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Research Article

Impact of Government Spending on Growth of National Income and Employment in India

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A B S T R A C T

This study examines the impact of government spending behavior on the growth of national income and employment in India during thirty years covering from 1990 to 2019. It found that increasing government spending has a strong positive influence on the growth of national income and a negative influence on unemployment in India while the reduction in government spending has a significant negative influence on the growth of national income and a significant positive influence on unemployment. However, the positive changes in government spending have a stronger influence on the growth of income and employment than reductions in government spending. This implies that government intervention in India is crucial for making available huge investments that could spur growth in income and the creation of employment. The study recommends increasing government spending that could accelerate economic growth and create employment opportunities. This is because private investors are not capable of making massive investments that could bring out higher growth of national income and employment. The relative share of the Defence services sector has been higher, but this sector has not shown any causal linkage with income from any of the sectors, thereby indicating that expenditure incurred on such activities has been less productive. Further, substantial expenditure on the Education sector has failed to generate income demanding adequate steps to be taken so that such activities could indeed lead to human capital formation, known to be a prerequisite for the development of an economy. The study recommends increasing government spending that could accelerate economic growth and create employment opportunities. This is because government expenditure boosts aggregate demand which in turn creates employment and higher output. Besides, private investors are seen not making massive investments that could bring out higher growth of national income and employment. Thus, there should be judicious use of government resources towards attaining the set macroeconomic goals of employment, higher income, stability, among others. The study also recommends powerful fiscal instruments such as a progressive tax system that could bring about an equitable distribution of income and wealth. These can be done through expansionary fiscal policy. Keywords: Economic growth, Fiscal Expansion, Government Spending and Unemployment.

Keywords: Income, Economy, Growth Rate, Investments, Tax

Introduction

Economic development, which refers to the process by which per capita income and economic welfare of a country increase over time are of utmost significance to all economies. It is determined by so many factors, of which the government expenditure is an important one. Government undertakes various forms of expenditure with the purpose to meet the aspirations and economic well-being of its citizens as well as ensure rapid social and economic development. It constitutes all categories of resources used for the provision of pure and merits public goods and services as well as economic services.

As far as the causal linkage between public expenditure and national income is concerned, there are broadly two theories, viz., Wagner's law and Kuznets' law. Wagner's law suggests that growth in national income causes growth in public expenditure whereas, on the other hand, Kuznets's law supports the view that growth in government expenditure causes growth in national income. Still some studies hold the view that there is no causal linkage between the two variables. This paper attempts towards (a) measurement of the speed of growth and structural changes in India's Government Final Consumption Expenditure and Income (at aggregated and disaggregated levels) and (b) an identification of the presence and nature of causal behavior between the two macro-variables. A knowledge of such behavior would expectedly help in two ways: (i) in identifying which of the two variables is the causal and which is affected and (ii) in identifying the exogeneity and endogeneity among government expenditure and national income. This would subsequently help in the development of a suitable macroeconomic simultaneous equations model for the economy involving government expenditure and income as the study variables. Besides, the assertion that government expenditure contributes positively to economic growth has become an accepted premise in most economies (Prasetyo & Zuhdi, 2013 (1)). Recently, unemployment is viewed as one of the most intractable problems facing developing countries. It has become a cankerworm that is eaten deep into the fabric of developing economies. It is referred to the condition and extent of joblessness within an economy and is measured in terms of the unemployment rate, which is the number of unemployed persons who are willing and able to work divided by the total labor force (Egbulonu & Amadi, 2016 (2)). Over the years, unemployment has increased in India. According to International Labour Organization(2019)(3), unemployment in India has increased from 6.4% in 2008 to 6.7% in 2010 and 6.9% in 2017 respectively. It has been seen as a social and economic malady. It affects the standard of living of people in the economy. To Egbulonu and Amadi (2016) (2), insecurity, insurgency, terrorism as well as militancy, kidnapping and pipeline vandalism is a result of the high rate of unemployment. According to Englama 2001 (4), the issue of persistent unemployment is now frightening because it is widening poverty, misery, social unrest, ethnic cum religious crisis, robbery, kidnappings, terrorism and other social vices. Conversely, national income has been on the rise without improvement in the level of unemployment. Hence, in an attempt to reduce unemployment, increase income and encourage employment generation, fiscal policy tool such as government spending has been used by most developing countries. It is against this background that this study examines the asymmetric impact of government spending behavior on the growth of national income and unemployment in India. This is to account for the exact impact of positive and negative changes in government spending of India on national income and unemployment. The objective of this study, therefore, is to provide a framework that will fill the existing empirical gap and assess the exact impact of negative and positive changes in government spending on national income and unemployment in India.

Literature Review

Keynes's theory asserts that increases in government spending lead to high aggregate demand and rapid growth in national income Keynes, 1936 (5). It favored government intervention to correct market failures, criticize the classical economists and argues that we are all dead in the long run (Keynes, 1936 ((5). It also rejected the idea that the economy would return to a natural state of equilibrium and envisaged economies as being constantly in flux, both contracting and expanding. Keynes advocated a countercyclical fiscal policy in which, during the boom periods, the government ought to cut spending and during periods of economic woe, the government should undertake deficit spending. Keynes categorized government spending as an exogenous variable that can generate economic growth instead of an endogenous phenomenon. It believed in the crucial role of the government to avoid depression by increasing aggregate demand and thus, switching on the economy again by the multiplier effect. Keynes' theory of the fiscal stimulus assumes that an injection of government spending eventually leads to added business activity and even more spending. The theory proposes that government spending boosts aggregate output and generates more income. A Wagnerian theory however focused on the view that an increase in national income causes more government spending (Bataineh, 2012((6); Ahmad & Loganathan, 2015(7). According to the Wagnerian approach, the share of government spending increases with growth in national income (Kumar, Webber & Fargher, 2012 (8).

Several studies have examined the relationship between government expenditure and economic growth [Kimaro,

Keong and Sea (2017 (9); Dudzevičiūtė, Šimelytė and Liučvaitienė (2017 (10); Bojanic (2013)(11); Kapunda and Topera (2013 (12); Taiwo and Abayomi (2011 (13) and Wang (2011 (14) and Beraldo, Montolio and Turati (2009 (15). These studies conclude that increasing government expenditure spurs economic growth. But Carter, Craigwell and Lowe (2013 (16); Chang, Huang and Wei 2011 (17) and Nurudeen and Usman 2010(18) have demonstrated that increasing government expenditure reduces economic growth. A similar study was carried out by Kimaro, Keong and Sea (2017 (9) using panel analysis of Sub-Saharan African low-income earners in analyzing the impact of government expenditure and efficiency on economic growth. The study showed that increasing government expenditure accelerates the economic growth of low-income countries in Sub-Saharan Africa. Holden and Sparrman (2016 (19) also attempted the effect of government purchases on unemployment in 20 OECD countries covering 1980 to 2007.

