NEAR EAST UNIVERSITY

GRADUATE SCHOOL OF SOCIAL SCIENCES

ECONOMICS PROGRAM

THE INVESTIGATION OF UNEMPLOYMENT-GROWTH RELATIONSHIP: EVIDENCE FROM ARDL COINTEGRATION APPROACH IN THE GAMBIA

MOMAT SECKA

MASTER'S THESIS

NICOSIA

2020

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THE INVESTIGATION OF UNEMPLOYMENT-GROWTH RELATIONSHIP: EVIDENCE FROM ARDL COINTEGRATION APPROACH IN THE GAMBIA

ABSTRACT

This thesis aimed to study the linkage between the unemployment and economic growth in The Gambia through the application of Autoregressive Distributed Lag (ARDL)by using a quarterly time series data from 1991 to 2019.The findings of the cointegration of ARDL long run and bound test reported that, there is a long-term connection among the variables. Several unit root tests were employed to check the order of integration for all the series. The Zivot Andrew unit rot test was employed to check for the presence of structural break in the variables and it was found that, there exist a structural break in the dependent variable unemployment in the second quarter of 2003. After running the analysis, the researcher also performed the post estimation diagnosis test as well as the stability tests to verify the validity of the results.It also captured the studied research questions and according to the OLS results, the validity of the Okun's law in The Gambia was checked and the coefficient of the growth rate in both the long and short run contains the negative sign which justifies that, the Okun's law is valid in the Gambia.

Finally, the study also recommended the development of sustainable strategies and policies for a more pronounced decrease of informal employment by governments and policy makers in order to gain greater positive impact on economic development by increasing employment prospects and capital, which in turn will increase growth.

Keywords: Unemployment, GR, Inflation rate and Foreign Direct Investment, The Gambia.

ÖZ

THE INVESTIGATION OF UNEMPLOYMENT-GROWTH RELATIONSHIP: EVIDENCE FROM ARDL COINTEGRATION APPROACH IN THE GAMBIA

Bu tez, Gambiya'daki işsizlik ve ekonomik büyüme arasındaki bağlantıyı, 1991'den 2019'a kadar çeyreklik bir zaman serisi verilerini kullanarak Otoregresif Dağıtılmış Gecikme (ARDL) uygulamasıyla incelemeyi amaçladı. Değişkenler arasında uzun süreli bir bağlantı olduğunu bildirmişlerdir. Tüm seriler için entegrasyon sırasını kontrol etmek için birkaç birim kök testi uygulandı. Değişkenlerde yapısal kırılma olup olmadığını kontrol etmek için Zivot Andrew birim çürüklüğü testi uygulanmış ve 2003 yılının ikinci çeyreğinde bağımlı değişken işsizlikte yapısal bir kırılma olduğu görülmüştür. Analizi çalıştırdıktan sonra ben de yaptım. Sonuçların geçerliliğini doğrulamak için tahmin sonrası tanı testi ve stabilite testleri. Bağımlı değişken (işsizlik oranı) için daha yüksek sayıda gözlemi yakalamak için verinin erişilebilirliği bir kısıtlamaydı ve bu nedenle araştırmacıyı, gözlem sayısını artırmada verileri üç ayda bir hesaplamaya zorladı.

Son olarak, çalışma ayrıca, istihdam beklentilerini ve sermayeyi artırarak ekonomik kalkınma üzerinde daha fazla olumlu etki elde etmek için hükümetler ve politika yapıcılar tarafından daha belirgin bir kayıt dışı istihdam azalması için sürdürülebilir strateji ve politikaların geliştirilmesini tavsiye etti ve bu da büyümeyi artıracaktır.

Anahtar Kelimeler: İşsizlik, GSYİH, Enflasyon oranı ve Doğrudan Yabancı Yatırım, Gambiya.

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ABBREVIATIONS

ARDL: Autoregressive Distributed Lag

CBG: Central Bank of The Gambia

FDI: Foreign Direct Investment

GR: Growth Rate

HDM: Harrod-Domar Model

IFMIS: Integrated Financial Management Information System

IMF: International Monetary Fund

INF: Inflation Rate

LGA: Local Government Area

OECD: Organization for Economic Cooperation and Development

OLS: Ordinary Least Squares

UNCTAD: United Nations Conference on Trade and Development

UR: Unemployment Rate

VAR: Vector-auto Regression

VEC: Vector Error Connection

WDI: World Development Indicators

WIR: World Investment Report

CHAPTER ONE

INTRODUCTION

This chapter discusses the introduction, theoretical background of study, research questions, research Hypothesis, objectives of study, scope of study and significance of the study and the limitations of study.

1.1 Introduction

Unemployment reduction remains a major problem in the Gambia. Although development has increased in recent years, and the evidence available demonstrates that better economic performance has resulted into unemployment reduction.It appears that Gambia has reached a turning point with higher growth rates marking a departure from years of economic depression. Long-run growth rates, however, tend to be inadequate to both improve worker productivity and provide jobs for an increasing population.

According to the Gambia labor force survey 2018, the profiles of unemployed individuals aged 15 to 64 years in regards to their sex, age group, and Local Government Area (LGA) suggested that there are 234,725 unemployed persons aged 15 to 64 years (35.2 percent), 104,933 of these are males, and 129,792 are females. Amongst all age groups, more males are employed than females.Furthermore, the report indicates that 71,805 unemployed people live in urban areas and 162,920 in remote areas. In comparison, the report indicates that more unemployed people live in rural areas relative to urban areas among all age ranges. At LGA rank, the results indicate that Basse, Brikama and Kerewan have the largest number of unemployed people among all the age categories.

Table 1: Number of Unemployed Persons Aged 15-64 Years by Sex, LGA and Age Group, 2018

Sex	15 - 24	25 -35	36-64	Gambia

Male	42,493	29,197	33,243	104,933
Female	42,874	42,147	44,771	129,792
AREA				
Urban	28,223	22,954	20,628	71,805
Rural	57,144	48,390	57,386	162,920
LGA				
Banjul	429	447	241	1,117
Kanifing	6,357	5,699	3,186	15,242
Brikama	17,005	17,006	16,825	50,836
Mansakonko	4,020	3,890	7,221	15,131
Kerewan	13,971	10,181	14,009	38,161
Kuntaur	9,605	6,825	8,011	24,441
Janjanbureh	12,005	9,062	11,022	32,089
Basse	21,975	18,234	17,499	57,708
The Gambia	85,367	71,344	78,014	234,725

Gambia labor force survey 2018

In rural areas, the percentage of the population unemployed is 76.6% and 23.4% in urban areas. Across all levels of schooling with the exclusion of diploma, technical certificate and secondary / tertiary schooling, the rural areas have a higher percentage of unemployment than the urban areas. At Local Government Area ground, Basse, Kuntaur and Janjabureh, havethe greatest percentages of unemployed persons across all levels of education as 26.5%, 20.1% and 18.9% respectively. Unemployment rates

by level of academic achievement indicate that the unemployment rate is 42.9 percent for men and 57.1 percent for women. However, males with diploma is 70.9 percent and upper secondary schooling is 59.5 percent having the largest concentrations of unemployed individuals. While other, for females; those with early childhood education is 73.3 percent and no education is 60.1 percent having the largest percentages of unemployed individuals.The findings of the 2018 Gambia Labor Force Survey reveal that, the youth unemployment rate is 41.5%. The report indicates that unemployment in rural areas is higher (69.4percent) than in urban areas (30.6 percent). The report at Local Government Area level shows that Basse, Brikama and kerewan, Brikama and Kerewan have the largest proportions of unemployed young people as 24.6%, 21.7% and 16.3%.

Moreover, actions must be taken to ensure that enhanced job conditions are generated by economic growth. The goal is to preserve the momentum of economic growth over the past few years and to increase the speed of change so that decent jobs can be encouraged as a base for sustainable development and poverty reduction. In order to accomplish this purpose, the appropriate policy climate is necessary.Macroeconomic management provides a range of policy mechanisms that are important for developing an atmosphere conducive to enhancing employment opportunities. Macroeconomic policies are a branch of what are sometimes called 'horizontal policies' i.e., Broad-based programs aimed at enhancing economic efficiency, but also do not address particular industries or practices.

1.2 THEORETICAL BACKGROUND

From 1991 to 2019, the average unemployment rate in Gambia was 9.8 %, with a high of 10.63% in 2000 and a low of 8.90% in 2019 (World Bank indicators 2020). Worldwide, there is a widespread and accepted assumption that growing GDP levels raises jobs and reduces unemployment. This theoretical guidance on economic development (GDP) and unemployment is normally alluded as the Okun's law (1962). Kreishan (2011) indicates that a rise in the Gdp growth rate of a country's economy is then predicted to raise job levels, thus lowering unemployment.However, unemployment

has been gradually increasing in the economy of developing countries, especially in Africa, resulting in a decrease in household income and living standards and a corresponding rise in the degree and prevalence of poverty (Kareem, 2006). While economic growth is important to reduce unemployment and alleviate poverty, Osinubi (2005) noted that, it is not enough, though, because economic growth alone cannot address all the main causes leading to poverty and unemployment.It is an established view in economics that higher growth rate of GDP lowers unemployment. This theoretical principle is known as Okun's law about production and unemployment. This relationship is among the prominent theories of macroeconomics concepts and has been found to hold mainly in the countries (Lee, 2000; Farsio and Quade, 2003; Christopoulos, 2004).

The pattern attracted attention not primarily from economists alone, but because of its high accuracy in methods, and also, because of its significant importance as a key element of macroeconomic growth. And, including the Phillips curve, it attempts to define the aggregate supply curve. In fact, it has ramifications for macro-economic policy in seeking the right or optimum growth rate for Mossa (2008).In Gambia, the labor market has seen a rise in unemployment for a variety of reasons, such as early-year demographic growth and the government's failure to generate the requisite amount of work openings. This shows that labor supply has exceeded labor demand in recent times, and this imbalance has steadily increased, leading to lack of adequate jobs for the workforce, especially young people and university graduates.

Any other indicators have a relative or opposite effect on GDP, such as government spending and inflation. For this, the increase or reduction in the unemployment rate may be claimed to have some effect on economic development. Unemployment is also correlated with a rise in the poverty rate and income inequality, and learning about the connection between unemployment and economic development is often a willingness to better adapt sustainable policy to improve the economy. Economic prosperity is typically enhanced by some of the most important foreign policy issues, which tends to lower the unemployment rate and thereby ties it to the influence of investment policies by making meaningful improvements in generating more jobs. Knight and kindon (2007),

addressed the influence of economic and social causes of unemployment on the national performance of a country in terms of loss of human capital, social exclusion, and rise in crime rates. A rise in the rate of growth is often linked with a decline in the unemployment rate, which is an acceptable economic claim, and this statement is backed by standard studies that assess the existence of the association between economic growth and its effects on unemployment.

One of the key objectives of macroeconomics is to preserve a high and sustainable gross domestic product at a low and steady unemployment rate and indicated that an increase in GDP growth could lead to an increase in the number of employments and thereby minimize the unemployment rate recognized as the Okun's rule (Banda 2016).

FOREIGN DIRECT INVESTMENT

Foreign direct investment is a form of foreign investment through which at least 10 % of the interest in a company located in another country (the direct investment firm) is purchased by a business living in one country (the direct investor) according to United Nations Conference on Trade and Development (UNCTAD, 2010). The Foreign direct investment is differentiated from the investment in foreign portfolios through disbursed investments used in the home country.

Foreign direct investment can be split into two types, according to Ghazali (2004). First, the flow of capital and other goods across regions, which can be viewed strictly as foreign direct investment as a main element in the position of financial influence over organizations or companies. The second category provides a wider understanding of the concept of investment as it includes various assets categories and contractual rights.

The United Nations Conference on Trade and Development (UNCTAD, 2008) notes that FDI provides a long-term relationship between companies in the subject (investor) countries and companies in the recipient (host) countries. This describes the source company (the international investor) as the entity in a state other than its home nation that owns land or company. In order to meet with the notion of foreign control, an

investment company must have no less than 10% of the common shares or the ability to serve on the board of directors of public corporations or their colleagues in those corporations. As branches or affiliates, the local companies are identified. Whereas this concept is informed by the flow dynamics of foreign investment in highly developed economies, while mergers between multinational corporations and monopolies in corporate property offer them an edge, they can still function in circumstances where particular global companies are involved. On the basis of this principle, the Foreign direct investment requires the ownership of a portion of the stock through obtaining the equity of the subsidiary through reinvesting, rather than handing on to shareholders, the profits generated by the subsidiary through short-term or long-term loans or concessions, subcontracts, management agreements, regulations and licenses, between the principal company and its subsidiary bodies.

EFFECTS OF FDI

The strong flows of FDI have prompted extensive debate and research into the impact of foreign direct investment on host nations. It is entirely understood that FDI will help local businesses intrinsically. Brooks (2003) suggests that host economies would benefit from the FDI in the following respects, apart from growing output and income:

(I) International investment is growing rivalry within the host economy. A new company's entry would help to improve market productivity and cut domestic prices. In turn, the arrival of international businesses will enable local businesses to work more effectively and establish innovative technology.

(II) Multinational companies introduce modern research or management skills. They must also provide their local suppliers or customers with professional guidance, and prepare workers who can then move to other businesses. Moreover, local businesses may improve by actually seeing peers from the outside. The extent to which host markets benefit depends on how the technologies can carry over to other industries on the local sector. Chan S.S. (2006).

(III) Global investment offers incentives in terms of export business exposure resulting from economies of scale in foreign firms selling or from the ability to gain customer share abroad.

(IV) Overseas spending will begin to fill the developing nation's foreign-exchange gap. Investment requires international inputs, too. When domestic reserves are inadequate to fund capital accumulation to achieve goal expansion, if there are obstacles to translating domestic currency into foreign exchange to buy imports, external inflows would help make sure foreign exchange is adequate to buy investment imports.

(v) Generally, foreign investment contributes to expanded domestic expenditure. A panel survey of 58 developing countries showed that nearly half a dollar of capital inflows is comparable to a rise of local consumption. However, there is a close one-to-one relationship between the foreign direct investment and local contributions as capital inflows in the direction of foreign direct investment. Nonetheless, it should be noted that not all direct investments will bring about a change to technology or effective spillovers.

FDI INFLOWS AREA TRENDS IN AFRICA

According to the World Investment report (WIR) (2019), FDI flows to North Africa grew by 7% to fourteen billion dollars due to large investments in most sub-regional countries. In 2018, Egypt remained the primary recipient of Foreign Direct Investment in Africa, while inflows dropped by 8% to 6.8 billion dollars. International investment in Egypt centered on about the oil and gas industry. In 2018, Egypt formed at least 12 oil and gas exploration deals with international oil firms. Several large international ventures have also been reported in other regions, such as a 2-billion-dollar project by Nibulon (Ukraine) to remodel Egypt's grain storage network and a one-billion-dollar project by Artaba Founding of Saudi Arabia to develop a medical industry.

FDI flows from Morocco rose by 36 % to 3.6 billion U.S. dollars. The country profits greatly from reasonably economic expansion and a balanced economy that attracts, international banking, oil development, tourism, and the manufacturing and automotive industries. The highest was the purchase by Sanlam Capital Markets (South Africa) of

the existing 53% of Sham Finances, Morocco's largest insurer, for one billion dollars.In 2018, Sudan's Foreign Direct Investment grew by 7percent to 1.1 billion dollars, with focus on oil and gas output and agriculture. Despite the removal of sanctions by the United States, political instability, currency restrictions and expensive banking networks are constraining the region's foreign direct investment development. Besides that, in 2018, minimal investment activity was reported in non-conventional fields. For example, with ambitions to grow internationally within the next 2 to 3 years, Kareem (living in the United Arab Emirates; now operated by Uber Technologies Inc.) commute-sharing business began operating in the city of Khartoum.

Foreign Direct Investment flows to Tunisia increased by 18 percent to one billion dollar. In comparison to power ($300 M) and infrastructure ($200 M), the largest proportion went to production ($375 M). In 2018, the main investor state in Tunisia was France, led by Qatar. The key developments in Greenfields have also been verified by Chinese companies. For example, the Chinese vehicle manufacturer SAIC Motors has signed a contract in Tunisia with the Meninx Group to develop a production facility targeting the African and European regions.

Foreign Direct Investment inflows to Sub-Saharan Africa grew by 13% to $32 billion in 2018, after a significant two-year slowdown. This increase may mainly be attributed to an uptrend in FDI finding capital and the return of inflows to South Africa, the second-largest nation on the continent. This more than overwhelmed the dramatic decline in inward FDI reported in a range of countries in the sub-region, which was partially due to political uncertainty and adverse market conditions.Foreign direct investment in West Africa plunged 15% to $9.6 billion, the least point since 2006. That was partly due to the drastic decrease in Nigeria in the second consecutive year. Foreign Direct Investment inflows to the country decreased by 43% to $2 billion, and Nigeria is no longer the main recipient of Foreign Direct Investment in West Africa. International oil suppliers were actually asked to pay 20 billion dollar in back-taxes. In 2018, however, spending by oil producers, which included substantial reinvested gains by current creditors. Nigeria's current strategy of raising the public equity of the collaborative project oil reserves to 40 percent could push up foreign direct investment

over the coming years.Ghana was the main beneficiary of FDI from West Africa, though Foreign Direct Investment inflows dropped by 8 percent to $3 billion.

In 2018, Foreign Direct Investment inflows remained unchanged, at 9 billion dollars for East Africa. Inflows to Ethiopia declined by 18% to $3.3 billion. But through investments in crude oil, resource extraction, property growth, renewable energy and manufacturing, the nation remained to be East Africa's largest Foreign Direct Investment recipient. In terms of all sectors and countries of birth, the foreign direct investment to the country has been diverse. Kenya's foreign direct investment grew by 27% to $1.6 billion. Investments, including manufacturing, plastics, hotels, and oil and gas, have been made in several industries. The country has taken steps to encourage private entrepreneurship and foreign investment, further strengthening foreign direct investment. Foreign direct investment reached a record high in Uganda in 2018, largely due to innovations in the oil and natural gas, coal, and hospitality sectors.

1.3 RESEARCH QUESTIONS

1. Is there any long run relationship between the variables (Growth rate to Unemployment, Inflation to Unemployment and FDI to unemployment)?

2. Is there any short run relationship between the variables (Growth rate to Unemployment, Inflation to Unemployment and FDI to unemployment)?

3. Is there any causal flow between the unemployment rate and the independent variables (Growth rate, Inflation and FDI)?

1.4 RESEARCH HYPOTHESIS

H0: there is a long run relationship between growth rate and unemployment

H1: there is no long run relationships between growth rate and unemployment

H0: there is a short run relationship between growth and unemployment

H1: there is no short run relationships between growth and unemployment

1.5 RESEARCH OBJECTIVES

The main objectives of this study are to comprehend the relationship between unemployment and Economic Growth (GR) in The Gambia in the period 1991 to 2019.

The objectives are:

1. To determine the long run impact of growth on unemployment in The Gambia.

2. To examine the short run impact of economic growth on unemployment in The Gambia.

3. To understand the causal flow between GR, inflation and FDI with unemployment.

1.6 SCOPE OF THE STUDY

Growth level determines various facets of a nation's developments including social, economic and political. However,this study focuses more on the economic side of The Gambia during the period 1991 to 2019.In fact, given the time period within which this analysis work had to be carried out, it would not be reasonable to look at all the measurements.Consequently, the study will be targeted to GR in the Gambia and its impacts on unemployment from 1991 to 2019.

1.7THE SIGNIFICANCE OF THE STUDY

•The result of the study would be meaningful in assessing the contribution of GRto unemployment.

