflation vary not just between countries, but also in different periods of the same country (Fischer & Modigliani, 1978).

The studies of inflation and growth in the ‘60s ensured that high inflation made it more attractive to hold capital (the portfolio substitution mechanism), which leads to more intensity in capital and more growth in the economy. However, the empirical studies showed that growth and inflation have an adverse relationship for two reasons: when many real balances are low, the efficiency of production factors will decrease. The other reason is that there may be a relationship between government purchase and the use of the inflation tax (Fischer, 1983).

Inflation can be a useful measure of how the government can control its economy. Governments with a high inflation rate can lose control over the economy, which leads to slower growth. The same can also be applied to the concept of budget deficit (Fischer, 1991).

We can consider trade openness a good indicator of an economy's growth, while also ensuring a healthy balance of payments. Liberal trade policies play an important role in restoring macroeconomic equilibrium; by supporting free trade the country can benefit and profit from economies of scale and become more efficient as it participates in global aspects of specialization. Besides that, free trade systems can increase the transparency of institutions and government policies (World Trade Organization, n.d.).

Using trade restrictions as a way to obtain external equilibrium is undesirable, because the effects of it are welfare reducing and asymmetric. Additionally, it may only increase the balance of payments in the short run. Free trade policy is not sufficient alone, countries can benefit from being more involved in global integrated markets, accompanied with logical macroeconomic policies. Economies with free trade policies will grow faster if they are financially stable (World Trade Organization, n.d.).

In the last decade there have been changes in the economists' and policy makers' views about the government's role in developing the economy. Governments can no longer be the important player in their country's economic activities. Instead, the private sector should lead the development process. Empirical studies have shown that private investments have a larger effect on growth than public investment even while other factors are considered. It is worth it to mention that a higher share of private investment not just alters the growth path, but it also alters the speed of convergence of real per capita income (Khan, 1996)

Domestic saving is a choice between consumption today and consumption tomorrow. The problem in making this choice is that it should be optimal in the sense that the incentives for consumption do not lead you to sub-optimal saving rates. If savings rates are low relative to investment this will lead to current account deficit and a sharp increase in the international borrowing of that country. Domestic savings may help in enhancing economic growth as it affects the level of investment, and acts as a motive to attract FDI in the country (Sesric, 2011).

2.1 Economic History of Egypt

Egypt's economy is one of the most versatile economies in the Middle East**,** with diverse sectors of industry, services, agriculture and tourism. There are about 26 million members of the work force according to estimations of 2010. The biggest share of the labor force (51%) is in the service sector, while the respective shares of agriculture and industry are 32% and 17%.

The Egyptian economy mainly depends on revenues from the Suez canal, agriculture, taxation, tourism, petroleum exports, media production and the work force abroad that consists of three million Egyptians that are scattered mainly in the gulf countries, the United States of America, Europe and Australia.

In the period between 2008 and 2011, the problems of the global financial crisis and the increasing prices of food, especially grains, have put pressure on the government to act immediately and reform the agriculture policy. The economy faced supply and demand long-term side effects from the crisis. Moreover, the government failed to reduce poverty, which reached 50% percent in 2011, leading up to the well-known Egyptian Revolution.

After the January 25th revolution, the country has made an extraordinary effort to sustain economic stability and stay on the right track while overcoming difficulties faced internally and externally (State Information Service, 2013).

2.2 Economic History of Morocco

Morocco has a wide contrast; although it is one of the best demographic trends in the Arab world, it suffers from extreme poverty and high rates of unemployment. The economy generally depends on agriculture and foreign financing. Phosphate is the major export of Morocco (World Press, 2011).

The economic situation of Morocco quickly declined, before improving again at the beginning of 80s. The growth looks like a V-shape from post-independence through the 70s. The post-independence decline is attributed to Hassan the 5th and Mohammad the 2nd when they adopted the "Moroccanization" policy. In that period the power was in the hands of the monarch, and the country was directed towards importing substation and nationalizing industries, leading to Morocco's near bankruptcy. With the intervention of the World Bank and IMF, Hassan the 2nd was forced to change the direction of the economy, in order to have debt forgiveness from the lenders. In addition, there was a need to reduce the reliance of the economy on phosphate and agriculture, because it made the GDP fluctuate. After that, new policies have been issued facilitating the ground for a new solid economy by encouraging exports and devaluing the currency. The success of Hassan the 2nd has opened the doors for his son Mohammad the 6th to expand and develop the economy (Friedman, 2010).

2.3 Economic History of Tunisia

As a country becoming middle class, over 50% of the population is involved in farming. Other sectors like energy, mining, tourism and manufacturing are also important. However, farming accounts for 15% of the GDP. Due to inadequate irrigation, the production varies wildly according to the season's rainfall.

In 1964, petroleum was discovered in the Sahara Desert near Algeria's borders. In 1966, production began. Later, oil discoveries have increased production. Recently there has been natural gas extraction from the Gabes gulf area, making Tunisia more self-sufficient. The country has plenty phosphate reserves and iron ore. Lead, salt and zinc are also among the country resources (The Colombia Electronic Encyclopedia, 2010).

Tunisia has an economic success story over the last 20 years. As the World Bank indicates, Tunisia has benefited from its robust economic growth rate. There were many factors that boosted this growth, but three of them have the biggest effect on the industrial and economic expansion over the last 30 years. Firstly, there was the reformation of the internal financial policies regarding inflation, budget deficit and corporate taxes. Secondly, there was the improvement of the external economic relation a combined with confidence in the internal political and economic system that led to the break down of trade barriers and the encouragement of foreign direct investment. Thirdly, as investment has increased (both foreign and private) the country developed its infrastructure and focused on tourism-based and knowledge-based economic growth (Friedman, 2010).

Chapter 3

DATA AND DATA METHODOLOGY

To analyze data in this thesis we used time series analysis for the selected countries. Chapter four will discuss where the data came from, evaluating methodology, data selection criteria, and indicators used in the comparative analysis.

3.1 Data

The data used here is drawn from the electronic World Bank database and IMF websites, and the time series is from 1980 to 2010. Microsoft excel, simple averages and standard deviations is used to calculate the means and volatility of this thesis and to compare performance between different countries as individuals and groups.

The economic indicator used to compare performance are percentage growth rate of real GDP, inflation, investment rate, savings rate, current account balance as a percentage of GDP, unemployment rate, trade openness including exports and imports percentage of GDP, budget balance percentage and external debt ratio to GDP. All of these indicators are analyzed for each country individually and as a group.

The time period for this analysis is from 1980 to 2010, with the sub-periods: 1980-1989, 1990-1999 and 2000-2010.

As seen in table 1 below, all of the economic indicators are listed in both terms: the paper term and the World Bank parameter term. The majority of them are drawn from the World Bank website, while the rest come from other websites.

Table 1: Data Terms

Paper terms	**World bank parameter**
real GDP Growth rate	GDP growth (annual %)
Inflation rate	Inflation, consumer prices (annual %)
Investment rate	Gross capital formation (% of GDP)
Savings rate	Gross savings (% of GDP)
Current account balance	Current account balance (% of GDP)
Unemployment	Unemployment, total (% of total labor force) (national estimate)
Exports	Exports of goods and services (% of GDP)
Imports	Imports of goods and services (% of GDP)
Trade openness	Exports + imports / GDP
External debt	External debt stocks (% of exports of goods, services and primary income)

Chapter 4

COMPARATIVE ANALYSIS OF EGYPT, MOROCCO AND TUNISIAN MACROECONOMIC PERFORMANCE

In this chapter, we will analyze the selected indicators data for each individual country. Then we will compare the countries as a group. The table below is a summary of averages of the indicators in the period from 1980 to 2010.

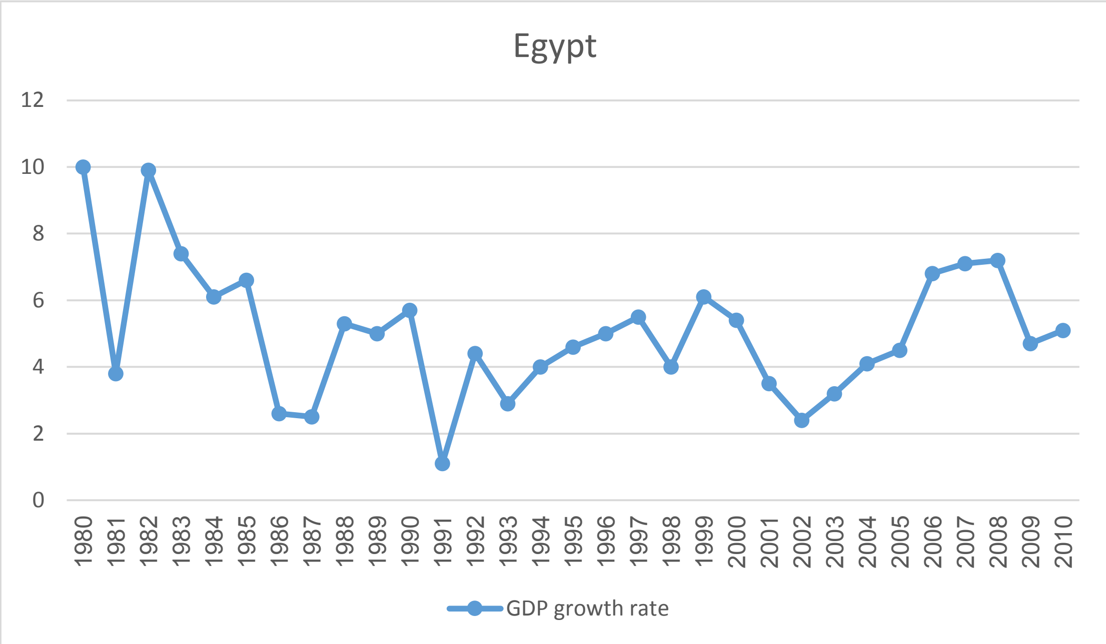
Table 2: Variables Averages Summary for the Period 1980-2010

Indicators	Egypt	Morocco	Tunisia
GDP growth	5.05%	3.81%	4.37%
Inflation rate	11.78%	4.52%	5.55%
Investment rate	22.69%	25.86%	26.35%
Savings rate	22.40%	24.38%	22.16%
Current account balance	-0.57%	-1.95%	-4.11%
Unemployment[1]	9.6%	14.0%	14.9%
Exports	22.97%	26.75%	41.30%
Imports	30.85%	33.05%	45.65%
Trade openness	53.82%	59.80%	86.94%
External debt	266.25%	270.51%	138.23%

[1] Unemployment rates are from the period 1990 to 2010

4.1 Comparative Analysis of GDP Growth in Egypt, Morocco and Tunisia

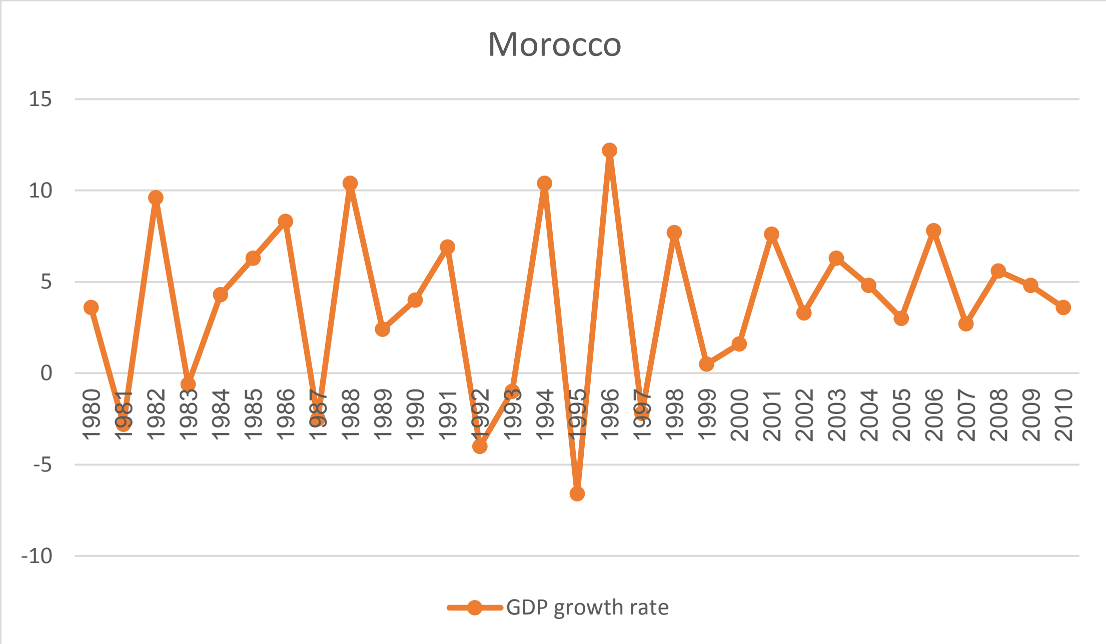
4.1.1 Analysis of GDP Growth in Egypt



Graph 1: GDP Growth in Egypt

In the graph above, we can see Egypt's GDP growth rate for the period 1980-2010. The GDP growth rate is inconsistent throughout the entire period. Egypt recorded its highest GDP growth rate of 10% in its first year (1980). It then drastically fell down to 3.8% in 1981. Moreover, it continues its ups and downs until the end of the period. In 1991, Egypt recorded its lowest GDP growth rate of 1.1% but after that year, it again begins to increase slightly.

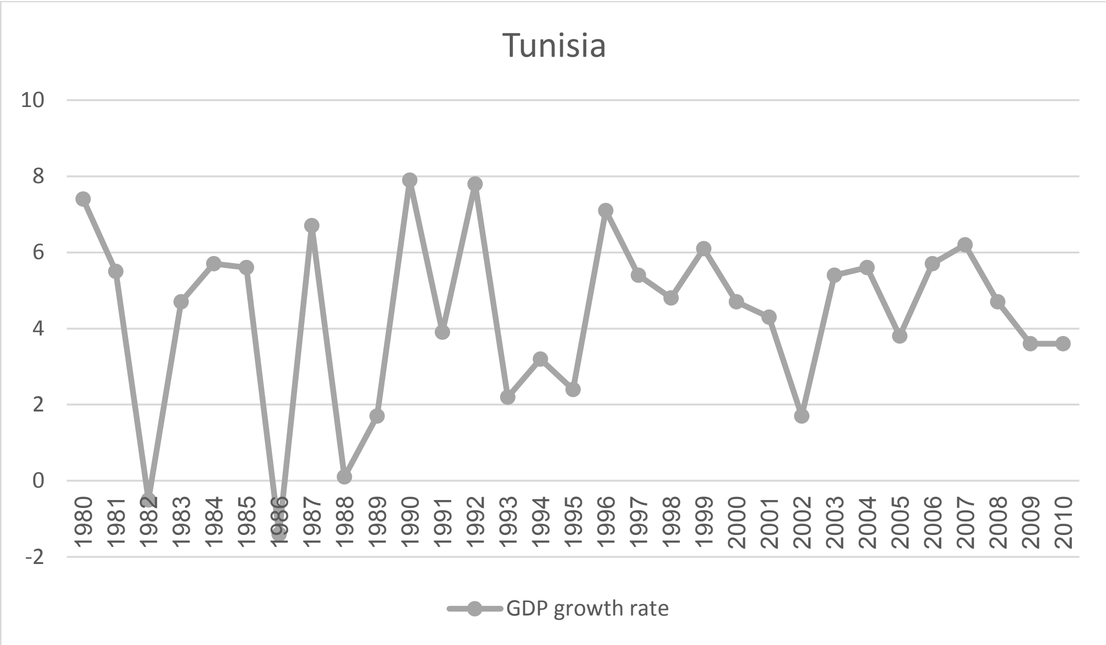
4.1.2 Analysis of GDP Growth in Morocco



Graph 2: GDP Growth Rate in Morocco.

As shown in the graph, Morocco's GDP growth rate has many drastic fluctuations. Morocco's highest GDP growth rate recorded was in 1996 with rate of 12.2%. However, the previous year (1995) Morocco recorded its lowest growth rate -6.6%.

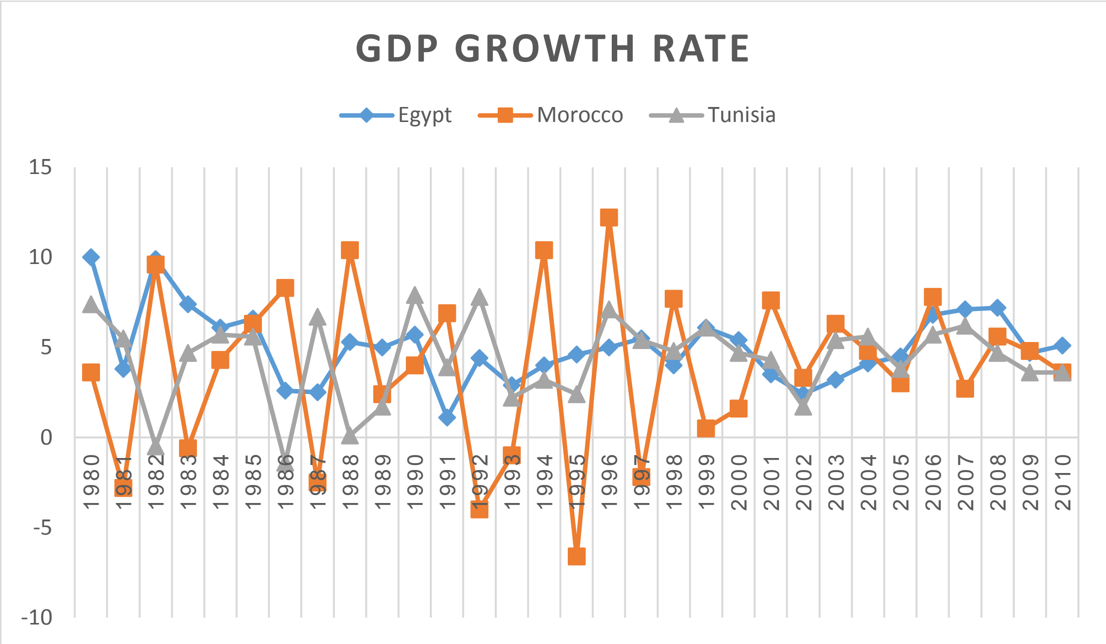
4.1.3 Analysis of GDP Growth in Tunisia



Graph 3: GDP Growth Rate in Tunisia.

The figure above shows the GDP growth rate of Tunisia, and it is obvious that Tunisia has a volatile growth rate over the period 1980-2010. Tunisia recorded its lowest GDP growth rate in the year 1986 with a rate of -1.4%. However, 4 years later it recorded its highest GDP growth rate in 1990 with a rate of 7.9%.