Model Specification

Keynesian aggregate demand can be written as:

$Y=C+I+G+(X-M)$ (1)

Where *Y* is the Aggregate income; *C* is the Consumption expenditure, *I* is the Investment expenditure; *G* is the government expenditure, *X* is the exports and *M* is the Imports.

Assuming that aggregate income can be represented by GDP, consumption expenditure by household final consumption expenditure, Investment expenditure by gross capital formation, government expenditure by general government final consumption expenditure and exports minus (-) imports for net trade in goods and services. But given that India is an open economy, the study incorporated foreign direct investment inflows and exchange rate as explanatory variables for the national income model. The model can be rewritten in a functional form and assuming the asymmetric effect of government spending on the growth of national income as:

$GDP_{it}= f(GSP\_POS_{it}, SGO\_NEG_{it}, HCE_{it}, GFCF\ it, TBAL_{it}, FDI_{it}, EXR_{it})$ (2)

Where GDP= Gross Domestic Product at current prices; GSP= Government spending;

HCE= Household consumption expenditure, GFCF=Gross Fixed Capital Formation;

TBAL = Trade balance; FDI= Foreign Direct Investment; and EXR = Exchange rate.

The functional model of the asymmetric effect of government spending on unemployment can be written as:

$UEM_{it}= f(GSP\_POS_{it}, SGO\_NEG_{it}, HCE_{it}, GFCF\ it, TBAL_{it}, FDI_{it}, EXR_{it})$ (3)

Where UEM= unemployment rate.

Transforming the equation (2) and equation (3), the model can be rewritten stochastically as:

$$GDP_{it}=\beta_0+\beta_1 GSP\_POS_{it}+\beta_2 GSP\_NEG_{it}+\beta_3 HCE_{it}+\beta_4 GFCF_{it}+\beta_5 TBAL_{it}+\beta_6 FDI_{it}+\beta_7 EXR_{it}+\eta_i+\nu_{it} \quad (4)$$

$$UEM_{it}=\beta_0+\beta_1 GSP\_POS_{it}+\beta_2 GSP\_NEG_{it}+\beta_3 HCE_{it}+\beta_4 GFCF_{it}+\beta_5 TBAL_{it}+\beta_6 FDI_{it}+\beta_7 EXR_{it}+\eta_i+\nu_{it} \quad (5)$$

Where

In=Natural Logarithm.

Following dynamic linear panel model in an autoregressive form such as:

$y_{it}= \alpha y_{i,t-1}+\beta x_{it}+U_{it}$ (6)

$U_{it}=\eta_i+\nu_{it}$ (7)

Applying the above typical linear dynamic panel model to equation (4) in assessing the asymmetric impact of government spending behavior on the growth of national income in India, the model is re-stated as:

$$GDP_{it}=\beta_0+\delta GDP_{i,t-1}+\beta_1 GSP\_POS_{it}+\beta_2 GSP\_NEG_{it}+\beta_3 HCE_{it}+\beta_4 GFCF_{it}+\beta_5 TBAL_{it}+\beta_6 FDI_{it}+\beta_7 EXR_{it}+\eta_i+\nu_{it} \quad (8)$$

While applying the above typical linear dynamic panel model to equation (5) in assessing the asymmetric impact of government spending behavior on unemployment in India, the model is re-stated as:

$$UEM_{it}=\beta_0+\delta GDP_{i,t-1}+\beta_1 GSP\_POS_{it}+\beta_2 GSP\_NEG_{it}+\beta_3 HCE_{it}+\beta_4 GFCF_{it}+\beta_5 TBAL_{it}+\beta_6 FDI_{it}+\beta_7 EXR_{it}+\eta_i+\nu_{it} \quad (9)$$

Where

β_0 = Intercept

β_1-β_7 = Parameter Coefficients to be estimated

η_1 = Individual Specific Effect or Fixed Effect

ν_{it} = An idiosyncratic error

The error correction version of the equation (7) yields the following:

$$\Delta GDP_{it}=\alpha c_{i,t-1}+\sum_{j=1}^{p}\delta_i \Delta GDP_{i,t-j}+\sum_{j=0}^{q}\beta_{1i}\Delta GSP\_POS_{i,t-j}+\sum_{j=0}^{q}\beta_{2i}\Delta GSP\_NEG_{i,t-j}+\sum_{j=0}^{q}\beta_{3i}\Delta HCE_{i,t-j}+\sum_{j=0}^{q}\beta_{4i}\Delta GFCF_{i,t-j}+\sum_{j=0}^{q}\beta_{5i}\Delta TBAL_{i,t-j}+\sum_{j=0}^{q}\alpha_{6i}\Delta FDI_{i,t-j}+\sum_{j=0}^{q}\alpha_{7i}\Delta EXR_{i,t-j}+\eta_i+\nu_{it}$$

And the error correction version of the equation (8) yields the following:

$$\Delta UEM_{it}=\alpha c_{i,t-1}+\sum_{j=1}^{p}\delta_i \Delta GDP_{i,t-j}+\sum_{j=0}^{q}\beta_{1i}\Delta GSP\_POS_{i,t-j}+\sum_{j=0}^{q}\beta_{2i}\Delta GSP\_NEG_{i,t-j}+\sum_{j=0}^{q}\beta_{3i}\Delta HCE_{i,t-j}+\sum_{j=0}^{q}\beta_{4i}\Delta GFCF_{i,t-j}$$

$$+\sum_{j=0}^{q}\beta_{3i}\Delta TBAL_{i,t-j}+\sum_{j=0}^{q}\alpha_{6i}\Delta FDI_{i,t-j}+\sum_{j=0}^{q}\alpha_{7i}\Delta EXR_{i,t-j}+\eta_i+v_{it} \quad (10)$$

Where the error correction term ($ec_{i,t-1}$) for growth of national income model is stated as:

$$ec_{i,t-1}=\theta_i[GDP_{i,t-j}-\alpha_{1i}GSP\_POS_{it}-\alpha_{2i}GSP\_NEG_{it}-\alpha_{3i}HCE_{it}$$
$$-\alpha_{4i}GFCF_{it}-\alpha_{5i}TBAL_{it}-\alpha_{6i}FDI_{it}-\alpha_{7i}EXR_{it}] \quad (11)$$

While the error correction term ($ec_{i,t-1}$) for the unemployment model is stated as:

$$ec_{i,t-1}=\theta_i[UEM_{i,t-j}-\alpha_{1i}GSP\_POS_{it}-\alpha_{2i}GSP\_NEG_{it}$$
$$-\alpha_{3i}HCE_{it}-\alpha_{4i}GFCF_{it}-\alpha_{5i}TBAL_{it}-\alpha_{6i}FDI_{it}-\alpha_{7i}EXR_{it}] \quad (12)$$

θ_i=-(1-δ_i), group-specific speed of adjustment coefficient (expected that $\theta_i \prec 0$)

GDP at current prices is the sum of gross value added by all resident producers in the economy plus any product taxes and minus any subsidies not included in the value of the products. The GDP data were sourced from the Government of India. General government final consumption expenditure (formerly general government consumption) includes all government current expenditures for purchases of goods and services (including compensation of employees) and most expenditures on national defense and security but excludes government military expenditures that are part of government capital formation. The data for government expenditure are sourced from the Government of India.

