International Journal of Management, Social Sciences, Peace and Conflict Studies (IJMSSPCS), Vol.6 No.3 September, 2023; p.g. 325- 344; ISSN: 2682-6135

THE DYNAMICS OF UNEMPLOYMENT AND POVERTY REDUCTION IN NIGERIA: APPLICATION OF CO - INTEGRATION AND CHOW TEST OF STABILITY [1992 - 2022]

SIR AZUBUIKE ERNEST AGUGUA, Ph.D
+234-8034269442 / azubuike.agugua@komu.edu.ng
Department of Economics, K. O. Mbadiwe University [KOMU]
Ideato, Imo State, Nigeria

ENWERE GEORGE M
+234-8060723715 / georgeenwere100@gmail.com
Department of Economics, Michael Okpara University of Agriculture
Umudike, Abia State Nigeria
&
REV CANON TIMOTHY C. NWACHUKWU, Ph.D
+2348038659542 / timothy.nwachukwu@komu.edu.ng
Department of Banking/ Finance, K. O. Mbadiwe University [KOMU]
Ideato, Imo State, Nigeria

ABSTRACT

This paper is an attempt to investigate empirically, the long run relationship between Unemployment and Poverty Reduction in Nigeria for the period, 1992 to 2022; A Cointegration and Chow Test of Stability approach. The main objective was to evaluate the impact of one of these macroeconomics variables – unemployment on poverty reduction in Nigeria, through the maintenance of full employment. Basically, we investigate and analyzed the impact of unemployment on poverty reduction and established the level of stability of variables over the period studied. For the achievement of these aims, we put forward and specified models, with variables such as; poverty reduction proxy by Gross Domestic Product Per-Capita [GDPPC], Money Supply [MOS], Domestic Credit [DCR] and Lending Rate [LER]. The econometrics methods of Cointegration to establish the extent of significance of the variables was used by carrying out a Unit Root Test. Given the empirical results, it was establish that some of the apriori expectations were inconsistent in the estimation. At the long-run, the results show to some extent that the level of impact of unemployment conditions, here, referred to as; [dynamics of unemployment], on poverty reduction in Nigeria adjust rapidly fairly well to changes in the explanatory variables, indicating that the variables are cointegrated. The Chow Test of Stability shows that, unemployment conditions in Nigeria have been stable over the period. Conclusively, based on our results, appropriate policy recommendations were made which include that; since unemployment is positively and significantly related to poverty reduction, government should adopt good policies that are associated with unemployment reduction such as; industrialization policy, provision of adequate vocational training centers to equip the youth in particular for self- employment, provision of micro-credit/micro-finance facilities, thus encouraging small scale, entrepreneurial schemes among others, with a view of checking poverty in the country.

Keywords: Money Supply, Lending Rate, Domestic Credit, Gross Domestic Product Per-Capita, Unemployment, Co-Integration, Chow-Test of Stability.

BACKGROUND TO THE RESEARCH

In discussing the nature of poverty in Nigeria (Okpara et al, 2019) agreed that Nigeria is a country richly endowed with human and natural resources. Though classified as a developing country, it is a country of countless opportunity for investment and enterprise. It is situated in the west African sub-region and lies between longitude 3® and 14® and latitude 4® and 14®, it has a landmass of 923,768 sq.km.

According to Sanwar Sultana (2016), United Nations Development Programme (UNDP)-2015 resident representative in Nigeria quoted in Anyanwu et al (2017) opined that:

With a human poverty index (HP I) of 46.1 Nigeria has become one of the poorest countries in the world. A very large percentage of the population lives below poverty line, unable to afford the very basic necessities improving the overall quality of life of poor people therefore become a national challenge.

Knowing full well that the poverty range in Nigeria is chronically dehumanizing, president Alhaji Umaru Musa Yaradua in his inaugural speech on May 29th, 2007 said I will give priority attention to poverty reduction in Nigeria. To this end, eight months after that speech, exactly on February, 2008, the president announced that N100 billion has been earmarked for poverty alleviation. Out of the N100 billion earmarked for poverty reduction strategic programme, N50 Billion went to microfinance banks as a strategy to reducing poverty in Nigeria through entrepreneurial development (Mbagwu, 2012]

OBJECTIVES OF THE RESEARCH

The main objective of the study is to evaluate the impact of unemployment conditions on poverty reduction in Nigeria while the specific objectives are:

1. To examine the trend and pattern of unemployment conditions on poverty reduction in Nigeria.
2. To determine the relationship between unemployment condition in Nigeria and poverty reduction.

RESEARCH HYPOTHESES

For the purpose of ensuring a detailed treatment of all relevant issues in the study area, the research was guided by the following two (2) hypotheses:

1. There is no significant relationship between Unemployment in Nigeria and Gross Domestic product per capita (GDPPC)
2. There is no significant relationship between macroeconomic variables of unemployment, money Supply (MOS), Domestic Credit (DCR), Lending Rate (LER) and Gross Domestic product per capita (GDPPC).

RESEARCH QUESTIONS

The following Research Questions guided the study:

1] What is the relationship between unemployment rate and poverty reduction in Nigeria?

2] What is the relationship between some selected macroeconomics variables and poverty reduction?

Review of Related Literature

Poverty is a plague afflicting people all over the world. It is considered one of the symptoms of manifestation of under development. Poverty is a vicious cycle which keeps the poor in a state of destitution and brachial disillusionment (Nwosu 2015).