4.1.4 Comparative Analysis of GDP Growth Rate for Egypt, Morocco and Tunisia



Graph 4: GDP Growth Rate in Egypt, Morocco and Tunisia 1980-2010

Table 3: Averages of GDP Growth Rate

Indicator name	year	Egypt	Morocco	Tunisia
GDP Annual Growth Rate	1980-1989	5.92%	3.90%	3.55%
	1990-1999	4.33%	2.79%	5.08%
	2000-2010	4.91%	4.65%	4.48%
Average	1980-2010	5.05%	3.81%	4.37%

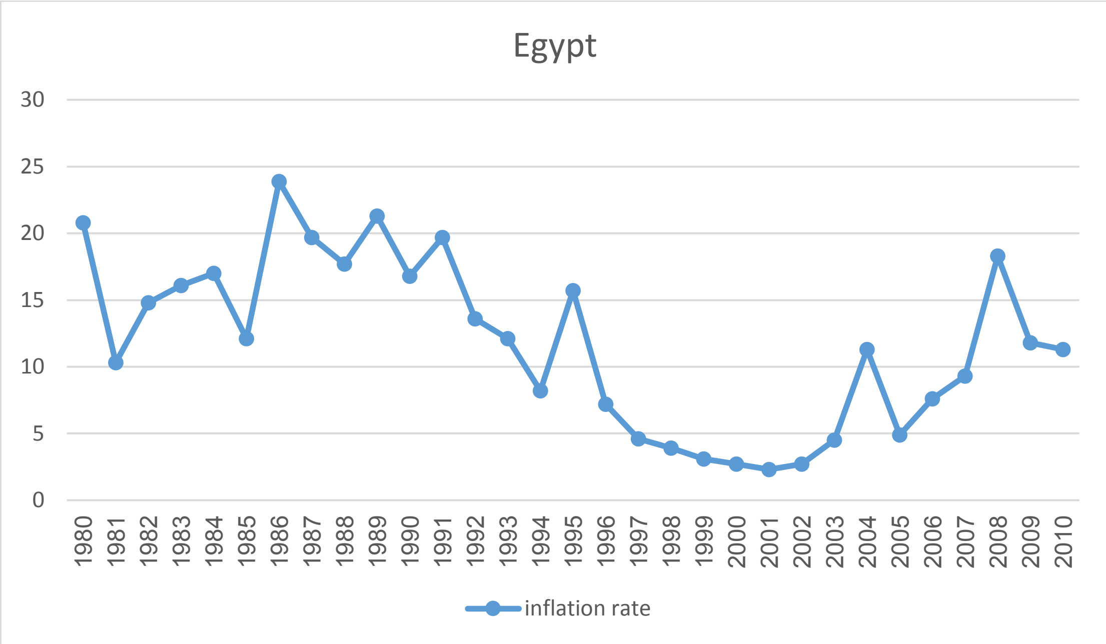
As shown in the graph and table above, Egypt's growth rate over the period 1980-2010 was the highest with rate of 5.05% while Tunisia came second with a rate of 4.37%, while Morocco had the lowest rate during the period: 3.81%.

As seen in the Morocco's graph above, Morocco had the most volatile growth rate. Tunisia was less volatile, yet had some fluctuations. Egypt was stable compared to the other two countries.

If we look at the averages in the sub-periods given in the table above, we notice that in the first period (1980-1989), Egypt had the highest rate, Morocco came second and Tunisia was the lowest. This ranking was the same during 2000-2010. Nevertheless, in the period 1990-1999, Tunisia had the highest rate followed by Egypt, and then Morocco.

4.2 Comparative Analysis of Inflation Rate for Egypt, Morocco and Tunisia

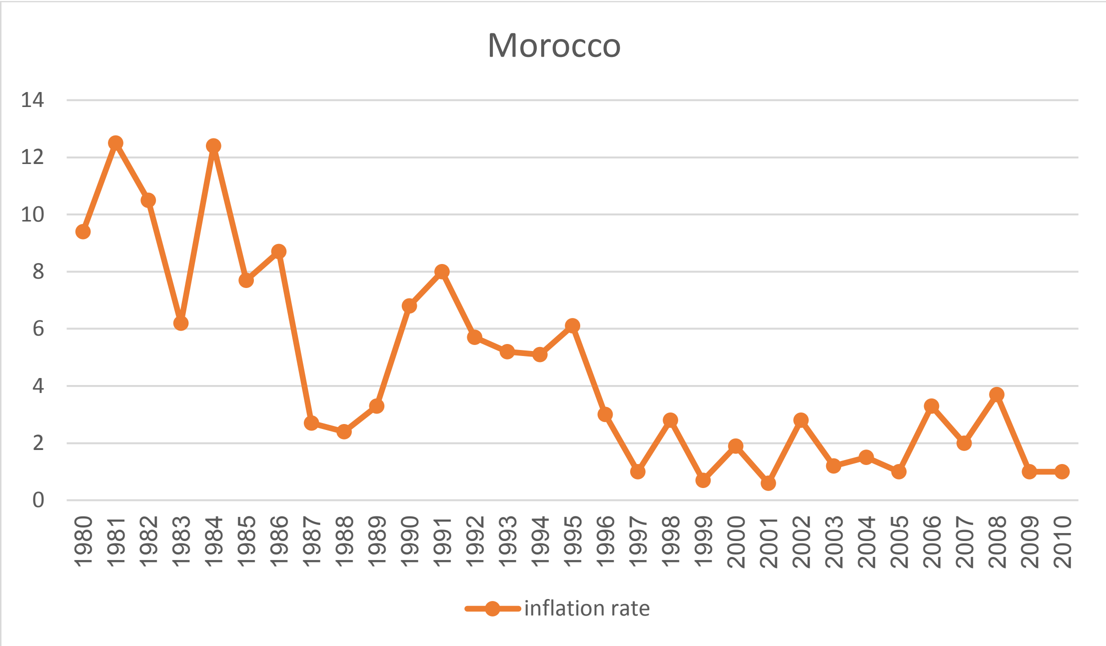
4.2.1 Analysis of Egypt Inflation Rate



Graph 5: Inflation Rate in Egypt

We can say that Egypt had a volatile inflation rate over the studied period time. Egypt recorded its highest inflation rate in 1986 with a rate of 23.9%. There have been small fluctuations after that year, reaching its lowest point in 2001 with an inflation rate of 2.3%. After 2001, the inflation rate began to increase drastically.

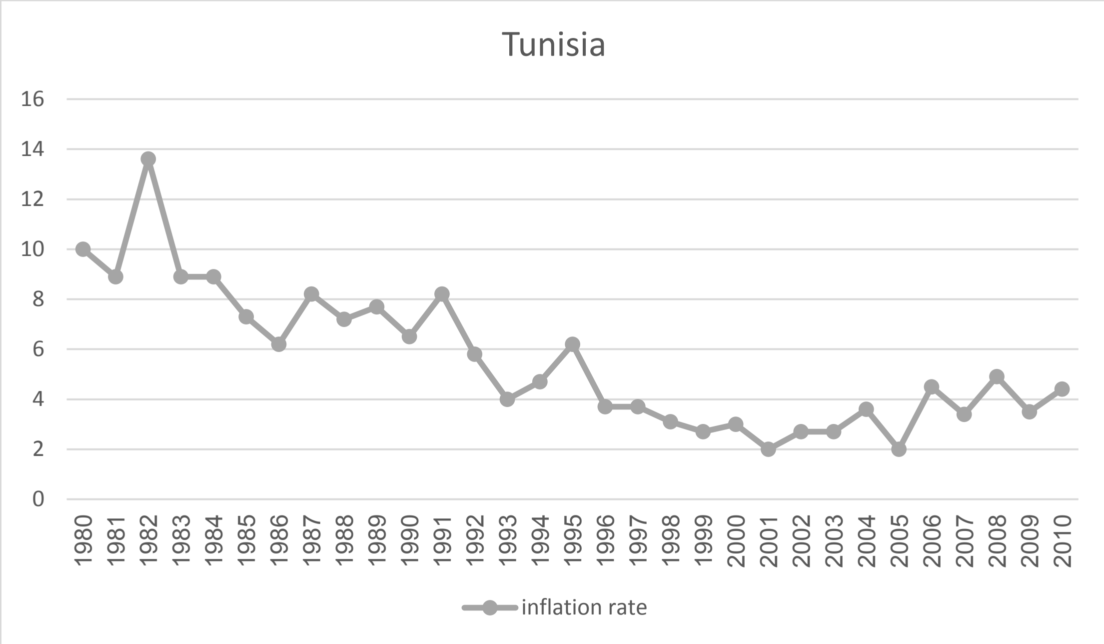
4.2.2 Analysis of Inflation Rate in Morocco



Graph 6: Inflation Rate in Morocco

The graph above shows the inflation rate of Morocco. The overall trend seen in the graph is a decline in the inflation rate from 1980 to 2010. Morocco recorded its highest inflation rate in 1981 with a rate of 12.5%. The lowest year was in 2001 with a rate of 0.6%.

4.2.3 Analysis of inflation rate in Tunisia

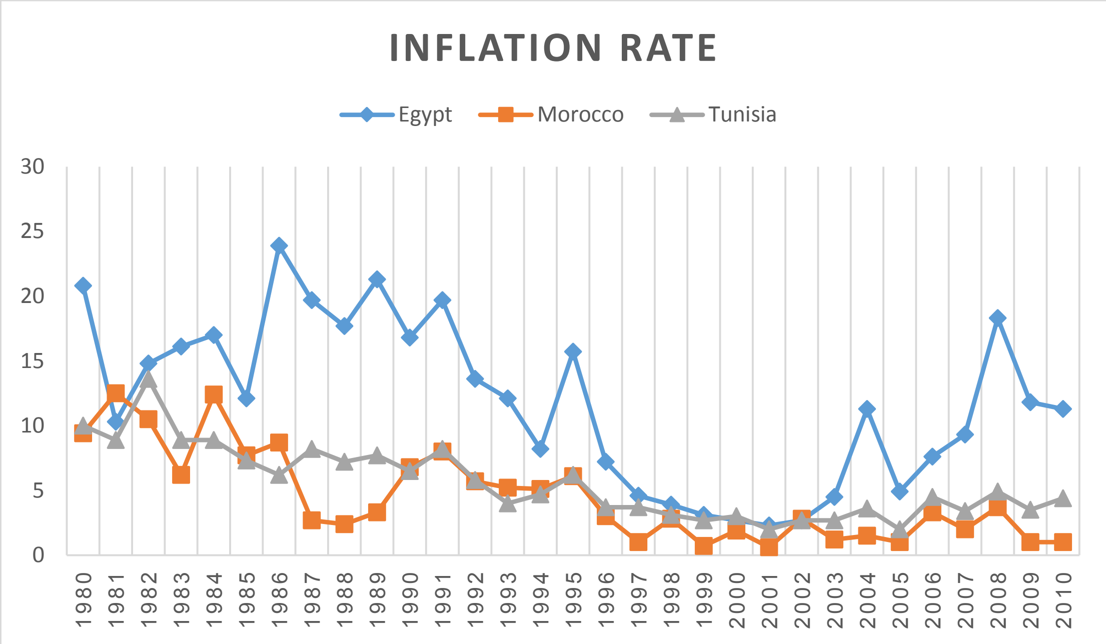


Graph 7: Inflation Rate in Tunisia

From the graph above, we can see that Tunisia recorded its highest inflation rate in 1982 with a rate of 13.6%. The lowest rate of 2% was experienced in both 2001 and 2005. We can see that the inflation rate of Tunisia declined gradually over the period of the study.

Tunisia witnessed some spikes in the early twenty years of the study, then it started to become more stable in the last 10 years.

4.2.4 Comparative Analysis of Inflation Rate in Egypt, Morocco and Tunisia



Graph 8: Inflation Rate in Egypt, Morocco and Tunisia from 1980-2010

Table 4: Averages of Inflation Rate

Indicator	Year	Egypt	Morocco	Tunisia
Inflation Rate	1980-1989	17.37%	7.58%	8.69%
	1990-1999	10.49%	4.44%	4.86%
	2000-2010	7.88%	1.82%	3.34%
Average	1980-2010	11.78%	4.52%	5.55%

From the table and the graph provided, we notice that Egypt was higher than its counterparts in inflation over 1980-2010 with a rate of 11.78%. Followed by Tunisia with a rate of 5.55%, and Morocco last with rate of 4.52%.

We can see from the graph and the table that all the countries have a declining inflation rate over the whole period of study.

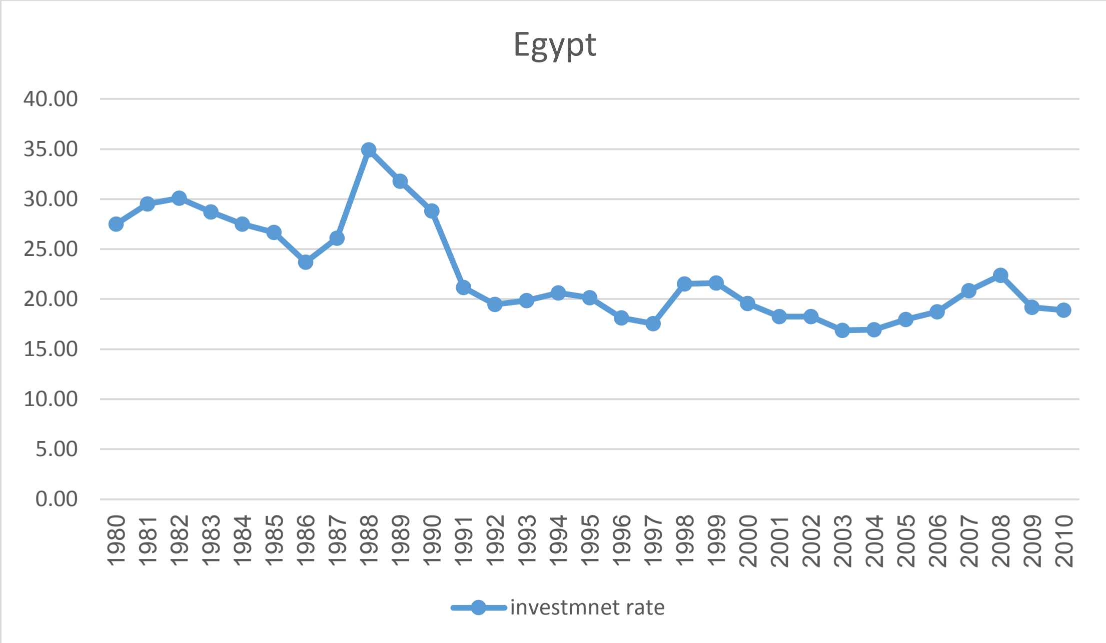
For the first period 1980-1989, Egypt had the highest inflation rate with a rate of 17.37%. Tunisia came second with a rate of 8.69%. Last came Morocco with a 7.58% inflation rate.

In the second sub-period, the countries had the same order that was seen in the first period. Egypt had a 10.49% inflation rate, Tunisia had a 4.86% inflation rate, and while Morocco had an inflation rate of 4.44%.

The order remained in the last period. Egypt had an average of 7.88%, Tunisia's average was 3.34%, and Morocco had an average of 1.82%.

4.3 Investment rate to GDP Ratio Comparative Analysis

4.3.1 Investment Rate to GDP Ratio Analysis in Egypt

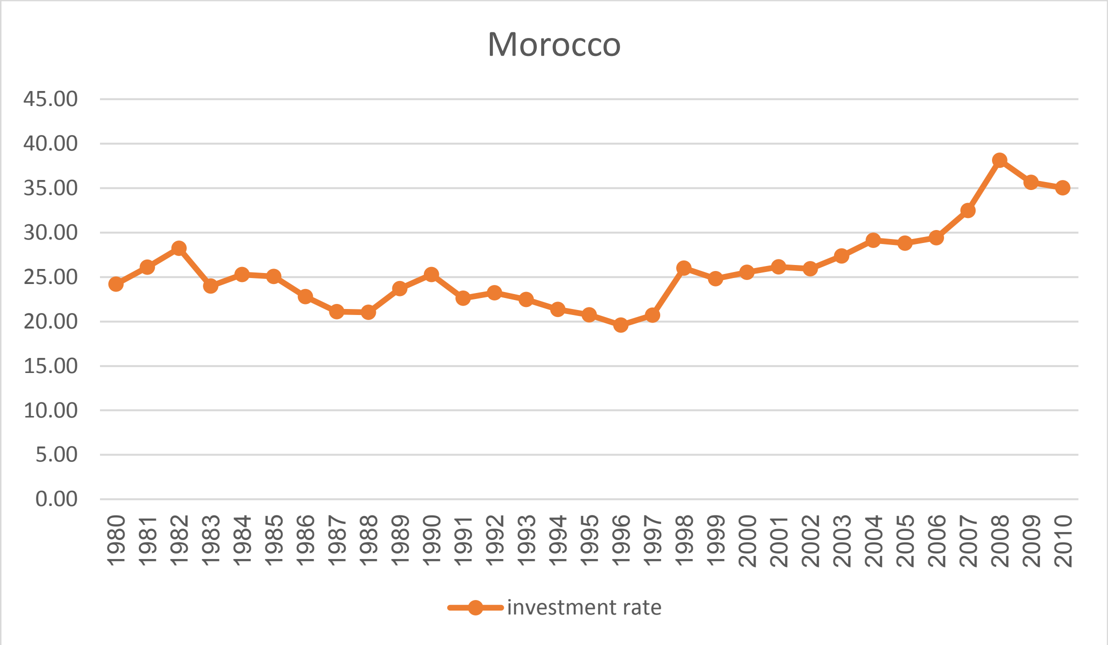


Graph 9: Egypt's Investment Rate Percentage of GDP

From the graph above, Egypt's investment rate has been on an upward trend from the year 1980 to 1982, increasing from 27% to 30%. Afterwards, it fell down to 23% in 1986.

In general, the investment rate is going down. However, Egypt recorded its highest investment rate in the year 1988 with 34%, and recorded its lowest investment rate in years 2003 and 2004 with 16%.

