

## Aggregate Demand and National Unemployment Level Nexus: Evidence from Nigeria

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This study investigates the impact of aggregate demand on the national unemployment level using Keynes Aggregate Demand Model. The paper uses Augmented Dickey-Fuller and Elliott-Rothenberg-Stock DF-GLS unit root test, Vector Error Correction Method and VEC Granger Causality/Block Exogeneity Wald Tests to examine the impact of the aggregate demand components on national unemployment level during 1999 – 2018. The results confirm that the components of household consumption expenditure, private investment, government investment expenditure exert a positive and significant effect on unemployment reduction in both the long-run and the short-run. The outcome of government consumption expenditure exhibits positive and significant effects in the long-run through the short-run effect is insignificant. Summarily, aggregate demand components through government intervention and individual participation have the potentials to engender full employment but its impact depends on domestically formulated policy change in line with the economic fundamentals in addition to structural reorganization to guarantee the functionality of institutions across various sectors of the economy. The government needs to intensify its effort through an increase in consumption and investment expenditure in other to engender productively and achieve full employment level.

### Keywords:

Aggregate demand,  
Consumption,  
Investment,  
Government  
spending, National  
unemployment level

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### **Background to the Study**

Since 1999 when Nigeria ushered in the fourth democratic era, the country has witnessed series of threats occasioned by youth restiveness, especially amongst the Niger Delta Militant and the dread Boko-Haram menace in the Northern part of Nigeria as well as other types of agitations that threatened National security. Several reasons are said to be responsible for these problems one of such is the risen trend of unemployment. However, the rise in the unemployment level in Nigeria has the potential to cause a serious threat to national security. In general, unemployment has a significant impact on Nigeria's economy and society specifically reduction in national output, rising rural-urban migration, high dependency ratio, poverty and worst of all series of crimes. The 2018 World Bank data of Nigeria indicates that the unemployment level is on an upward trajectory standing at 26.17% in 2018 from 13.1% recorded in 1999. The average growth rate of GDP within the corresponding period stood at 5.58% but failed to translate to a productive economy with various job opportunities across sectors. Nigeria has achieved considerable growth in GDP since the fourth democratic era, but this was not sufficient to reduce unemployment. The absence of these has brought a significant proportion of Nigerians into high income or wealth dispersion represented by an average Gini coefficient index of 45.66% and this could be one of the reasons for the average low life expectancy rate of 49.79 in the period 1999 to 2018.

The collapse of the world economies in 1929 saw the emergence of some development models centered on the aggregate demand and aggregate supply as espoused by scholars such as Harrod's (1939) growth model and post-Keynesian or structuralist, aggregate demand models. These models/theories suggest that aggregate supply is implausible in an economy implying that aggregate supply factors, which are so dear to mainstream growth theorists, are irrelevant for long-run growth. Keynes General's theory of 1930 emerges due to the decline in spending sometimes referred to as aggregate demand, which led to a decline in production consequently gave rise to income inequality occasioned by an inevitable stall in economic growth. The coming on stream of Keynes General theory centered on the increase in aggregate demand through government intervention and private participation. Modigliani (2000) emphasizes that the direct impact of aggregate demand on unemployment is triggered by a decline in investment. This implies that a decrease in investment throughout the expenditure progression and the unemployment level increases. Moreover, Mitchell and Muysken, (2006) asserted that shortfall in investment has persisted because monetary policy has remained too tight, combined with a tight fiscal policy motivated by the Maastricht-criteria.

Achieving full employment constitutes a large component of the cost of business cycles, thus understanding the interplay between unemployment in relation to the overall economic performance is vital. This evidence in the jobless growth as one of the features of the 2008/2009 recent global financial crisis in the world (Sahin, Tansel & Berument, 2013) and 2016 economic recession witnessed in Nigeria. Nigerians economy has witnessed tremendous growth in the components of aggregate demand translating to an average GDP growth rate of 5.58% for the period 1999 to 2018. In the studies of Bernanke (2003);

Khemraj, Madrick, and Semmler, (2006); World Bank, (2008); Nabli, Jauregi, Carlos, Silva, (2007) attested to how rising output does not bring higher employment or lower unemployment, in both developed and developing countries. Nigeria's governments have pursued relative prudent fiscal policy, monetary policy, maintained well-developed infrastructure and strong legal and regulatory environment that can guarantee a conducive business climate but unemployment remains on a steady upward trend. The enactment of reforms leading to the establishment of several institutions has not transparently facilitated project implementation for the maximum benefit of Nigerians. The implication is that the achievement of all these might not be sufficient to create much-needed employment opportunities and reduces unemployment.