Poverty affects many aspects of human conditions; hence there has been no universal consensus on the definitions of poverty. The concept of poverty which reflects its numerous visible attributes is multidimensional in nature. Attributes of poverty may be classified into structural, Economic, Social, cultural and political deprivations. The structural dimension appears more permanent and manifests a vicious cycle, reflecting limited productive resources, lack of skills for gainful employment, local disadvantage and inadequate income to obtain the basic necessities of life. The social dimension of poverty is largely a gender issue since the greatest weight of poverty is borne by women, household heads and children from poor homes. Often, the poor are known to have inadequate level of consumption. (Chuma 2014)

They are illiterates with short life span (World Bank, 2016) and cannot satisfy their basic needs, Ifeanyi, (2012). A concise definition depicts poverty as a state where an individual is not able to carter adequately for his/her basic needs of food, clothing and shelter, is unable to meet social and economic obligations, lack gainful employment skills, assets and self-esteem; and has limited access to social and economic infrastructure such as education, health care, portable water and sanitation, and consequently has limited chances of advancing his/her welfare to the limit of his/her capabilities (Nwosu 2015).

Development literature hinges the remote causes of poverty in developing countries on adverse international development, world recession, series of economic reforms undertaken by these countries and the crushing burden of foreign debt. The fundamental causes of poverty however are domestically, based and include inadequate production and income; difficult access to employment opportunities; poor quality of labour force, low level of technology; inefficient use, of resources; and lack of access to credit facilities and other productive resources (Dandekar, 2011).

Theories of Unemployment

Various theories have been advanced by economists to explain the logic behind the existence of different types of unemployment. These theories include: Search Theory, Implicit Contract Theory and the Efficiency wage Theory

Search Theory: According to Ohale & Onyema (2016), this is when prospective employees lack perfect information about job market and the wages being offered by firms and therefore spend time to acquire the information by sampling job offers. It postulates that each unemployed person sets target wage while in search of job. The target wage is likely to be adjusted downwards. The downward adjustment of the target wage reduces the number of the unemployment. The job search will continue until he gets a job that offers to pay the target

wage or something about it. This target wage is adjustable depending on the individual experience or situation.

Implicit contract theory: Explains why wages are rigid and this rigidity can lead to lay-offs and therefore unemployment. According to this theory, firms do not vary employment levels when demand for their goods changes. Rather there is an implicit arrangement to ensure that workers are guaranteed their job at a fixed wage and the firms bear risk of economic fluctuations. Because of this, firms attempt to maintain long term employment relationship with their workers by offering contracts that commit to them to a particular wage structure in the future. This contract could be explicit or implicit. Explicit contracts are those negotiated legal documents that are binding on both parties while the implicit contract is formal commitment. The conclusion is that wage rigidity will prevent the engagement of fresh hands and therefore increase the level of unemployment, Ohale & Onyema (2016).

APPRAISAL OF POVERTY REDUCTION PROGRAMMES IN NIGERIA

The reduction of poverty is the most difficult challenge facing any less developed country (LDC), where on the average majority of the population is considered poor. CBN (2014), observed that facts and figures in Nigeria have it that, the number of those in poverty increased from 27% in 2009 to 46% in 2010; it declined slightly to 42% in 2012 and rose sharply to 67% in 2013. While by 1999, at the start of the Obasanjo's regime, it was on record that about 70% of Nigerians lived in poverty.

According to Ihunda, (2004), the regime of Obasanjo declared in the year 2000 budget a whooping sum of N470 billion ''to fight poverty''. Before the passage of the year 2000 budget, the president sought and withdrew N10 billion to support its poverty reduction programme. By 2001, the government of Olusegun Obansanjo increased the budgetary allocation to poverty reduction by 150%. This idea of poverty reduction was received with high hopes especially given the speed with which the administration tackled the fuel problem at the inception of the administration. Poverty reduction programme was seen as a means through which the government can revamp the battered economy and rebuild self-esteem in majority of Nigerians who had been dehumanized through past military regimes. It is the wish of the researcher to appraise not only the efforts of past administrations, but also the role played by past administrations (both military/civilian), so as to identify a more proactive approach to poverty reduction programmes in Nigeria.

However, it is impressive to give detailed account of some poverty reduction programmes in Nigeria between 1989 and 2022. These include:

National Directorate of Employment (NDE)

National directorate of Employment (NDE) was established in 1986 by Ibrahim Babangida. The NDE has gone a long way in the area of poverty reduction by implementing four core programmes to the benefit of the poor, unemployed and aged. The NDE four core programmes are: Vocational Skills Development (VSD), Special Public Works (SPW), Small Scale Enterprises (SSE), and Agricultural Employment. The VSD involves four schemes namely; National Open Apprenticeship (NOA), School on Wheels (SOW), Waste to Wealth (WOW) and Resettlement Scheme (Nzenwa, 2000).

According to available data from NDE; a total of 106,094, people were recruited under the Vocational Skills development in 1994. The data also showed that 100,000 people were recruited to strengthen the delivery of the NDE 606 trained, under waste-to-wealth scheme, 3955 trainees completed the fourth cycle modular training resettlement schemes. A total of 159 projects in 18 states were under the agricultural employment programme, 3091 farmers from the different parts of the country benefited from a loan of N31 millions of which the retired people, rural based agricultural graduates and peasant farmers were the targets (NDE, 2000).

Additionally, N1.5m and 19 irrigation pumps were distributed to 290 farmers from Bauchi and Borno States that were displaced by flood. A total of 360 unemployed youths benefited from the motorcycle loan valued at N88, 000 per participant under the SSE. This is aimed at ameliorating acute transportation problem as well as create employment in the transport sub-sector, and repayable in 3 years at annual interest rate of 9%. A total of 10,000 Youth Corp members were trained under the entrepreneurship development programme during the year under review (NBS, 2000:123).

