Impact of Unemployment on Economic Growth in Nigeria from 1990–2020

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Authors’ contributions

This work was carried out in collaboration between both authors. Both authors read and approved the final manuscript.

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ABSTRACT

This study investigated the impact of unemployment on economic growth in Nigeria from 1990 to 2020. Population rate, unemployment rate and labour force were used as independent variables while Gross domestic product (GDP) as dependent variable. Annual time series data on our targeted variables were obtained from secondary sources including the Central Bank of Nigeria annual statistical bulletin, World Bank development indicators (various years). The Eview9 Statistical Software was employed to analyze the data empirically. The Unit root test shows that Gross domestic product, unemployment rate and labour force variables to be evaluated are all stationary after first deference I(1) while population rate was stationary at level I(0). The data were analyzed using the Autoregressive distributed lag (ARDL). From the results of the ARDL estimates it was revealed that among others, unemployment rate impact negatively on GDP but significant only in the long run. Labour force impact positively on Gross domestic product and statistically significant in the short run. The study recommends amongst others that government should create jobs mostly for the real sector, that is agriculture and manufacturing sectors – The Nigerian agricultural sector employs about seventy percent of the population mostly at subsistence level. If the Nigerian government supports this sector by making loans available and affordable for those in the agricultural sector, it would boost agricultural output, increase gross domestic product and decrease unemployment rate in Nigeria.

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1. INTRODUCTION

Unemployment is one of the macroeconomic problems facing Nigeria as a nation and one of the macroeconomic objectives of the government is the attainment and sustainability of high level output with a low considerable unemployment in Nigeria. In Nigeria, the unemployment rate stands at 27.1% in the second quarter 2020 up from the 23.1% recorded in Q3, 2018 [1]. In fact, Ndubisi, & Nwakwo (2013), identified the rate of unemployment as the major problems facing Nigerian economic development. The Nigerian unemployment problem at the moment as well as in pasts has been issues of uttermost interest to the economics scholars, government, those that make polices, as well as individuals [2]. The problem of unemployment has become a global issue that needs urgent attention, although its effects are more devastating in underdeveloped countries of the world. Defining unemployment, there has been no consensus or general definition as different nationalities of the world define it the way it suits their localities [3]. The author states thus, an economy with high rate of unemployment, would have a high level of poverty and associated welfare challenge. Nevertheless, population of a nation is seen from two perspectives; they are those who are economically active and those who are economically inactive. The economically active group which is referred to as the Labour force are those that have the will power and are ready to work, including those who are active in their engagement in producing of products and services (employed) and those not employed. Alternatively, those who are in the group of those who are inactive in economic sense, are not those who are not searching for job or those who do not have the capabilities orchestrated by health reasons [4]. Furthermore, ILO (2020), asserted that those who are active economically and looking for work but cannot get are referred to as the unemployed, part of this are those who willingly left their jobs and those who were disengaged.

According to International Labour Organization [5] in National Bureau of Statistics report, unemployment is that proportion of people in the labor force who were actively looking for employment but cannot get. It is imperative therefore, to note that, the internationally acclaimed definitions of unemployment do not put into consideration vis-à-vis the quantity of wages earned nor it is viewed in relation to job Satisfaction. Instead, unemployment and employment are taken as a the involvement of a person in economic-activity irrespective of if such activity is economically satisfying to the person or not. (ILO, 2018).

The level of unemployment in Nigeria is so high that it could be regarded as one of the greatest macroeconomic problems of the nation. It has affected a great deal the youth and the overall economic growth and development of the nation. Apparently, the level of unemployment especially that of higher school graduates, hinders Nigeria’s progress in several ways. Apart from the economic waste it brought to the nation, it also constitutes political unrest for the country. The level of unemployment situation in Nigeria is so alarming and disheartening that the country’s economic condition cannot absorb an optimal proportion of its labour force. This is basically the reason why crime and other social vices are on the rise in the country. This paper is aimed at investigating the impact unemployment has on economic growth and offer way forward on how to address some of the its challenges.