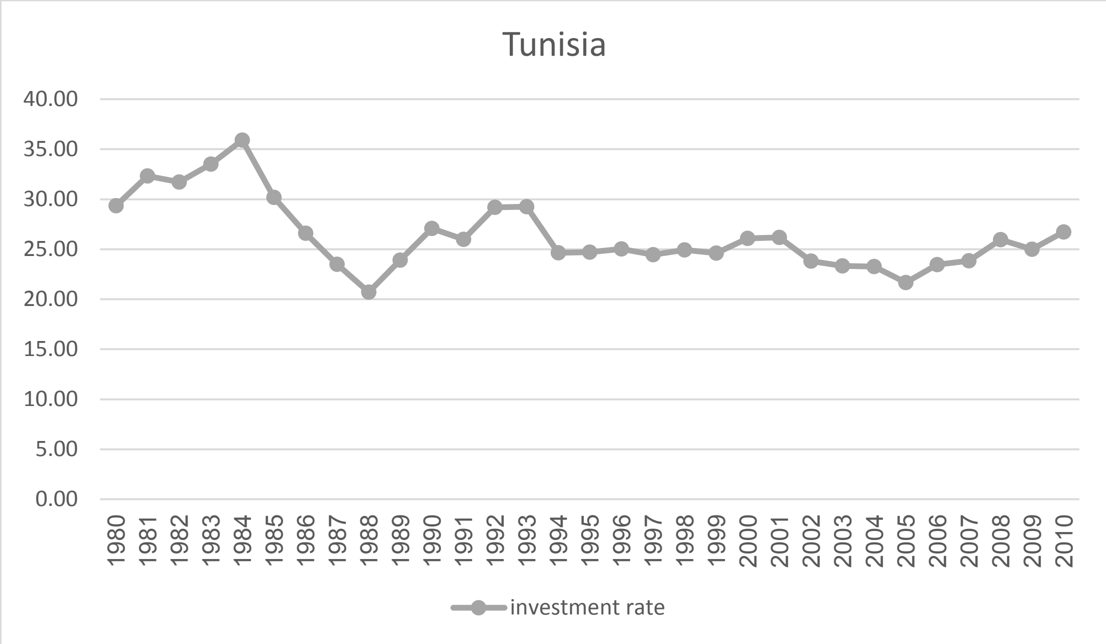
4.3.2 Analysis of Investment Rate Percentage of GDP in Morocco



Graph 10: Morocco Investment Rate Percentage of GDP

From this graph, we can see that Morocco had little to no fluctuations with a stable trend during the first two decades. After that, it had an upward trend through the last decade. The highest investment rate was in 2008 with 38% percent. The lowest recorded was 19% (1996).

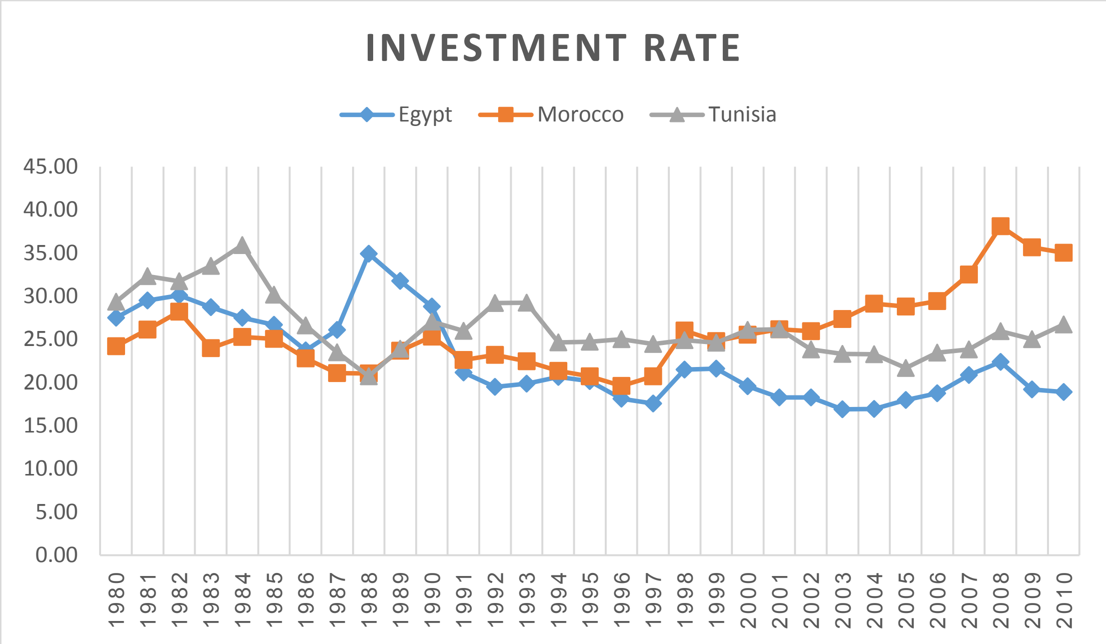
4.3.3 Analysis of Investment Rate Percentage of GDP in Tunisia



Graph 11: Tunisia Investment Rate Percentage of GDP

From the graph above, we can see that Tunisia has recorded its highest and lowest investment rate during the first ten years, with 35% in 1984 and 20% in 1988 respectively. After 1988, the rate of investment was fairly stable between the rates of 29% and 21% during the last 20 years.

4.3.4 Investment Rate Comparative Analysis for Egypt, Morocco and Tunisia



Graph 12: Investment Rate for Egypt, Morocco and Tunisia

Table 5: Investment Rate Percentage of GDP Averages

	Sub-period	Egypt	Morocco	Tunisia
Investment Rate as Percentage of GDP	1980-1989	28.65%	24.15%	28.77%
	1990-1999	20.89%	22.67%	25.98%
	2000-2010	18.90%	30.33%	24.48%
Average	1980-2010	22.69%	25.86%	26.35%

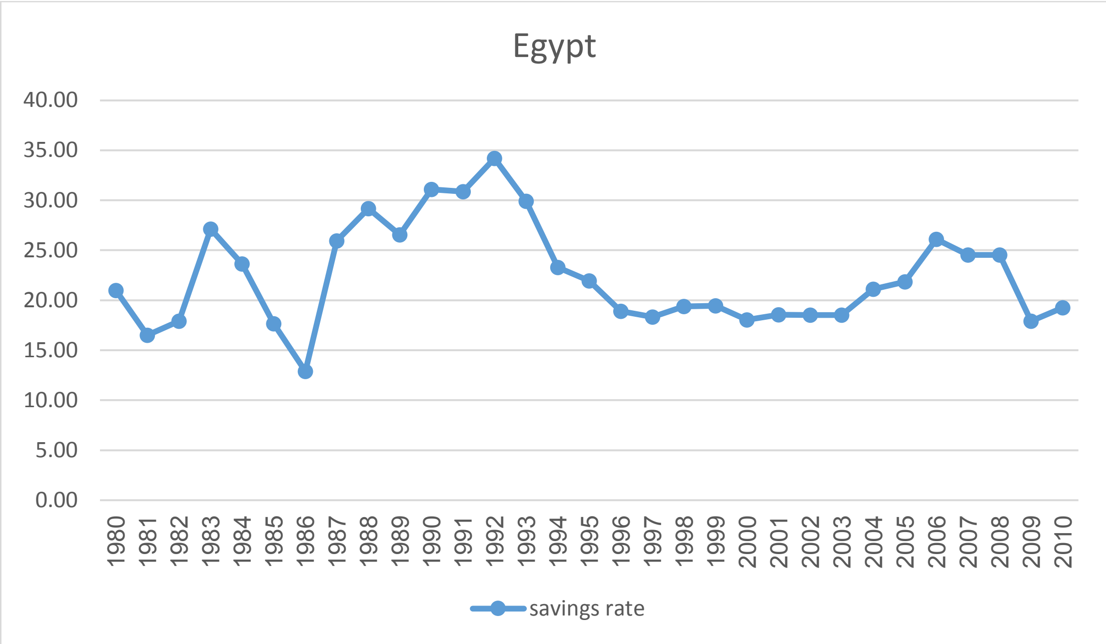
From 1980-2010, Tunisia average was in the lead with rate of 26%. Followed by Morocco with an average rate of 25%. Egypt was last with an average of 22%. From the graph, we can see that Tunisia had the highest investment rate until year 1986, when it started to fall giving the lead to Egypt in the period of 1986-1990. We can notice that Morocco took the lead from year 2001 until 2010. As seen in the table, the averages of the three sub-periods for the three countries support our findings.

As seen in the first period (1980-1989), Egypt and Tunisia have nearly the same average investment rate (approximately 28%), with Morocco only at an average of 24%. In the second period, Tunisia had the highest average investment rate (25%), with Morocco having a rate of 22%, and Egypt at an average rate of 20%.

However, in the third period, Morocco had the highest average of 30%, Tunisia came second with an average of about 24%, and Egypt coming last with an average of 22%. It is important to note that Egypt and Tunisia both had a decreasing trend throughout the 30 year study.

4.4 Comparative Analysis of Savings Rate in Egypt, Morocco and Tunisia

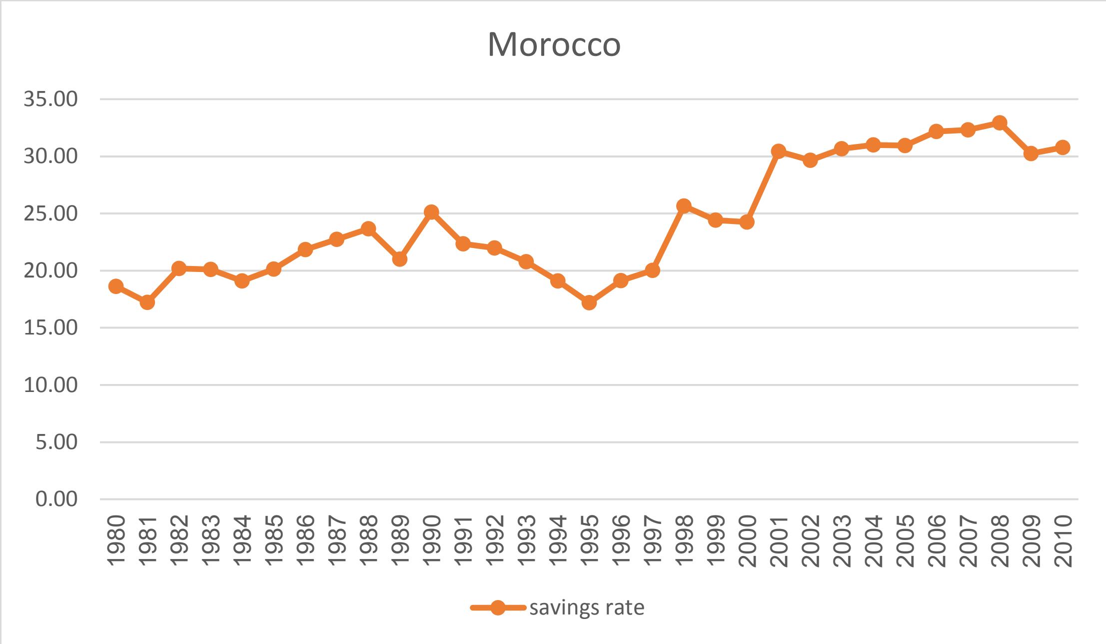
4.4.1 Analysis of Savings Rate in Egypt



Graph 13: Savings Rate in Egypt

The savings rate in Egypt has fluctuations in the first 15 years, yet stabilizes for the final 15 years of the study. Egypt recorded its highest savings rate in 1992 with a rate of 34.19%. However, the lowest savings rate was recorded in 1986 with a rate of 12.89%.

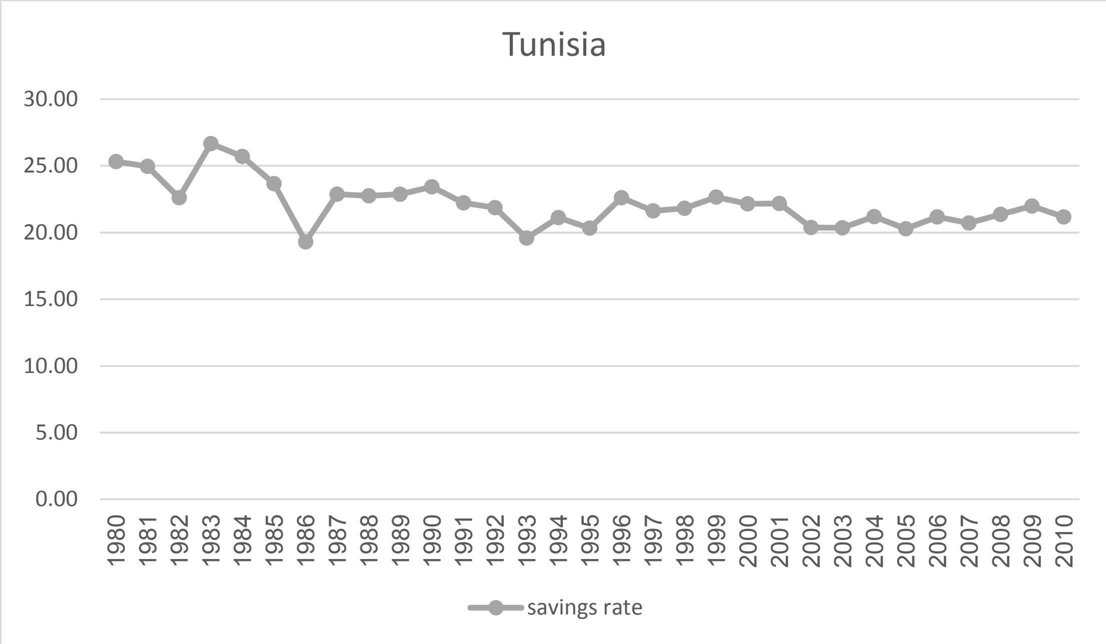
4.4.2 Analysis of Savings Rate in Morocco



Graph 14: Savings Rate in Morocco

If we look at the graph above we can notice that Morocco's savings rate is trending upward with little to no fluctuations. In 1995, Morocco recorded it lowest savings rate with a rate of 17.19%. Nevertheless, in 2008 it recorded its highest savings rate with a rate of 32.93%.

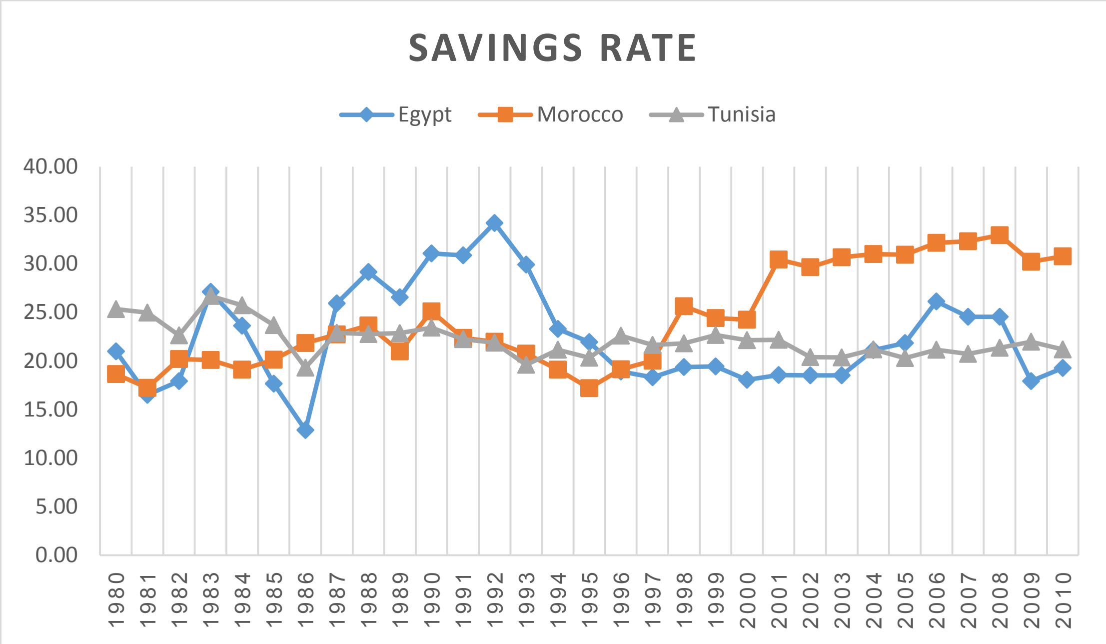
4.4.3 Analysis of Savings Rate in Tunisia



Graph 15: Savings Rate in Tunisia

As we can see from the figure above, Tunisia had a nearly stable savings rate over the period of the study with very small fluctuations in the first 7 years. Tunisia recorded its highest savings rate in the 1983 with rate of 26.67%. The lowest rate was recorded in 1986 at a rate of 19.29%. After 1986, the rate rose to 22.88% and stayed around that number for 4 years before it gradually started to fall again.

4.4.4 Comparative Analysis of Savings Rate for Egypt, Morocco and Tunisia



Graph 16: Savings Rate in Egypt, Morocco and Tunisia

Table 6: Averages of Savings Rates

Indicator	Year	Egypt	Morocco	Tunisia
Savings Rate	1980-1989	21.83%	20.46%	23.67%
	1990-1999	24.73%	21.57%	21.73%
	2000-2010	20.81%	30.49%	21.17%
Averages	1980-2010	22.40%	24.38%	22.16%

According to the figure and table above, from 1980 to 2010, Morocco had the highest average savings rate at 24.38%, Egypt came in the second place with a rate of 22.40%, while Tunisia had a slightly lower savings rate than Egypt (22.16%).

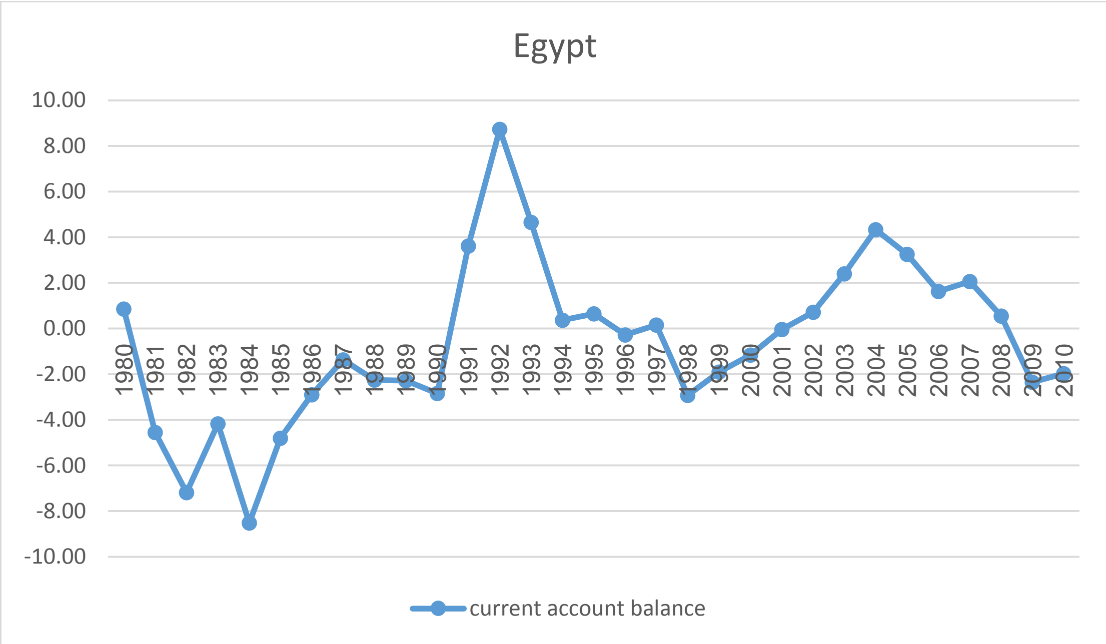
As supported by both the graph and data table above, Tunisia was ahead in the first 10 years with an average of 23.67%. Egypt was in second place with a rate of 21.83%, and Morocco came last with a rate of 20.46%.