National poverty Eradication Programme (NAPEP)

On assumption of office in May 29, 1999, Olusegun Obasanjo started to address the issue of poverty through its Poverty Alleviation Programme (PAP). In 2000, with the sum of N10 billion the programme created about 200,000 jobs and many people were gainfully employed (NAPEP Watch, 2000).

However, in January 2001, the original outlay of PAP was amended and renamed National Poverty Eradication Programme (NAPEP). With a take-off grant of N6 billion, NAPEP structured and integrate four sectorial schemes; namely; Youth Empowerment Scheme (YES), aimed at empowering the youths economically. This is done through the Capacity Acquisition Programme (CAP), Mandatory Attachment Programme (MAP) and Credit Delivery Programme (D). Under CAP, it trained about 100,000 unemployed youths just as 5000 who received training as tailors and fashion designers were settled. A total of 50,000 unemployed graduates have benefited from MAP (NAPEP: 52).

The second scheme is the Rural Infrastructural Development Scheme (RIDS) that ensures the provision and development of infrastructural amenities in the area of transportation, energy, water and communication in the rural areas.

The Social Welfare Services Scheme (SOWESS) that carries out programmes on qualitative education, primary health care, farmers' empowerment and provision of social services in the third scheme of NAPEP.

Lastly, the National Resources Development and Conservative Scheme (NRDCs) contain agricultural resources programmes, water resources programmes, solid mineral resources programmes and environmental protection programmes.

According to CBN, NAPEP disbursed a total of 500m to some states under the revolving micro-credit fund scheme. The report said '' A total of 120,000 people benefited from the

disbursement to enable them set up small enterprises. About N240m was disbursed to 7,200 farm families under the NAPEP's farmers' empowerment programme. Under the second phase of the programme, 2000 units of three-wheel vehicles called ''Keke NAPEP'', were distributed to youths and they were sold at percentage discount on '' an ownership operated basis'' (Bullion 2014).

TRENDS OF UNEMPLOYMENT RATE

The problem of unemployment has posed a great challenge to many countries (both developed and developing). In recent times, the incidence of unemployment in Nigeria has been deep and widespread, cutting across all facets of groups, educational strata and geographical entities.

This is clearly evident in the Bullion 2014, manual. for instance, the unemployment rate rose from 4.3% in 1976 to 6.4% in 1980, though it recorded some marginal decline between 1981 and 1986, the rates were highly relatively higher than that obtained in the 1960s and 1970s.

The economic downturn did not only discourage new investment but also forced government to implement stabilization measures including restriction on importation. Given the high import-dependency of most manufacturing companies undertaken by the Manufacturers Association of Nigeria (MAN) showed that 61.0% of the companies surveyed were down for different periods if not less than months while between 62.0% and 63.9% of them disengaged over 1000 workers (CBN 2013).

This development made job placement for fresh school leavers to be exceedingly difficult. In addition, the government also placed an embargo on employment from September 1981, though relaxed in some periods (e.g. November 1982). This was implemented pari-pasu with the public sector retrenchment.

GROSS DOMESTIC PRODUCT PER CAPITA (GDPPC) LINKED WITH UNEMPLOYMENT

The concept of Human capital refers to the abilities and skills of human resources of a country, while human capital formation refers to the process of acquiring and increasing the number of persons who have the skills, education and experience that are critical for economic growth and development of the country, Okojie (2019).

Human resources are all about `embracing, that is, it is inclusive of persons who work now, or are likely, to be productively employed sooner or later. It is a continuum, a continuous process from childhood to old age, and must for any society or enterprise that wishes to survive under the complex challenges of a dynamic world.

Okpara (2020), in agreement with this view, opines, ''the essence of human resources development becomes one of ensuring that the workforce is continuously adapted for, and upgraded to meet, the new challenges of its environment''. This implies that those already on the job require retraining, reorientation and adaptation to meet the new challenges. This special human capacity can be acquired and developed through education, training, health

promotion, as well as investment in all social services that influence man's productive capacities Onimode (2018).

According to the American Economic Society (2016); investment in education and on-the-job training creates a more productive and adaptive workforce. Investment by government in roads, health, sewer and water facilities…. Foster employment, productivity, growth and environmental improvement, which in turn guarantees increased Gross Domestic Product per capita (GDPPC). This invariably reduces the level of unemployment in the country.

Unemployment has remained one of the most stubborn problems facing macroeconomic policy makers in Nigeria since independence. The ''open'' unemployment problem has been compounded by the ''hidden'' unemployment problem prevalent mainly in rural areas and in the urban informal sector. The school-leavers unemployment problem of the 1960s and 1970s has, in the 1980s and 1990s aggravated by the university graduates' unemployment problem, thus transforming yesterday's unemployment problem to today's unemployment crisis Ohale (2021).

THEORETICAL FRAMEWORK

Amadi et al (2015), asked a rhetorical question, ''who is to be blamed for the problem of poverty? He went further by quoting the book of Proverbs chapter 14 verse 31 of the Holy Bible that: He who oppresses the poor insults his maker and he who is kind to the needy honor Him. The quotation appears to be saying that poverty did not originate today. It is a socio-economic ''cancer'' that is as old as history.

The world is divided into two groups of people, ''the Haves and the Have-nots'' those who live in plenty and those who stagnate in want and are familiar with fear of hunger of sickness and death.