1.1 Aim and Objectives of the Study

The aim of the this study is to empirically investigate the impact of unemployment on economic growth and development in Nigeria from 1990 to 2020. While the specific objectives is to:

(i) Find out the impact of unemployment on economic growth and development in Nigeria.
(ii) Examine the effect of population on economic growth and development in Nigeria.
(iii) Evaluate the impact of labour force on economic growth and development in Nigeria.

2. LITERATURE REVIEW

2.1 The Concept of Economic Growth

According to Kimberly, A. [7], Economic growth as to do with an increase in the worth of an economy’s products and services, which produces more gains for business outfits.
Consequently, the prices of stocks increase. Based on this, Organizations gain capital for investment and also employ more workers. There is a rise in income because there is a creation of more jobs. Therefore, there is more money available to the consumers to buy more goods and services, and purchases therefore brings about more economic growth. This is why almost all countries of the world are interested in positive growth. This is basically why economic growth is the most needed economic indicator.

Fajingbesi and O dusola [7], defined economic growth as a rise or increase in capital per head. Since the requirement for growth, is not only per capital because if only capital is provided for without also providing the necessary framework for the use, it would all be tantamount to a waste. Hemming [8], opined that economic growth is necessitated by the make up of expenditure, since some expenditures have more impact on growth. Most important amongst these forms of expenditures are the provision of socio-economic infrastructures, operation and maintenance, as well as administrative and legal framework. According Balami [9], Economic growth that is always measured by GDP is usually termed as increase in the economy’s output which is her capacity to produce products and services required to improve the economic wellbeing of her citizens. Economic growth is considered as a smooth process that has to do with increasing the level of goods and services in an economy. Economic growth is said to be meaningful, when the rate of population growth is lower than the rate of economic growth. In other words, when the rate of economic growth is higher than the rate of population growth. This is so because, the rate of economic growth had to lead to a decent standard of living or improvement in human welfare. Thus, economic growth is considered a steady process of increase in the productivity capacity of the economy, which brings about increase in national income, being characterized by labour productivity.

2.2 The Concept of Population

Population is said to have attained growth when there is an increase in the numerical strength of the people that live in a state or country. Generally, it is normally referred to as a rise which occurs in a country’s population in any given period of time normally a year. Population growth is referred to as a rise in the numerical strength of persons in a country, state or city. The population growth variables would be measured by rate of population growth. In this study, the rate of population growth stands for a change in the size of the population on the average usually on an annual basis with a specified period. It does measure the level at which a population change. The rate of population growth rate is influenced by the following factors like the rate of birth, the rate of death and net migration. Birth rate refers to the number of people that are born into a population at particular period of time normally one year. Death rate is defined as the total number of the population divided by the total number of death in a given period of time normally a year. Immigration: it is the number of people that enter a country at a given period of time, normally one year. Emigration: It is the total number of people that migrate out of a country at a particular period of time, usually within a period of one year. Net Migration is arrived at when the total of immigration is deducted from emigration in a country at a given period of time usually one year. Quantitative is referred to the rate at which a population grows. The main reasons responsible for growth in population is when there is an increase in the rate of birth, also when there is a fall in the rate of death as well as a fall in net migration. Put in mathematical form, growth in population is the mathematical difference between the sum of the number of deaths/emigration and the total number of births/immigration. Population Growth= (Birth Rate plus Immigration) minus (Death Rate plus Emigration). The population of a nation might rise base on natural increase, which is as a result of birth rate which exceeds death rate. In developing countries, birth rate is on the average which is much higher than in the developed countries of the world. It has been observed that the demographic trends in less developed nations that the mortality rate is also higher than those of the developed nations. Furthermore, Osinubi [10], asserted that due to current cholera, smallpox, malaria and other related diseases vaccinations, the rate of death in both third world nations and developed nations have declined. The less developed nations specifically Asian and African countries accounted for 93% increase in the world population [11]. That not with standing, rapid growth in population has grave socioeconomic effects on the population especially if the population growth does not give room for decent or sufficient standard of living.