• The research on the nexus between unemployment and growth rate in the Gambia would provide valuable insights in meeting the country's long-term macroeconomic growth goals. The thesis may still be used by scholars as a guideline for future studies and as a baseline for drawing conclusions for similar studies.

CHAPTER TWO

THE LITERATURE REVIEW

There have been varying views on the correlation between the two factors in recent research on the connection between Growth level and unemployment. However, other variables such as inflation and foreign direct investment have also been looked at with their impacts on unemployment and economic Growth.

2.1 THEORETICAL LITERATURE

Okun's law defines the relation between unemployment and Economic growth. It is a numerical association that has earned good empirical backing for a wide set of countries (Knotek, 2007; Moosa, 1997; and Okun, 1962). As initially calculated by Okun, it has the corresponding basic formula as:

Change in unemployment rate $= \alpha - \beta$ X Change in real output……equation 1

Where α(alpha) represents the intercept and β (beta) represents the elasticity of the unemployment rate with respect to actual production, and Okun calculatedit to be around 0.3 for US within the early post - Second World War era. The value of α / β is the minimum amount of production growth required to lower the unemployment rate due to labor force and labor productivity development.

This research is supported by a variety of unemployment theories (Classical and Keynesian) and economic development (Neoclassical and Endogenous) theories. Classical theory has proposed that any unemployment that occurs in an economy,

there'd be a short-lived of it and the activity of the free-market powers would immediately recover full jobs in the economy.Keynesian unemployment theory believed that unemployment is due to low aggregate demand (Keynes, 1936). Keynes also recommended that the government use effective measures, such as expansionary monetary or fiscal policies, to solve or mitigate the issue of unemployment in the economy.Neoclassical growth theory (Solow-Swan model) indicates that steady state growth rates are dictated exogenously by technical change. Centered on this, Solow-Swan model, Aghion and Howiit (1997) concluded that, if there is no technical advancement, the impact of decreasing returns on capital will be the same and e ultimately, accumulation would cause economic activity to cease. Trpkova and Tashevska (2011) found that endogenous growth models stressed the importance of human resources and potential for creativity in leading to economic growth. As a result, endogenous growth economists strongly agree that steady growth has been produced endogenously.

Many studies in developed nations, affirm the relationship formed by Okun (1962) to measure the connection between the output and the unemployment rate, but the findings differ from nation to nation and over the years, depending on the type of economic development achieved in specific State (Revenge & Beutalia; 1995, Lee; 2000, Sogner & Stiassny; 2002).A considerable number of studies with a divergence views have indicated a lack or weakening of this association in developing nations and in the Arab world in particular as Al-Ghannam (2003) examined the connection between the pace of economic development and employment of private businesses in Saudi Arabia, using the co-integration test and the (ECM) error correction model.Granger's causality contributed to the development of a long-term balancing relationship between the rate of unemployment and economic development, and the presence of a causal link exists only on one path from the rate of economic growth to unemployment, and not conversely.

2.1.1 EMPIRICAL REVIEW

An empirical analysis has been dedicated to the proof of Okun's law over the past few years and some of which are: Andrei et al. (2009) stated that the connection between growth rate and unemployment is critical for policymakers to ensure a sustained rise in living conditions.Akinlo et al. (2004), using the Error Correction Method, studied the effect of FDI on Nigeria's economic development from 1970 to 2001. The findings showed that household capital and foreign capital had no impact on economic development and that it was not dramatically necessary and that financial investment had a significant negative impact on productivity, reflecting on the conclusions that could derive from the high flow of capital it produces. On the other hand, several experiments have sought to clarify whether or not a link exists between unemployment rate to growth level.

To commence with, Feizolah et al (2012) examined the impacts of inflation and unemployment on Iranian Economic growth from 1996 to 2012, and their model estimates recorded the substantial and reverse effects of inflation and unemployment on long-term Growth level, suggesting that inflation and unemployment are associated with a decrease in long-term Economic growth. That concern made it possible for them to constantly propose to the Iranian authorities that they should strive and plan to reduce and track inflation and unemployment in order to gain Growth in the economy. For the same Okun's data set (1962), Silverstone and Attfield (1997) used co-integration relationships to calculate Okun's coefficient as 2.25 instead of 0.67.Irfan Lal et al (2010) measured the effect of unemployment on real GDP growth and then checked the validity of Okun's in some selected Asian countries (Malaysia, Saudi Arabia and Indonesia) where time series evidence was observed for the annual data obtained between 1980 and 2006 and stated that the relation between GDP and unemployment was approximately 3 to 1, resulting in a one-point decrease in unemployment, raising GDP as much as 3 points.

Leopold Soegner & Alfred Stiassny (2002) reported a reverse correlation concerning unemployment and real Gdp by testing Okun's law. Christian e weber (1996) also analyzed Okun's law and concluded that the estimation of the production gap with the

unemployment rate was traditionally associated with one of the facts of the market cycle.

Kitov (2011) analyzed the correlation between unemployment and Gdp per-capital in developed nations such as the UK, Spain, the US, Canada, Australia, Spain and France within the period 1985 to 2010. He found that predicted changes in the unemployment rate were applicable in those developed countries under the Okun's law.Azman-Saini et al (2010) explored the relationship between Foreign Direct Investment and economic growth (GDP) by taking into account the role of the economic climate (as a measure of the efficiency of the institution). They employed a panel data set of 85 nations during the period 1976-2005. Their results indicate that the presence of multinational corporations would significantly benefit countries by promoting greater equality of economic activities due to the existence of a desirable interaction period. Martin F. J. Prachowny(1991) assessed that a rise in GDP growth of about 2/3 % was the outcome of a percentage point decrease in unemployment, while shifts in weekly hours had an independent effect on the production deficit in US economy. Esa and Juda (2010) tried to verify the short and long-term Okun coefficient in Iraq, but the study's results indicated that the unemployment rate is immune to improvements in GDP and that the coefficient of correlation observed between the independent and dependent variable is lower because of Iraqi jobs policy and is thus not consistent with economic policies.Prachowny (1993) used his variant of the difference to estimate the concept of Okun's and then calculated the Non-Accelerating Unemployment Inflation Rate (NAIRU) and the production gap in the U.S and the finding reports that the marginal contribution of a one-pointdecreases in unemployment results to only about two-thirds percent rise in GDP. Nor and Judhiana(2007) investigated this, where there is an Okun's law concerning unemployment growth in the Malaysian economy. The analytical results suggest that there is an inverse relationship between unemployment and economic growth and a long-term association between the variables was found by employing the Engle Granger's cointegration technique. Yousefat(2011) used matrix and casual correlation to verify a simultaneous integration method and the error correction model to test the Algerian economy from 1970 to 2009.The study represents a minimal and an inverse causal association between unemployment and Economic growth, but the two

variables do not report a long-term or short-term correlation. Roseau (2014) analyzed the link between production and unemployment in the United States in the period 1977-2011 and the findings revealed a strong association between output and unemployment, and then the study stated that, the financial crisis was fundamental to the correlation between growth in economic and unemployment. Li and ZI Juan Liu (2012) discussed a paper on China's unemployment rate, production and its link with inflation. The vector auto regression (VAR) and vector error correction (VEC) models were used to research causality and co-integrate variables, respectively. The study found that the effect of growth is inversely linked to unemployment.

A study undertaken for 10 developed countries (US, UK, Japan, Canada, Germany,France, Italy, Sweden, Netherlands, Australia), Freeman (2001) analyzed the law of Okun's and integrating new technologies with trend decomposition and found that the original 3point coefficient of Okun's is now somewhere near two-point GDP growth for every 1 percent change in the unemployment rate in the countries under study. Al-Habees & Abu Rumman (2012) researched about this association in Jordan and they found that the fast growth rate and the gradual fall in the unemployment rate were a very promising trend towards development, but this was counter to the presence of a strong correlation between GDP and unemployment. Sogner (2001) estimated Okun's law on Austrian economy, which employed quarterly data from 1970-2015 on unemployment and Gdp growth.The Okun's coefficient, which was around 2 to 3 percent, but his study estimated the Okun's coefficient to be 4.16% over the period of the study and indicating a reverse relationship between the variables. Neely (2010) observed that in industrialized countries (US, Japan and Germany) with little controlled labor markets, Okun's coefficients tended to be smaller. Justification being, it is easier to lay off workers and unemployment is more prone to demand shifts. He also added that, "The Okun coefficient would shift over time because rules, facilities, preferences, social norms, and demographics depend on the relation of Gdp growth and unemployment."

Many economists, though, challenge the Okun'sLaw. In a number of recent studies, titles such as 'The Fall of Okun's Law' (Gordon, 2011) and 'An Ambiguous Okun's Law,

Not the Right Rule of Thumb' (Meyer and Tasci, 2012) have been written. It was noted by Ciftcioglu et al (2007) and Hisarcıklar et al (2013) that the connection between unemployment and FDI inflows was strong.Shahid (2014) analyzed the effect of unemployment and inflation on Pakistan's economic growth and identified an inverse relationship between growth and unemployment. In 2010, Lal et al tested the validity of Okun's law from 1980 to 2006 in specified Asian countries such as China, India, Bangladesh, Sri Lanka and Pakistan and employed the Engle Granger co-integration and vector error correction procedure and the result indicated the invalidity of Okun's laws in the above-listed countries.Observers have suggested that each of the previous three U.S. recessions was followed by a "jobless recovery" in which unemployment did not drop as often as Okun's Law predicted. Analyses of international data indicate that in many countries the law of Okun's is contradictory (Cazes et al, 2012, for instance). Between 1994 and 2012, Banda studied the connection between unemployment and production in South Africa, but found that South Africa had a clear correlation between unemployment and Real Gdp.

Okun's rule for G7 countries was checked by Moosa (1996) and his cyclical factor is calculated using the dynamic time series model of Harvey from the production and unemployment rate. The empirical findings suggest that the coefficient of Okun's is greater in North America, and smaller Japan.Some found the relationship between the variables unrelated specially during the 2008 to 2009 Great Recession, when there was no connection between shifts in production and unemployment across nations for example (IMF, 2010).

Pierdzioch et al (2009) analyzed the correlation between Economic growth (Gdp) and unemployment within the period 1989-2007 in the G7 countries and the finding shows that a clear or positive correlation between unemployment and GDP was recorded. McKinsey (2011) maintains that Okun's law broke down due to labor market problems, such as a gap between workers and employment. His recommendation emphasizes on policies in the labor market, such as work preparation, as the key to lowering unemployment.Noormamode S. (2008) studied the impact of FDI on Jordan's economic growth within the period 1990 to 2009, using a co-integration and error correction

model. The result shows that FDI inflows have little significant impact on economic development.

Okun's rule for G7 countries was checked by Moosa (1996) and the cyclical factor is calculated using the dynamic time series model of Harvey from the production and unemployment rate. The empirical findings suggest that the coefficient of Okun's is greater in North America, and smaller in Japan. Mehra (2013), analyzed the correlation between unemployment and Gross Domestic Product in Turkey from 1998 to 2006, using the framework of co-integration and causality, and found a long-run linkage between unemployment and Gross domestic product. Jaradat (2013) investigate the impact of unemployment and inflation on Jordanian Gdp growth by using time series data for the period 2000 to 2010. The correlation between the variables was observed using SPSS, where he employed the liner regression method. His study or conclusions found that economic growth will rise by 1% if we increase inflation by 0.906 percent, and if unemployment falls by 0.697 percent, economic growth will increase by 1%. The study however reported that Gdp growth and unemployment are negatively related, and however, GDP and Inflation are positively and significant related.

Bankole and Fatai (2013) tested the Okun's coefficient and assessed the validity of Okun's law in Nigeria, using the 1980-2008 annual time series results, where the Engle granger and OLS co-integration mechanism were used. The analytical analysis depicts a positive Regression coefficient and thus suggests that in Nigeria there is an invalid definition of Okun's. The researchers suggested that policymakers should implement some economic strategies to focus more on structural adjustment and restructuring of the labor market.

Ball et al (2013) tested the validity of the Okun's law using U.S. data from 1948-1980 and data from 20 developing countries. They have shown the law ofOkun's to be a simple and secure arrangement in most of the countries in the study. They believed, however, that there was always a discontinuity or divergence from the law of Okun's, but it was found that the variations were generally minimal in size and stayed briefly.In 1962, Okun's found that if Gross Domestic Product grows gradually, then the

unemployment rate decreases, and if growth is very low, the unemployment rate rises. If inflation equals to potential growth, the rate of unemployment remains steady. A work conducted by Biyase and Bonga (2010) has implemented OLS and found the correlation between Gdp growth and unemployment to be 'paradoxical,' suggesting that the unemployment rate in South Africa is due to export production, which does not actually produce jobs, but an increase in labor force participation.

Hussain et al. (2010) investigated the link between real Gross domestic product and unemployment in Pakistan from 1972 to 2006 and a time series data was used with the Augmented Dicky Fuller Unit Root method was employed, which shows the variables were stationary at the first difference, and after which, the Johansen Co-integration was used to investigate the long-term relationship between the variables. The results of the co-integration report recognize a long-term link with growth in GDP, capital, wages, unemployment, and openness in trade. The final results reported that economic growth changes have a reverse relation to unemployment.

Ismihan (2010) and Knotek (2007) saw systemic breaks in the relation between unemployment and GDP growth. They reported that Okun's coefficient in the expansion period of the economy is lower than that in the contraction phase of the economy. Ismihan (2010) broke down the coefficient of Okun's law in and then found that Okun's law began to evolve dramatically in response to systemic adjustments in rules,administrative changes and other similar labor and good market assets over a substantial span of time. By employing the co-integration and the Durban Watson method for using time series, Kreishan (2011) studied the validity of Okun's law to the Jordanian economy from 1970 to 2008 and he concluded that the law of Okun's is ineffective for Jordan, since the lack of industrial growth does not justify the unemployment crisis in Jordan. Keller & Nabil (2002) stated that the performance of Middle East and North Africa (MENA) countries was not sufficiently proportional to the labor force of the country, not ensuring fast development and favorable labor market outcomes.

Knotek (2007) examines the association between unemployment and Economic growth (GDP) in US within the period 1948 to 1960 and from 1948 to 2007 using the continuous analysis of Okun's law and thus finds changes in the coefficient of Okun's in accordance with market phases, and during times of economic development the coefficient was significantly lower than during recession periods. Barışik et al (2010), used Markov-switching method and studied the relation between unemployment and growth in Turkey from 1988 to 2008 and found that output did not generate jobs. Al-Eid et al. (2012) examined the likelihood of the correlation between production and unemployment in the Palestinian Territories by using a simple regression model with annual data for the period from 1996 to 2011. A weak reverse correlation between production and unemployment rate was discovered by the experimental findings. A unit rise in output is correlated with a 2.05% decrease in the annual unemployment rate in Palestine and the West Bank by 0.25% and 0.31% in Gaza. Al-Ghannam (2003) presented an applied analysis using the cointegration techniques and error correction mechanism to explore the correlation between the rate of production and jobs in private entities in Saudi Arabia.A long-term correlation of employment and outcome resulting from the causality of Granger, and the existence of a causal link in just one direction from growth rate to jobs and not vice versa.

In four Arab countries, Moosa (2008) researched the relevance of Okun's law:Algeria, Egypt, Tunisia and Morocco. He finds that growth in production does not convert into gains in jobs for the four nations, which means that the Okun's coefficient is statistically insignificant.Mitchell and Pearce (2010) have noticed that the unemployment rate and Gross Domestic Product growth are going in different direction. But the change in the unemployment rate triggers Gross Domestic Product growth to be less affected related to the Okun's coefficient standard.

The world's various industrialized Asian countries are powerful measures of successfully decreasing the unemployment crisis, – for example Malaysia, Korea, China and Singapore. Furthermore, they are also increasingly expanding, as they have political stability, good governance, and sound law and justice regulations. As a consequence, global businessmen in Europe, the United States, Jordan and China from

all over the world spend randomly in these regions as a result of the economic development of these developed countries. The governments of developing countries and their representatives should strive to make their economies thrive by embracing of such Asian countries.

2.1.2 THEORIES OF ECONOMIC GROWTH

Economic growth refers to a period of sustainably improving the total national income of a nation. The process of economic growth as it progresses in the past has been researched through numerous techniques, particularly within the free market economy. Subsequent portions of this analysis will present the various models of economic development produced at different periods by different economists.

2.1.3 AK MODEL

The AK model of the "new" theoryof growth signifies the Harrod-Domar growth equation: re-visited investment and progress. The AK model suggests that learning by doing produces technological innovations as people bring money together that appear to increase the marginal output of money, thereby compensating for the trend of declining marginal output where technology is unchanged.

THE AK MODEL FUNCTIONS:

Y=AK ……equation 2

Where Y, A and K represent the following:

Y = national output,

K = capital stock,

A = a constant on the assumption of constant returns to capital

The clear return on capital principle eliminates the principle of diminishing returns to capital in the orthodox neoclassical growth theory, meaning that investment accounts for long-term growth, while growth is implicit in this case.The exogenously defined rate of labor-force production and technological innovation does not inherently determine total production, as in neoclassical theory.

The initial model of neoclassical growth (Solow, 1956) centered on translating saving into physical capital production."The constant return on capital assumption in modern production theory derives from the inclusion of other forms of reproducible capital to physical capital, such as human capital, as seen by Barro and Sala-I-Martin (1995)," The global absence of declining returns seems somewhat ridiculous, but if we assume Capital Stock (K) to include human capital, the idea becomes more plausible.Thus the, K is a composite capital measure in the above equation. Many modern growth theorists are simply dressed as neoclassical growth theorists, but it is productive for them to incorporate various sources of capital such that the theory can maintain the neoclassical concept of diminishing physical returns on capital.

Likewise, the argument in the early pressure on the neoclassical growth paradigm, – for example Kaldor (1957), the ratio of physical capital production remained comparatively stable in accordance with an increase in the amount of human labor. And it was to be highlighted, along with all kinds of technological advances, by multiple reasons that led to an increase in labor efficiency in a proportion similar to the capital-labor ratio. If K is defined as physical capital, it is evident from the above equation that the Harrod-Domar growth equation was the model that was created some 50 years ago (Harrods, 1939; Domar, 1947).

Distinguishing the equation totally by dividing it to Y shows:

DY/Y = A (DK/Y) = A (I/Y) ……. equation 3

In which,

DY/Y = THE ECONOMIC GROWTH RATE

I/Y = PHYSICAL INVESTMENT RATIO AND

A = THE PRODUCTIVITY OF PHYSICAL CAPITAL

DY/I = THE RECIPROCAL OF THE INCREMENTAL CAPITAL-OUTPUT RATIO

This is identical to the Harrod's growth equation g= s / c. If capital productivity is similar across countries, there would be a complete relationship between the growth rate of the countries and the amount of investment, wherein the slope of the correlation is the opposite of the total ratio of capital production.Therefore, there are two major problems that, considering its uncertainty, the "new" growth theory has so far been ignored. First,

how exactly can disparities in the rate of growth between nations be explained by differences in the physical spending ratio alone? Secondly, what helps understand variations in the production of labor seen as the dependent factor?Modern growth theory implicitly addresses the problem of capital development by using factors such as education, R&D expenditure, financial variables, trade, political stability, and on in growth estimates, but either Gross Domestic Product growth or per capita is the dependent variable of the cross-section or panel data measurement.

By taking inequalities as the element to be discussed in the effective production of capital or the margin of capital output, the problem was never properly tackled. Where possible, much more useful results will be obtained by the latter process.suppose the conventional method is supported, the significance of factors such as education, R&D expenditure and the initial per capita income level would also partially reflect interrelationships with differences in the investment ratio (with the exception that these factors are completely orthogonal), providing false conclusions, especially if the investment ratio was not included in the equation at all.