Prisca, (2016) opined that poverty indicates a less of under-privileged individuals. The under-privileged group is under privileged when compared to the privileged class within the same society.

In Nwosu, (2015) view, as contained in his work, A New framework for development in Nigeria, he contended that poverty, which properly conceived and lived, can and must be the wealth of mankind.

Dendeka and Ruth (2021), defines poverty as a situation where an individual is not able to have diet which has adequate intake of calories. From the on-going definitions, it has been established that poverty is related to the inadequacy of income, which helps to support the minimum living standard of a given society.

Review of Empirical Literature

Bratzznd and Grisby in their analysis of the structure thoughts and poverty and its elimination, carried out a survey on the Indian Government expenditures between 2000 and 2019. It showed that the education sector gulped 5% in 2000, 9% in 2015, 12% in 2017 and 2018 and 13.5% in 2019 of the total expenditure.

Wealth creation, Rural development micro projects development and River Basins Development received 3% in 2000, 4% in 2015, 2% in 2016 and 2.5% in 2017/2018 also 3% in 2019.

Citron, Constance and Roberts (2010), in their analysis of ''Measuring poverty- Anew Approach in U.S.A '' observed that, the Federal Government in U.S.A for 2015, showed that 18.2% of its total expenditure were devoted to poverty reduction only with the other sectors taking 81.8%. Citron et al revealed that ever since, the total budget for poverty reduction has been increasing, for the 20 years reviewed. Thus, giving an analysis of the U.S economic trends, the authors showed within the period.

But when the GDP was computed at 2015 constant dollars, it showed a compound annual growth rate of 3.85% from 2015 to 2020, when it rose from 2345.4 billon to 6345.0 billion U.S dollars.

In 2014, the real GDP was 4821.5 billion, showing a negative growth rate of 2.55 over the preceding year. While in 2015, it improved to 6876.6 billion dollars to 2.5% growth rate over the 2014 performance.

While Cocreft and Andre (2012) in similar study in U.S revealed that the budget for poverty reduction gulped 23.4% in 2010 and by 2018, it rose to 24.5% of the total expenditure in those years. They also showed in the study of government expenditure in U.S. (2000-2018), that it grew from 120 million dollars in 2000 to 240.76 million dollars in 2018, at current prices. That showed a 5.8% compound annual growth rate in public expenditures, as against 3.5% growth rate in GNP.

Daata 2018 (in his study of ten (10) under-developed countries over the period 2000 to 2015, found that as a result of increased unemployment, poverty and inequality, the governments have increased the budgetary allocations towards reducing poverty and bridging the inequality gap in India.

SUMMARY OF LITERATURE REVIEW

The implicit contract theory of unemployment, shows that the rigidity of wages leads to unemployment. This is adopted, because, if there is low productivity necessitated by lack of motivation by government through increase in workers welfare, people will be encouraged to work. By implication, increased productivity is required to bring unemployment to a desired level. Thus, this calls for a paradigm shift in Nigeria.

Research methodology

Model Specification

In order to gauge the relationship that exists between poverty rate and unemployment coupled with our stated objectives and hypotheses in the introductory page above, the model shall be established as follows:

GDPPC = f(UMP) ------ (3.1)

GDPPC = f (UMP, MOS, DCR, LER) ------ (3.2)

The argument in equations 3.1 and 3.2 above was tried both linear and log linear specifications and the one that suits our specification, judged in term of goodness of fit, precision of estimates and a tolerable level of multicollinearity will be chosen. Thus, transforming the argument in 3.1 and 3.2 into logarithmic equations, we have;

Log GDPPC = $e + f \log UMP + \lambda_1$ ----- 3.3

Log GDPPC = $\gamma_0 + \gamma_1 \log UMP + \gamma_2 \log MOS + \gamma_3 \log DCR + \gamma_4 \log LER + \gamma_2$ ----- 3.4

The mathematical form of the model is as follows:

$\ln \phi_1 = e + f \ln X_1 + \lambda_3$ ----- 3.5

$\ln \phi_1 = \gamma_0 + \gamma_1 \ln X_1 + \gamma_2 \ln X_2 + \gamma_3 \ln X_3 + \gamma_4 \ln X_4 + \gamma_4$ ----- 3.6

Where ϕ_1 = GDPPC
X_1 = UMP
X_2 = MOS
X_3 = DCR
X_4 = LER

$\lambda_1 - \lambda_5$ = Stochastic Disturbance term
ϕ_1 and $X_1 - X_4$ as stated above
e – f = parameters for simple regression
$\gamma_0 - \gamma_5$ = parameters for multiple regression.
It is believed that the stochastic regression term will capture the impact of the other variables that were not included in the models. Hence, the mathematical form of the model becomes;

$\ln \phi_1 = \gamma_0 + \gamma_1 \ln X_1 + \gamma_2 \ln X_2 + \gamma_3 \ln X_3 + \gamma_4 \ln X_4 + \lambda_5$ ----- 3.7

Data Collection / Processing

This article is designed to explain the methods which the researcher used in analyzing the various data that were collected for the work.

Data Required

The data required for the study includes:

Poverty Reduction proxy by GDPPC	1992-2022
Unemployment Rate [UMP]	1992-2022
Money supply [MOS]	1992-2022
Domestic Credit (DCR)	1992-2022
Lending Rate (LER)	1992-2022

METHOD OF DATA ANALYSIS

This research shall employ:

a) Cointegration and Error Correction Model (ECM) techniques.
b) The Chow Test of Stability.