In the second period of 1990-1999, Egypt took first place with a rate of 24.73%, Tunisia came in the second place with a rate of 21.73%, and Morocco came last with a slightly smaller rate than Tunisia (21.57%).

However, Morocco jumped from last in the second period to first in the third period at a rate of 30.49%. Tunisia took second place with a rate of 21.17%. Consequently, Egypt came last with a rate of 20.81%, despite being in first place in the second period.

4.5 Comparative Analysis of Current Account Balance (percentage of GDP)

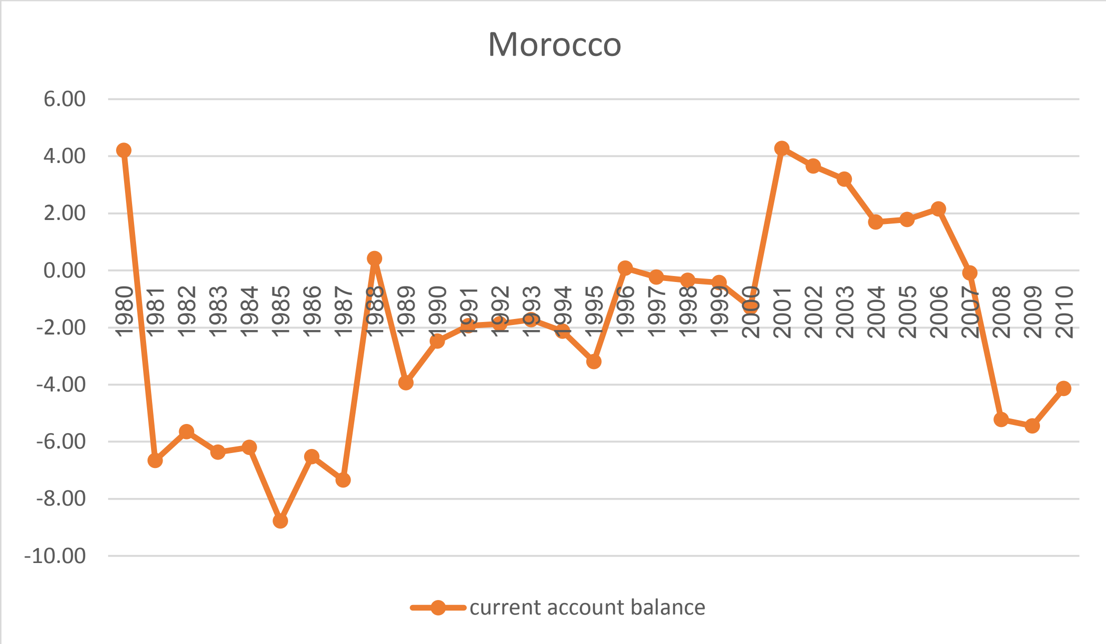
4.5.1 Analysis of Egypt's Current Account Balance



Graph 17: Current Account Balance in Egypt

As we can see from the graph above, Egypt had a volatile current account balance over the study period. After starting with a good rate in 1980, it declined to reach its lowest point in the year 1984 with a value of -8.52%. After the trough value, it started to rise up again drastically to reach it highest value in 1992 with a rate of 8.74%.

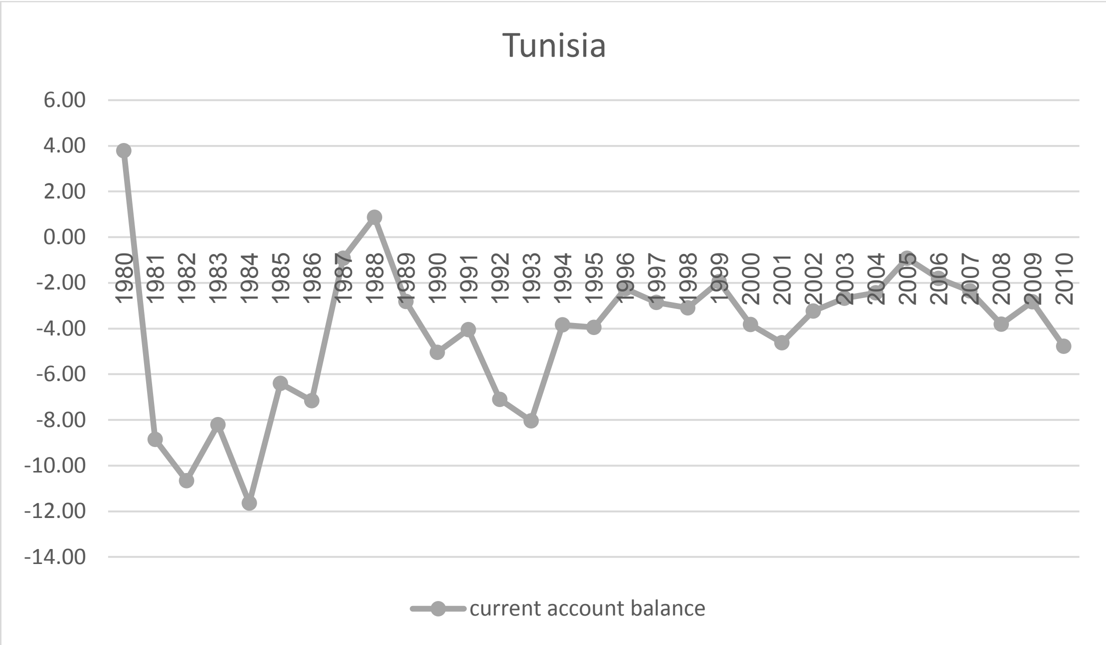
4.5.2 Analysis of Morocco's Current Account Balance



Graph 18: Current Account Balance in Morocco

The graph above shows that Morocco's current account balance moved drastically from a high point in the year 1980 to a low point in year 1981, and after that to the lowest recorded point over the period of the study in year 1985 with a value of -8.77%. The highest point recorded was in 2001 with a rate of 4.27%.

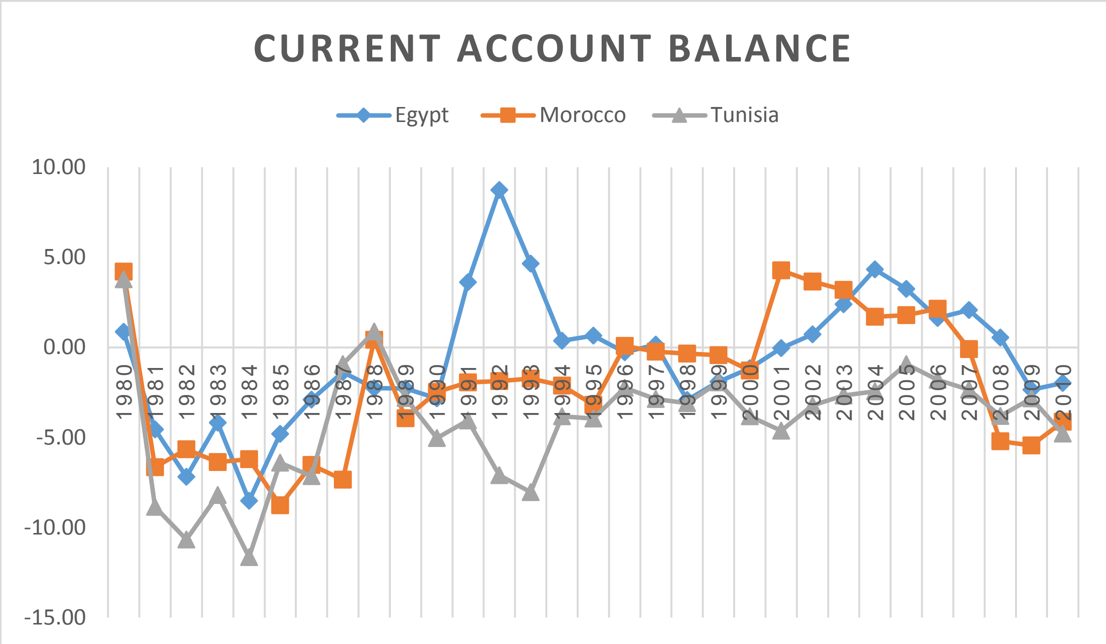
4.5.3 Analysis of Current Account Balance in Tunisia



Graph 19: Current Account Balance in Tunisia

As seen in the graph above, the country has only been non-negative twice. It had only two positive current account balances. The highest balance recorded was in its first year (1980) with a value of 3.79% then there was a sharp drop next year to -8.86%. After 3 years, it reached its lowest point of the study period in 1984 with a value of -11.64%. After that, it starts to increase gradually to reach the second positive point in 1988 with a value of .88%. After that year, it fluctuates under zero until the last year.

4.5.4 Current Account Balance Comparative Analysis in Egypt, Morocco and Tunisia



Graph 20: Current Account Balance in Egypt, Morocco and Tunisia

Table 7: Averages of Current Account Balance Percentage of GDP

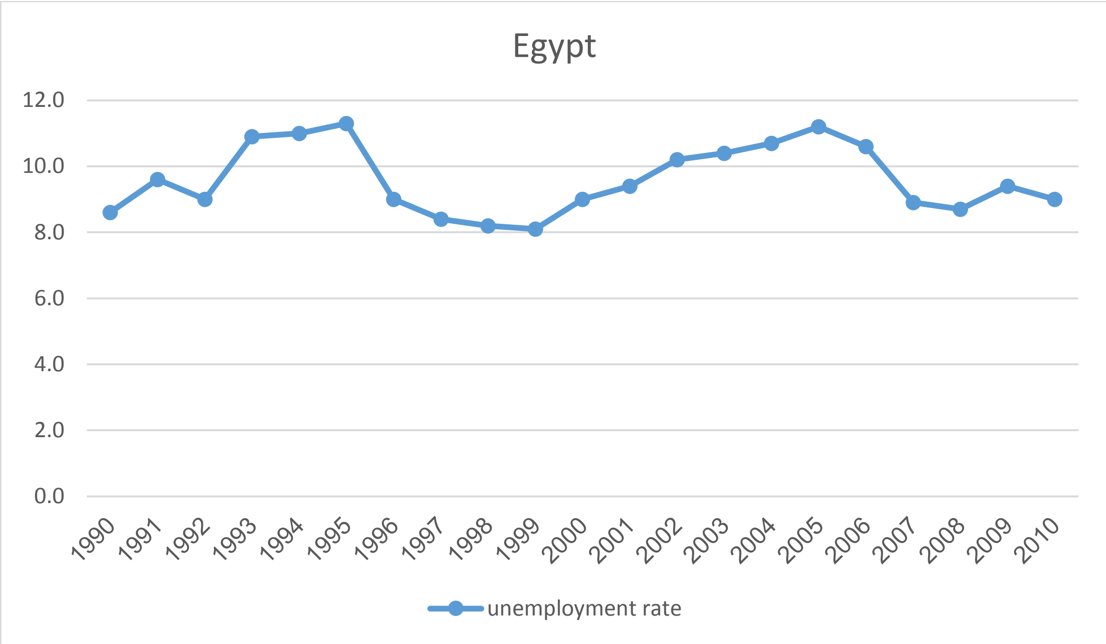
Indicator	Year	Egypt	Morocco	Tunisia
Current Account Balance percentage of GDP	1980-1989	-3.72%	-4.68%	-5.20%
	1990-1999	1.02%	-1.42%	-4.22%
	2000-2010	0.86%	0.05%	-3.03%
Averages	1980-2010	-0.57%	-1.95%	-4.11%

We can see from the table and graph above that Egypt had the highest average over the whole period (1980-2010) with an average of -0.57%. Morocco came in second place with an average of -1.95%. Moreover, the country in the last place was Tunisia with a value of -4.11%.

From the periodic table, we can see that Egypt had the highest averages over the three sub-periods. Morocco came second in the three decades. Moreover, Tunisia had the lowest averages over the three periods.

4.6 Comparative Analysis of Unemployment rate in Egypt, Morocco and Tunisia

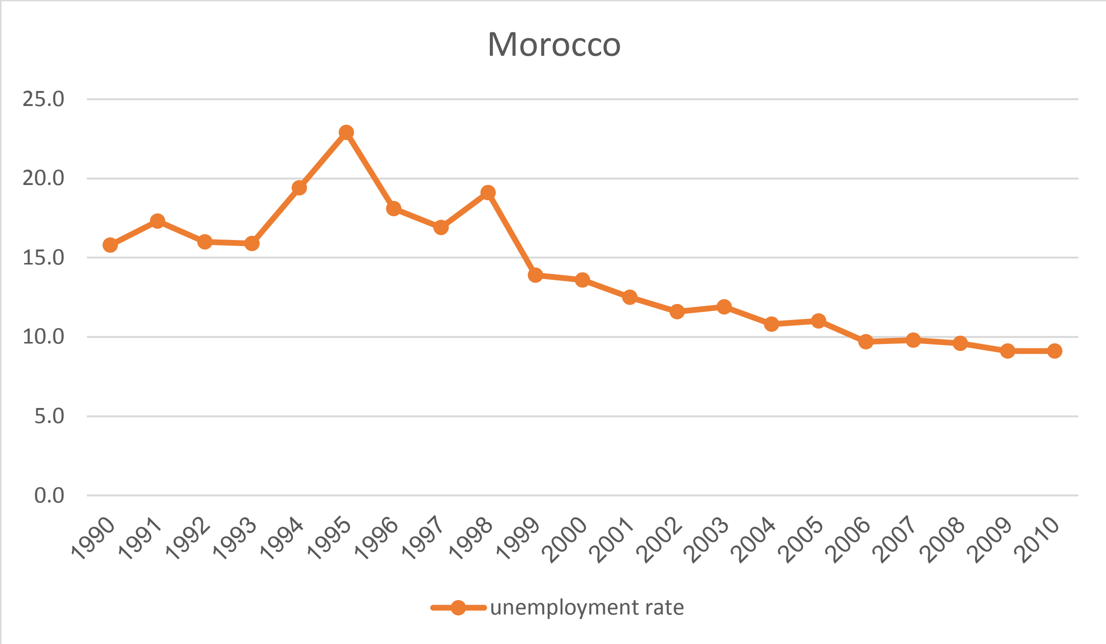
4.6.1 Analysis of Egypt's Unemployment Rate



Graph 21: Unemployment Rate in Egypt

From the graph above, we can notice that the unemployment rate in Egypt had small fluctuations. It starts to increase from 1990 with a rate of 8.6% until it reaches its highest point 11.3% in 1995, after that it drops again to reach its lowest recorded point over the period of the study in 1999 with a rate of 8.1%. After 1999, there had been gradual increase until the year 2005.

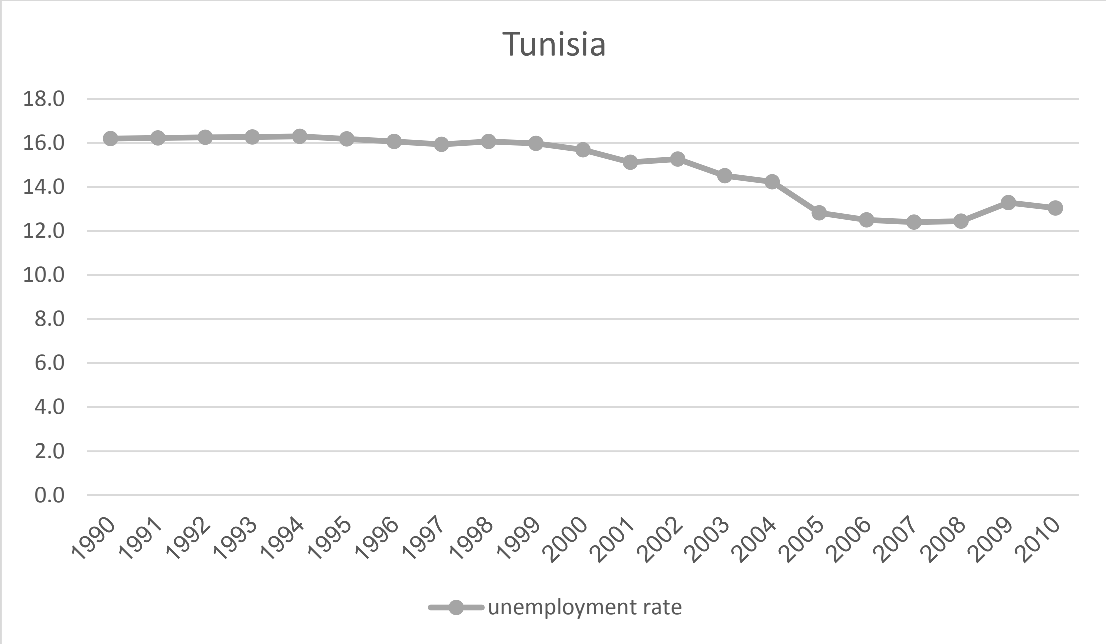
4.6.2 Analysis of Morocco's Unemployment Rate



Graph 22: Unemployment Rate in Morocco

The Moroccan unemployment rate is a gradual downward trend except two spikes in 1995 and 1998. The first spike is the highest value recorded by Morocco with a rate of 22.9%. After that, it continues to decline to reach its lowest point in the last two years 2009 and 2010 with a rate of 9.1%.