Barro’s early experiments (— for example, 1991) reveal this quite clearly when he finally enters the spending proportion in the model equation (almost as an afterthought) at the completion of his seminal study paper on recognizing differences in growth patterns through nations and finds that the expected class size trend vector coefficients are greatly reduced.One reason why there is nothing different about the "new" growth theory is that the AK model transforms into the Harrod-Domar growth equation with a fixed capital-output ratio. Another important explanation is that it has also been part of the post-Keynesian movement to challenge the neoclassical expectation of reduced returns on capital.

Any of these are the fact that the proportion of capital production remained largely constant or even decreased, compared to neo-classical expectations, considering the vast accumulation of capital and the development of income over time, not as much as Nicholas Kaldor in his multiple growth models (Kaldor 1957, 1961).As an elaboration on

why the capital-output ratio will be constant, Kaldor (1961) replaced the neoclassical growth model with the technological progress method. As such, as clearly claimed by Palley (1996), Kaldor is the true originator of the "new" growth theory.

2.1.4 THE MODEL OFHARROD-DOMAR GROWTH

This growth model was developed by two different economists, one working independently of the other but nearly concurrently. The observers were both R.F. Harrod, Domar, E.D. Harrod did, of course, report his findings before Domar.The thesis For a New Economy by Harrod was released in 1948, while Domar ’s book Essays on Economic Growth Theory was published on 1957. The content of the Harrod Model and Domar Model varies, but the concepts adopted in both models are so related that they have been integrated and applied as a single coherent model, more generally known as the Harrod-Domar Model (HDM).

The classical and Keynesian economic growth research was also integrated by HDM. Capital investment in the sustainable development cycle within the HDM has been influential. Both classical economics and Keynesians have recognized the critical role of capital accumulation in the growth of an economy. However, classical economists saw only the capacity of capital accumulation, because they did not take the demand side into account, believing that output provided its own market.The Keynesians, on the other hand, deviated in the reverse direction. Particularly concerned with the short term, they only found the adequacy of demand and neglected the issue of capacity expansion by investment in the long run. Many facets of the investment process have been looked at by HDM. The HDM, which theorized the continued preservation of the balance, started with the income category of the full employment level and required that the amount of output generated by the investment be able to handle the additional revenue arising from the investment. The more capital is produced, and the greater the initial national income, considering the increasing propensity to borrow.

The larger the real level of net investment would indeed be, so maintaining full work would require an ever-expanding amount of net investment. This demanded, in essence, a steady rise in real national income. Accumulation of resources and growth in sales would go hand-in - hand. A capital raise increases the economic capacity of the economy.If wage increases are not pursued, any of the latter could occur, the new capital could remain largely unknown, the new capital will be able to replace the initial capital that frees up the latter from their assets and/or markets, and the new capital must absorb workers (and probably other factors). Consequently, a capital gain that is not balanced by a raise in wages would result in shortages of capital and/or workers. Extreme capital accumulation will lead to overproduction and, eventually, to a depression-driven downturn of investment. The HDM is composed of the following: 1) the tentative degree of full employment of income subsists; (2) the running of the market is not interfered with by the government; (3) exogenous influences do not influence production variables , i.e. the concept of a closed economy; (4) no transformation lags; (5) The average propensity to save (S / Y) and the mean propensity to save (ΔS/ΔY) are relative, i.e. the real save change is relative to the conditional saving change (6) The propensity to save and the capital production ratio are constant. The constant return rule worked regardless of the fixity of the volume of capital out (7) Income, spending, and savings are all represented in the net context.

With his model, Harrod is attempting to explain how steady (i.e., equilibrium) development will take place within an economy. Systemic mechanisms continue to perpetuate this disparity, contributing either to structural instability, as steady development is interrupted and the economy is unbalanced. In other words, Harrod's development model is based primarily on addressing the following questions:(1) how can a fixed proportion of capital production (capital multiplier) and a fixed proportion of investments (propensity to save) achieve a steady growth rate? (2) How is the steady rate of growth going to be achieved, or what are the conditions for healthy growth? (3) How do human factors put a ceiling on the growth rate of the economy?The Harrod model has as its base three growth rates. The first is, the real rate of growth is represented by G. This is determined by the savings ratio and the capital-output ratio. It demonstrates cyclical, short-run growth rate fluctuations. Second, there's GR, which

reflects the justified rate of growth. It is the rate of income of maximum growth of ability within an economy.Third, the normal growth rate, represented by Gn. It is considered to be the 'maximum welfare.' It can also be named the development rate of full employment.

The three growth rates described above are represented by the following equations:

i) Actual Growth Rate (G)

GC = S

G = actual rate of growth

C = the marginal capital output ratio

S = saving income ratio

ii) Warranted Growth Rate (Gw)

Gw Cr = S

Gw = warranted growth rate

Cr = amount of capital required to sustain the warranted growth rate

S = saving-income ratio

iii) Natural Growth-rate (Gn)

Gn Cr = or ≠ S

Gn= natural Growth-rate

Cr = amount of capital required to sustain the warranted growth rate

S = saving-income ratio

The Domar method is based on the dual existence of investment. First, investment raises the economic capacity and, secondly, investment profits. The solution for stable growth is spending from both sides.

1: The investment's demand side can be associated as shown in below:

Yd = I/d ……..equation 4

Yd = Level of national income

I = net investment, which represents change in stock of real capital

d = marginal propensity to save, which is the reciprocal of multiplier

2. The supply side of the investment can be equated as follows:

Ys = σk…… equation 5

Ys = Level of productive capacity l

σ = productivity of capital

K = real capital

Investment is the core concept of the HDM. This assumes a dual function. In the one side, it generates income and, on the other, it creates competitive leverage. The enhanced potential often results in higher productivity and higher jobs, depending on the level of income. In terms of growth rates, the position regarding income behavior should be expressed.Parity for all growth rates would assure maximum employment for labor and optimum use of capital assets. Such situations, however, allocate only a steady line of progress. The true growth rate can differ from the necessary rate of growth. If the real growth rate is higher than the expected growth rate, the economy will then suffer average inflation.And If the actual growth rate is lower than the appropriate growth rate, then the economy will drift into mixed deflation.

The HDM is not immune from scrutiny, though, and it has the following restrictions.

The HDM believes that, such as the tendency to invest and the capital-output ratio, critical variables are stable. This are subject to long-term variations in the Rolling, in fact.Changes will modify steady growth requirements within these criteria. The HDM uses parameters of aggregates. The interconnections between sectors cannot be shown by a model developed on the basis of these aggregates and, as such, is not planned to demonstrate the structural changes that constitute a fundamental feature of the economic development of a developing economy.For sustained growth, the harmonious growth of the different economic sectors is very critical. While aggregate stability requirements are fulfilled, a lack of coherence between the growths of various industries will trigger deviations from steady growth. The HDM assumed that the manufacturing role was fixed, because there is no replacement system for different variables.

It is typically possible to exchange various output factors, at least to a small extent, for each other. Substitutability between different variables increases the resilience of the economy and thereby diminishes the possibilities for accumulated deviations from the direction of steady development. The HDM gives priority only to the demands of steady development and neglects the pace of growth.For developed nations whose primary emphasis is development and not growth rate, it is much more beneficial. For contrast, developed countries are more concentrated on growth rates. If they raise the rate of growth dramatically, they wouldn't mind implementing strategies that generate uncertainty.In turn, the HDM is a laisses-faire based solely on the principle of fiscal accountability and designed to demonstrate the requirements for a emerging economy to maintain progressive harmony. Thus, for developing economies, the policy ramifications are not really significant. The HDM is an efficient idea, considering these limitations, since it was a motivating attempt to dynamize and secularize Keynes' stagnant short-run saving and investing philosophy.

2.2 THE SOLOW MODEL (NEO-CLASSICAL GROWTH MODEL)

The analysis starts with the Solow-Swan model, or even the more popular Solow model for the two economists, named after Robert (Bob) Solow and Trevor Swan. In the same year, the Solow model was published in 1956 (Solow, 1956, and Swan, 1956). These two economists authored two cutting-edge papers.Bob Solow subsequently created other ramifications and uses of this model and was commended by the Nobel Prize for these contributions in economics. This policy has influenced the manner in which we examined and not only the growth in economy, but the whole macroeconomic field.

The Solow model is exceptional, considering its simplicity.Looking at it like that, people could struggle to realize how much of an intellectual success it was due to what had occurred previously. Prior to the adoption of the Solow production model, the most common approach was based on the method created by Roy Harrod and Evsey Domar (Harrod, 1939; Domar, 1946). For example, the Harrod-Domar model illustrated possible dysfunctional aspects of economic progress, such as how economic growth would go hand and hand with increasing unemployment. According to Filho et al (2005), the simple Solow growth model posits a secure equilibrium with a long-run constant rate of revenue rise.Usually, the neoclassical theory of empirical definition of the product's function consists of constant value returns, relevant boundary conditions, and the reduction of yields from all inputs and some degree of exchange between them. Assuming a constant savings rate means that each country always follows a route through an iso-savings curve.

The actual research stated that exogenous population growth and production rates were valuable simplifications during Solow's period. The Solow definition does have certain limitations, considering its originality.
Firstly, it's based on the concept of a closed structure. That is, a set of nations that have no interconnections takes on the convergence principle.Such a problem can, however, be solved if, as done by Solow, we make the statement that each model has certain erroneous findings, so if the official findings do not respond to the simplifying assumptions used, it will achieve success. For example, Barro et al (1995) and many attempts have been made to establish a development model.

The second limitation of the Solow model is that the implied capital benefit variable does not agree with the national accounting statistics.An attempt to eliminate this problem, explored by Lucas (1988), involves an extension to the capital theory of both physical, education and health. The third constraint is that the average speed of convergence, given the attempts to modify the Solow model, is too limited and has ramifications for this dimension. For instance, the Diamond model of the Ramsey-Cass-Koopmans model and Open economic variants also have greater convergence rates. And finally, the equilibrium growth rates of the controlling factors depend on the pace of technological development, an exogenous influence, because new technologies cannot be created by the entities in the Solow model.

The Solow model, considering these shortcomings, was the cornerstone of economic literature centered on the development of nation-wide profits.Indeed, conditional income divergence means that countries have a negative relationship between the current per capita level of real Gross Domestic Product and the projected growth rates of the same community. This result is obviously derived from the assumption of decreasing returns on each good, which means that, as a consequence, a country with less investment-intention continues to have more returns and higher Gross Domestic Product growth rates.In Bernard and Durlauf (1996), Barro (1997), SalaIMartin (1995) and Durlauf (2003), for example, a systematic analysis of the convergence principle and, in particular, its relevance across different calculation methods.
The Solow neoclassical growth model was also evaluated by Mankiw, Romer, and Weil (1992).The neoclassical Solow model was postulated to suit the data better if another variable, human capital, was included, dramatically enhancing the real capacity to account for income differences between countries.
Filho et al (2005), uses his analysis to address the above-mentioned weaknesses by new econometric approaches, selecting a set of nations with time series that have the same stochastic properties to allow reliable calculations of physical capital-share.

This experiment has provided a new empirical study to the Solow growth model which provides fresh indicators of wealth gaps across nations. A series of analytical

assessments for the hypotheses of economic growth has been established from the overwhelming array of extraordinary advances in econometric methods.
Islam (1995) made a major contribution in line with this structure; His article reports estimated a system of panel data for the parameters of a neoclassical model.The article admits that the leveling results serve as heterogeneous specified intercepts for the individual nations in this situation. Whereas the findings of Mankiw et al (1992) allow one to infer that human capital plays an important role in the role of development, Islam (1995) came to the different conclusion, if technical advances are included in the norm in a specific country.A random individual impact model version generated by Islam (1995) was put into effect by Lee, Pesaran, and Smith (1997), which combines heterogeneity in production mechanism intercepts and slopes by adopting a heterogeneous vigorous panel regression system. Some scholars have argued that the parameter homogeneity claim can definitely be rejected. They figured out that distinct growth rates make the concept of convergence essentially meaningless, as information of the convergence rate does not provide insight into the essence of cross-national output fluctuations over time. Most of the classical econometric theory, in turn, was based on the belief that the calculated effects existed in stationary systems. To nullify this statement, a brief look at the history of certain economic time series, or indeed the background of economic projections, is necessary, as economies develop, grow and change in both actual and theoretical terms over time. Binder and Pesaran (1999) shown that there is a way to tackle this problem, provided that the original edition substitutes a stochastic variant of the Solow model.

This requires that technology and labor be explicitly treated as stochastic unit root processes and then provide a methodological context for the use of meaningful outcomes in the expected equations of the panel-data methodology. Binder and Pesaran (1999) claim that the estimation of the convergence function is defined solely in terms of the functional random components computed in the panel data method, without further details on the convergence dynamics, if these conditions are taken into account.However, Binder and Pesaran (1999) argued that the stochastic neoclassical

development model applied in the time series of per capita output is not actually a logical incoherence, considering the presence of unit roots.

2.2.1 THE PRODUCT VARIETY MODEL

This is the third stage of modern economic growth: development models linked to product complexity based on modernism (Romer, 1990). By producing new types of products which are not immediately improved, creativity stimulates increased output. Productivity emerges from an increasing variety of specialized products that are intermediate.Slowly, the selection of products increases as it costs real resources, including time, to learn how to produce a wide range of products. Enhanced awareness (A.A. Young, 1928) induces and encourages development. For each new product, there is a set product production expense that needs to be charged only once, when the product is first released, then never again. Sunken costs can be seen as costs of production, a practice that adds to the stock of technological knowledge.Modern technology consists of a set of blueprints, each detailing how to produce a certain device, and each design introduces another blueprint (understood as basic creativity, as if opening up a new manufacturing sector) to the collection. Identifying the newest technologies with the numerous varieties is used as a metaphor. Company production prices have dropped and fixed costs have made product markets competitively monopolistic rather than completely competitive.

Profits are created by imperfect competition, and those advantages become an opportunity for creative product growth. "This makes it easier to" solve "the problem that Euler’s theorem generates (because optimal competition depletes income). Output is assisted by an increasing range of products.New innovations themselves gain from experimental entrepreneurs interested in R&D, who, whether they innovate effectively, are motivated by the prospect of (perpetual) monopoly profits. There is only one kind of innovation that always leads to a different product of the same kind. The scientific proof doesn’t seem to clearly support this model. In comparison, the economy plays no role in turnover and departure.

2.2.2 THE SCHUMPETERIAN MODEL

This is the third family of modern economic development. "Indeed, it is a growth model focused on invention and innovation, also known as the Schumpeterian paradigm because it requires" technological change "(Schumpeter, 1942): inventions created by modern advanced technologies that enhance efficiency make old goods redundant (Aghion and Howitt, 1992, 1998). From the modern theory of industrial organization, this ideology emerged and put corporations and businessmen at the middle of the production cycle. Three principal theories are the basis of the model and they are: First: survival in the long run depends on innovation. Method innovations can well be method improvements, either improving the productivity of manufacturing inputs (e.g. labor or capital); or advancements in goods (new implementation of products); or administrative improvement.Secondly, developments emerge from expenditures such as research and development (R&D), skills in corporate growth, seeking market opportunities for innovative innovators, driven by monopoly income. A critical consideration in thinking about the role of public interest in the growth cycle is that developments create substantial spillovers of knowledge (on future operation in research and innovation) that private businesses do not fully internalize.

While private laissez-faire businesses tend to be investing in R&D and planning. This propensity to underinvest is exacerbated by the existence of credit system insufficiencies that are becoming increasingly tight in recessions. Thus, as a co-investor economy, an integral feature of information for the Administration.
Thirdly: inventive death. In other words, new advances begin to replace current technology, outdated technologies, old expertise, and become increasingly obsolete.Therefore, creation requires a struggle between the old and the new: the inventors of yesterday, stopping emerging innovations that obsolete their activities. This also reveals that growth driven by creativity is associated with a higher rate of business and employee turnover in OECD nations. And it shows the government’s second position, namely as a provider of protection against the possibility of unemployment and helping employees shift from one work to another.Even most specifically, policymakers

would need to find the right balance between preserving innovation rents and not actively preventing future entry and growth.

The model begins with a production function of the Cobb-Douglas at the industry level.

$Y_{it} = A_{it} * K_{it}$,…… equation 6

K is the stream of a certain intermediate commodity used in this field, of which the end product or capital produces per unit each-for-one. The new creator (a monopolist) mainly creates and distributes each intermediate commodity. The Ait production parameter is improved by a positive innovator in Sector I and is thus able to detach the previous product in that sector before the next innovator eventually displaces it.
First assumption of the model: exponential growth typically means a higher rate of market turnover, as the arrival of new innovators and removal of former innovators is triggered by this creative development loop.The presumption that all sectors are ex ante equal provides a simple definition (Cobb-Douglas) when the focus is on individual industries. The growth rate of Factor Productivity A is, as in the neoclassical model, the long-term growth rate, which here depends endogenously on a high rate of business innovation.
The model was criticized in the following respects as well:
The 'innovator and inventor' in the Schumpeter Model was awarded as an 'Ideal Man.' But inventions and innovations are today, for days, the standard activities of industrial interests. Schumpeter also notes that, owing to inventions and changes, there are economic variations. This is not, however, right. They are created by the expectations of the consumer, psychological behavior and monetary and fiscal conduct.Once again, Schumpeter assigns the highest importance to developments and improvements in terms of economic development. Yet technologies cannot be produced in countries where capital and energy are limited.
Schumpeter relies on credit production for inventions. However, it is challenged by the argument that bank loans would support economic activity in the short term. But bank loans will, in the long run, be inadequate for such development.In such a scenario, the

creation of the industry will rely on the sale of securities, etc. It's unfair to assume that, according to Meir and Baldwin, the socioeconomic system will eventually shift towards socialism. If we look at Europe and America as imperialist countries, they have a higher degree of economic growth. They have freedom of expression and freedom of publishing. Yet there has been no chance to turn the wealthy capitalist nation into socialism so far.Whereas the opposite has arisen and the Soviet countries have been developing into 'market economies' since the collapse of the Soviet Empire.

CHAPTER THREE

GAMBIA'S PROFILE

This chapter discusses the general knowledge about Gambia and its economic history and the current economic analysis.

3.1 OVERALL INFORMATION ABOUT THE GAMBIA

The Gambia is found in West Africa with a small open economy and surrounded by Senegal on all areas except the Atlantic Ocean. The Gambia spreads to 320 kilometers downstream in widths and alongside the River Gambia varying from 24 to 48 kilometers with a very limited natural resources and a high density in the rural population. As of 2018, The Gambia's rural population was 38.73% with its maximum value as 87.87% in 1960, while its lowest value in 2018 was 38.73% and an estimated total population

density of around 225 inhabitants per square kilometer. The amount of human capital in Gambia is relatively stable as demonstrated in 2015 with a balanced literacy rate of 50.78%. This has improved considerably from 6% in 1962 before independence and 20 percent of the citizenry above 15years in 1985. (The Gambia Bureau of Statistic, (GBoS 2019)).