Cointegration and Error Correction Model (ECM) Techniques

The study employed cointegration and error correction techniques to estimate the model. According to Johansen and Juselius (1990), most economic time series (variables) that exhibit

strong trends are non-stationary, yet they are being treated as though they were stationary by most economist.

This leads to the coefficient of determination (R^2), tending to unity (i.e. very high R^2), or adjusted coefficient of determination (R^2), together with highly auto-correlated residuals as indicated by low Durbin-Watson (DW) statistic.

Consequent upon, the above unemployment conditions was subjected to a unit root test to determine their time series characteristics. Unit root is basically required to ascertain the number of times a variable has to be differenced to arrive at stationarity (Engle and Granger, 1977).

The methods of testing for unit roots are by use of the Dickey-Fuller (DF) test and the Argumented Dickey -Fuller (ADF), but the ADF test is considered superior to the Dickey-Fuller test because it adjusts appropriately for the occurrence of serial correlation.

The analysis of testing for unit roots naturally leads to the theory of cointegration (Iyola and Ekanem, 2017). This is because, basically, cointegration deals with methodology of modeling non-stationary time series variables. The idea rests on the thesis that, even though two-time series may not themselves be stationary, a linear combination of two non-stationary time series are said to be "cointegrated''. Usually, for cointegration, (Foster, 2018:13) the two-time series have to be of the same "order" i.e. they should be stationary after the same number of differencing.

The Chow Test of Stability

According to Koutsoyiannis (1977), the aim of testing the stability of regression coefficients when increasing the size of the data is to find out whether the estimates will be different in enlarged samples and whether they will remain stable over time.

In line with this, our aim is to establish if unemployment level has actually brought about the stability in the economy through poverty reduction.

It is our view that, if our data are divided in such a way to capture the Structural Adjustment Programme (SAP); SAP years (1986-92) and post SAP years (1992-2006) or the many years of military rule (1989-1999), that is 10 years and the years of democratic governance (1999-2022), that is 23 years and applying the Chow Test of Stability, we shall be able to establish if unemployment conditions have led to the achievement of its stabilization function. Iyoha (2017), has stated that a major economic function of government is the promotion of economic stabilization and economic growth. He went further to state that "by economic stabilization, we mean policies aimed at controlling inflation, unemployment, and promoting growth in balance of payment. In the long-run, they include policies designed to promote economic growth through poverty reduction programmes.

Furthermore, we decided to use the CHOW test to determine stability of our models because there may have occurred events which change the structure of the relationship, for example, changes in government programmes and policies, time-lags in the release of funds and

implementation of programmes and so on. If such changes occur, the coefficients may not be stable; they may be sensitive to changes in the sample composition that is unemployment conditions may bring about instability in poverty reductions. Given the above exposition we carried out the CHOW test of stability as follows**; F* =** $\frac{(\Sigma e^2 - \Sigma e_1^2)n2}{(\Sigma e_1^2(n_1-k)}$ Koutsoyiannis (1977).

EXPECTED RESULTS
BASED ON THE APRORI EXPECTATIONS
UNEMPLOYMENT (UNEMP)

This refers to those willing and able to work at the prevailing wage rate but is not gainfully recruited to work. Unemployment is presented in equations 3.1, 3.2, 3.3, 3.4, 3.5, 3.6 and 3.7 in this research as independent variable. The consideration of this variable boils down to the fact that, unemployment has been on the increase as poverty reduction proxy by (GDPPC) keeps on diminishing. This is predicted on the fact that, the more people are recruited to work, the more they add to the GDP, thus the higher the GDPPC.

However, in economic logic, it is expected that increases in MOS and DCR should lead to increase in GDPPC. On the other hand, increase in LER leads to decrease in GDPPC, (this is since higher LER, discourages investment which affects the GDP). Therefore, the relationship between GDPPC and unemployment and that of LER is hypothesized to be negative. While the relationship between GDPPC, money supply and DCR is hypothesized to be positive. Hence,

F, y_1, $y_4<0$ y_2, $y_3>0$

DOMESTIC CREDIT (DCR)

This is one of the explanatory variables. This shows the total amount of money given to the economy by the financial institutions in order to promote the level of economic activities (production of goods and services).

MONEY SUPPLY (MOS)

This is one of the regressors in inflation, also in unemployment models. Money supply or Money stock refers to the total value of money in the economy and this consists of currency (notes and coins) and deposit money banks. For purpose of policy, there are two variants of Money supply in Nigeria M1 and M2. M1 is the narrow measure of money supply while M2 is the broad measure of Money Supply and includes M1, savings and time deposits. Also, M2 measures total liquidity in the economy.

LENDING RATE (LER)

This is one of the explanatory variables used in the unemployment model. The lending rate is the rate at which commercial banks lend money to the investing public. It has a close relationship with rediscount rate. This is because the lending rate depends on the rediscount rate. The lending rate cannot be above the rediscount rate (CBN, 2019).

Cointegration Test Results

We now turn to determine the existence of long-run equilibrium relationship between our variables. Separate cointegration tests are carried out on each variable to cover the two (2) models of the work.

As indicated earlier, non-stationary time-series can be cointegrated if there is a linear combination of them that is stationary, that is, the combination does not have a stochastic trend. The linear combination is the cointegration equation.

From the results in appendix B, (Cointegration Test Result), it shows that the variables in model (3.1 and 3.2) are cointegrated, that is, there exists a long-run relationship among the variables. The cointegration tests are based on the Johansen and Juselius (1989) test.