2.3 The Concept of Labour Force

The Labour Force in Nigeria is composed of all persons aged 15–64 years with the exemption of
students, retired persons, home keepers, and stay-at-home parents, and persons who are incapacitated and those who do not like to work. Those who are not either unemployed or employed. They are not put into consideration in the labour force, for instance, some people who are not available for work during the reference week and persons who are not available and are not interested in working because of various reasons best known to them. Examples are, disabled or retired persons and seasonal workers, housewives and students [12]. Unemployment is a situation when a person who is ready and searching for employment cannot find work. The unemployment rate is the number of an economically active population who are available and ready to work but cannot get work. These include people who have lost their jobs and not those who have voluntarily left work [13]. Based on this study, unemployment refers to a situation where a person is without work or income due to lack of opportunities, although he or she is able, ready and willing to work. Jelilov, et al. [14], opined that though many persons care about the number of those who are unemployed, economists basically focus on the unemployment rate. This assertion is in line with a rise in the number of persons which have not been unemployed compare with the labour force in the population. The rate of unemployment could be expressed as a percentage, it could be calculated in the following way: and is calculated as follows: Unemployment rate equal to those not employed divided by total labour force, multiply by one hundred.

2.4 The Concept of Unemployment

According to Aminu and Anono [15], unemployment is the total number of people who are able, ready and willing to work, and do make themselves available for job at the prevailing wage rate but there is no work available for them. It thus means that unemployment is a situation when people are jobless in the country. By the same token, unemployment was defined by International Labour Organization [16] as a state of joblessness that arises when individuals are without jobs and they have actively sought for work within a period of a month. The unemployment is calculated as a percentage by dividing the number of unemployed individuals by individuals currently in the labour force. Balami [9], conceptualized unemployment as such a situation whereby an employee or employees are not voluntarily not working. What this portend is, employees ready to work cannot find any work to do. In the same vein, the classical school of thought asserted that unemployment is when the demand for labour is lower than the supply of labour. Unemployment, according to the classical school occurs when the real wages are set beyond the level of market-clearing, here, the number of people seeking for jobs are more than the available vacancies. It was reported in 2011 in a Business Week Report, “More than 200,000,000 people world wide are out of work, a record high, as almost 2/3 of advanced economies and 1/2 of less developed nations experienced a slowdown in employment growth.

2.5 Types of Unemployment

Frictional unemployment: It is a type of unemployment that occurs as a result of friction in industry. In this case, the jobs are available but the people to do the jobs are not available because they do not have the needed skills for such jobs. Another reason could be the fact that they are not aware of the availability of such jobs. This might occur due to ignorance, lack of mobility of labour, when there is shortage in raw materials etc.

Residual unemployment: Unemployment is said to be residual when it is age related or bothers on the sanity and capability of the job seekers. It also occur when the job seekers lack the adequate training.

Structural unemployment: Unemployment is said to be structural when there is drift in an organization pattern of production or there is a shift in the economy of a country, leading to a mis-match between the employers and the skills they required.

Cyclical Unemployment is when there is a reduction in the demand for goods and services, which is basically caused by recession in an economy that would in turn leads to the sacking of workers.

Technological Unemployment is said to exist when there is the introduction of mechanization production as a result of steady technological changes which could in turn pave way for man power reduction.

2.6 Causes of Unemployment

Officials of the government: certain official of the government officials who occupy some key positions in the country engage in graft practices.
The problem is general in that it is raging from the local government to the states and from the states to the federal level of governments local government levels. They mismanage and speculate money meant for staff working under them.

Poor educational planning: The high unemployment rate amongst the Nigerian youth is traceable to the decay educational system in Nigeria. This is one of the major reasons why the universities in Nigeria were not ranked amongst the first one thousand best universities rated globally. The Nigerian educational system failed to equip student with the much required knowledge required for the desires of the society at large. Nonetheless, Gbosi [17], observed that the establishment of so many institutions of learning for the aim of getting corporate jobs is the major cause of this problem.