Household final consumption expenditure is the market value of all goods and services, including durable products (such as cars, washing machines and home computers), purchased by households. It excludes purchases of dwellings but includes imputed rent for owner-occupied dwellings, payments and fees to governments to obtain permits and licenses. Gross capital formation (formerly gross domestic investment) consists of outlays on additions to the fixed assets of the economy plus net changes in the level of inventories. The trade balance is also known as net trade in goods and services is derived by offsetting imports of goods and services against exports of goods and services. The exports and imports of goods and services comprise all transactions involving a change of ownership of goods and services between residents of one country and the rest of the world. Unemployment refers to the share of the labor force that is without work but available for and seeking employment. This is measured in percentage.

Official exchange rate refers to the exchange rate determined by national authorities or to the rate determined in the legally sanctioned exchange market. The exchange rate is measured as local currency units and the data were sourced from International Monetary Fund. Foreign direct investment refers to direct investment equity flows in the reporting economy. It is the sum of equity capital, reinvestment of earnings and other capital.

Database and Methodology

The data were compiled in the form of time series (at both the aggregated and disaggregated level) for thirty years from 1990-91 to 2019-20 on Net Domestic Product and Government Final Consumption Expenditure. Compilation of data was made primarily from various issues of National Accounts Statistics of the Central Statistical Office, Government of India in respect of ten 10 major sectors of Government Final Consumption Expenditure [viz., General Public Services (GPS); Defence (DFS), Education (EDN), Health (HLT); Social Security and Welfare Services (SWS), Housing and Other Community Amenities (HCA), Cultural, Recreational and Religious Services (CRS); Economic Services (ECS); Other Services (OTS); Aggregated Government Final Consumption Expenditure (ACE)] and six major sectors of Net Domestic Income (viz., Primary (PRM), Secondary (SEC), Tertiary-I (TR1), Tertiary-II (TR2), Aggregated Tertiary (TRT) and Aggregated Net Domestic Product (ADP)).

The compound growth rate in government final consumption expenditure during different periods was estimated by fitting an exponential function of the type: $G_t = a\ b^t\ e^{ut}$, where a and b are unknown constants estimated through the OLS technique as applied to the linearised version of the above function and u_t stands for the disturbance term at time t. Compound growth rate (r) was then computed as r (%) = (b-1).100 To understand the nature of structural changes, relative shares of government expenditure in different sectors (G_{it}) were computed as a percentage of total expenditure (G_t) as $RS_{it}=(G_{it}/G_t).100$. For assessing the speed of structural changes, two well-known indexes were made use of. These were: The index q due to Moore (1978) (20), which is nothing but the angle between vectors of the relative share of PFCE in different sectors during the base period (i.e, W_{0i}) and current period (i.e, W_{1i}) and the index based on entropy measure {(Sethi,1997; 2001;2003)(21, 22,23): Sethi &Raikhy (1992) (24)}. Values of these indexes were computed for twelve periods/sub-periods. A choice among the two indexes was made through their CV values. For estimating the long-term behavioral growth paths traced by each of the components of government expenditure, an attempt was made to search out the curves of the best-fit from amongst the following seven functional forms :

Simple Linear (SLR) $Yt = a + bt + ut$	(1)
Quadratic (QUD) $Yt = a + bt + ct2 + ut$	(2)
Cubic (CUB) $Yt = a + bt + ct2 + dt3 + ut$	(3)
Log Linear (LLR) ln $Yt = a + bt + ut$	(4)
Log Quadratic (LQD) ln $Yt = a + bt + ct2 + ut$	(5)
Log Cubic (LCB) ln $Yt = a + bt + ct2 + dt3 + ut$	(6)
Geometric (GEO) ln $Yt = a + blnt + ut$	(7)

Estimation of the functional forms (i), (ii) and (iii) was carried out through the OLS technique. The functional forms (iv) to (vii) were estimated through the usage of logarithmic

transformation coupled with the OLS technique. For a given component, the line of the best fit was identified based on the j-coefficient of predictability, Residual Mean Square (RMS) and the Durbin-Watson (D-W) statistic. The goodness of fit of each of the estimated functions was adjudged based on relatively higher values of the - coefficient, a relatively low value of RMS and a value of D-W statistic closest to two (Sethi, 1997)(21). In case of the conflicting situations, the functional form associated with the lowest value of RMS was considered as the curve of the best fit. With the help of the best-fit functional form, relative growth rates (RGR_t) in different sectors of government final consumption expenditure were computed as $RGR_t = t/G_t$, where t represents the time derivative of G_t - Such growth rates were computed at different points in time and were then used to examine various alternative hypotheses regarding the behavioral growth paths traced by different components of government expenditure. Each one of the aforementioned computations was also made similarly in respect of the major aggregates of net domestic product. For examining the causal relationship between government expenditure and domestic products, Granger's causality analysis (1969 (25) was performed. As per Granger's causality theorem, a time-series $\{Y_t\}$ is said to be caused by a time-series $\{X_t\}$, if current values of Y can be better predicted by past values of X than by the past value of Y alone. In other words, if forecasts of variable Y using both the lagged values of Y and the lagged values of some other variable X are superior to the forecasts obtained by using past values of Y alone, then X is said to Granger cause Y. In the same way, if past values of Y improve the forecasts of X in the presence of past values of X, then Y is said to Granger cause X.

Estimation Procedure

This study used Dynamic Panel Data Models which have the following techniques or estimators: Generalized Method of Moments (GMM) (either First Difference GMM or System GMM, that is; the Arellano-Bond estimator and the Arellano-Bover/Blundell-Bond estimator); Mean Group (MG); Pooled Mean Group (PMG); and Dynamic Fixed Effects (DFE). But since the number of time series for the study is relatively larger than cross-sections (T > N), non-stationary heterogeneous panel models are preferred where Pooled Mean Group (PMG) estimator and Mean Group (MG) estimator are considered. Hence, the PMG estimator constrains the long-run coefficients to be the same across countries and allows only the short-run coefficients to vary while the MG estimator estimates separate regressions for each country and computes averages of the country-specific coefficients, which provides consistent estimates of the long-run coefficients (that is, it allows for all coefficients to vary and be heterogeneous in the long-run and short-run). The Hausman test was therefore used to decide whether PMG or MG estimator is appropriate for the study. The study correlation analysis to show whether regressors have perfect or linearly exact representations of one another to avoid multicollinearity; panel unit root tests to ascertain whether any variable is integrated of order 2 or not. The desired level of integration of the variables is being stationary at level, I(0) or integrated of order one, I (1). The study used IM, Pesaran and Shin (IPS) panel unit root test. The study assumed long-run homogeneity and tested the null hypothesis of homogeneity through a Hausman-type test to compare between the Mean Group and the Pooled Mean Group (PMG) estimators. The decision rule is: to reject the null hypothesis if the probability value is less than 0.05. The null hypothesis is that MG and PMG estimates are not significantly different or PMG more efficient. Therefore, the outcome of the Hausman (1978)(23) test determines which estimator is most preferred.