CHOW TEST RESULT

In performing this test, we used the residual sum of squares i.e. the unexplained variations, with the degrees of freedom in calculating the F* ratio which will be compared with the critical F-values at 5% level of significance. Each of the models will be tested. The parsimonious result for the period 1992 -2012 is the augmented sample (n1), while the period 2014-2022is the additional sample (n2).

The null hypothesis:

Acceptance of the null hypothesis means that the structural coefficients are stable; their values are not changing in expanded periods. We used the macroeconomic conditions models without check variables in conducting the chow test.

UNEMPLOYMENT

$\Sigma e^2 = 3.10 \times 10^9$, $\Sigma e_1 = 7.81 \times 10^{12}$, $n_1 = 10$, $n_2 = V_1 = 8$, $K = 2$, $V_2 = 20$, $F^* = 5.86$

The result shows that in unemployment models $F^* > F0.005$ thus we reject the hypothesis and accept the alternative hypothesis. This means that the structural coefficients are not stable; values are changing in expanded periods.

DISCUSSION OF FINDINGS

From the parsimonious short-run dynamic adjustment model (for model 3.1), unemployment explained 86.3% change in GDPPC. This implies that, the coefficient of determination was significantly high and the overall results was high significant at 1%.

The result showed that the rate of adjustment parameter of unemployment on GDPPC was low, rightly signed and significant. Though, the priori expectation was not met (i.e. unemployment showed a positive relationship with GDPPC), the overall significance was highly significant at 1%.

This study disagreed with similar study carried out by Johansen (1985) and Amadi et al (2015) who found a small negative effect of unemployment on gross domestic product per capita (GDDPC). However, the study agreed with the works of Kapteyn and Kooreman (2015), Greer and Thoebecks (2017) and Baridam (2018).

Kapteyn et al, Greer et al and Baridam found a larger than positive effect of unemployment on GDPPPC (poverty). They found an R^2 of 0.801 or 80% between unemployment on GDPPPC, similar to the current study's R^2 result of 0.86 or 86%. The study found a significant relationship between the two variables, and a priori expectation was not met.

The present study also agreed with the works of Kapteyn, Greer and Baridam on the sign and size of the error correction model.

HYPOTHESIS I

Ho: there is no significant relationship between unemployment in Nigeria and Gross Domestic product per capita (GDPPC).

Using appendix, A for model 3.1, our result showed that, unemployment at current level is 0.4207.

This shows that unemployment at current level is not statistically significant. Therefore, we accept the null hypothesis and reject the Alternative and conclude that there, is no statistically significant relationship between unemployment and GDPPC.

Model 3.1; For unemployment; $S(a_0) > a_0/2$

(i.e.) $4.52 \times 10^{-7} > \underline{3.75 \times 10^{-7}}$ (i.e. 1.88×10^{-7})

2

Here; $4.52 \times 10^{-7} > 1.88 \times 10^{-7}$.

This means that, we accept the null hypothesis (H_o) and reject the alternative (H_1) which implies that $a_1 = 0$.

R.Q. 1

What is the relationship between unemployment rate and poverty reduction in Nigeria?

With reference to 3.2 (variables in the model), particularly 3.1: 'unemployment'. It was stated that our apriori expectation on unemployment on GDPPC is as follows:

Increase in unemployment results to decrease in GDPPC (i.e. ↑ Unemp →GDPPC↓ = < 0 (negative relationship). But our result proved otherwise, our result showed that;

↑ Unemp → GDPPC ↑ (this implies a positive relationship).

By implication, from the result, as unemployment is rising, poverty is decreasing (this is not in consonance with Economic theory).

Recommendations/policy Implication

Based on the findings of the study, some policies that would be of help to government and policy makers in improvement of poverty reductions in Nigeria are made.

For policy

Since unemployment is positively and significantly related to poverty reduction, government should adopt good policies that are associated with unemployment reduction such as; industrialization policy, provision of adequate vocational training centers to equip the youth in particular for self-employment, provision of micro-credit/ micro finance facilities, thus encouraging small scale entrepreneurial schemes among others with a view to checking poverty in the country.

The government should ensure macro-economic stability and growth with development, which is the first means 0f reaching the poor. Since, without growth there can be no expansion which will create employment and increase income for distribution.

Government needs to focus efforts on policy aspects of improving the capacity utilization (CAU) and rely more on the informal and formal private sectors to increase capital investment. As well as raising Domestic Credit (DCR).

The need to establish independent mechanisms for monitoring the performance and execution of poverty reduction programmes of NDE, NAPEP, NDDC and MDGs by the government, such as the establishment of Nigeria Poverty Reduction Regulatory Commission – (NPRRC).

APPENDIX A
MODEL 3.1
Short-run regression model of GDPPC: Variable taken at level

Dependent Variable: GDPPC				
Method: Least Squares				
Date: 07/28/23 Time: 08:26				
Sample: 1992-2022				
Included Observations: 30				
Variable	coefficient	Std. Error	t-Statistic	Prob.
C	0.264535	0.032501	6.288594	0.42066
UMP	-3.64E-07	2.46E-07	-1.481483	0.1474
R-Squared	0.059008	Mean dependent var		0.216188
Adjusted R-squared	0.032123	S.D. department		0.164113
S.E of regression	0.161456	Akaikie info criterion		-0.756632
Sum squared resid	0.912379	Schwarz criterion		-0.669556
Log likelihood	15.99770	F-statistic		2.194790
Durbin-Watson stat	1.575803	Prob (F-Statistic)		0.147426

