Chapter One

Introduction

1.1 Background to the Study

Unemployment has always been a serious problem faced by most developed and developing countries and resulting to socio-economic problems[1]. This was noted as one of the greatest challenges of the sub-Saharan African economies today, in which the high rate of unemployment-maintained a rising trend over the years. This rising state of unemployment in Nigeria is known by many with its biting presence on an average Nigerian. This is being alluded to by the report of the National Bureau of Statistics (NBS) which put the unemployment rate at 33.28% and the unemployed youth population at 42.5%[2]. The number of unemployed Nigerians rose by 6.5% totaling 23.19 million from 21.7 million, thereby resulting to 1.49 million new entrants[2]. This could be deduced that unemployment was largely youth unemployment most especially as the unemployment rate registered the fastest growth in 2017[3]. The NBS explained that the job losses resulted from the outbreak of COVID-19 pandemic and its stifling impact on businesses during the period.

In underdeveloped countries, there exist colossal open unemployment and disguised unemployment. The unemployment is spreading with urbanization and the spread of education. But industrial sector has failed to expand along the growth of labour force as such increasing urban unemployment. Then there are the educated unemployed who fail to get jobs due to structural rigidities and lack of manpower planning. However, such unemployment is not voluntary but involuntary. People are prepared to work but they are unable to find one throughout due to lack of complementary factors. Such unemployment is found in the rural landless and smallholder farmers due to the seasonal nature of farm operations and inefficient

labour and equipment to keep them fully employed. On the other hand, a person is said to be disguised unemployed if his contribution to output is less than what he can produce by working for normal hours daily[4]. The unpleasant trend of unemployment tend put the nation in grave danger, as World Bank survey in 2011 reported that 40 percent of those who join militancy movement indicated that they are motivated by unemployment; while 50 per cent of those involved in criminal activities are also stimulated by unemployment.

Furthermore, unemployment is a major contributor to widespread poverty and income inequality. Therefore, it is of utmost importance to understand the impact of unemployment and income inequality to ensure sound policies that will boost economic growth and impact positively on the standard of living of the Nigerian populace. Income inequality on the other hand is defined as the disparity in income between rich and poor individuals in a society. Income inequality is a growing problem globally, and it is even more evident in developing countries like Nigeria. The issue of inequality in Nigeria has risen over the years as the country's Gini coefficient at 59% peaked in 1996 but later dropped to 40.1% in 2003 and 35.1% in 2018[5]. This immediately placed Nigeria among the most unequal countries in the world. One of the main causes of inequality was the growing level of corruption in the country and the absence of fair distribution of economic and human resources[6]. Economic growth is expected to not only increase the per capita income of a country, but also improve the welfare and living standard of its citizens. However, in Nigeria there is a disconnection between economic growth and development as growth does not necessarily guarantee economic development. One of the main factors that have led to this is the way income is distributed amongst the rich and the poor.

The notion of income inequality only refers to material dispersion across the society that has an influence on the position of individuals. These characteristics are usually resources, or goods in a

broad sense, that are much in demand in the society. This suggests the spread of sharing pattern whether in material resources or consumption parameters while examining the upsurge of income inequality and its threat on the people's health for the past years in Nigeria with income inequality, per capita income, education, savings and health proxied by infant mortality rate and life expectancy rate as key variables of concerns[7]. It is a no brainer that Nigeria has been the most populous country in Africa, with a population of estimated at over 200 million given by the National Population Commission. Meanwhile, this high population figure gave a picture of 1 in 4 Africans being a Nigerian out of 924 million Africans as at 2006. As at 2014 the commonly cited figure of the country's population is 180 million people. The country has a land mass of 356,669 square miles (923,768 square kilometers), and thus a population density of 145 people per square kilometer. The country is a large oil producer, producing more than 2.5 million barrels per day, which placed it as the Africa's largest oil producer and 6th largest oil producing in the world[8].

In addition, the country has a huge reserve of natural gas which is not yet exploited. It is estimated that Nigeria has over 181 trillion cubic feet of proven natural gas reserves, which makes it one of the ten (10) top natural gas endowments in the world. The Gross Domestic Product (GDP) of Nigeria had been put at $478.93 billion and $493.92 billion in 2017 and 2020, by the World Bank, which also gave the per head distribution in the country as US$2,575.46 and US$2,396.04 respectively[5]. Prior to now, agricultural produce and solid minerals has been the main stay of Nigeria's economy. This included cocoa, cottonseed, groundnuts, palm kernels, coffee, bean seed, hides and skins, plywood and timber log, etc. There were also petroleum oil, iron and steel, limestone and coal, etc. The petroleum industry was less important in the economy until in the 1970s despite the establishment of the first refinery in 1965 situated in Port Harcourt. The industry at the time was in the hands of the private investors such as the Mobil Oil

Company and the Shell BP among others. It is on record that as at 1960 oil production was only 17,000 barrels per day, while in 1966 it increased to 450,000 barrels per day. By the mid-1970s the oil sector became the most important in the economy of the country[7]. Earnings from the sector rose from ₦510 million in 1970 to ₦8 billion in 1977, falling slightly to ₦5.4 billion in 1978 and rising again to a record level of ₦13.5 billion in 1980, before a dramatic fall of the earning in 1982 and 1983 which were ₦9 billion and ₦8 billion respectively[5]. Thus, Nigerian leaders were convinced that the problem of the country was not money but how to spend it, and that was when both the military and the civilian leaders concentrated on mere expenditures of oil wealth from 1973 to 1983. This was exactly when oil prices increased more than tenfold i.e. from $3.561 per barrel in 1973 to $40.00 per barrel in 1981[5].

To everyone's dismay this unprecedented wealth was not used properly for the development of the country and the majority of its citizens continued to suffer untold hardship as a result of extreme poverty and deprivation simply because the money was not only mismanaged but also stolen and siphoned away in foreign banks. Nigeria is richly endowed with both human and natural resources. According to the Human Development Report, Nigeria's HDI value in 2019 was 0.539 which put the country in the low human development category and positioning it at 161 out of 189 countries[9]. Nigeria is amongst the top 20 largest economies in Africa with a GDP of US$594.257 billion, regardless of the country's current economic setback it still manages to thrive, Nigerian economy has experienced a slow and sluggish growth since the end of 2015. This is primarily due to the negative external and internal shocks the country has been facing such as: the fall in oil prices, security issues as a result of the Islamic terrorist group (Boko Haram) which led to the loss of over 2 million lives and the inadequate supply of foreign exchange in the forex market. Economic growth declined from 8.04% in 2009 to 6.31% in 2014

and a negative growth of -1.62% and -1.79% in 2016 and 2020 respectively, joined with a high level of inflation at 15.68% and 13.2% in the same years[5]. The central bank has sought adequate monetary and fiscal policies to reduce borrowing costs for the government and private sector and stimulate the economy.

Furthermore, unemployment, income inequality and poverty are so intertwined that one can easily confuse one for the other. Although, it is possible for one to be employed and still be poor, this is likely to be a case of underemployment. Thus, by unemployment, it includes those underemployed. Unemployment and underemployment reflect the failure to make use of an important factor of production, labour, for fostering economic growth. Low returns to labour as well as high unemployment indicate the existence of poverty. Poverty makes it difficult to make investments in education and health that would increase productivity. This is not only true for individuals; families face an inter-generational poverty trap. Families face the choice between sending their children and young family members to school and sending them to earn much needed income. The social aspects of the problem lie in the association of unemployment with social exclusion and a sense of hopelessness. One of the greatest challenges facing the Nigerian economy is unemployment which has maintained a rising trend over the years. The total labour force in Nigeria is made up of all persons aged 15-64 years excluding students, home keepers, retired persons and stay-at-home to work or not interested. Unemployed refers to people who are willing and capable of work but are unable to find suitable paid employment.

The classical school of thought that provided the earliest thinking on economic issues did not fail to give a central point of reflection on the undesirability of unemployment. The Keynesian revolution of the 1930's, which commanded the explosive attack on economic orthodoxy apparently, treated unemployment as a central issue of great concern. Following the path of the

predecessors, economists at all times and in all ages have expressed various degrees of concern over the threat of the monster called unemployment. The population of every economy is divided into two categories, the economically active and the economically inactive. The economically active population (labor force) or working population refers to the population that is willing and able to work, including those actively engaged in the production of goods and services (employed) and those who are unemployed[7]. The next category, the economically inactive population refers to people who are neither working nor looking for jobs. There seems to be a consensus on the definition of unemployment. The International Labour Organization (ILO) defines the unemployed as numbers of the economically active population who are without work but available for and seeking work, including people who have lost their jobs and those who have voluntarily left work such as housewives, full time students, invalids, those below the legal age for work, old and retired persons[9].

However, the application of this definition across countries has been faulted, especially for the purpose of comparison and policy formulation, as countries characteristics are not the same in their commitment to resolving unemployment problems[10]. The unemployment rate is expressed as a percentage of the total number of persons available for employment at any time. Unemployment has been categorized as one of the serious impediments to social progress. Apart from representing a colossal waste of a country's manpower resources, it generates welfare loss in terms of lower output thereby leading to lower income and well-being[11,12]. Unemployment is a very serious issue in Africa and particularly in Nigeria[13,14]. The need to avert the negative effects of unemployment on poverty has made the tackling of unemployment problems to feature very prominently in the development objectives of many developing countries. Poverty is not an easy

concept to define. As a result, a range of definitions exist, influenced by different disciplinary approaches and ideologies.

The dominant Western definition since World War II has defined poverty in monetary terms, using levels of income or consumption to measure poverty and defining the poor by a headcount of those who fall below a given income/consumption level or poverty line[15]. However, this economic definition has been complemented in recent years by other approaches that define poverty in a more multidimensional way[16]. These approaches include the basic needs approach, the capabilities approach and the human development approach[17,18,19]. Their acceptance is reflected in the widespread use of the United Nations Development Programme's (UNDP) Human Development Index (HDI), which is a composite measure of three dimensions of human development: life expectancy, educational attainment and standard of living, measured by income in terms of its purchasing power parity[20]. It is also reflected in the Organization for Economic Co-operation and Development's (OECD) conceptualization of multidimensional poverty, defined as interlinked forms of deprivation in the economic, human, political, socio-cultural and protective spheres[21]. For our purposes here, poverty is also defined by a sense of helplessness, dependence and lack of opportunities, self-confidence and self-respect on the part of the poor. Indeed, the poor themselves see powerlessness and voicelessness as key aspects of their poverty[22]. Further, the acknowledgement of the multidimensionality of poverty is reflected in the range of both quantitative and qualitative methodological approaches adopted to conceptualize and measure poverty[23].

The poverty situation in Nigeria is quite disturbing. Both the quantitative and qualitative measurements attest to the growing incidence and depth of poverty in the country[24]. This situation however, presents a paradox considering the vast human and physical resources that the

country is endowed with. It is even more disturbing that despite the huge human and material resources that have been devoted to poverty reduction by successive governments, no noticeable success has been achieved in this direction. Although, predicted poverty reduction scenarios vary greatly depending upon the rate and nature of poverty related policies, actual evidence suggests that the depth and severity of poverty is still at its worst in Nigeria, SSA and South Asia. Within these regions, poverty is largely a rural phenomenon with an average of between 62 and 75 percent of the population living on less than a dollar a day and also tends to be deeper than urban poverty in these regions [25]. Besides, it has become increasingly evident that within the African region the poor are heterogeneous and that some element of dynamics does exist with a clear distinction between chronic and transitory poverty[26]. Chronic poverty is considered the component of total poverty that is static and transitory poverty component that is attributable to the inter-temporal variability[27]. The isolation of the process underlying chronic and transitory poverty is considered essential in understanding the extent to which each poverty type may obscure the other or even distort the effects of government anti-poverty programmes.

A national poverty survey carried out indicates that the high tropic areas have moderate poverty while the northern regions have poverty levels that are as high as 60 percent[28]. The average national poverty incidence indicates that this situation has not improved during the last 20 years in a majority of SSA countries. Nigeria‘s main challenges include, reducing poverty, diversifying its economy from the oil and gas sector towards more labor intensive sectors, and improving health and education[29]. The oil has increased economic volatility and inflation while those living in poverty being most vulnerable to volatility and inflation. To add to it, instability of government revenues and a crowding out of agriculture (which provides the source of income to the poor) have made the situation worsen. The oil industry does not employ a sizeable number of

unskilled workers, thereby contributing little to reducing poverty. The oil crisis in the oil producing region of Nigeria which perpetrated poverty has been linked to high crime rates, especially in the Niger Delta region where there is a sharp contrast between the rich and the poor[30]. The masses cause social unrest because the wealth gotten from their territory does not get to them. In the Nigerian society, the best way to acquire wealth is to enter the political sphere. Most of the time political success is tied to criminal activities. The link between economic and political power must be broken for progress to be made. Poverty is inextricably linked to social exclusion, both as a cause and as one of its consequences. Moreover, poverty is increasingly framed in ways which overlap with social exclusion, namely the capacity of an individual or a household to participate fully in society[31].

Scholars have proposed measuring poverty using several indicators beyond income or consumption, the linkages between social exclusion and poverty have become more explicit. The study of poverty in the United Kingdom, defined relative deprivation as covering several aspects of living standards and participation in social life. Since then, different analytical approaches have highlighted the social, political and environmental aspects of poverty, together with its economic aspects. The publication of the first Human Development Index (UNDP, 1990) along with Amartya Sen's capabilities approach to poverty, as well as the more recent emphasis on the multiple dimensions of poverty, have been notable landmarks in this conceptual shift. At the regional level, the European Union's 10-year growth and jobs strategy, Europe 2020, combines the fight against poverty and social exclusion into a single priority area and provides a joint set of measures and targets[32].

These broader approaches to poverty address important relational issues which affect material deprivation and further hinder the ability of those living in poverty to participate fully in society

and live the lives they wish to lead. There is also a close relationship between levels of income inequality and the exclusion of some sectors of society. Not only does high income inequality hamper poverty reduction and economic growth but, without appropriate institutions to prevent it, inequality also leads to a concentration of political influence among those who are already better off and therefore tends to create or preserve unequal economic and social opportunities through uneven access to public services. The denial of political voice or influence among those at the lower end of the inequality spectrum can reinforce social tensions and cause political instability and conflict. The critical linkages among poverty, income inequality, deficits in decent work and exclusion have been well acknowledged in the international policy arena. At the World Summit for Social Development in 1995, Governments recognized that the common pursuit of social development aimed at creating social justice and building societies for all not only calls for fostering social integration, but also demands the eradication of poverty and the promotion of full employment. In adopting the 2030 Agenda for Sustainable Development, Governments and the international community at large reaffirmed with renewed urgency that striving for an inclusive world means addressing several interdependent goals, including the eradication of poverty, the reduction of inequalities, the pursuit of inclusive and sustainable economic growth and decent work for all, among other goals. At the same time, attempts to define and quantify the inclusiveness of growth and of wider development processes by analyzing trends in poverty, inequality and employment have gained space in national and international policy and academic debates. In recognizing that no society can be considered genuinely inclusive if poverty remains widespread, economic inequalities are high or growing, or decent work opportunities are lacking.

1.2 Statement of the Problem

Unemployment and income inequality have been and remained grave challenges which has eaten so deep into the fabric of Nigeria and threaten its existence as an entity. This is largely substantiated by level of industrialization in the nation which has always been at its ebb. The fact remains that few job prospects are met by a high concentration of economic opportunities (beyond agriculture) in a handful of cities in the country. More so, the Nigeria's "tax system" perpetuates inequality and the government places a more onerous tax burden on the poor by way of multiple taxation of smaller businesses through the different levels of government and informal authorities while tax waivers are granted to big multinational companies. Furthermore, the country's high cost of governance irks many citizens, Nigeria is a country where over 60% of the population live in poverty, the lawmakers, a fraction of that population are some of the highest paid in the world earning as much as $37,500 per month or even more. This high cost of governance comes at the expense of infrastructure and similar investments.

Also, widespread bribery and corruption, whether in the form of withholding the salaries and pensions of civil servants, nepotism, or greasing the palms of police officers, continue to redistribute income away from the masses. Salary gaps is another factor that leads to income inequality, the income inequality that we have today mostly comes from wide differences in salaries. At the very extreme are C-suite executives who have seen their average compensation grow nearly tenfold between 1960 and 2019. College-educated workers in general have fared far better than average, seeing their wages nearly double over that same period. By comparison, workers with less than a high school diploma have seen no growth in real wages over that same period. The interest of this project is to proffer solutions to the problems identified above so as to give a better life to the populace in this nation. It's no-brainer that Nigeria is hard stricken by

incessant unemployment and income inequality either by the increase of number of graduates churned out from tertiary institutions every year or through recession largely due to policy summersault. However, the misnomers could be address by having focused and thoughtful leadership both in public and private sectors to drive meaningful growth and development in the nation.

1.3 Research Questions

i. In what way does unemployment impact income inequality in Nigeria?

ii. What is the impact of unemployment on the living standard of the Nigerian populace?

iii. What is the effect of income inequality on the living standard of the Nigerian populace?

1.4 Objectives of the Study

The aim of this study is to analyze the relationship among unemployment, income inequality and standard of living in Nigeria. To achieve this broad objective, the specific objectives are pursued to:

i. investigate the impact of unemployment on income inequality in Nigeria;

ii. examine the extent at which unemployment affect the living standard of the Nigerian populace; and

iii. evaluate the effect of income inequality on the living standard of the Nigerian populace.

1.5 Hypotheses

The following hypotheses to be tested in this study are:

$H_0$1: There is no significant relationship between unemployment and inequality in Nigeria.

$H_0$2: Unemployment has no significant effect on the standard of living in Nigeria.

$H_0$3: Income inequality does not have significant impact on the standard of living of the Nigerian populace.

1.6 Significance of the Study

This study is aimed at assessing the impact of unemployment and income inequality on the living standard of the Nigerian populace and how to find a solution to the problems. Unemployment, income inequality and poverty in Nigeria remain remarkably high despite impressive economic growth. High unemployment rates make personal incomes extraordinarily divergent. Income inequality in the country has been worsening ever since as a result of differential access to infrastructure and amenities. The impact of unemployment and income inequality on the living standard of the Nigerian populace is far reaching with attendant rapid increase in crimes such as armed robbery, kidnapping and banditry which are posing major threats to national security. This study is an attempt to drill down to the causes of unemployment and income inequality in Nigeria and its impact on the populace. Since the causes and effect of unemployment will be identified and enumerated, it is hoped that the findings will become a basis for possible remedial actions and interventions that will accelerate economic development.

1.7 Scope of Study

This study is limited to the impact of unemployment and income inequality on the standard of living of the Nigerian populace. The research study centers on research work done over the past 39 years spanning from 1981 to 2019. The sources of data will include information from the Central Bank of Nigeria (CBN), National Bureau of Statistics (NBS) and other relevant sources (local and international data).

1.8 Limitation to the Study

This study investigates the impact of unemployment and income inequality on the living standard of the Nigerian populace between the periods of 1981 and 2019. The choice of this study period is based on the availability of data from national and international institutions. The secondary source of data employed in this study is not within the control of the researcher. It therefore becomes difficult for the user to read accurately how unemployment and income inequality affect living standard in the country. The study might be limited to policy formulation and implementation on standard of living, unemployment and inequality on one hand and public finance on the other and how has the government finance policies faired so far in the growth and development of Nigerian economy.

1.9 Operational Definition of Terms

Unemployment: This refers to a situation when an individual that is actively searching and within the working age group is seeking employment but is unable to find work.

Income Inequality: This explains the unevenly income distribution throughout a population of people living in a society. Income inequality is high when there is less equal income distribution.

Standard of Living: It simply shows the wealth, relieve, material goods, and basic necessities of life in an economy. The quality of life in such economy is more subjective and intangible.

Income Growth: This is the average increase in the proceeds of output of goods and services produced in a country for a specific period of time.

Per Capita Income Growth: It is average income earned per person in a given area in a specified year.

Cost of Living: This is the total amount of money required to ensure basic life expenses like food, clothing, housing, and health for a certain time period. Thus, it is the cost of sustaining a certain living standard.

Endnotes

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Chapter Two

Literature Review

2.1 Conceptual Review of Unemployment, Inequality and Standard of Living

The unemployment rate measures the number of people actively looking for a job as a percentage of the labour force. Unemployment occurs when a person who is actively searching for employment is unable to find work. Unemployment is often used as a measure of the health of the economy. The most frequent measure of unemployment is the unemployment rate, which is the number of unemployed people divided by the number of people in the labor force. Unemployment is a key economic indicator because it signals the (in)ability of workers to readily obtain gainful work to contribute to the productive output of the economy. More unemployed workers mean less total economic production will take place than might have otherwise. And unlike idle capital, unemployed workers will still need to maintain at least subsistence consumption during their period of unemployment. This means the economy with high unemployment has lower output without a proportional decline in the need for basic consumption. High, persistent unemployment can signal serious distress in an economy and even lead to social and political upheaval. Furthermore, a low unemployment rate means that the economy is more likely to be producing near its full capacity, maximizing output, and driving wage growth and rising living standards over time. However, extremely low unemployment can also be a cautionary sign of an overheating economy, inflationary pressures, and tight conditions for businesses in need of additional workers. While the definition of unemployment is clear, economists divide unemployment into many different categories. The two broadest categories of unemployment are voluntary and involuntary unemployment. When unemployment is voluntary, it means that a person has left his job willingly in search of other employment. When it is

involuntary, it means that a person has been fired or laid off and must now look for another job. Digging deeper, unemployment - both voluntary and involuntary - can be broken down into four types.

Frictional Unemployment

This exists when there is lack of adjustment between demand for and supply of labour, it arises when a person is in between jobs. After a person leaves a company, it naturally takes time to find another job, making this type of unemployment short-lived. It is also the least problematic from an economic standpoint. Frictional unemployment is a natural result of the fact that market processes take time and information can be costly. Searching for a new job, recruiting new workers, and matching the right workers to the right jobs all take time and effort to do, resulting in frictional unemployment.

Cyclical Unemployment

Cyclical unemployment is the variation in the number of unemployed workers over the course of economic upturns and downturns. Unemployment rises during recessionary periods and declines during periods of economic growth. Preventing and alleviating cyclical unemployment during recessions is a major concern behind the study of economics and the purpose of the various policy tools that governments employ on the downside of business cycles to stimulate the economy.

Structural Unemployment

Structural unemployment comes about through technological change in the structure of the economy in which labor markets operate. Technological change such as automation of manufacturing or the replacement of horse-drawn transport by automobiles, lead to

unemployment among workers displaced from jobs that are no longer needed. Retraining these workers can be difficult, costly, and time consuming, and displaced workers often end up either unemployed for extended periods or leaving the labor force entirely[1].

Institutional Unemployment

Institutional unemployment is unemployment that results from long term or permanent institutional factors and incentives in the economy. Government policies such as high minimum wage floors, generous social benefits programs, and restrictive occupational licensing laws; labor market phenomena such as efficiency wages and discriminatory hiring; and labor market institutions such as high rates of unionization can all contribute to institutional unemployment. Delving into inequality on the other hand, is a known fact that income inequality is paramount when it comes to making progress on poverty reduction. Income inequality matters greatly as it may slow down overall economic growth and slow down the pace at which growth translates into poverty reduction[2]. A situation of high and rising inequality in the presence of increasing growth can only result into little or no reduction in the level of poverty[3]. Assuming all the growth recorded by countries continued at the same rate as over the last 20 years with income distribution remaining unchanged, poverty will only fall by 10 per cent by 2030, from 17.7 per cent in 2010[4]. It is further noted that increased income inequality can dampen the impact of growth in reducing poverty, such that inequality is not just a problem. As a group in 2006, United Nations Economic Commission for Africa (2007) reported that oil-exporting countries in Africa had the highest growth rates and contributed 57.5 per cent of the continent's 5.7 per cent growth rate. Yet the growth pattern in such countries is usually not socially inclusive as it benefits mostly the owners of a small number of large enterprises and not resulting in a significant increase of formal employment.

In corroboration, data from the Central Intelligence Agency's World Factbook showed that 23.9 percent of the working population in Nigeria is unemployed, as an estimated 62 percent of the nation's 177 million people are below the age of 25. In 2011, 63 per cent of the population lived on less than USD 1 per day, up from 61 per cent in 2010. The unemployment rate is vital in any economy as it is one of the determinants of economic growth and development in developed and developing nations; thus, necessitating government round the globe to examine its impact on their economies. In 2011, an analysis on the unemployment situation in Nigeria shows that of the total number of unemployed individuals, 43.7% were university graduates, 23.8% were polytechnic graduates and 15.5% were college graduates. The continuous rise in the unemployment rate in Nigeria is disturbing; according to the National Bureau of Statistics, the unemployment rate rose from 4.9% in 2007 to about 29.5 % in 2013; which is a sign that policies to tackle unemployment in the country are usually inefficient due to rigid and weak labour market institutions. Though, Nigeria is not the only nation facing the problem of unemployment; but its rising levels shows that the phenomenon has become precarious. Thus, urgent attention on policies designed to tackle unemployment in Nigeria need to be properly reviewed.

Actually, the deteriorating employment crisis in the nation is partly an indication of government's inability to formulate policies that will create more jobs or provide a conducive environment that would encourage the private sector to increase employment opportunities without restrictions. The present trend of unemployment rate in Nigeria is frightening, and foretells a nation that would be plagued with negative outcomes such as crimes, high level of poverty, migration, low domestic industrial output, youth restiveness, kidnapping, conflict and lawlessness if immediate action is not taken. World leaders, in adopting the Millennium Declaration in 2000, pledged to create a more equitable world[5]. Yet, income inequality has

increased in many countries over the last few decades, as the wealthiest individuals have become wealthier while the relative situation of people living in poverty has improved little.

Disparities in education, health and other dimensions of human development still remain large despite marked progress in reducing the gaps. Various social groups, especially indigenous peoples, persons with disabilities and rural populations, suffer disproportionately from income poverty and inadequate access to quality services and, generally, disparities between these groups and the rest of the population have increased over time. This is not new. The Report on the World Social Situation 2005 warned of an inequality predicament and concluded that failure to pursue a comprehensive, integrated approach to development would perpetuate such a predicament, causing all to pay the price. The Report on the World Social Situation builds on that earlier report, emphasizing that addressing inequalities is not only a moral imperative but it is also necessary in order to unleash the human and productive potential of each country's population and to bring development towards a socially-sustainable path. The Report examines recent inequality trends and analyses their social, economic and political impacts, highlighting new developments and paying attention to the situation of disadvantaged social groups. It shows that inequality not only matters to people living in poverty, but also for the overall well-being of society. The Report illustrates that growing inequalities can be arrested by integrated policies that are universal in principle yet pay attention to the needs of disadvantaged and marginalized populations. It reminds world leaders that, in addressing inequalities, policy matters. While income inequality across countries has receded somewhat in recent years, it has risen within many countries. Non-economic inequalities have either remained stable or declined yet remain high.