Findings/ Result

Growth in Government Expenditure and Income

As regards the rate of growth of the major sector of government expenditure, the aggregated government expenditure has increased at a fairly high rate. The Education (EDN) sector has recorded the fastest rate of growth followed by the Social Security and Welfare Services (SWS) sector (Table 1), which may be viewed as a welcome sign from the point of view of human capital formation. As far as the impact of liberalization regime is concerned, six sectors (viz., General Public Services; Defence; Social Security and Welfare Services; Cultural, Recreational and Religious Services; Economic Services; and Aggregated Government Final Consumption Expenditure) were favorably affected whereas the rest of the four (viz., Education; Health; Housing and Other Community Amenities; and Other Services) have been adversely affected. Thus the liberalization policy has induced a mixed impact on the growth of government expenditure. In respect of Net Domestic Product, the fastest growth rate was experienced by Tertiary-I sector followed by Aggregated Tertiary sector. The growth rate of the Primary sector had been the slowest during the entire study span. As regards the impact of the liberalization regime, all the sectors of net domestic product were favorably affected by the regime.

Structural Change in Expenditure and Income

The nature of structural changes, as assessed based on relative shares (Table 2), indicate that in respect of government final consumption expenditure, the Education sector has improved its relative share significantly. The relative share of the Defence Services sector has declined but has remained to be the highest one, indicating thereby, that the Indian government has to spend a considerably large chunk of money on such activities which are otherwise less-productive. In respect of net domestic product, the

relative share of Primary sector has declined and that of Aggregated Tertiary sector has increased. Such a pattern may not be a conducive one for the economy. The decline in the Primary sector's share should preferably have been absorbed by the Secondary sector. But, the actual realized picture has been grossly different from what is ideally required. This might be taken to imply that, with the adoption of liberalization policy, the Secondary sector, in general and the Industrial/Manufacturing sector, in particular, have undergone a serious setback. To assess the speed of structural changes in quantitative terms, two indexes (q) and (x) were computed, of which the latter one was observed to be better one from the point of view of its being more sensitive to such changes. As per this index (i.e. x), both the variables have undergone considerable structural transformations, but the speed of such transformations in respect of government expenditure has been more than doubled that of domestic products (Table 3).

Table 1.Rates of Growth (r, in %) in Government Expenditure and Income (at Current Prices)

Period Sectors	1990-91 to 1999-2000	2000-01 to 2009-2010	2010-11 to 2019-20	1990-91 to 2004-05	2004-05 to 2019-20	1990-91 to 2019-20	RC**
Government Expenditure							
GPS	12.50 (0.988)*	16.55 (0.998)	15.54 (0.983)	13.42 (0.989)	15.98 (0.993)	15.23 (0.992)	19.08
DFS	11.38 (0.970)	17.20 (0.969)	14.01 (0.990)	12.17 (0.986)	13.56 (0.990)	14.05 (0.995)	11.42
EDN	16.40 (0.995)	18.01 (0.994)	16.96 (0.982)	17.46 (0.994)	16.94 (0.990)	17.48 (0.996)	-2.98
HLT	16.53 (0.998)	16.09 (0.996)	15.15 (0.979)	17.00 (0.995)	14.41 (0.985)	15.75 (0.994)	-15.23
SWS	14.24 (0.977)	16.79 (0.950)	16.20 (0.992)	17.25 (0.946)	17.83 (0.995)	17.25 (0.997)	3.36
HCA	15.23 (0.936)	18.86 (0.975)	11.36 (0.938)	16.48 (0.969)	14.47 (0.959)	16.44 (0.955)	-12.20
CRS	12.44 (0.940)	17.34 (0.976)	13.40 (0.929)	13.30 (0.950)	13.66 (0.960)	14.05 (0.981)	2.71
ECS	15.53 (0.990)	15.03 (0.996)	21.12 (0.990)	15.92 (0.996)	18.14 (0.978)	16.47 (0.966)	13.94
OTS	18.00 (0.679)	-4.09 (0.188)	12.63 (0.607)	10.64 (0.206)	10.46 (0.741)	5.81 (0.570)	-1.69
ACE	13.30 (0.991)	16.60 (0.997)	16.03 (0.988)	14.08 (0.995)	15.53 (0.992)	15.29 (0.994)	10.30
Income							
PRM	9.37 (0.939)	11.77 (0.978)	14.25 (0.974)	10.54 (0.975)	14.65 (0.987)	12.44 (0.983)	38.99
SEC	13.59 (0.996)	15.30 (0.993)	14.50 (0.978)	13.76 (0.998)	15.20 (0.987)	14.59 (0.995)	10.46
TR1	15.20 (0.986)	16.17 (0.998)	17.04 (0.992)	15.67 (0.996)	17.01 (0.996)	16.31 (0.997)	8.55
TR2	11.54 (0.994)	14.50 (0.997)	20.06 (0.992)	11.94 (0.997)	18.86 (0.996)	15.14 (0.953)	57.96
TRT	13.06 (0.991)	15.31 (0.998)	18.62 (0.995)	13.55 (0.996)	17.99 (0.998)	15.65 (0.981)	32.77
ADP	11.53 (0.986)	13.95 (0.993)	16.21 (0.989)	12.28 (0.992)	16.19 (0.995)	14. 16 (0.987)	31.84

Table 2.Relative Shares of Government Expenditure and Net Domestic Product in Major Sectors (at Current Prices)

Year/Sector	1990	1995	2000	2005	2010	2015	2020
Government Expenditure							
GPS	24.63	23.19	22.48	22.19	23.01	23.40	24.82
DFS	39.16	40.63	35.56	35.78	34.30	30.86	29.64
EDN	9.99	10.22	12.66	14.69	15.42	15.30	16.99
HLT	5.28	5.82	6.94	7.21	6.81	6.21	6.35
SWS	2.70	2.28	2.58	2.72	3.46	3.57	3.30
HCA	1.53	1.78	1.65	2.20	2.47	2.14	1.88
CRS	1.02	0.87	0.90	0.83	1.02	0.74	0.58
ECS	13.78	12.66	15.07	13.64	13.18	17.33	15.93
OTS	1.91	2.55	2.16	0.74	0.33	0.45	0.51

ACE	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Net Domestic Product							
PRM	47.97	43.58	41.30	37.15	34.71	31.94	28.43
SEC	19.86	21.04	23.00	24.16	25.51	23.76	21.82
TR1	12.43	15.29	16.35	19.30	20.03	20.36	21.93
TR2	19.74	20.09	19.35	19.39	19.75	23.90	27.82
TRT	32.17	35.38	35.70	38.69	39.78	44.30	49.75
ADP	100.00	100.00	100.00	100.00	100.00	100.00	100.00