In light of the above, this paper investigates the components of aggregate demands under the three-sector model on the employment level in Nigeria covering the period of 1999 to 2018. The choice of the timeframe is predicated on the several economic reforms witnessed under the fourth and current democratic dispensation. It is expected that the outcome of the aggregate demand components will rebirth a new direction towards enhancing employment level from the current state of unemployment at 26.17% in 2018. The study is hinged on the review of relevant literature on models of aggregate demand and employment. The study uses an econometric model to determine how aggregate demand can drive the employment level in Nigeria. The rest of the study is organized as follows. Section 2 discusses the literature review and data description. Section 3 presents the methodology and model. Section 4 presents results and analysis. Section 5 concludes the study.

### **Literature Review**

The concept of unemployment varies across various categories either young, middle age and old economies. For the past 30 years, unemployment in general and youth unemployment in particular, have become fundamental issues across developing and developed nations (Isengard 2003). Several studies have shown that youth unemployment is attributable to low skills acquisition of young workers. While others asserted is the result of a fall in aggregate demand, which prompted a fall in the labour demand. But studies reveal that the young labour force is more affected than the old labour force due to changes in aggregate demand (O'Higgins 2001). However, this study is not aimed at distinguishing between the young labour force and the old labour force rather sees how each of the components of aggregate demands responds to the employment level. From a broad perspective, Barker (1999) defines the unemployed person as the one who is without work, is currently available for work, and is seeking or wanting to work. The unemployment rate is defined as the number of unemployed persons taken as a percentage of the economically active population, which includes both the employed and the unemployed (Mafiri, 2002). Mafiri see unemployment definition revolving around both employed and those who are unemployed who make up the economically active population. In whatever category of unemployment one falls, the bottom line remains the possible channels that can absorb this teeming population. This is where the aggregate demand model comes to play by enhancing the potential in each of the components towards achieving a full employment level.

Aggregate demand is the summation of current expenditures at current prices in any given accounting period by all sectors (household, firm, foreign, and public) (Tchemeva, 2014). In this study, aggregate demand comprises of household expenditure, firms expenditure, and government spending. This study excludes net export due to Nigeria's over-dependence on imports, hence the need for future study to look at the export and import dynamics. To Keynesian, emphases are placed on cyclical unemployment, which is occasioned by simple Keynesian insufficient expenditure that is demand deficiency, which further causes the macroeconomic equilibrium to be below the full employment level. The changes in aggregate demand can be represented diagrammatically in Figure 1.

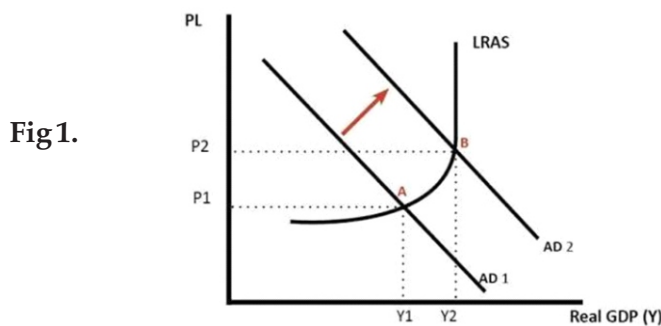


Figure 1 shows an increase in aggregate demand components of consumption, investment, government purchases, or net exports shifts the aggregate demand curve AD1 to the right as shown while a reduction in one of the components of aggregate demand shifts the curve to the left, as shown in Fig 1. Keynes believes that to achieve full employment level from Y1 to Y2, there is a need for an increase in aggregate demand, which opposes the classical views of an increase in aggregate supply. This theory implies that aggregate demand is the mechanism whereby employment can be changed, thus emphasis of this study is on aggregate demand components. To Keynes, several events could trigger the change in the quantity of consumption of individuals at each price level and thus shift outward aggregate demand curve and one of such reasons is a good economic expectation, which will also translate to more demand from a production angle. Investment in physical assets will be used for future production of goods and services, thus expectations of firms in terms of demand due to economic prosperity play a critical role in determining current and future investment.