Over the years, the Nigerian government has initiated various policies aimed at reducing the rate of unemployment in the economy. These policies include the Structural Adjustment Programme (SAP), welfare to work scheme, tax reduction etc. In spite of these policies introduced by the Nigerian government, the youths from 18-24 years are experiencing great hardship in securing employment. This is partially due to the fact that macroeconomic policies introduced by the government to ensure market stabilization are not efficient due to numerous economic and social malaises in Nigeria. Since the early 1980s, Nigeria's economic growth in spite of several years of economic reforms has remained sluggish averaging 2.8% in the decade of 1990s. This poor growth performance certainly causes developmental challenges including macroeconomic volatility that impact negatively on low per capita GDP; investment; and high level of unemployment[6,7]. In addition, the Nigerian economy has been typified by incidents of oil price shocks as well as world commodity prices which have brought about a slight dysfunction in the labour market. Over the years, the result of these continuous macroeconomic shocks has created structural imbalances within the Nigerian labour market, thus, producing a disparity between the rising rate of the labour force and corresponding rise in job opportunities. In the long run, this problem has impeded the swift performance of the labour market towards creating employment opportunities.

Consequently, the ratio of persons employed to the unemployed are relatively small, so much that the persons employed are compensated with low wages for services rendered. The inadequate employment situation has numerous extensive socio-economic, political and moral consequences. Persons in paid employment and those with insufficient skills are most susceptible when a macroeconomic shock takes place in the labour market[8]. The gap between the rich and the poor may be a worldwide problem, but in Nigeria the scale of inequality is extreme. In one

day, the richest Nigerian man can earn from his wealth 8,000 times more than what the poorest 10% of Nigerians spend on average in one year for their basic consumption. The Gender in Nigeria Report categorizes Nigeria among the 30 most unequal countries in the world. According to World Bank data, in 2009 the poorest half of the population held only 22% of national income. Income inequality, as measured by the Gini Index, increased during the 2000s from 40% in 2003 to 43% in 2009. The paradox of growth in Nigeria is that as the country gets richer, only a few benefits, and the majority continues to suffer from poverty and deprivation. Former Finance Minister Okonjo-Iweala noted that: "...in Nigeria, the top 10 percent of the population is capturing most of the growth there is and the people at the bottom are being left behind[9]. If we don't put our minds to this problem, the whole economy may be in danger." The disparity is such that the amount of money that the richest Nigerian man can earn annually from his wealth is enough to lift 2 million people out of poverty for one year. Just over 15 years into its return to democratic rule, Nigeria is in the curious position of having the world's highest-paid lawmakers preside over some of its poorest people. Because economic growth has been creating few opportunities for young people, there has been associated increasing level of violent crime, as well as religious, inter-ethnic and communal clashes. Poverty and inequality in Nigeria are not due to lack of resources, but to the ill-use and allocation of such resources. Continued widespread corruption and the emergence of a political elite out of touch with the daily struggles of the average Nigerian have conspired to ensure the cost of governance remains astronomical.

According to former CBN governor, Charles Soludo "this is a problem that has gone on for too long. The cost of governance in Nigeria is without doubt too high; actually, it is outrageous". Consequently, very limited resources are left to provide basic essential services for the wider, growing Nigerian population. According to human rights lawyer, Femi Falana, "It is sad to note

that most Nigerians never take cognizance of the war being waged by state governments against the poor and disadvantaged citizens". An additional problem is weak policy implementation. In fact, over the years a number of policies and programmes have been designed with the purpose of alleviating poverty and inequality, such as: Rural Basin Development Authority (RBDA), Directorate of Food, Roads and Rural Infrastructure (DFRRI), Rural Electrification Scheme (RES), Agricultural Development Programme (ADP), National Directorate of Employment (NDE) and Better Life for Rural Women. Others were the Family Support Programme (FSP), Rural Banking Scheme (RBS), People's Bank, the National Poverty Eradication Programme (NAPEP) and the Agricultural Credit Guarantee Scheme (ACGS). However, in many cases, these policies and programmes have not been implemented effectively to result in meaningful impact on poverty. Despite the prevailing recession Nigeria is still seen as Africa's largest economy and one of the fastest growing in the world. Yet, more than half of the Nigerian population still grapples with extreme poverty, while a small group of elites enjoys ever-growing wealth. Over the past 40 years, the gap between the rich and the poor has been growing in developed and developing countries alike. In 2015, just 62 people had as much wealth as the poorest half of humanity, and the richest one percent owned more wealth than the rest of the world combined.

At the same time, the poorest people are being denied their fair share: since the turn of the century, the poorest half of the world's population has received just one percent of the total increase in global wealth. In Nigeria the scale of economic inequality has reached extreme levels, and it finds expression in the daily struggles of the majority of the population in the face of accumulation of obscene amounts of wealth by a small number of individuals. While more than 112 million people were living in poverty in 2010. The richest Nigerian man will take 42 years

to spend all of his wealth at 1 million per day. According to Oxfam's calculations, the amount of money that the richest Nigerian man can earn annually from his wealth is sufficient to lift 2 million people out of poverty for one year[10,11]. Lifting all Nigerian people living below the extreme poverty line of $1.90 out of poverty for one year will cost about $24 billion. This amount of money is just lower than the total wealth owned overall by the five richest Nigerians in 2016, which was equal to $29.9 billion. Poverty in Nigeria is particularly outrageous because it has been growing in the context of an expanding economy where the benefits have been reaped by a minority of people, and have bypassed the majority of the population. Annual economic growth averaged over 7% in the 2000s, and yet Nigeria is one of the few African countries where both the number and the share of people living below the national poverty line over that period, increased from 69 million in 2004 to 112 in 2010, equivalent to 69% of the population. In the same period the number of millionaires increased by approximately 44%. Income inequality, as measured by the Gini Index, grew from 40% in 2003 to 43% in 2009. Regional inequality is high in Nigeria, and it translates into higher rates of poverty in the north-western states of the country. For example, in Sokoto State, 81% of the population is poor, while poverty incidence is much lower, at 34%, in Niger.

Economic and gender inequality are interconnected and reinforce each other. The life of Nigerian women is affected by a myriad of discriminatory traditional and socio-cultural practices that put them at disadvantage in a number of areas compared to men. For example, the majority of women are employed in casual, low-skilled, low-paid informal jobs; women are less likely than men to own land and 75.8% of the poorest women have never been to school, compared to 28% of richest men. In Jigawa State, 94% of women (against 42% of men) are illiterate. As a result of these disadvantages, women are more likely to be poor than men, and keep being excluded from

full participation in the country's economic, social and political life. At the root there is a culture of corruption and rent-seeking combined with a political elite out of touch with the daily struggles of average Nigerians. The overlap between political and economic power bends the allocation of opportunities, income and wealth to vested interests, and biases policy - making in favour of the rich. A first consequence is the astronomical cost of governance. Nigerian lawmakers are one of the best paid in the world: the average annual salary is US$118,000, equivalent to 63 times the country's GDP per capita (in 2013). Costs of maintaining the machinery of government are also inflated by the excessive staff numbers, inflated salaries and benefits, arbitrary increase in the number of government agencies and committees, hidden allowances and oversized retirement packages. The high cost of governance reinforces inequality because it means that few resources are left to provide basic essential services for the wider, growing Nigerian population. Public resource management is subject to elite capture, corruption and rent seeking, and as such contributes to reproducing inequality and compromises opportunities for inclusive growth. The tax system is largely regressive: the burden of taxation mostly falls on poorer companies and individuals.

On one side, big multinational receive questionable tax waivers and tax holidays, and utilise loopholes in tax laws to shift huge profits generated in the country to low tax jurisdictions. In some cases, these tax waivers have been captured by the economic and political elite and used expressly to garner political patronage. It has been estimated that every year Nigeria loses $2.9 billion of potential revenues to questionable tax incentives. This is equal to about three times the country's total health budget in 2015. Other revenues are lost because some companies shift profits to shell offices in tax havens and countries with low tax rates. A recent investigation found that between 2010 and 2013 a major telecom company had transferred N37.6bn (about

$119 million) of profits generated in Nigeria to its Dubai office where it had very negligible operations, to avoid appropriate tax aligned to profit levels made from the country. On the other side, to meet their revenue generation targets, the government – especially at the state level – opts for aggressive taxation of the informal sector, sometimes imposing erratic taxes according to needs. As a consequence, small and medium enterprises and men and women in the informal sector face multiple taxation, accompanied in some cases by human rights violations.

Further, the public resources that the government manages to collect are often spent in an unfair and inefficient way. This translates into lack of access to basic services for the majority of the population and poor outcomes in human development. The shares of government budget allocated to education, health and social protection are among the lowest in the region. For example, in 2012, 6.5% of the budget was allocated to education, 3.5% to health and 6.7% to social protection (in 2010). By comparison, in Ghana these shares were, respectively, 18.5% (in 2015), 13.8% (in 2015) and 9.1% (in 2010). Public institutions have been unable to use the limited resources available in an effective way. For example, 57 million of Nigeria's estimated population of 170 million people lack access to safe water, and over 130 million citizens are without access to adequate sanitation. Nigeria is also at the top of the list of countries with the highest number of children out of school. Elite capture of public sector policies and resources undermines the productivity of the most important sectors of the economy and prevents the fair distribution of the benefits of growth. This is especially notable in agriculture and in the oil sector. Agriculture is the main source of non-oil exports and employs almost half of the Nigerian population.

However, unfavourable policies have prevented small, poor farmers from benefiting from agricultural growth. For example, import quotas introduced to encourage investments in the rice

value chain and meant for investors with rice-milling capacity were instead issued to cronies, who in turn sold them to larger traders and corporations. This pushed down the market price of rice, harming millers and rice farm owners whom the measure was originally meant to favour. The oil sector provides 80% of the Nigerian government's revenue, but its performance is not efficient, and its contribution to the economy is not equitable. According to Nigerian National Petroleum Corporation, between 2013 and 2015, $3.9bn (N858bn) was lost to pipeline vandalisation and grand crude oil theft. Further, Nigeria continues to spend huge amounts of scarce foreign exchange importing refined petroleum, because domestic capacity is insufficient to meet demand. Allegations are that government resources allocated for refineries maintenance are captured by the political elite. Misappropriation of resources is evident in the case of the oil-rich Niger Delta region. Despite the allocation of large amounts of funds from multiple sources for the region's development since 1999, the local communities still live in dire conditions, including environmental pollution and degradation, gas flaring, acid rain, lack of infrastructure low levels of human development. Another consequence of the mismanagement of the nation's resources is the high rate of unemployment, especially among the youth. In 2016, between 12.1% and 21.5% of Nigeria's youth were without a job, and rates of underemployment are even higher.

The inability of the economy to generate enough jobs results from the insufficient allocation of resources to the creation of new economic opportunities, combined with a difficult business environment, which disincentives domestic investment and induces capital flight. The situation of the unemployed reached desperate levels when on 15th of March 2014, 6.5 million people visited recruitment centres to apply for 4000 vacant positions in the Nigeria Immigration Service. At least 16 people died in the stampede that ensued during the process. In Nigeria and all over the world, economic inequality is a catalyst for social tensions within communities, with citizen

frustrations manifesting in increased crime rates and violence in various forms, including communal, domestic, electoral, religious and inter-tribal violence. Inequality also perpetuates corruption because politics is perceived as the only route to earning opportunities. The rising level of inequality in Nigeria poses a growing threat to Nigeria's unity and stability and to its ability to eradicate poverty. However, deliberate policy interventions and political commitment, backed by an active, vibrant civil society and enlightened, proactive citizens can break the cycle. Unemployment is one of the most visible indicators of economic activity[12]. The rate of unemployment typically rises considerably during recessions then falls as the economic recovers. People commonly view the typical unemployed worker as suffering long-lasting despair and destitution, so the media publicize high unemployment as a great social problem. This view of the unemployed worker is not an accurate depiction of the vast majority of those out of work, in contrast, most of the unemployed find work relatively quickly.

While their income loss is significant, it is not catastrophic for most workers who suffer an unemployment spell. Some degree of unemployment is socially and perhaps personally desirable. Globally, much of unemployment consists of new entrants to the labour market seeking their first job, individuals who are voluntarily changing jobs or occupations, and people in jobs for which periodic or seasonal layoffs are normal, expected, and compensated for by higher wages during periods of employment. For these individuals, unemployment is not a problem at all. It is merely part of the natural functioning of a flexible and efficient labour market.

Economists often view unemployment as one facet of an inevitable process of search in the labour market. Jobs and workers are heterogeneous along many dimensions. Workers differ (among other ways) by intelligence, creativity, education, training, experience, physical size and strength, manual dexterity, ability to sustain repetitive tasks, and preferences about their work

environment. Jobs vary in the abilities, education, and experience that are required to perform them, as well as in working conditions, location, opportunities for advancement, and many other characteristics. Since workers and jobs are so heterogeneous, the process of matching the characteristics of a particular unemployed worker with the most suitable vacant job often cannot be accomplished quickly. Instead unemployed workers and employers having vacant jobs engage in a two-sided search, seeking to achieve a good match as quickly as possible. The length of this search process for a typical unemployed worker is a major factor in determining the unemployment rate. One can imagine an economy in which this matching problem could be solved trivially. If all workers and jobs were identical, for example, there would be no gain to searching for a better match. Or if everyone had instantaneous and perfect information about the characteristics of all workers and jobs, searches could be accomplished in just a moment. However, in an economy in which the matching problem cannot be solved trivially it is generally desirable to have both a positive unemployment rate and a positive job vacancy rate. Successful matching requires a pool of searching workers on one side of the market and a pool of available jobs on the other. The socially optimal unemployment rate depends on the size of the pool that is required in order for optimal matching to occur. The optimal pool size, in turn, depends on the efficiency of the "matching technology" in the economy as well as on a variety of social and policy variables. If the costs and benefits of search are largely internal to the workers and firms doing the searching, we might expect that a competitive market economy would gravitate toward the socially optimal amount of search.

However, the labour markets of modern economies contain many distortions that might cause the long-run equilibrium unemployment rate (the so-called natural rate of unemployment) to be higher or lower than the optimal rate. In particular, a wide variety of government policies

influence the incentives of workers and employers to continue searching, including unemployment insurance programs, job-protection legislation, and "active" labour market policies such as job-placement assistance and training. Recent analysis of unemployment has focused intensely on one particular empirical problem: extremely high unemployment in continental Europe since 1980. From 1950 until 1970, the unemployment rate in most European countries averaged about 2%, roughly half of the rate in the United States during that period. Since 1980, Europe has suffered unemployment rates in the 8 to 12 percent range, about twice the U.S. rate. Moreover, long-term unemployment (of more than one year) is far more common in Europe than in America. Theories of unemployment are able to explain some, but not all, aspects of the divergence of unemployment behaviour between Europe and America. The most interesting new tools that are employed in the analysis of unemployment is dynamic programming, which is a common method of analysis of models involving transition in continuous time between alternative discrete states. In the case of unemployment models, the main states are employed and unemployed, with some variations in selected models. Dynamic programming has a complicated side and a simple intuition. In order to measure unemployment, economists have adopted a statistical definition that is only partially understood by the general public.

Unemployment statistics, optimal matching does not generally mean making the best matches that are conceivably possible. Better matches involve costs (longer unemployment spells) as well as benefits (better fit between jobs and workers). The optimal amount of matching balances these marginal costs and benefits. In the United States, the extent of unemployment is commonly expressed as the ***unemployment rate***, which is the number unemployed divided by the total labour force, which consists of the sum of employment and unemployment. (In Europe,

the "headline number" is more likely to be the number of unemployed rather than the rate.) The unemployment rate ignores completely those who are classified as out of the labour force—they enter neither the numerator nor the denominator. To the extent that it is difficult to distinguish between people who are unemployed and those out of the labour force, this may cause ambiguity in the meaning of the unemployment rate.

To account for this potential problem, economists sometimes use the ***employment/population ratio*** instead of the unemployment rate. This ratio measures the share of the adult population that is employed and treats unemployment and out of the labour force as equivalent states. Apart from the usual difficulties associated with surveys, such as inaccuracy in responses, the categorization of the population by labour-market status poses some difficulties. There are some "gray areas" between the three categories that have led some economists (and politicians) to question the relevance of published measures. Another difficult boundary is that between unemployed and out of the labour force. Many countries have begun to collect data on ***discouraged workers***, who are officially classified as out of the labour force. Discouraged workers have given up job search because they do not believe they can find a job. They are clearly part of the unemployment problem *if their assumption is correct*. However, since they are not actively seeking work, it is impossible to tell whether they would have, in fact, been able to find a job had they continued their searches. The presence of discouraged workers suggests that the measured unemployment rate may understate the true magnitude of unemployment.

2.2 Theoretical Review

There is often a distinction theoretically among several categories of unemployment, although it is difficult or impossible to decompose the empirical measure in a corresponding way.

The most fundamental distinction is between ***natural unemployment*** and ***cyclical unemployment***. In a famous presidential address to the American Economic Association in 1967, coined the phrase "natural rate of unemployment" to refer to the rate that results from the equilibrium operation of the microeconomy, when macroeconomic conditions cause neither a general excess demand nor an excess supply of labour. At any point in time, macroeconomic conditions can lead to a slack aggregate labour market in which unemployment is above the natural rate or a tight labour market with unemployment lower than the natural rate. The difference between the actual rate and the natural rate of unemployment is often called cyclical unemployment. Keynes emphasized the importance of cyclical unemployment during the Great Depression, which he interpreted as a huge aggregate excess supply of labour. When unemployment changes, there is often disagreement among economists about whether the causes are microeconomic or macroeconomic, in other words, whether it is a change in natural or cyclical unemployment. In the early post-war period, the natural rate of unemployment was widely regarded as being stable at about 4 percent in the United States and about half of that in Europe. Changes in the labour market and in the general level of unemployment in the 1970s and 1980s convinced most macroeconomists that the natural rate can fluctuate considerably due to changes in the microeconomic structure of the labour market.

The natural rate in the United States was reckoned to be 5.5 to 6.5 percent in the 1980s. The causes of high unemployment are regarded almost universally as microeconomic, which means that they should be viewed as increases in the natural rate. From the Macroeconomists and

labour economist's re-examination, there exists sharp distinction between natural and cyclical unemployment. Despite the inconvenience it imposes on the theories, the microeconomy and macroeconomy are highly interdependent. A period of recession or depression caused by strictly macroeconomic factors will affect the microeconomic structure of the labour market in several ways. The demand for durable goods is usually more sensitive to business cycles than other goods, so these industries will shrink more than others in recessions, which will affect the industry, regional, and occupational structure of the demand for labour. On the supply side, workers who have been unemployed for a long time often lose job skills or job-finding skills, making them less likely to find a job. Economists have used the term ***hysteresis*** to refer to situations where prolonged increases in cyclical unemployment raise the natural rate of unemployment. If hysteresis occurs, then the unemployment rate may never return all the way to its original natural rate after rising in a large and prolonged recession.

Within the category of natural unemployment, economists sometimes distinguish ***frictional*** and ***structural*** unemployment. Frictional unemployment results from the natural frictions of the labour-market matching process. You can think of the frictionally unemployed as job searchers for whom suitable vacancies exist, but who have not yet found these openings. Structural unemployment occurs when the skills and other characteristics of the unemployed do not match the requirements of the available jobs. Technological change and structural shifts in the economy often cause changes in the skill composition of the job pool. If the labour force does not keep up with these changes, then structural unemployment is likely to result. There is no single unified model of unemployment. The Walrasian paradigm based on the market for a homogeneous good predicts that there should be no unemployment, so this workhorse benchmark model of neoclassical economics is not informative. Instead, one must move beyond

the Walrasian model in one way or another. Since there are many ways in which actual labour markets differ from a Walrasian market, there are many possible approaches that can be followed. While employment and unemployment are clearly connected in important ways, a theory of employment alone is not sufficient to explain the behaviour of unemployment.

One fallacy that is often committed by uninformed members of the public and the media is to assume that a decline in employment of, say, 1000 workers necessarily means that unemployment will rise by 1000. If a firm lays off 1000 workers, only a fraction will enter the ranks of the unemployed, and many of those are unlikely to remain there very long. Some of the laid-off workers will find jobs right away, moving from one employment position to another rather than into unemployment. Others will leave the labour force for retirement, education, child-bearing, or other non - labour activity. Similarly, when a firm hires 1000 new workers, some would have been previously unemployed, but many others will come from other jobs or from outside the labour force as, for example, with new graduates finding their first jobs. Rather than simply viewing unemployment as the counter-state to employment, it is modelled as a process of search. The success that individuals seeking new jobs will have in finding them depends on two broad kinds of circumstances: (1) the general balance of demand and supply in the labour market, and (2) the match between the searchers' characteristics and those of the available jobs. There are two broad categories of approaches to explaining movements in unemployment that correspond to these two kinds of circumstances. One approach emphasizes the heterogeneity of workers and jobs. Because every worker and every job have unique characteristics, matching them up through a search process is time consuming. Search models examine the propensity of employers and job searchers to achieve matches and how that propensity varies over time. This approach models the flows of workers and jobs between states:

a job match that results in a hire transforms an unemployed worker into an employed worker and a vacant job into an occupied one. To complete the model, one must examine the other labour - market flows: job creation and destruction, entry to and exit from the labour force, and the flow of separations of existing workers from their jobs.

In the search approach, natural unemployment fluctuates when there are changes in the efficiency of matching in the economy or in the other flows between labour-market states. For example, if ***structural shifts*** in the economy make it more difficult to match the characteristics of unemployed workers with those of vacant jobs, then matching will be less efficient and the natural rate of unemployment will increase. It should be emphasized that the kind of unemployment described by the search theories does not require a general excess supply of labour. It stresses the fact that even when the number of unemployed is equal to the number of job vacancies, neither number is likely to be zero. The other major approach emphasizes microeconomic imperfections that lead to imbalance between demand and supply in the aggregate labour market, especially to excess labour supply. These imperfections can be associated with government interference such as minimum wages and unemployment benefits, or with deviations in the behaviour of firms or workers from the assumptions of price-taking competitive markets such as the presence of unions or non - competitive behaviour by employers. This approach often tends to maintain the assumption that labour is a homogeneous good and emphasizes the possibility of a lasting imbalance between demand and supply in the unified labour market.

One popular model that takes that approach is the ***efficiency-wage*** model. This model is based on the notion that firms pay higher wages than would normally be necessary in order to attract workers. Different versions of efficiency-wage models stress different reasons why firms may

do this. One is that higher wages may prevent shirking by employees; another is that a higher wage offer may attract a more qualified pool of applicants. While each firm in an efficiency-wage model wants to pay more than other firms, that obviously cannot happen. If all firms offer an efficiency wage, then aggregate wages in the economy are bid up above the market-clearing level and a general excess supply of labour results.

Contract models are based on the observation that labour contracts often forbid firms from changing wages in the short run, but allow them to respond to variations in their need for labour through layoffs and overtime. A rich literature exists that examines the rationale for such contracts and their optimal structure.

Another model that follows this approach is the ***Insider-outsider model***, where a sharp distinction is drawn between the bargaining status of individuals who are currently working (insiders) and those who are unemployed or out of the labour force (outsiders). This model has been advanced as a promising explanation for the poor performance of labour markets in continental Europe in recent decades. A lengthy empirical literature has examined the impact of minimum-wage laws on both employment and unemployment. Although there is a considerable range of results, the consensus seems to be that minimum wages have relatively minor employment/unemployment effects. Nonetheless, minimum-wage laws may have significant impacts in certain time periods and on certain groups of workers, especially teenagers and unskilled workers.

A simple minimum-wage model, the most basic analysis of the minimum wage proceeds in the way that there is need to analyze any price floor. In Figure 2.1, labour is assumed to be homogeneous; all workers participate in the same market and earn the same wage. If the market is Walrasian, then the wage will be w^* and the economy will operate with full employment at

the level L^*. If a minimum wage is imposed at a level higher than the equilibrium wage, say at w_1, then the market cannot reach equilibrium. Only L' workers are hired at w_1 and $L'' - L'$ workers are unemployed.

Note that the effects of the minimum wage on employment and unemployment are not of the same magnitude. Employment falls from L^* to L', while unemployment rises (by more) from zero to $L'' - L'$. This is because the higher wage draws additional workers into the labour market if the labour-supply curve slopes upward. The magnitude of unemployment arising out of the minimum wage in this model depends on the elasticity of the labour-supply and labour-demand curves. If these curves are highly inelastic (steep), then the unemployment gap is small and the main impact of the minimum wage is to transfer income from consumers (through higher prices of products) or producers (through lower profits, if the product market is not competitive) to workers. If labour demand and supply are highly elastic (flat) then there will be a large reduction in employment and a large increase in unemployment. Beyond its simplistic representation of the labour market, the analysis depicted in Figure 2.1 is flawed in one important respect: minimum wages are almost always set well below the average wage in the economy, not above it. Suppose that the minimum wage is set at w_2. In this case, the minimum is not binding since no one is paying wages below $w_2$in equilibrium. Thus, the minimum wage has no effect on the market at all. This is obviously too simplistic an analysis to capture how a minimum wage affects the market. Most workers, including virtually all skilled workers, earn more than the minimum wage and are not directly impacted by its presence. Some workers, mostly young and unskilled workers, may be affected, however. To capture this kind of interaction, we need a segmented model of the labour market that separates skilled from unskilled labour.

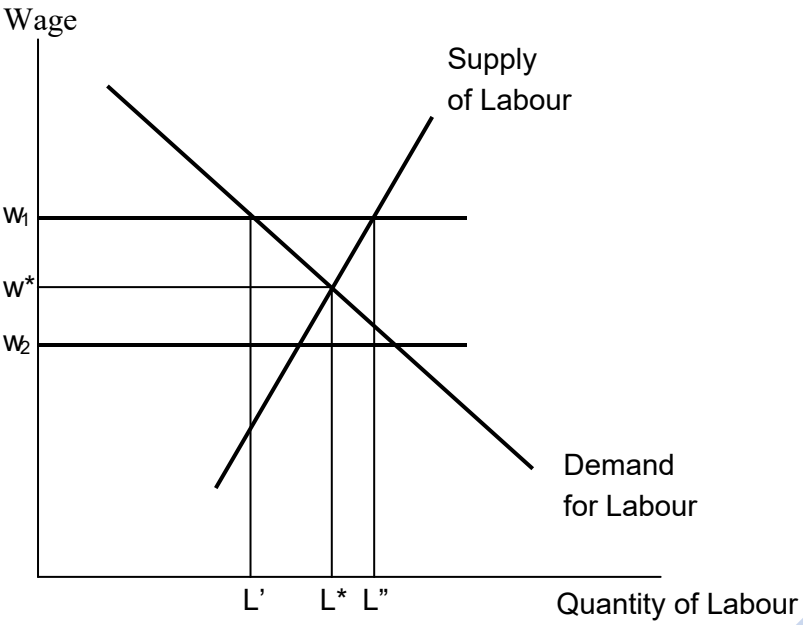

Figure 2.1: Minimum wage in unified labour market
Source: Piketty & Saez (2003).