Religious/tribal sentiments: Religious and tribal sentiments have been a major problem in Nigeria. In Nigeria, jobs are hard to get but when government advertises for job openings, those who are in positions as officials of government determine those to be given employment are to be employed, qualified or not. Most times they end up giving employment to those persons rom their village, regions and their religious groups as against persons with the required perquisites. This basically the reason behind ineptitude and inefficiency in most offices of the government in Nigeria. Their major aim is not to offer jobs to to families and friends of “big men” whether they would deliver or not.

Abandonment of the agric sector: In the past, the agricultural sector had been the leading employer of labour. It provides jobs for more than sixty percent of the population of Nigeria. Nonetheless, as a result of the discovering of crude oil, attention was to a larger extent diverted from agriculture. Though the oil industry has grown and expanded but the unemployment level has kept rising at a geometric rate because the capacity of employment level is at low ebb compare to the available job seekers that do not have a place in the industry.

Unfavourable environment for entrepreneurship: There are so many graduates with great dreams about starting their own establishments without dreaming of doing any work with the government. Nevertheless, such young graduates with lofty dreams do not come to pass as a result of factors such as epileptic power supply, lack of funds to start business to mention but two. Good ideas and dreams without the fund or capital cannot work and since the government does not have plan in place to assist upcoming youths who are young entrepreneurs, their dreams eventually shattered and they therefore are added the long line of youths who are not unemployed patiently waiting for to be given employment. Overseas and indigenous investor who might want to establish industries by creating jobs for the massive unemployed youth are unable to do such as a result of epileptic power supply which is the basic requirement for a functional industry.

Over increase in population: Nigeria is the most populous black nation in the world and it may soon be competing with the USA population wise. Although the United States of America has a higher population but with better living standard this because they have a working system cares for their large population. Nevertheless, government functions have been eroded with corrupt practices in Nigeria this has left nothing to take care of the fast growing population which is the basic reason why unemployment is very common in Nigeria. There is need to control the population of Nigeria if the problem of unemployment is to be solved. Nigeria as country is quick to boast about her unproductive population and that is not good enough.

Ghost workers: the problem of ghost workers has been the bane of many sectors of the Nigerian economy. This a situation where people predominantly under age and the relatives of those in government are on the payrolls of the government and their parents or relatives in the civil service keep taking their salaries.

2.7 Theoretical Review

2.7.1 The harrod-domar growth model

In economics, this model is referred to as capital only model. Harrod succeeded Rostow, this basically because Rostow had some questions unattended to. According to the model, savings is a proportion of net investment and national product considered as the changes in the capital stock (K). Therefore, such type of relationships in economics are termed as capital output ratio. If the capital-output ratio is defined as K and assumes further that the national savings ratio, S, is a fixed proportion of national output then the total new investment is determined by the level of total savings.
The Solow Growth Model: The Solow growth model is an economic growth model with the growth of total GDP explained by increases in population, investment, and technical progress. There is full employment in this model, with an aggregate production showing constant returns to scale. In analyzing the process of economic growth, Brian and Howard [18], in their analysis, they combined the demand and supply sides of the economy in order to generate economic growth. They argued that economic growth could best be comprehended from the view of the neo-classical school of thought which is regarded as the supply side.

2.7.2 The Modified Phillips Curve (MPC)

The MPC was termed as successful because it was a phenomenon of macro-economics theory that became popular of macroeconomic theories and it influenced greatly on governmental policies of the 1960s. It was at that time it was regarded as a tool for economic policies, there is this believe by the government that they could achieve a very low unemployment since they are willing to put up with high inflationary trends and the attainment of a stable price by coping with a high Unemployment [19]. Nevertheless, in the 70s the inverse relation and unemployment nonetheless fell apart and majority of Organisation of Economic Co-operation and Development member states observed stagflation which stands for higher inflation as well as higher unemployment. Despite the Phillips curve was unable to give a detailed explanation to stagflation, a new correlation between unemployment and inflation was discovered, namely the inverse relation of unemployment and changes in inflation.

2.7.3 Empirical review

Myriad of literatures have explained the types, causes of unemployment and its implications across different countries and regions of the world especially developing countries like Nigeria.