Government spending could be on consumption goods and capital goods, all other things unchanged, will affect aggregate demand. Net export is the difference between export and import and an increase in the demand for domestic goods leading to increase country's net exports and aggregate demand for more expectation in foreign exchange earnings for further investment all towards achieving full employment. According to Krugman (1990), the three most significant elements for the economy overall are productivity, income distribution, and unemployment. Consequently, Landmann (2004) posits that the growth path of aggregate productivity is likely to affect the distribution of income and this is

prominent in the discussion of Kuznets' curve hypothesis. This assertion shows that the Keynesian aggregate demand model remains relevant in determining the employment level in the economy.

Meyer (2017) in the study of an analysis of the short and long-run effects of economic growth on employment used Vector Autoregressive (VAR) model to test for a long and short-run relationship between employment and economic growth in South Africa using quarterly data for the period 2002 to 2016. The series includes employment, real GDP, inflation rate and the repo rate. Finding reveals that employment responds positively to economic growth this is in addition to the revelation of the Granger-causality test that economic growth and repo rate granger cause changes in employment.

Ajakaiye, Jerome, Nabena and Alaba (2016) examined the relationship between economic growth and employment in Nigeria for the period 2005 to 2014. Finding reveals that the growth rate experienced since 2005 has not translated to more employment opportunities, which could be traceable to low magnitude obtained. Rather, there are movements of labour from agriculture and manufacturing to the low productive service sector such as communication, tourism and the likes.

The Study conducted by Sahin, Tansel, and Berument (2013) using output-employment relationships across sectors in Turkey from 1988 to 2008. Using Ordinary Least Square (OLS) estimates to analyze the data. Findings failed to establish along-run relationship between aggregate output and total employment. However, the short-run result reveals the contrary outcome with an insignificant effect. But surprising aggregate output exerts significant relationship between non-agricultural employment and sectoral employment in the long-run while the short-run result reveals that output exerts an insignificant effect on non-agriculture employment and eight out of the nine sectors consider.

Yaumidin (2012) conducted studies on aggregate demand, unemployment, and employment policies in Indonesia's industrial sector for the period of 1985 to 2009. The study uses regression to analyze the obtained data using the theoretical framework of Okun law. Findings show that Indonesia still faced a high unemployment rate given the result of the gap output and unemployment model. Secondly, Indonesia needs high economic growth, which is about 8-9 percent to create employment elasticity's to absorb much more labor force.

Eita and Ashipala (2010) investigate the determinants of unemployment in Namibia for the period 1971 to 2007 using the Engle-Granger two-step econometric procedure. Empirical results revealed that there is a negative relationship between unemployment and inflation in Namibia. The study further shows potential output would significantly positively be impacted on the unemployment level. Thus, the increase in investment causes unemployment to decrease significantly. The study concludes that there is evidence that the Phillips curve holds for Namibia and that unemployment can be reduced by increasing aggregate demand check.



There are limited studies on this line of thought in Nigeria under the theoretical framework of Keynes' Aggregate demand towards achieving full employment level. The only similar work is that of Yaumidin (2012) in Indonesia. Thus, it is pertinent this study looks at aggregate demand components of consumption expenditure, investment (gross fixed capital formation, government consumption expenditure, government investment expenditure on employment level in Nigeria covering the period of 1999 to 2018.

### The Methodology/Model

This study first employs an informal test of descriptive and graphs to examine the features and co-movement of the data series. Thus, the formal test of Augmented Dickey-Fuller and Elliott-Rothenberg-Stock DF-GLS unit root test was used to determine the level of stationarity of the time series data before applying the main estimation technique. The analytical technique is the Vector Error Correction Model (VECM). For the post-test, the study applied the Serial Correlation Test, Heteroscedasticity, and Ramsey Reset Test to ensure that results obtained do not suffer from wrong the specification, non-normality, and serial correlation.