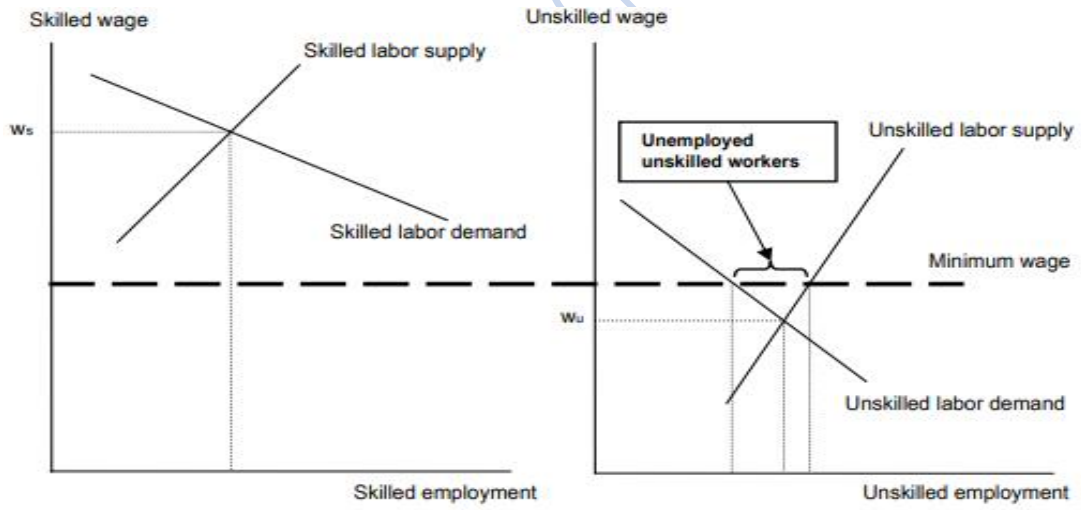

Figure 2.2: Minimum wage in a segmented labor market
Source: Piketty & Saez (2003).

Minimum-wage effects on skilled and unskilled labour

A two-sector labour market is shown in the other graph. The left panel shows the equilibrium of the market for skilled labour. In this market, the equilibrium wage w_s exceeds the minimum wage w_m, so there is no direct effect of the minimum-wage law on unskilled labour. The right panel shows the unskilled labour market in which the equilibrium wage w_u is lower than the legal minimum. The wage floor is effective in the unskilled market, preventing demand from coming into equality with supply. As in our initial analysis of Figure 2.1, employment is reduced and an unemployment gap exists. This would be the end of the story if there were no connections between the markets for skilled and unskilled labour. However, there may be spill overs on either the demand side or the supply side (or both). On the supply side, there would be no immediate spillover of workers from one market to the other. Unskilled workers cannot, presumably, become skilled immediately, while skilled workers earn a higher wage in the skilled market and have no incentive to move. In the longer run, supply flows in either direction are possible. Those who cannot find work in the unskilled sector due to the excess supply situation may choose to acquire skills and eventually move to the skilled sector. This would increase the supply of skilled workers and drive their wage down. However, the gap between skilled and unskilled wages has been reduced (for those unskilled who have work), so there may be less incentive for workers to acquire skills if they believe that they will be successful in getting an unskilled job at the higher minimum wage. This spillover would tend to offset the previous one, leaving the net effect on supply uncertain.

On the demand side, firms' demand for skilled workers may be affected by the increase in the wage for unskilled labour. If skilled and unskilled workers are substitutes, the firm will increase its demand for skilled workers, which will tend to push skilled wages upward. If they are

complements, this will reduce skilled-labour demand and lower skilled wages. Although the substitute-complement relationship between skilled and unskilled labour is likely to vary across industries, the most common assumption is that they tend to be substitutes. If that assumption is true, then an increase in the minimum wage will raise the wages of skilled workers. This hypothesis is supported strongly by the intense political support for minimum-wage legislation by labour unions. Most members of labour unions already earn more than the minimum wage, so they have no direct interest in a higher minimum wage. However, if a higher minimum wage for unskilled workers raises the whole wage structure as firms substitute union workers for now-more-expensive lower- skilled workers, then union members may gain as well. Although union leaders may claim that their support of minimum-wage laws is philanthropy toward or solidarity with unskilled workers, it is highly unlikely that they would support these laws if they *reduced* the wages of union members.

To summarize, effective minimum-wage laws appear to benefit the fraction of unskilled workers that are able to find jobs. They reduce the welfare of those unskilled workers who cannot find employment. Skilled labour seems to gain from higher minimum wages as substitution by firms pushes the entire wage structure upward. One determinant of the rate of unemployment is the length of time that the average unemployed job-searcher takes to accept a new job. If searchers find and accept new jobs quickly, then unemployment is lower than if it takes a long time for people to move from unemployed to employed. The length of job search is sometimes modelled by considering the marginal costs and marginal benefits that a searcher expects from continuing to search. The search terminates when the marginal benefit of search no longer exceeds the marginal cost. The principal cost of search is the wage income that is forgone by not having accepted the best offer received to date. The longer a worker searches,

the better the job offers he or she accumulates, so the marginal cost of continuing becomes higher the longer is the search. The benefit of additional search is that a better job might be found. This marginal benefit is likely to decline as search continues, since the incremental increase in job quality is likely to become smaller as more jobs have been checked.

The declining marginal benefit curve in Figure 2.3 shows the falling marginal benefit of search, while the rising marginal cost curve represents the increasing marginal cost. Length of search is measured on the horizontal axis. Search equilibrium occurs where marginal benefit equals marginal cost, with duration D^*.

Anything that changes the marginal cost or marginal benefit of search will affect the chosen search duration, and thus affect equilibrium unemployment. For example, if a person's prospects for improving on his or her best job offer suddenly appear to improve, then the marginal benefit of search increases and the individual lengthens search time. If a searcher's spouse gets a better job, the marginal cost of search may fall, increasing the length of search. One possible explanation for why unemployment rose in the 1970s and 1980s when more and more married women entered the labour force is that two-income families may have lower marginal search costs than families with a single earner, allowing longer searches and raising the equilibrium rate of unemployment.

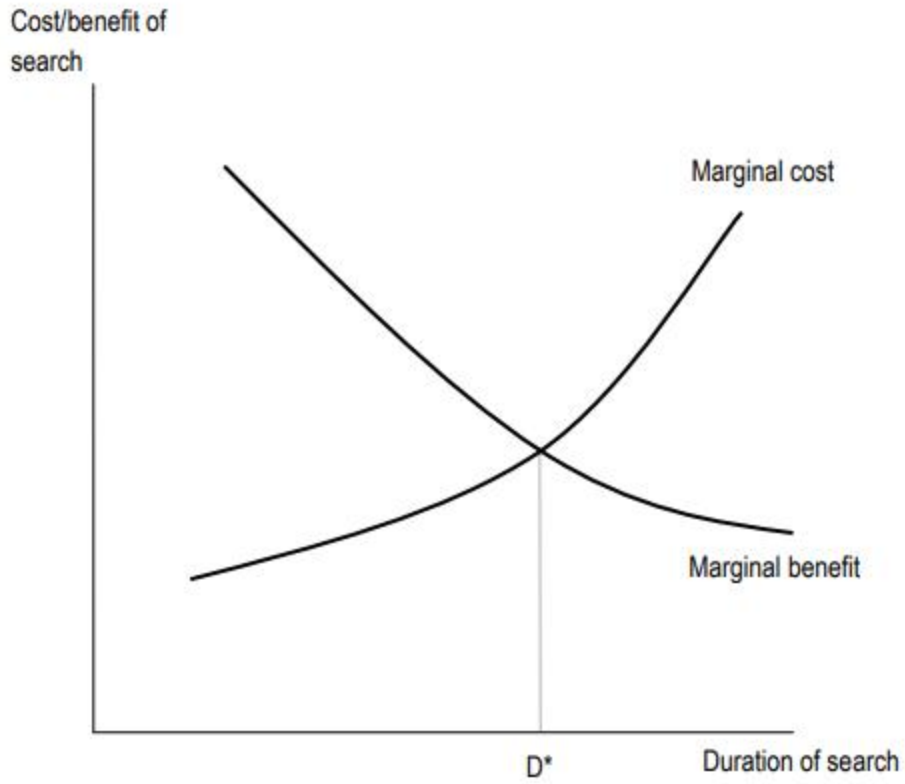

Figure 2.3: Marginal costs and benefits of search
Source: Piketty & Saez (2003).

One consideration that has a large effect on search cost is the availability of unemployment-insurance benefits. If the government pays benefits to an unemployed worker to "replace" a substantial share of his or her potential salary, marginal search cost may be substantially reduced. In the United States, workers who lose their job are entitled to a share of their previous salary (usually about half, subject to an upper limit) for a limited period of time (usually six months, though this is sometimes extended during recessions). The presence of limited-time unemployment benefits would shift the left-hand part of the marginal cost curve down assuming that benefits run out after a period of time equal to D'. The presence of unemployment benefits causes two potentially testable changes in unemployment. First, the duration of search and the equilibrium rate of unemployment should both increase. Second, because of the discontinuity in the marginal cost curve at the time limit for benefits, there should be an unusually large share of the unemployed accepting jobs at exactly that duration. The effect of benefits on unemployment is difficult to test because of the many other factors that affect unemployment rates. In an empirical study of 1980s unemployment rates in 20 countries, it was discovered that an additional year of benefit eligibility cause unemployment to rise by 0.92 percentage points, and that an increase of one percentage point in the "replacement ratio" raises unemployment by 0.17 points. Time-series studies for the United States are less clear[13].

The effect of unemployment benefits on search can be seen more decisively from the effect of benefit duration on length of unemployment spells. Further study revealed a remarkable tendency for the length of unemployment spells to be exactly the maximum benefit duration[14]. For example, if unemployed workers are eligible for six months of benefits, then an unusually large number of the unemployed would find jobs after exactly six months. Although there is considerable evidence that more generous unemployment benefits lead to higher equilibrium

unemployment, it is not clear that this is necessarily bad. In order to assess the *optimal* duration of unemployment from a social point of view, we need to examine the marginal *social* costs and benefits of search, which may not be identical to marginal *private* costs and benefits. Lengthening the search of an unemployed worker may lead to a better match between the skills of the worker and the requirements of the job. By using his or her skills in a better way, the worker receives higher wages. Society gains from this through improved productivity and efficiency—more output is available for society from the worker's effort. If wages reflect workers' marginal product accurately, then the social benefits of the increased search and improved matching correspond to the individual or private benefits. The private cost to the worker of additional search is his or her forgone wages from the best available offer. Likewise, society loses the output that the worker would have produced had he or she not continued to search. If wages reflect marginal products then social costs and private costs will be similar. If private benefits and costs of search match up with social benefits and costs, then the individual's choice of search duration will be socially optimal.

If the government then introduces unemployment benefits to this situation, private search costs fall, but social costs do not change. Searchers will search longer than the socially optimal duration and the equilibrium or natural unemployment rate will be above the socially optimal rate. However, there are reasons why we may be skeptical about the optimality of searchers' duration choices in the absence of unemployment benefits. One that is familiar from our analysis of consumption and investment is the possibility of liquidity constraints and imperfect capital markets. Households without substantial nonhuman assets usually find it difficult, and often impossible, to borrow at reasonable interest rates against future earnings. Consider the lone worker in such a household. If he or she were to become unemployed, the cost of a lengthy

job search could be huge in terms of forgone utility (starving children come to mind). However, from society's point of view, the cost is merely the cash value of the worker's forgone wages. Whereas the worker cannot borrow against future earnings, society does so easily. Thus, the effective cost of search to the worker could be much larger than the social cost.

In this case, the duration of search in the absence of unemployment benefits could be too short and the equilibrium unemployment rate too low. Introducing unemployment benefits may serve to offset (more or less) this externality, leading to a more socially efficient search decision. The presence of a labour union that engages in collective bargaining on behalf of workers can alter the nature of the labour market in many ways. Several theories of unemployment incorporate the behaviour of unions. Romer analyzes the insider outsider model, which is often thought to represent union behaviour. In this section, we consider the direct effects of unions on employment and unemployment. Whole libraries have been written about the goals, activities, and impacts of labour unions. While union activities and styles of organization differ substantially from country to country and over time, unions almost universally raise their members' wages through the process of collective bargaining. Unless unions also raise the marginal product of labour, this will result in a lower level of employment of union labour than would occur in a competitive market.

***An economy-wide labour union*:** The structure of labour unions varies considerably across economies. American unions are often to be defined by industry or by craft. For example, the United Auto Workers represents most workers in the automobile industry regardless of occupation, while individual craft unions represent workers in construction trades such as plumbers and electricians. Recent mergers and consolidations have often blurred industrial and occupations lines. In some other OECD countries, unions are much more centralized. Finland,

Norway, Australia, and Belgium have institutional regimes under which a single centralized wage bargain affects most of the entire economy. Austria, Denmark, and Sweden moved away from centralized wage bargaining in the 1980s. Most other countries in the OECD strike wage bargains that cover entire sectors of the economy. The United States, Canada, Japan, and the United Kingdom are exceptions in which wage bargaining at the enterprise or plant level predominates.

2.2.1 A Two-sector Model of Unions and Unemployment

Since most countries have a substantial sector of the economy that is not covered by collective bargaining, it seems more realistic to model the labour market as having two sectors: a union sector and a non-union sector. In the union sector, wages are above the equilibrium level due to effective bargaining. The non-union sector functions competitively. For simplicity, the demand for labour in the two sectors is assumed to be similar, i.e., the marginal product of labour is the same in the union and non-union sectors. Suppose that we begin from an initial equilibrium in which wages are identical in the two sectors. When the union increases the wage through bargaining, firms will reduce employment of union labour. Thus, there may be some initial unemployment in the union sector and a differential between union and non-union wages. Can this situation be sustained in equilibrium, or will demand and supply adjust further? As in the case of the minimum wage, there are possible spill overs between markets that may influence the ultimate equilibrium. On the supply side, some union workers will be displaced by the reduction in union employment. What will these workers do? If they seek employment in the non-union sector, then the supply of non-union workers will increase, and non-union wages may fall. Thus, labour may spill over from the union to the non-union sector. However, it is also possible that the attraction of high wages (if one is lucky enough to get a job) will retain and

attract workers to the union sector. Union members and would-be-members may queue for union jobs, willingly accepting temporary or intermittent.

Although, it will ignore the distinction in the text, unionization is not always synonymous with coverage by collective bargaining. The leading example of this is France, where only about 10% of workers belong to unions, but the collective bargaining agreements that unions negotiate extend to 90% of the work force. Rates of coverage by collective bargaining among OECD countries vary from over 90% in France and Belgium to about 20% in Japan and the United States. For simplicity, we refer to the part of the labour market characterized by collective bargaining as the union sector. Unemployment as a cost of getting higher wages during periods of employment. This queuing phenomenon - sometimes called ***wait unemployment*** - will raise the aggregate rate of unemployment. In addition to these labour-supply spillovers, demand spillovers will occur if the goods produced by the union and non-union sectors are fairly close substitutes. In this case, after a rise in the union wage, the non-union sector can undercut the prices of firms in the union sector since it has lower labour costs. As the market price of goods falls, firms in the union sector may make losses and gradually leave the industry. The non-union sector will absorb the extra demand, and the size of the non-union sector will gradually grow relative to the union sector. Under this scenario, union power will be eroded over time, perhaps reducing the union wage differential and the share of the work force that is unionized. There will be little effect of unions on unemployment in the long run if demand spillovers are important. Thus, a powerful but not universal union sector can cause wage differentials among industries and a decline in employment in covered industries. However, it is unlikely that very much of this decline in employment will result in unemployment.

Only if workers queue for union jobs rather than spilling over into the non-union sector will the existence of a union raise the equilibrium unemployment rate. Even this effect may diminish over time if substitution on the demand side reduces union power in the long run. Central to the search theory of unemployment is the principle that workers and jobs are heterogeneous over many dimensions. Each worker has a particular package of skills, education, experience, location (and willingness to relocate), and preferences among job characteristics. Every job has particular characteristics of location, working conditions, and skill requirements. The process of search attempts to make matches between worker and job characteristics. It is tempting to suggest that this sort of substitution may account for the dramatic decline in U.S. unionization rates from about 30% in the 1950s to about half of that today. However, the goods produced by union labour in the United States (typified by heavy industrial goods and craft trades) do not seem like close substitutes for those of the non-union sector (such as agriculture and services). It seems instead that declining unionization has been a function of the general rise in service employment and a decline in manufacturing, largely motivated by changing demand, changing patterns of international trade, and shifts in technology.

However, when there are fundamental differences between the characteristics of searchers and jobs, then matching will be more difficult, and unemployment is likely to be higher. Thus, search theory suggests that the natural unemployment rate may be sensitive to changes in the efficiency of job matches. For example, if an economy is subject to an unusual degree of change in the sectoral composition of output, the occupational composition of the demand for labour, or the geographical distribution of output, then the natural rate of unemployment should be high. The seminal study looking at the effects of sectoral shifts on unemployment is argued that when the cross-industry dispersion of growth in employment is high, more workers will be changing

industries and matching will be more difficult, leading to higher unemployment[15]. Dispersion by the standard deviation across a broad set of industries of the rate of employment growth. When this variable was included in a regression in which the dependent variable was the unemployment rate, its sign was positive and statistically significant. The work was widely regarded as showing support for the idea (implicit in real business cycles) that a large part of cyclical fluctuations in unemployment can be explained by shifts in supply conditions rather than by aggregate demand. The rationale for the result was challenged and argued that sectoral shift variable was capturing changes in aggregate demand rather than supply-induced structural shifts[16].

Since the sectors of the economy have varying sensitivity to demand-induced business cycles, such cycles would cause high cross-sectoral variability in employment growth. For example, investment and durable goods industries are more cyclically sensitive than services and nondurables, so when a (demand-induced) recession hits, employment will fall by more in these cyclically sensitive industries than in others, which in turn causes the cross-sectoral variance in employment growth to increase. The argument was supported with evidence that job vacancies are negatively related to cross-sectoral variability. If the effect of high employment growth dispersion was due to supply-induced sectoral shifts, then vacancies should be high in the growing industries and the unemployment rolls swollen with workers from the shrinking ones. Thus, the prior model predicts that unemployment and vacancies should both rise in times of high variability. The latter argued that high measured variability occurs at times when overall labour demand is falling, which explains why vacancies are low rather than high.

Since the United States does not collect data on job vacancies, the series they actually used was a measure of help-wanted advertising collect by the Conference Board, a private business

organization. This variable is, at best, a rather weak proxy for job vacancies, which has prompted some proponents of the sectoral-shift model to question the validity of the latter's results. A lengthy literature has followed the two models with significant evidence being presented on both sides of the debate. There is still considerable controversy about the relevance and interpretation of the association between unemployment and measures of sectoral shifts. Proponents of both sides (often Keynesians on the aggregate-demand side and neoclassical economists on the supply-induced sectoral-shift side) can find plenty of evidence to support their claims. Another factor that should affect the ease with which searchers and job vacancies are matched up is the degree of flexibility that is present on both sides of the market. If workers are very narrowly trained for specific jobs in specific industries, then they should be much more prone to long unemployment spells if sectoral shifts arise. If, on the other hand, workers have a relatively general set of skills that are useful in a variety of industries and occupations (sort of like Reed students!), then they should adapt quite easily to sectoral shifts. Romer examines four major categories of models: efficiency-wage models, contract models, insider-outsider models, and search and matching models. If time permits, we shall spend considerable time with each of these since all of them have strong influences on how modern macroeconomics think about unemployment. As noted above, the first three groups of models are commonly associated with a Keynesian view of unemployment and business cycles: imperfections in labour markets cause excess supply to be sustained. The search and matching models have found favour with those who prefer a more neoclassical approach.

Efficiency-wage models Neoclassical factor demand theory treats the firm as a price taker in labour markets. The firm observes the equilibrium wage (for a particular category of labour) and determines how much it wishes to hire based on the marginal-revenue-product curve for that

kind of labour. The theory of ***efficiency wages*** is based on the premise that firms may voluntarily choose to pay more than the market-equilibrium wage for at least some categories of labour. Why would a firm choose to do this? In the strict neoclassical framework, it would not, because the productivity of each worker is determined strictly by the technological factors that underlie the production function. Like robots, workers are plugged into the production process and are assumed to do their job regardless of wages, working conditions, or other factors. In a richer model, worker productivity might be endogenously determined by such factors as their degree of effort or the rate of (disruptive) worker turnover. In such a setting, workers who recognize that they are receiving a premium above the "normal" wage may have incentive to work harder and may be less likely to quit. This raises productivity, perhaps by enough to more than compensate for the higher wage the firm pays. To allow varying worker efficiency, we model the firm's production as a function of the effort of the average worker times the number of workers. Effort is assumed to depend positively on the real wage that the workers receive, $e = e(w)$, with $e' > 0$.

Note that there are many assumptions that could be used to justify this effort wage or efficiency-wage relationship. For example, higher wages may make workers more content, healthier (if equilibrium wages in the economy are very low), more hard-working, less likely to cause problems for other workers, and less likely to quit. Any of these effects raises the worker's productivity, so the efficiency-wage framework encompasses a fairly broad set of underlying assumptions. In the first case, there is unemployment in the economy and unemployed workers are assumed to be willing to work at any wage that the firm offers. In the second, there are no unemployed workers and the firm must offer a wage at least as high as that of other firms. This condition can be interpreted as implying that the elasticity of effort with respect to the wage

must equal one when the firm is at the optimal wage and employment level. As Romer points out, the economy-wide equilibrium in this model can feature either zero unemployment (if aggregate labour demand at the efficiency wage is greater than or equal to supply) or positive unemployment (if labour demand is less than supply).

Suppose that we are in a positive-unemployment equilibrium. What prevents firms from lowering the wage when unemployed workers come knocking at their doors offering to work for less than what the firm is currently paying? The answer is that they recognize that lowering wages will reduce employee productivity enough to raise labour costs by more than the saving in lower wages. Thus, the usual Walrasian mechanism that would tend to eliminate excess supply in the labour market is disabled in an efficiency-wage model and unemployment can remain indefinitely. Romer adds realism to the model by enriching the effort function to take account of factors other than the firm's wage that influence worker productivity. While the simple wage/efficiency link may be appropriate for a developing country in which higher wages enhance worker efficiency through better health and nutrition, the story is more complicated when the rationale behind the efficiency boost is effort, contentment, or retention. Even a firm that pays high wages may suffer from low morale if its wages are low relative to those of other firms in the market. A worker's contentment and level of effort probably depends more on her perception of her wage relative to other firms rather than on the actual level of the wage. Similarly, a higher rate of unemployment in the market is likely to cause workers to feel fortunate to have their current jobs and encourage them to work hard in order to retain them.

The Shapiro-Stiglitz model. Who entitled their paper "Equilibrium unemployment as a worker discipline device." high unemployment encourages greater effort[17]. The model is a specific application of efficiency wages in which workers have an incentive to shirk (not work hard).

Firms, obviously, would like to assure that workers instead exert high effort and thus achieve high productivity. If the firm can monitor worker performance at no cost, then it can simply insist on its desired level of effort as a condition of employment and fire workers who shirk. However, the more interesting and realistic case is one in which firms cannot directly observe individual workers' effort. Instead, there is a given probability. Since workers get utility from higher wages and lose utility from working hard, the combination of wages and work requirements offered by the firm must give workers a level of utility as high as that offered by other firms in order to attract workers. Thus, workers must decide whether to shirk or to work hard by balancing the increased utility of shirking against the probability of being caught and fired. This is, in itself, an interesting problem that warrants our attention. However, the worker's incentives depend in an important way on what happens to fired workers. If they can simply move immediately to another firm and shirk, then there is no real cost to being caught and no incentive to work hard. In order to motivate hard work, the fired shirker must lose something by being fired.

In the spirit of the previous model, the fired worker either loses a wage premium (efficiency wage) offered by the employer or faces the prospect of an unemployment spell. Since all firms offer the same wage in equilibrium, it must be the existence of unemployment that gives workers an incentive to work hard. Hence, the title "equilibrium unemployment as a worker discipline device." Solving the Shapiro-Stiglitz model would be impossible without some simplification of our usual macroeconomic framework. In the middle of the twentieth century, it came to be believed that 'a rising tide lifts all boats': economic growth would bring increasing wealth and higher living standards to all sections of society. At the time, there was some evidence behind that claim. In industrialized countries in the 1950s and 60s every group was

advancing, and those with lower incomes were rising most rapidly. Unemployment and income inequality are interconnected. In the economic and political debate, this 'rising tide hypothesis' evolved into a much more specific idea, according to which regressive economic policies – ones which favour the richer classes – would end up benefiting everyone. Resources given to the rich would inevitably 'trickle down' to the rest – a modern version of the old-fashioned 'trickle-down economics'. It is important to clarify that this trickle-down notion did not follow from the post-war evidence.

The 'rising-tide hypothesis' was equally consistent with a 'trickle-up' theory – give more money to those at the bottom and everyone will benefit; or with a 'build-out from the middle' theory – help those at the center and both those above and below will benefit[18]. Today the trend to greater equality of incomes, which characterized the post-war period, has been reversed. Inequality is now rising rapidly. Contrary to the rising-tide hypothesis, extraordinary growth in top incomes has been going along with economic slowdown and stagnating real incomes for the majority of households. The trickle-down notion – along with its theoretical justification, marginal productivity theory – needs urgent rethinking. That theory attempts both to *explain* inequality – why it occurs – and to *justify* it – why it would be beneficial for the economy as a whole. It argues in favour of alternative explanations of inequality, with particular reference to the theory of rent-seeking and to the influence of institutional and political factors, which have shaped labour markets and patterns of remuneration. And it shows that, far from being either necessary or good for economic growth, excessive inequality tends to lead to weaker economic performance. It argues therefore for a range of policies which would increase both equity and economic wellbeing. For instance, examining the ongoing trends in income and wealth. In the last three or four decades, those at the top have done very well, especially in the US, likewise in

Nigeria. Between 1980 and 2013, the richest 1% have seen their average real income increase by 142% (from $461,910, adjusted for inflation, to $1,119,315) and their share of national income double, from 10% to 20%. The top 0.1% have fared even better.

Over the same period, their average real income increased by 236% (from $1,571,590, adjusted for inflation, to $5,279,695) and their share of national income almost tripled, from 3.4 to 9.5%. Over the same 33 years, median household income grew by only 9%. And this growth actually occurred only in the very first years of the period: between 1989 and 2013 it shrank by 0.9%. But even this underestimates the extent to which those at the bottom have suffered – their incomes have only done as well as they have because hours worked have increased. Between 1979 and 2007, workers in the bottom fifth of the wage distribution increased their average annual work hours by 22 percent – a greater increase than for any other quintile. Median wages (adjusted for inflation) increased by only 5 percent from 1979 to 2012, even though at the same time productivity grew by 74.5 percent. And these statistics underestimate the true deterioration in workers' wages, for education levels have increased (the percentage of Americans who are college graduates has nearly doubled since 1980, to 30 percent) so that one should have expected a significant increase in wage rates.