Blanchard [19] observed the impact of macro-economic shocks and labour market in European nations and he observed that when adverse shocks occur they produce labour market institution added to high rate of unemployment; the result was found to be in consonant consistent with that of Fitousi et al. [20]. Freeman [21] used current economic developments in trend cycle de-composition to check the law proposed by Okun for a panel of 10 industrial nations, that Okun's original estimate for the U.S. of a three-point for each 1% decrease in the rate of unemployment rate which averages at just under a two-point of Real Gross Domestic Product growth for sample countries Pooled estimates for Europe are smaller than estimates for the rest of the sample. Freeman concluded that the law is still capable of proving estimates of the impact on unemployment on Gross Domestic Product. In a research which investigated the impact of institutions and regulations on unemployment in OECD. Botero et al. [22] in an inclusive cross country study find out the economic impact of employment, collective bargaining, social security and industrial laws for 85 countries. They discovered that wealthy nations regulate labour less often than the poor ones, in its place they offer more social securities. In addition, they opined that severe regulation of labour is harmful to labour force participation and creates higher unemployment. Baccaro and Rei [23], could not find out detailed proofs either direct or indirect effects of labour market on the rate of unemployment. Although, Baccaro and Rei find out proofs of a solid positive effects of union density on the rate of unemployment.

Akeju and Olanipeun [24] investigated the correlation between the rate of unemployment and economic growth, the Error correction mechanism and Johansen co-integration tests were used to find out both the long-run and short-run correlations amongst the variable which was used in carrying out the study. The empirical investigations showed long run and short run relationships between the rate of unemployment and the rate of growth in output in Nigeria and both the rate of economic growth and that of unemployment rate have positive relationship, therefore, the need to include fiscal measure which brings about attraction of FDI to lower the unemployment rate in Nigeria. Using Okun's law of first-difference and output-gap model. Tvrdon [25], he investigated European Union countries. He examined two main factors which are institutional in nature which significantly affect the way labour market performs and tax-wedge on labour activity and policies of an active labour-market. It shows that high taxes have direct relationship with the rate of unemployment, but the policy of an effective labour market has the well withal to counter-balance the negative effect of a tax that is consider high.
In line with the above assertion by Tyrdon, Airi et al. [25], investigated the effects of the rate of unemployment in Nigeria economy (1980-2010). They adopted OLS, their findings showed that unemployment rate negatively signed which means it has a negative impact on the gross domestic product (GDP) in Nigerian economy. Ademola and Badiru [26], they investigated and determined the impact of unemployment and inflation on economic performance in Nigeria between the period 1981 to 2014. They used Ordinary Least Square (OLS) technique as method of analysis to evaluate the real data for the analysis. The analysis revealed that the rate of unemployment and the rate of inflation have a positive relationship with economic-growth. The positive significant correlation amongst the rate of unemployment, rate of inflation and RGDP indicate that Real Gross Domestic Product in Nigeria is influenced by oil revenue which engages a small proportion of those who are highly skilled labour and the output price of oil is exogenously determined which might not respond as expected to growth in output in Nigeria.

3. METHODOLOGY

3.1 Model Design

The researcher makes use of the quasi-experimental design called correlational research design which is met to establish a relationship between variables and to determine if the correlation that exists is statistically significant or not. Also, the quasi-experiment research design is used because the study is descriptive and analytical in nature and the variables are not under the control of the researcher.

3.2 Model Specification

The functional form on which the econometric model is built on is expressed as:

\[ \text{LNGDP} = F(\text{UNEMR, POPR, LABF}) \]

Where;

GDP = Gross Domestic Product
UNEMR = Unemployment Rate
POPR = Population Rate
LABF = Labour Force
F = Functional notation

GDP is the dependent or criterion variable while UNEMR, POPR and LABF are the independent or explanatory variables.