Table 3.Indices of Structural Changes in Government Final Consumption Expenditure (GFCE) and Net Domestic Product (NDP) in India

Indices/Period	GFCE		NDP		ISI *
	θ	ζ	θ	ζ	
1990-91 to 1995-96	3.34	5.61	5.81	1.39	4.03
1995-96 to 2000-01	5.81	5.51	3.79	1.62	3.40
1990-91 to 2000-01	5.27	5.72	9.33	2.79	2.05
2000-01 to 2005-06	3.43	9.07	6.85	2.64	3.43
2005-06 to 2010-11	2.61	6.30	3.63	1.52	4.14
2000-01 to 2010-11	4.86	10.61	9.68	4.72	2.25
2010-11 to 2015-16	6.42	11.93	6.11	2.77	4.31
2015-16 to 2019-20	5.90	2.79	6.70	1.21	2.30
2010-11 to 2019-20	11.60	19.78	10.30	4.47	4.42
1990-91 to 2004-05	8.78	16.32	14.02	6.26	2.61
2004-05 to 2019-20	11.50	20.99	12.70	6.29	3.34
1990-91 to 2019-20	16.80	30.79	23.30	13.37	2.30
C.V.(%)	58.70	68.73	58.44	84.12	
R	0.93**		0.97**		

Note: *The index of Structural Imbalance (ISI) was constructed as ISI = ξGFCE /ξ NDP, Correlation coefficient (r) between the two indexes (q and x) was statistically significant at p = 0.

The behavioral growth paths traced by various components of India's government final consumption expenditure and net domestic product were observed to be non-linear, in general. In a majority of the components, the growth paths were either ordinary cubic or cubic on a logarithmic scale. As per the relative growth rates (Table 6), computed from the best-fit paths (Table 4), most of the components of government final consumption expenditure portrayed an inverted U-pattern. On the other hand, an accelerating growth path was observed to have been experienced by a majority of the components of net domestic product (Table 5 and Table 6), with the Secondary sector as the exceptional case. We may, thus, say that the policy of liberalization, which was initiated broadly during 1984-85, had a suppressive impact on government expenditure. This might be due to a curtailment of the public sector by way of privatization and disinvestment measures and such measures have to lead the economy to overall efficiency resulting in accelerated growth in income.

Correlation Result

The result of the correlation analysis as obtained by the author from STATA 15 Output is presented in Table 5. The results of the correlation test in Table 5, imply that all the regressors are not linearly dependent on one another or exact and hence there is the absence of multicollinearity in the model.

Panel Unit Root Tests Result

The results of panel unit root tests are presented in Table 6.

The result in Table 6, shows the panel unit root tests results. The results indicate that all the panels contain unit roots at

levels. However, the variables became integrated of order one after the first difference. Thus, the variables were not integrated of order higher than one thereby satisfying the conditions for the application of panel ARDL or non-stationary heterogeneous panel models.

Impact of Government Spending Behaviour on Growth of National Income

The study employed Panel ARDL and the results are presented in Table 7. If the probability value of the chi-square of the Hausman test is less than 0.05, we reject the null hypothesis (Ho: difference in coefficients not systematic) and conclude that the difference in coefficients is systematic and preferably, use the estimates of MG estimator, otherwise, PMG estimates would be preferred.

The results in Table 7, showed the chi-square value of 4.24 with its probability value of 0.7520 which is greater than 0.05 (at a 5% level of observed significance). Therefore, we do not reject the null hypothesis and conclude that the PMG estimator is preferred over the MG estimator. The results of long-run estimates are presented in Table 8. This means that Pooled Mean Group (PMG) constrains the long-run coefficients to be the same across countries (cross-sections) and allows only the short-run coefficients to vary due to short-run policy changes and structures.

Table 4.Estimates of Parameters of the Best-Fit Equation for Government Expenditure in Major Sectors

Sector	Equation of best fit	Parameters of the best-fit equation	Phi	RMS	D-W statistic
GPS	LCB	a=0.987, b=1.404E-02, c=4.193E-04, d=-6.698E-06	0.999	5.049	1.060
DFS	LCB	a = 1.001, b=1.129E-02 c=5.173E-04, d=-1.035E-05	0.995	1.485	0.767
EDN	LCB	a=0.964, b= 2.571E-02 c=1.963E-04, d=-4.408E-06	0.999	7.126	0.811
HLT	QUD	a=0.966, b=3.220, c=-1.157	0.999	8.733	0.733
SWS	LCB	a=0.945, b=2.539E-02 c=7.346E-04, d=-1.443E-05	0.995	5.108	0.958
HCA	CUB	a=1.320, b= 2.782E-02, c=-7.118E-03, d=2.704E-03	0.988	5.730	1.601
CRS	LCB	a=0.958, b=3.131E-02, c=5.592E-04, d=-1.2 53E-05	0.989	1.415	1.707
ECS	LCB	a=0.949, b=2.718 E-02 c=-3.594E-04, d=1.061E-05	0.998	1.064	1.280
OTS	CUB	a=-0.246, b=0.773 c=-5.914E-02, d=1.437E-03	0.715	1.348	1.821
ACE	LCB	a=0.987, b=1.398E-02 c=2.187E-04, d=-3.618E-06	0.999	3. 294	0.891

Table 5.Correlation Test Results

	GDP	GSP	HCE	GFCF	TBAL	FDI	EXR	UEM
GDP	1							
GSP	0.8952	1						
HCE	0.7711	0.838	1					
GFCF	0.6714	0.6122	0.5925	1				
TBAL	-0.0152	-0.0492	-0.1171	0.0059	1			
FDI	0.7354	0.6357	0.7284	0.4739	-0.0738	1		
EXR	-0.0503	-0.0592	-0.0392	-0.0387	-0.0134	-0.0188	1	
UEM	0.1852	0.2804	0.1441	0.1550	0.1373	0.0579	-0.1273	1

Table 6.Stationarity Test Result

Variables	Im, Peseran and Shin (IPS)			Decision
	W-t-bar Statistic	Probability Value	Order	Remark
GDP	14.8423	1.0000	1 (1)	Not Stationary
D.GDP	-18.4662	0.0000*		Stationary
GSP	10.4260	1.0000	1 (1)	Stationary
D.GSP	-15.0927	0.0000*		Stationary
HCE	12.6151	1.0000	1 (1)	Not Stationary
D.HCE	-16.2025	0.0000*		Stationary
GFCF	8.2481	1.0000	1 (1)	Not Stationary
D.GFCF	-17.8993	0.0000*		Stationary
TBAL	1.6054	0.9458	1 (1)	Stationary
D.TBAL	-19.0151	0.0000*		Stationary
FDI	0.7819	0.7829	1 (1)	Not Stationary
D.FDI	-25.7833	0.0000*		Stationary
EXR	12.0470	1.0000	1 (1)	Not Stationary
D.EXR	-15.8265	0.0000*		Stationary
UEM	0.3235	0.6268	1 (1)	Not Stationary
D.UEM	-14.2024	0.0000*		Stationary