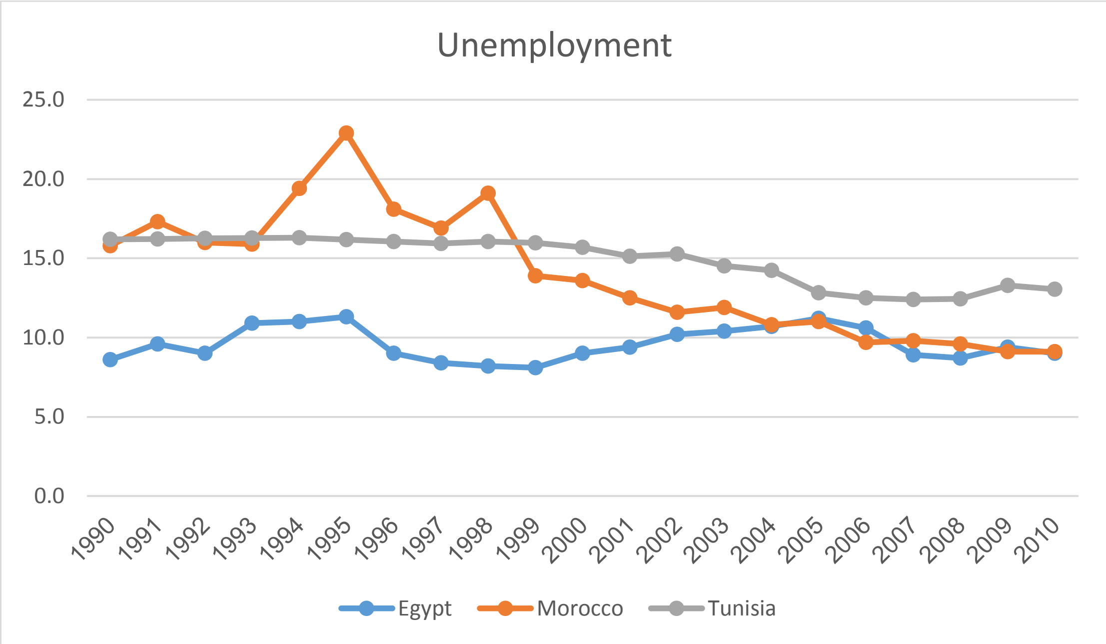
4.6.3 Analysis of Tunisia's Unemployment Rate



Graph 23: Unemployment rate in Tunisia

As we see from the figure above, Tunisia Unemployment rate is nearly stable with a little move downward. The highest unemployment rate recorded was in 1993 and 1994 with a rate of 16.3%. Meanwhile the lowest rate was recorded in 2007 and 2008 with a rate of 12.4%. After the last two years, the rate increases again to 13.3% in year2009.

4.6.4 Comparative Analysis on Unemployment Rate in Egypt, Morocco and Tunisia



Graph 24: Unemployment Rate of Egypt, Morocco and Tunisia

Table 8: Averages of Unemployment Rate from 1990-2010

Indicator	Year	Egypt	Morocco	Tunisia
Unemployment rate	1990-1999	9.4%	17.5%	16.1%
	2000-2010	9.8%	10.6%	14.9%
Averages	1990-2010	9.6%	14.0%	14.9%

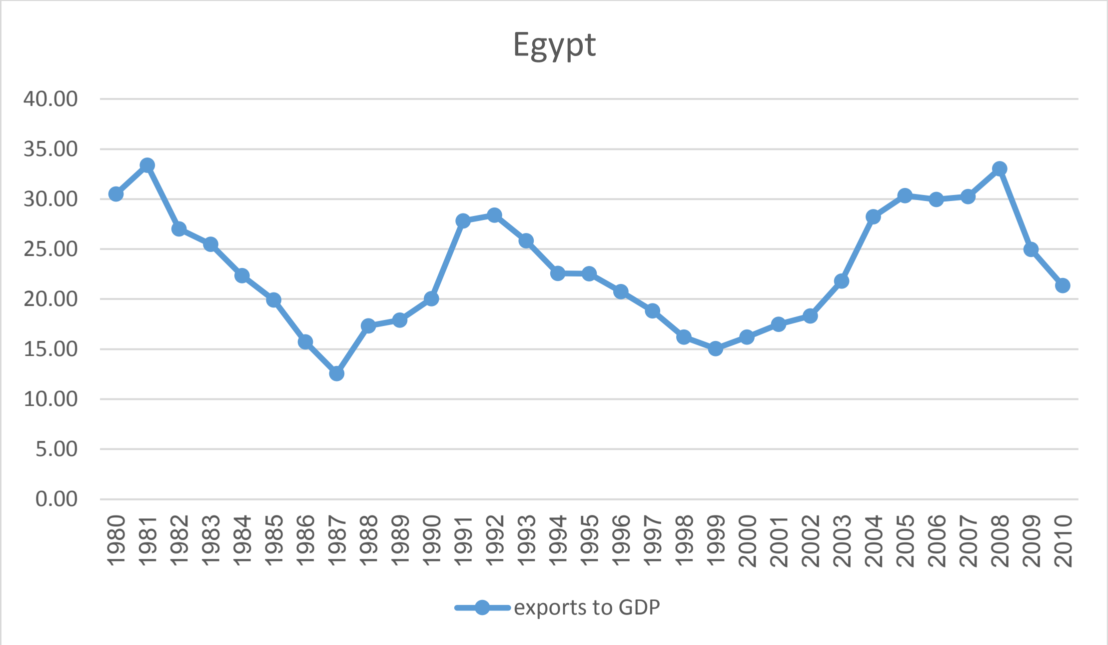
As from 1990-2010, Tunisia unemployment rate was higher than Egypt and Morocco's rate (14.9%), After it came Morocco, it recorded 14% and Egypt was last with an unemployment rate of 9.6%. It is obvious from the graph that Egypt was in the lead of the least unemployment rate from 1990 until 2010. Only one year that Morocco made it lower in 2006. Moreover, Tunisia came last over the last decade. The table above shows the periodic averages that supports the graph.

From the table in the previous page we can notice that Egypt had the lowest averages over the two decades 1990-1999 and 2000-2010 with rates of 9.4% and 9.8% respectively. While Tunisia came second in the first period with a rate of 16.1% and Morocco came last with a rate of 17.5%. The second period Tunisia and Morocco changed places, with Morocco in the second place 10.6% and Tunisia last 14.9%.

It is good to notice that Tunisia had the most stable unemployment rate but the highest one over the period of the study.

4.7 Comparative Analysis of Exports to GDP percentage

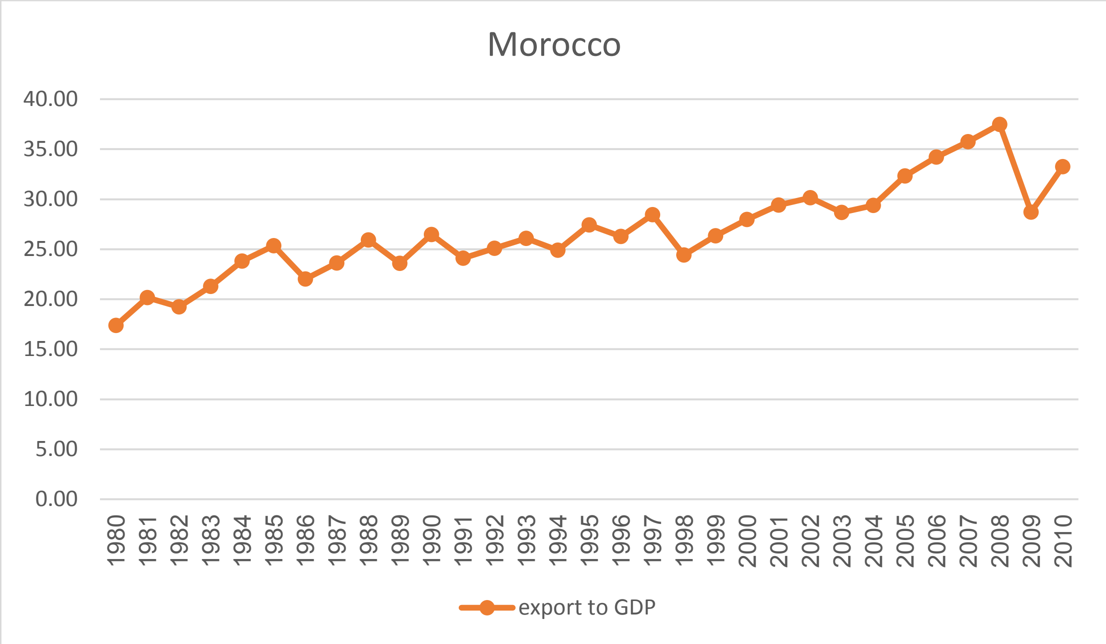
4.7.1 Analysis of Exports to GDP Ratio in Egypt



Graph 25: Ratio of Exports to GDP in Egypt

From the graph above we can notice that the export percentage in Egypt fluctuate over the period of study. Egypt recorded its highest export ratio in the year 1981 with a rate of 33.37%. The lowest rate was in 1987 with a rate of 12.56%. After the lowest year, the rate started to increase gradually until it reach 28.40% in year 1992 before it starts to fall again in the following year.

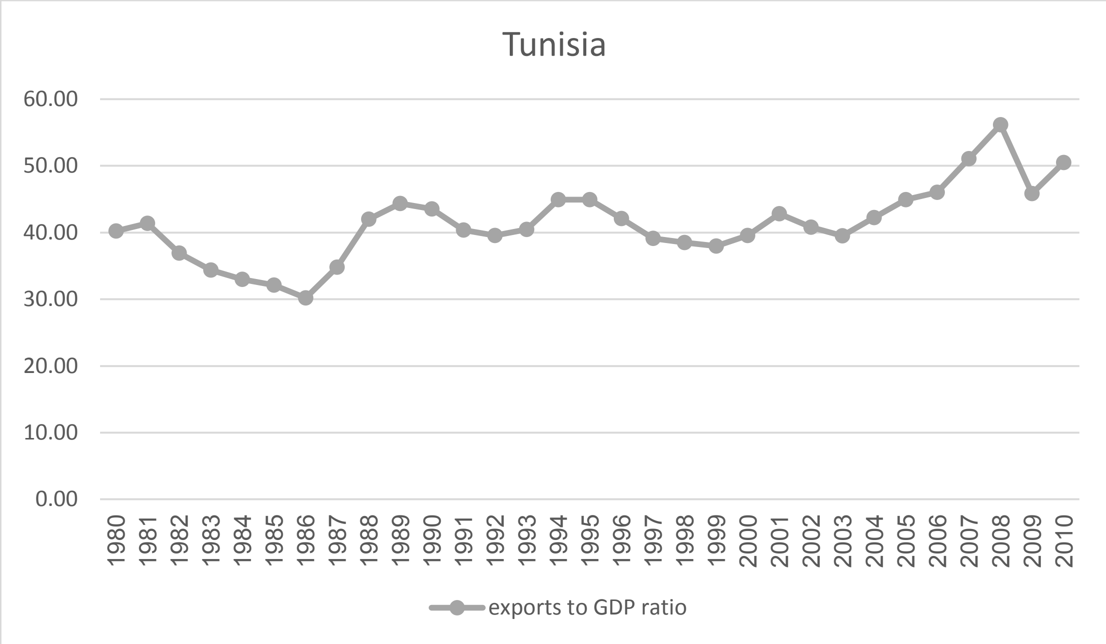
4.7.2 Analysis of Exports to GDP Ratio in Morocco



Graph 26: Ratio of Exports to GDP in Morocco

As we can see from the figure above that Morocco had an upward trend over the years of study 1980-2010 in the export to GDP ratio, with small spikes over the whole period. Morocco recorded its lowest export ratio in its first year (1980) with a rate of 17.39% and it starts to increases until it reaches its highest point in 2008 with a rate of 37.48%.

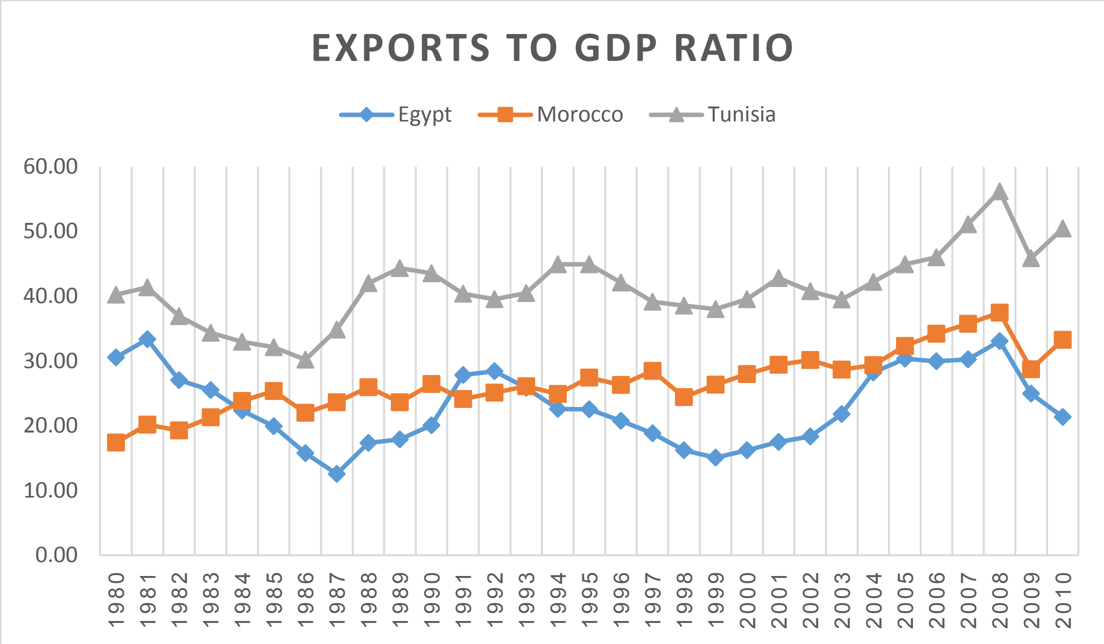
4.7.3 Analysis of Export to GDP Ratio in Tunisia



Graph 27: Ratio of Exports to GDP in Tunisia

Tunisia had small fluctuations over the period of study. Its starts with rate of 40.24% in the first year (1980) it goes up in the second year to 41.37% then it starts to fall gradually until it reaches its lowest exports ratio in the year 1986 with rate of 30.18. Tunisia recorded its highest export to GDP ratio in the year 2008 with a rate of 56.17%.

4.7.4 Comparative Analysis of Export Ratio in Egypt, Morocco and Tunisia



Graph 28: Exports to GDP Ratio in Egypt, Morocco and Tunisia

Table 9: Averages of Exports to GDP Ratio

Indicator	Year	Egypt	Morocco	Tunisia
Exports to GDP Ratio	1980-1989	22.22%	22.24%	36.93%
	1990-1999	21.81%	25.95%	41.15%
	2000-2010	24.72%	31.57%	45.40%
Averages	1980-2010	22.97%	26.75%	41.30%

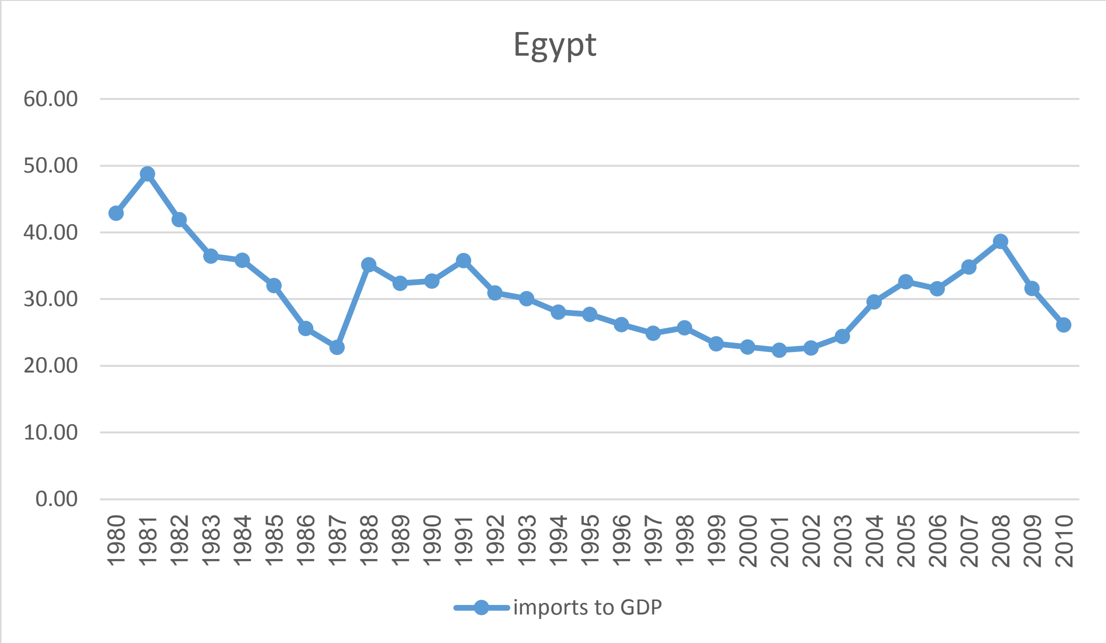
For the period, 1980-2010, as it is shown in the graph and the table, the highest average of the export to GDP ratio goes for Tunisia with a rate of 41.30% in the second place comes Morocco with a rate of 26.75%. Egypt in the last place with a rate of 22.97%.

We can see from the graph above that Tunisia had the highest export ratio over the three sub-periods. Morocco came second over the three periods and Egypt was last in the three periods.

Good to note that Morocco and Tunisia had an upward trend through all the three periods of the study that Egypt did not experience.

4.8 Comparative Analysis of Ratio of Imports to GDP

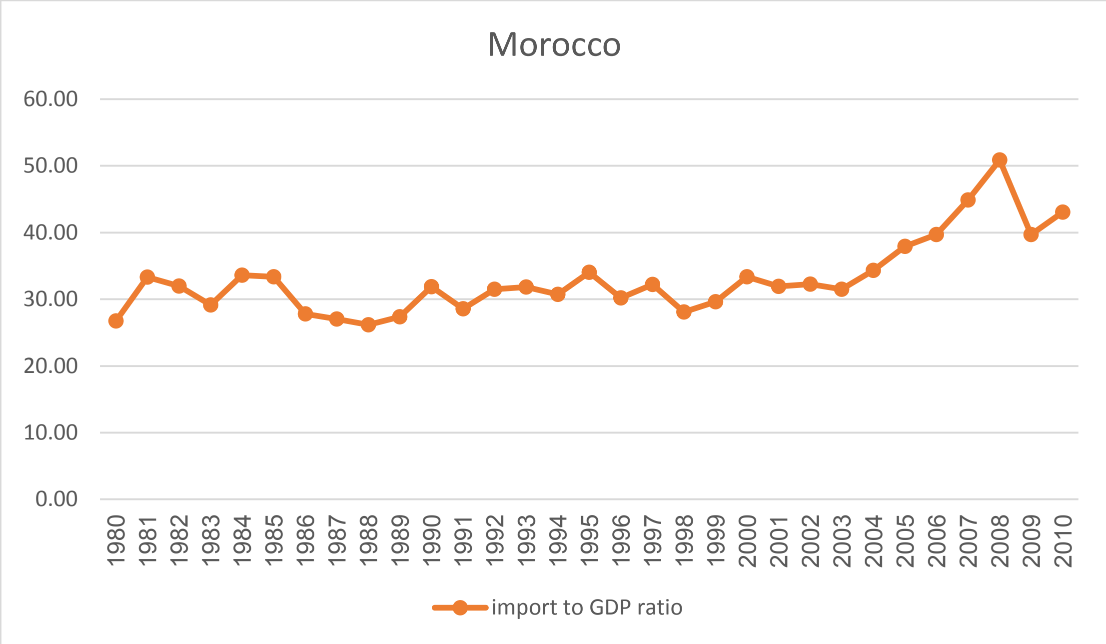
4.8.1 Analysis of Imports to GDP Ratio in Egypt



Graph 29: Imports to GDP Ratio in Egypt

As we see from the graph above, the import ratio of Egypt had been fluctuating over the first 11 years then it took downward trend for the next 10 years before it starts to raise again for the last 10 years. Egypt recorded its highest import ratio in 1981 with a rate of 48.80%. However, the lowest point was recorded in 2001 with a rate of 22.33%.

