

The Nexus between Government Tax Revenues and Government Expenditures in India

¹Priyanka Chawla, ²Prof. Pravin Saxena,

¹ Research Scholar, Dayalbagh Educational Institute, Dayalbagh, Agra
E-mail Id.: priyanka.chawla777@gmail.com,

²Professor, Dept. of Accountancy and Law, Faculty of Commerce, Dayalbagh Educational Institute, Dayalbagh, Agra.

Abstract: The study examines the co-integration between Government Expenditures and Government Tax Revenues in India by using Unit Root, Augmented Dickey-Fuller (ADF), Engle Granger Co-integration and Granger Causality Test. It tests two hypotheses relating to the tax revenue-expenditure relationship, i.e. tax-spend hypothesis and spend-tax hypotheses during 2000-2001 to 2017-2018. The nexus is studied at centre and state (combined level). The study comes across a relationship that exists between Government Expenditures and Tax Revenues in India. The result shows that there is one-way causality running from Spending to Tax Revenue (spend-tax hypothesis) along with long-run relationship. This result justifies the operation of spend-tax hypothesis. The reverse-causality is not found in the analysis either for short or long-run.

Key Words: Government Tax Revenue, Expenditure, Co integration, Augmented Dickey Fuller (ADF) Test, Granger Causality Test.

1. INTRODUCTION:

The growing inequality between revenue and expenditure in many countries has been a source of concern to many economists, analysts and researchers. Such fiscal imbalances with the attendant adverse effects on economies have aggravated rigorous research on the causes and effects of such inconsistency, resulting to four alternative hypotheses relating to the relationship between government expenditure and revenue. The hypotheses are; the revenue-and-spend hypothesis, the spend-and-revenue hypothesis, the fiscal synchronization hypothesis or the fiscal neutrality hypothesis and the institutional separation hypothesis. In order to test the validity of these hypotheses, many authors have employed different methodologies, and their results have shown conflicting outcomes as shown in the literature. The main objective of this study is to ascertain the direction of causality between the disaggregated values of government revenue and expenditure in India by deploying a robust econometric methodology. The result would assist policy makers to recognize the sources of any fiscal imbalance that might exist and consequently, direct efforts to developing suitable strategies for a sound fiscal framework.

2. OVERVIEW OF THE THEORETICAL LITERATURE:

The relationship between government tax revenue and expenditure is discussed in the literature with the help of four hypotheses, namely the tax-and-spend hypothesis, the spend-and-tax hypothesis, the fiscal synchronisation hypothesis, and the institutional separation hypothesis.

Tax-Spend Hypothesis

According to Friedman (1978) this hypothesis defines a positive relationship between government spending/expenditure and taxation. If tax revenue is increased government spending/expenditure will also increase and Vice Versa.

Spend-Tax Hypothesis

According to Peacock and Wiseman (1979) the spend-and-tax hypothesis, government first spends than tax policies and revenues are attuned to accommodate the desired level of spending.

Fiscal Synchronization Hypothesis

The first of these is the *fiscal synchronisation* hypothesis where it is suggested that the government take decision to tax and to spend is simultaneously and causality runs in both directions

Institutional Separation Hypothesis

The *institutional separation* hypothesis proposes that there is no causality between public expenditure and public revenue. This absence of causal link is due to 'many important actors with divergent interests and agendas'

3. REVIEW OF LITERATURE:

Rao M. Govinda (2018) studied the evolution of the Indian Tax System and trends in the tax revenue of the Central and State Government for the period 1999-2000 to 2014-2015. The study revealed that share of direct tax in total tax

revenue increased from 10 per cent in 2003-04 to 12.6 percent in 2007-08. It was observed that as regards the personal income taxes, the most vicious and visible changes were the reduction in Income Tax rates and rising of exemption limit which gets further enhanced when combined with standard deduction.

Chellaiah and Rao (2017) analysed the trends in tax revenue for the period 2005-06 to 2015-2016 and elective ways to increase tax revenue. Regarding direct taxes, it recommended to remove many exemptions, improve the tax administration and introduction of adequate extent of computerisation so as to fastly expand the actual tax base and tax collection.

Navjot and Om Parkash (2015) studied various aspects of Union Government’s taxation in India. Period chosen for the study was from the year 1991-92 to 2013-14 regarding personal income tax. Study shown that the income tax rate structure was transformed more frequently in recent years and in many cases on year to year basis which violated the principle of stability and created difficulties in tax administration. However, after eighties, the tax rate structure remained strictly stable.

Zeaud (2014) conducted the same study for Jordan between the periods 1990 to 2011 and also found a bi-directional relationship indicating that the fiscal synchronization hypothesis holds for the Jordan economy.

Saeed and Somaye (2012) investigated the causal link between government expenditure and revenue in oil exporting countries during the period 2000-2009 and found a positive unidirectional causality running from revenue to expenditure indicating the existence of the revenue-spend hypothesis.

4. RESEARCH GAP AND RESEARCH PROBLEM:

The various estimates to test the Government Tax Revenues-Expenditure causality are examined in context to different countries, in spite of the diversify nature of the conclusion, this study tried to explore the causality between government expenditures and tax revenues in India but it differs from earlier studies on the following aspects.

Firstly, it scrutinizes two hypothesis tax-spend or spend-tax by causality tests verification in context of India. Secondly, it investigates relationship (long/short term) between both of the variables with current data.