Okun's Law frequently represents the relationship between output growth and the change in the unemployment rate (Moosa, 1997). Besides, it is often used to demonstrate Keynesian unemployment. This relationship is express in equation 1:

$$\ln Y_t - \ln Y_{t-1} = -\alpha \Delta \mu + b \quad \text{Eqn. 1}$$

Where  $y$  is the GDP and  $\Delta \mu$  indicates the percentage point change in the unemployment rate. The Okun-coefficient  $\alpha$  indicates the amount of output growth necessary to reduce unemployment by 1 percentage point. However, recent data shows that Okun coefficient to be 1:4 (Samuelson & Nordhaus, 1995). Aggregate demand components comprise of consumption, investment, government spending and net export and increase in these components targets towards achieving full employment level. Falling from Yaumidin (2012) who adopts Keynes' aggregate demand model and Okun's Law, the function form of the model in equation 1 is modify and express in equation 2.

$$NUL = f(HCE, INV, GCE, GIE, ) \quad \text{Eqn. 2}$$

Note, equation 2 represent the three-sector model although, government spending disaggregate into Government Consumption Expenditure (GCE) and Government Investment Expenditure (GIE). Net export omitted from the aggregate demand model due to Nigeria's import-dependent economy, hence further study is expected to look at the asymmetry in export and import dynamics. According to Brooks (2014), a Vector Autoregressive (VAR) model should be the first step in conducting a multivariate analysis that involves investigating the relationship between variables. Given the adoption of aggregate demand model, this study incorporates the series into the VECM model and express in mathematical form in equation 3.

$$\Delta NUL_t = \alpha^{NUL} + \sum_{i=1}^K \beta_i^{NUL} \Delta HCE_{t-i} + \sum_{i=1}^K \gamma_i^{NUL} \Delta INV_{t-i} + \sum_{i=1}^K \delta_i^{NUL} \Delta GCE_{t-i} + \sum_{i=1}^K \theta_i^{NUL} \Delta GIE_{t-i} + \tau^{NUL} ECM_{t-i}^{NUL} + \varepsilon_t^{NUL} \quad \text{Eqn. 3}$$

Where; NUL= National Unemployment Level (Rate); HCE= Household Consumption Expenditure (Naira/Billion); INV= Investment (current US\$); GCE= Government Consumption Expenditure (Naira/Billion); GIE = Government Investment Expenditure (Naira/Billion). Because of a different unit of measure and to avoid the outcome of the study model rendering explosive, data used in this study were transformed into log. This study uses annual data covering 1999 to 2018 obtained from the World Bank database and Central Bank of Nigeria Statistical Bulletin.

However, the national unemployment level, which is measured in rate, is considered to see how components of aggregate demand can engender full employment level as postulated by Keynes. The variable, gross fixed capital formation is the investment on capital goods and it measures investment in a physical asset that can boost production process. Its inclusion will help to ascertain the current level of investment in physical assets and its effect on employment level and it is measured in current US\$. Government Expenditure (GEXP) consists of both consumption and investment expenditure, which is an integral part of aggregate demand components. GEXP is measure in Billion Naira. Household consumption expenditure is consumption expenditure on durable and non-durable goods, maintenance and protection, payment of factor services, and goods and services (John, 2003). HCE as an important part of aggregate demand hence according to the Organisation for Economic Co-operation and Development, (2009), it is an essential variable for economic analysis of aggregate demand.

### Preliminary Analysis

This study document some of the features and co-movement that would lead one to conclude that aggregate demand is an important determinant of employment level in Nigeria. One way to ascertain this is to establish the major changes in employment level and its similar changes emanating from aggregate demand.

**Table 1:** Descriptive Statistics

	Mean	Std. Dev.	N_Std. Dev.	Skewness	Kurtosis	Jarque-Bera
NUL	18.13	5.30	0.29	0.16	1.31	2.46(0.29)
HCE	27590.50	25206.98	0.91	0.73	1.85	2.89(0.24)
INV	1540.56	1214.49	0.79	0.85	2.45	2.67(0.26)
GCE	2795.30	2042.66	0.73	0.10	1.53	1.84(0.40)
GIE	750.03	372.59	0.50	0.61	3.08	1.25(0.53)

**Source:** Extract from Output

Table 1 holds the statistical features of the nominal variables used in this study. The results reveal an average growth of 18.13%, N27, 590 billion, and N1,540 billion for the series of NUL, HCE, and INV respectively. Similarly, it is evident from the results that the

GCE and GIE had an average growth of N2, 795 billion, N750 billion over the period of the study. For uniformity of the series given their different units of measure, the study obtains new standard deviations value, which indicates low volatility for variables of NUL, HCE, INV, GCE, and GIE exhibit moderate fluctuation. As for the distribution of the skewness, the series is roughly equal given the closeness to zero for all the series. However, the series of NUL, HCE, INV, and GCE display platykurtic distribution is given their kurtosis values of less than three while only GIE display leptokurtic distribution since the kurtosis value is slightly greater than 3. Finally, the Jarque-Bera statistic implies that the series is normally distributed given the validity of the signs of some of the series.