In fact, average real hourly wages for all Americans with only a high school diploma or a bachelor's degree have decreased in the last three decades. In the first three years of the so-called recovery from the Great Recession of 2008-2009 – in other words, since the U.S. economy returned to growth – *91% of the gains in income* have gone to the top 1%. Bush and Obama both tried a trickle-down strategy—giving massive amounts of money to the banks and the bankers. The idea was simple: by saving the banks and bankers, all would benefit. The

banks would restart lending. The wealthy would create more jobs. This strategy, it was argued, would be far more efficacious than helping homeowners, businesses, or workers directly.

The US Treasury typically demands that when money is given to developing countries, conditions be imposed on them, to ensure not only that the money is used well, but that the country adopts economic policies that (according to *their* economic theories) will lead to growth. But no conditions, e.g. to lend more or to stop their abusive practices, were imposed on the banks, for fear that the bankers would get upset and not respond in the way hoped. The rescue worked in enriching those at the top; but the benefits did not trickle down to the rest of the economy. The Fed, too, tried trickle-down economics. One of the main channels by which Quantitative Easing was supposed to rekindle growth was that it would lead to higher stock market prices – higher wealth for the very rich, who would then spend some of that, and that in turn would benefit the rest. Both the Fed and the Administration could have tried policies that more directly benefited the rest of the economy: helping homeowners, lending to small and medium sized enterprises, and fixing the broken credit channel.

The trickle-down policies were relatively ineffective – one reason that eight years after the US slipped into recession, the economy was still not back to health. In the last 25 years the Gini index – the widely used measure of income inequality – has increased by roughly 22% in Germany, 13% in Canada, 13% in UK, 8% in Italy and 6.4% in Japan. The more countries follow the American model, the more the results seem to be consistent with what has occurred in the United States. The UK has now achieved the second highest level of inequality among the countries of Western Europe and North America, a marked change from its position before the Thatcher era. Germany, which had been among the most equal countries within the OECD, now ranks in the middle.

The enlargement of the share of the pie appropriated by the richest 1% has also been a general trend, and in Anglo-Saxon countries it started earlier, and it has been more marked than anywhere else. In rich countries, such as the US, the concentration of wealth is even more impressive than that of income and has been rising too. For instance, in the UK the income share of the top 1% went up from 5.7% in 1978 to 14.7% in 2010, while the share of wealth owned by the top 1% surged from 22.6% in 1970 to 28% in 2010 and the top 10% wealth share increased from 64.1% to 70.5% over the same period.

Also, disturbing are the patterns that have emerged in transition economies, which at the beginning of their movement to a market economy had low levels of inequality in income and wealth (at least according to available measurements). Today, China's inequality of income, as measured by its Gini coefficient, is roughly comparable to that of the United States and Russia. Across the OECD, since 1985 the Gini has increased in 17 of 22 countries for which data is available, often dramatically. Moreover, other research has found that the importance of inherited wealth has increased in recent decades, at least in the rich countries for which we have data. After displaying a decreasing trend in the first post-war period, the share of inheritance flows in disposable income has been increasing in last decades[19]. How can we explain these worrying trends? Traditionally, there has been little consensus among economists and social thinkers on what causes inequality. In the nineteenth century, they strived to explain and either justify or criticize the evident high levels of disparity. Marx talked about exploitation. Nassau Senior, the first holder of the first chair in economics, the Drummond Professorship at All Souls College, Oxford talked about the returns to capital as a payment for capitalists' abstinence, for their not consuming.

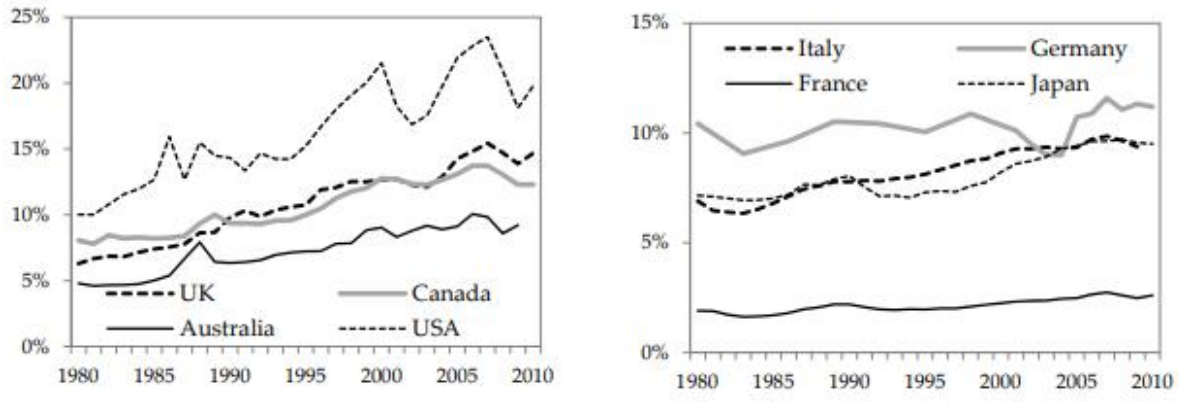

Figure 2.4: Income share of the richest 1% in some major industrialized countries
Source: World Top Incomes Database

Neoclassical economists developed the marginal productivity theory, which argued that compensation more broadly reflected different individual's contributions to society. While exploitation suggests that those at the top get what they get by taking away from those at the bottom, marginal productivity theory suggests that those at the top only get what they add. The advocates of this view have gone further: they have suggested that in a competitive market exploitation simply could not persist, and that additions to capital would cause wages to increase, so workers would be better off thanks to the savings and innovation of those at the top. More specifically, marginal productivity theory maintains that, due to competition, everyone participating in the production process earns a remuneration equal to her or his marginal productivity. This theory associates higher incomes with a greater contribution to society. This can justify, for instance, preferential tax treatment for the rich: by taxing high incomes we would deprive them of the 'just deserts' for their contribution to society, and, even more importantly, we would discourage them from expressing their talent.

Moreover, the more they contribute, the harder they work and the more they save—the better it is for workers, whose wages will rise as a result. The reason that these ideas justifying inequality have endured is that they have a grain of truth in them. Some of those who have made large amounts of money have contributed greatly to our society, and in some cases what they have appropriated for themselves is but a fraction of what they have contributed to society. But this is only a part of the story: there are other possible causes of inequality. Disparity can result from exploitation, discrimination and exercise of monopoly power. Moreover, in general, inequality is heavily influenced by many institutional and political factors – industrial relations, labour market institutions, welfare and tax systems, etc, which can both work independently of productivity and affect productivity. That the distribution of income cannot be explained just by

standard economic laws is suggested by the fact that the *before*-tax and transfer distribution of income differs markedly across countries. France and Norway are examples of OECD countries that have managed by and large to resist the trend of increasing inequality. The Scandinavian countries have a much higher level of equality of opportunity, regardless of how that is assessed. Marginal productivity theory is meant to be a universal economic law.

Neoclassical theory taught that one could explain economic outcomes without reference, for instance, to institutions. Thus, the standard theory cannot explain how countries with similar technology, productivity and per capita income can differ so much in their *before*-tax distribution. The evidence, though, is that institutions do matter. Not only can the effect of institutions be analysed, but institutions can themselves often be explained, sometimes by history, sometimes by power relations, and sometimes by economic forces (like information asymmetries) left out of the standard analysis. Thus, a major thrust of modern economics is to understand the role of institutions in creating and shaping markets. The question then is: what is the relative role, the relative importance of these alternative hypotheses? There is no easy way of providing a neat quantitative answer, but recent events and studies have lent persuasive weight to theories putting greater weight on rent-seeking and exploitation. The term 'rent' was originally used to describe the returns to land, since the owner of the land receives these payments by virtue of his ownership and not because of anything he *does*.

The term was then extended to include monopoly profits (or monopoly rents), the income that one receives simply from control of a monopoly, and in general returns due to similar ownership claims. Thus, rent-seeking means getting an income not as a reward to creating wealth but by grabbing a larger share of the wealth that would have been produced anyway without their effort. Even worst, rent-seekers typically destroy wealth, as a by - product of their taking away from

the others. A monopolist who overcharges for his product takes money from those whom he is overcharging and at the same time destroys value. To get his monopoly price, he has to restrict production. Growth in top incomes in the last three decades has been driven mainly by two categories: those in the financial sector (both executives and professionals) and non-financial executives. Evidence suggests that rents have contributed largely to the strong increase in the incomes of these two categories. That the rise in their compensation has not reflected productivity is indicated by the lack of correlation between managerial pay and firm performance. Already in 1990 Jensen and Murphy, by studying a sample of 2,505 CEOs in 1,400 companies, found that annual changes in executive compensation did not reflect changes in corporate performance. It was discovered in some development the huge increase in US executive compensation since 1993 cannot be explained by firm performance or industrial structure and that, instead, it has mainly resulted from flaws in corporate governance, which, in practice, enabled managers to set their own pay[21].

About 350 firms were examined, showing that growth in the compensation of their CEOs largely outpaced the increase in their stock market value. Most strikingly, executive compensation displayed substantial positive growth even during periods when stock market values decreased. There are other reasons to be suspect of the standard marginal productivity theory. In the United States the ratio of CEO pay to that of the average worker increased from around 20 to 1 in 1965 to 300 to 1 in 2013. There was no change in technology that could explain a change in relative productivity of that magnitude, and no explanation for why that change in technology would occur in the US and not in other similar countries. Moreover, the *design* of corporate compensation schemes made it evident that it was not intended to reward effort: typically, they were related to the performance of the stock, which would rise and fall

depending on many factors outside the control of the CEO, such as market interest rates and the price of oil. It would have been easy to design a higher power incentive structure with less risk, simply by basing compensation on relative performance, relative to a group of comparable companies. Finally, the battles in the Clinton Administration, focusing on tax systems which encouraged so-called performance pay (without imposing conditions to ensure that pay was actually related to performance) and disclosure requirements (which would have enabled market participants to assess better the extent of stock dilution associated with CEO stock option plans) clarified the battle lines: those pushing for favourable tax treatment and against disclosure understood well that these arrangements would have facilitated greater inequalities in income.

For specifically the rise in top incomes in the financial sector, the evidence is even more unfavourable to explanations based on marginal productivity theory. Further study shows that in the last two decades workers in the financial industry have enjoyed a huge 'pay-premium' with respect to similar sectors, which cannot be explained by the usual proxies for productivity (like the level of education or unobserved ability)[22]. It was estimated that financial sector compensations have been about 40% higher than the level that would have been expected under perfect competition. It is also well documented that 'too big to fail' banks enjoy a rent due to implicit State guarantee. Investors know that these large financial institutions can count, in effect, on a government guarantee, and thus they are willing to provide them funds at lower interest rates. The big banks can thus prosper not because they are more efficient or provide better service but because they are in effect subsidized by taxpayers.

Clearly, the rents enjoyed in this way by big banks translated into higher incomes for their managers and shareholders. In the financial sector even more than in other industries, executive compensation in the aftermath of the crisis provided convincing evidence against marginal

productivity theory as an explanation of wages at the top: the bankers who had brought their firms and the global economy to the brink of ruin continued to receive large pay—compensation which in no way could be related either to their social contribution or even their contribution to the firms for which they worked (both of which were negative). For instance a study which focused on Bear Sterns and Lehman Brothers in 2000-2008 has found that the top executive managers of these two giants have brought home huge amounts of 'performance-based' compensations (estimated in $1 billion for Lehman and 1.4 for Bear Stearns), which were not clawed back when the two firms collapsed.

Still, another piece of evidence supporting the importance of rent-seeking in explaining the increase in inequality is provided by those studies which have showed that increases in taxes at the very top do not result in decreases in growth rates. If these incomes were a result of their *efforts,* we might have expected those at the top to respond by working less hard, with adverse effects on GDP. Three striking aspects of the evolution of most rich countries in the last 35 years are (a) the increase in the wealth to income ratio; (b) the stagnation of median wages; (c) the failure of the return to capital to decline. Standard neoclassical theories, in which 'wealth' is equated with 'capital', would suggest that the increase in capital should be associated with a decline in the return to capital and an increase in wages. The failure of wages of unskilled workers to increase has been attributed by some (especially in the 1990s) to skill-biased technological change, which increased the premium put by the market on skills.

Hence, those with skills would see their wages rise, and those without skills would see them fall. But recent years have seen a decline in the wages paid even to skilled workers. Moreover, other research shows, *average* wages should have increased, even if some wages fell. Something else must be going on. There is an alternative, and more plausible, explanation for these three

stylized facts. It is based on the observation that rents are increasing (due to the increase in land rents, intellectual property rents, monopoly power and other forms of exploitation). As a result, the value of those assets which are able to provide rents to their owners - like land, houses and some financial claims - is rising proportionally. So overall wealth increases, but this does not lead to an increase in the productive capacity of the economy or in the mean marginal productivity or average wage of workers; to the contrary, wages may stagnate or even decrease, because the rise in the share of rents has happened at the expense of wages. The assets which are driving the increase in overall wealth, in fact, are not produced capital goods, and in many cases, they are not even 'productive' in the usual sense; they are not directly related to the production of goods and services. With more wealth put into these assets, there may be less invested in real productive capital. In the case of many countries where we have data (like France) there is evidence that this is in fact the case: a disproportionate part of savings in recent years has gone into the purchase of housing, which did not increase the productivity of the 'real' economy.

Monetary policies that lead to low interest rates can increase the value of these 'unproductive' fixed assets - an increase in the value of wealth that is unaccompanied by any increase in the flow of goods and services. By the same token, a bubble can lead to an increase in wealth - for an extended period of time - again with possible adverse effects on the stock of 'real' productive capital. Indeed, it is easy for capitalist economies to generate such bubbles (a fact that should be obvious from the historical record, but which has been confirmed in theoretical models.) The increase in the wealth-income ratio may still have more to do with an increase in the value of rents than with an increase in the amount of productive capital. Those that have access to financial markets—those that can get credit from banks (typically those already well off) can

purchase these assets, using them as collateral. As the bubble takes off, so does their wealth and society's inequality.

2.3 Dimensions of Inequality in Nigeria

Conventionally, income-based measures of inequality are usually adopted for the assessment of the relationship between federal politics and inequality. For example, the Gini coefficient is a statistical measure of inequality which has been applied to national income distributions to measure income inequality in countries. It gives a 0 to a perfectly equal distribution and 1 to a perfectly unequal distribution. These statistics while offering a snapshot of the situation with regard to income, does not tell the whole story. That is why this study adopts the multidimensional conception of inequality that includes non-income aspects. This approach is adopted because understanding inequality in Nigeria goes beyond income measures and in most cases all dimensions of inequality interact to produce a particular outcome. For the purpose of this article, three dimensions of inequality are taken into consideration. These are economic, gender, and regional. Economic inequality (also known as the gap between rich and poor, income inequality, wealth disparity, or wealth and income differences) is the difference in the distribution of economic assets (wealth) and income within or between populations or individuals. The term typically refers to inequality among individuals and groups within a society, but can also refer to inequality among countries.

The issue of economic inequality involves equity, equality of outcome, equality of opportunity, and life expectancy. Gender inequality on the other hand refers to unequal treatment or perceptions of individuals based on their gender. It arises from differences in socially constructed gender roles as well as biologically through chromosomes, brain structure, and hormonal differences. Gender inequality stems from distinctions, whether empirically grounded

or socially constructed. Gender inequality is used to refer to the disparity between persons as a result of either being man or woman. It is the assumption which allows superiority of one gender thus preventing both men and women to have equal rights, opportunities, or privileges. In the society, women are the ones who are mostly affected by gender inequality. Regional inequality on the other hand refers to a situation in which differences exist between two or more regions in terms of economic, social, political, and other opportunities, which makes a region to be ahead of other regions. This inequality may be due to differences in natural resource, level of production, and location of industries. In other words, regional inequality exists when certain regions have limited opportunities and low standards of living when compared with others.

Since the creation of Nigeria in 1914, gender inequality has been a development issue. In spite of efforts over the years, women still lag far behind men in most indicators of socio-economic development and political participation. Women constitute the majority of the poor, the unemployed, and the socially disadvantaged. Although women represent between 60 and 79 percent of Nigeria's rural labor force, men are five times more likely to own land than women. In general, land ownership is very low among women, a factor that limits their ability to exploit a land-based livelihood strategy. It affects their ability to access finance, for example, and often delays investment decisions or reduces the earning potential of agriculture. It is important to note that even though Nigerian Land Use Act of 1978 nationalized all land and vested authority in the State Governor who holds it in trust on behalf of all, in practice; however, the way land is owned and accessed varies from place to place. It can be an amalgam of traditional Islamic Sharia and other local governance practices. In rural areas, women's rights of access are still regarded as secondary to those of men and many customs suggest that women's access to land is still mediated via patrilineal systems, in spite of the intentions of the 1978 Land Use Act. For

women, user rights often follow marriage, inheritance, or borrowing. Inability to have access to land usually inhibits livelihood opportunities. The Nigerian federation is divided into six geo-political zones. These zones exhibit differentials in inequality reduction over the years.

The problem of inequality in these zones can be traced to British colonial policies which laid the foundation for North–South regional divisions in infrastructure, religion, educational systems, gender norms, and a variety of other factors. Geographic differences have also played a role in the divide. An arid climate and proximity to the Sahara Desert renders the North more vulnerable to the effects of climate change, while the oil industry in the Niger Delta produces environmental degradation in the South. Although the data are not directly comparable across the years owing to differences in the way they were collected, they indicate the presence of a consistent North–South divide. The living standard survey conducted by the NBS for the year 2010 shows that poverty has been on the increase while standard of living has continued to fall. In a report released last February 2010, the agency found that absolute poverty in the country increased from 54.4 percent in 2004 to 60.9 percent in 2010. The report said the North–West and North–East zones of the country recorded the highest poverty rates with 70 and 69 percent, respectively, in 2010 while the South–West recorded the lowest at 49.8 percent. By NBS's estimation, 61.2 percent of Nigerians were living below $1 per day, and most of these people are to be found in the North. The report said poverty and inequality in income distribution has been on a steady increase in the country since 2003.

But by 2011, the situation had gone worse. Persistent inequality between groups or horizontal inequality has well-documented negative consequences for development outcomes. While there is a growing literature on the effects of these inequalities, their patterns, origins, and the mechanisms through which they persist, remain understudied in the economic literature.

Equitable access to public services like electricity, sanitation and water infrastructure is crucial for improving well-being and expanding the productive capacities of individuals in societies. One hypothesis is that being centralized in 1850 might have placed local elites in a better position to bargain with federal regimes for access to public services whose allocation they could directly control through the indirect rule system. This bargain was only successful, however, if you were a compliant centralized ethnic state. Depending on compliant behavior towards the federal regime, being a centralized ethnic state/group is associated with a 14% increase in access to grid-based electricity for compliant groups versus a 6% decrease in access to electricity for noncompliant groups on average between 1990 and 2013. Similar patterns are found with access to flush toilets, another historically federally administered service. In contrast, pre-colonial centralization and the bargaining mechanism are not significant for access to locally administered infrastructure services, including access to improved pit latrines and water, whose allocation federal regimes were/are unable to directly control. For these locally administered services, local government quality seems more strongly to predict access to these services, though it does not predict access to the aforementioned federally administered services.

2.3.1 Geopolitical Zones, Ethnicity and Governance Structure in Nigeria

Ethnic inequality is examined using geopolitical zone as a proxy for ethnicity. Nigeria has a three-tier administrative system with the federal government at the most macro level and a Federal Capital Territory (FCT) at Abuja. The next administrative level is 36 state governments which are further subdivided into 774 local government areas (LGAs), the smallest administrative unit in the country. The states and accompanying LGAs can be classified further into six geopolitical zones. The six geopolitical zone categorizations are not trivial, with ethnic affiliations aligning, by design, along these six zones. To check that the geopolitical zones are

an accurate approximation of ethnic group locations in the country, using Demographic and Health Survey (DHS) data from 1990 to 2013. Ethnicity and zone are similarly stable and high in Nigeria with values between .8 and .9 between 1990 and 2013[23]. To further check that geopolitical zone is an accurate proxy for ethnicity in Nigeria, measure of cross-fractionalization. Cross-fractionalization is a version of the Herfindahl index and measures 'the extent to which individuals who are in the same group on one cleavage are in different groups on the other cleavage. Values of cross-fractionalization for ethnicity and geopolitical zone are low, stable and near 0 at about 0.04 between 1990 and 2013.

Ethnicity and geopolitical zones are almost perfect proxies for one another in Nigeria. Strategies for managing economic, gender, and regional inequality in Nigeria revolve mainly around development plans, social protection policies adopted by different regimes, the federal character principle, and fiscal federalism. Although development planning as a strategy for fostering development and ameliorating inequality began in Nigeria during the colonial period, the first National Development Plan was launched in June 1962. It was meant to cover a period of six years, 1962–1968. The major focus of the plan was public sector investment in the areas of electricity supply, transportation, industry, trade, education, and primary production. It was expected that the implementation of this plan would help stimulate development in different parts of Nigeria and reduce inequality. The outbreak of the civil war in 1967 interrupted the proper implementation of the plan. After the civil war, the second National Development Plan (1970–1974) was launched. The major focus of the plan was the reconstruction of war devastated areas and the promotion of economic and social development in Nigeria. The objectives of the plan were ensuring: a united, strong and self-reliant nation, a great and dynamic economy, a just and egalitarian society, a land of bright and full opportunities for all

citizens, and a democratic society. The implementation of this plan was characterized by wasteful spending of government's revenue. It was also characterized by the neglect of the agricultural sector as a result of the oil boom in the international market and increased revenue for the Nigerian government.

At the end of the plan period, agriculture recorded a negative growth rate of about 0.06 percent. The Third National Development Plan (1975–1980), was made after extensive consultation with the private sector of the economy through the National Economic Advisory Council created in 1972. The huge investment expenditure proposed in the plan was 10 times the size of the Second National Development Plan. The seven cardinal objectives of the plan were increase per capita income, ensure more even distribution of income, reduction in the level of unemployment, increase in the supply of high-level manpower, diversification of the economy, ensuring balanced development, and indigenization of economic activities. The overall strategy of the plan was to utilize the resources from oil to develop the productive capacity of the economy and thus permanently improve the quality of lives of Nigerians. In spite of the laudable objectives of the plan, its implementation was a failure. The Fourth National Development Plan (1981–1985) was intended to facilitate the process of establishing a solid base for the long-term economic and social development of Nigeria. Emphasis was placed on key sectors such as agriculture, manufacturing, education, manpower development, and infrastructure.

The projected capital expenditure was about 82 billion naira. The following were the specific objectives of the plan: increase the real income of the average citizen, ensure more even distribution of income among individuals and socioeconomic groups, reduce the level of unemployment and underemployment, increase the supply of skilled manpower, reduce the dependence of the economy on a narrow range of activities, ensure balanced development—that

is, the achievement of a balance in the development of different sectors of the economy and various geographical areas of the country, increased participation by citizens in the ownership and management of productive enterprises, greater self-reliance, that is, increased dependence on local resources in seeking to achieve the various objectives of society. This also implied greater efforts to achieve optimum utilization of Nigeria's human and material resources, development of technology, increased productivity, the promotion of a new national orientation conducive to greater discipline, better attitude to work, and cleaner environment. The performance of the Nigerian economy during the implementation of the fourth plan was generally poor. This was basically because of the fall in the price of crude oil in the international market and high degree of corruption during the second republic.

The poor performance of the fourth development plan necessitated the preparation of the fifth development plan. The exercise started with a conference organized by the Nigerian Institute of Social and Economic Research and the Federal Ministry of National Planning to discuss the strategies for the fifth plan. Based on the recommendations of this conference, the guidelines for the plan were formulated. The fifth national development plan was postponed until 1988–1992. The fifth plan's objectives focused on promoting the Structural Adjustment Program (SAP). The focus were to devalue the naira, remove import licenses, reduce tariffs, open the economy to foreign trade, promote non-oil exports through incentives, and achieve national self-sufficiency in food production. The drafters of the fifth plan sought to improve labour productivity through incentives, privatization of many public enterprises, and various government measures to create employment opportunities. In late 1989, the administration of General Ibrahim Babangida abandoned the concept of a fixed five-year plan. Instead, a three-year "rolling plan" was introduced for 1990–1992 in the context of more comprehensive 15- to 20-year plans.

A rolling plan, considered more suitable for an economy facing uncertainty and rapid change, is revised at the end of each year, at which point estimates, targets, and projects are added for an additional year. Thus, planners would revise the 1990–1992 three-year rolling plan at the end of 1990, issuing a new plan for 1991–1993. In effect, a plan is renewed at the end of each year, but the number of years remains the same as the plan rolls forward. In Nigeria, the objectives of the rolling plan were to reduce inflation and exchange rate instability, maintain infrastructure, achieve agricultural self-sufficiency, and reduce the burden of structural adjustment on the most vulnerable social groups. Generally, development plans in Nigeria failed to achieve the desired objectives mainly as a result of poor implementation. In addition to development plans several social protection policies have been introduced to help alleviate inequality in Nigeria.

Over the years, the government and non-governmental institutions have tried designing and implementing programs aimed at providing the citizens with assistance in the areas of job creation, housing, social security, and health insurance. The emphasis on social protection by scholars and international agencies has influenced the decision of the Nigerian government to include social protection in the vision 20: 2020 program. The Vision 20: 2020 objective for social protection is to "increase productivity and income, reduce poverty and vulnerability by diminishing people's exposure to risk and enhancing their capacity to protect themselves against hazards and loss of income." Specifically, it calls on social protection to contribute to reducing the poverty rate from 65 to 50 percent by 2013. An estimated ₦186 billion (about US$1.16 million) of social protection expenditure is proposed over the plan period, although it is not clear how this will be allocated within social protection or how these resources will be generated. The plan suggests that process issues will be addressed (harmonizing provision, improving coordination and data management, etc.) alongside expansion of social protection

provision to the informal sector; particularly, through the National Health Insurance Scheme (NHIS) and social transfers to the most vulnerable groups. The major objectives of social protection policies in Nigeria include assisting people who are poor to get out of poverty; providing income support to the poorest, especially the sick, and retirees; increase enrolment and attendance rates of students in public schools; address short-term employment needs by developing skills and competencies, and reduction of damages to properties arising from natural and manmade disasters.

Major social protection schemes pursued by the Nigerian government over the years include NHIS, National Pension Schemes, The Universal Basic Education Program, conditional cash transfers, fuel subsidy reform palliative measures, and National Poverty Eradication Program. Others are River Basin Development Authorities, the Agricultural Development Program, Agricultural Credit Guarantee Scheme, Rural Electrification Scheme, Operation Feed the Nation, Green Revolution, Better Life Program, Family Support Program, the Family Economic Advancement Program.

2.3.2 Federal Character Principle

The federal character principle was introduced as a strategy for reducing regional inequality and promoting inclusiveness in the management of the political affairs of federation. The federal character principle was first introduced statutorily in the 1979 constitution of the Federal Republic of Nigeria. According to section 14(3) and (4) of this constitution, the Federal Character principle stipulates that: The composition of the Government of the federation or any of its agencies, shall be carried out in such a manner as to reflect the federal character of Nigeria and the need to promote national loyalty, thereby ensuring that there shall be no predominance

of persons from a few states or from a few ethnic or other sectional groups in that government or any of its agencies.