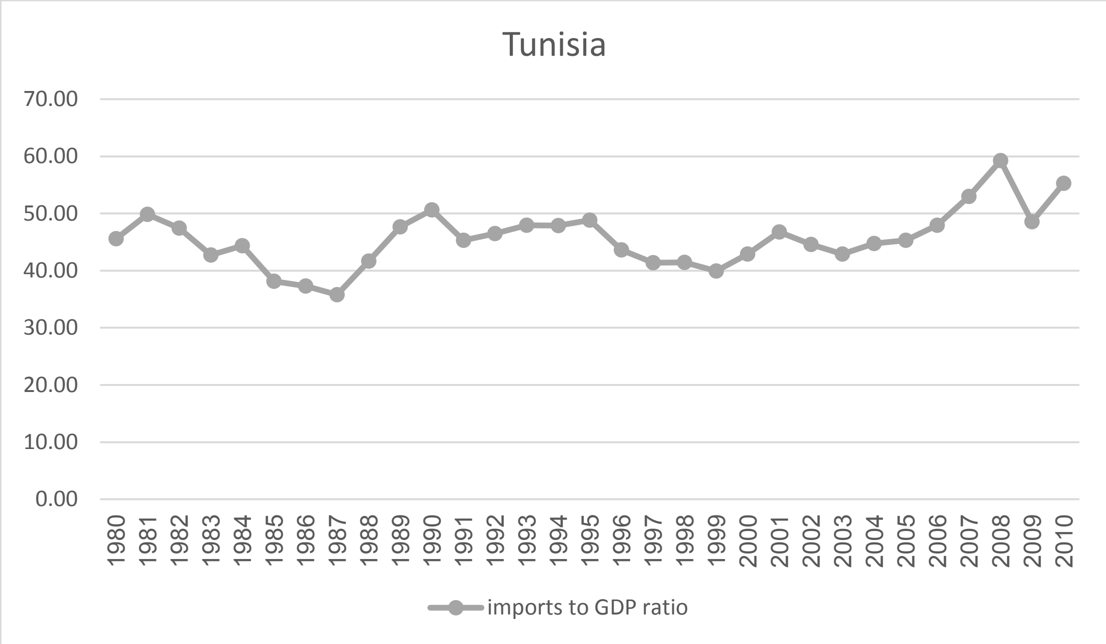
4.8.2 Analysis of Imports to GDP Ratio in Morocco



Graph 30: Imports to GDP Ratio in Morocco from 1980-2010

As shown in the figure above, Morocco had nearly stable import to GDP ratio over the 24 first years that fluctuates between 26% and 33%. The highest import to GDP ratio was recorded in 2008 with a rate of 50.87%. The lowest ratio was in 1988 with a rate of 26.19%.

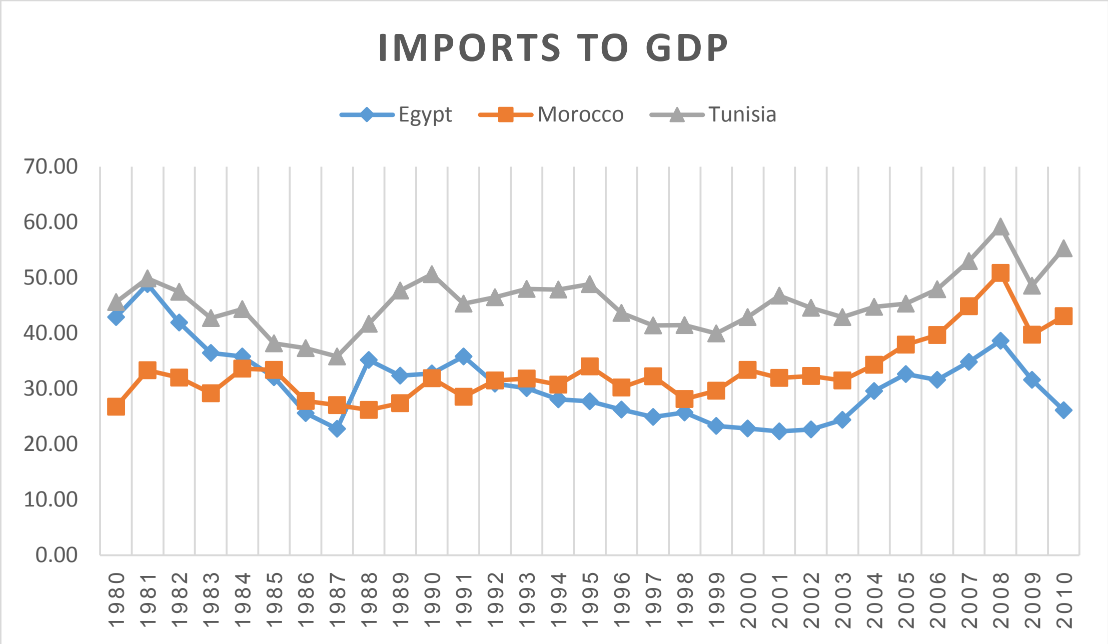
4.8.3 Analysis of Imports to GDP Ratio in Tunisia



Graph 30: Ratio of Import to GDP in Tunisia

From the graph above, we can notice that Tunisia had small fluctuations over the period of the study 1980-2010. Tunisia had its highest imports to GDP rate at the year 2008 with a rate of 59.22%. However, Tunisia experienced the lowest rate in year 1987 at a rate of 35.82%.

4.8.4 Comparative Analysis of Imports Ratio in Egypt, Morocco and Tunisia



Graph 31: Imports to GDP Ratio in Egypt, Morocco and Tunisia

Table 10: Averages of Imports to GDP Ratio

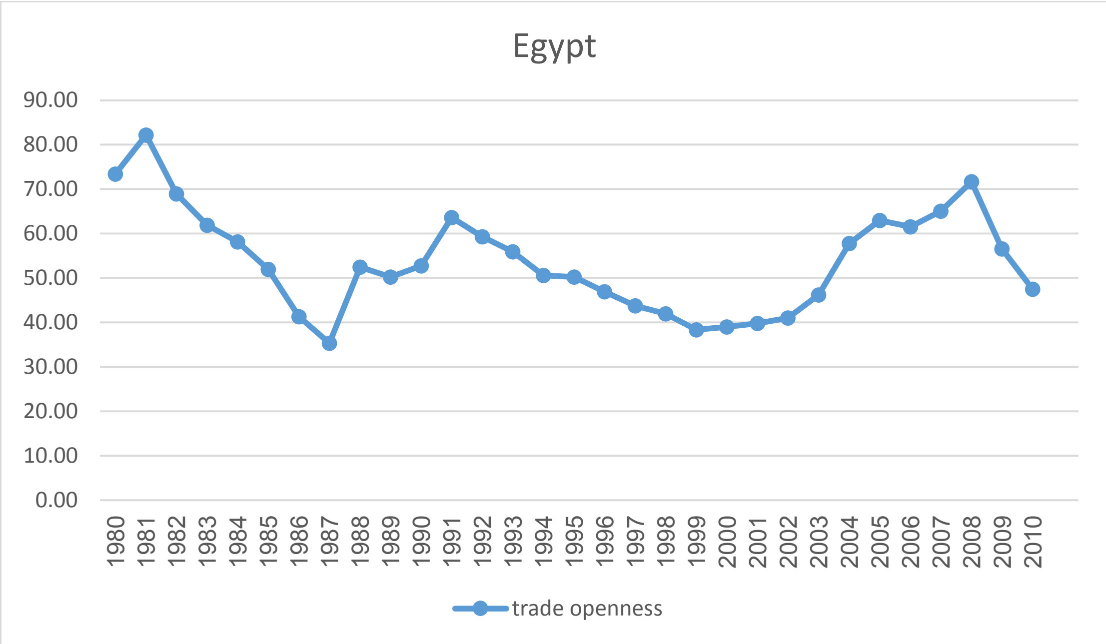
Indicator	Year	Egypt	Morocco	Tunisia
Imports to GDP Ratio	1980-1989	35.38%	29.65%	43.05%
	1990-1999	28.54%	30.86%	45.34%
	2000-2010	28.83%	38.13%	48.28%
Averages	1980-2010	30.85%	33.05%	45.65%

During the whole period of study (1980-2010) as shown in the graph and table above Tunisia had the highest average import to GDP ratio with a rate of 45.65%. Morocco came in the second place with an average of 33.05%. Egypt was last by an average of 30.85%.

Over the three sub-periods, Tunisia had the highest averages, Egypt and Morocco had the second and the third place interchangeably.

4.9 Comparative Analysis of Trade Openness in Egypt, Morocco and Tunisia

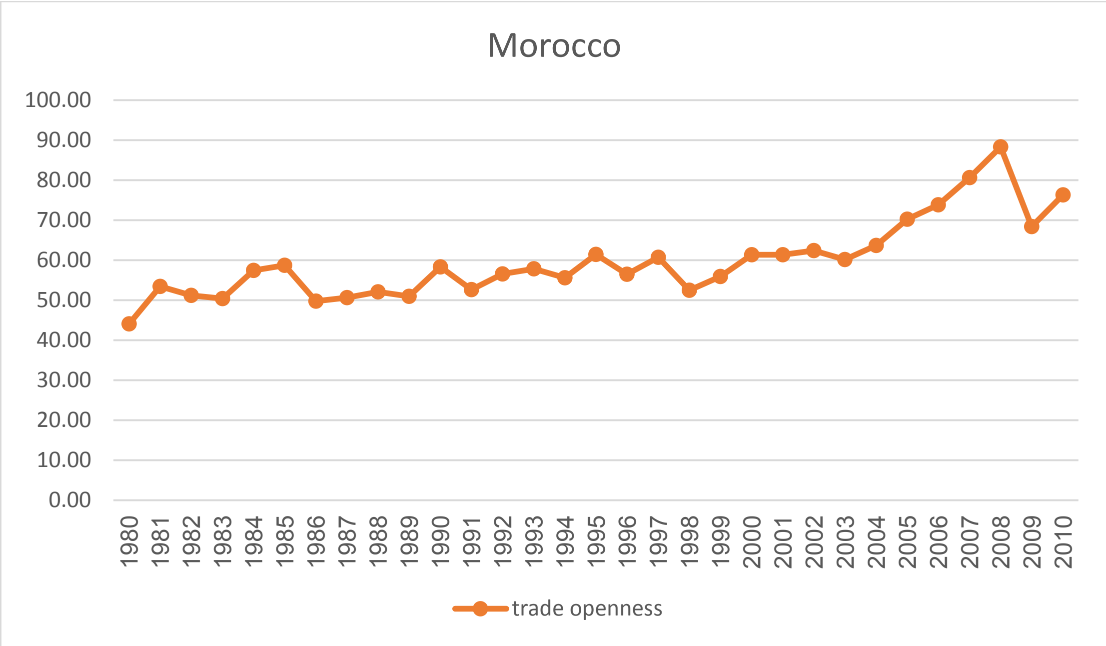
4.9.1 Analysis of Egypt's Trade Openness



Graph 32: Trade Openness in Egypt

The graph above shows the fluctuations in Egypt's trade openness. In the second year 1981, Egypt recorded its highest trade openness rate 82.18%. Then it drastically dropped to reach its lowest point in 1987 with a rate of 35.32%. After that year it starts to raise up until it reaches the year 1991 then it falls again gradually through the second decade.

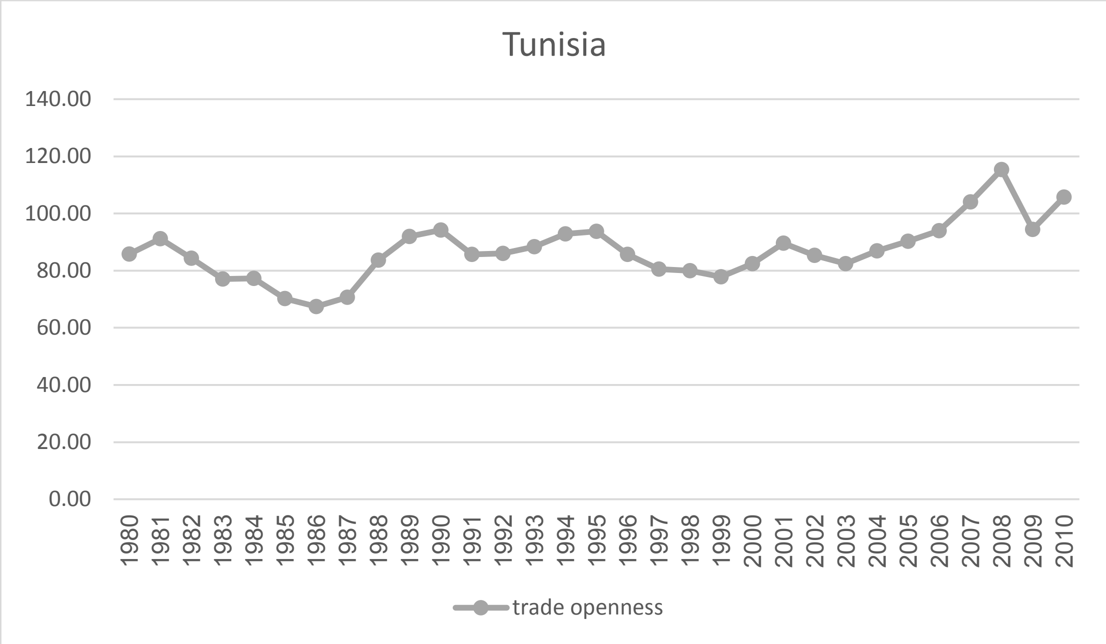
4.9.2 Analysis of Trade Openness in Morocco



Graph 33: Trade Openness in Morocco

As we see from the graph above, the trade openness percentage in Morocco increases gradually over the period of study with small fluctuations. The first year was the lowest percentage recorded by Morocco with a rate of 44.13%. After that year, the percentage starts to increase until it reach its highest point in year 2008 with a rate of 88.35%.

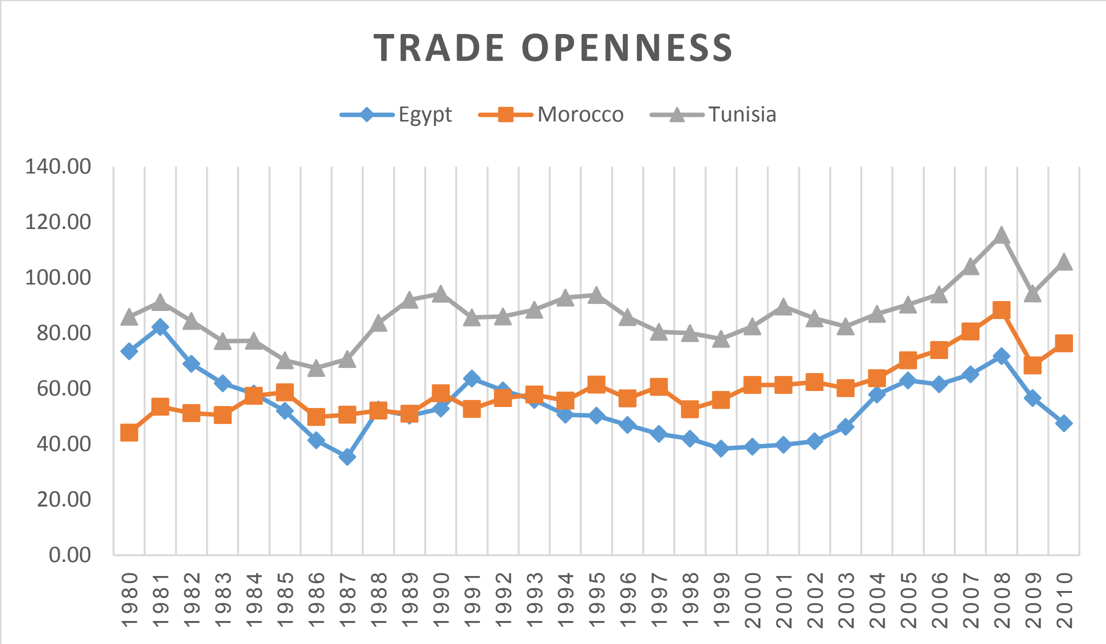
4.9.3 Analysis of Trade Openness in Tunisia



Graph 34: Trade Openness in Tunisia

As shown in the graph above Tunisia trade openness rate had small fluctuations over the period of the study. From the second year on there was a decline in the rate. In 1986, Tunisia recorded its lowest trade openness percentage as of 67.49%. However, after the lowest year it starts to increase gradually with small fluctuations until it reaches its highest point in 2008 with a rate of 115.40%.