The linear regression models based on the above functional relation is expressed as:

\[ \text{LNGDP} = \beta_0 + \beta_1 \text{UEMPR} + \beta_2 \text{POPR} + \beta_3 \text{LABF} + U \]

\[ \Delta \text{LNGDP}_t = \alpha_{0i} + \beta_1 \Delta \text{GDP}_{t-1} + \sum_{i=1}^{n} \beta_2 \Delta \text{UNEMR}_{i-1} + \sum_{i=1}^{n} \beta_3 \Delta \text{POPR}_{i-1} + \sum_{i=1}^{n} \beta_4 \Delta \text{LABF}_{i-1} + \lambda \text{ECT}_{t-1} + \epsilon_t \]

Where \( \beta_0 \) is the regression constant or intercept, \( \beta_1, \beta_2, \beta_3 \) and \( \beta_4 \) are the regression coefficients or parameters and \( \epsilon_t \) is the random variable. All other terms are as earlier defined.

4. EMPIRICAL RESULTS AND DISCUSSIONS

This section presents the analysis of data and interpretations. It evaluates the interrelationship between Gross domestic product (GDP), Unemployment rate (UNEMR) Population rate (POPR) and Labour force (LABF) in Nigeria.

4.1 Data Analysis

4.1.1 Descriptive statistics

The results of the descriptive statistics of the variables in the RGDP model are shown in Table 1.

The result of the descriptive statistics in Table 1 shows that the average of the distribution for GDP, LABF, POPR and UNEMR are 288.8765, 46629483, 1.44E+08 and 4.526129 respectively, while the median which is the center of distribution less sensitive to outliers relative to mean are 176.1300, 46768185, 1.39E+08 and 3.00E+08 respectively. The maximum and minimum values for the distribution includes; 546.6800, 63226720, 9.01E+08 and 4.526129 respectively, the means value of the distribution for GDP, LABF and POPR are 288.8765, 46629483, 1.44E+08 and 4.526129 respectively.

Skewness of the distribution Table 1 indicates that all variables in the model have long right tails as shown by their positive nature of elasticity. The Kurtosis which measure the peakness of the distribution above indicates that only UNEMR is peaked (Leptokurtic) while other variables such as GDP, LABF and POPR are flat. Jarque-Bera statistics and its associate probability values indicate that the following variables; GDP, LABF, POPR and UNEMR are all normally distributed given that their probability values are more than 0.05.
Table 1. Descriptive Statistics Results

<table>
<thead>
<tr>
<th></th>
<th>GDP</th>
<th>LABF</th>
<th>POPR</th>
<th>UNEMR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>228.8765</td>
<td>46629483</td>
<td>1.44E+08</td>
<td>4.526129</td>
</tr>
<tr>
<td>Median</td>
<td>176.1300</td>
<td>46768185</td>
<td>1.39E+08</td>
<td>3.820000</td>
</tr>
<tr>
<td>Maximum</td>
<td>546.6800</td>
<td>63226720</td>
<td>2.06E+08</td>
<td>9.010000</td>
</tr>
<tr>
<td>Minimum</td>
<td>27.75000</td>
<td>32063706</td>
<td>97667632</td>
<td>3.300000</td>
</tr>
<tr>
<td>Std. Dev.</td>
<td>178.6337</td>
<td>9163293.33270830</td>
<td>1.709927</td>
<td></td>
</tr>
<tr>
<td>Skewness</td>
<td>0.306141</td>
<td>0.053783</td>
<td>0.334283</td>
<td>1.874766</td>
</tr>
<tr>
<td>Kurtosis</td>
<td>1.485017</td>
<td>1.881053</td>
<td>1.879326</td>
<td>4.724543</td>
</tr>
<tr>
<td>Jarque-Bera</td>
<td>3.448834</td>
<td>1.632166</td>
<td>2.199567</td>
<td>22.00101</td>
</tr>
</tbody>
</table>

Table 2. Augmented dickey fuller unit root test for RGDP model

<table>
<thead>
<tr>
<th>Variable</th>
<th>ADF</th>
<th>Level</th>
<th>1st Diff</th>
<th>I(.)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Coeff.</td>
<td>5% CV</td>
<td>Coeff.</td>
</tr>
<tr>
<td>LNPOPR</td>
<td>-5.755</td>
<td>-2.981</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LNLABF</td>
<td>-2.278</td>
<td>-3.574</td>
<td>-4.421</td>
<td>-3.603</td>
</tr>
<tr>
<td>UNEMR</td>
<td>-0.294</td>
<td>-3.568</td>
<td>-4.947</td>
<td>-3.574</td>
</tr>
<tr>
<td>LNGDP</td>
<td>-1.521</td>
<td>-3.568</td>
<td>-4.139</td>
<td>-3.574</td>
</tr>
</tbody>
</table>

Table 2, shows the unit root test results of Augmented Dicky Fuller Test (ADF). In line with the prepositions of Jenkins and Box [27], Variable that are not stationary at levels would be made stationary after first difference. All the variables in the model were made stationary after first difference except POPR which was stationary at level I(0) [28-40].