These constitutional provisions were, respectively, repeated in the 1989 and 1999 Constitutions. In order to ensure proper implementation of the federal character principle, a Federal Character Commission (FCC) was established, to "monitor and enforce Federal Character application and proportional representation." By the time the FCC was established by Decree No. 34 of 1996, its powers, including the powers (Section 4, Subsection 1c) to prosecute heads of ministries and Parastatal for failing to carry out its instructions, were enormous. And the scope of its operations had been extended beyond governmental bureaucracies, to address the inequalities in social services and infrastructural development, along with the inequalities in the private sector. It also had powers: (a) to work out a formula for the redistribution of jobs and (b) to establish, by administrative fiat, the principle of proportionality within the Federal Civil Service (FCC, 1996).

Critics of federal character have, however, observed that the "policy suffers from a faulty philosophical premise. It is a policy that was supposed to have been designed for the benefit of the underprivileged. But it was designed for the benefit of the ruling class in the Nigerian context, resulting in the further disempowerment of the powerless." Consequently, it resulted in "geometric diffusion of mediocrity, public service ineptitude, and manifest decline in public morale. Thus, the policy has failed, largely, to integrate the society as it merely promoted ethnic and sectional consciousness rather than reduce inequality.

2.3.3 Intergovernmental Fiscal Relations

The search for an effective strategy for harnessing and sharing resources in Nigeria has been one of the major problems in the country. Over the years different commissions and committees have recommended various revenue sharing formulas. Currently, revenue in the federation account is distributed in the following proportions: 48.50 percent to the Federal Government, 26.72 percent to the states, 20.60 percent to the local government councils, and 4.18 percent to centrally control special funds. The federation account revenues devolved to the sub-national governments are shared among the states and localities on the basis of the following indices and percentage weights: equal shares to each state or locality at 40 percent; population at 30 percent; social development needs at 10 percent; land mass and terrain at 10 percent and internal revenue generation efforts at 10 percent. Two major issues that remained contentious are the weighting of the derivation principle and lack of transparency and accountability in the administration of the federation account. The 1999 Constitution of the Federal Republic of Nigeria also stipulated that at least 13 percent of the revenue allocated to state governments should be on the basis of derivation. Despite the entrenchment of the minimum 13 percent derivation rule in the 1999 Constitution, intensive agitation for the expansion of the rule to between 25 and 50 percent persists in the Niger Delta states. Yet the distribution of gross revenue allocation shows that the nine oil producing states in Nigeria: Akwa Ibom, Bayelsa, Delta, Rivers, Edo, Imo, Ondo, Cross Rivers, and Abia received over 50 percent of the total revenue transfers to the states in 2008 even though they accounted for only 22.3 percent of the population. It is important to note that the pattern of intergovernmental fiscal relations in Nigeria has been inducing inequality in Nigeria instead of reducing it.

2.3.4 Reasons for the Failure of Federal Policies to Alleviate Inequality in Nigeria

Several reasons can be identified for the persistence of inequality in Nigeria in spite of several policies and strategies identified by the federal government. The following are some of them:

1. **Public Spending Pattern/Cost of Governance**

The public spending habit of the Nigerian government is one of the factors that perpetuate inequality in Nigeria. It costs Nigerians about ₦1.3 trillion (US$8.3 billion) to pay the salaries and allowances of political office holders. As a way of understanding this sum, ₦1.147 trillion (US$7.4 billion) was ear marked for capital projects in 2012. Of this sum, just about half was truly spent which translates to the fact that, for every dollar the Nigerian government spends in developing capital infrastructure, two dollars are committed to paying the salaries of public office holders. In 2009, Nigerian legislators received a total of ₦102.8 billion (US$663.2 million) comprising "just" ₦11.8 billion (US$76.1million) as salaries and a whopping ₦90.96 billion (US$586.8 million) as allowances. The import of this gross disparity between salaries and allowances allows for just about 11 percent of their take home to be taxed. Sourced figures indicate that the Nigeria Senate President has a total annual package amounting to ₦560 million ($3.6 million) compared to Barak Obama's US$400,000 (₦62 million) as the President of the United States. Note that of Obama's pay, US$350,000 (almost 90 percent) of that amount is taxed while just about 11 percent of Nigeria's senate president's pay is taxed[24].

2. **Challenges Associated with Social Protection Interventions**

The scale of most social protection programs in Nigeria is extremely small when compared with the number of people who require such policy interventions. This is reflected in the small scale of programs run by government and development partners (international agencies and

NGOs), which cover between a few hundred households and a few thousand. In other words, social protection programs reach only a small fraction of the poor. For example, the cash transfer program In Care of the People (COPE) has reached just 0.001 percent of poor households. In Jigawa State, for example, a state with 4 million people and a poverty rate of 90 percent, only 850 households are beneficiaries of the program

3. **Lack of Political Commitment**

Strong political will has been identified as a requirement for the success of social policies. In Nigeria, frequent policy changes and inconsistent implementation turn out to prevent continuous progress. Severe budgetary and governance problems have also contributed to the full implementation of the programs. This has often resulted in partial implementation or abandonment of social programs.

4. **Non-involvement of Beneficiaries in the Design of Social Programs**

A crucial aspect of transformative social policy is state-community partnership in setting the social policy agenda. In Nigeria, lack of involvement of beneficiaries in the formulation and implementation of social programs had resulted in the failure of policies that would have transformed the lives of people from quantity to quality.

5. **Corruption and Mediocrity**

The manifestations and problems associated with corruption in Nigeria have various dimensions. Among these are project substitution, misrepresentation of project finances, diversion of resources, conversion of public funds to private uses, etc. In some cases, lack of accountability and transparency made social programs to serve as conduit for draining national resources.

6. **Indigene–Settler Issue**

There is a deep attachment of Nigerians to their states of origin, regardless of whether or not they are residing there. Indigeneity is simply a discriminatory concept employed in the Nigerian state to distinguish between the indigenes or natives of a state or locality and those who are referred to as non-indigenes or settlers. It is also used to confer special privileges which are beyond the reach of non-natives on the natives. In Nigeria, to be employed outside, one's ethnic base at state government level means in practice that such a person is a "non-indigene." In most cases, employment into the public service of a state or enjoying other benefits such as scholarship requires the provision of a letter of identification that the individual is from a particular ethnic group or local government. This often prevents many Nigerians from benefiting from policies that can improve their livelihood. In some parts of Nigeria, the indigene–settler classification of the citizens and the concomitant inequality associated with it fuels ethnic hostilities and recurrent bloodshed. Human Rights Watch has observed, discriminatory policies have "served to aggravate inter-communal tensions that are dangerously volatile in and of themselves ... while high ranking federal officials including (former) President Olusegun Obasanjo have publicly denounced the growing negative impact of Nigeria's indigene/settler divide, federal government policies have served to reinforce and legitimize its consequences". As a growing number of Nigerians migrate to and reside in localities outside their states of origin, in pursuit of economic and educational opportunities, increasing numbers no longer live within the local government areas where they would technically be considered indigenes.

7. **Leadership Problem**

Although other factors are important to the success of federalism, the quality of leadership is important to successful governance. That is why after a careful observation of the problems in Nigeria, bad leadership is the problem militating against development in Nigeria. The link between bad leadership and the poor performance of federalism in Nigeria can be inferred that "federalism adopted as a means of allaying the fears of domination and ensuring balanced representation in Nigeria's divided society has been converted into a formula for distributing political offices as political booty, for sharing the national cake."

2.3.5 Reactions of Citizens to the Challenges of Inequality in Nigeria

The persistence of inequality in Nigeria has elicited different reactions from Nigerians in different zones of the country. The Nigerian tragedy has been bedeviled by a set of oppositions: generalized, stereotyped, not necessarily of the same order and may be imaginary, yet each widening the wound and reducing the hopes of healing it; North vs. South, Islam vs. Christianity, alleged feudalism vs. assumed socialism, federal vs. unitary preferences, traditional authority vs. achieved elitism, haves vs. have-nots, each with sinister undertones of tension, irreconcilability and threatened withdrawal." For example, the southern part of Nigeria witnessed the struggle for resource control, militancy, and violent conflicts. More recently, Boko Haram attacks in Northern Nigeria has become a deadly outcome of the unresolved contradictions in the Nigerian state. Boko Haram is the product of the "Maitatsine" doctrine or a brand of Islamic zealots and fundamentalists introduced to Northern Nigeria in 1945, and he argues that the Maitatsine or Boko Haram riots of 1980 and 2009 were linked to the failure of governance in Nigeria." Boko Haram, which was largely unknown when it emerged in 2002 in Maiduguri, a remote city in north eastern Nigeria, bordering Cameroon, surged to pre-eminence in 2009 through some

remarkable but deadly chain of events that occurred in Maiduguri. In a context of mass poverty, unemployment and inadequate law enforcement, Boko Haram has gained support by playing on people's frustrations and using religion to further its ends. Northern Nigeria is generally poorer than the rest of the country and residents complain of corruption, inequality, and the government's failure to address problems.

The quality of life of people in developing countries including Nigeria is not near the expected standard. This is especially so with women living in the rural areas whose lives are characterized by poor income, poverty, hunger, diseases as well as lack of potable water, good shelter and access to medical attention. This is due to the fact that these women do not have access to valuable information and may not make use of available information which could help them meet the challenges of daily living. It appears that the concept of quality of life is fast becoming a popular concept worldwide including Nigeria. At first sight, quality of life is a simple, straightforward construct. Most people have a reasonably clear idea of what sorts of things would enhance their individual quality of life (and probably the quality of life of other individuals too). There is an adage that says, "He who wears the shoe knows where it pinches". The quality of life of a person is what he/she perceives it to be. For example, higher pay; longer holidays; more satisfaction in our working lives; time to pursue enjoyable and satisfying leisure pursuits; emotional fulfillment in relationships; and having a long healthy and happy life – all within a safe, caring and supportive local community are among the things people conceived as what could improve their quality of life.

Quality of life in the rural setting is a multifaceted phenomenon determined by the cumulative and interactive impacts of numerous and varied factors like housing conditions, infrastructure, access to various amenities, income, standard of living, satisfaction about the physical and

social environment. According to this author, the two indicators of quality of life which are subjective and objective are pointing to two different things. Subjective indicator focuses on pleasure as the basic building block of human happiness and satisfaction of quality of life. However, the objective indicator on the other hand, focuses on a radically different perspective. To those who are working with this indicator, the important question to ask at the individual level are whether people are healthy, well fed, appropriately housed, economically secure and well educated or not rather than whether they feel happy. The fundamental concepts of quality of life are values. They play an important role in the experience of qualitative life because they represent the needs, aspirations and goals which are important to individuals and which they seek to fulfill. What quality of life means on a global scale can be distilled from the social indicators identified by major international organizations such as the World Bank, World Health Organizations, United Nations, European System of Social Indicators and Australian Bureau of Statistics.

Given the importance of indicators for project monitoring and evaluation in meeting a range of economic, social and environmental goals, the framework for choice of indicators used to assess quality are adopted by the World Bank. Such indicators are : economic growth, earnings growth; the absence of poverty and unemployment; decent housing: health and life expectancy; an educated population; high levels of cultural participation and low rate of crime; equity in social opportunities and the absence of political corruption in the broader context of responsible environmental management. The satisfaction derived from the various life domains directly contribute to individual quality of life. The domains that are selected as indicators of quality of life for this study are: housing, occupation, income, health, education, neighbourhood or community, family life, government, social status and spiritual life. They were selected because

they are considered to be relevant to different regions of structure of well-being in many studies. The judgments and experience such as values and satisfactions derived from them are essential to the overall feelings of qualitative life. The concern for increasing the quality of life of the rural women in Nigeria can be seen in the general concern to alleviate the socio-economic status of the rural poor household. Many programmes sponsored by either the national government or international agencies have been designed to improve quality of life of the rural women in Nigeria.

Worthy to mention is the introduction of the Better life for Rural Women (BLW) in 1987 under late Mariam Babangida, (the then Nigerian first lady) and the Family Economic Advancement Programme (FEAP) under Mariam Abacha (the Nigerian first lady in 1993-97) which were planned to play critical role in alleviating the status of rural women in Nigeria, socially and economically. In recognition of the failure of the past government efforts, some non-governmental organizations stepped up efforts also to improve the quality of life among the women folks living in the rural areas. Example is the Country Women Association of Nigeria (COWAN) which started in Ondo State Nigeria in 1982. However, most of these programmes have failed to ameliorate the working and living conditions of rural women because women in rural areas for which such programmes were meant lagged behind in terms of socio-economic advancement. The reason is that rural women in Nigeria have developed a culture of silence, resignation and docility. This author stressed that rural women in Nigeria are not inherently poor, nor doomed to ignorance and disease. Rather they are blessed with massive fertile land and mineral resources and also a huge and virile labour force, which can be transformed into goods and services. The missing link, however, has been the absence of an effective information system pattern for mobilizing and stimulating them into action with a view to improving their

quality of life. At the Millennium Summit in September 2000, world leaders adopted the UN Millennium Development Goals (MDGs) which are the world's time bound and quantified targets for addressing extreme poverty in its many dimensions – income, poverty, hunger, disease, lack of adequate shelter, etc.

Many countries including developing countries like Nigeria are on track to achieve at least some of the goals at the appointed deadline of 2015. To achieve the Millennium Development Goals by 2015, many countries need to quickly improve their economic growth, education and health systems, their management of environmental resources, and their infrastructure for water, sanitation, telecommunication and transportation – all these in place will improve the quality of life of the people. The role which information could play in achieving these goals cannot be ignored. Information about the Millennium Development Goals will enable stakeholders to plan, control, manage and implement actions that could further enhance the quality of life of these rural women. Appropriate information empowers people towards actions that can transform lives and allow for a greater sense of independence. Rural women need information of all types to improve the quality of their life and their environment. Proper identification of the rural women information needs will reduce uncertainty and enables them to identify alternative solution to problems, adequate provision of information will also enable them to acquire more knowledge.

2.4 Empirical Review

Literatures on the unemployment, poverty inequality link are most times connected to growth as a result of the theoretical link between inequality and growth. The literature on the empirical analysis of the relationship between unemployment, poverty, inequality and economic growth has become quite substantial since early 1980's. Empirical evidence has been conflicting with

contradictory findings because of differences in samples used, econometric techniques, measurement of poverty, specifications and country peculiarities. Earlier studies before the past two decades tend to support Kuznets's inverted-U curve of an increase in income inequality at the early stage of growth of the economy which will decline as the economy grows. Most of these studies were done on cross-sectional basis.

However, most studies in the last two decades do not support the Kuznets's hypothesis mostly on country specific factors and some found no methodical relationship between growth and inequality. According to the World Employment and Social Outlook in 2018, the global unemployment rate has been stabilizing after a rise in 2016. It is expected to have reached 5.4 per cent in 2018, with the total number of unemployed exceeding 192 million persons[25]. As the long-term global economic outlook remains modest despite stronger than expected growth in 2017, the report attributes the positive trend between 2017 and 2018 mainly to the strong performance of labour markets in developed countries, where the unemployment rate is projected to fall by an additional 0.2 percentage points in 2018 to reach 5.5 per cent, a rate below pre-crisis levels. In contrast, employment growth is expected to fall short of labour force growth in emerging and developing countries, but has nevertheless improved compared to 2016[25].

The concepts of economic growth and unemployment are at the beginning of the most important variables in the sense that all economies are choosing and implementing economic policies. The study investigates the relationship between economic growth and unemployment in Eastern European Countries for the period of 1992-2014 within panel data framework[26]. In the study, the relationship was examined in the context of Okun's Law. They employed the panel Unit Root, pooled OLS and panel Johansen co-integration tests respectively. The results show that the economic growth and unemployment series are stationary at first level, unemployment affected

positively by economic growth, in other words 1% rise in GDP will fall the unemployment rate by 0.08% because of Okun's coefficient for Eastern European Countries and there is a co-integration between these important macroeconomic variables.

A study examines the relationship between some macroeconomic variables and unemployment in India using a time series data from 1991 to 2017[27]. The cointegration test and its associated vector error correction model (VECM) and Granger causality test were used in the analysis. The variable used as proxy of economic growth are unemployment rate and real gross domestic product, consumer price index used as proxy for inflation, gross fixed capital formation, literacy rate and labour force. The stationarity test results indicated that all the variables became stationary after first differencing. Also, the result of the Johansen cointegration test showed a significant long run relationship existing among unemployment, GDP, inflation, labour force, literacy rate and investment. The VECM shows that the economic unemployment of India is somewhat predictable by the given explanatory variables. In the VEC model, intercept the parameter is positive and significant at 1% level indicating that the overall unemployment's increases proportionately during that period. The result of the Granger causality test indicated unidirectional relationship between unemployment and real GDP with causality running from real GDP to unemployment. Further, gross domestic product, domestic private investment and labour force significantly causing unemployment based on the probability value result. There is bi-directional Granger causality between labour force and unemployment[27].

The relationship between unemployment and economic growth in South Africa was examined using the quarterly data from 1994:Q1 to 2016:Q4[28]. They used ARDL bound testing approach to show the long run relationship between the variables. They found that there is negative relationship between unemployment and economic growth in short run as well as long run. This

also validates the Okun's law (1962), which discovered the linkage unemployment and economic growth. They suggested that government should come up with efficient macroeconomic policies, needful structural change in the economy, stabilizing growth, flexible labour market policies to reduce unemployment rate[28].

A scholar analyses the Botswana labour market trends, specifically unemployment rate, over a period between 2000 and 2016[29]. Furthermore, he made the comparison with Namibia and South Africa. To make an inference on unemployment rate by age and gender, he considered it vital to consider both the development and changes in the labour market over time. Botswana's unemployment rate was found to average 18.2% between 2000 and 2016. However a disparity between male and female unemployment rate was observed. The study noted that youth unemployment rate has been increasing over the study period in Botswana. Furthermore, youth unemployment in Botswana surpassed total unemployment in 2016. Botswana was found to have a more stable labour market in comparison with Namibia and South Africa. However, South Africa was commended for having the lowest female youth unemployment rate as compared to Botswana and Namibia. The findings further discerned an increase in economically active populace in all the countries[29].

A study examines the relationship between poverty and growth on the one hand and initial inequality on growth on the other hand in the provincial level of Vietnam[30]. Poverty was negatively related to growth while there was no relationship between initial inequality and later growth. Poverty and inequality was found to be positively linked thus reducing one entails the reduction of the other. Poverty reduction and inequality was also found to be determined by human capital, investment, GDP growth rate and trade openness. The study concluded that policy on poverty reduction in the country will bring about more equitable society[30]. In Iran, two

researchers carried out a related study on unemployment and growth, although they also focused on the role of inflation[31]. They found that between 1996 and 2012, there was a negative relationship between unemployment, inflation and economic growth. They concluded that inflation should be controlled and unemployment reduced in order to achieve maintainable economic growth. Also, a study focused on the period between 1995 and 2015 in Greece and showed a unidirectional relationship between unemployment and growth, both in the short and long run[32].

A study investigates the contributions of macroeconomic policies towards pro-poor growth in Nigeria[33]. Using a secondary data sets from 1960-2000, he discovered that the relationship between growth and unemployment is weak. It indicates that people below poverty stripe do not benefit from the recorded growth over time. The author stressed further that the benefit derived by these people keep decreasing at an increasing rate. The study concluded that the output growth do not necessarily ensure pro-poor growth. With major preference to Nigeria, a scholar unravels the problem of unemployment in sub-Saharan Africa[34]. The author discovered a large number of factors that account for this problem by assessing past and present employment policy programmes formulated to tackle the problem. The result shows that economic factors hold back the performance of the programmes. Four scholars used impulse response, variance decomposition and Granger causality tests to investigate the macroeconomic implication of fiscal policy in Nigeria between 1970 and 2013[35]. The findings revealed that fiscal policy tools have greatly impacted on macroeconomic performance in Nigeria.

Two researchers investigate the education student enrolment and linkage with unemployment and economic growth in Nigeria using annual data from 1970-2005[36]. The dataset comes from several issues of central bank of Nigeria annual reports and statement of account federal ministry

of education and national university commission (NUC). The result shows that government funding is not stable and predictable, likewise, its capital and recurrent financing since 1970 is low which takes a small proportion of the country's budget. A study examines how fiscal policy tools influenced employment creation in Nigeria using annual data sets within the periods of 1980 to 2015[37]. Tax revenue and government expenditure were employed measures of fiscal tools while the employment level at rural, urban and national were considered. The Engel Granger cointegration test results suggest that there exists a long-run relationship between fiscal policy instruments and employment level in Nigeria. The findings from ordinary least square method shows that employment generation is positively influenced by government spending and manufacturing output. This indicates that there is a reduction in unemployment rate due to an increase government spending and output from manufacturing industry in Nigeria. The coefficients of tax revenue and agricultural output were negative, suggesting that they do not influence employment level positively[37].

The study examines the nexus of unemployment, poverty and economic growth in Nigeria between the periods, 1985-2015[38]. We employed the Augment Dickey–Fuller test, Johansen cointegration, Granger causality and Error Correction Model to establish the links between the variables. The unit root test revealed that the variables trend with time indicating their failure of integration at level. However, they were found to be stationary at first difference. The Granger causality result showed that there is no causality between unemployment, poverty and economic growth. The cointegration result revealed that there is no long-run relationship between unemployment, poverty and economic growth in Nigeria. In addition, unemployment-induced poverty, though it shows a positive relationship, and also a significant determinant of growth in the country in the short run, however, unemployment have a negative relationship with growth is

a significant determinant of growth. It implies that growth in the country will happen even if there are poor people as defined in absolute terms. The economy will still expand even if the number of people increases. This is also the case in the short run, revealing that the economy has grown even though, over the years, the numbers of poor people have increased. Therefore, it is important to take cognizance of the fact that the high rate of unemployment will translate into a high rate of poverty even if the value of the gross domestic products is increasing. This will result in mere economic growth without noticeable economic development. This situation can only be sustained and improved upon if certain policy measures such as sound fiscal and monetary policy that can ensure enabling environment, attract private investment and promote productivity are put in place. Also, there is a need for stable policies that would ensure equal distribution of income so that the poor also benefits from the country's growth[38].

A study examines the determinants of rural poverty in South-Western Nigeria[39]. The study uses a probit model on a sample of 500 smallholder farmers to establish factors that influences probability of households' escaping chronic poverty. The study found that access to micro-credit, education, participation in agricultural workshops/seminars, livestock asset, and access to extension services significantly influence the probability of households' existing chronic poverty. On the other hand, female headed households' and distance to the market increases the probability of persistence in chronic poverty while gender disparities in property rights in favour of women empowerment through legal rights to property act as key chronic poverty ameliorating factors among the farming communities.

A study employs the autoregressive distributed lag (ARDL) bounds testing technique to examine whether Okun's law exists in Nigeria during 1970-2014[40]. In addition, this study considers the role of oil prices in the Nigerian economy. The empirical results indicate that a cointegrating or

long term relationship exists between the unemployment rate, economic growth and oil prices. In addition, the results demonstrate that in Nigeria, in the long term, unemployment has a negative and significant effect on economic growth, and oil prices have a significant and positive effect on economic growth. The coefficient of unemployment (0.18%) for this study is far less than the result reported by Okun and other studies that focused on developed countries. This suggests that the Okun coefficient is not only unstable but varies for different countries, and does not remain constant for Nigeria.

A research paper examined the relationship between unemployment and economic growth in Nigeria by determining the effects of unemployment on economic growth in Nigeria covering the period 1986-2015[41]. Variables employed include unemployment rate and growth rate of gross domestic product. The data were analyzed using the ARDL bound testing and the parsimonious Error Correction Model (ECM) of the ARDL Model respectively. The findings showed that there is no long- runs relationship between unemployment rate and economic growth in Nigeria. Although, with effective policies, the long-run increase in unemployment has a growth enhancing mechanism on economic growth which is statistically significant. Also, results from the short-run parsimonious ECM indicate that a 1% increase in unemployment lead to 20.6% increase in real output in the third period which is statistically significant. This shows that unemployment in Nigeria is growth enhancing through the informal sector.

Three scholars examine the role played by unemployment on the making of the Nigerian Gross Domestic Product (GDP) for a period of nine years, 2000–2008[42]. Using the regression analysis, findings showed that unemployment has an enormous effect (over 65 percent) on the making of the Nigerian GDP and there exist an inverse relationship between the model (unemployment) and the GDP - increase in the model leads to decrease on the GDP and vice versa.

Two researchers assess the determinants of poverty as well the poverty coping strategies among farming households in Nasarawa State, Nigeria[43]. The study employed simple random sampling to select 150 farming households and used Costs of Calorie method and Discriminant Analysis to determine the incidence of poverty as well as its determinants respectively. The incidence of poverty among the sampled households was found to be high and the major determinants of poverty include household size, number of income sources of the household head, number of household members employed outside agriculture and the number of literate adult males and females in the household. The major poverty coping strategies include skipping of meals, reduction in the quantity of meals served and engaging in wage labour.

A scholar examines the determinants of the urban unemployment in Nigeria[44]. The variables for include level of unemployment and demand for labour, supply of labour, population, inflation, capacity utilization, gross capital formation and nominal wage rate. Using time series secondary data and parsimonious error correction mechanism, the study found that the rising nominal wages and the accelerated growth of population which affected the supply side through a high and rapid increase in labour force relative to the absorptive capacity of the economy appear to be the main determinant of high unemployment in Nigeria.

Two researchers examine poverty situation in Nigeria by employing the data of economic growth and millennium development goals (MDGs) expenditure[45]. The methodology employed was panel data analysis consisting of pooled model, fixed-effects, random-effects and weighted least square. The results revealed that, a unit increase in per capita GDP led to 0.6 percent increase in poverty. Similarly, a unit increase in MDG expenditure resulted in 11.56 units increase in relative poverty in the pooled model. The study concluded that economic growth and MDG spending has not substantially reduced poverty over the sample period.

A study analyzes the fundamental trends of per capita income, government capital expenditure, the human development index, and the rate of unemployment in Nigeria[46]. Using a vector autoregressive model, they found that a reduced unemployment rate improves human development and consequently reduces poverty. Also, as growth in public capital expenditure rises, unemployment falls and the human development index improves. Therefore, infrastructure-based policies, which initially reduce unemployment, will also improve the living conditions of Nigerians in the end.

Some scholars assessed the causes and consequences of regional imbalances and inequalities in Nigeria[47]. They listed the following as factors responsible for income inequalities are uneven distribution of natural resources, administration of the Royal Niger Company and British Colonialism, regionalism and State creation and institutional policies. In addition, they stated that inequalities have caused unemployment, weakness of development potentials, and overpopulation of the developed regions, environmental degradation and pressure on infrastructural development.

Two scholars examined the causal link between poverty and income inequality in Nigeria based on the use of Granger causality techniques, they found a direct line of causality between poverty and inequality in addition to indirect channels through unemployment and low life expectancy on inequality which aggravates poverty in Nigeria[48]. They also stated that Sub-Saharan African countries have registered the highest levels of poverty and inequality in income.