Source: Authors' Computation

Table 7.Hausman Test Results for National Income Model

	(b)	(B)	(b-B)	Sqrt(diag(V_b-V_B))
Variables	**mg**	**pmg**	**Difference**	**S.E**
GSP_POS	-669.1206	1.038473	-700.1591	1437.51
GSP_NEG	1.579347	-0.9196451	2.4989921	7.11125
HCE	22.1855	0.9780268	21.20747	35.7696
GFCF	-1.907433	0.9910314	-2.898465	3.83489
TBAL	0.701843	0.9637353	-0.2618709	2.5271
FDI	5.066443	0.2279045	4.838538	7.25831
EXR	-3.411357	0.0002503	-3.411607	7.18233
Chi-square = 4.24				
Prob. = 0.7520				

The result of the PMG estimator shows that increasing government spending has a significant positive influence on the growth of national income in the long run by 1.03847 at a 5% level of observed significance. This implies that an increase in government spending leads to 1.03847 increases in the growth of national income in India. On the other hand, a reduction in government spending leads to a 0.91965 reduction in the growth of national income. This explains the asymmetric impact of government spending behavior on the growth of income in India. This implies that increasing government spending is more beneficial to the growth of developing economies like India than the fiscal policy of cutting government spending. Other estimates such as household consumption expenditure, gross fixed capital formation, trade balance and foreign direct investment are theoretically plausible and statistically significant at a 5% level of significance. The estimated coefficient of exchange rate also has a positive influence on the growth of national income in India. This implies that an increase in household consumption expenditure and gross fixed capital formation, trade balance surplus, increased foreign direct investment inflows and exchange

rate depreciation have a strong positive influence on the growth in the long run. Mixed-effects (positive and negative impact) of government spending on national income were revealed in the short-run due to differences in short-term and medium-term policies. However, the study revealed a significant speed of adjustment to long-run equilibrium in case of initial distortions.

Impact of Government Spending Behaviour on Unemployment

The study employed Panel ARDL and the results of the Hausman test to assess the impact of government spending behavior on unemployment. If the probability value of the chi-square of the Hausman test is less than 0.05, we reject the null hypothesis (Ho: difference in coefficients not systematic) and conclude that the difference in coefficients is systematic and preferably, use the estimates of MG estimator, otherwise, PMG estimates would be preferred.

The result of the PMG estimator shows that increasing government spending has a significant negative influence on unemployment in the long run by 0.285 at a 5% level of observed significance. This implies that an increase in government spending leads to a 0.285 reduction in the level of unemployment. On the other hand, a reduction in government spending leads to 0.475 increases in the level of unemployment. This explains the asymmetric impact of government spending behavior on unemployment. This implies that increasing government spending improves the employment situation of developing economies like India than the reduction in government spending. Other estimates such as household consumption expenditure, gross fixed capital formation, foreign direct investment and exchange rate are theoretically plausible and statistically significant at a 5% level of significance. There are also mixed effects (positive and negative impact) of government spending on unemployment in the short-run due to differences in short-term and medium-term policies. The positive influence of the exchange rate on unemployment implies that exchange rate depreciation exposed firms and individuals to excessive costs that retards their production level thereby increasing the level of unemployment. The study also revealed high convergence speed towards long-run equilibrium in case of initial distortions.

Causality Behaviour

Trend stationarity was introduced in each of the time series and the causality analysis was then performed in respect of each of the aforementioned ten major aggregates of government final consumption expenditure (taken on one hand) and each of the six major aggregates of net domestic product (taken on the other). To save space, the computations have been presented only in respect of aggregated GFCE versus different aggregates of NDP.

As regards causal behavior between Aggregated Government Final Consumption Expenditure and Aggregated Income, variance ratio (F) for the value of R2 turned out to be highly significant meaning, thereby, that the estimated equation was fairly suitable for explaining variability in the time-series information. Values of Box-Pierce (B-P) and Ljung- Box (L-B) statistics turned out to be non-significant indicating, thereby that the residuals obtained from the estimated equation were white-noise in nature. On imposing the restriction (i.e., by discarding the current and past values of X variable, thereby regressing the current value of Yt only upon its past values), the values of R2 and R2 were slashed down. As a result, the value of R2 underwent a reduction (nearly 7.7 percent). In other words, on shifting from restricted to unrestricted version, the forecasting power of the variable Yt got an impulse through 7.7 percent. However, as per the variance ratio test, the impulse of such a magnitude was non-significant. This might be taken to imply that current and lagged values of the X variable have failed to improve the forecasting ability of the Y variable significantly. In other words, the aggregated net domestic product has failed to act as a causal variable in In respect of each of possible combinations, broadly two types of relationships were estimated. These were: (a) Unrestricted [wherein Yt was related with current and past values of Xt and past values of Yt] and (b) Restricted [wherein Yt was related with its past values alone]. The relationships were estimated by taking lag lengths (p and q) for both X and Y variables to be equal to 2.

Table 8.Long-run Estimates of National Income Model

GDP	Coefficient	Std. Err.	z	P>|z|
GSP_POS	1.03847	0.047393	21.91	0.000*
GSP_NEG	-0.91965	0.078515	-11.71	0.000*
HCE	0.97803	0.008863	110.35	0.000*
GFCF	0.99103	0.020663	47.96	0.000*
TBAL	0.96374	0.270757	35.59	0.000*
FDI	0.2279	0.053773	4.24	0.000*
EXR	0.00025	0.000068	3.68	0.000*

Table 9.Long-run Estimates of National Income Model

Sector	Equation	Parameters of the best-fit equation	Phi	RMS	D-W statistic
PRM	CUB	a = 0.534, b = 0.346c = -3.618E-02, d = 1.835E-03	0.996	0.247	1.404
SEC	LCB	a = 0.989, b = 1.231E-02 c = 1.789 E-04, d = - 2.971E-06	0.999	1.934	1.043
TRI	LCB	a = 0.980, b = 1.653E-02 c = 4.420E-05, d = 4.295E-08	0.999	2.713	1.004
TR2	LCB	a = 0.992, b = 1.060E-02c = 8.738E-05, d = 2.979E-06	0.998	3.177	1.007
TRT	LCB	a = 0.988, b = 1.193E-02 c = 8.349E-05, d =1.153E-06	0.999	1.745	0.809
ADP	CUB	a = -0.373, b = 0.807 c = -0.086, d = 3.601E-03	0.999	0.226	0.846

Table 10.Temporal Changes in Relative Growth Rates (RGR) in Major Components of Government Expenditure and Net Domestic Product