## Result Presentation and Discussion

**Table 2:** Summary of Unit Root Test Results

	Augmented Dickey-Fuller		Elliott-Rothenberg-Stock DF-GLS	
	Level (Constant & Trend)	1 <sup>st</sup> Diff. (Constant & Trend)	Level (Constant & Trend)	1 <sup>st</sup> Diff. (Constant & Trend)
NUL	-2.572942	-3.328075**	-.2340049	-.3542735***
HCE	-2.328673	-5.104892***	-2.589692	-5.334369***
INV	-2.054675	-6.049015***	-2.976041	-3.424743**
GCE	-0.152317	-4.171129***	-3.620333**	-4.389947***
GIE	-2.874710	-	-2.964293*	-

Notes: \*\*\*, \*\* and \* denote 1%, 5% and 10% significance levels respectively.

Source: Extract from results

The unit root test decision rule state that, the ADF statistic should be at least greater than any of the critical values at 1%, 5%, and 10% respectively. Fundamentally, the study carried out a data diagnostic test using a unit root test to ascertain the order of integration of the series. The Augmented Dickey-Fuller and Elliott-Rothenberg-Stock DF-GLS test was employ and table 2 holds that the results and variables became stationary at first difference (that is I(1). Hence, the study proceeds with the Johansen Cointegration test to test for the presence of cointegrating associations among the non-stationary series. The result is express in table 3:

**Table 3:** Johansen Cointegration Test

Null Hypothesis	Trace Statistic	0.05 Critical Value	Null Hypothesis	Max-Eigen	0.05 Critical Value
$r=0^*$	156.32	69.82	$r=0^*$	86.45	33.88
$r\leq 1^*$	69.87	47.86	$r\leq 1^*$	32.68	27.58
$r\leq 2^*$	37.18	29.79	$r\leq 2^*$	25.39	21.13
$r\leq 3$	11.79	15.49	$r\leq 3$	11.65	14.26
$r\leq 4$	0.14	3.84	$r\leq 4$	0.14	3.84

Source: Extract from results

Note:  $r$  represents the number of co integrating vectors. Both Trace statistic and Max-Eigen statistic indicates 3 and 3 co integrating equation each. \* denotes rejection of the hypothesis at the 0.05 level



The decision rule for Johansen Cointegration test holds that there should be at least one Cointegration equation revealing relationship between dependent and independent variable (s). Table 3 shows the Trace and Max-Eigen test statistics and it reveals a long-run association amongst the variables since 3 statistical value is greater than their respective critical values for the co integrating equations. Based on the stationarity outcome, the effect of aggregate demand components on the employment level is investigated via the Vector Error Correction Method in table 5 but that will come after the lag selection criteria test in table 4.

**Table 4:** VAR Lag Order Selection Criteria

Lag	LogL	LR	FPE	AIC	SC	HQ
0	41.31200	NA	1.51e-08	-3.822316	-3.573779	-3.780253
1	125.3077	114.9414*	3.38e-11*	-10.03239*	-8.541167*	-9.780013*

\* indicates lag order selected by the criterion

An optimal lag of 1 is chosen for the empirical model based on Schwarz Information Criterion, Akaike Information Criterion, Sequential Modified LR Test Statistic, Final Prediction Error and Hannan-Quinn Information Criterion.

