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"An empirical study on the correlation of Macro-Economic Indicator with Developmental and Non-Developmental Expenditures by Central Government: Evidence from India"

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Abstract

This study aims to increase an expertise of the relation among the public expenditures and economic growth of India. Public expenditures consist of development and non-development expenditures incurred by central government of India. It has been observed with the help of this study that development expenditures play a dominant role not only in increasing the GDP rate of India but also in declining the poverty rate. And on the other hand, non-development expenditures are incurred for nonproductive area and these expenditures don not generate any revenue for the government. It can be concluded that non-development expenditures creates burden on government and the focus should be more on development expenditures because social and economic development of the country is directly connected with these expenditures. Statistical analysis is used to testify the study and support the conclusions drawn from it. This study would help to know the trends of public expenditures and its effect on economic indicators of India.

Keywords: Development, Non-development Expenditures, GDP, Economic indicators.

I Introduction

The primary components of the economic coverage of a country are Public Expenditure and Public Revenue. We will be talking only about the Public Expenditures. The classical economists did now no longer examine extensive the results of public expenditure, for public expenditure at some point of the 19th century became very small due to the very restrained Government activities.

As a tool of Fiscal Policy, Government expenses may have greater impact on the monetary increase relying on how it's far utilized and controlled via way of means of the Government. The Keynesian view defends this by stressing on Government expenditure as a tool for accomplishing longer term growth rate. In growing nations like India, the quantity of the public spending has extraordinary relevance within side the growth process and reduction of monetary disparities. The improvement of the economy relies upon the character of expenses and its social impact.

Government expenditures are referred to as public spending. It is borne by both the central and state governments. Public spending is spent on a variety of activities for the benefit of the people as well as for economic development, mainly in growing countries. In other words, public spending is the cost incurred by public authorities such as the central, state, and municipal governments to meet the people's collective social needs. Expenditures on

general, social, and economic services account for the majority of government spending.

Because the government's spending was so minimal in the past, the subject of public expenditure was overlooked. There has been a continual and non-stop boom in public expenditures in international locations everywhere in the world. This trend was first seen in the 19th century, but it became evident and definitive in the 20th.

1.1 Classification of Public Expenditures

Different economists have categorized government spending into various categories. Professor Adam Smith categorized government spending according to the functions it performs. Defence spending, commercial spending, and research and development spending are the three categories. Prof. Dalton divided public spending into two categories: grants and purchase price. Grant occurs when the government provides its resources without expecting anything in return. The cost of providing services is covered by the grant.

The term "buy price" refers to when the government transfers money to individuals or communities in exchange for certain services. Normally, public spending is divided into:

1. Revenue expenditures: This includes spending on civil administration, defence, and welfare programmes, among other things.

2. Capital expenditure: This is a one-time expense. It is an out-of-pocket expense. All capital expenditures include money spent on multipurpose projects, large factories such as steel and cement, and money spent on machinery, buildings, and land.

3. Development expenditures: This includes irrigation, industrial development, education, and health care, among other things.

4. Non-development expenditures: This includes money spent on civil administration, police, defence forces, and the judiciary, among other things.

2 Background of the study

Adolf Wagner, a noted German fiscal theorist of the 19th century, presented his famous hypothesis “law of the increase of state activities” which has led to increase in public expenditure. He hypothesized as follows:

2.1 The New Concept of Welfare State

The nineteenth century State changed into in particular and essentially a police State, however the twentieth Century State is a Welfare State whose fundamental goal is to sell the economic, political and social properly being of citizens. The government spends money on full employment creation and maintenance, improvement programmes, [free] education, and social security measures.

2.2 Warfare and War Plans

In most cases, national defence spending accounts for half of overall spending. The larger the country, the higher the share of revenue dedicated to national defence.

2.3 Population growth and urbanization

The ongoing trend of urbanization increases spending on public health, education, and other activities such as hospitals, playgrounds, organized recreations, water, sewerage, and the provision of welfare and aid.