4.9.4 Trade Openness Comparative Analysis in Egypt, Morocco and Tunisia



Graph 35: Trade openness in Egypt, Morocco and Tunisia

Table 11: Averages of Trade Openness

Indicator	Year	Egypt	Morocco	Tunisia
Trade Openness	1980-1989	57.59%	51.89%	79.98%
	1990-1999	50.35%	56.81%	86.49%
	2000-2010	53.55%	69.70%	93.68%
Averages	1980-2010	53.82%	59.80%	86.94%

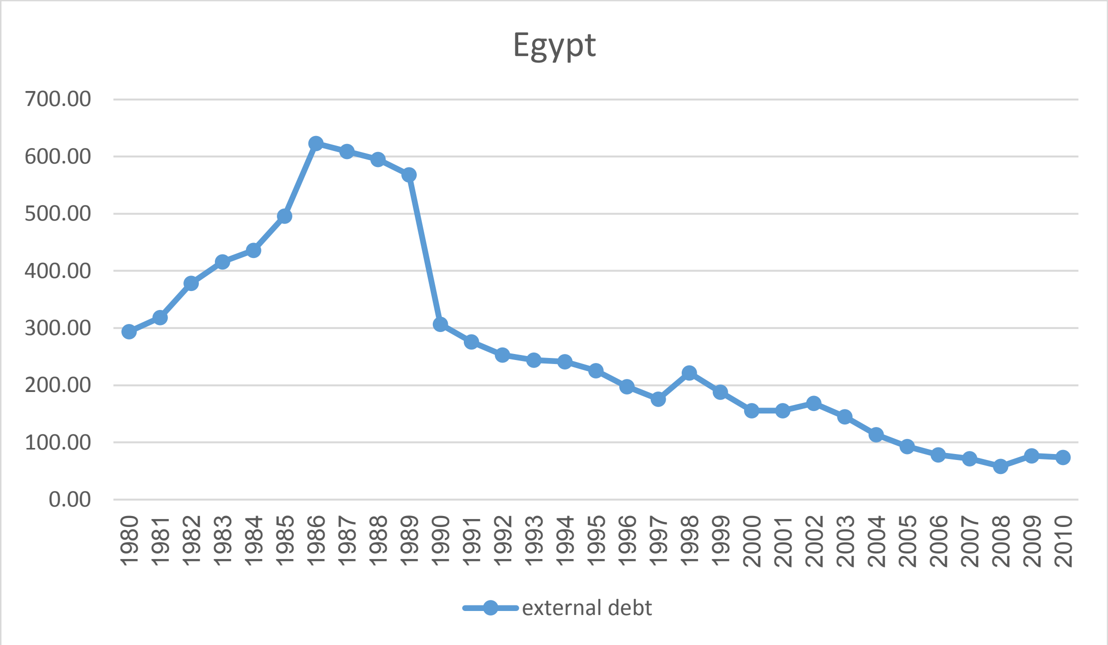
As we see from the Graph and Table above, it is clear that Tunisia dominates in the three sub-periods 1980-1989, 1990-1999, 2000-2010 with averages of 79.98%, 86.49%, 93.68% respectively. With a leading average of the whole period of study at 86.94%.

Egypt came second in the first sub-period 1980-1989 at 57.59%. However, it came last in the second and third sub-periods with averages of 50.35% and 53.55% respectively.

Morocco came third in the first sub period at 51.89%. and came second in the second and third sub-periods with averages of 56.81% and 69.70% respectively.

4.10 Comparative Analysis of External Debt Ratio in Egypt, Morocco and Tunisia

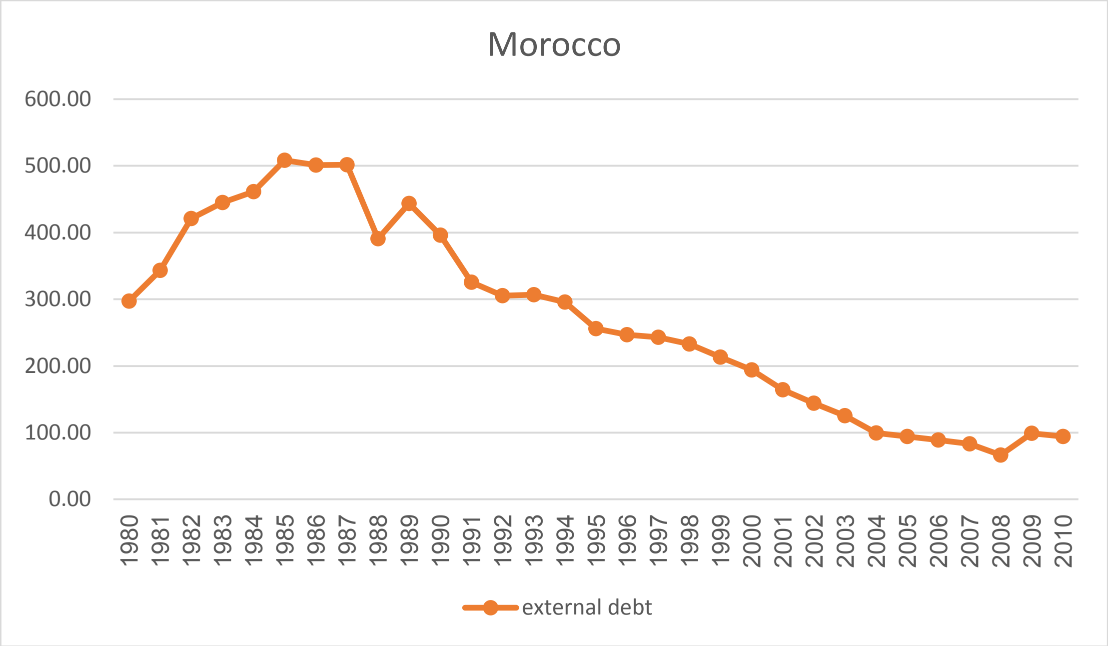
4.10.1 Analysis of External Debt Ratio in Egypt



Graph 36: External Debt Ratio in Egypt

From the graph above, you can see that the ratio of external debt increases drastically in the first six years until it reaches 1986 the highest recorded value 623.28%. then it declines gradually to the year1989. After that, it decreases drastically to the year 1990 and slows down until it reaches its lowest point in 2008 with rate of 58.06%.

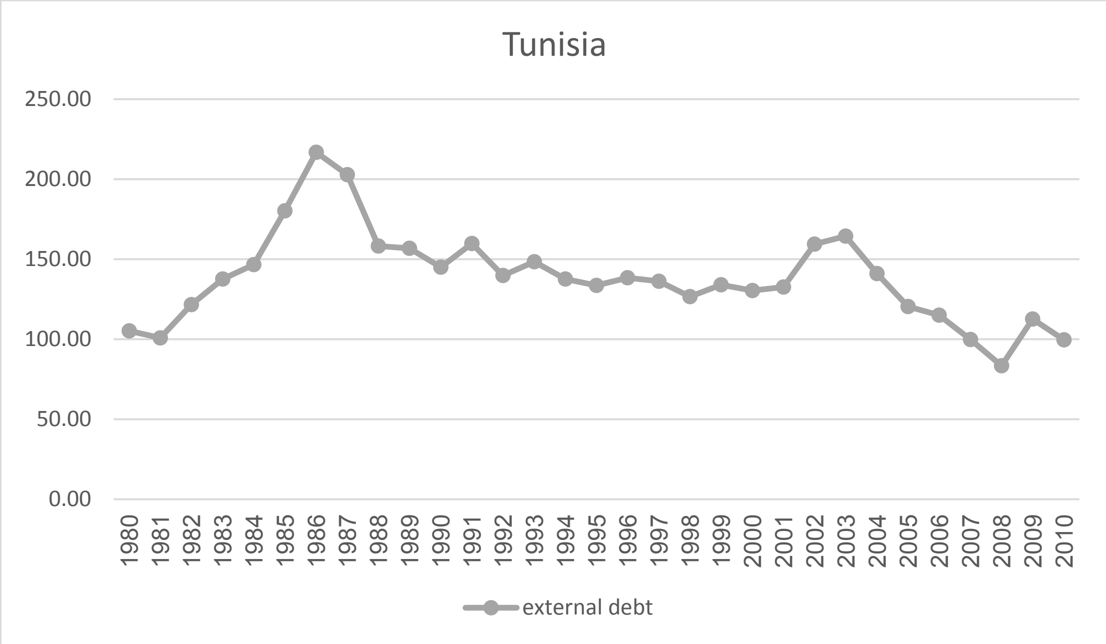
4.10.2 Analysis of External Debt Ratio in Morocco



Graph 37: External Debt Ratio in Morocco

As the graph above shows, the first five years have witnessed increase in the external debt ratio. Morocco recorded its highest ratio in 1985 with a rate of 508.07%. Then it starts to fall over the last two and half decades until it reaches its lowest recorded ratio ever in 2008 with a rate of 66.29%.

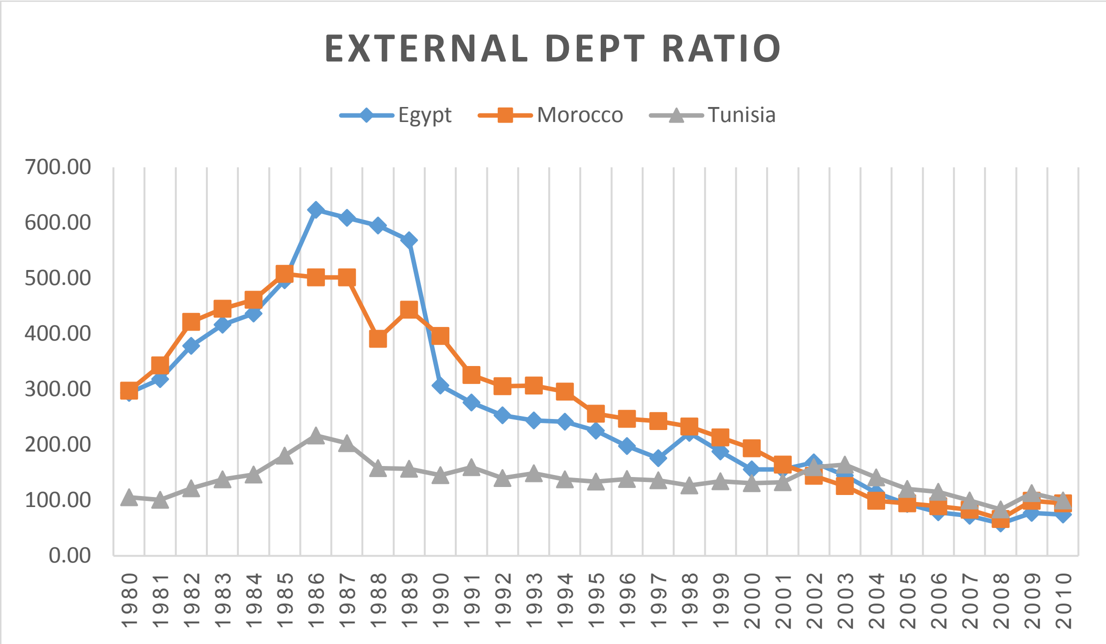
4.10.3 Analysis of External Debt Ratio in Tunisia



Graph 38: External Debt Ratio in Tunisia

As we see from the graph above the external debt ratio for Tunisia had been little bit volatile over the period of the study. The highest recorded ratio was in 1986 with a rate of 216.72%. From the year 1988, the ratio was declining in gradual basis until it reaches 2001. After 2001, there was increase again in the ratio. In 2008, Tunisia recorded it lowest external debt ratio with a rate of 83.50%.

4.10.4 Comparative Analysis of External Debt Ratio in Egypt, Morocco and Tunisia



Graph 39: External Debt Ratio in Egypt, Morocco and Tunisia

Table 12: Averages of External Debt Ratio

Indicator	Year	Egypt	Morocco	Tunisia
External Debt Ratio	1980-1989	473.43%	431.26%	152.64%
	1990-1999	232.93%	282.08%	139.96%
	2000-2010	108.20%	113.86%	123.56%
Averages	1980-2010	266.25%	270.51%	138.23%

From the graph and table above, we can see that Tunisia came in the first place with the lowest external debt ratio over the years of study with an average of 138.23%. Egypt came in the second place with an average of 266.25%. Morocco came last with an average of 270.51%.

In the periods 1980-1989 and 1990-1999, Tunisia led with the lowest averages of 152.64% and 139.96% respectively. In the first sub-period Morocco came in the second place with an average of 431.26% and Egypt came last with an average of 473.43%. However, in the second sub-period Morocco and Egypt switched places with Egypt is the second lowest country with an average of 232.93%. Morocco came last in the second period as the highest average of 282.08%.

In the last sub-period 2000-2010, Egypt had the lowest average of 108.20%. Morocco came second with an average of 113.86%. Tunisia came last with an average of 123.56%. Worth to mention that in the last decade the movement of the ratio for the three countries is nearly identical.

Chapter 5

MACROECONOMIC VOLATILITY COMPARATIVE ANALYSIS OF EGYPT, MOROCCO AND TUNISIA

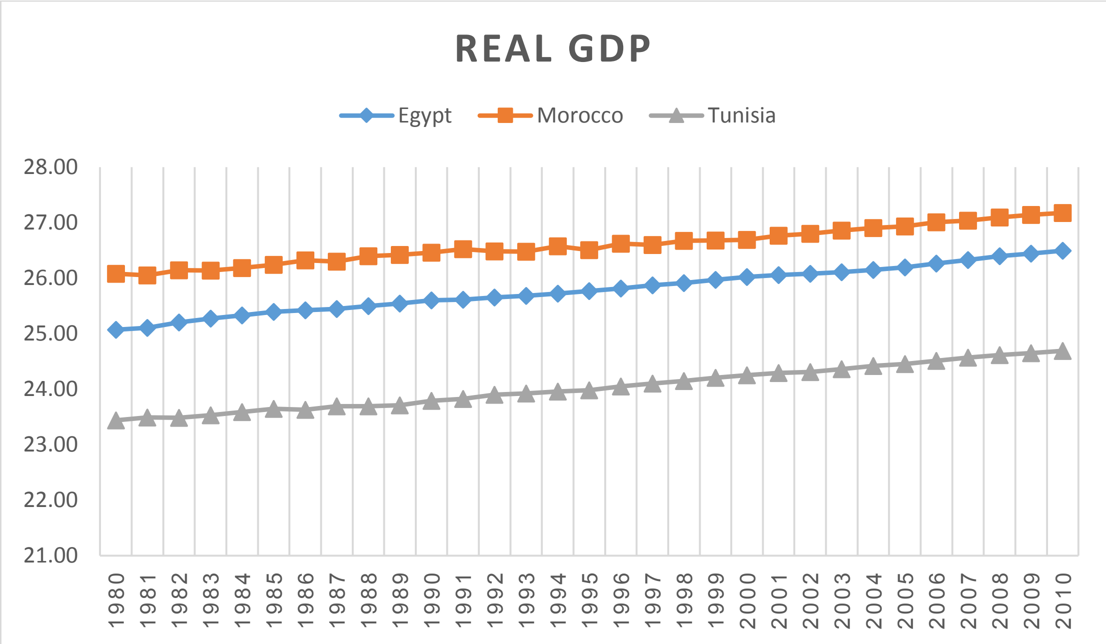
To conduct the analysis of volatility we will calculate the natural logarithms then we will compute the standard deviation of real private investment, real private consumption and real GDP. However, we will simply calculate standard deviation in measuring GDP growth rate and inflation rate volatility.

Standard deviation shows how unpredictable or stable an indicator can be in the economy. Standard deviation measures the volatility of indicators. In the table below, you can find a summary of the variables of interest standard deviation.

Table 13: Summary of Macroeconomic Volatility

Volatility	Egypt	Morocco	Tunisia
Real GDP	0.41	0.33	0.39
Real Private Consumption	0.37	0.28	0.36
Real Private Investment	0.33	0.40	0.25
GDP Growth Rate	2.02	4.60	2.34
Inflation Rate	6.39	3.51	2.78

5.1 Volatility of Real GDP Comparative Analysis in Egypt, Morocco and Tunisia.



Graph 40: Volatility of Real GDP for Egypt, Morocco and Tunisia

Table 14: Summary of Real GDP's Standard Deviation

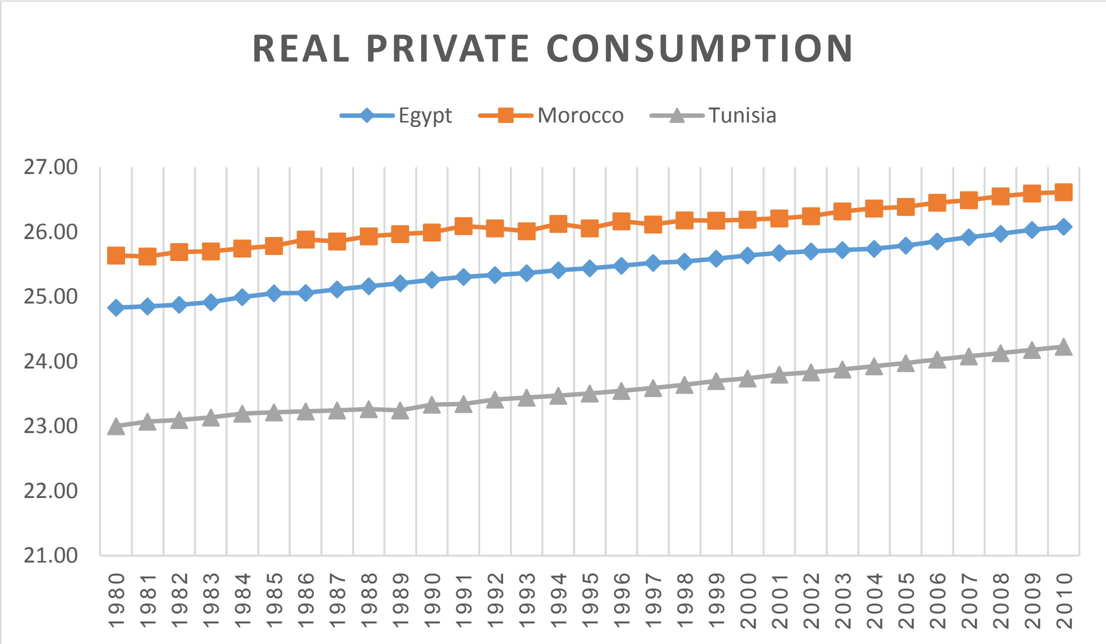
Indicator	Year	Egypt	Morocco	Tunisia
Real GDP	1980-1989	0.16	0.13	0.10
	1990-1999	0.13	0.08	0.14
	2000-2010	0.17	0.16	0.15
Standard Deviation	1980-2010	0.41	0.33	0.39

From the graph and table above we can see the see real GDP's standard deviation for the three countries over the period of the study. As shown in the table Egypt is the most volatile country with slight difference from other countries with standard deviation of 0.41. Tunisia came in the second place with rate of .39. Morocco is the most stable among the group with standard deviation of 0.33.

In the first decade, Egypt was in the lead with standard deviation of 0.16. Morocco came after Egypt with rate of 0.13. Tunisia came last with standard deviation of 0.10. However, in the second decade, Tunisia recorded standard deviation of 0.14 and it was the highest among the group. Egypt came in the second place; its standard deviation was 0.13. While Morocco came last with standard deviation of 0.08.

The rank in the third period was the same as the first. Egypt in the first place with standard deviation of 0.17. Morocco came in the second place with standard deviation of 0.16. While Tunisia came last with a rate of 0.15. In the third period, all countries experienced increase in volatility.