From independence i.e., 1965, and up to 2018, the average value for primary school enrollment in Gambia was 64.6% with a minimum of 24.33% in 1972 and a high of 98.01% in 2018 and for secondary school enrollment, an average value of 18.55% with a minimum of 7.61% in 1971 and a high of 50.13% in 2010 respectively. A military coup d'état occurred in July 1994, following 30 years of democratic government, bringing Colonel Yahya Jammeh to leadership. He led the transitional ruling council from 1994 to 1996 and then got elected as President in the 1996 election. Yet, after 22years of his service, President Yahya Jammeh, who is widely considered as an authoritarian leader, lost to President Adama Barrow in the December 2016 presidential election. From independence which was 1965 to date i.e., 2020, the Presidential election in December 2016 led to the first democratic change presidency in Gambia. Fellow West African nations' interference and military assistance led to the diplomatic overthrow of Ex-President Yahya Jammeh after he initially failed to relinquish power.The economic future thus relies greatly on the capacity of the new administration to conduct a seamless and rapid transition, balance budgets, rebuild participant confidence, stabilize the economy and draw back tourists and lay the basis for sustainable development.Over the past decades, Gambia has witnessed some degree of economic shift, the country has not significantly increased the share of the manufacturing sector in the economy by 15 per cent in 2013, up from 12 per cent in 2004, or increased the added value of production. Challenges to economic growth include inadequate regional coordination, lack of sufficient and low-cost in the accessibility of electricity and under-optimal infrastructure and education.Entrepreneurship has not taken off as well. Restrictions include a non-enough expertise in entrepreneurship and systematic shortcomings in the business climate including challenges to access funding and capital, heavy taxes and sub-optimal administrative procedures.Gambia is part of the few nations in West Africa that are not part of the West African Monetary Union also

called the French-colonized CFA franc region. The currency of Gambia is dalasi and is issued by the Central Bank of Gambia which floats against foreign currencies. By the end of the 19th century, the British began their rule on the Gambia River by Bathurst, a small former slave settlement now called Banjul the capital of Gambia, rendering the country an outpost within Senegal.

3.2 STATISTCAL ANALYSIS OF GAMBIA'S ECONOMY

The Gambia has a very little natural resources and a gross domestic product per capita of roughly D35.084 which translates to$716 (World Investment report (2019)). Agricultural production is a vital source of income in the country, whiles its share of total actual GDP has decreased from 35% to 19% over the past eight years which is from 2010 to 2018. The primary component of Gross Domestic Product in The Gambia is the service industry, and it rose from 49.20 % points to 56.51 % points with 2010 to 2018(World Investment report (2019)).

While the first ten years of independence were governed by comparatively stable conditions and a series of adverse external shocks with insufficient domestic policies which resulted to a significant reduction in overall performance of the economy.In the same vein, the public sector scale has significantly expanded, pointing to an ever-greaterfiscal imbalances. Gambia initiated significant institutional reforms under the institutional and stabilization programs sponsored by the International monetary fund and World Bank beginning in the mid-1980s under the umbrella of the Economic Recovery Program (ERP) and the program for Sustainable Development (PSD). The concept behind the intended course was to break the economic stagnation and lay the groundwork for sustainable economic growth. Important components of the recent changes included a relaxation of the exchange rate which included drop in the value of the Dalasi and exchange-market liberalization.

The PSD aimed to encourage development and modernization by improving the ties between the financial and real sectors of the economy. The International Monetary Fund (1999) sub-categorized the economic history of The Gambia into four main sub-periods and they are: The period between 1964 to1978 which was before economic downturn in

sub-Saharan Africa grew rampantly, the period between1979 to 1986, which included both economic decline and the beginning of transformation.1987to 1994, which saw the military invasion and the drop in the value of the CFA franc, 1995 to1998, which followed the removal of the CFA franc overvaluation in neighboring countries and for the aim of this analysis, the study would analyze the various periods under discussion. A rapid decline in real economic growth occurred during the period from 1979 to 1986, which covered the period of economic depression and structural change under examination. In general, the internal and external differences resulted from substantial increases in import prices, especially for crude oil mostly during 1970s.

A dry spell throughout the Sahel, relatively low peanut market prices, declining funding assistance and insufficient monetary and fiscal policies contributed significantly to this growth. The exchange rate was the benchmark against the pound sterling and was deemed overvalued and the economic conditions worsened.And hence, the unsuccessful military coup in 1981 geared towards removing the government of President Jawara, halted by the intervention of the Senegalese pressures, culminated in a decrease of around 20% in tourist arrivals. These factors led to a fall in economic development and a drop in investment ratios, but steadily showed signs of improvement. In the same vein, the real Gross Domestic Product growth rate was estimated at 5.33percent under national income and prices showing a 22.75 % fall in the overall real Gdp value from the first sub period. However, Gross Domestic Product per capita declined to 1.46%, while its amount rose by around 34.7%. The GDP deflator index was approximately 32.4 %, an improvement of about 146 % from the first sub period(World Bank indicators 2020).

Gross domestic expenditure as a component of Gross Domestic Product was at 23.93 percent, implying a decrease in its value of around 28% from the first period. Private investment as a component of Gross Domestic Product was also at 13.30 %, implying a fall in value of almost 32 percentage points relative to the first era. At the time, the inflation rate was also at 17.17 %, showing a massive increase in its value of around 18.3 % relative to the first quarter. Consequently, revenue and grants for the government's budget as a percentage of Gross Domestic Product recorded a 20-

percentage point rise in its value relative to the first cycle at 24.18 %. Gross spending and likewise net lending as a percentage of Gross Domestic Product was 32.61%, implying a 28% decrease in valuation relative to the first era.As a percentage of Gross Domestic Product, capital spending was 10.63%, implying a fall in its value and has about 23 percentage points relative to the first period. Over this time, the growth in the real amount of gross expenditure was the outcome of an increase in the magnitude of the public sector.

In 1986, the reform of the exchange rate, which was a significant part of the Economic Reform Program, led to a nominal depreciation of the exchange rate of about 78%. As a result of this fall, true product prices can be increased for groundnuts and other crops without having a negative effect on foreign trade. Despite a high inflation rate in 1986, there was no rise in the overall price of non-traded commodities due to depreciation. The fiscal situation declined dramatically in between late 1970s and mid-1980s. The ERP revenue initiatives included the implementation of a sales tax and tax base growth and tax structure reinforcement. External trade taxes have been reformed to promote competitiveness and improve the economic opportunities mechanism by removing all aggregate barriers, rationalizing import duty, reducing import and export taxes, introducing a sales tax and merging all but three basic duty with Advalorem duties.

Another unforgettable time in Gambia was 1987 to 1994, i.e., change from democratic rule to the Military Takeover, Gambia experienced considerable growth in its economy, falling inflation, and a rise in the competing position of the country in the period, despite the 1986 depreciation of the dalasi and the robust efforts in balancing the budget of the government.The latter result can primarily be due to the average decline of about 18% over the period of the actual exchange rate. In 1987 to 94, the government decreased the budget deficit to an estimated 0.6% of GDP, relative to the 8.5% reported during the previous sub period. That being dealt with, this effective fiscal expansion was not followed by an improvement in the country's capital expenditure, whose ratio to Gross Domestic Product dropped with an average of 11% in the period 1979 to 1986 to an average of 6% during 1987 to 1994. The total investment

ratio dropped by roughly 5 percentage points as private investment continues to remain somewhat stagnant during that period.

A major consequence of the 1994 military coup was that Gambia was in a difficult position to get support from its donors. Real GDP growth on average was around 2.5% between the period 1995 to 1998, and the real GDP per capita income declined gradually by 0.8% during that time. This decline was not surprising provided that the population of Gambia grew by 3.5% on average within this period.The average decline in per capita real GDP was largely due to the drastic 6.25% decrease reported in 1996. Similarly, the low overall real average growth rate of 2.5% over the period was largely the result of the sharp downturn of 3.5% in 1996 growth(World Bank indicators 2020).

The coup had negative impacts in Gambia as the Gambian economy moved away from an agricultural sector-oriented to a service-oriented economy with tourism and commerce as the key contributors. The United Kingdom and Scandinavian issued travel notices during the period 1994 to 1995 which have resulted in a decline of about two-thirds in inbound tourism. There were no major improvements to the investment aspect in the period 1995 to1996. Though public-sector capital expenditures grew to 9.5% of Gross Domestic product, private investment plummeted to approximately 9.5% due to investors' loss of confidence after the coup. During the period 1994 to 1995, monetary policy wassignificantly loosened by the military authorities, and inflation remained high at about 7% during those two years.

The central bank's tight policy position was largely responsible for raising the average inflation during 1995-98 to 3%. Fiscal outcomes were less optimistic. The annual fiscal deficit was 6.5 % of Gross Domestic Product, despite reform efforts undertaken by the government after the general elections in early 1997. The period 1995 to 1998 was marked by substantial overspending, rising interest rate pressures and overcrowded investments.

For 1999-to-2012 timeframe, the key economic growth drivers for the Gambia were agriculture and the tourism industry. However, the real Gross Domestic Product growth rate have been influenced by fuel price fluctuations, the 2008 world financial crisis and

the 2011 food supply crisis due to insufficient rainfall and irregular rainfall trends. Nonetheless, real Gross Domestic Product growth accelerated with an average of 5.9% in 2003 to 2006 to around 7% in 2007 and slipped to 6.3% in 2008 which was companied by a robust growth in tourism, construction and agriculture. Against the global financial crisis and its effect over the years on tourism, various industry productivity, re-exportation and expansion, led to a reduction in the Gross Domestic Product growth rate in the year 2009.

Despite the effects of the world crisis on tourism, FDI and remittances, the Gross Domestic Product growth rate in 2010 was 5% compared to the best performing economies in the Economic Community of West African States (ECOWAS) region. Significant increases in agricultural production, underpinned by good rainy seasons and government funding for the expansion of the upland rice production program, have largely driven development.Then again, the projected real GDP growth of 5.5% in 2011 intended to improve the macroeconomic structure required to further strengthen the enabling environment for accelerated and sustainable development and to mitigate poverty was not really achieved due to the food crises resulting from the agricultural production climate conditions.Over the first half of 2010 revenue reverse on the fiscal front declined, resulting in a 0.5% increase in budget deficit. Rising costs for fuel supply led to a decrease in revenues and poor growth in the non-agricultural segments of the economy whiles lessening the corporate tax base.

Corrective steps used by the Government included rising petrol prices, regulating expenditure and prioritizing expenditure in order to minimize domestic debt compared to Gross Domestic Product, reducing net domestic borrowing to 0.4% of Gross Domestic Product. Trade deficit in the export sector plummeted to 10% of Gross Domestic Product in the year 2010.This was related to an improvement in export demand, higher local agricultural food production to reduce imports, the Gambia Groundnut Corporation’s successful promotion strategies and the development of the Gambia Transport Association aimed at enhancing the growth and re-export of groundnut exports.

As a percentage of GDP, the Capital Account reported growth in travel revenue of about 11%, reflecting the turnaround in the tourism sector and a 10% rise in remittances in 2010. FDI plummeted by 14% and gross international assets remained at 121 million Dollars.As regards to the reserve and broad money, monetary aggregates grew at a fast rate of 21% and 20% respectively which exceeding the Central Bank of the Gambia's monetary objectives. The government's higher-than-anticipated use of CBG funding, led to quick reserve currency growth.

The Central Bank of The Gambia, continued to maintain a free-market exchange-rate stance, responding only to sustain stable market trends that would encourage the dalasi to reflect its real value. Important development has been taken on the public financial management measures, with technical assistance given by the International Monetary Fund and the Donor Partners.The policy plan involved developing an effective financial reporting and information framework, strengthening the procurement process and eventually introducing a medium-term allocation system, and planning services for the budget. The planned benefits from the National Financial Planning initiatives extend from the full adoption of Integrated Financial Management Information System (IFMIS) which manages the budgeting and accounting of the government and greatly enhanced accountability and transparency in the way resources are utilized. IFMIS has already been implemented in government departments and funding agencies, to the completion of a formal arrangement between the ministry of Finance and Economic Affairs and the Central Bank of The Gambia on the IFMIS requirements for the adoption of the Domestic Financial Services regulations on the Payment System whiles designing the Internal Medium-Term Expenditure Mechanism (MTEM) in the planning of the 2013 budget in at least two government agencies.

Government slippages, poor financial planning and higher labor costs have had a drastic and detrimental impact on the fiscal situation of the nation from 2013 to 2018. The gross fiscal deficit rose from 1.7% of Gross Domestic Product in 2008 to a peak of 10% in 2014, raising the projected spending rate. The deficit was about 7.3% in 2016 whiles gross investment was expected to reach 3% of Gross Domestic Product due to a high interest cost and capital spending. in the same vein, tax revenues

and grants increased to 23.7%of Gross domestic product in total, but it was not enough to account for the spending increase.The improvement of fiscal reserves was a primary concern in the year 2017 and 2018. Importantly by controlling the pay schedule, tightening fiscal control and complete engagement in public sector auditing and restructuring.

The national debt is heavily funded by local deposits, due to the difficulty of mobilizing international financing.Indeed, contingent debt owned by state entities are a major factor, and reforms are expected to mitigate fiscal pressures in the near future. Altogether, since mid-2013, the 1year money market borrowing rate of interest resulted in a 10 % boost.The Gambia's Expanded Credit Facility (ECF) has been stripped away with the IMF by weak domestic economic regulation and usual government downturns.In March 2015, the nation entered into imminent financial assistance as part of the accelerated loan scheme to enable the government to fulfill its immediate balance of payments and budgetary requirements.

However, In May 2015, the presidential office released an executive order fixing the exchange rate at a pace that was far more than 20% overpriced relative to the real market price.Though this was repealed in January 2016, the incident resulted in a capital shortfall and delayed operations to finance the partner-programmed scheme, putting a higher pressure on the economy and leading to increased borrowing.With regards to monetary policy, the Central Bank of the Gambia has continued to use the instruments available to control rising inflation, maintaining inflation at a single stage, though inflation has risen from 6.8% in 2015 to 8.3% in 2016. In June 2015, the Central Bank of the Gambia decided to keep the target cap at 23% after a one percent increase in 2015.

Extending from 2015, initiatives to strengthen capital discipline and projections have been pursued by close cooperation with the Ministry of Finance and Economic Affairs. Monetary aggregates deteriorated in 2016 as large currencies dipped by 0.2% in the mid of the year, reflecting a major drop in net foreign reserves of banks.By contrast, in the mid of 2016, the gross domestic capital of the banking sector had grown by

35.20% and equally, the net government estimate of the banking sector increased by 29.1%. This is proven by the fact that the local financial system financed the state fiscal policy, thus further revealing its weakness. The Central Bank of the Gambia expanded the foreign currency aggregate of banks to open in 2015 positioning to raise liquidity in the foreign currency, increasing barriers for import-export firms. In reality, in interbank trading, the presidential office put an overpriced exchange rate and nominal exchange rate by Fifty percent.The removal of currency controls in January 2016 alleviated the crisis, enabling stock-building to hit almost three months ' worth of imports earlier in the year, while businesses were still hurt by other regulatory constraints in place.

3.3 WORLD DEVELOPMENT INDICATORS (WDI) LATEST ECONOMIC ASSESSMENT OF THE GAMBIA

The GDP of the Gambia grew by 6% in 2019, compared with 6.5% in 2018, according to World Development Indicator (2020). After Thomas Cook UK ended, sales grew by 10%, supported by wholesale and retail trade. Agriculture contracted by 10%, owing to erratic conditions.Strong public and private investment on the demand side had pushed growth. Public spending was assisted by externally financed programs (9.8% of Gross Domestic Product), while private sector credit grew massively (y-o - y growth of 35.8%). Inflation accelerated from 6.5 percent in 2018 to 7.1 percent in 2019, reflecting a dip in the gap in production and the impact of a one-off rise in administrative costs.

In 2019, the country maintained a stable economic condition and actually reduced public debt by about 3.5% of GDP to 2.6% of GDP in 2019 (linked to a balanced budget of 0.6%). Total taxes (with the exception of subsidies) have increased significantly, powered by strong tax efficiency.Present spending increased by 1% of Gross Domestic Product in 2019 compared to 2018 to meet a 50% rise in civil sector incomes and higher expenses on public services and peace building services. Interest rates dropped from 26.1% of national sales in 2018 to 22.3% in 2019. Public debt fell from 86.7% of Gross Domestic Product in 2018 to 82.5% in 2019.

On 11th February 2020, the International Monetary Fund signed a staff-level agreement with Gambia on a three-year Extended Credit Facility framework amounting to around

$48 million. This agreement will help to speed up the required financing from several other international partners to enable Gambia to deliver on its productive potential and fulfill important or vital needs.

3.4 POPULATION SIZE OF THE GAMBIA

In Gambia, provisional estimates of the 2013 Population and Housing Census conducted by The Gambia Bureau of Statistic (GBOS) indicate that 1,882,450 individuals have been enumerated. This preliminary count indicates an improvement of 5.6% over the 1,783,424-population expected for 2013. This variation can be due to a variety of reasons, one of which, comparison to 2003, is a potential increase in the 2013 census distribution.The substantial decrease in population growth rates from 4.2% over the 1983 to 1993 inter-censual period to 2.7% during the 1993 to 2003 period is a potential indicator of a 2003 undercount of the population. Compared to the number of residents mentioned in the 2003 census, the provisional population count shows an absolute increase of 521,769 residents (or 38.3 %).
Overall, the provisional population shows that Gambia's population has increased gradually since the start of a full census in 1963, increasing from less than a third of a million people in 1963 to 1.4 million people in 2003 and now 1.9 million people in 2013.For decades, the gradual growth in the size of the population, has some policy consequences for all sectors, especially the sectors of health, agriculture, education and housing. With the steady growth in the population, the need for resources and land bot for residential and agricultural use is also growing.With a growing adverse global economic climate and rising environmental issues, a rising growth at this pace will continue to pose challenges to progress.

On average, during the 2003 to 2013 inter-censual period, The Gambia's population increased at a rate of 3.3% per year. With this rate of demographic increase, it is estimated that the population of Gambia will double in the next 21 years. Comparing the present rate of population growth to the reported average growth rate of 2.7% over the inter-censual period 1993 to 2003, the population growth rate has drastically increased over the past 10 years. One would have predicted that the population growth rate would

have decreased with measures aimed at decreasing immigration, assuming zero net migration. This unprecedented trend in population growth rate can be linked to enhancements in 2013 Census coverage over 2003 and dropping death rates. As predicted, the population movement out of Banjul (which is emigration) outweighed the input of births and in-migration to Banjul's populace, leading to population decline over the inter-census period. By comparison, the population in the local government area of Brikama (LGA) increased by an average annual rate of 6.1%. The extraordinary rate of population growth reported by the LGA is due to the migration of migrants from outside the country and from other parts of the country.

ALLOCATION OF THE 2013 LOCAL GOVERNMENT POPULATION BY SEX

Overall, preliminary figures from the 2013 population census showed there were more females in the Gambia than males. 50.5% of the population counted is female compared to 49.5% male, according to the findings. The results also showed that Local Government Areas (LGA) that are primarily urban appear to have more males than females, while those that are mostly rural appear to have more females than males.This can be due to the migration of men in search of better paying work from rural to urban areas and also, migration of migrants from outside the country to the urban.

Sex ratio refers to the number of males in a population, per 100 females. The pattern seen indicates a greater female population. Overall, there are 98 males for every 100 females in The Gambia.

CHAPTER FOUR

METHODOLOGY

The chapter explained the kind of data and econometric approaches used to research on the impact of growth rate on unemployment, as well as the types of factors used and how these variables were used to measure the impact.

4.1 DATA SOURCES

For the regression analysis spanning from the period 1991 to 2019, this analysis collected annual time series data and was later converted to quarterly time series data by using the quadratic-match average in increasing the number of observation on

unemployment, growth rate, inflation and foreign direct investment. The data used in this analysis came from the World Database (2020) as a secondary source. This study thus reported economic growth as growth level, and unemployment as the total number of unemployed workers relative to the labor force in the Gambia.The main type of unemployment in Gambia is technological and structural, with technological advances continuing to boost production, resulting in an increase in unemployment. Therefore, four factors will be evaluated: unemployment, growth level, inflation and foreign direct investment. The thesis based on the Okun's law model that identified the dependent variable as unemployment rate, while economic growth as GR, inflation, and foreign direct investment are the explanatory variables.