Year/Sector	1990-91	1995-96	2000-01	2005-06	2010-11	2015-16	2019-20	C.R*
Government expenditure								
GPS	1.49	1.84	2.08	2.23	2.28	2.23	2.11	20.95
DFS	1.23	1.64	1.89	1.99	1.93	1.72	1.44	23.60
EDN	2.61	2.76	2.84	2.86	2.81	2.70	2.56	5.53
HLT	-28.06	-49.19	43.60	22.41	14.54	10.71	8.83	1659.92
SWS	2.68	3.26	3.63	3.78	3.71	3.43	3.05	17.03
HCA	1.61	12.91	19.54	17.03	13.89	11.49	10.04	84.77
CRS	3.24	3.67	3.91	3.96	3.82	3.50	3.10	12.18
ECS	2.65	2.40	2.31	2.38	2.61	3.00	3.43	19.51
OTS	140.47	8.50	-0.21	-0.54	5.92	11.92	12.96	100.77
ACE	1.44	1.62	1.75	1.82	1.84	1.80	1.73	12.19
Net domestic product								
PRM	32.97	6.45	8.99	13.83	14.20	12.62	11.22	67.27
SEC	1.27	1.41	1.52	1.58	1.59	1.56	1.50	11.19
TR1	1.66	1.71	1.75	1.80	1.84	1.89	1.93	7.52
TR2	1.08	1.20	1.36	1.57	1.82	2.12	2.39	37.75
TRT	1.21	1.31	1.42	1.55	1.70	1.86	2.01	24.84
ADP	0.91	1.04	1.17	1.28	1.38	1.47	1.54	25.71

Table 11.Results on causal Linkage in Respect of Different Combinations of Government final Consumption Expenditure and Net Domestic Product

Consumption Expenditure and Net Domestic Product										
Effect (Y) L-B	Cause (X)	Form	R2 (%)	R2 (%)	F-ratio for R2	D.F.	D-W	B-P	L-B	No. of Iterations
GCE_{ACE}	NDP_{ADP}	UNR	54.88	44.63	5.352**	5,22	6.322	8.646		45
		RST	47.13	42.90	11.142**	2,25	6.427	8.734		3
		IMP	7.75	1.73	1.260NS	3,22				

NDP_{ADP}	GCE_{ACE}	UNR	46.34	34.15	3.800*	5,22	1.902	6.514		1
		RST	38.48	33.56	7.820**	2,25	1.887	9.530		155
		IMP	7.86	0.59	1.074 NS	3,22				
GCE_{ACE}	NDP_{PRM}	UNR	58.25	48.77	6.140**	5,22	1.710	8.012	11.264	3
		RST	47.13	42.90	11.142*	2.25	1.366	6.427	8.734	1
		IMP	11.12	5.87	1.954 NS	3,22				
NDP_{PRM}	GCE_{ACE}	UNR	58.25	48.77	6.140**	5,22	1.710	8.012	11.264	3
		RST	47.13	42.90	11.142*	2,25	1.366	6.427		1
		IMP	11.12	5.87	1.954 NS	3,22				
GCE_{ACE}	NDP_{SEC}	UNR	54.15	43.72	5.196**	5,22	1.330	6.687	8.768	1
		RST	47.13	42.90	11.142**	2,25	1.366	6.427	8734	3
		IMP	7.02	0.82	1.122 NS	3,22				
NDP_{SEC}	GCE_{ACE}	UNR	38.74	24.82	2.783*	5,22	2.073	9.422	13.385	1
		RST	27.15	21.32	4.659*	2,25	2.016	4.719	6.860	3
		IMP	11.59	3.5	1.388NS	3,22				
GCE_{ACE}	NDP_{TRI}	UNR	63.64	55.38	7.70**	5,22	1.337	9.535	12.573	1
		RST	47.13	42.90	11.142**	3,22	1.366	6.42	8.734	3
		IMP	16.51	12.48						
NDP_{TRI}	GCE_{ACE}	UNR	63.80	55.58	7.756**	5,22	2.496	7.966	10.653	235
		RST	57.61	54.22	16.99**	2,25	2.234	6.116	7.986	164
		IMP	6.19	1.36	1.254 NS	3,22				
GCE_{ACE}	NDP_{TR2}	UNR	58.14	48.62	6.111**	5, 22	9.327	9.327	12.242	107
		RST	47.13	42.90	11.142**	2, 25	1.366	6.427	8.734	3
		IMP								

The reason behind taking such a value of lag length was that from the parsimonious point of view, the number was neither very small (to capture the past effect of the variables nicely) nor was very large (to avoid complexity along with the loss in degrees of freedom associated with the relationship). For both the relationships, coefficient of multiple determination (R2), adjusted coefficient of multiple determination (R2), variance ratio (F) for R2, variance ratio for improvement in R2, Durbin-Watson (D-W) statistic, Box-Pierce (B-P) statistic and Ljung-Box (L-B) statistics were also worked out respect of aggregated government final consumption expenditure. Also, there were no indications of reverse causality between the two variables. Thus the time series on the two variables might be viewed to have grown over the study span in a rather independent manner. Almost a similar pattern was observed in respect of aggregated government expenditure taken on one hand and income.

from each of the Primary, Secondary, Tertiary I and tertiary II sectors, on the other. However, in respect of Aggregated Government Final Consumption Expenditure and Aggregated Tertiary sectors, the variance ratio for improvement in the coefficient of determination was found to be significant at 5 percent probability level, indicating thereby the presence of unidirectional causality that runs from aggregated consumption expenditure to aggregated income of tertiary sector.

Causality behavior between disaggregated government expenditure on one hand and aggregated/disaggregated income on the other could be discussed on similar lines. Unidirectional causality could be detected when expenditure on General Public Services was taken as effect variable and that of income from the primary sector was taken as the cause variable. In the rest of the combinations, no causal relationship could be detected. Thus, income from the primary sector was the only exceptional case that showed a causal relationship with government expenditure on General Public Services.

Government expenditure on Defence services was observed to have borne no causal linkage with aggregated/ disaggregated income. What it means is that the Indian government has to spend (a considerable large chunk of money) on defense services, irrespective of the level of

net domestic product. Also, this particular sector does not help significantly towards income generation because of its being less productive. Such an outcome, though not a very desirable one, might be due to the rather strategic nature (from the point of view of the maintenance of safety and security of the nation) of the defense sector.

Again government expenditure on the Educational sector and Health sector was observed to bear no causal relationship with income from any of the major sectors. Thus, irrespective of the fact that government expenditure on both the sectors [especially on Education] has been increasing, yet the sectors have failed to produce able and skilled manpower, (might be due to gross inefficiencies in the prevailing setup of these sectors) which, in turn, have failed to contribute perceptibly towards the generation of national income.