Short-run regression model of GDPPC: Variable measured in log

Dependent Variable: LOG (GDPPC)				
Method: Least Squares				
Date: 07/28/23 Time: 08:27				
Sample: 1992-2022				
Included Observations: 30				
Variable	coefficient	Std. Error	t-Statistic	Prob.
C	1.949056	3.165549	0.615709	0.5421

LOG (UMP)	-0.360295	0.277314	-1.299230	0.2024
R-Squared	0.046010	Mean dependent var		-2.145844
Adjusted R-squared	0.018753	S.D. department		1.810338
S.E of regression	1.793284	Akaikie info criterion		4.058512
Sum squared resid	112.5553	Schwarz criterion		4.145589
Log likelihood	-73.08247	F-statistic		1.687998
Durbin-Watson stat	2.126795	Prob (F-Statistic)		0.202359

Short-run regression model of GDPPC: variable taken at level

Dependent Variable: GDPPC				
Method: Least Squares				
Date: 07/28/23 Time: 21:13				
Sample: 1992-2022				
Included Observations: 30				
Variable	coefficient	Std. Error	t-Statistic	Prob.
C	0.241807	0.074333	3.253023	0.0027
UMP	-3.53E-07	3.41E-07	-1.033856	0.3090
MOS	1.01E-09	8.08E-09	0.124948	0.9013
DCR	-1.06E-08	9.74E-09	-1.091765	0.2831
LENR	0.001728	0.004528	0.381643	0.7052
R-Squared	0.094298	Mean dependent var		0.216188
Adjusted R-squared	-0.018915	S.D. department		0.164113
S.E of regression	0.165658	Akaikie info criterion		-0.632695
Sum squared resid	0.878161	Schwarz criterion		-0.415004
Log likelihood	16.70486	F-statistic		0.832925
Durbin-Watson stat	1.654910	Prob (F-Statistic)		0.514312

Short-run regression model of GDPPC: Variable taken in log.

Dependent Variable: LOG (GDPPC)				
Method: Least Squares				
Date: 07/28/23 Time: 21:14				
Sample: 1992-2022				
Included Observations: 30				
Variable	coefficient	Std. Error	t-Statistic	Prob.
C	1.656956	4.548034	0.364324	0.7180
LOG (UMP)	-0.208547	0.529956	-0.393518	0.6965
LOG (MOS)	0.396804	0.376776	1.053156	0.3002
LOG (DCR)	-0.354321	0.389225	-0.910323	0.3695
LOG (LENR)	-0.717527	1.197632	-0.599122	0.5533
R-Squared	0.093040	Mean dependent var		-2.145842
Adjusted R-squared	-0.020330	S.D. department		1.810339
S.E of regression	1.828648	Akaikie info criterion		4.170119
Sum squared resid	107.0065	Schwarz criterion		4.387811
Log likelihood	-72.14720	F-statistic		0.820679
Durbin-Watson stat	2.116555	Prob (F-Statistic)		0.521640

APPENDIX B

Johanson Co-integration Test Result

Date 07/28/23Time: 08:34				
Sample: 1992-2022				
Included Observations: 30				
Test assumption: Linear deterministic trend in the data				
Series: D(GDDPC,2) D(UMP,2)				
Lags Interval: 1 to 1				
	Likelihood	5 percent	1 percent	Hypothesized
Eigenvalue	Ratio	Critical Value	Critical Value	No. of CE(s)
0.895882	140.9712	15.41	20.04	None**
0.882712	68.57981	3.76	6.65	At most 1**
* (**) denotes rejection of the hypothesis at 5% (1%) significance level				
L.R test indicates 2 cointegrating equation(s) at 5% significance level				

Unnormalized Cointegrating Coefficients:				
D (GDPPC,2)	D (UMP,2)			
-0.788620	5.05E-08			
0.184353	-2.50E-06			
Normalized Cointegrating Coefficients: 1 Cointegrating Equation(s)				
D (GDPPC,2)	D (UMP)	C		
1.000000	-6.40E-08	-0.09141		
Log likelihood	-431.0159			

Johanson co-integration test Result

Date 07/28/23 Time: 21:29				
Sample: 1992-2022				
Included Observations: 30				
Test assumption: Linear deterministic trend in the data				
Series: D(GDDPC,2) D(UMP,2) D (MOS,2) D (DCR,2) D(LENR,2)				
Lags Interval: 1 to 1				
	Likelihood	5 percent	1 percent	Hypothesized
Eigenvalue	Ratio	Critical Value	Critical Value	No. of CE(s)
0.978065	379.7544	68.52	76.07	None**
0.960490	257.5248	47.21	54.46	At most 1**
0.921561	154.1264	29.68	35.65	At most 2**
0.875750	72.67248	15.41	20.04	At Most 3**
0.169358	5.937808	3.76	6.65	At Most 4**
* (**) denotes rejection of the hypothesis at 5% (1%) significance level				
L.R test indicates 2 cointegrating equation(s) at 5% significance level				
Unnormalized Cointegrating Coefficients:				
D (GDPPC,2)	D (UMP,2)	D(MOS,2)	D(DCR,2)	D(LENR,2)
0.010596	3.32E-07	-6.36E-08	-1.31E-08	-0.031462
-0.093104	1.31E-07	-6.47E-08	-4.37E-08	0.011559
0.751139	-1.84E-07	-4.44E-08	1.35E-08	0.008533
0.114288	-2.87E-06	-2.61E-08	-1.46E-08	-O.014188
0.841496	-2.64E-07	2.88E-07	-1.13E-08	-0.010354
Normalized Cointegrating Coefficients: 1 Cointegrating Equation(s)				
D (GDPPC,2)	D (UMP)	D (MOS,2)	D (DCR,2)	D (LENR,2)