4.2 MODEL SPECIFICATION

Below is a model of the variablesused in this study and unemployment is modelled as a function of gross domestic product, inflation and foreign direct investment.

The model of the study is therefore, specified as follows:

$$URt = \beta 0 + \beta 1 GRt + \beta 2 INFt + \beta 3 FDIt + U \quad \text{……Equation 7}$$

Where

URt is unemployment rate

GRt Growth rate

INFt is inflation rate

*FDIt*is the foreign direct investment

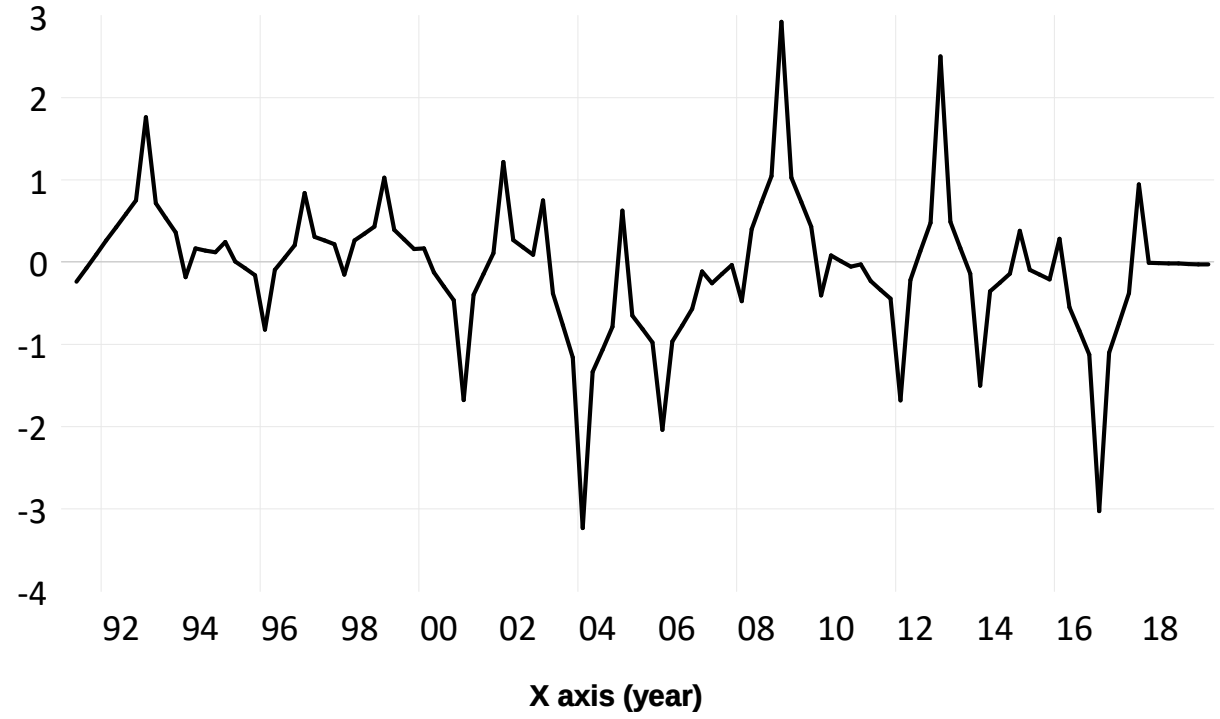
U is the unobserved or error term

The slope parameters areβ1, β2 and β3

4.3 GRAPHS OF VARIABLES USED IN THE STUDY

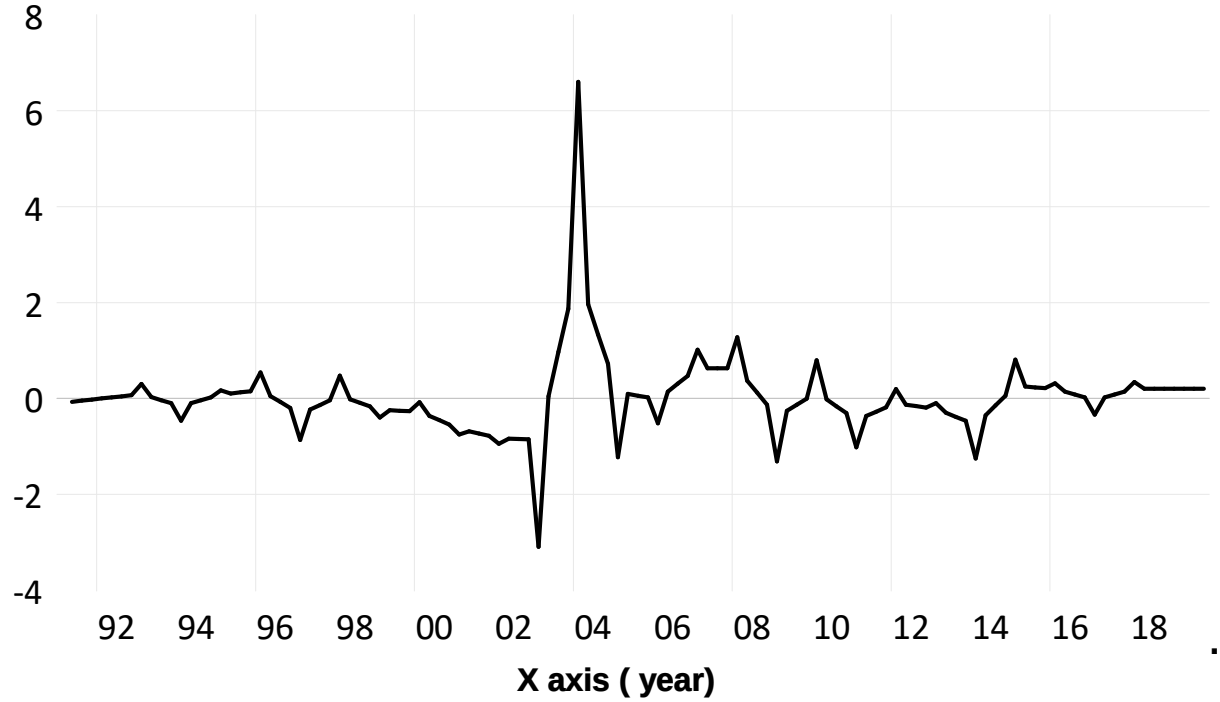
% CHANGE UNEM

Y axis (Unem rate)

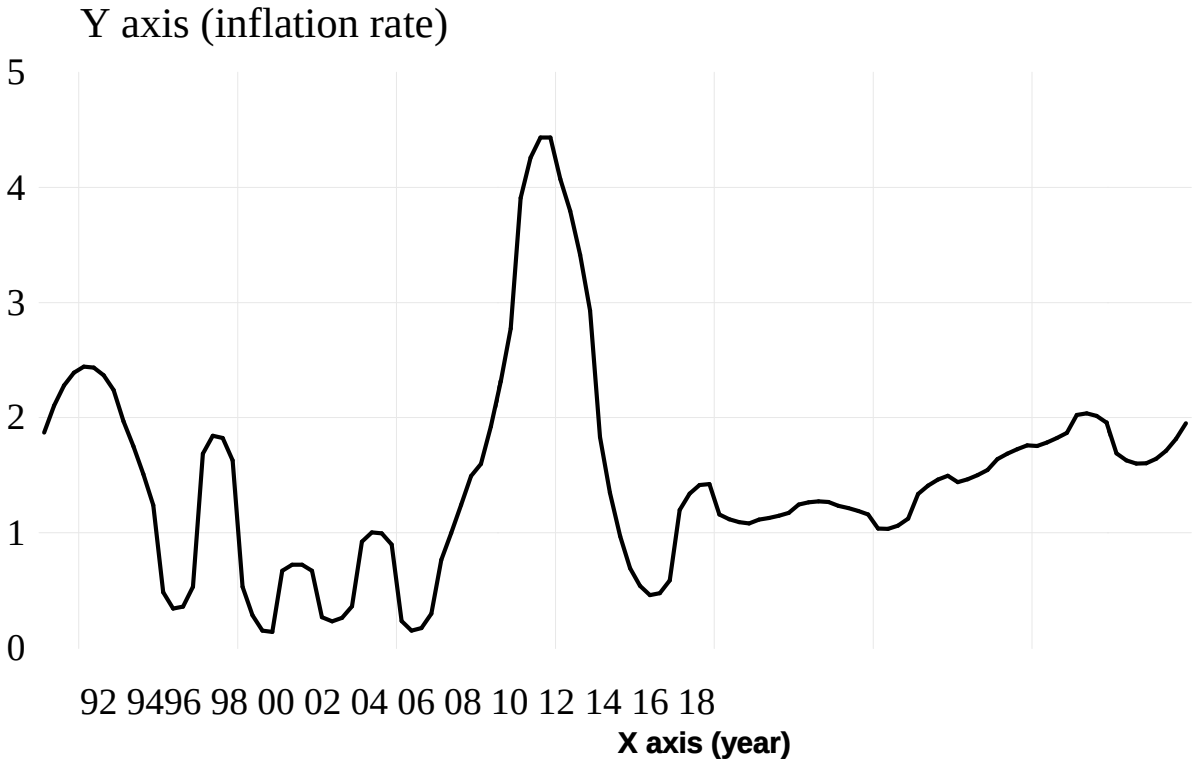


GROWTH RATE

Y axis (GR)

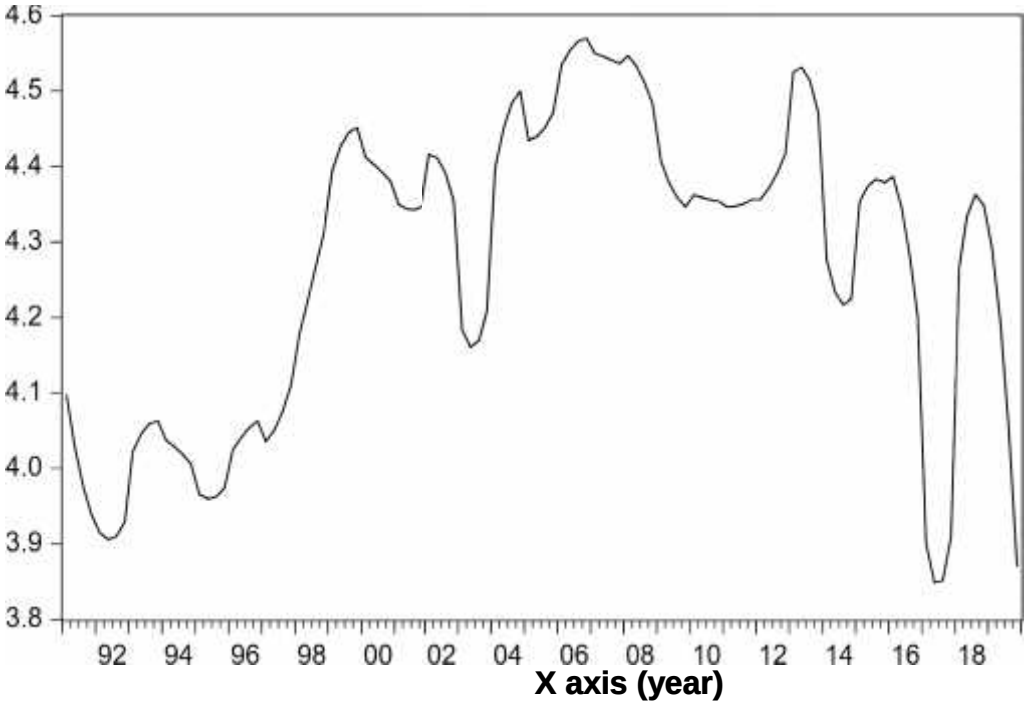


INF



LFDI

Y axis (% FDI)



4.4 <u>DESCRIPTIVE ANALYSIS</u>

The descriptive analysis a mathematical description that quantitatively outlines or explains the characteristics of the data set which helps to obtain or measure the central tendency (mean, median and mode), the dispersion (standard deviation) and to also understand whether the sample of our data is normally distributed(kurtosis, skewness and Jarque Bera). The findings of the descriptive analysis below, shows the effects of the variables used in the model, and the findings report the key trend parameters,i.e., the mean, median, minimum, maximum, standard deviation, skewness, Kurtosis and Jarque Bera. The mean is the sum of all the values in the data set and then divides it by the reported number within the data set.Therefore, themean results report the mean value of unemployment rate as 2.447960, growth rate as 0.015791, inflation rate as 1.462017 and foreign direct investment as 4.270050. The median represents the middle value after sorting observations from the highest to the lowest values or vice versaand the median result reports the unemployment rate as 2.427758, growth rate as -0.019748, inflation as 1.348050 and foreign direct investment as 4.348433. The skewness helps to measure the degree of asymmetry of the series and a positive skewnessimplies that, the distribution will have a higher long right tail, meaning there are higher values than the sample mean whiles negative skewness implies that, the distribution will have a higher long left tail, meaning there are lower values than the sample mean. Therefore, the statistical skewness reports that, unemployment and FDI are negatively skewed whiles growth rate and inflation rate are positively skewed. The skewness values for unemployment rate, GR, inflation and log of FDI are -0.084674, 3.580335, 1.248186 and -0.493029 respectively.

The Kurtosis statistics measures the peakness or flatness of the distribution of the series and a mesokurtic contains a normal distribution with a kurtosis value of 3 and if it is leptokurtic, it means it has a positive kurtosis (peaked curve) with more higher values than the sample mean whiles being platykurtic implies that it has a negative kurtosis (flatted curve) with more lower values than the sample mean. The kurtosis results show that unemployment rate and foreign direct investment are platykurtic i.e., they are less than 3 and have a negative kurtosis (flatted curve) with lower values than the sample mean. Whereas GR and inflation rate are leptokurtic i.e., they are more than 3 and have a positive

kurtosis (peaked curve) with more higher values than the sample mean, the probability of the Jarque-Bera statistics shows that all the variables are not normally distributed at all percentage level over the period of this study.

TABLE 6: DESCRITIVE ANALYSIS RESULTS

	UNEM	GR	INF	LFDI
Mean	2.447960	0.015791	1.462017	4.270050
Median	2.427758	-0.019748	1.348050	4.348433
Maximum	2.666078	6.602987	4.433569	4.570055
Minimum	2.205742	-3.094326	0.137097	3.848741
Std. Dev.	0.134591	0.866415	0.906290	0.203274
Skewness	-0.084674	3.580335	1.248186	-0.493029
Kurtosis	1.884005	31.81107	5.161401	2.013102
Jarque-Bera	6.105175	4223.149	52.24609	9.325918
Probability	0.047237	0.000000	0.000000	0.009438
Sum	281.5154	1.815936	168.1320	491.0558
Sum Sq. Dev.	2.065078	85.57690	93.63517	4.710514
Observations	115	115	115	115

Descriptive Statistics – Common Sample

4.5 UNIT ROOT

The study employed the unit root for the Dickey- Fuller Generalized Least Square(DF-GLS), Kwiatkowski- Phillips- Schmidt-Shin (KPSS), Augmented Dickey Fuller (ADF) and the Philips-Peron (PP) test. As for Hamilton in 1994, in the face of serial interaction and heteroscedasticity, the stationary test of the PP is usually known to be effective than ADF because PP is stable and robust, though it has its own limitations.The study used a standard measurement framework proposed by Pesaran and other cointegration forces by an autoregressive distributive lag process by Pesaran 1997, Pesaran and Shin 1999, and Pesaran 2001, which is the boundary checking strategy.

UNIT ROOT TEST

The unit root test is usually done to determine whether a time series data is stationary or non-stationary. A stationary time series has a constant mean ($\bar{x}$), variance (σ^2) and auto covariance overtime.However, if a time series is non stationary, we often apply difference in making it stationary. Gujarati (2004) highlights that regressing a time series that is non stationary on one or more non stationary time series can create a spurious regression. And, it is also vital to verify the stationarity of time series data when working with time series data to prevent a spurious regression. However, another explanation for conducting stationary tests is the outcomes collected from a time series which is non stationary, can be seen for the specific span of time and cannot be extended to the future.

Thus, non-stationary time series can be of very less practical value for future predictions Gujarati (2004).The steps of the empirical analysis consist of performing the standard unit root tests and then to provide a robust conclusion on the order of integration, the Zivot Andrews (ZA) test has been implemented. The results show that the variables are in I (0) and I(1) order of integration such that only the Unemployment rate and Foreign Direct Investment are non-stationary at level whiles the FDI is only not stationary at the first difference of the DFGLS but stationed at the rest of the other methods i.e. KPSS, ADF and the Philips-Peron test. Under the first difference scenario, when we compare the results of DFGLS with KPSS and more importantly, with the ZA results, we can see that the variable (LFDI) is indeed I (1). DFGLS test suffers from low power in the presence of structural break and that is why Carrion-I-Silvestre et al. (2009) developed a new test framework allowing for the break(s). Theresults is represented in the table below:

TABLE 7: UNIT ROOT TEST RESULTS

			LEVEL				
	ADF	PP	DF-GLS	KPSS	ZA	Break	Order of Integration
UNEM	-1.172	-0.766	-1.381	0.788***	-4.038	2003Q2	**I (1)**
INF	-1.656	-2.631*	-1.991**	0.081	-5.307**	2003Q3	**I (0)**
FDI	-1.902	-2.408	-1.291	0.508**	-2.29	2002Q3	**I (1)**
GR	-4.734***	-5.283***	-4.741***	0.073	-6.146***	2003Q2	**I (0)**
			First Differences				

UNEM	-2.775*	-5.242***	-2.791***	0.205	-5.791***	2004Q2	--
INF	-2.787*	-12.744***	-1.619**	0.018	-5.075***	2004Q2	--
FDI	-2.723*	-5.701***	-1.001	0.269	-5.677***	2003Q4	--
GR	-5.555***	-40.123***	-5.576***	0.123	-8.048***	2004Q3	--

Note: The null hypothesis is that the series has a unit root in the ADF, PP, ADF-GLS, and ZA tests, whereas the series is stationary under the null hypothesis of the KPSS test. ***, **, and * denote significance at the 1% ,5% and 10% levels, respectively

4.6 CHOW STRUCTURAL BREAK POINT TEST

A structural break is when an event has affected the trend of a particular series or when a movement in a particular series is distorted or truncated. The issue of structural break is such that, the conventional test like ADF, PP and so on are usually weak in the face of structural break. A break is an intermittent shock that has a permanent effect on time series. However, if during the unit root testing the break is not specifically accounted for, then the standard unit root test like ADF and PP might misinterpret the structural break for unit root and then report inappropriately, and because of that, it is generally essential for one to go to a unit root protocol that clearly accounts for the structural break possibilities.From the result above, the Zivot Andrew unit root test was employed to verify for the existence of structural break in the variables and the results of the above table show that, there exist a structural break in the second quarter of 2003 for unemployment and growth level whiles in the third quarter of 2003 for inflation and FDI.

The chow test can also be used to verify for a break in a model and if exists a break, then we can re specify and estimate the model with structural break through employing a dummy variable to check for its stability upon completion of test. The dummy variable can take zero or one values, wherein zero represents years before the date of the break and one represents the date of the break and afterwards. From the result below, the chow breakpoint test was conducted with a break date in the second quarter of 2003 and a null hypothesis of no breaks at specified breakpoint. The results show a significant f value of 0.0000 and indicating a significance at all percentage level and resulting to a rejection of the null in favor of the alternative which states that, there is a break point. As of 2003, Gambia has taken several significant measures for macroeconomic stability, with improvements in fiscal deficit management, curbing

money growth and inflation, and strengthening fiscal and monetary account transparency. None the less, with the "stop and go" strategies of the past decade and the economic condition, the authorities certainly have yet to split with them.