2.4 The Great Depression [1929-33] and Extension of Government function

The Great Depression revealed the need for government to intervene in economic activity and take on new responsibilities. The government used a variety of steps to actively promote industry, agriculture, full employment, public welfare, and control over all areas of the economy.

The different reasons for the boom of public expenditure includes, upward thrust of democracy, upward thrust in rate levels, boom in public debt observed via way of means of expanded hobby rates, boom of the spirit of monetary nationalism and preference for self-sufficiency, etc.

"Any growth in public expenditure appears a calamity to some folks, a cause of happiness to others, and a matter of indifference to still others," writes Buchler in his book "Public Finance." However, government spending is increasing at a rate of 15 to 20% every year.

3 Literature Review

There have been numerous studies and research on this subject in the past. Varied countries have had different outcomes. Some research (Devarajan, Anuradha De, and others) have found that public expenditure as a whole has a beneficial impact on economic growth in developing nations like Nepal and Bolivia. However, several studies demonstrate that in nations such as Kenya, there is no link between government spending and economic growth.

Similar studies have been conducted in India, one of which was conducted by Jasneet Kaur Wadhwa of SGTB Khalsa College, Delhi University, India, and shows that India's public spending has been increasing since 1980. However, during the post-reform period (after 1991), development spending has decreased, while non-development spending has increased. After the post-reform period, development expenditures as a percentage of GDP gradually decreased, while non-development expenditures as a percentage of GDP rapidly increased. According to the most recent data, each of these types of expenses account for nearly the same percentage of GDP.

Dr. S. A. Saiyed, Head Department of Business Economics, Faculty of Commerce, Maharaja Sayajirao University of Baroda, Vadodara, Gujarat, India, determined a huge hyperlink among country wide income (or GDP) and improvement and non-improvement expenditures. His study found that between 1980 and 2011, India's national income (GDP) had a considerable and favorable impact on the determination of government development and non-development spending.

Many studies, however, show that there is no absolute well-defined link between public expenditures and real GDP per capita. According to Edward Hsieh and Kon S. Lai (1994), this link might change over time and across countries.

4 Statement of the Problem

Economic idea does now no longer routinely generate robust conclusions approximately the effect of government expenditure on financial growth. Almost each economist might agree that there are conditions wherein decrease stages of presidency expenditure might decorate financial growth and there are different instances wherein better stages of presidency expenditure might be desirable (Liew 1985).

The questions that want to be responded are whether or not we want growing government activities in a modern financial system like India, whether or not government spending crowds out the personal quarter and the form of dating that exist among government financial coverage and economic growth in India. Notwithstanding the growing government spending, economic growth has been at the decline. This study seeks to offer solutions to the above questions.

5 Objective of the Study

The wide objective of this study is to observe the effect of diverse classes of government expenditure on economic growth in India.

The specific objectives of the study are to:

1. Evaluate the possible existence of co-integration between government expenditure and real economic growth rate in India.

2. Analyze the trend of government expenditure in India from 1992-1993 to2019-2020.

3. Examine how public expenditure contributes to real economic growth rate in India.

6 Data and Methodology

The study is primarily based totally on secondary records accrued from the various issues of the Reserve Bank of India Bulletin, Reports on Currency and Finance, Economic Survey and diverse reviews of the Ministry of Finance, etc. The records are for the duration from 1992-1993 to 2019-20. The evaluation entails Simple Linear Regression strategies the usage of the OLS (Ordinary Least Squares) estimates. The useful specification of the version entails the usage of Natural Logs and taking the variables as a percentage of the GDP with a purpose to reduce the mistakes because of econometric issues of multicollinearity, heteroskedasticity, etc.