A study from a historical perspective, noted that unemployment, income inequality and poverty in Nigeria, is unusually high despite impressive economic growth[49]. This situation he attributed to differential access to infrastructure and amenities with resulting impact on high incidence of poverty. A study investigates and determines the effects of unemployment and inflation on

economic performance in Nigeria between the periods 1981–2014[50]. Ordinary Least Square (OLS) technique was adopted with various diagnostic test to determine how fit are the data for the analysis. The result indicated that unemployment and inflation are positively related to economic growth. The positive relationship between unemployment, inflation and RGDP indicates that Nigeria RGDP is driven by oil revenue that employs very limited highly skilled labour and the price of output of crude oil is determined externally which may not response as expected to growth of output in the country.

A recent study offers update on the assessments of unemployment and income inequality in Nigeria, using data from the General Household Surveys of the National Bureau of Statistics[51]. Based on an array of operational techniques, the study made the following findings: first, the Nigerian economy is characterized by a persistent rise in national unemployment rate, with variability at some periods; which may persist. Second, the male labour force has a higher unemployment rate compared to their female counterpart. Third, unemployment is higher among youths, between 15-34 years. Fourth, in addition to socioeconomic and demographic characteristics, post-secondary educational labour force is the dominant class of the unemployed. Fifth, a growing trend of income disparity was found between Nigerian states and regional clusters. Finally, it was revealed that rising unemployment accelerates income inequality. Besides, fiscal federalism, strategic economic policies aimed at providing sustainable employment encompassing the youths and graduates of post-secondary education should be put in place[51].

Six researchers examined income inequality and its general effect on agricultural production in rural and urban area of Ekiti state, Nigeria[52]. Their study was based on primary and secondary data, methodology utilized were Descriptive analysis, Gini coefficient and Regression analysis.

They showed that income inequality is higher in urban than in the rural areas and that income level, farm size and household size are the factors that contribute to inequality in both rural and urban areas. They recommended improvement in production technology, infrastructural facilities, access to credit and land to enhance income distribution of large household and thus increase agricultural production.

A study analyzed the impact of different forms of inequality on economic growth and unemployment in Indonesia based on a panel data for the period 2000 to 2012[53]. They utilized the OLS methodology, hence found that expenditure inequality have a negative influence on growth; whereas, education inequality badly affects successive unemployment. Also, a researcher provided evidence that unemployment upturns the risk of poverty and inequality[54]. The study suggests the need for welfare reform with emphasis on employment generation.

2.5 Gaps in Literature

Despite the high numbers of studies conducted to show the links between "unemployment and inequality", "unemployment and standard of living" and "inequality and living standard", it was observed that there are a limited number of studies paying attention to the interrelationship between unemployment, inequality and standard of living in developing countries like Nigeria. The empirical findings of studies on developed and developing countries are different regarding the living standard in long run. This provides some gaps in existing empirical research to examine the link among unemployment, income inequality and living standards at different stages of development, most especially when distinguishing between the effects of changes in the unemployment and income inequality on living standards. Therefore, this study is to bridge these gaps in existing empirical research by investigating the effects of unemployment on

inequality; how unemployment impacted on the standard of living; and the effects of income inequality on standard of living.

Furthermore, there have recently been many empirical researches to determine the effects of unemployment and income inequality on standard of living. With the improving of data quality, a wide range of methodology techniques, the number of empirical studies has contributed useful information to living standard effects of development economics fields. These studies now focus more on each cross-country sample and panel case study, but the results from those are not consistent, especially when considering specific and individual problems of each country.

2.6 Conceptual Framework

The conceptual link among unemployment, inequality and standard of living depicted in Figure 2.5 is discussed in this section. Unemployment and inequality are closely related to each other. When considered from a larger point of view, unemployment is the reason and inequality is the outcome. Unemployment results in inequality when it continues for successive cycles. Unemployment, be it cyclical, structural or frictional, adds to the misery of the jobless workers. There seems to be a consensus on the definitions and usage of the concept, unemployment. Unemployment is "a situation in which persons capable and willing to work are unable to find suitable paid employment"[55]. As defined by International Labour Organisation, unemployed workers are those who are currently not working but are willing and able to work for pay, currently available to work and have actively search for work[56]. Unemployment is defined as "the facts of a number of people not having a job; the number of people without a job; the state of not having a job".

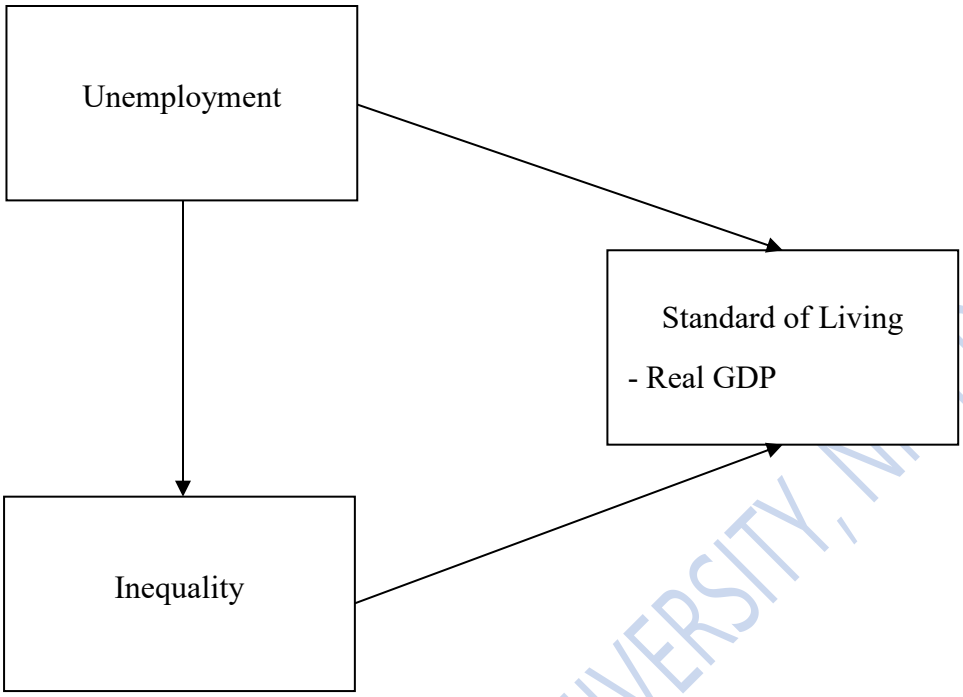

Figure 2.5: Conceptual Links of Unemployment, Inequality and Standard of Living

In the same vein, an operational definition of unemployment for this work will include the underemployed, hence unemployment occurs when people who are able and willing to work are without jobs, or cannot find work that is effective and productive to do. It also occurs when people undertake jobs that are contrary or lower than their academic qualifications or areas of specialization. For instance, a first or second degree holder that enroll as a recruit into any of the armed forces or paramilitary or a degree holder working as a clerk in an office is greatly underutilized and as such could be termed as unemployed even when such person is on a job. Many countries across the world, rich and poor, have experienced rapid growth in the gap between the richest people in society and everyone else over the past 30 years. Failure to tackle this growing crisis is undermining social and economic progress and the fight against poverty. Inequality is bad for us all. It reduces economic growth, and worsens health and other outcomes. The consequences for the world's poorest people are particularly severe. The evidence is clear: there will be no end to extreme poverty unless governments tackle inequality and reverse recent trends. Unless they do so, the World Bank predicts that by 2030 almost half a billion people will still be living in extreme poverty. The rise of extreme economic inequality also undermines the fight against gender inequality and threatens women's rights. Women's economic empowerment has the potential to transform many women's lives for the better and support economic growth. Functionally, the link between unemployment, inequality and standard of living is expressed as:

$$gincp = f(uemp, ineq) \tag{2.1}$$

In mathematical form, it is stated as:

$$gincp = \pi_0 + \pi_1 uemp + \pi_2 ineq \tag{2.2}$$

Where: *gincp* represents growth rate of real gross domestic product measuring standard of living; *uemp* denotes the unemployment rate; *ineq* is income inequality; and π_0, π_1, π_2 are parameters.

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Chapter Three

Methodology

The methodology of this study is presented in a way to explain the empirical modeling and estimation approaches used to estimate the parameters. The discussion under this section is divided into four different sections. The chapter contains the model specification specified in line with the objectives of the study. Other sections include the theoretical expectation, estimation techniques and data sources and measurements. Specifically, section 3.1 presents the specification of empirical models, section 3.2 provides the theoretical expectation, section 3.3 presents the estimation methods and the last sect provides the data sources and measurements.

3.1 Model Specification

3.1.1 Empirical Model of the Links between Unemployment and Income Inequality

Following the conceptual framework developed for this study in the last section of chapter two and the adapted mode specifications of previous studies, the modified model relating to the links between unemployment and income inequality including relevant control variables (income per capita, domestic credit to private sector by banks, gross fixed capital formation, inflation rate and trade openness) is specified in functional form as follows[1,2,3]:

$$ineq_t = f(uemp_t, gincp_t, dcps_t, gfcf_t, \inf_t, topen_t) \quad (3.1)$$

Where: *ineq* denotes income inequality; *uemp* is unemployment rate; *gincp* represents growth of income per capita; *dcps* denotes domestic credit to private sector by banks to GDP, *gfcf* represents gross fixed capital formation to GDP; *inf* is inflation rate; *topen* is trade openness; and *t* is time periods.

In econometrics form, it is stated as:

$$ineq_t = \phi_0 + \phi_1 uemp_t + \phi_2 gincp_t + \phi_3 dcps_t + \phi_4 gfcf_t + \phi_5 \inf_t + \phi_6 topen_t + \upsilon_t \quad (3.2)$$

Where: *ineq* denotes income inequality; *uemp* is unemployment rate; *gincp* represents growth of income per capita; *dcps* denotes domestic credit to private sector by banks to GDP, *gfcf* represents gross fixed capital formation to GDP; *inf* is inflation rate; *topen* is trade openness; ϕ_0, ϕ_{1-6} are parameters; *t* denotes time period; and υ represents error term.

3.1.2 Empirical Model Linking Unemployment and Living Standard

To examine the impacts of unemployment rate on standard of living, the study adapted the model of previous studies by modeling standard of living measured by real income per capita growth as a function of unemployment, domestic credit to private sector by banks, gross fixed capital formation, inflation rate and trade openness[4,5]. The baseline model for the time series analysis is specified below as:

$$gincp_t = f(uemp_t, dcps_t, gfcf_t, \inf_t, topen_t) \quad (3.3)$$

Where: *gincp* denotes income per capita growth; *uemp* is unemployment; *dcps* denotes domestic credit to private sector by banks; *gfcf* is gross fixed capital formation; *inf* represents inflation rate; *topen* denotes trade openness; and *t* is time periods.

In econometrics form, it is stated as:

$$gincp_t = \pi_0 + \pi_1 uemp_t + \pi_2 dcps_t + \pi_3 gfcf_t + \pi_4 \inf_t + \pi_5 topen_t + e_t \quad (3.4)$$

Where: *gincp* denotes income per capita growth; *uemp* is unemployment; *dcps* denotes domestic credit to private sector by banks; *gfcf* is gross fixed capital formation; *inf* represents inflation rate;

topen denotes trade openness; π_0, π_{1-5} are parameters; *t* denotes time period; and *e* represents stochastic term.

3.1.3 Empirical Model of the Relationship between Income Inequality and Living Standard

Following the last objective which is to investigate the effects of income inequality on living standard, the study adapted the model of past studies by modeling standard of living as a function of income inequality, domestic credit to private sector by banks, gross fixed capital formation, inflation rate and trade openness[4,5]. The baseline model of this objective is specified below as:

$$gincp_t = f(ineq_t, dcps_t, gfcf_t, \inf_t, topen_t) \quad (3.5)$$

Where: *gincp* denotes income per capita growth; *uemp* is unemployment; *dcps* denotes domestic credit to private sector by banks; *gfcf* is gross fixed capital formation; *inf* represents inflation rate; *topen* denotes trade openness; and *t* is time periods.

In econometrics form, it is stated as:

$$gincp_t = \theta_0 + \theta_1 ineq_t + \theta_2 dcps_t + \theta_3 gfcf_t + \theta_4 \inf_t + \theta_5 topen_t + v_t \quad (3.6)$$

Where: *gincp* denotes income per capita growth; *uemp* is unemployment; *dcps* denotes domestic credit to private sector by banks; *gfcf* is gross fixed capital formation; *inf* represents inflation rate; *topen* denotes trade openness; θ_0, θ_{1-5} are parameters; *t* denotes time period; and *v* represents stochastic term.

3.2 Theoretical Expectation

Concerning the a'priori expectation of income inequality model, a direct relationship is expected between unemployment rate and income inequality. This implies that an increase in unemployment rate will further lead to an increase in income inequality of the whole economy. Likewise, inflation has positive level of association with the income inequality of a country. On the contrary, growth in income per capita, domestic credit to private sector by banks, and gross fixed capital formation have indirect impact on income inequality measured by gini coefficient. This means that an increasing growth in income per capita, rise in domestic credit to private sector by banks, and high gross fixed capital formation have the chances of decreasing income inequality. Similarly, the effect of trade openness on income inequality is negative.

For standard of living measured by real income per capita model, the study expects an indirect relationship between unemployment and standard of living in an economy. It means that an increase in unemployment rate have higher tendency of reducing the living standard. Similarly, an economy with high income inequality rate has a negative relationship with standard of living. In contrast, domestic credit to private sector by banks, high gross fixed capital formation, inflation rate and trade openness have a direct impact on living standard. This means that an increasing domestic credit to private sector by banks, high gross fixed capital formation, inflation rate and trade openness have the chances of increasing the standard of living of people in a economy. Table 3.1 presents the summary of the a'propri expectations of the variables.

Table 3.1: A'priori Expectation

Dependent Variable: Income Inequality (*ineq*)		
uemp	Unemployment rate	$\frac{\partial ineq}{\partial uemp} > 0$
gincp	Income per capita growth	$\frac{\partial ineq}{\partial gincp} < 0$
dcps	Domestic credit to private Interest rate	$\frac{\partial ineq}{\partial dcps} < 0$
gfcf	Gross fixed capital formation	$\frac{\partial ineq}{\partial gfcf} < 0$
inf	Inflation rate	$\frac{\partial ineq}{\partial \inf} > 0$
topen	Trade openness	$\frac{\partial ineq}{\partial topen} < 0$
Dependent Variable: Living standard (*gincp*)		
uemp	Unemployment rate	$\frac{\partial gincp}{\partial uemp} < 0$
ineq	Income inequality	$\frac{\partial gincp}{\partial ineq} < 0$
dcps	Domestic credit to private Interest rate	$\frac{\partial gincp}{\partial dcps} > 0$
gfcf	Gross fixed capital formation	$\frac{\partial gincp}{\partial gfcf} > 0$
inf	Inflation rate	$\frac{\partial gincp}{\partial \inf} > 0$
topen	Trade openness	$\frac{\partial gincp}{\partial topen} > 0$

Source: Author's compilation (2021).

3.3 Method of Data Analysis

In this study, the specification and estimation of the models requires that there is a need to test the time series properties of the variables so as to determine whether they contain integrated components. For this reason, this study adopts time series estimation techniques. Prior to the estimation of the parameters, this study investigates the stationarity (presence of a unit root or not) of the variables using the Augmented Dickey Fuller (ADF) test. Afterwards, the study tests for the cointegration of the variables depending on the results of the stationarity of the variables. As well, the appropriate estimator was employed to evaluate the coefficients of the empirical models.

3.3.1 Stationarity Test Method

This study used the unit root test to test for the stationarity of the times series data collected for the research to avoid the danger of bias that stationarity of data may pose to the study if they are not checked. The unit root test was employed because in the literature most time series variables are non-stationary and using non-stationary variables in the model might lead to a spurious regression. To ascertain whether time series data were stationary or non-stationary and to determine the number of times (the level) at which the variables must be differenced before becoming stationary, unit root tests were conducted. The Dickey-Fuller regression is estimated as follows for unit root.

$$\Delta Y_t = \lambda Y_{t-1} + V_t \qquad (3.7)$$

If λ equals 0, Y_t is non-stationary, as a result Y_t and X_t are not co-integrated. In order words, if λ is significantly different from 0 Y_t and X_t are found integrated individually. Given the inherent weakness of the unit root to distinguish between null and the alternative hypotheses, it is

desirable that the Augmented Dickey Fuller (ADF) test be applied. To be co-integrated; both Y_t and X_t must have the same order of integration[6,7]. The ADF regression is specified as follows:

$$\Delta Y_t = \alpha + \beta t + \delta Y_{t-1} + \gamma_i \sum_{t=1}^{m} \Delta Y_{t-1} + \varepsilon_t \quad (3.8)$$

Δ is the first difference operator, ε_t is the new random error term, *M* is the optimum number of lags needed to obtain "white noise". The null hypothesis of non-stationarity is rejected if the estimated ADF statistic is found to be larger in absolute term or more negative than its critical values at 1 or 5 percent level of significance.

3.3.2 Co-integration Test

Co-integration among the variables is used to determine the existence of a long run equilibrium relationship between the variables. The concept of co-integration creates the link between integrated processes and the concept of steady state equilibrium[8]. The idea behind co-integration is that 'although two different series may not themselves be stationary, some linear combination of them may be indeed be stationary with the generalization to more than two series[8]. Economic variables are inherently non-stationary and thus, could meander without any tendency to return to equilibrium in the long run. Implicit in the co-integration theory is the fact that there exists a linear combination of these non-stationary variables that is stationary. Thus, the purpose of the co-integration test is to determine whether a group of non-stationary time series is co-integrated to reduce bias. The concept of co-integration creates the link between integrated processes and the concept of steady state equilibrium[9]. In this study, autoregressive distributed lag (ARDL) tests for co-integration analysis was employed to investigate the long-term relationship between the variables of interest.

3.3.3 ARDL Estimation Test

In this study, the autoregressive distributed lag (ARDL) was used to estimate the short-run and long-run estimates of the existing relationship between government expenditure and agricultural performance. Three advantages for using this method are stated as: (a) small sample data (b) variables with mixed stationarity level either I(0) or I(1) and (c) both long- and short-run estimates can be derived simultaneously[10]. The lag length is selected using the Akaike information criteria (AIC). The calculated F-statistic value is used to make the decision about the cointegration. The significance of our calculated value is compared with the two tabulated values (upper bound and lower bound) computed by a scholar[11]. The decision criteria support cointegration if the calculated value is greater than the upper bound value; no cointegration if the value is lesser than the lower bound value; and inconclusive if the value lies between the two bounds values.

3.4 Criteria for Model Evaluation

In order to analyze the model, three criteria where utilized namely:

3.4.1 Economic Criteria

The economic criteria which is used to measure the sign and size of the parameters in the model.

3.4.2 Statistical Criteria

This includes the t-test, F-statistics, and R^2.

R^2 Test of Goodness of fit of the Model

The R-square (R^2) also known as the coefficient of determination or the explanatory power of the model it tells the proportion of the total variable in the dependent variable y that is explained by the regression line or the explanatory variables *x*. In a single/simple regression model, it is the

square of the correlation coefficient. The valve of the R^2 lies between 0 and 1 i.e. $0 \leq R^2 \leq 1$ when the $R^2 = 0$, it means the explanatory variable do not explain the dependent variable and when the $R^2 = 1$, it means the model is best fit. If the R^2 is multiplied by 100, then it shows the percentage of total variation in y the dependent variable that is explained by variation/changes in *x*. the closer the R^2 is to one. The stronger is the explanatory power of the estimated regression line, and thus the closer are the observation to the line. If R^2 =0.56 it means that 56% of total variation in y is explained by the regression line/changes in *x* and the other 44 remains unexplained by *x*. we can obtain the R^2 from the formula.

$$R^2 = \frac{\Sigma xy}{\Sigma y^2} \qquad (3.9)$$

Test of individual statistics of the slope coefficient (T. Test)

This test the individual significance of the co-efficient, to do this, we test the null hypothesis that $b_1 = 0$ against the alternative hypothesis that $b_1 \neq 0$ in employing the t test, we compare the computed with the value read from the student's t table at given level of significance, (α) and n-k degree of freedom/ if the absolute value of the computed t value is greater than the absolute value of the theoretical, *t* value, we reject the null hypothesis (H_0) at he given level of significance i.e. if $t_{cal} > t_{tab}$, reject H_0; Accept H_1

$t_{cal} < t_{tab}$, Accept H_0, reject H_1

It is calculated using the formula

$$t_{cal} = \frac{\hat{\beta}\iota}{\sigma\hat{\beta}\iota} \qquad (3.10)$$

t_{cal} = t calculated; b_i = estimated *b*; and S_{bi} = standard error of estimated *b*.

Alternatively, the rule of thumb can be used, which state that if the T_{cal} is greater than 2 at the 5 percent level of significance, we reject the null hypothesis and conclude that the parameter is statistically significant in explaining the dependent variables. Put differently, if we have Ho: b_i = 0, $H_i : b_i \neq 0$ we reject H_o if $\frac{/\hat{b}_s/}{\sigma\hat{b}_s} > 0$.

The F Statistic (Test for overall significance of the model)

This test for the statistical significance of the entire slope coefficient jointly on the dependent variable using a level of significance. The F statistic is done by comparing the F_{cal} with the F tabulated. When the F_{cal} is greater than the F_{table} we reject the null hypothesis, and conclude that all variables put together is statistically significant in explaining the dependent variable. The formula for F statistic is:

$$F_{cal} = \frac{R^2 / k - 1}{1 - R^2 / n - k} \qquad (3.11)$$

3.4.3 Econometric Criteria

This includes the test for serial correlation and multi colinearity in the model. Since it is a time series analyses, we did not test for heteroskedasticity in the model, as it is a problem of cross sectional analyses.

D.W Statistic Durbin – Watson Test

This test for whether there is serial or Auto correlation in the model using a level of significance. When the value of D.W statistics is between 1.5 and 2.5 i.e $1.5 \leq D.W \leq 2.5$ we reject the null hypothesis at the 5 percent level of significance and conclude that there is no autocorrelation in the model. It is obtained from the formula.

$$D.W = \frac{\sum_{\tau=2}^{n} (\mu_{\tau} - \mu_{\tau-1})^2}{\sum_{t=2}^{n} \mu_{\tau}^2} \quad (3.12)$$

In the test, we formulate the null hypothesis. This is tested against the alternative hypotheses. To test the null hypothesis using Durbin Watson test, we could equate H: P = 0 to H_0: d = 2, and that the value of "d" lies between 0 and 4. If d = 2, there is no auto correlation, if d = 0, we have a perfect positive autocorrelation, if d = 4, there exist perfect negative autocorrelation.

3.5 Data Sources and Measurement

The data set for this study is obtained mainly from secondary sources. The secondary data comprises annual time series spanning 1981 through 2019. The sample period is selected using the purposive sampling technique based on data availability and to cover the SAP and post-SAP periods. Specifically, living standard is measured using per capita income growth. The income per capita vaiable is measure using ratio of GDP to population in current US dollar. It is measured in billion of US Dollars and obtained from World Development Indicators (2020). Also, uenmployment rate and income inequality measured by Gini coefficient are sourced from World Development Indicators (2020). Gross fixed capital formation and total trade as a percentage of gross domestic product are gotten from WDI (2020). Inflation is measured as the percentage change in general price level using 2010 as the base year. It is measured in percentage and sourced from World Development Indicators (2020).

Endnotes

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Chapter Four

Results and Discussion of Findings

This chapter presents the results of empirical analysis of the relationship among unemployment, income inequality and standard of living in Nigeria using annual time series data from 1981 to 2019. In order to achieve the objectives of the study, regression models that relate the variables (dependent and independent) from the empirical literature as identified in the theoretical framework are specified. For the purpose of clarity, the chapter is structured into four sections. The first section focuses on presentation of the data, descriptive analysis of the trend and relationship between agriculture output and economic development for the period under review. Second section provides the time series properties of the variables by testing the stationarity and cointegration tests of all the variables used in the model. The third section presents the result of the short-run error correction model and the long-run estimates using the ARDL method. In the same section, the stability test and discussion of various diagnostic tests is also presented. The last section presents the discussion of findings.

The data used for the study are the following variables unemployment, inequality, income per capita, domestic credit to private sector, gross fixed capital formation, inflation and trade openness. These data were sourced from the Central Bank of Nigeria Statistical Bulletin (2019) and World Development Indicators (2020).

4.1 Preliminary Analysis

4.2.1 Descriptive Statistics

Table 4.1 presents the summary statistics which shows the mean (average), standard deviation (degree of dispersion) minimum and maximum values of the variables as well as the skewness and Kurtosis. The results in the table provided some insight into the nature of the variables used in the study. The average values of unemployment, inequality, income per capita and growth of per capita income are10.2%, 443%, US$1208.6 and 0.52% respectively. Regarding the standard deviation statistics, their respective value were 6.90%, 6.06%, US$877.80 and 5.33%. The values indicated that they are highly dispersed. Similarly, this is revealed in their corresponding minimum and maximum values. Concerning other variables, the mean of domestic credit to private sector by banks to GDP is 9.14%. It shows that the ratio of domestic credit to private sector by banks to the size of the Nigeria economy grew at an average of 9.14% from 5.73% in 1981 to 10.43% in 2019.Regarding gross fixed capital formation, its average growth to GDP is 35.92%. The variable had a minimum value of 14.17% and a maximum of 89.39% during the period under study. From the table, inflation has a mean value of 19.15% per annum during the period under study. The variables showed minimum and maximum values of 5.39% and 72.84% respectively. Similarly, trade openness has an average value of 32.3% during the period under review. The variable shows a standard deviation of 12.4% as well as lower and higher values of 9.14% and 53.28% respectively. The large standard deviation from the mean suggests that the variable is highly volatile.

Table 4.1: Descriptive Statistics of the Variables

	UEMP	INEQ	INCP	GINCP	DCPS	GFCF	INF	TOPEN
Mean	10.11795	44.42051	1308.621	0.520831	9.143295	35.92314	19.14646	32.30051
Median	9.700000	43.00000	902.2158	1.472851	8.152684	34.04928	12.55496	34.02388
Maximum	24.70000	56.70000	3098.986	12.45747	19.60353	89.38613	72.83550	53.27796
Minimum	1.800000	35.10000	270.2240	-15.45036	4.948032	14.16873	5.388008	9.135846
Std. Dev.	6.920445	6.054888	877.8017	5.324852	3.545742	19.40219	17.06283	12.40409
Skewness	0.653580	0.565240	0.506888	-0.874697	1.208734	1.027296	1.783591	-0.368582
Kurtosis	2.282138	2.127292	1.799553	4.702236	4.078280	3.714149	4.997667	2.250726
Jarque-Bera	3.613987	3.314355	4.011827	9.681724	11.38611	7.688452	27.16262	1.795334
Probability	0.164147	0.190676	0.134537	0.007900	0.003369	0.021403	0.000001	0.407519
Sum	394.6000	1732.400	51036.22	20.31240	356.5885	1401.002	746.7120	1259.720
Sum Sq. Dev.	1819.917	1393.144	29280362	1077.454	477.7468	14304.90	11063.33	5846.736
Observations	39	39	39	39	39	39	39	39

Source: Author's compilation (2021).