In the 1990s, high budget deficits and, more generally, monetary sterilization of capital inflows contributed to an unprecedented rise in domestic debt, which in 2005 hit 36% of GDP. While lower than the international debt (at 138% of GDP in 2005), the concentration of domestic debt is more critical owing to a much higher service burden and its ineligibility for debt relief. Domestic lending bears very large interest rates, with a variety of detrimental implications, whereas international financing is extremely concessional. The growing stock of Treasury bills drives up interest rates, increasing the debt in exchange, generating an impossible circle that is hard to break. Creditors from the private sector are squeezed out while banks may receive decent returns from merely owning Treasury bills. High conditions for debt servicing place a fiscal burden on public finances, pushing the government to cut expenditure on infrastructure and/or to increase taxes, negatively impacting the private sector.

CHOW BREAKPOINT RESULT TEST RESULTS: 2003Q2

F-statistic	54.62003	Prob. F(4,108)	0.0000
Log likelihood ratio	128.3236	Prob. Chi-Square(4)	0.0000
Wald Statistic	218.4801	Prob. Chi-Square(4)	0.0000

4.7COINTEGRATION TESTS RESULTS.

Upon deciding the variables are stable, then the next method is to conduct cointegration tests to assess if there is a long-term connection among variables. In this analysis, the purpose of co-integration is to analyze the long-term association between unemployment and the independent variables i.e. (GR, INF and LNFDI), and this will also help to draw valuable economic conclusions depending on the results acquired. The regression below shows the ARDL long run and bounds test in analyzing the short

and long run relationshipwith unemployment as the dependent variable and the independent variables (GR, INF AND LFDI) with lag length 2, 1, 0, 0, 2 for Unemployment, GR, dummy(which takes 0 or 1 values), FDI and inflation respectively.

However, with the long run and bound test result, we consider the value of the F statistic and then compare it to the I (0) and I (1) values. Following the criteria,suppose the f value is less than the I (0) values, then we will not reject the null hypothesis that reports a no cointegration among variables and in the same vein, if the f value is greater than the I(1) values, then we reject the null in favor of I (1) which shows or reports cointegration among variables.

From the result below, the reported f statistic4.259468 is above the I (1) value at 5% significance level, which supports a long run cointegration bound among the variables i.e. there exists a long run equilibrium in the variables.

F-Bounds Test		Null Hypothesis: No levels relationship		
Test Statistic	Value	Signif.	I(0)	I(1)
			Asymptotic: n=1000	
F-statistic	4.259468	10%	2.45	3.52
k	4	5%	2.86	4.01
		2.5%	3.25	4.49
		1%	3.74	5.06
			Finite Sample: n=80	
Actual Sample Size	114			
		10%	2.548	3.644
		5%	3.01	4.216
		1%	4.096	5.512

t-Bounds Test		Null Hypothesis: No levels relationship		
Test Statistic	Value	Signif.	I(0)	I(1)
t-statistic	-4.018125	10%	-2.57	-3.66
		5%	-2.86	-3.99
		2.5%	-3.13	-4.26

	1%	-3.43	-4.6

4.8LONG RUN ANALYSIS

The long run results of the study imply that, holding all other factors constant, i.e., LFDI and INF, the coefficient of the growth rate -0.006517 with a highly significance p value of 0.0006 has a negative linkage with the dependent variable (unemployment) since it contains a negative coefficient. Expressing that, a percentage point increase in the Growth rate is associated with a 0.6% decrease in the unemployment rate which is in concurrence with the economic theory of Okun's law.

However, the coefficient of the inflation rate 0.002865 with an insignificant p-value of 0.0799, shows a positive relationship with the dependent variable (unemployment rate) and hence translates that, a percentage point decrease in inflation rate is connected to 0.2% decrease in unemployment. Moreover, the coefficient of log of foreign direct investment 0.021976 with a significant p-value of 0.0333 indicates a positive relationship with the dependent variable (unemployment rate) and thus reports that, a percentage point decrease in the foreign direct investment, decreases unemployment rate as much as 2.1%. Consequently, the change in unemployment is a predictive variable for the change in Growth rate in The Gambia.

Furthermore, the multiple determinant coefficients usually considered as the goodness of fit (R squared) is 0.989466 and implying that the independent variables explain the dependent variable as much as 98.9%. The table below represents the ordinary least square regression results,

TABLE8

Variable	Coefficient	Std. Error	t-Statistic	Prob.
UNEM(-1)	1.389463	0.073301	18.95553	0.0000
UNEM(-2)	-0.467578	0.076259	-6.131472	0.0000
LFDI	0.021976	0.010189	2.156880	0.0333
GR	-0.006517	0.001842	-3.538720	0.0006
INF	0.002865	0.001620	1.768109	0.0799
DUM	-0.024436	0.006150	-3.973427	0.0001
C	0.106874	0.038427	2.781198	0.0064

R-squared	0.989466	Mean dependent var	2.448171
Adjusted R-squared	0.988875	S.D. dependent var	0.135166
S.E. of regression	0.014257	Akaike info criterion	-5.603760
Sum squared resid	0.021748	Schwarz criterion	-5.435747
Log likelihood	326.4143	Hannan-Quinn criter.	-5.535573
F-statistic	1675.068	Durbin-Watson stat	1.987214
Prob(F-statistic)	0.000000	Wald F-statistic	1898.928
Prob(Wald F-statistic)	0.000000		

LONG RUN AUTOCORRELATION TEST

Long run autocorrelation test using Breusch-Godfrey Serial Correlation LM test is used to test if autocorrelation exists in the variables and the result with a null hypothesis of no serial correlation reports that, there exists no autocorrelation in the variables as its P-value 0.1802 is insignificant at 5% significant level.

Autocorrelation test result

F-statistic	1.742060	Prob. F(2,105)	0.1802
Obs*R-squared	3.661269	Prob. Chi-Square(2)	0.1603

LONG RAMSEY RESET TEST

Long run Ramsey reset test was used to show the stability of the model and the result reports that the data contains no misspecification i.e. it is free of specification errors, since the value of the t-statistic, F-statistic and likelihood ratio test are all insignificant with insignificant p value at all level.

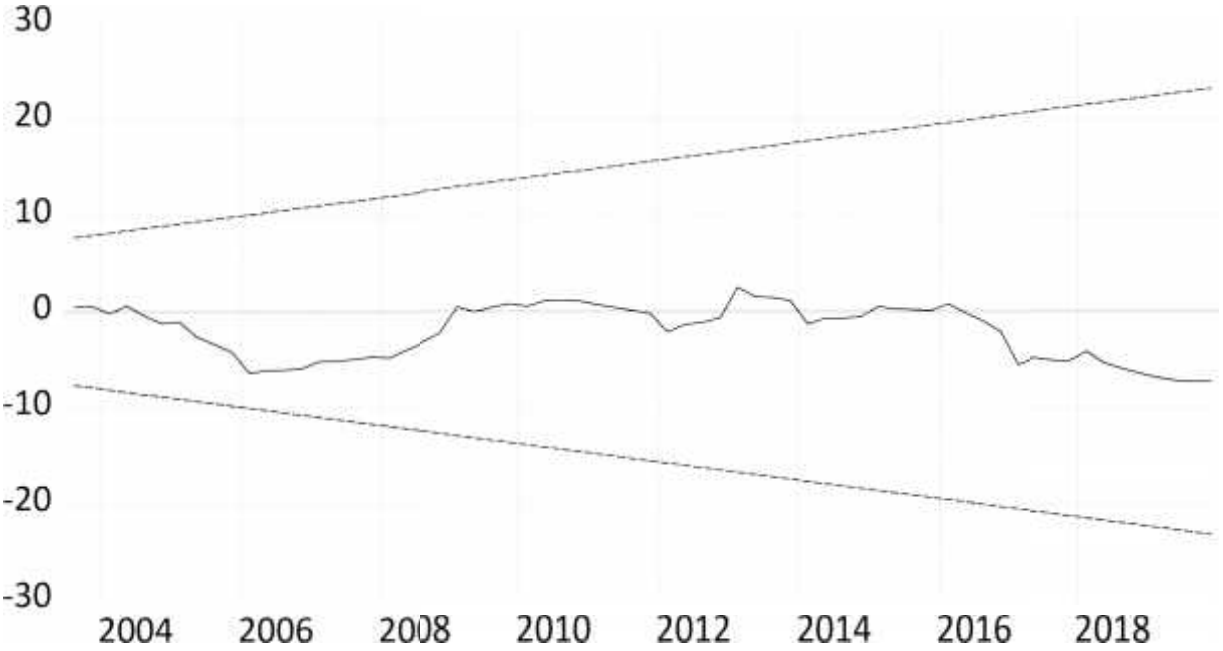
RAMSEY RESET TEST RESULT

	Value	df	Probability
t-statistic	1.136629	106	0.2583
F-statistic	1.291926	(1, 106)	0.2583
Likelihood ratio	1.381031	1	0.2399

CUSUM FOR LONG RUN

Long run graphical result of cusum represents the stability in the model since they all lie within the 5percent significance level boundary and which shows that, the structural

break in the model has been conveniently taken care of and hence signifies stabilities of the model at 5% significance level.



CUSUM 5% Significance

4.9 SHORT RUN ANALYSIS

Short run results of the study imply that, holding all other factors constant, i.e., LFDI and INF, the coefficient of the growth rate -0.015122 with a highly significance p value of 0.0000 has a negative link with the dependent variable unemployment since it contains a negative coefficient. Expressing that, one percent increase in the growth rate, will decrease unemployment as much as 1.5% which is also in concurrence with the economic theory of Okun's law. However, the coefficient of the inflation rate 0.006151 with an insignificant p-value of 0.1727, shows a positive relationship with unemployment and hence translates that, a percent decrease in inflation, decreases unemployment as much as 0.6%. The error correction model shows the speed in which the variables can

catch up in the equilibrium. The error correction model coefficient -0.718922 has a negative and a statically significant at 1%, implying that, any change in the variables is corrected by the error correction model as much as 71.9%.

Consequently, the change in unemployment is a predictive variable for the change in Growth rate in The Gambia.Furthermore, the multiple determinant coefficients usually considered as the goodness of fit (R squared) is 0.698426 implies that the independent variables explain the dependent variable as much as 69.8%. The table below represents the ordinary least square regression results,

TABLE 9: SHORT RUN ANALYSIS

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(UNEM(-1))	1.215253	0.098259	12.36789	0.0000
D(UNEM(-2))	-0.230550	0.054835	-4.204452	0.0001
D(LFDI)	0.166058	0.039401	4.214514	0.0001
D(LFDI(-1))	-0.103155	0.028110	-3.669736	0.0004
D(GR)	-0.015122	0.002011	-7.518997	0.0000
D(INF)	0.006151	0.004480	1.372856	0.1727
ECM(-1)	-0.718922	0.114314	-6.288993	0.0000

R-squared	0.698426	Mean dependent var	-0.001757
Adjusted R-squared	0.681356	S.D. dependent var	0.020295
S.E. of regression	0.011456	Akaike info criterion	-6.040592
Sum squared resid	0.013912	Schwarz criterion	-5.871639
Log likelihood	348.2935	Hannan-Quinn criter.	-5.972033
Durbin-Watson stat	2.077520		

SHORT RUN AUTOCORRELATION TEST

Short run autocorrelation test using Breusch-Godfrey Serial Correlation LM test result with a null hypothesis of no serial correlation reports that, there exists no autocorrelation in the variables as its P-value 0.5479 is insignificant at 5% significant level.

AUTOCORRELATION TEST RESULT

F-statistic	0.605209	Prob. F(2,103)	0.5479
Obs*R-squared	1.312510	Prob. Chi-Square(2)	0.5188

SHORT RAMSEY RESET TEST

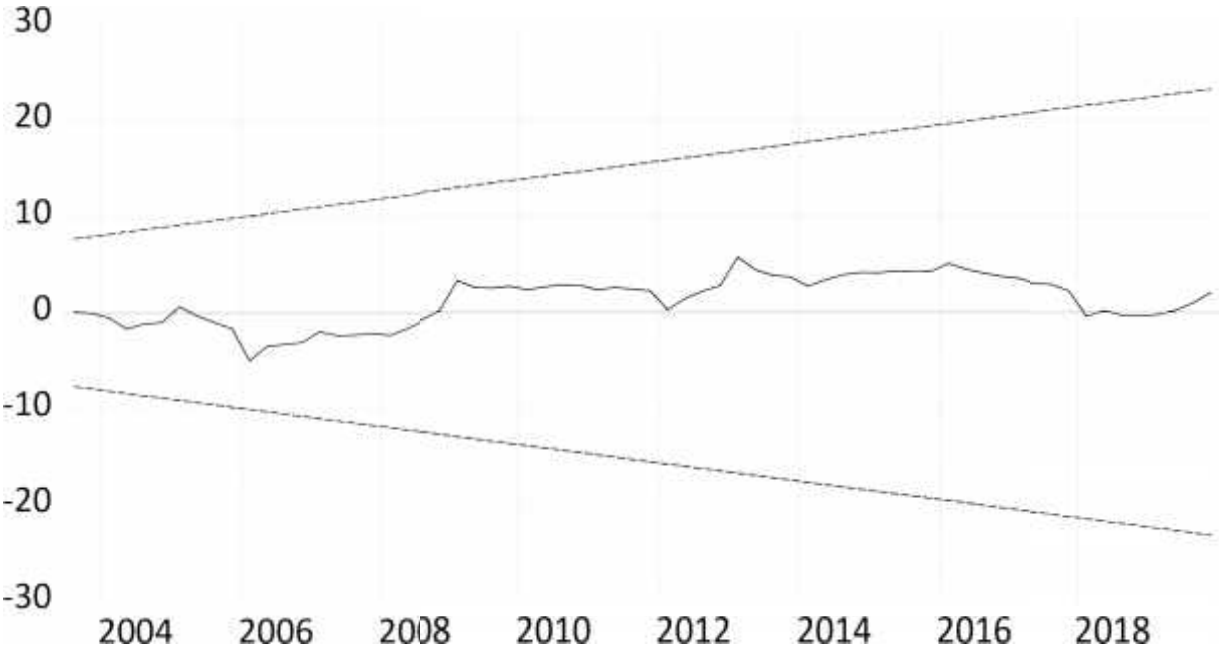
Short run Ramsey reset test was used to show the stability of the model and the result reports that the data contains no misspecification since the value of the t-statistic, F-statistic and likelihood ratio test are all insignificant with insignificant p value at all level.

RAMSEY TEST RESULT

	Value	df	Probability
t-statistic	0.162363	104	0.8713
F-statistic	0.026362	(1, 104)	0.8713
Likelihood ratio	0.028639	1	0.8656

CUSUM FOR SHORT RUN

The short run graphical result of cusum represents the stability in the model since they all lie within the 5percent significance level boundary and which shows that, the structural break in the model has been conveniently taken care of and hence signifies stabilities of the model at 5% significance level.



GRANGER CAUSALITY TEST

The granger causality is used to distinguish the causality linkage between the variables (FDI and Unemployment) during the short andlong-run periods.

In both the short run and long run OLS regression of the study, the results reported a strong causality association fromeach explanatory variable to the dependent variable

(unemployment).However, for the other variables (GR and INF), since no lag has been used in the short-run model, the Granger is simply the t-statistic of their corresponding coefficient. There is a short-run casual flow running from the growth rate to unemployment as the p-value of D (GR) 0.0000 in the short-run model is significant (leading to a rejection in the null of no casualty). The causality test for FDI is performed since it is the only variable with a lag in the short run model and hence reports a short-run casual flow running from the FDI to unemployment as the p-value of FDI (0.0003) in the Granger test result reports significance (leading to a rejection in the null of no casualty).

TEST RESULT FOR LFDI

Test Statistic	Value	df	Probability
F-statistic	8.942428	(2, 106)	0.0003
Chi-square	17.88486	2	0.0001

CHAPTER FIVE

DISCUSSIONS AND FINDINGS

This chapter involves the discussion, results, policy implication, conclusion andthe recommendationfrom the results of this study with the used of the data reviewed in the preceding chapter. It also captured the studied research questions and according to the OLS long run,the validity of the Okun's law in The Gambia was checked and the coefficient of the growth rate in both the long and short run contains the negative sign which justifies that, the Okun's law is valid in the Gambia. The chapter concludes by addressing some of the policy implications and its recommendations.

5.1 DISCUSSION

The study aimed to understand the linkage between the unemployment and economic growth in The Gambia through the application of Autoregressive Distributed Lag (ARDL) by using a quarterly time series data from 1991 to 2019.In doing so, variables such as

GR, inflation rate and FDI were employed to make up the independent variables whiles unemployment rate serves as the dependent variable.
In addition, the literature review was instilled by references from previous scholars to the analysis of the relationship between unemployment and economic growth and how it influenced the Gambia economy. An annual data method was employed for the study and then converted to quarterlyby using the quadratic-match average in helping to adjust the number of observationswith a secondary data source from World Bank Data (2018).

5.2 FINDINGS

The findings report the outcome of the study and from the reports shown in the previous chapter, a short and long run auto-correlations test were employed with the used of, Breusch-Godfrey Serial Correlation LM Test and the result reported ano auto-correction in the variables with insignificant P-Values of 0.5479 and 0.1802 respectively.
One of the simple criteria of the ARDL is that no variables should be found to be significant at I (2). The essential limits given by Pesaran, Shin, and Smith (2011) and Narayan (2005) are not accurate if the order of integration of any one of the variables is higher than I(1). Therefore, for this reason, a unit-root test must be conducted to insure that the variables follow the ARDL's basic assumptions.

In chapter 4, the findings of the unit-root tests showed the lack of I (2) variables for all the input variables, which is a required prerequisite for the ARDL system to be used. More precisely, the results show that the variables are in different order of integration such that the Unemployment rate and Foreign Direct Investment are non-stationary at level. ADF, KPSS, DF-GLS and PP were employed for stationary test and the results reported stationarity in the variables at I (0) and I (1).

The F-statistic findings in the cointegration test explicitly show that the inputted variables have a long-run linkage. Pesaran and Pesaran (1997) suggest that the presence of co-integration means that long-term influencing variables for the dependent variable (unemployment rate) are the selected independent variables.

A long and sort run regressions were employed in the study and the results indicated a validity of Okun's law in the Gambia during the duration of the study.

Quite like several researches where the connection between unemployment and economic growth is clear and with a reverse connection, observational findings in this analysis are conclusive.

While high unemployment rate has social and economic implications, some additional problems need more investigation. What causes, for example, are the cause for the high unemployment? And, does the level of unemployment takes a course of self-regulation, irrespective of thegrowth rate? A brief reason for these concerns is the broad type of informal jobs and the dilemma of the structural unemployment. Based on the International Labor Organization, ILOSAT database. Data retrieved in June 21st, 2020 from the World Bank data. In the year 2018,the informal employment of female in the Gambia accounts to 79.17% whiles for the male population in the same year accounts to 74.2%. This is driven by the imbalances between the labor supply with labor demand, more so, the geographical imbalance.