5.2 Comparative Analysis of Volatility of Real Private Consumption for Egypt, Morocco and Tunisia



Graph 41: Volatility of Real Private Consumption in Egypt, Morocco and Tunisia

Table 15: Summary of Real Private Consumption's Standard Deviation

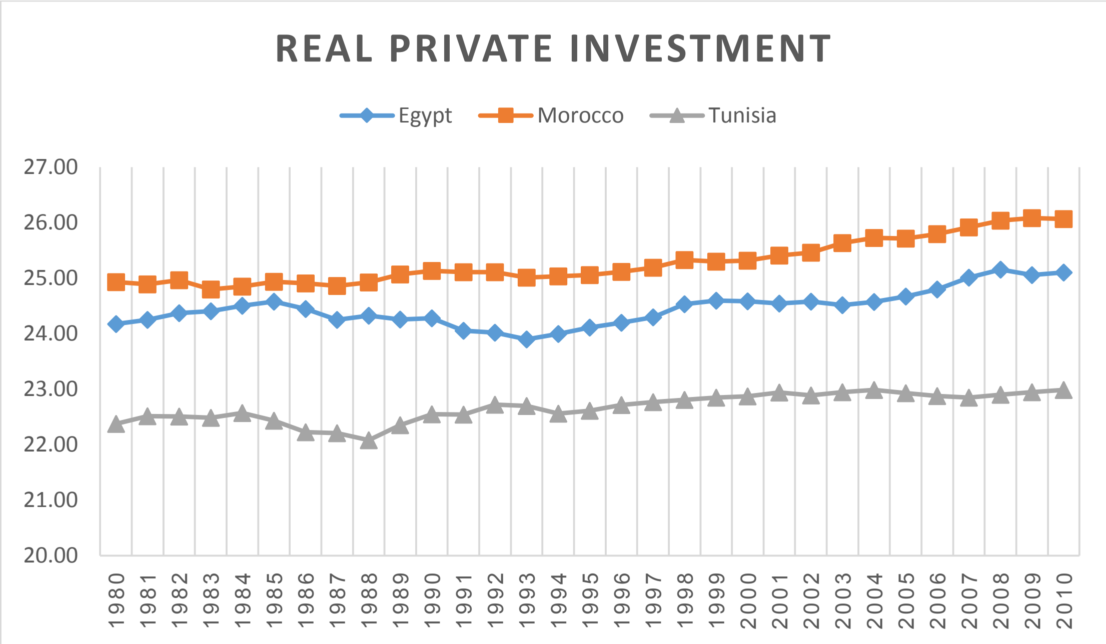
Indicator	Year	Egypt	Morocco	Tunisia
Real Private Investment	1980-1989	0.13	0.12	0.09
	1990-1999	0.11	0.07	0.12
	2000-2010	0.15	0.15	0.16
Standard Deviation	1980-2010	0.37	0.28	0.36

As shown above, you can see the real private consumption standard deviation for the selected countries in 1980-2010. In general, we can say that the volatility of the three countries was quite low. Egypt leading with standard deviation of 0.37 over the whole period. Tunisia came next with rate of 0.36. Moreover, Morocco was last with standard deviation of 0.28.

In the first sub-period, Egypt recorded the highest standard deviation, Morocco came second and Tunisia last with standard deviations of 0.13, 0.12 and 0.9 respectively. However, in the second period Tunisia came first with standard deviation of 0.12. Egypt was second with standard deviation of 0.11. Moreover, Morocco came last and recorded a standard deviation of 0.7.

In the last sub-period, Morocco in the lead with standard deviation of 0.16. Egypt and Morocco recorded the same standard deviation (0.15).

5.3 Comparative Analysis of Volatility of Real Private Investment in Egypt, Morocco and Tunisia



Graph 42: Volatility of Real Private Investment for Egypt, Morocco and Tunisia

Table 16: Summary of Real Private Investment Standard Deviation

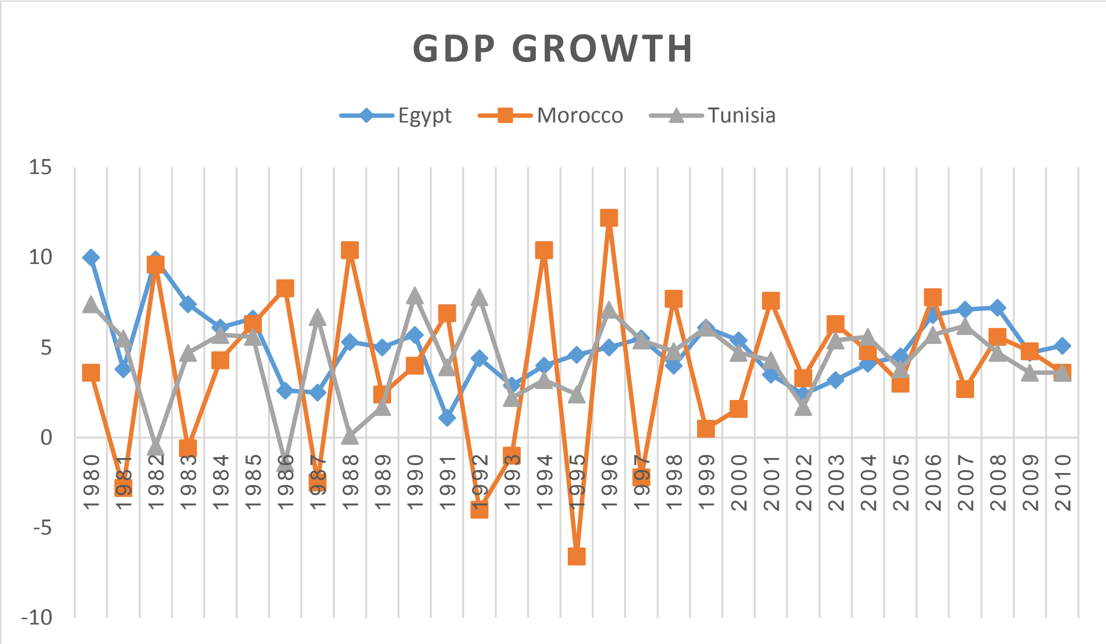
Indicator	Year	Egypt	Morocco	Tunisia
	1980-1989	0.13	0.07	0.16
	1990-1999	0.23	0.10	0.11
	2000-2010	0.25	0.27	0.05
Standard Deviation	1980-2010	0.33	0.40	0.25

As we can see from the table and figure above, Morocco was the most volatile over the period 1980-2010. Egypt came next. Its deviation was 0.33. Tunisia was last with 0.25 standard deviation.

From 1980 to 1989, Tunisia was the most volatile among the group with 0.16 standard deviation. Egypt came second with 0.13 standard deviation. In addition, the country that was least volatile with regards to real private investment was Morocco with 0.07 standard deviation.

In the second sub-period 1990-1999, Egypt was in the lead with 0.23 standard deviation. In the second place came Tunisia with standard deviation of 0.11. The last country was Morocco with 0.10 standard deviation. The rank for the third decade was Morocco first, Egypt then Tunisia with standard deviations of 0.27, 0.25 and 0.05 respectively.

5.4 Comparative Analysis of Volatility of GDP Growth Percentage in Egypt, Morocco and Tunisia



Graph 43: Volatility of GDP Growth Rate for Egypt, Morocco and Tunisia

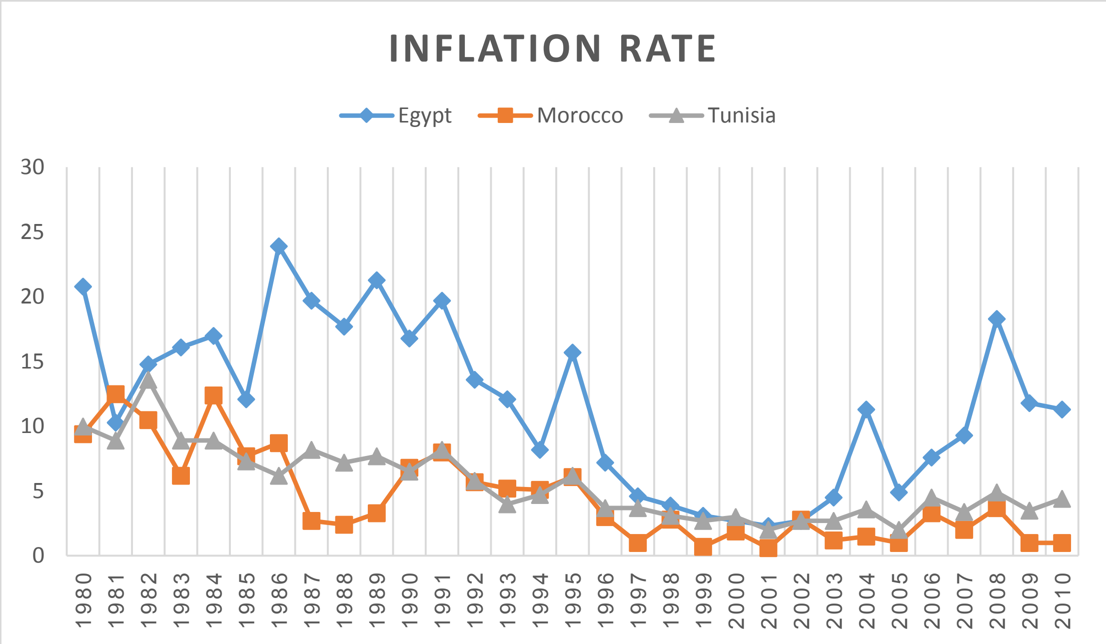
Table 17: GDP's Growth Rate Standard Deviation Summary

Variable	Year	Egypt	Morocco	Tunisia
Growth Rate Percentage of GDP	1980-1989	2.66	4.81	3.25
	1990-1999	1.48	6.39	2.14
	2000-2010	1.61	2.03	1.28
Standard Deviation	1980-2010	2.02	4.60	2.34

According to the figure and table above, over the whole period of study the most volatile country in GDP growth was Morocco with 4.60 standard deviation. Came in the second place Tunisia with standard deviation of 2.34. Egypt was the least volatile among the countries with 2.02 deviation.

As we can see from the table above, Morocco had the highest volatility of GDP growth over the three sup-periods with standard deviations of 4.81, 6.39 and 2.03 respectively. However, Tunisia came in the second place in the first and second sub-periods with standard deviations of 3.25 and 2.14 respectively. While Egypt was last in the first 2 periods with standard deviations of 2.66 and 1.48. Nevertheless, in the last period Egypt came second and Tunisia came third with standard deviations of 1.61 and 1.28 respectively.

5.5 Comparative Analysis of Inflation Volatility in Egypt, Morocco and Tunisia



Graph 44: Volatility of Inflation Rate for Egypt, Morocco and Tunisia

Table 18: Summary of Inflation Rate's Standard Deviation

Indicator	Year	Egypt	Morocco	Tunisia
Inflation Rate	1980-1989	4.24	3.82	2.04
	1990-1999	5.90	2.45	1.76
	2000-2010	5.05	1.04	0.98
Standard Deviation	1980-2010	6.39	3.51	2.78

From the figure and table above, for the whole period of study 1980-2010, the highest volatile country was Egypt with 6.39 standard deviation. The country that came in the second place was Morocco with standard deviation of 3.51. In the last place came Tunisia with 2.78 standard deviation.

Egypt had recorded the highest volatility of inflation rate over the three sub-periods with standard deviations of 4.24, 5.90 and 5.05 respectively. The country the came in the second place over the three periods was Morocco with standard deviations of 3.82, 2.45 and 1.04 respectively. While Tunisia was the least volatile country recording 2.04, 1.76 and 0.98 standard deviations respectively.

Chapter 6

CONCLUSION

After analyzing the variables for the selected countries, we have found that most of the time countries have suffered unfavorable performance and a volatile economic growth. In this section we will try to investigate the factors caused that and recommend some solutions to the problem.

6.1 Egypt

During 1980s, there was an economic aid of billions of dollars to Egypt from Arab neighbors, the United States and Europe. However, the inefficient industries that the state run, the increasing public sector, and the heavy military investments resulted in large public debt, sharp trade deficit, unemployment and inflation.

Over the period 1982-1990, Egypt struggled with an external debt crisis with its highest external debt recorded in 1986. The U.S. treated Egypt generously with waiving its debt as a reward for it contribution in the gulf war against Iraq.

The 1980s had witnessed the blast of the unemployment problem. In 1985, the government stopped to employ graduates because of the public sector successive losses. The relaxed demand for Egyptian labor in the gulf and Iraq, as a result of decreasing oil prices and the competition from Indian and Asian labors, exacerbated the problem. The unemployment rate increased during the first half of the 1990s. Budget deficit also reached the highest levels in that period. The Central bank financed the deficit causing a wave of high inflation rate. All of this has affected the GDP growth rate, which reached its lowest point in 1991.

In the 1990s, Egypt adopted a set of macroeconomic stabilization policies and started a number of structural reform programs to direct the country in the right high growth path. The inflation rate went down as a result. However, the Central Bank of Egypt could not achieve price stability under these policies. The unemployment percentage and GDP growth rate got worse. The failure of these policies is due to two key points: first, there was a conflict of monetary policy objectives, which made the Central Bank unable to use its tools efficiently. Second, issuing money to finance the budget deficit caused high inflation.

The East Asian crisis in 1997 have affected negatively the Egyptian trade balance. Since Asian currencies were devaluated, their exports became more attractive than Egyptian goods.

In 2004, Egypt undertook structural reform programs. These programs included liberalization of trade, the exchange market, investment, state entities privatization, tax reform, public finance management and other improvements. The GDP growth rate increased from 4.1 in 2004 to 7.2 in 2007 as a result. The Egyptian economy witnessed an increase of productivity in that period. Unemployment went down from 11.2 percent in 2004/2005 to 8.7 percent in 2007/2008. Exports grew, current account surplus remained small and external debt continued declining.

The global financial crisis that occurred in the second half of 2008 has affected the Egyptian economic negatively in many sectors, particularly the tourism revenue, the

Suez Canal revenue and exports among many other sectors . There was a decline in most of the macroeconomic indicators, destroying what have been built in the previous years.

This paper recommends Egypt to liberalize its trade regime, eliminate trade barriers and diversify its exports map. It should open the economy for foreign and domestic competition and decrease tariffs. The Central Bank should have independent legal instruments and should be more independent from the government. Investing in risk management institutions would be helpful in mitigating future crisis.

6.2 Morocco

In the beginning of 1980s, the economic condition of morocco were marked by an external debt and very weak growth chances. There was a current account deficit close to 9 percent of GDP. The foreign reserve was depleted, and the government was unable to pay its external debt. The domestic savings were continuing to drop from the 70s until the early 80s, because of loss in terms of trade and negative public savings. As capital inflows decreased, the investment rate fell down; it reached 21 percent in 1987.

In 1983, Morocco undertook reform programs with the assistance of World Bank and IMF. The aim of these programs was to increase the economic growth rate, stabilize the economy, and decrease the income inequality. During the period between 1983-1988, the GDP increased by nearly 5% a year, the deficit was down by half, exports and gross domestic savings increased rapidly, inflation reduced and current account balance reached a surplus. What helped to improve current account balance was the low expenditures on wheat and oil thanks to their price drop in 1986.

All these accomplishments were reversed in the 1990s because of the drought, the recession of the European Union and falling phosphate and rising oil prices. The country suffered a bad harvest in this period, which held back the economic growth and increased the unemployment.

In 2000s, Morocco had improved its economic performance and boosted its growth. Sound policies and structural reforms where undertaken. The average of GDP growth was 4.65% over the period of 2000-2010, almost double the rate in the 90s (2.8%). Pursuing the appropriate monetary policies, Morocco succeeded to maintain stable and low inflation (an average 1.9 since 2000). Designed specific strategies were implemented to increase productivity and investment. Gross investment increased from 22.7% of GDP in the 90s to 30.4% of GDP in 2000s. These higher rates of investment had led to improved growth potential and diversification of the economy, not to mention less volatility. Trade openness had grew over the last decade but still low compared to Tunisia. Exports had been weak due to slow development in the manufacturing sector. Unemployment had decreased since the reforms, from 14% in 1999 to 9.6% in 2008. Still there is a problem because the majority of these jobs were in the agriculture and informal sectors, while the educated youth remain in the unemployment zone. The improvements over the last decade have made Morocco more tolerant to shocks internally and externally, a good example would be how it withstood the rising of the oil prices.

Despite of the 2008 financial crisis, Morocco's growth performance has been good. Unemployment continued to fall. The public finances were well managed. The rapid increase in the food price led inflation to rise from 2% in 2007 to 3.7% in 2008, but due to the decline in world prices in 2009 and excess supply of domestic food, inflation declined to 1% in 2009. Morocco recorded a high current account deficit in 2008 and 2009, explained by the impact of the crisis on tourism revenues and workers remittances that was compensating the trade deficit before.

In order to create jobs and generate wealth, Morocco has to achieve higher growth rates. To do so, it should sustain the economic reforms and rely on global trade by increasing exports to gain more growth. Diversified products are also needed. The environment of business should be more dynamic and competitive to help absorb the new educated youth. The financing sector should be more open with effective supervision to increase competition and result on better practices, new instruments and lower intermediation costs.

6.3 Tunisia

In 1986, the Tunisian economy faced a crisis because of the interventionist policy adopted by the government, the drop in oil prices, and the drought. The crisis caused a negative GDP growth, current account deficit of about 7%, and the highest recorded external debt in the period of study. However, the government undertook economic and financial reform programs in the 1986 to fix the situation. These programs aimed at liberalizing external trade, restructuring the financial sector and making a fiscal reform. After the reform programs, GDP growth had developed to reach 7.9% in 1990. However, the growth was weak in 1988-89 due the drought. The gulf war also affected the Tunisian economy in 1990.

In the period of 1992-1996, Tunisia undertook economic and financial reforms strengthening program, a completion of the former program. The investment rate dropped in the period of the program. Inflation fell from 5.8 percent in 1992 to 3.7

percent in 1996. However the drought in 1994 and 1995 have affected the agriculture and fishing activities, which in in turn slowed down the growth in these years. Nevertheless, it was compensated by a large growth in these activities in 1996.

As a step to liberalize trade, Tunisia conducted an "Association agreement" with the help of the European Union in 1996. By 2008, import tariffs and other trade barriers were removed on most of the goods. The country recorded the highest import and export rates that year (59% and 115% respectively). It is worth mentioning that 65% of Tunisia's imports are from EU. During the period 1997-2001, Tunisia had achieved noteworthy economic developments; GDP growth rate of 5.3 percent during this period, investment rate reached 26.2% in 2001, and inflation had been reduced.

The financial crisis of 2008 also hit Tunisia in many ways. As 75% of Tunisia's exports go to Europe, exports fell down in 2009. GDP growth declined in late 2008 and early 2009. But strong recovery begun in 2010.

Tunisia must reinforce its resistance ability to external shocks. It should implement subsidy reforms to reduce the budget deficit. Confidence in the political system should be improved as political tension usually hinders economic growth. Wider structural reforms are also needed.

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