Moreover, unemployment, inequality, income per capita, domestic credit to private sector, gross fixed capital formation and inflation skewed positively witha correspondingly values of 0.654, 0.565, 0.506, 1.208, 1.027 and 1.784, whereas trade openness skewed leftward with a statistical value of -0.469. As well, the Kurtosis identified 3.0 suggesting the normal distribution. From Table 4.2, none of the variables exhibit normal distribution. Of all the variables, income per capita growth, domestic credit to private sector, gross fixed capital formation and inflation are leptokurtic while unemployment, inequality, income per capita and trade openness are platykurtic in distribution. The results revealed that all of the variables are not normally distributed. More so, the Jarque-Bera statistics revealed that four variables are significant at 0.05 critical values while others are not.

4.2.2 Trend Analysis of Unemployment, Income Inequality and Standard of Living

The trend movements of unemployment, income inequality and standard of living are presented in Figure 4.1. From the chart, it shows that unemployment slopes steeply from 1981 to 1999, afterward it begins to move upward to 23.9% in 2011. Later, it dropped to 10.6% in 2012, rose to 24.7% in 2013. In 2014, unemployment falls to 9.7% and subsequently rises through the remaining periods under study. Meanwhile, per capita income growth fluctuates all through the periods. As for income inequality, the trend moves up and down but it slopes steeply for some periods.

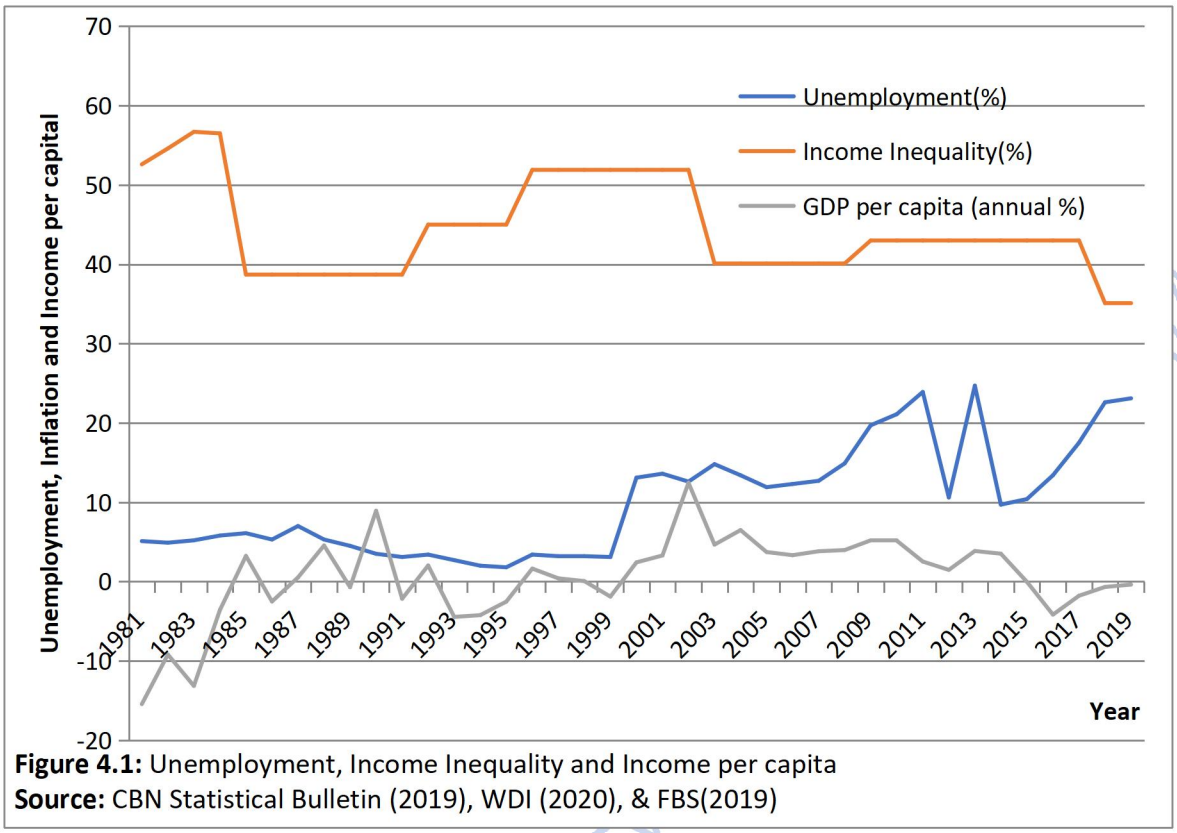

Figure 4.1: Unemployment, Income Inequality and Income per capita
Source: CBN Statistical Bulletin (2019), WDI (2020), & FBS(2019)

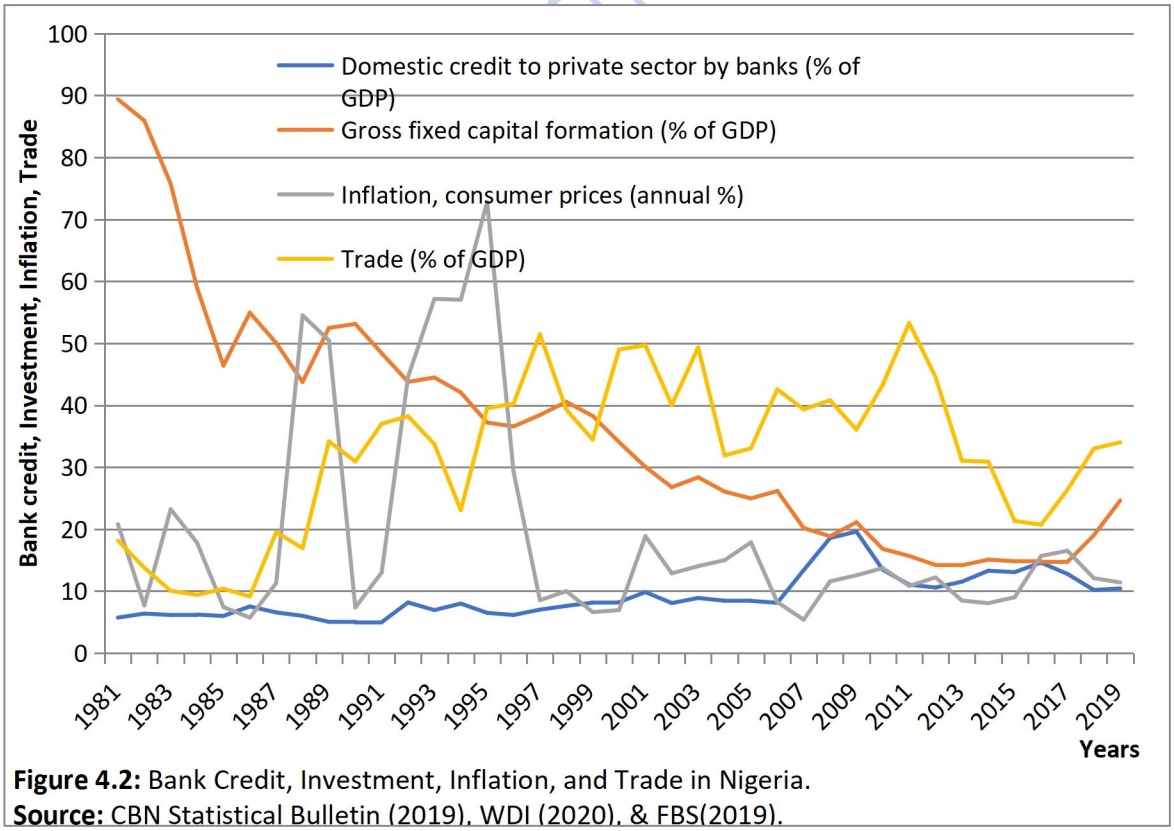

Figure 4.2: Bank Credit, Investment, Inflation, and Trade in Nigeria.
Source: CBN Statistical Bulletin (2019), WDI (2020), & FBS(2019).

In Figure 4.2, it shows the trend of domestic credit to private sector by banks, gross fixed capital formation, inflation and trade openness in Nigeria for the period 1981 to 2019. The trend movement of domestic credit to private sector by bank to GDP sloped in a steep way but it reached a peak of 21.19% in 2009 during the periods under study. However, the trend of gross fixed capital formation to GDP slopes downwardly from 1981 at 89.39% to 14.21% in 2014, thereafter moves in a positive direction. As for inflation and trade openness, their movements were in a zig-zag throughout the periods.

4.2.3 Correlation Analysis

In this section, the correlation analysis of the variables was presented. This shows the bi-variate relationship between the explained and explanatory variables in the model and the correlation result is reported in Table 4.2. The reason for estimating the correlation coefficients is to provide the actual information about the level of association between the variables. Also, it helps to analyze the strength of relationship among the explanatory variables in order to avoid multicollinearity issues in the specified model.

Table 4.2: Correlation Analysis

	uemp	*ineq*	*incp*	*gincp*	*dcps*	*gfcf*	*inf*	*topen*
uemp	1							
ineq	-0.354	1						
incp	0.674	-0.207	1					
gincp	0.362	-0.396	-0.017	1				
dcps	0.663	-0.234	0.668	0.281	1			
gfcf	-0.666	0.436	-0.448	-0.640	-0.698	1		
inf	-0.424	0.010	-0.442	-0.214	-0.311	0.204	1	
topen	0.319	-0.039	-0.007	0.501	0.238	-0.538	-0.056	1

Source: Author's compilation (2021).

From the result, it can be deduce that unemployment, income per capita, domestic credit to private sector by bank and trade openness have negative correlation with income inequality. Meanwhile, income inequality has a direct level of association with gross fixed capital formation and inflation. This implies that as the financial sector develops and high trade openness, income inequality reduces. As regards income per capita, unemployment has positive correlation coefficient while income inequality has negative correlation coefficient. This means that income per capita positively correlate with unemployment but negatively correlate with income inequality. In addition, gross fixed capital formation and inflation have negative correlation with income per capita and its growth rate. Meanwhile, trade openness correlates positively with income per capita but negatively link with per capita income growth. Likewise, the correlation analysis among the explanatory variables is reported in the table. The correlation coefficients are low which means that the specified regression model for the study does not suffer from multicollinearity problem.

4.3 Stationarity Test

The section examines the stationarity level of the series used in examining the relationship between unemployment, income inequality and living standard in Nigeria under the periods under study. This is because if the time series variables are non-stationary, regression results with these time series will differ from the conventional theory of regression with stationary series. The implication is that the regression coefficients with non-stationary variables will be spurious and misleading. To resolve the problem, the study performed a test for the level of stationarity of the time series. First, the study estimates the order of integration because studies have shown that in most time series studies the constancy doctrine of OLS is violated. The outcome is that the classical *t*, *f*, and Durbin Watson statistic value based on such estimate may yield biased and inconsistent result, leading to the so called spurious regression problem. As a result of this problem, the study begins by considering the characteristics of the time series data employed in the study by considering the order of integration of series using the Augmented Dickey Fuller (ADF) set of unit root test. The unit root result is presented in Table 4.3.

Table 4.3: Augmented Dickey Fuller (ADF) Test (Trend and Intercept)

Variables	ADF value at Level	ADF value at 1stDifference	Order of Integration	Remark
UEMP	-2.7910 (3) [-3.5443]	-4.8361 (1) [-3.5403]**	I(1)	Reject H_0
INEQ	-2.2525 (0) [-3.5331]	-5.8755 (0) [-4.2268]***	I(1)	Reject H_0
GINCP	-2.6703 (1) [-3.5366]	-5.0883 (1) [-4.2350]***	I(1)	Reject H_0
DCPS	-4.0400 (1) [-3.5366]**	–	I(0)	Reject H_0
GFCF	-2.7210 (0) [-3.5331]	-5.1746 (0) [-3.5366]***	I(1)	Reject H_0
INF	-4.0198 (1) [-3.366]**	–	I(0)	Reject H_0
TOPEN	-2.3667 (8) [-3.5331]	-4.6561 (8) [-4.3098]***	I(1)	Reject H_0

Note: ** indicate level of significance at 5%.
Source: Author's compilation (2021).

The stationarity test results of the series at levels and first difference are reported in Table 4.4. In carrying out the test, a constant and trend term is included. Also, the optimal lag length of each case for ADF tests is chosen using the Akaike Information Criteria (AIC) after testing for higher order serial correlation residuals. As reported in Table 4.4, it can be seen that the ADF values of domestic credit to private sector to GDP and inflation rate have greater statistics than the ADF critical values in absolute terms at levels. This implies that we do not accept the null hypothesis that these series contain a unit root in the process at level. Thus, this means that domestic credit to private sector to GDP and inflation rate are stationary at levels. Meanwhile, the results shows that the ADF values of unemployment, income inequality, income per capita growth, gross fixed capital formation and trade openness are lower than the ADF critical values in absolute terms at level, thereby, accepting the null hypothesis that these series contain a unit root in the process at level. Afterward, we took the first difference and each series appear to be stationary as the ADF value is more negative than the ADF critical value. Since the data appear to be stationary in first differences, no further tests are performed. As a result, it can be concluded that the series (unemployment, income inequality, income per capita growth, gross fixed capital formation and trade openness) are integrated of order one I (1).

4.4 Presentation of Results

4.4.1 Empirical Results of the Impact of Unemployment on Income Inequality

Cointegration Test Result

The study tests the long-run relationship between unemployment, income inequality and other controlling variables by employing the autoregrssive distributed lag (ARDL) bound cointegration approach prior to testing of hypothesis of both short-run and long-run parameters. Regarding the models revealing the long run relationship between income inequality, unemployment and other controlling variables (income per capita, domestic credit to private sector by banks, gross fixed capital formation, inflation rate and trade openness), the ARDL bound test is used for the reason that it is suitable for variables at different order of integration. In Table 4.5, the F-statistics show the result of the existence of long-run relationship between unemployment, income inequality and other controlling variables in Nigeria.

In Table 4.4, the estimated F-statistics of the normalized equations are greater than the lower and upper critical bound at 1% significance level. It means that the null hypothesis of no long-run relationship is rejected at 1% significance level. The economic implication of the above results is that unemployment, control variables (such as income per capita, domestic credit to private sector by banks, gross fixed capital formation, inflation rate and trade openness) and income inequality, all have equilibrium condition that keep them together in the long run. As a result, there exists a long-run relationship between unemployment and income inequality in Nigeria.

Table 4.4: Cointegration Test of Unemployment and Income Inequality

Test Statistic	**Value**	**K**
F-statistics (ineq| gincp, dcps, gfcf, inf, topen)	22.8259	6
Critical Value Bounds		
Significance	**I0 Bound**	**I1 Bound**
10%	1.99	2.94
5%	2.27	3.28
2.5%	2.55	3.61
1%	2.88	3.99

Source: Author's computation (2021).

Results of Short-run and Long-run Estimates

The sub-section present the first null hypothesis result that unemployment rate has no significant effect on income inequality in Nigeria. Both the short run and long run estimates of unemployment and other explanatory variables (such as income per capita, domestic credit to private sector by banks, gross fixed capital formation, inflation rate and trade openness)in Nigeria are presented employing the estimated ARDL approach extensively discussed in the preceding chapter. The estimated ARDL model is a composite of short run and long run estimates of the interrelationship among the indicators understudied. In Table 4.5, the short run and long run estimates of unemployment, income per capita, domestic credit to private sector by banks, gross fixed capital formation, inflation rate and trade openness were explicitly presented.

Table 4.5: Results of estimated ARDL model of Unemployment and Income Inequality

Dependent Variable: Income Inequality(ineq)
Selected Model: ARDL(3, 4, 4, 4, 4, 4, 3)
Sample: 1981 2019 **Included observations:** 35

Short-Run Estimates				
Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**Prob.**
D(INEQ(-1))	1.511122	0.022273	67.84514	0.0002
D(INEQ(-2))	-0.698879	0.014011	-49.87926	0.0004
D(UEMP)	-0.061089	0.010048	-6.079456	0.0260
D(UEMP(-1))	2.176653	0.029529	73.71142	0.0002
D(UEMP(-2))	0.655890	0.016768	39.11451	0.0007
D(UEMP(-3))	0.099751	0.009674	10.31140	0.0093
D(GINCP)	1.288482	0.020358	63.29163	0.0002
D(GINCP(-1))	2.220209	0.034518	64.32020	0.0002
D(GINCP(-2))	0.677620	0.017559	38.59012	0.0007
D(GINCP(-3))	-0.173078	0.012886	-13.43171	0.0055
D(DCPS)	0.524282	0.023617	22.19973	0.0020
D(DCPS(-1))	-3.741847	0.050394	-74.25150	0.0002
D(DCPS(-2))	-2.921898	0.042895	-68.11758	0.0002
D(DCPS(-3))	2.207449	0.042210	52.29739	0.0004
D(GFCF)	0.233401	0.012101	19.28848	0.0027
D(GFCF(-1))	0.202261	0.012823	15.77299	0.0040
D(GFCF(-2))	-0.378604	0.013798	-27.43958	0.0013
D(GFCF(-3))	0.201785	0.010182	19.81697	0.0025
D(INF)	0.000444	0.003092	0.143742	0.8989
D(INF(-1))	0.235361	0.003932	59.86434	0.0003
D(INF(-2))	0.041190	0.003311	12.44148	0.0064
D(INF(-3))	0.114340	0.002892	39.54095	0.0006
D(TOPEN)	-0.952118	0.013358	-71.27510	0.0002
D(TOPEN(-1))	-0.912394	0.013174	-69.25526	0.0002
D(TOPEN(-2))	-0.579491	0.009308	-62.25503	0.0003
ECT(-1)	-0.226246	0.002496	-90.64948	0.0001
Long-run Estimates				
UEMP	-1.664498	0.080091	-20.78257	0.0023
GINCP	-0.008781	0.131326	-0.066862	0.9528
DCPS	0.951687	0.123482	7.707086	0.0164
GFCF	-0.180749	0.016008	-11.29102	0.0078
INF	-0.175860	0.012599	-13.95821	0.0051
TOPEN	0.230470	0.042517	5.420675	0.0324
C	53.26127	1.442503	36.92282	0.0007

R-squared	0.7996	**F-stat**	244.98 (0.000)
Adj. R-squared	0.6586	**D-Watson**	1.9313

Diagnostic Tests

Serial Correlation	1.5935 [0.2563]	**Normality Test:**	0.0319 [0.9842]
Functional Form:	0.7251 [0.6006]	**Heteroskedasticity Test:**	2.2069 [0.0742]

Source: Author's computation (2021).

Concerning the short-run estimation results, the error correction term measuring the speed or degree of adjustment is presented. This is the rate of adjustment at which the dependent variable changes due to changes in the independent variables. The short run analysis shows the dynamic pattern in the model. Also, it is computed to ensure that the model dynamics have not been constrained by inappropriate lag length specifications. The ARDL test automatically choose the lag length on all variables as the model was set at three to ensure sufficient degree of the freedom based on automatic selection of Akaike Information Criterion. Table 4.6 presents the short-run estimates of the relationship between unemployment and income inequality. The coefficient of the ECT is found to be negative and statistically significant at 5% significance level. The error correction term statistics of -0.2263 implies that the model corrects its short-run disequilibrium by 22.63% speed of adjustment in order to return to the long run equilibrium.

Table 4.5 showed that the short run of income inequality at lag one has a positive and significant impact on the current changes in income inequality at 5%. However, second lag of income inequality has a negative coefficient and significant at 5% level. This implies that the current level of income inequality is influenced positively by the previous level of income inequality but negatively affected by the second lag. The short-run parameter estimates of unemployment at current, first, second and third lags were found to be positive and statistically significant at 5%. This means that unemployment directly influence changes in income inequality. Likewise, income per capita positively and significantly influences inequality at the conventional level, although the third lag of income per capita has a negative coefficient. Also, domestic credit to private sector by banks at current and third lag has direct and significant impact on unemployment. However, the first and second lags of domestic credit to private sector by bank reportedly affect unemployment negatively. The short-run coefficients of gross fixed capital

formation at current level, first and third lags have positive coefficients while the second lag has a negative parameter. As for inflation rate, all the coefficients are positive and significant at 5% significance level. Regarding trade openness, its coefficients are negative which means that it indirectly and significantly impacted on income inequality.

The long-run estimates from Table 4.5 indicated that unemployment rate has negative and significant impact on income inequality in Nigeria. The result shows that the indicator is not in tandem with the theoretical expectations and it is statistically significant at 5%. Similarly, income per capita, gross fixed capital formation and inflation rate negatively influence income inequality in Nigeria within the periods understudied. On magnitude basis, a 10% increase in unemployment, income per capita, gross fixed capital formation and inflation rate cause income inequality to reduce by 16.65%, 0.09%, 1.81% and 1.76% respectively. On the contrary, the table reported that domestic credit to private sector by banks and trade openness had direct effect on income inequality in Nigeria. This does not conform to a'priori expectations. A 10% rise in domestic credit to private sector by banks and trade openness increase income inequality by 9.51% and 2.31% respectively.

The coefficient of determination (Adjusted-R^2) is high (65.86%) indicating that about 65.86% of the total variations in income inequality was explained by the variables in the model. It simply indicated that the variation of changes in income inequality was explained by 65.86% variations in unemployment and other controlling variables. The overall test using the F-statistic (244.98) is statistically significant at 5% level of significance showing that model is well specified and statistically significant. The Durbin Watson statistic (1.9313) shows that there is absence of serial autocorrelation in the model. The estimated ARDL model is also tested for heteroscedasticity, serial correlation, functional form misspecification, parameter stability and

normality. The results from these tests are shown in Table 4.5. The estimated ARDL model revealed that the model passed the serial correlation, normality test, and heteroskedasticity test. It means that the error terms are normally distributed with same variances and they are not serially correlated. Also, the Ramsey RESET test was satisfactory for the ARDL model indicating that the model is well distributed.

4.4.2 Empirical Results of the Impact of Unemployment on Living Standard

Cointegration Test Result

In this sub-section, the study tests the long-run relationship between unemployment, living standard and other controlling variables by employing the autoregrssive distributed lag (ARDL) bound cointegration approach prior to testing of hypothesis of both short-run and long-run parameters. Regarding the models revealing the long run relationship between unemployment, living standard and other controlling variables (domestic credit to private sector by banks, gross fixed capital formation, inflation rate and trade openness), the ARDL bound test is used for the reason that it is suitable for variables at different order of integration. In Table 4.6, the F-statistics show the result of the existence of long-run relationship between unemployment, living standard and other controlling variables in Nigeria.

From Table 4.6, the estimated F-statistics of the normalized equations are greater than the lower and upper critical bound at 1% significance level. It means that the null hypothesis of no long-run relationship is rejected at 1% significance level. The economic implication of the above results is that unemployment, control variables (such as domestic credit to private sector by banks, gross fixed capital formation, inflation rate and trade openness) and living standard, all have equilibrium condition that keep them together in the long run. As a result, there exists a long-run relationship between unemployment and living standard in Nigeria.

Table 4.6: Cointegration Test of Unemployment and Living Standard

Test Statistic	**Value**	**K**
F-statistics (gincp| uemp, dcps, gfcf, inf, topen)	7.0075	5
Critical Value Bounds		
Significance	**I0 Bound**	**I1 Bound**
10%	2.08	3.00
5%	2.39	3.38
2.5%	2.70	3.73
1%	3.06	4.15

Source: Author's computation (2021).

Results of Short-run and Long-run Estimates

The sub-section present the second null hypothesis result that unemployment rate has no significant effect on standard of living measured by real income per capita growth in Nigeria. Both the short run and long run estimates of unemployment and other explanatory variables (such as domestic credit to private sector by banks, gross fixed capital formation, inflation rate and trade openness)in Nigeria are presented employing the estimated ARDL approach extensively discussed in the preceding chapter. The estimated ARDL model is a composite of short run and long run estimates of the interrelationship among the indicators understudied. In Table 4.7, the short run and long run estimates of unemployment, domestic credit to private sector by banks, gross fixed capital formation, inflation rate and trade openness were explicitly presented.

Table 4.7: Results of Estimated ARDL Model of Unemployment and Living Standard

Dependent Variable: Living Standard (gincp)
Selected Model: ARDL(4, 4, 3, 4, 4, 4)
Sample: 1981 2019 **Included observations:** 35

Short-Run Estimates				
Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**Prob.**
D(GINCP(-1))	0.246816	0.131361	1.878917	0.1093
D(GINCP(-2))	0.873759	0.132644	6.587269	0.0006
D(GINCP(-3))	0.644825	0.115714	5.572577	0.0014
D(UEMP)	-0.255102	0.087846	-2.903950	0.0272
D(UEMP(-1))	-1.354328	0.195027	-6.944327	0.0004
D(UEMP(-2))	-0.924514	0.148918	-6.208213	0.0008
D(UEMP(-3))	-0.396930	0.092020	-4.313509	0.0050
D(DCPS)	-1.139194	0.198027	-5.752710	0.0012
D(DCPS(-1))	2.385246	0.257931	9.247599	0.0001
D(DCPS(-2))	2.693969	0.369828	7.284387	0.0003
D(GFCF)	0.104375	0.097504	1.070471	0.3256
D(GFCF(-1))	-0.639486	0.102401	-6.244910	0.0008
D(GFCF(-2))	0.462648	0.097691	4.735818	0.0032
D(GFCF(-3))	-0.210104	0.076530	-2.745399	0.0335
D(INF)	-0.121870	0.024490	-4.976232	0.0025
D(INF(-1))	0.169782	0.028655	5.925014	0.0010
D(INF(-2))	0.163270	0.024980	6.536149	0.0006
D(INF(-3))	0.098253	0.025959	3.784884	0.0091
D(TOPEN)	0.476863	0.063117	7.555276	0.0003
D(TOPEN(-1))	0.193912	0.040916	4.739291	0.0032
D(TOPEN(-2))	0.241145	0.046449	5.191636	0.0020
D(TOPEN(-3))	0.059560	0.033033	1.803046	0.1214
ECT(-1)	-0.242685	0.024502	-9.904800	0.0001
Long-run Estimates				
UEMP	0.625969	0.115868	5.402428	0.0017
DCPS	-1.044266	0.198155	-5.269948	0.0019
GFCF	-0.020505	0.072483	-0.282896	0.7868
INF	-0.086970	0.030126	-2.886858	0.0278
TOPEN	0.216915	0.040970	5.294494	0.0018
C	-0.218480	5.220051	-0.041854	0.9680

R-squared	0.8639	**F-stat**	4.0080 (0.0446)
Adj. R-squared	0.6978	**D-Watson**	2.0030

Diagnostic Tests			
Serial Correlation	3.2367 [0.1113]	**Normality Test:**	2.4588 [0.2925]
Functional Form:	1.1210 [0.2993]	**Heteroskedasticity Test:**	0.5955 [0.8488]

Source: Author's computation (2021).