4.2 The ARDL Bound Test, Short run and Long run Results for GDP Model

The ARDL Bound Test, Short-run and Long-run Results for GDP Model is presented in Tables 3, 4 and 5.

The result presented in Table 3 shows that the calculated F-statistics of 6.282186 is higher than the upper bound critical value of 4.35 at 5% significant level. Based on this result, it is concluded that a long run relationship exists among the variables of GDP model. So, there is a long run co-integration amongst the variables in the Gross Domestic Product model.

4.3 Discussion of Estimated Short Run for GDP Model

The result of the short – run dynamic regression for Gross domestic product is presented in Table 4. The regression result indicates that in the short run, the variables of labour force and population rate positively related with GDP but negative relationship for unemployment rate. What these mean are, increase in labour force and population rate will bring about a rise in GDP in Nigeria ceteris paribus. Also increase in unemployment will bring about a decrease in GDP in Nigeria ceteris paribus.

The ECM turned up with a negative value of -0.262973as the ECM coefficient which suggests 26% speed of adjustment. This means that approximately 26% of discrepancy in the following year is adjusted for the present year.

4.4 Discussion of the Estimated Long-run for GDP Model

The long-run results for Gross domestic product is presented in Table 5. It indicates that labour force coefficient is positively signed while population rate and unemployment rate coefficients are negatively signed. These indicate that in the long run, increase in labour force would increase GDP whileincrease in both population rate and unemployment rate would reduce GDP (Economic growth).
Table 3. Bound test for GDP model

<table>
<thead>
<tr>
<th>Test Statistic</th>
<th>Value</th>
<th>k</th>
</tr>
</thead>
<tbody>
<tr>
<td>F-statistic</td>
<td>6.282186</td>
<td>3</td>
</tr>
<tr>
<td>Critical Value Bounds</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Significance</td>
<td>I0 Bound</td>
<td>I1 Bound</td>
</tr>
<tr>
<td>10%</td>
<td>2.72</td>
<td>3.77</td>
</tr>
<tr>
<td>5%</td>
<td>3.23</td>
<td>4.35</td>
</tr>
<tr>
<td>2.5%</td>
<td>3.69</td>
<td>4.89</td>
</tr>
<tr>
<td>1%</td>
<td>4.29</td>
<td>5.61</td>
</tr>
</tbody>
</table>

Source: Computed from E-view

Table 4. ARDL-ECM Short-run Results for GDP model

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>t-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>DLOG(LABF)</td>
<td>1.614186</td>
<td>0.731752</td>
<td>2.205919</td>
<td>0.0372</td>
</tr>
<tr>
<td>DLOG(POPR)</td>
<td>21.264358</td>
<td>4.198499</td>
<td>5.064753</td>
<td>0.0000</td>
</tr>
<tr>
<td>D(UNEMR)</td>
<td>-0.049968</td>
<td>0.024444</td>
<td>-2.044199</td>
<td>0.0521</td>
</tr>
<tr>
<td>CointEq(-1)</td>
<td>-0.262973</td>
<td>0.090223</td>
<td>-2.914701</td>
<td>0.0076</td>
</tr>
</tbody>
</table>

Cointeq = LOG(GDP) - (6.1382*LOG(LABF) -0.6427*LOG(POPR) -0.1900*UNEMR -92.1933 )