In India, higher level of current budget deficit are funding to a significant extent by government borrowing these, adds to the interest burden approaching future expenditure as well as leading to probability of higher taxes. Thus the budget deficit is an important variable in the nexus between government tax revenues and government expenditures in India. Several empirical studies have tried to shed light on the outcome of fiscal deficit rather than the causes. Although the relationship between revenue and expenditure is still an unsettled issue, the main purpose of the present study is to envisage the relationship between government tax revenues and expenditures variables in the Indian context.

5. OBJECTIVE OF THE STUDY:

To analyse the relationship between Government Tax Revenues and Expenditures in India.

6. RESEARCH METHODOLOGY:

To examine the causality between the Govt. expenditures and tax revenues in India, a sample of 18 annual observations for the outlined variables from the year 2000-2018 are taken into consideration. Data for Government Expenditure and Tax Revenues are occupied from secondary sources which include the website of Ministry of Finance, Reserve Bank of India and Hand book of Statistics on Indian Economy.

Econometrical Model

To analyse the causal relationships between the two outlined time series which include Government Expenditures (G_E) and Government Tax Revenues (G_{TR}) in India with objective to interrogate the unidirectional causality (spend-tax or tax-spend) the Granger Causality test has been applied and Engle Co-integration test has been used to test the existence of a long run relationship between Government Expenditures and Tax Revenues in India

Hypotheses

Following two hypotheses are integral to examine spend-tax and the tax-spend hypotheses

H01: Government Expenditures does not cause Government Tax Revenues

H02: Government Tax Revenues does not cause Government Expenditures.

ANALYSIS

Table No.1:		Result of Unit Root Test				
Variable	ADF Value	t-statistics (1% level)	t-statistics (5% level)	t-statistics (10% level)	P-Value	Result
G_E	-5.785869	-3.470703	-2867970	-2.576589	0.0312	Stationarity

G_{TR}	-8.342578	-4.364674	-2.546646	-2.865478	0.0254	Stationarity
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Source: Author’s Computation

Empirical Result: The obtained results based on unit root test by the use of Dickey-Fuller test are shown in Table No.1 as it is observed, the test ADF value = -5.785869(G_E) & -8342578(G_{TR}) are both lesser than Mackinnon value at 1 percent, 5 percent and 10 percent level of significance so null hypothesis is rejected, both the variables are stationary in nature at 1(I) difference.

ENGLE GRANGER COINTEGRATION

Co-integration test is used to determine whether there is a long-term equilibrium relationship between variables, if there is a co-integration relationship between variables, then the variable is a long-term equilibrium.

Table-2 Engle Granger Co- integration					
VARIABLE	EGC Value	(1% level) t-statistic	(5% level) t-statistic	(10% level) t-statistic	Result
G_E & G_{TR}	-6.574566	-3.775656	-2.766557	-2.267755	Long Run Relationship

Source: Author’s Computation

Empirical Result: EGC show variables are stationary that there is significant long run relationship between the tax revenue and government expenditure in India

GRANGER CAUSALITY TEST

For Granger Causality economic variables must be stationary which have been proved by the unit root test that G_E and G_{TR} are stationary at 1st difference.

Table No.3 Granger Casualty Test				
Null Hypotheses	F-Statistic	P-Value	Result	
G_E does not Granger cause G_{TR}	5.68589	0.00375	Rejected H_{01}	
G_{TR} does not Granger cause G_E	2.32438	0.56757	Accepted H_{02}	

Source: Author’s Computation

Source: All the variables data are taken from RBI and Ministry of Finance

Empirical Result: The above table shows that that Government Expenditures (G_E) and Government Tax Revenues (G_{TR}) cause uni-directionally to each other it is revealed that there is a unidirectional causality which runs from Government expenditures (G_E) to Government Tax Revenues (G_{TR}) as P value (0.03575) is lesser than the Critical Value so rejected the hypothesis1 hence its revealed that G_E Causes G_{TR} . Whereas, it is also revealed that the outlined orders of the Government Tax Revenues (G_{TR}) collection does not cause Government. Expenditures (G_E) as P value (0.56757) is more than Critical Value hence, accepted the hypothesis 2.

7. CONCLUSION :

The results conclude that India Government Expenditures and Tax Revenues exhibit a stable long run relationship and there exists unilateral causality from expenditures to revenues (spend- tax hypothesis) in India. The government decides to spend first and then raise tax revenues and grants to finance its expenditures, rather than adopting the method of raising funds first and collect revenues and take decision to spending later according the revenues.

Therefore, any changes in government spending may lead to the changes in tax revenues. The reason for this is when the government is able to effectively collect tax revenue; the tendency to increase the government spending is very high, while in the case of spending, a good spending will project a good growth and influence the economy.

Therefore, when the economy is in an upward trend the tendency to collect more tax is very high. When government issues any new policy that can increase or decrease direct tax collection especially in individual and companies' collection, this will also influence the indirect tax collection.

8. IMPLICATIONS OF THE STUDY:

As regards to the policy implication, it implies that India's government first engages in spending and after that to pay for this spending raise taxes to boost government revenue but it may have negative impact on investors and human capital that is skilled one because of fear to pay higher taxes in future.

If rise in government expenditure will lead to a higher taxes costs or higher borrowing which result on higher interest payable, government expenditure might not achieve its purpose of accelerating economic growth because in case of India an increase in taxes increases the govt. spending and hence, fiscal deficit translated as an un necessary economical burden for its economy so it's necessary that government reforms expenditure analysis should be measured as the task that will determine the direction and deployment of revenue raised from Tax and Tariff Reforms. Once the optimal expenditures are identified, it will be 'economically efficient' to set targets for tax collections and revenue utilization.

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