CHAPTER SIX
CONCLUSION, RECOMMENDATION, POLICY IMPLICATION AND LIMITATION OF THE STUDY

6.1 CONCLUSION

This study empirically attempts to understand the correlation between GR and unemployment rate in the Gambia during the period 1991 to 2019 based on the Okun's (1962). The empirical analysis consisted of the unit root for Augmented Dickey-Fuller test, KPSS, DF-GLS and the Philips-Perron, Zivot Andrew unit root, Chow test for structural break, ARDL long run form and bounds test, long run and short run stability test, the Wald test, Breusch-Godfrey Serial Correlation LM Test for long and short run auto correlation, descriptive statistic and modified an OLS to estimate link between unemployment rate and Output. The outcome showed that the data series were stationary at different levels and the break point was dealt with by using cusum to check for stability and in which the result was stable, cointegration test revealed a long-run linkage between unemployment rate and GR, the Breusch-Godfrey Serial Correlation LM Test results showed no auto correlation in the variables, The long and short run OLS regressions showed a significant effect of the link between unemployment and

economic growth with a statistical p value of GR as 0.0000 and 0.0006 and with a negative relationship which suggested a validity of Okun's law in The Gambia during the period of study.

6.2RECOMMENDATION

As a result of this study, it is however important to recommend that, the government and policy makers develop or adopt sustainable strategies and policies towards reducing unemployment and to have a stronger positive impact on the economic by increasing employment prospects and capital which will in turn enhance economic growth.

6.3 POLICY IMPLICATION

The findings of this report, however, have significant policy consequences for Gambia's economic policymakers, as this is the first effort to empirically examine the causal relation between these two measures by analyzing them using a variety of assessment methods. Demand management economic strategies will not have a major effect on the reduction of unemployment in Gambia. In the case of Gambia, economic policies further geared towards structural improvements and labor market reforms will be more fitting. Tax and benefit structure changes aimed at improving job prospects that could draw informal workers to enter the formal industries and more wage stability relies on a less structured collective bargaining structure and a deeper consensus between the parties engaged in wage negotiations will be more adequate in these situations.

6.4LIMITATION OF THE STUDY

The limitation of the study is that the accessibility of data to capture a higher number of observations for the dependent variable (unemployment rate) was a constraint and hence forces the researcher to interpolate the data to quarterly by using the quadratic-match average in increasing the number of observations.

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APPENDIX

DATA USED IN THE STUDY

YEAR (Q)	UNEM	LG	LFDI	INF
1991Q1	2.429641	1.637468	4.096353	1.869969
1991Q2	2.423859	1.636324	4.029670	2.103994
1991Q3	2.422109	1.635553	3.977244	2.277598
1991Q4	2.424391	1.635157	3.939075	2.390782
1992Q1	2.430703	1.635134	3.915162	2.443544
1992Q2	2.441047	1.635485	3.905507	2.435886
1992Q3	2.455422	1.636210	3.910109	2.367806
1992Q4	2.473828	1.637308	3.928968	2.239306
1993Q1	2.517359	1.642289	4.022341	1.966944
1993Q2	2.535391	1.642731	4.045611	1.750979
1993Q3	2.549016	1.642144	4.059035	1.507968
1993Q4	2.558234	1.640528	4.062613	1.237913
1994Q1	2.553555	1.632847	4.036752	0.481625
1994Q2	2.557758	1.631184	4.028476	0.341155
1994Q3	2.561352	1.630506	4.018193	0.357317
1994Q4	2.564336	1.630813	4.005901	0.530109
1995Q1	2.570539	1.633604	3.965103	1.686744
1995Q2	2.570773	1.635278	3.959394	1.841913
1995Q3	2.568867	1.637337	3.962276	1.822828

1995Q4	2.564820	1.639779	3.973749	1.629489
1996Q1	2.543750	1.648646	4.024289	0.530823
1996Q2	2.541375	1.649440	4.040754	0.281406
1996Q3	2.542812	1.648202	4.053620	0.150163
1996Q4	2.548062	1.644932	4.062887	0.137097
1997Q1	2.569508	1.630697	4.035413	0.668456
1997Q2	2.577430	1.626935	4.050738	0.721240
1997Q3	2.584211	1.624714	4.075720	0.721699
1997Q4	2.589852	1.624034	4.110360	0.669834
1998Q1	2.585875	1.631702	4.177733	0.264316
1998Q2	2.592625	1.631379	4.222457	0.228332
1998Q3	2.601625	1.629875	4.267609	0.260555
1998Q4	2.612875	1.627188	4.313187	0.360985
1999Q1	2.639773	1.620721	4.394028	0.921450
1999Q2	2.650164	1.616708	4.426527	1.001562
1999Q3	2.657445	1.612551	4.445519	0.993149
1999Q4	2.661617	1.608251	4.451004	0.896211
2000Q1	2.666078	1.606990	4.412180	0.231037
2000Q2	2.662672	1.601130	4.402973	0.148934
2000Q3	2.654797	1.593854	4.392579	0.170191

2000Q4	2.642453	1.585161	4.380999	0.294808
2001Q1	2.598102	1.573198	4.349939	0.762868
2001Q2	2.587836	1.562414	4.343305	0.998171
2001Q3	2.584117	1.550956	4.342803	1.240801
2001Q4	2.586945	1.538823	4.348433	1.490757
2002Q1	2.618508	1.524279	4.416148	1.598106
2002Q2	2.625555	1.511491	4.411661	1.922689
2002Q3	2.630273	1.498724	4.390924	2.314573
2002Q4	2.632664	1.485977	4.353939	2.773756
2003Q1	2.652336	1.439996	4.183394	3.907939
2003Q2	2.642227	1.440590	4.160835	4.258643
2003Q3	2.621945	1.454505	4.168950	4.433569
2003Q4	2.591492	1.481742	4.207741	4.432715
2004Q1	2.507625	1.579581	4.398652	4.072182
2004Q2	2.474125	1.610548	4.450214	3.793330
2004Q3	2.447750	1.631924	4.483873	3.412260
2004Q4	2.428500	1.643710	4.499628	2.928971
2005Q1	2.443680	1.623496	4.434708	1.830651
2005Q2	2.427758	1.625062	4.439765	1.348050
2005Q3	2.408039	1.626001	4.452028	0.968355

2005Q4	2.384523	1.626313	4.471496	0.691566
2006Q1	2.335844	1.617825	4.534857	0.536873
2006Q2	2.313281	1.620150	4.554060	0.458221
2006Q3	2.295469	1.625116	4.565792	0.474800
2006Q4	2.282406	1.632723	4.570055	0.586609
2007Q1	2.279758	1.649358	4.550001	1.197276
2007Q2	2.273930	1.659692	4.546061	1.338095
2007Q3	2.270586	1.670112	4.541389	1.412693
2007Q4	2.269727	1.680619	4.535985	1.421071
2008Q1	2.258969	1.702106	4.547027	1.156922
2008Q2	2.268031	1.708427	4.533288	1.115382
2008Q3	2.284531	1.710477	4.511946	1.090144
2008Q4	2.308469	1.708255	4.483000	1.081207
2009Q1	2.375859	1.685762	4.406953	1.114862
2009Q2	2.400266	1.681397	4.378600	1.128014
2009Q3	2.417703	1.679160	4.358443	1.146953
2009Q4	2.428172	1.679051	4.346481	1.171677
2010Q1	2.418313	1.692368	4.361987	1.245637
2010Q2	2.420188	1.691996	4.358709	1.264555
2010Q3	2.420438	1.689232	4.355918	1.271879

2010Q4	2.419063	1.684078	4.353615	1.267610
2011Q1	2.418445	1.666875	4.346711	1.234005
2011Q2	2.412867	1.660802	4.347417	1.213646
2011Q3	2.404711	1.656199	4.350646	1.188791
2011Q4	2.393977	1.653069	4.356397	1.159440
2012Q1	2.353711	1.656340	4.356364	1.036759
2012Q2	2.348602	1.654181	4.370482	1.033949
2012Q3	2.351695	1.651521	4.390446	1.062175
2012Q4	2.362992	1.648360	4.416255	1.121439
2013Q1	2.422102	1.646727	4.524821	1.336048
2013Q2	2.433961	1.641753	4.531555	1.407662
2013Q3	2.438180	1.635467	4.513370	1.460589
2013Q4	2.434758	1.627868	4.470265	1.494830
2014Q1	2.398188	1.607489	4.276395	1.439778
2014Q2	2.389688	1.601853	4.233789	1.464889
2014Q3	2.383750	1.599490	4.216601	1.499555
2014Q4	2.380375	1.600402	4.224832	1.543777
2015Q1	2.389484	1.613371	4.353604	1.638638
2015Q2	2.387266	1.617319	4.374622	1.685540
2015Q3	2.383641	1.621029	4.383009	1.725565

2015Q4	2.378609	1.624501	4.378765	1.758713
2016Q1	2.385336	1.629581	4.386550	1.752750
2016Q2	2.372227	1.631837	4.347180	1.785038
2016Q3	2.352445	1.633117	4.285315	1.823342
2016Q4	2.325992	1.633419	4.200955	1.867663
2017Q1	2.255523	1.627864	3.900750	2.023613
2017Q2	2.230664	1.628165	3.848741	2.037721
2017Q3	2.214070	1.629441	3.851576	2.015602
2017Q4	2.205742	1.631693	3.909257	1.957254
2018Q1	2.226578	1.637305	4.264411	1.689766
2018Q2	2.226422	1.640554	4.334731	1.628126
2018Q3	2.226172	1.643824	4.362846	1.599422
2018Q4	2.225828	1.647115	4.348755	1.603655
2019Q1	2.225391	1.650427	4.292459	1.640824
2019Q2	2.224859	1.653761	4.193957	1.710930
2019Q3	2.224234	1.657116	4.053249	1.813972
2019Q4	2.223516	1.660493	3.870336	1.949950

Sourced From Eviews 9

ADF FOR LFDI AT LEVEL (NON STATIONARY)

Null Hypothesis: LFDI has a unit root

Exogenous: Constant
Lag Length: 10 (Automatic - based on AIC, maxlag=12)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-1.902992	0.3299
Test critical values:	1% level	-3.493747	
	5% level	-2.889200	
	10% level	-2.581596	

*MacKinnon (1996) one-sided p-values.

ADF FOR LFDI AT FIRST DIFFERENCE (STATIONARY)

Null Hypothesis: D(LFDI) has a unit root
Exogenous: Constant
Lag Length: 8 (Automatic - based on SIC, maxlag=12)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-2.723807	0.0734
Test critical values:	1% level	-3.493129	
	5% level	-2.888932	
	10% level	-2.581453	

ADF FOR GROWTH RATE AT LEVEL (STATIONARY)

Null Hypothesis: GR has a unit root
Exogenous: Constant
Lag Length: 1 (Automatic - based on Modified SIC, maxlag=12)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-4.734049	0.0001
Test critical values:	1% level	-3.489117	
	5% level	-2.887190	
	10% level	-2.580525	

ADF FOR INFLATION AT LEVEL (NON STATIONARY)

Null Hypothesis: INF has a unit root
Exogenous: Constant
Lag Length: 12 (Automatic - based on AIC, maxlag=12)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-1.656550	0.4502
Test critical values:	1% level	-3.495021	
	5% level	-2.889753	
	10% level	-2.581890	

*MacKinnon (1996) one-sided p-values.

ADF FOR INFLATION AT FIRST DIFFERENCE (STATIONARY)

Null Hypothesis: D(INF) has a unit root
Exogenous: Constant
Lag Length: 12 (Automatic - based on AIC, maxlag=12)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-2.787538	0.0636
Test critical values:	1% level	-3.495677	
	5% level	-2.890037	
	10% level	-2.582041	

ADF FOR UNEMPLOYMENT AT LEVEL (NON STATIONARY)

Null Hypothesis: UNEM has a unit root
Exogenous: Constant
Lag Length: 9 (Automatic - based on SIC, maxlag=12)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-1.172885	0.6841
Test critical values:	1% level	-3.493129	
	5% level	-2.888932	
	10% level	-2.581453	

ADF FOR UNEMPLOYMENT AT FIRST DIFFERENCE (STATIONARY)

Null Hypothesis: D(UNEM) has a unit root
Exogenous: Constant
Lag Length: 8 (Automatic - based on SIC, maxlag=12)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-2.775558	0.0652
Test critical values:	1% level	-3.493129	
	5% level	-2.888932	
	10% level	-2.581453	

DF- GLS FOR LFDI AT LEVEL (NON STATIONARY)

Null Hypothesis: LFDI has a unit root
Exogenous: Constant
Lag Length: 9 (Automatic - based on SIC, maxlag=12)

		t-Statistic
Elliott-Rothenberg-Stock DF-GLS test statistic		-1.291843
Test critical values:	1% level	-2.586960
	5% level	-1.943882
	10% level	-1.614731

DF-GLS FOR LFDI AT FIRST DIFFERENCE (NON STATIONARY)

Null Hypothesis: D(LFDI) has a unit root
Exogenous: Constant
Lag Length: 8 (Automatic - based on SIC, maxlag=12)

		t-Statistic
Elliott-Rothenberg-Stock DF-GLS test statistic		-1.001845
Test critical values:	1% level	-2.586960
	5% level	-1.943882
	10% level	-1.614731

DF-GLS FOR GROWTH RATEAT LEVEL (STATIONARY)

Null Hypothesis: GR has a unit root
Exogenous: Constant
Lag Length: 1 (Automatic - based on Modified SIC, maxlag=12)

		t-Statistic
Elliott-Rothenberg-Stock DF-GLS test statistic		-4.741586
Test critical values:	1% level	-2.585587
	5% level	-1.943688
	10% level	-1.614850

DF-GLS FOR INFLATION AT LEVEL (STATIONARY)

Null Hypothesis: INF has a unit root
Exogenous: Constant

Lag Length: 4 (Automatic - based on Modified SIC, maxlag=12)

		t-Statistic
Elliott-Rothenberg-Stock DF-GLS test statistic		-1.991172
Test critical values:	1% level	-2.585962
	5% level	-1.943741
	10% level	-1.614818

DF-GLS FOR UNEMPLOYMENT AT LEVEL (NON STATIONARY)

Null Hypothesis: UNEM has a unit root
Exogenous: Constant
Lag Length: 9 (Automatic - based on SIC, maxlag=12)

		t-Statistic
Elliott-Rothenberg-Stock DF-GLS test statistic		-1.381796
Test critical values:	1% level	-2.586960
	5% level	-1.943882
	10% level	-1.614731

DF- GLS FOR UNEMPLOYMENTAT FIRST DIFFERENCE (STATIONARY)

Null Hypothesis: D(UNEM) has a unit root
Exogenous: Constant
Lag Length: 8 (Automatic - based on SIC, maxlag=12)

		t-Statistic
Elliott-Rothenberg-Stock DF-GLS test statistic		-2.791167
Test critical values:	1% level	-2.586960
	5% level	-1.943882
	10% level	-1.614731

KPSS FOR LFDIAT LEVEL (STATIONARY)

Null Hypothesis: LFDI is stationary
Exogenous: Constant
Bandwidth: 8 (Newey-West automatic) using Bartlett kernel

		LM-Stat.
Kwiatkowski-Phillips-Schmidt-Shin test statistic		0.508273
Asymptotic critical values*:	1% level	0.739000
	5% level	0.463000
	10% level	0.347000

KPSS FOR GROWTH RATEAT LEVEL (STATIONARY)

Null Hypothesis: GR is stationary
Exogenous: Constant
Bandwidth: 2 (Newey-West automatic) using Bartlett kernel

		LM-Stat.
Kwiatkowski-Phillips-Schmidt-Shin test statistic		0.073304
Asymptotic critical values*:	1% level	0.739000
	5% level	0.463000
	10% level	0.347000

KPSS FOR INFLATION AT LEVEL (STATIONARY)

Null Hypothesis: INF is stationary
Exogenous: Constant
Bandwidth: 8 (Newey-West automatic) using Bartlett kernel

		LM-Stat.
Kwiatkowski-Phillips-Schmidt-Shin test statistic		0.081332
Asymptotic critical values*:	1% level	0.739000
	5% level	0.463000
	10% level	0.347000

*Kwiatkowski-Phillips-Schmidt-Shin (1992, Table 1)

KPSS FOR UNEMPLOYMENT AT LEVEL (NON STATIONARY)

Null Hypothesis: UNEM is stationary

Exogenous: Constant
Bandwidth: 9 (Newey-West automatic) using Bartlett kernel

		LM-Stat.
Kwiatkowski-Phillips-Schmidt-Shin test statistic		0.788526
Asymptotic critical values*:	1% level	0.739000
	5% level	0.463000
	10% level	0.347000

KPSS FOR UNEMPLOYMENT AT FIRST DIFFERENCE (STATIONARY)

Null Hypothesis: D(UNEM) is stationary
Exogenous: Constant
Bandwidth: 5 (Newey-West automatic) using Bartlett kernel

		LM-Stat.
Kwiatkowski-Phillips-Schmidt-Shin test statistic		0.205405
Asymptotic critical values*:	1% level	0.739000
	5% level	0.463000
	10% level	0.347000

*Kwiatkowski-Phillips-Schmidt-Shin (1992, Table 1)

PP FOR LFDI AT LEVEL (NON STATIONARY)

Null Hypothesis: LFDI has a unit root
Exogenous: Constant
Lag length: 10 (Spectral OLS AR based on AIC, maxlag=12)

		Adj. t-Stat	Prob.*
Phillips-Perron test statistic		-2.408175	0.1417
Test critical values:	1% level	-3.488063	
	5% level	-2.886732	
	10% level	-2.580281	

*MacKinnon (1996) one-sided p-values.

PP FOR LFDI AT FIRST DIFFERENCE (STATIONARY)

Null Hypothesis: D(LFDI) has a unit root
Exogenous: Constant
Lag length: 12 (Spectral OLS AR based on AIC, maxlag=12)

		Adj. t-Stat	Prob.*
Phillips-Perron test statistic		-5.701945	0.0000
Test critical values:	1% level	-3.488585	
	5% level	-2.886959	
	10% level	-2.580402	

*MacKinnon (1996) one-sided p-values.

PP FOR GROWTH RATE AT LEVEL (STATIONARY)

Null Hypothesis: GR has a unit root
Exogenous: Constant
Bandwidth: 16 (Newey-West automatic) using Bartlett kernel

		Adj. t-Stat	Prob.*
Phillips-Perron test statistic		-5.283050	0.0000
Test critical values:	1% level	-3.488585	
	5% level	-2.886959	
	10% level	-2.580402	

PP FOR INFLATION AT LEVEL (NON STATIONARY)

Null Hypothesis: INF has a unit root
Exogenous: Constant
Bandwidth: 3 (Newey-West automatic) using Bartlett kernel

		Adj. t-Stat	Prob.*
Phillips-Perron test statistic		-2.631778	0.0896
Test critical values:	1% level	-3.488063	
	5% level	-2.886732	
	10% level	-2.580281	

PP FOR INFLATION AT FIRST DIFFERENCE (STATIONARY)

Null Hypothesis: D(INF) has a unit root
Exogenous: Constant
Lag length: 12 (Spectral OLS AR based on AIC, maxlag=12)

		Adj. t-Stat	Prob.*

Phillips-Perron test statistic		-12.74473	0.0000
Test critical values:	1% level	-3.488585	
	5% level	-2.886959	
	10% level	-2.580402	

*MacKinnon (1996) one-sided p-values.

PP FOR UNEMPLOYMENT AT LEVEL (NON STATIONARY)

Null Hypothesis: UNEM has a unit root
Exogenous: Constant
Bandwidth: 5 (Newey-West automatic) using Bartlett kernel

		Adj. t-Stat	Prob.*
Phillips-Perron test statistic		-0.766613	0.8243
Test critical values:	1% level	-3.488063	
	5% level	-2.886732	
	10% level	-2.580281	

*MacKinnon (1996) one-sided p-values.