**Table 5:** VECM Result for Long-Run

Variable	Coefficient	Std. Error	t-Statistic
C	5.423569		
lnNUL	1.000000		
lnHCE	-0.929424	0.06303	-14.7456
lnINV	-1.049308	0.05045	-20.7984
lnGCE	3.290041	0.14945	22.0141
lnGIE	-3.675106	0.14945	-27.0691
ECM	-0.178165	0.05907	-3.01615

**Source:** Extract from results

**Table 6:** VECM Result for Short-Run

Variable	Coefficient	Std. Error	t-Statistic
C	0.036311	0.01619	2.24216
ln NUL	0.207409	0.24353	0.96037
ln HCE	-0.207409	0.09639	-2.15182
ln INV	-0.436888	0.15617	-2.79744
ln GCE	0.167433	0.11626	1.44020
ln GIE	-0.373342	0.12630	-2.95607
R <sup>2</sup> = 0.521602	F-Stat = 2.998905		

**Source:** Extract from results

Tables 5 and 6 hold the VECM result for both the long-run and the short-run. The coefficient of household consumption expenditure exhibits a negative and significant effect on the national unemployment level in the long-run while the short-run exert a negative and insignificant effect. The negative sign is an indication that the current level of household consumption is not sufficient to enhance the full employment level. This outcome corroborates with the finding in Yaumidin (2012) who further accentuates that Nigeria is still an import-dependent country hence the desire to increase consumption expenditure might be limited by the cost implication of high prices of imported products. Keynes' advocacy for an increase in consumption expenditure to stimulate the economy remains a gateway to full employment level. The series of investment expenditure reveals a negative and significant influence on the unemployment level in both in the long-run and the short-run and this is contrary to the findings of Eita and Ashipala (2010). The implication is that within the study period, the level of investment is not adequate to reduce the unemployment level thus call for more investment in the direction that can stimulate growth for more employment opportunities.

The series of government consumption expenditure further shows a positive and significant impact on the unemployment level in both the long-run and short-run but the short-run impact is insignificant. Government consumption spending is supposed to provide free services to both consumers and producers and these services entered in consumers and producer's utility function, thus these expenditures enhance production function. It is important that the government increases its expenditure in this direction. The estimated value of government investment expenditure shows a negative and significant effect on the national unemployment level in both the long-run and the short-run. In Nigeria, government investment from 1999 to 2018 has witnessed an upward trajectory rising from N498.03billion to N1, 682.10 billion but its effect is still negligible given the negative sign. Importantly, the proportionality in the coefficient is a pointer that any little change in fiscal policy can stimulate economic growth.

The error correction model is negatively signed as required - estimated at 17% and insignificant. The adjusted  $R^2$  implies that 52% of the variations in unemployment account for by aggregate demand components. The F-statistics reveals the combined goodness of fit of the model.

**Table 7:** VEC Granger Causality / Block Exogeneity Wald Tests

Dependent variable: D(NUL)			
Excluded	Chi-sq	df	Prob.
D(HCE)	4.630338	1	0.0314
D(INV)	7.825658	1	0.0052
D(GCE)	2.074162	1	0.1498
D(GIE)	8.738335	1	0.0031
All	11.14099	4	0.0250

**Source:** Extract from results

Table 7 houses granger causality test. The result shows that there is causality between the series of HCE, INV, and GIE granger causes national unemployment level in Nigeria and this buttresses the significance of the VECM estimates in the long-run. However, the series of GCE exert insignificant result, which conforms to VECM in the short-run

### Conclusion

This study investigates the effect of aggregate demand on national unemployment level in Nigeria, based on the World Bank and Central Bank of Nigeria data covering the period of 1999 to 2018 and the estimation technique is based on the outcome of the stationarity test thus necessitating the use of Vector Error Correction Method. The study was hinge on Keynes aggregate demand model on unemployment level with emphases on the series of household consumption expenditure, private investment and disaggregated government spending into government consumption expenditure, government investment expenditure. The study sticks to the three-sector model over the original four-sector model in the aggregate demand model. The choice of the three-sector model is because of the dynamics in export and import that need to be evaluated using the separate asymmetric techniques to establish the relationship either negative or positive, thus the need for further study in this direction.