The data collected for the analysis is given in the table below:

Table 1:- MAJOR HEADS OF DEVELOPMENTAL AND NON-DEVELOPMENTAL EXPENDITURE OF THE CENTRAL GOVERNMENT

(in Crore)

Year	Development Expenditures	of which		Non-development Expenditures	Total Expenditures
		Economic Services	Social Services		
1992-1993	65479	26248	4009	60584	126063
1993-1994	72464	27571	4830	73586	146050
1994-1995	82803	33897	5873	82402	165205
1995-1996	84427	35029	7655	98632	183059
1996-1997	94197	37253	9672	112217	206414
1997-1998	110994	44246	11845	127820	238814
1998-1999	137257	54375	14656	150298	287555
1999-2000	129151	60956	17221	177928	307079
2000-2001	139386	71731	17679	197470	336856
2001-2002	159364	80868	15130	215456	374820
2002-2003	184197	103820	22007	242749	426946
2003-2004	195428	108071	23859	243298	438726
2004-2005	214955	115030	29906	262904	477860
2005-2006	229060	133053	38264	290677	519737
2006-2007	255718	142772	43762	341278	596996
2007-2008	325670	172955	61648	400728	726398
2008-2009	471399	273222	89797	428145	899544
2009-2010	528242	304440	102628	514101	1042343
2010-2011	666069	404312	124990	551471	1217540
2011-2012	705321	436943	113612	627075	1332396
2012-2013	742417	458222	119346	692856	1435273
2013-2014	784504	478376	134840	803070	1587574
2014-2015	813813	459786	62038	881159	1694972
2015-2016	835019	495234	91462	990172	1825191
2016-2017	899369	569910	105303	1075825	1975194
2017-2018	998201	623730	113382	1143772	2141973
2018-2019	1025979	631826	122949	1289134	2315113
2019-2020	1153187	719731	153058	1533142	2686330

Source: Budget documents of the Government of India.

Table 2:-GROSS DOMESTIC PRODUCT (At constant prices)

(in Crore)

Year	GDP at Market prices (Constant Prices)	GDP Growth (%)	Annual Change
1992-1993	774545	4.75%	-0.73%
1993-1994	891355	6.66%	1.91%
1994-1995	1045590	7.57%	0.92%
1995-1996	1226725	7.55%	-0.02%
1996-1997	1419277	4.05%	-3.50%
1997-1998	1572394	6.18%	2.13%
1998-1999	1803378	8.85%	2.66%
1999-2000	2023130	3.84%	-5.00%
2000-2001	2177413	4.82%	0.98%
2001-2002	2355845	3.80%	-1.02%
2002-2003	2536327	7.86%	4.06%
2003-2004	2841503	7.92%	0.06%
2004-2005	3242209	7.92%	0.00%
2005-2006	3693369	8.06%	0.14%
2006-2007	4294706	7.66%	-0.40%

2007-2008	4987090	3.09%	-4.57%
2008-2009	5630063	7.86%	4.78%
2009-2010	6477827	8.50%	0.64%
2010-2011	7784115	5.24%	-3.26%
2011-2012	9009722	5.86%	0.22%
2012-2013	9944013	6.39%	0.93%
2013-2014	11233522	7.41%	1.02%
2014-2015	12467959	8.00%	0.59%
2015-2016	13771874	8.26%	0.26%
2016-2017	15391669	6.80%	-1.46%
2017-2018	17098304	6.53%	-0.26%
2018-2019	18971237	4.04%	-2.49%
2019-2020	20339849	-7.96%	-12.01%

Source: Central Statistics Office (CSO).

7 Model Specification

The specified model is as follows:-

$$\ln(PGDP) = \beta_1 + \beta_2 \ln(DGDP) + \beta_3 \ln(NDGDP) + u_i$$

Where:-

a. 'PGDP' stands for Per Capita Real GDP,

b. 'DGDP' stands for Developmental Expenditure as share of the Real GDP and,

c. 'NDGDP' stands for Non-developmental Expenditure as a share of Real GDP.

d. 'Ui' stands for the error term associated with the model

The Predicted (Dependent) variable in our evaluation is the natural log of the Per Capita Real GDP at the same time as the Predictors (Independent Variables) are the natural log of Development expenditure taken as a share of Real GDP and the natural log of Non-Development expenditure taken as a share of Real GDP.