1.000000	-3.13E-05	-6.00E-06	-1.24E-06	-2.969331
	(9.1E-05)	(1.8E-05)	(3.5E-06)	(8.42861)
Log likelihood	-1593.661			
Normalized Cointegrating Coefficients: 2 Cointegrating Equations(s)				
D (GDPPC,2)	D(UMP,2)	D (MOS,2)	D (DCR,2)	D (LENR,2)
1.000000	0.000000	4.08E-07	3.96E-07	-0.246069
		(3.0E-07)	(2.0E-07)	(0.13130)
0.000000	1.000000	-0.204701	-0.052141	-86965.63
		(0.05975)	(0.039290	(26432.1)
Log likelihood	-1541.962			
Normalized Cointegrating Coefficients: 3 Cointegrating Equation(s)				
D (GDPPC,2)	D (UMP,2)	D (MOS,2)	D (DCR,2)	D (LENR,2)
1.000000	0.000000	0.000000	8.78E-08	-0.059859
			(4.0E-08)	(0.05515)
0.000000	1.000000	0.000000	0.102479	-180345.5
			(0.07073)	(97490.6)
0.000000	0.000000	1.000000	0.755348	-456177.6
			(0.29925)	(412456.)
Log likelihood	-1501.235			
Normalized Cointegrating Coefficients: 4 Cointegrating Equation(s)				
D(GDPPC,2)	D (UMP,2)	D (MOS,2)	D (DCR,2)	D (LENR,2)
1.000000	0.000000	0.000000	0.000000	0.0103230
				(0.04348)
0.000000	1.000000	0.000000	0.000000	9935.656
				(9604.47)

REFERENCES

Baratzznd, M.S. and A.B. Grisby (2016); "*Thoughts of poverty and its Elimination*". Journal of social sciences. Vol. 6:1.2nd April.

Baridam, D.M. (2018); "*Research Methods in Administrative Science".* Ed. Nigeria: Sherbrooke Associates.

Bassey, E.B. (2018): "*The impact of Macroeconomic Conditions on Poverty Alleviation in Nigeria*". International Research journal for development, Vol. 7, No. 2, pp. 1-12.

Chijoke, O and Akin, J. (2014): "*Nigeria: Warning Signals from UNDP Report*", The Guardian, July 8, p.9

Chuma, Ifedi (2014): "*Reforms and Poverty Alleviation*", Daily Champion, July 19, p.11

Cocreft J.D., and F.G. Andre (2012): *Dependence and Under-development,* Anchor Books, New York.

Daata A. (2018): *Perspective of Economic Development,* Macmillan Publishers Co. Ltd. London, vol. 1.8.

Dandekar, V.M. and N.A Rath, (2011): Poverty in India, Pune: Indian School of Political economy, Vol.16

Engle and C.W.J Granger, (1977); *Spurious Regression in Econometrics,* Journals of Economics, pp. 100-12.

Ifeanyi, M. (2012): "*The Challenge of Poverty",* Daily Champion, September 30, p.11.

Johansen & Julius (1989):" Maximum *Likehood Estimation and Inference on Cointegration with application to the Demand for Money".* Oxford Bulletin of Economics and Statistics, 52, Pp. 169-210

Kapteyn A.P. Kooreman and R. Willemse (2016): "*Some Methodological Issues in the Implementation of Subjective Poverty Definitions".* The Journal of Human Resources 23:22-242.

Keynes, J.M (1936): General theory of Employment, Interest and Money, New York: Harcourt Bruce and World Inc.

MDGs (2014): National Millennium Development Goals Report, Nigeria, Dec.

National Bureau of Statistics (NBS), (2018): Core welfare Indicator Questionnaire (CWIQ) Survey, June.

– (2015): Socioeconomic profiles of Nigeria, Dec.

– (2014): The Nigerian Statistical Fact Sheet on Economic and Social Development, Dec.

NBS (2015); "*Social-Economic Profile of Nigeria"* Lagos, Dec.

– (2018); "*Socio-economic Profile of Nigeria*" Lagos, Dec.

NDE (2017); NDE publication, Nigeria, Abuja, Dec. Vol. 10

Nwosu N.J., (2015). "*The Political economic of Small enterprise Development*", In Nigerian Journal of development Studies, vol. 1, No. 2.

– (2000): The Challenge of Poverty in Africa. Owerri. Skillmark Media ltd.

Nzenwa, O.E. (2000): Micro-Credit & Development: Poverty Alleviation in Nigeria (CECOPEC, Lagos). Pp 50-75.

Ogwumike F.O. (2017): Poverty & Basic needs. An Approach to Development in Nigeria. Unpublished Ph.D. Thesis, Department of economics, university of Ibadan.

Prisca, E. (2016); "*Poverty Eradication in Nigeria Requires Multi- Sectoral Approach*", The Guardian, Sept. 21, p.33.

Sanwar, S. (2010): The Development of a Developing Nation in Anyanwu (2017), Lagos Nigeria.

United Nations Department of Economic and Social Affairs (2015): *"Development Plans: Appraisal of Targets and Progress in Developing Countries*", World Economic survey, 2014 – Part I, New York.

United Nations Development Programme (UNDP), (2010); (2013); (2015): "*Human Development Report*", Oxford University Press, New York.United Nations Food and

Agricultural Organization (2006): African Agriculture: The Next 25 years, Rome. P. 14, 15, 16.