PP FOR UNEMPLOYMENT AT FIRST DIFFERENCE (STATIONARY)

Null Hypothesis: D(UNEM) has a unit root
Exogenous: Constant
Bandwidth: 15 (Newey-West automatic) using Bartlett kernel

		Adj. t-Stat	Prob.*
Phillips-Perron test statistic		-5.242068	0.0000
Test critical values:	1% level	-3.488585	
	5% level	-2.886959	
	10% level	-2.580402	

*MacKinnon (1996) one-sided p-values.

ZA FOR LFDI AT LEVEL (BREAK)

Zivot-Andrews Unit Root Test
Date: 10/16/20 Time: 23:10
Sample: 1991Q1 2019Q4
Included observations: 116
Null Hypothesis: LFDI has a unit root with a structural

break in the intercept
Chosen lag length: 4 (maximum lags: 4)
Chosen break point: 2002Q3

	t-Statistic	Prob. *
Zivot-Andrews test statistic	-2.290515	0.106638
1% critical value:	-5.34	
5% critical value:	-4.93	
10% critical value:	-4.58	

ZA FOR GROWTH RATE AT LEVEL (BREAK)

Zivot-Andrews Unit Root Test
Date: 10/17/20 Time: 00:10
Sample: 1991Q1 2019Q4
Included observations: 116
Null Hypothesis: GR has a unit root with a structural
break in the intercept
Chosen lag length: 4 (maximum lags: 4)
Chosen break point: 2003Q2

	t-Statistic	Prob. *
Zivot-Andrews test statistic	-6.146283	1.76E-05
1% critical value:	-5.34	
5% critical value:	-4.93	
10% critical value:	-4.58	

* Probability values are calculated from a standard t-distribution and do not take into account the breakpoint selection process

ZA FOR INFLATION AT LEVEL (NO BREAK)

Zivot-Andrews Unit Root Test
Date: 10/16/20 Time: 23:10
Sample: 1991Q1 2019Q4
Included observations: 116
Null Hypothesis: INF has a unit root with a structural
break in the intercept
Chosen lag length: 5 (maximum lags: 4)
Chosen break point: 2003Q3

	t-Statistic	Prob. *
Zivot-Andrews test statistic	-5.307345	0.003128
1% critical value:	-5.34	
5% critical value:	-4.93	
10% critical value:	-4.58	

* Probability values are calculated from a standard t-distribution and do not take into account the breakpoint selection process

ZA FOR INFLATION AT FIRST DIFFERENCE (BREAK)

Zivot-Andrews Unit Root Test
Date: 10/16/20 Time: 23:10
Sample: 1991Q1 2019Q4
Included observations: 116
Null Hypothesis: DINF has a unit root with a structural break in the intercept
Chosen lag length: 4 (maximum lags: 4)
Chosen break point: 2004Q2

	t-Statistic	Prob. *
Zivot-Andrews test statistic	-5.075690	0.007071
1% critical value:	-5.34	
5% critical value:	-4.93	
10% critical value:	-4.58	

* Probability values are calculated from a standard t-distribution and do not take into account the breakpoint selection process

ZA FOR UNEMPLOYMENT AT LEVEL (BREAK)

Zivot-Andrews Unit Root Test
Date: 10/16/20 Time: 23:10
Sample: 1991Q1 2019Q4
Included observations: 116
Null Hypothesis: UNEM has a unit root with a structural break in the intercept
Chosen lag length: 2 (maximum lags: 4)
Chosen break point: 2003Q2

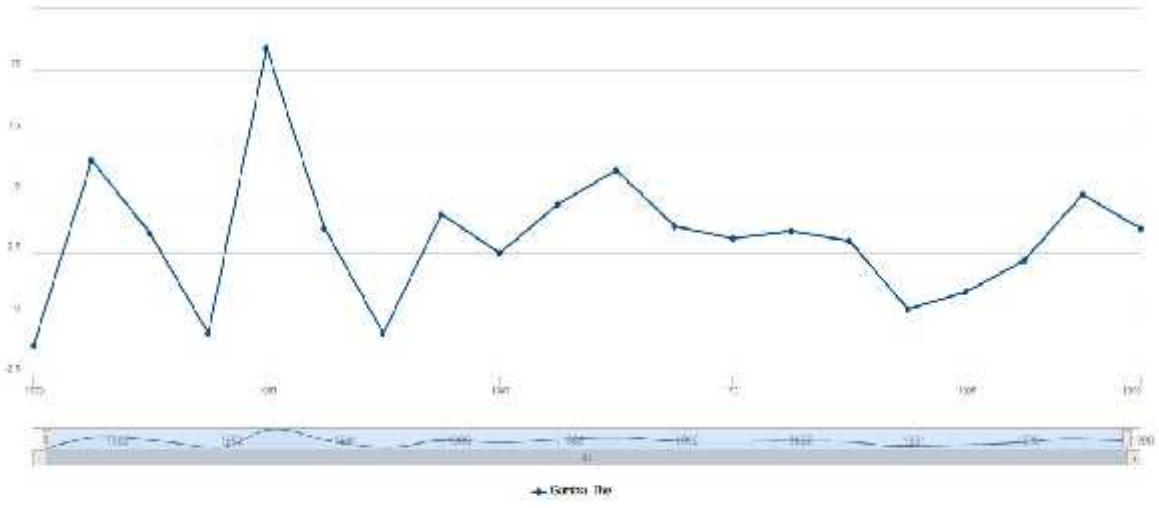
	t-Statistic	Prob. *
Zivot-Andrews test statistic	-4.038421	0.007816
1% critical value:	-5.34	
5% critical value:	-4.93	
10% critical value:	-4.58	

* Probability values are calculated from a standard t-distribution and do not take into account the breakpoint selection process

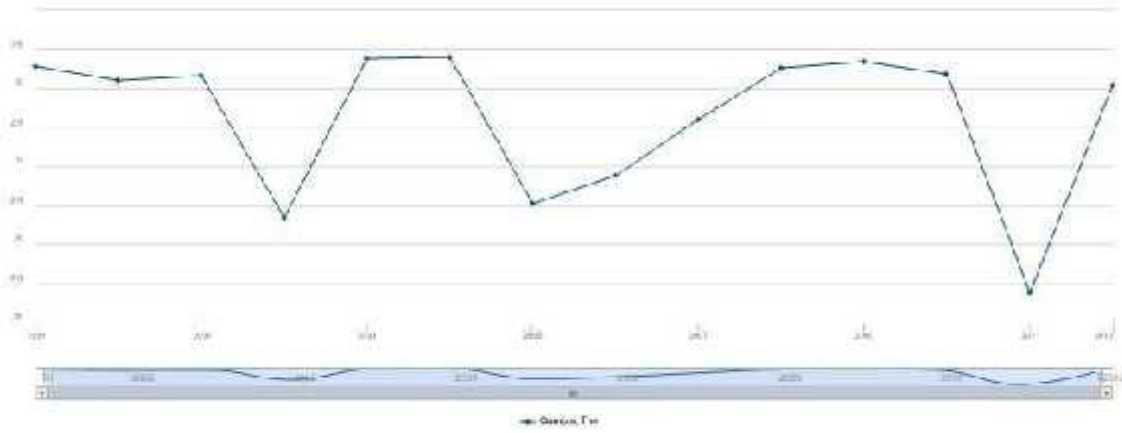
THE ECONOMIC INDICATORS OF THE GAMBIA FROM THE PERIOD 1979 TO1998

Selected Economic Indicators, 1979-1998			
(Period averages; in units indicated)			
	1979-1986	1987-1994	1995-1998
National income and prices			
Real GDP growth rate	5.33	3.88	2.62
Per capita real GDP			
Level	2,747.69	2,575.26	2,448.00
Growth 1/	1.46	-0.33	-0.78
GDP deflator (index, 1990=100)	32.39	100.46	137.09
Gross domestic investment/GDP (percentage)	23.93	19	19.15
Private investment/GDP (percentage)	13.3	13.09	9.62
Government investment/GDP (percentage)	10.63	5.92	9.53
Consumer price			
Level (index, 1990=100)	30.13	103.53	143.73
Inflation 1/	17.17	10.25	2.99
Government budget			
Total revenue and grants/GDP (percentage)	24.18	28.34	20.99
Total expenditure and net lending/GDP (percentage)	32.61	28.94	27.35
Capital expenditure/GDP (percentage)	10.63	5.92	9.65
Overall budget balance (percentage)	-8.43	-0.6	-6.36
Sources: IMF, International Financial Statistics, and World Economic Outlook database			

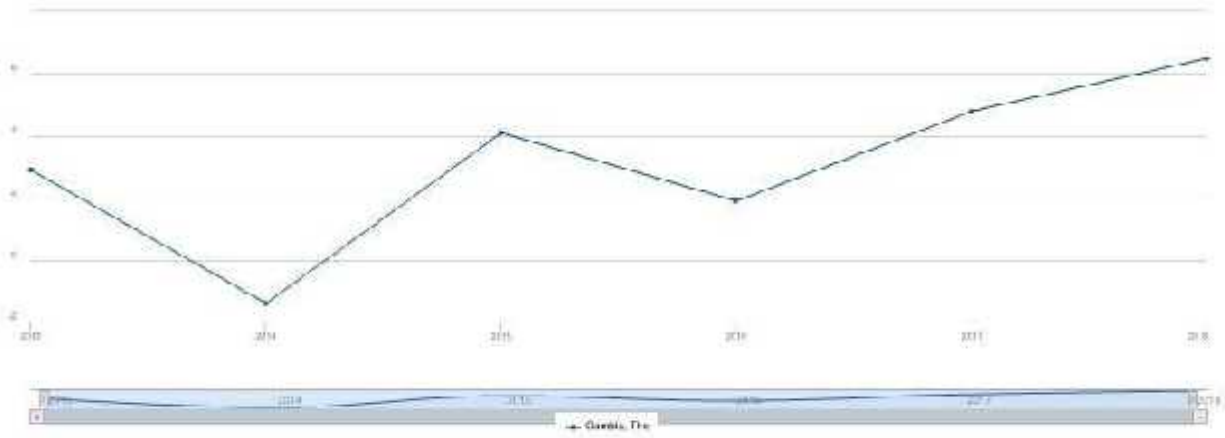
GROWTH RATE OF GAMBIA'S GDP FROM THE PERIOD 1979 TO 1998



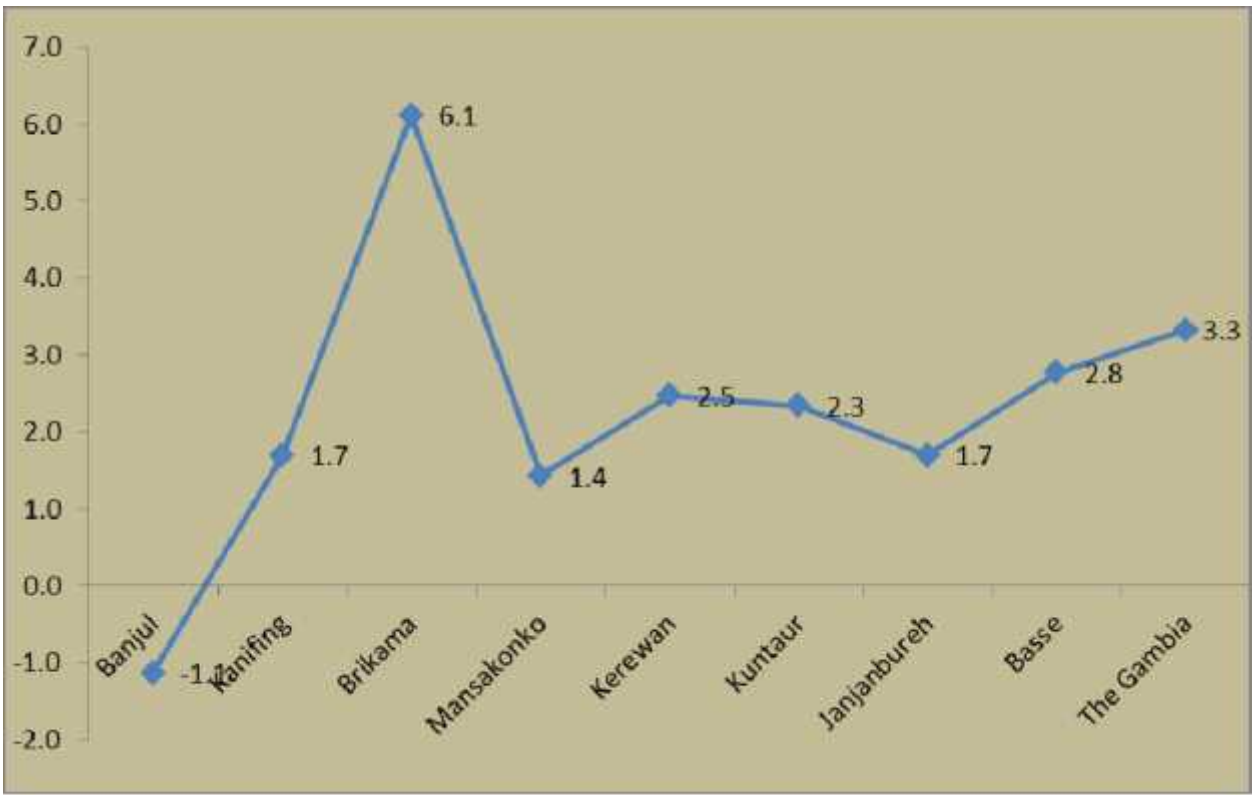
GROWTH RATE OF GAMBIA'S GDP FROM THE PERIOD 1988-2012



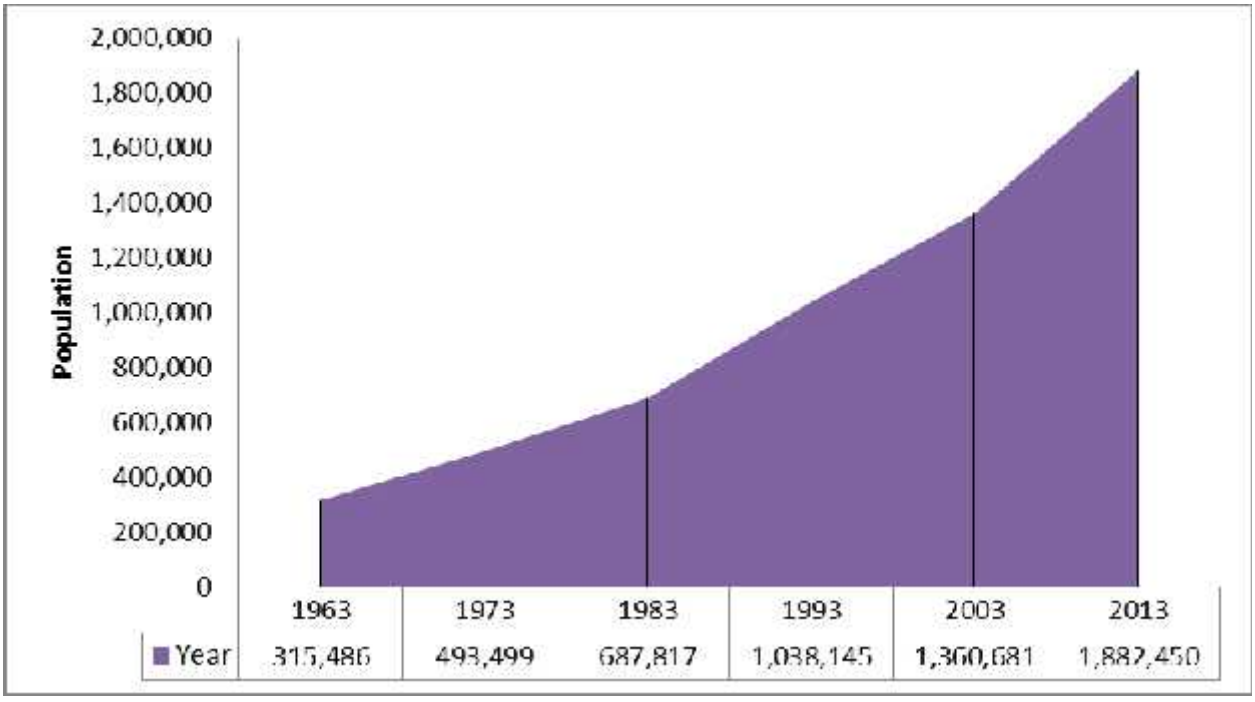
GROWTH RATE OF GAMBIA'S GDP FROM THE PERIOD 2013-2018



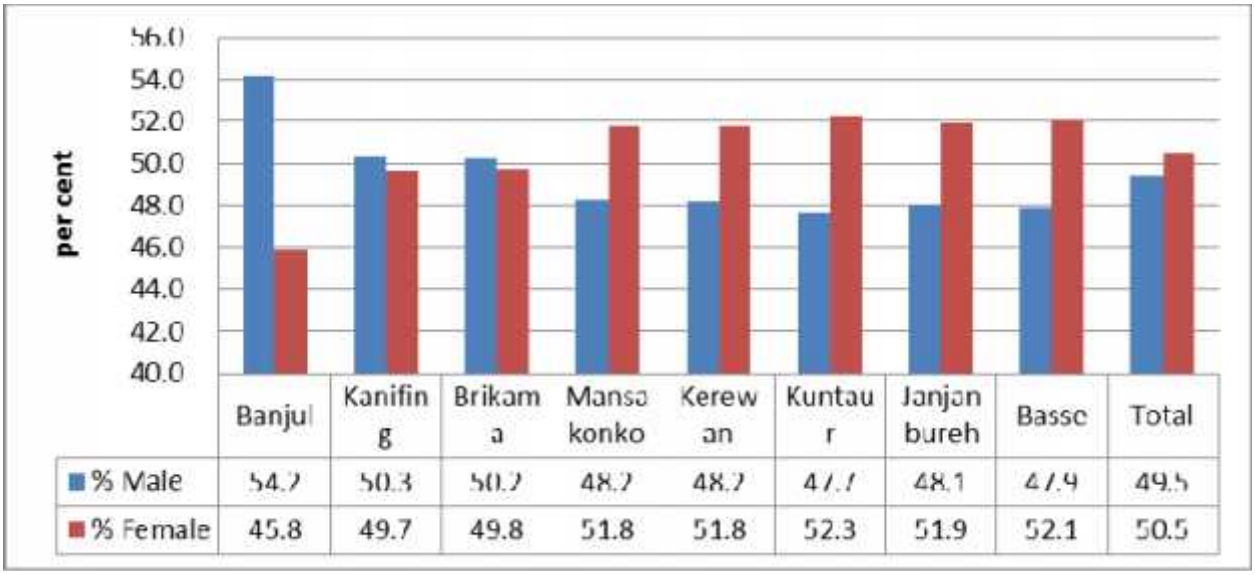
AVERAGE ANNUAL GROWTH RATE (%) BY LOCAL GOVERNMENT AREA



POPULATION GROWTH AND SIZE



POPULATION DISTRIBUTION BY SEX BY LOCAL GOVERNMENT AREA



SEX RATIO ACROSS LGA

Lga	*Total population*	*Male*	*Female*	*Sex ratio*
Banjul	31,301	16,954	14,347	118
Kanifing	382,096	192,417	189,679	101
Brikama	699,704	351,482	348,222	101
Mansakonko	82,361	40,721	41,640	93
Kerewan	221,054	104,931	116,123	93
Kuntaur	99,108	47,233	51,875	91
Janjanbureh	126,910	61,001	65,909	93
Basse	239,916	115,960	123,956	92
Total	**1,882,450**	**930,699**	**951,751**	**98**

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