8 Expected Signs and Outcome

As recognized in advance that developmental expenditure need to have an effective good sized effect at the GDP increase so we assume that coefficients of the time period related to developmental expenditure need to be effective and rather good sized at 1% significance level. Similarly, because it anticipated that non-developmental expenditure isn't always going to improve the financial situation of country so we assume that the signal related to this time period need to be both poor and insignificant at 1% significance level.

9 Data Analysis and Empirical evidences

The regression analysis output for the specified model:

$$\ln(PGDP) = \beta_1 + \beta_2 \ln(DGDP) + \beta_3 \ln(NDGDP) + u_i$$

Done on the data mentioned above is given below:

Regression Output:

	Coefficients	Standard Error	t-stat	p-value
Intercept	10.76891683	0.132785717	85.37795	6.6947839
LDGDP	0.528108759	0.114962717	4.645796	0.0009671
LNDGDP	0.172186792	0.079116056	3.288905	0.0290565

Multiple R	0.998
R Square	0.995329
Adjusted R Square	0.994362
Standard Error	0.426178

The coefficients signify what impact each independent variable has on the dependent variable (LPGDP). Every 1 unit rise in LDGDP would increase the LPGDP by 0.528108759 units and similarly every 1 unit rise in LNDGDP would increase the LPGDP by 0.172186792 units according to these results. The intercept term is the value of the LPGDP when the other two terms are zero.

The coefficient of determination R2 (=0.995) and the adjusted coefficient of determination Adjusted R2 (=0.994362) have very high values (close to 1) indicating that the estimated model is a good one. In other words we can say that approximately 99% changes in the predicted variable are being explained by the predictors in the model.

These consequences additionally display that coefficients β_(1) and β_2are statistically considerable at 1% significance level with p-values 6.6947839and 0.0009671 respectively; while coefficient β_3 is rendered insignificant at 1% significance level (p-cost 0.0290565). Hence these convey us to the belief that the independent variable ln (NDGDP) isn't always contributing a good deal to the monetary growth; and as a result it need to know no longer be covered within side the model.

From preceding research its miles anticipated that Non-improvement Expenditures in addition to the Development Expenditures will increase while the Gross Domestic Product of India will increase even though it does now no longer make contributions itself to the financial increase like its counterpart. To take a look at this, we find the correlation a number of the distinctive variables.

The results of the correlation test are:-

	LDGDP	LNDGDP	LPDGP
LDGDP	1		
LNDGDP	0.950662	1	
LPDGP	0.951439	0.962659	1

These effects display that there's a totally strong correlation among the various three variables and all have a high-quality relation with every other. When one will increase, the opposite will increase as well. So this suggests that despite the fact that Non-improvement expenditure won't be contributing substantially to the Per capita GDP increase as an entire however it does boom while the PGDP will increase displaying that they're Pro-cyclical to every other.

10 Conclusion

The effects and evaluation bring us to the belief that at 1% significance level, the independent variable ln(NDGDP) isn't always statistically huge and for this reason does now no longer make a contribution a lot to the Per capita GDP increase of country while the independent variable ln(DGDP) is pretty huge and contributes undoubtedly to the financial increase of India.

But as anticipated from the preceding research, Developmental and Non-developmental Expenditures boom because the Per Capita Real GDP will increase. So, we will finish that public expenses as an entire are big contributors to the financial boom and in that still developmental expenditure make contributions considerably to the boom while Non-developmental expenditure does now no longer have a lot of a hand within side the boom of a country's GDP. These outcomes are commensurate with a number of the preceding research that expenses; in particular non-development expenses do now no longer continually boom the economic growth of the country. But overall we find that expenditures increase when Real Per capita GDP increases which has been established in the researches done before.

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