Source: Computed from E-view

Table 5. ARDL long run regression for gross domestic product model

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>t-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>LOG(LABF)</td>
<td>6.138208</td>
<td>4.142912</td>
<td>1.481617</td>
<td>0.1515</td>
</tr>
<tr>
<td>LOG(POPR)</td>
<td>-0.642736</td>
<td>3.843944</td>
<td>-0.167207</td>
<td>0.8686</td>
</tr>
<tr>
<td>UNEMR</td>
<td>-0.190010</td>
<td>0.060041</td>
<td>-3.164685</td>
<td>0.0042</td>
</tr>
<tr>
<td>C</td>
<td>-92.193269</td>
<td>8.499106</td>
<td>-10.847407</td>
<td>0.0000</td>
</tr>
</tbody>
</table>

Source: Computed from E-view

4.5 Stability Tests for LOG (GDP)

The test is meant to test the appropriateness and stability of the estimated ECM model. This is to check if the coefficient of the model is stable and can be used for prediction. The stability test was conducted using the cumulative sum (CUSUM) and cumulative sum of square (CUSUMSQ) tests. If the plot of the CUSUM and CUSUMSQ for the model lies within the 5 percent critical bound it is suggestive that the model is stable. From our results, the model is stable.
Fig. 1. cumulative sum (CUSUM) and cumulative sum of square (CUSUMSQ) tests

5. CONCLUSION AND RECOMMENDATIONS

This study examined the impact of unemployment on economic growth in Nigeria from the period 1990 – 2020. The study investigated the long run and short run relationship between the variables by using Autoregressive distributed lag (ARDL). The empirical results show that Gross domestic product is influenced positively by labour force both the short run and long run. Labour force was also found to be statistically significant at a 5% level of significance only in the short run. It thus means that increase in labour force would lead to increase in economic growth in Nigeria. Population rate coefficient has a positive influence on GDP in the short run and it is
statsiically significant but it has a negative impact on GDP in the long run but it is not statistically significant. It thus means that increase in population would lead to economic growth in the short run but in the long run population growth might have adverse effect on economic growth. The coefficient of unemployment was negatively signed in both long run and short run. It was found to be statistically significant only in the long run. What this portends is, increase in unemployment in Nigeria leads to a decrease in GDP in other words, increase in unemployment rate would lead to a decrease in economic growth in Nigeria in both the long run and short run. From the theoretical point of view, the outcome of this study was found to be in agreement with Okun's Law which stated that, there is a negative relationship between unemployment rate and economic growth. It thus means that unemployment hinders the growth of an economy. Furthermore, the finding of this study was found to be in agreement with existing studies such as Soylu et al. (2018), Subusiso and Hlalefang (2018) as they found a negative relationship between unemployment and economic growth. The result of this study is in variance with that of Jajere (2016), who found that unemployment has no significant impact on economic growth. Based on the findings, the study therefore recommends that;

(i) Since labour force has positive impact on economic growth in both the long run and short run, the private sector employers therefore, should be given Subsidies to encourage them to employ more people. Government should as well subsidize the taxes paid by private employers in order to encourage them to employ more workers.

(ii) It is also recommended that government should give emoluments as cushion for unemployment for the unemployed as application in developed economies of the world. Those who are not employed can use part of their unemployment-emolument to make vouchers available for the companies that engaged them as such general recruitment-subsidies have same effects as a source of tax reduction on payroll.

(iii) The government should deregulate the labour market; the essence of this is to encourage the minimum wage policy. Although the demerit of establishing a low wage-policy is the fact it gives rise to wage only for the minimally paid but for all groups as workers bargain to restore relativities.

For Further Studies: It is suggested that further studies be done to find out the adverse effects of rate of unemployment on the Nigerian economy as well as the determinants of growth and development in Nigeria.

LIMITATIONS OF THE STUDY

The study utilized secondary data, which had already be obtained and displayed in the public domain which is completely different from the primary data which is firsthand information. There is every tendency that possible errors in the process of measurement or during recording may have been carried along into the research results.

More also, the researcher had been overwhelmed by the study because he had to conduct the study alongside his or his official duty at the place of work and other personal and social engagements.

Nevertheless, the challenges were taken care of due to the fact that the researcher was guided carefully by consulting other researchers in the same field of study.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

REFERENCES