Therefore, in the following proposed policies, only the series that are statistically significant on the national unemployment level is considered. The negative and non-proportionality of the coefficients of household consumption expenditure is a sign of its inadequacy thus, the study suggests an increase in household consumption expenditure but that depends on the wealth or income at hand. This supports the calls for increment in Nigeria's minimum wage to meet their necessities and this increment would have a multiplier effect on various economic activities on both consumers and producers. The negative series of private investment is a pointer for more investment expenditure in physical assets that can induce production process, besides, the elasticity indicates that any slight changes in government's policies can facilitate more availability of capital goods that can enhance production and distribution of goods and services. Government

investment expenditure though revealed a positive effect but its effect has not translated to more investment opportunities for people to gain job. However, the sign and size is an indication that changes in economic policies and reorganization will create more employment opportunities for the teeming population. Summarily, aggregate demand components through government intervention and individual participation have the potentials to engender full employment but its impact depends on domestically formulated policy change in line with the economic fundamentals in addition to structural reorganization to guarantee the functionality of institutions across various sectors of the economy.

### Reference

- Ajakaiye, O., Jerome, A. T., Nabena, D., & Alaba, O. A. (2016). *Understanding the relationship between growth and unemployment in Nigeria*. UNU-WIDER, Brookings Institution.
- Barker, F. (1999). *South African labour market: critical issues for renaissance*. Pretoria: J. L. Van Schaik Publishers.
- Bernanke, B. (2003). *The jobless recovery: Global economic and investment outlook conference*. Carnegie Mellon University, Pittsburgh, Pennsylvania.
- Eita, J. H., Ashipala, J. M. (2010). Determinants of unemployment in Namibia. *International Journal of Business and Management*, 5(10).
- Harrod, R. F. (1939). An essay in dynamic theory. *Economic Journal*, 49, 14–33.
- Isengard, B. (2003). Youth unemployment: Individual risk factors and institutional determinants. a case study of Germany and the United Kingdom. *Journal Youth Studies*, 6(4), 357–376.
- John, B. (2003). *Dictionary of Economics*. Oxford University Press.
- Keynes, J. M. (1936). *The general theory of employment, interest and money*. Harcourt, Brace and Company, New York.
- Khemraj, T., Madrick, J., & Semmler, W. (2006). Okun's law and jobless growth. *Schwartz Center for Economic Policy Analysis*. 3, 1-10.
- Krugman, P. (1990). *The age of diminished expectations*. Cambridge University Press.
- Kuznets, S. (1955). Economic growth and income inequality. *American Economic Review*, 45, 1-28.

- Landmann, O. (2004). *Employment, productivity and output growth*. Employment Strategy Working Papers No. 2004/17.
- Mafiri, M. I. (2002). *Socio-economic impact of unemployment*. An unpublished dissertation in faculty of economic and management sciences at the University of Pretoria ETD.
- Meyer, D. F. (2017). An analysis of the short and long-run effects of economic growth on employment in South Africa. *International Journal of Economics and Finance Studies*, 9(1).
- Mitchell, W., & Muysken, J. (2006). *Employment is driven by aggregate demand*. Australia, Working Paper No. 06-09.
- Modigliani, F. (2000). *Europe's economic problems*. Carpe Oeconomiam Papers in Economics, 3rd Monetary and Finance Lecture, Freiburg.
- Moosa, I. (1997). A cross-country comparison of Okun's coefficient. *Journal of Comparative Economics*, 24, 335-356.
- Nabli, M. K., Jauregi, C. S. & Silva, S. J. (2007). *Job creation in a high growth environment: the Mena region*. World Bank: Middle East and North Africa Working Paper Series No.49
- O'Higgins, N. (2001). *Youth unemployment and employment policy: A global perspective*. International Labor Office, Geneva.
- Okun, A. (1970). *The political economy of prosperity*. New York: Norton.
- Palangkaraya, A., & Yong, J. (2011). Trade liberalisation, exit, and output and employment adjustments of Australian manufacturing establishments. *The World Economy*, 34, 1-22.
- Sahin, A., Tansel, A., & Berument, H. M. (2013). Output-employment relationship across sectors: along- versus short-run perspective. Forschungs institutzur Zukunft der Arbeit Institute for the Study of Labor. IZA Discussion Paper No. 7599.
- Tchemeva, P. R. (2014). *Full employment: The road not taken*. Levy Economics Institute Working Paper No. 789.
- World Bank (2008). Hashemite Kingdom of Jordan resolving Jordan's labor market paradox of concurrent economic growth and high unemployment. World Bank Report, No.39201.
- Yaumidin, U. (2012). *Aggregate demand, unemployment, and employment policies in the Indonesia's industrial sector*. Conference Paper.