Regarding the short-run estimation results, the error correction term measuring the speed or degree of adjustment is presented. This is the rate of adjustment at which the dependent variable changes due to changes in the independent variables. The short run analysis shows the dynamic pattern in the model. As well, it is computed to ensure that the model dynamics have not been constrained by inappropriate lag length specifications. The ARDL test automatically choose the lag length on all variables as the model was set at three to ensure sufficient degree of the freedom based on automatic selection of Akaike Information Criterion. Table 4.7 presents the short-run estimates of the relationship between unemployment and standard of living measured by real income per capita growth. The coefficient of the ECT is found to be negative and statistically significant at 5% significance level. The error correction term statistics of -0.2427 implies that the model corrects its short-run disequilibrium by 24.27% speed of adjustment in order to return to the long run equilibrium.

In Table 4.7, it showed that the short run coefficients of living standard measured by income per capita growth have a positive and significant impact on the current changes in standard of living at 5% except the coefficient at first lag which has an insignificant value. The short-run parameter estimates of unemployment at current, first, second and third lags were found to be negative and statistically significant at 5%. This means that unemployment indirectly influence changes in living standard measured by income per capita growth. Meanwhile, domestic credit to private sector by banks at current level has an indirect and significant impact on living standard measured by income per capita growth. However, the first and second lags of domestic credit to private sector by bank reportedly affect living standard measured by income per capita growth positively. The short-run coefficients of gross fixed capital formation at current level and second lag have positive coefficients while the first and third lags have a negative parameter which is

reportedly significant at 5% level. As for inflation rate, all the coefficients are positive and significant at 5% significance level with the exception of its current level which has a negative coefficient. Concerning trade openness, its coefficients are positive which means that it directly and significantly impacted on living standard measured by income per capita growth.

The long-run estimates in Table 4.7 indicated that unemployment rate has positive and significant impact on living standard measured by income per capita growth in Nigeria. The result shows that the indicator is not in tandem with the theoretical expectations but it is statistically significant at 5%. Similarly, trade openness positively influence living standard measured by income per capita growth in Nigeria within the periods understudied. This follows the a'priori expectation. On magnitude basis, a 10% increase in unemployment and trade openness cause living standard measured by income per capita growth to rise by 6.25% and 2.19% respectively. On the contrary, the table reported that domestic credit to private sector by bank, gross fixed capital formation and inflation rate had an indirect effect on living standard measured by income per capita growth in Nigeria. This does not conform to a'priori expectations except inflation. A 10% rise in domestic credit to private sector by bank, gross fixed capital formation and inflation rate reduce living standard measured by income per capita growth by 10.44%, 0.21% and 0.87% respectively.

The coefficient of determination (Adjusted-R^2) is high (69.78%) indicating that about 69.78% of the total variations in living standard measured by income per capita growth was explained by the variables in the model. It simply indicated that the variation of changes in living standard measured by income per capita growth was explained by 69.78% variations in unemployment and other controlling variables. The overall test using the F-statistic (4.008) is statistically significant at 5% level of significance showing that model is well specified and statistically

significant. The Durbin Watson statistic (2.0030) shows that there is absence of serial autocorrelation in the model. The estimated ARDL model is also tested for heteroscedasticity, serial correlation, functional form misspecification, parameter stability and normality. The results from these tests are shown in Table 4.8. The estimated ARDL model revealed that the model passed the serial correlation, normality test, and heteroskedasticity test. It means that the error terms are normally distributed with same variances and they are not serially correlated. Also, the Ramsey RESET test was satisfactory for the ARDL model indicating that the model is well distributed.

4.4.3 Empirical Results of the Effects of Income Inequality on Living Standard

Cointegration Test Result

This sub-section examines the long-run relationship between income inequality, living standard measured by income per capita growth and other controlling variables by employing the autoregrssive distributed lag (ARDL) bound cointegration approach prior to testing of hypothesis of both short-run and long-run parameters. Regarding the models revealing the long run relationship between income inequality, living standard measured by income per capita growth and other controlling variables (domestic credit to private sector by banks, gross fixed capital formation, inflation rate and trade openness), the ARDL bound test is used for the reason that it is suitable for variables at different order of integration. In Table 4.8, the F-statistics show the result of the existence of long-run relationship between income inequality, living standard measured by income per capita growth and other controlling variables in Nigeria.

Table 4.8: Cointegration Test of Income Inequality and Living Standard

Test Statistic	**Value**	**K**
F-statistics (gincp| ineq, dcps, gfcf, inf, topen)	6.0503	5
Critical Value Bounds		
Significance	**I0 Bound**	**I1 Bound**
10%	2.08	3.00
5%	2.39	3.38
2.5%	2.70	3.73
1%	3.06	4.15

Source: Author's computation (2021).

From Table 4.8, the estimated F-statistics of the normalized equations are greater than the lower and upper critical bound at 1% significance level. It means that the null hypothesis of no long-run relationship is rejected at 1% significance level. The economic implication of the above results is that income inequality, control variables (such as domestic credit to private sector by banks, gross fixed capital formation, inflation rate and trade openness) and living standard measured by income per capita growth, all have equilibrium condition that keep them together in the long run. As a result, there exists a long-run relationship between income inequality and living standard measured by income per capita growth in Nigeria.

Results of Short-run and Long-run Estimates

The sub-section present the second null hypothesis result that income inequality has no significant effect on standard of living measured by real income per capita growth in Nigeria. Both the short run and long run estimates of income inequality and other explanatory variables (such as domestic credit to private sector by banks, gross fixed capital formation, inflation rate and trade openness)in Nigeria are presented employing the estimated ARDL approach extensively discussed in the preceding chapter. The estimated ARDL model is a composite of short run and long run estimates of the interrelationship among the indicators understudied. In Table 4.9, the short run and long run estimates of income inequality, domestic credit to private sector by banks, gross fixed capital formation, inflation rate and trade openness were explicitly presented.

Table 4.9: Results of Estimated ARDL Model of Income Inequality and Living Standard

Dependent Variable: Living Standard(GINCP)
Selected Model: ARDL(4, 1, 3, 2, 3, 4)
Sample: 1981 2019 **Included observations:** 35

Short-Run Estimates				
Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**Prob.**
D(GINCP(-1))	0.417010	0.175859	2.371272	0.0353
D(GINCP(-2))	0.700538	0.135072	5.186399	0.0002
D(GINCP(-3))	0.430269	0.113834	3.779788	0.0026
D(INEQ)	0.213100	0.117073	1.820227	0.0937
D(DCPS)	-1.114378	0.213133	-5.228567	0.0002
D(DCPS(-1))	1.390719	0.217035	6.407798	0.0000
D(DCPS(-2))	1.170236	0.241498	4.845747	0.0004
D(GFCF)	-0.925046	0.120965	-7.647220	0.0000
D(GFCF(-1))	-0.318616	0.104939	-3.036200	0.0103
D(INF)	-0.090237	0.026418	-3.415723	0.0051
D(INF(-1))	0.093667	0.029415	3.184270	0.0079
D(INF(-2))	0.155968	0.031928	4.884971	0.0004
D(TOPEN)	0.127661	0.044113	2.893988	0.0135
D(TOPEN(-1))	0.242912	0.045354	5.355908	0.0002
D(TOPEN(-2))	0.236908	0.051664	4.585576	0.0006
D(TOPEN(-3))	0.278479	0.048911	5.693617	0.0001
ECT(-1)	-0.131147	0.016454	-7.970433	0.0000
Long-run Estimates				
INEQ	-0.257638	0.112960	-2.280786	0.0416
DCPS	-1.522885	0.403145	-3.777513	0.0026
GFCF	-0.467192	0.135338	-3.452038	0.0048
INF	-0.101776	0.037866	-2.687817	0.0197
TOPEN	0.059297	0.086376	0.686499	0.5054
C	40.50753	8.872435	4.565548	0.0006

R-squared	0.9088	**F-stat**	3.7047 (0.0113)
Adj. R-squared	0.8276	**D-Watson**	2.0921

Diagnostic Tests

Serial Correlation	1.6559 [0.2392]	**Normality Test:**	0.5058 [0.7766]
Functional Form:	0.9132 [0.3807]	**Heteroskedasticity Test:**	2.5192 [0.0513]

Source: Author's computation (2021).

As regards the short-run estimation results, the error correction term measuring the speed or degree of adjustment is presented. This is the rate of adjustment at which the dependent variable changes due to changes in the independent variables. The short run analysis shows the dynamic pattern in the model. As well, it is computed to ensure that the model dynamics have not been constrained by inappropriate lag length specifications. The ARDL test automatically choose the lag length on all variables as the model was set at three to ensure sufficient degree of the freedom based on automatic selection of Akaike Information Criterion. Table 4.10 presents the short-run estimates of the relationship between income inequality and standard of living measured by real income per capita growth. The coefficient of the ECT is found to be negative and statistically significant at 5% significance level. The error correction term statistics of -0.1312 implies that the model corrects its short-run disequilibrium by 13.12% speed of adjustment in order to return to the long run equilibrium.

Just like the result in Table 4.7, Table 4.9 showed that the short run coefficients of living standard measured by income per capita growth have a positive and significant impact on the current changes in standard of living at 5%. The short-run parameter estimate of income inequality at current level was found to be positive and statistically significant at 10%. This means that income inequality directly influence changes in living standard measured by income per capita growth. Meanwhile, domestic credit to private sector by banks at current level has an indirect and significant impact on living standard measured by income per capita growth. However, the first and second lags of domestic credit to private sector by bank reportedly affect living standard measured by income per capita growth positively. The short-run coefficients of gross fixed capital formation at current level and first lag have negative coefficients which is reportedly significant at 5% level. As for inflation rate, all the coefficients are positive and

significant at 5% significance level with the exception of its current level which has a negative coefficient. Pertaining to trade openness, its coefficients are positive which means that it directly and significantly impacted on living standard measured by income per capita growth.

The long-run estimates in Table 4.9 indicated that income inequality has negative and significant impact on living standard measured by income per capita growth in Nigeria. The result shows that the indicator is in tandem with the theoretical expectations and it is statistically significant at 5%. Similarly, domestic credit to private sector by bank, gross fixed capital formation and inflation rate negatively influence living standard measured by income per capita growth in Nigeria within the periods understudied. Only the coefficient of inflation is in tandem with apriori expectation. On magnitude basis, a 10% increase in income inequality, domestic credit to private sector by bank, gross fixed capital formation and inflation rate cause living standard measured by income per capita growth to reduce by 2.58%, 15.23%, 4.67% and 1.02% respectively. On the contrary, the table reported that trade openness had a direct effect on living standard measured by income per capita growth in Nigeria. This does conform to a'priori expectations except inflation. A 10% rise in trade openness increase living standard measured by income per capita growth by 0.59%.

The coefficient of determination (Adjusted-R^2) is high (82.76%) indicating that about 82.76% of the total variations in living standard measured by income per capita growth was explained by the variables in the model. It simply indicated that the variation of changes in living standard measured by income per capita growth was explained by 82.76% variations in income inequality and other controlling variables. The overall test using the F-statistic (3.7047) is statistically significant at 5% level of significance showing that model is well specified and statistically significant. The Durbin Watson statistic (2.0921) shows that there is absence of serial

autocorrelation in the model. The estimated ARDL model is also tested for heteroscedasticity, serial correlation, functional form misspecification, parameter stability and normality. The results from these tests are shown in Table 4.9. The estimated ARDL model revealed that the model passed the serial correlation, normality test, and heteroskedasticity test. It means that the error terms are normally distributed with same variances and they are not serially correlated. Also, the Ramsey RESET test was satisfactory for the ARDL model indicating that the model is well distributed.

4.5 Discussion of Findings

Based on the findings of the estimated model, the study shows that the current level of unemployment negatively influences income inequality but the subsequent lags positively influenced income inequality in the short run. This means that the existing level of unemployment rate is found responsible for income inequality in Nigeria. Thus, a positive relationship exists between unemployment and inequality in the short run. This aligns with the result of past study that the incidence of poverty among the sampled households was found to be high and the major determinants of poverty include household size, number of income sources of the household head, number of household members employed outside agriculture and the number of literate adult males and females in the household[1]. Also, a short run direct relationship exists between unemployment and inequality[2,3]. A study found that unemployment upturns the risk of poverty and inequality[4]. In the long-run, unemployment has an indirect and significant impact on income inequality. This was in line with the findings of a study that unemployment falls and the human development index improves[5]. However, the negative impact of income per capita on income inequality is not statistically confirmed and this negates the results of existing studies that a direct relationship exists between income and poverty[6].

Furthermore, the study argues that unemployment rate impacted income per capita negatively in the short run but positive in the long run. The short run negative impact of unemployment on income per capita aligns with past studies thereby validating Okun's law[7,8,9]. As for the long run results, the study align with studies that unemployment in Nigeria is growth enhancing through the informal sector[10,11]. As well, income inequality has positive impact on income per capita statistically significant at 10% in the short run. Meanwhile, in the long run, income inequality negatively and significantly affects income per capita during the periods understudied. This aligns with the past study that expenditure inequality has a negative influence on growth[12].

Endnotes

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Chapter Five

Conclusion

This research study investigated the relationship between unemployment, income inequality and standard of living measured by income per capita growth in Nigeria for the period 1981-2019. Following the Schumpeter theory of development, three regression models were specified. In the first model, income inequality is regressed on unemployment rate, income per capita, and other control variables namely domestic credit to private sector by banks, gross fixed capital formation, inflation rate and trade openness. In the second model, standard of living measured by real income per capita growth is regressed on unemployment rate, and other control variables namely domestic credit to private sector by banks, gross fixed capital formation, inflation rate and trade openness. The last model regress standard of living measured by real income per capita growth is regressed on inequality rate, and other control variables namely domestic credit to private sector by banks, gross fixed capital formation, inflation rate and trade openness. The empirical model is developed in the light of developments in the methodology of econometric modeling and the analysis of time series with stochastic non-stationary components starting with an analysis of the unit root properties of the relevant series, cointegration, and autoregressive distributed lag (ARDL) model.

5.1 Summary of Findings

In the case of the first objective, the ARDL bound test shows that there exists a long-run relationship between unemployment and income inequality in Nigeria. The result showed that the current level of income inequality is influenced positively by the previous level of income inequality but negatively affected by the second lag. The short-run parameter estimates of unemployment at current, first, second and third lags were found to be positive and statistically

significant at 5%.This means that unemployment directly influence changes in income inequality. Equally, income per capita positively and significantly influences inequality at the conventional level, although the third lag of income per capita has a negative coefficient. Also, domestic credit to private sector by banks at current and third lag has direct and significant impact on unemployment. The short-run coefficients of gross fixed capital formation at current level, first and third lags have positive coefficients while the second lag has a negative parameter. As for inflation rate, all the coefficients are positive and significant at 5% significance level. Regarding trade openness, its coefficients are negative which means that it indirectly and significantly impacted on income inequality. For the long-run estimates, unemployment rate has negative and significant impact on income inequality in Nigeria. Similarly, income per capita, gross fixed capital formation and inflation rate negatively influence income inequality in Nigeria within the periods understudied. On the contrary, domestic credit to private sector by banks and trade openness had direct effect on income inequality in Nigeria. For this model, the error correction term statistics of -0.2263 implies that the model corrects its short-run disequilibrium by 22.63% speed of adjustment in order to return to the long run equilibrium.

Concerning the second objective, the study found a long-run relationship between unemployment rate and standard of living in Nigeria. The short run coefficients of living standard measured by income per capita growth have a positive and significant impact on the current changes in standard of living at 5% except the coefficient at first lag which has an insignificant value. The short-run parameter estimates of unemployment at current, first, second and third lags were found to be negative and statistically significant at 5%. This means that unemployment indirectly influence changes in living standard measured by income per capita growth. Meanwhile, domestic credit to private sector by banks at current level has an indirect and significant impact

on living standard measured by income per capita growth. However, the first and second lags of domestic credit to private sector by bank reportedly affect living standard measured by income per capita growth positively. The short-run coefficients of gross fixed capital formation at current level and second lag have positive coefficients while the first and third lags have a negative parameter which is reportedly significant at 5% level. As for inflation rate, all the coefficients are positive and significant at 5% significance level with the exception of its current level which has a negative coefficient. Concerning trade openness, its coefficients are positive which means that it directly and significantly impacted on living standard measured by income per capita growth. As for the long run parameters, unemployment rate has positive and significant impact on living standard measured by income per capita growth in Nigeria. Equally, trade openness positively influence living standard measured by income per capita growth in Nigeria. Quite the opposite, domestic credit to private sector by bank, gross fixed capital formation and inflation rate had an indirect effect on living standard measured by income per capita growth in Nigeria. The error correction term statistics of -0.2427 for the second model implies that the model corrects its short-run disequilibrium by 24.27% speed of adjustment in order to return to the long run equilibrium.

Regarding the third objective, there exist a long-run relationship between income inequality and standard of living in Nigeria. The short run coefficients of living standard measured by income per capita growth have a positive and significant impact on the current changes in standard of living at 5%. The short-run parameter estimate of income inequality at current level was found to be positive and statistically significant at 10%. This means that income inequality directly influence changes in living standard measured by income per capita growth. Meanwhile, domestic credit to private sector by banks at current level has an indirect and significant impact

on living standard measured by income per capita growth. However, the first and second lags of domestic credit to private sector by bank reportedly affect living standard measured by income per capita growth positively. The short-run coefficients of gross fixed capital formation at current level and first lag have negative coefficients which is reportedly significant at 5% level. As for inflation rate, all the coefficients are positive and significant at 5% significance level with the exception of its current level which has a negative coefficient. Pertaining to trade openness, its coefficients are positive which means that it directly and significantly impacted on living standard measured by income per capita growth. Based on long run estimates result, income inequality has negative and significant impact on living standard measured by income per capita growth in Nigeria. Likewise, domestic credit to private sector by bank, gross fixed capital formation and inflation rate negatively influence living standard measured by income per capita growth in Nigeria. On the contrary, trade openness had a direct effect on living standard measured by income per capita growth in Nigeria. The error correction term statistics of -0.1312 for the third model implies that the model corrects its short-run disequilibrium by 13.12% speed of adjustment in order to return to the long run equilibrium.

5.2 Conclusion

This study explores the relationship between unemployment, inequality and living standard in Nigeria using time series data spanning from 1981-2019. This work is structured into five chapters. The chapter one begins with the background to the study, problem statement, objectives of the study, significance of the study and scope of the work. The chapter two discusses relevant literatures that are important to the study. Thus in this section, some theories that shows the nexus between agriculture outputs and economic development are discussed. Also, the empirical reviews from various authors and scholars were reviewed and incorporated in this chapter as well

as the theoretical framework. The succeeding chapter presents the methodology, model specification and method of data analysis while chapter five contains the summary of findings, recommendation and conclusion.

The findings show that the current level of unemployment negatively drives income inequality but the subsequent lags positively influenced income inequality in the short run. Meanwhile, income per capita affect short run inequality positively and significant. The long-run estimate shows that unemployment has an indirect and significant impact on income inequality in the long-run. The negative impact of income per capita on income inequality is not statistically confirmed. Furthermore, the study found that unemployment rate impacted income per capita negatively in the short run but positively in the long run. As well, income inequality has positive impact on income per capita statistically significant at 10% in the short run. Meanwhile, in the long run, income inequality negatively and significantly affects income per capita during the periods understudied. The study concluded that there is significant relationship between unemployment, income inequality and standard of living in Nigeria.

5.3 Recommendations

This study recognizes the efforts and challenges of government and other agencies in tackling the challenges of achieving improved employment, equal distribution of income and standard of living in Nigeria. From the findings of this study, the following are recommended:

1. The government should focus on strategies that will curtail unemployment and guarantee equal distribution of income. Possible factors responsible for high unemployment and increasing unequal distribution of income in Nigeria include non-diversification of the economy and the existence of unused labour surplus which has resulted in rigidities in the labour market and in the wage structure of the country;

2. The current situation of unemployment, income inequality and low living standard can only be improved upon if certain policy measures such as sound fiscal and monetary policy that can ensure enabling environment, attract private investment and promote productivity are put in place. Also, there is a need for stable policies that would ensure equal distribution of income so that the poor also benefits from the country's growth;
3. Achieving improved living standard in the country can be achieved by adopting pro poor policies which entails increased investments in human capital development by the public and private sector;
4. There also the need to effectively manage unemployment and distribution of income in order to stimulate high level of output growth which will in turn lead to high income per capita and improved living standard; and
5. There is need to ensure that the country's abundant human and natural resources are adequately utilized and engaged in productive activities. This will go a long way in ensuring low unemployment rate and also guarantee stable income and improved standard of living.

5.4 Areas of Further Studies

The study proposes that future studies to conduct a structural break analysis that would provide the opportunity of comparing the various strategies of monetary policy (like unemployment, income inequality and standard of living) before and after the policy changes in the economy. Adopting estimation techniques such as the non-linear autoregressive distributed lag model to examine the asymmetric effect of employment and income equality strategies on standard of living would expand frontiers of knowledge.

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Appendix

	UEMP	INEQ	INCP	GINCP	DCPS	GFCF	INF	TOPEN
Mean	10.11795	44.42051	1308.621	0.520831	9.143295	35.92314	19.14646	32.30051
Median	9.700000	43.00000	902.2158	1.472851	8.152684	34.04928	12.55496	34.02388
Maximum	24.70000	56.70000	3098.986	12.45747	19.60353	89.38613	72.83550	53.27796
Minimum	1.800000	35.10000	270.2240	-15.45036	4.948032	14.16873	5.388008	9.135846
Std. Dev.	6.920445	6.054888	877.8017	5.324852	3.545742	19.40219	17.06283	12.40409
Skewness	0.653580	0.565240	0.506888	-0.874697	1.208734	1.027296	1.783591	-0.368582
Kurtosis	2.282138	2.127292	1.799553	4.702236	4.078280	3.714149	4.997667	2.250726
Jarque-Bera	3.613987	3.314355	4.011827	9.681724	11.38611	7.688452	27.16262	1.795334
Probability	0.164147	0.190676	0.134537	0.007900	0.003369	0.021403	0.000001	0.407519
Sum	394.6000	1732.400	51036.22	20.31240	356.5885	1401.002	746.7120	1259.720
Sum Sq. Dev.	1819.917	1393.144	29280362	1077.454	477.7468	14304.90	11063.33	5846.736
Observations	39	39	39	39	39	39	39	39

	uemp	*Ineq*	*incp*	*gincp*	*dcps*	*gfcf*	*inf*	*topen*
uemp	1							
ineq	-0.35388	1						
incp	0.673617	-0.2071	1					
gincp	0.362145	-0.39611	-0.01685	1				
dcps	0.662885	-0.23374	0.667528	0.281035	1			
gfcf	-0.6665	0.435901	-0.44759	-0.64019	-0.69792	1		
inf	-0.42442	0.010196	-0.4423	-0.21399	-0.31058	0.204346	1	
topen	0.319155	-0.03902	-0.00664	0.501191	0.238327	-0.53807	-0.05646	1

Table: Presentation of Data

Year	Unemployment (%)	Income Inequality (%)	GDP per capita (annual %)	GDP per capita (current US$)	Domestic credit to private sector by banks (% of GDP)	Gross fixed capital formation (% of GDP)	Inflation, consumer prices (annual %)	Trade (% of GDP)
1981	5.1	52.6	-15.4504	2180.198	5.725914	89.38613	20.81282	18.17173
1982	4.9	54.6	-9.19511	1843.909	6.375795	85.9414	7.697747	13.77983
1983	5.2	56.7	-13.1531	1222.629	6.151426	75.75651	23.21233	10.04497
1984	5.8	56.5	-3.58494	902.2158	6.211178	58.95629	17.82053	9.380541
1985	6.1	38.7	3.233579	882.52	5.99109	46.39545	7.435345	10.39198
1986	5.3	38.7	-2.50995	639.0131	7.528398	54.94827	5.717151	9.135846
1987	7	38.7	0.525849	598.2649	6.563383	50.04989	11.29032	19.49534
1988	5.3	38.7	4.546936	549.2374	6.010196	43.75477	54.51122	16.94061
1989	4.5	38.7	-0.70885	474.232	5.042703	52.48744	50.46669	34.18262
1990	3.5	38.7	8.930687	567.5286	4.948032	53.12219	7.3644	30.92474
1991	3.1	38.7	-2.16446	502.9141	4.992393	48.40018	13.00697	37.0216
1992	3.4	45	2.025825	477.1776	8.171612	43.77439	44.58884	38.22739
1993	2.7	45	-4.45708	270.224	6.940109	44.47636	57.16525	33.71975
1994	2	45	-4.23282	321.3207	7.994131	42.06784	57.03171	23.05924
1995	1.8	45	-2.53005	408.181	6.48923	37.20593	72.8355	39.52838
1996	3.4	51.9	1.634594	461.5196	6.15079	36.58167	29.26829	40.25773
1997	3.2	51.9	0.406826	479.9838	7.012976	38.42226	8.529874	51.46101
1998	3.2	51.9	0.057195	469.4305	7.608687	40.5534	9.996378	39.27861
1999	3.1	51.9	-1.89572	497.8416	8.152684	38.278	6.618373	34.45783
2000	13.1	51.9	2.419133	567.9307	8.218357	34.04928	6.933292	48.9956
2001	13.6	51.9	3.290571	590.3818	9.843124	30.03794	18.87365	49.6805
2002	12.6	51.9	12.45747	741.7475	8.070036	26.76866	12.87658	40.03517

2003	14.8	40.1	4.657786	795.3862	8.896912	28.3709	14.03178	49.33496
2004	13.4	40.1	6.489604	1007.874	8.451011	26.06325	14.99803	31.89587
2005	11.9	40.1	3.721624	1268.383	8.425299	24.96612	17.86349	33.05946
2006	12.3	40.1	3.326218	1656.425	8.111026	26.1665	8.225222	42.56657
2007	12.7	40.1	3.822072	1883.461	13.38805	20.18004	5.388008	39.33693
2008	14.9	40.1	3.97251	2242.872	18.57315	18.85977	11.58108	40.79684
2009	19.7	43	5.197954	1891.335	19.60353	21.11545	12.55496	36.05871
2010	21.1	43	5.158545	2280.437	13.4594	16.81501	13.7202	43.32076
2011	23.9	43	2.525322	2487.598	11.03214	15.67631	10.84003	53.27796
2012	10.6	43	1.472851	2723.822	10.58945	14.21112	12.21778	44.53237
2013	24.7	43	3.853723	2961.549	11.52443	14.16873	8.475827	31.04886
2014	9.7	43	3.513977	3098.986	13.29021	15.08353	8.062486	30.88519
2015	10.4	43	-0.02928	2687.48	13.06695	14.82718	9.009387	21.33265
2016	13.4	43	-4.16839	2176.003	14.59721	14.72496	15.67534	20.72252
2017	17.5	43	-1.78882	1968.565	12.77727	14.71562	16.52354	26.3476
2018	22.6	35.1	-0.67972	2027.779	10.17951	19.01838	12.09473	33.00783
2019	23.1	35.1	-0.37975	2229.859	10.43073	24.62523	11.39679	34.02388

Source: WDI (2020), CBN Statistical bulletin (2019) and Federal Bureau of Statistics (2019).

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University Compliance Certificate

This is to certify that, this thesis by **Joshua ZIRA** with Matriculation Number LCU/PG/000160 in the Department of Economics and Development Studies, Faculty of Management and Social Sciences, Lead City University, Ibadan is in **full** compliance with the approved University format and style.

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