In respect of government expenditure on Social Security and Welfare Services and aggregated income, there seemed to be no causal linkage between these two variables. A similar type of pattern was observed in disaggregated income as well with the Primary sector as the single exceptional case. This was the case when income from the primary sector was taken as cause variable and that of expenditure on Social and Security Welfare Services sector as effect variable. The causal relationship between the two variables was a unidirectional one. A Unidirectional causality was also noticed in respect of income from aggregated tertiary sector taken on one hand and that expenditure on economic services taken on the other. However, we could not detect any type of causality in respect of expenditure on other services and income from aggregated/ disaggregated sector.

In a nutshell, no clear-cut pattern in respect of causal linkages between different components of income and expenditure has emerged (Table 11). Most of the combinations have exhibited an absence of causality, indicating that the said variables are independent. These findings are, more or less, on the expected lines, as a bulk of the government expenditure is incurred in activities like defense and social infrastructure wherein the expenditure, indeed, is not viewed on commercial lines but is rather viewed as strategic/ social obligations of the government. Furthermore, the findings have a fair amount of similarity with those in respect of Private Final Consumption Expenditure versus National Income of India (Sethi, 2001)(22). Only seven combinations out of a totality of sixty have shown causal linkage of unidirectional type. In two combinations, the unidirectional causality was detected to have run from government expenditure to net domestic product, thereby indicating the prevalence of Kuznets law. Only in one combination (viz, income from the primary sector and government expenditure on General public services), the causality was running from income to expenditure, implying the validity of Wagner's law. These findings are in agreement with those of Singh (1997) (21) from his paper regarding the validity of Wagner's law in the context of the Indian economy.

Conclusion

The study found that there is an asymmetric effect of government spending on national income and unemployment in India. The implication is that increasing government spending spurs economic growth and reduces the level of unemployment. This conforms to the theoretical argument of Keynes that increases in government spending lead to high aggregate demand and rapid growth in national income and reduced government spending leads to unemployment and reduction in income (Keynes, 1936). However, the improvement in national income and reduction in unemployment due to increased government spending has a higher impact relative to the income and unemployment effects of the reduction in government spending in India.

Recommendations

The relative share of the Defence services sector has been much higher, but this sector has not shown causal linkage with income from any of the sectors, thereby indicating that expenditure incurred on such activities has been less productive. Therefore, steps need to be taken by the Government of India to create a congenial environment, not only at the domestic level but also with its neighboring countries so that the surplus resources could be diverted towards certain developmental activities.

The Government has been incurring substantial expenditure on the Education sector, but this sector has not generated income. This might be due to misconceptions and inefficiencies in the prevailing setup. Therefore, adequate steps need be taken so that such activities could indeed lead to human capital formation, known to be a prerequisite for the development of an economy.

The study recommends increasing government expenditure that could accelerate economic growth and create employment opportunities. This is because government expenditure boosts aggregate demand which in turn creates employment and higher output. More so, private investors are seen unwilling in making massive investments that could bring out higher growth of national income and employment. Thus, there should be judicious use of government resources towards attaining the set macroeconomic goals of employment, higher income, stability, among others.

The study also recommends powerful fiscal instruments such as a progressive tax system that could bring about an equitable distribution of income and wealth. These can be done through expansionary fiscal policy.

References

1. Prasetyo AD, Zuhdi U. The government expenditure efficiency towards the human development. *Procedia Economics and Finance* 2013; 5: 615-622.
2. Egbulonu KG, Amadi KW. Effect of fiscal policy on unemployment in the Nigerian economy. *International Journal of Innovative Finance and Economics Research* 2016; 4(3):1-7.
3. International Labour Organisation. Unemployment rate.ILO modeled estimates, 2018.
4. Englama A. Unemployment concepts and issues. CBN Bullion 2001; 25(4).
5. Keynes JM. The General Theory of Employment, Interest and Money. New York: Harcourt Brace Publishers, 1936.
6. Bataineh IM. The impact of government expenditures on economic growth in Jordan. *Interdisciplinary Journal of Contemporary Research in Business* 2012; 4(6): 1320-1338.
7. Ahmad UG, Loganathan N. The causal nexus between government expenditure and economic growth in Nigeria: evidence from a bootstrap rolling window approach. *The American Journal of Innovative Research and Applied Sciences* 2015; 2(1): 16-24.
8. Kumar S, Webber DJ, Fargher S. Wagner's law revisited: cointegration and causality tests for New Zealand. *Applied Economics* 2012; 44(5): 607-616.
9. Kimaro EL, Keong CC, Sea LL. Government Expenditure, Efficiency and Economic Growth: A Panel Analysis of Sub Saharan African Low-Income Countries. *African Journal of Economic Review* 2017; 5(2): 34-54.
10. Dudzevičiūtė G, Šimelytė A, Liučvaitienė A. Government expenditure and economic growth in the European Union countries. *International Journal of Social Economics* 2017; 2(11).
11. Bojanic AN. The composition of government expenditures and economic growth in Bolivia. *Latin American Journal of Economics* 2013; 50(1): 83-105.
12. Kapunda SM, Topera JS. Public expenditure composition and economic growth in Tanzania: Socio-economic policy implications. *Asian-African Journal of Economics and econometrics* 2013; 13(1): 61-70.
13. Taiwo M, Abayomi T. Government expenditure and economic development: empirical evidence from Nigeria. *European Journal of Business and Management* 2011; 3: 18-29.
14. Wang K. Health care expenditure and economic growth: Quantile panel-type analysis. *Economic Modelling* 2011; 28(4): 1536-1549.
15. Beraldo S, Montolio D, Turati G. Healthy, educated and wealthy: A primer on the impact of public and private welfare expenditures on economic growth. *The Journal of Socio-Economics* 2009; 38: 946-956.
16. Carter J, Craigwell R, Lowe S. Government expenditure and economic growth in a small open economy: A disaggregated approach 2013; 1-28.
17. Chang H, Huang B, Wei C. Military expenditure and economic growth across different groups 2011.
18. Nurudeen A, Usman A. Government expenditure and economic growth in Nigeria 1970-2008: A disaggregated analysis. *Business and Economics Journal* 2010; 1-11
19. Holden S, Sparrman V. Do government purchases affect unemployment? 2016; 1-26
20. Moore JH. A Measure of Structural Change in Output, The Review of Income & Wealth 1978; 24(1): 105-118.
21. Sethi AS. Dynamics of National Income, New Delhi: Deep and Deep Publications, 1997.
22. Globalisation and the Emerging Pattern of Consumption Expenditure: The Indian Experience. *The Journal of Income and Wealth* 2001; 23(2): 145-60.
23. Consumption Expenditure and Income in India: Short-Term Forecasts and Causality Behaviour. *An International Journal of Development Economics* 2003: 17(1&2): 61-90.
24. Sethi AS, Raikhy PS. Structural Transformations in National Income of India. *Indian Journal of Quantitative Economics* 1992; 8(1&2): 49-64.
25. Granger CWJ. Investigating Causal Relations by Econometric Models and Cross Spectral Methods, Econometrica 1969; 37(3).