ECONOMY OF INDIA: LESSONS AND PRIORITIES

(The Impact of Government Regulatory Policy on Economic Growth)

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ABSTRACT

Throughout the virtually regular economic policy regimes, India instantaneously came across which resulted a considerable influence on the economic growth of the country's economy in a pragmatic manner. This paper attempts to review the theoretical and empirical framework on the impact of fiscal policy changes and government expenditure programs which focused on economic growth in India during the aforesaid regulation periods. The Estimated results confirm that in the long run using the Engel Granger Cointegration Test Total Government Spending will improve the GDP Indian economy improves by 59%. Total tax revenue will increase the GDP by India's 57%. In the short run there is significant impact of fiscal policy variables on economic growth in Indian economy. Indian economy grows with the expansionary budgetary policy which was tested by the Error Correction Mechanism. According to obtained results, the Impulse Response Function strives when an external shock does not affect to the total government spending level, the Indian economy does adequately responsive. Indian economy is strong enough to handle the external shocks which affects the country's spending level.

Key Words: Fiscal Policy, Purchasing Power Parity, Recurrent Expenditure, Capital Expenditure, Direct Taxes, Indirect Taxes, Expansionary Policy

INTRODUCTION

India is the sixth-largest economy in the globe and the third-largest by purchasing power parity[1]

[1] India is the sixth largest economy by Nominal Gross Domestic Product where the data refer to the year 2016.

is recognized as one of the leading economies in Asia. India's enormous per capita GDP (PPP) with $7,783 as of 2018. Throughout the past centuries, India is having a uneven history where the country experienced ups and downs in economic policies from the colonial era. We can see a lot of similarities in between most of the developing countries including India by means of consumption patterns, the direction of trade, import destinations etc. In terms of political ideologies, as all the other developing economies India is undergoing a democratic and socialist political atmosphere. The country is ranked in the global economic positioning as low middle-income economy which is demonstrating the similar pattern of fiscal and monetary policy regimes we see in the other emerging markets. In this study we have attempted to examine how these government fiscal policy affects the economic growth in India throughout the history using an econometric analysis and finally the paper attempts to identify some lessons and priorities to the rest of developing countries by considering fiscal policy patterns and their effects on economic growth during the study period. Nevertheless, as a giant economy, India's fiscal policy operates mainly by taxation and government spending.

India's budgetary policy plays a massive pathway towards its economic growth in numerical aspects which determines the state income and expenditure valuation towards less debt and more investment-oriented policy. In achieving this, India as an emerging economy, deviates its growth strategy towards home fueled public policy where the deficit is maximumly financed by domestic sources. The entire budgetary system India includes the economic instruments consisting of taxes, spending, foreign and domestic loans and transfers. The trend during the past few decades is that in Indian economy, the budgetary policy receives a significant importance towards the development activities of India. India's fiscal policy objectives include mobilizing adequate resources for financing various programs and projects, to raise the savings and investment for increasing the rate of capital formation, to promote necessary development etc.

Therefore, the Indian economy has been articulating its fiscal policy incorporating the revenue, expenditure and public debt mechanisms in an inclusive manner. During the past few decades, India has been vigorously occupied to boost local and foreign direct and indirect investments. The sectors with high potential for investments in India comprise Infrastructure, Electronics, Education, Food processing, Medical equipment, Pollution control, Textile machinery, Water and

(selecting all countries, GDP per capita (current US$), World Bank). Accessed on 1 July 2017.

Sustainable energies. Intended for India, the sectors with high potential are Tourism, Utilities, Infrastructure, IT, Marine services and Apparels. This study provides a view to endeavor historical perspective. Based on the performances in the last decades it is possible for the country to achieve high growth potentials in the coming years if the current government implements a package of economic policies back by appropriate fiscal policy to create a conducive and inclusive domestic climate in the minds of international and domestic community. This study attempts to investigate the impact of fiscal policy changes on economic growth in the Indian economy and finally it attempts to assess the effectiveness of budgetary policy towards an accelerated economic boom. For this purpose, the study employs fiscal variables of India including taxation, expenditure and debt levels of both countries and also its impact on Gross Domestic product for the period 1990 to 2018.

RESEARCH QUESTION

The main research question in this study is,

Is there any significant impact of Fiscal Policy variables on Economic Growth in India during the period from 1990 to 2018?

HYPOTHESIS

The main hypothesis of this study is;

H0: There is no relationship between fiscal policy variables and economic growth in India during the study period.

H1: Fiscal Policy variables promote economic growth effectively in Indian economy.

OBJECTIVES OF THE STUDY

Objectives of this study can be divided into two main sub sections, known as main objective and some specific objectives.

- **Main objective**

There is one main objective in this study which covers the scope of the thesis can be written as;

- To investigate the impact of fiscal policy changes on economic growth of India.

- **Specific objectives**

There are few specific objectives used in this study which can be identified as;

- To understand the behavior of the expenditure and taxation policy instruments in India.
- To measure the effectiveness of fiscal policy changes on economic growth and to assess its performance.
- To suggest some policy implications by identifying lessons and priorities to the slow growing developing economies.

LITERATURE REVIEW

In order to identify the theoretical policy context of India, the study concludes a review of fiscal policy and economic growth in terms of various philosophical applications including eminent theories, Musgrave Theory of Public Expenditure and Growth, The Wagner's Law, The Keynesian Theory, The Solow's Theory, The Endogenous Growth Theory, The Peacock Wiseman Hypothesis, Rostow's growth theory and the Critical Limit hypothesis which can be used to give a precise understanding of these variables and the reasons for those fluctuations. These theories have been emphasized the importance of fiscal policy variables including taxation, public spending and government debt rates and their impact on economic growth in the country. In addition to the theoretical aspects, this paper strives to explain the literature review with the empirical literature from Indian context and for the global context.

EMPIRICAL STUDIES FROM INDIA

Swati Yadav, Upadhyay and Seema Sharma (2010) in their paper titled "Impact of Fiscal Policy Shocks on the Indian Economy" have analyzed the impact of fiscal shocks on the Indian economy using structural vector autoregression (SVAR) methodology. They have used quarterly data for the period 1997Q1 to 2009Q2. Authors have used two different identification schemes to assess the effects of shocks to government spending and tax revenues on output. Accordingly, the recursive scheme is based on the Cholesky decomposition and the second identification scheme Blanchard & Perrotti (1999) technique of using information on tax system to identify the SVAR model.

They have found that the impulse responses obtained from both identification schemes behave in a similar manner, but the value of multipliers differs. In addition to that they have identified that the shock to tax variable has a bigger impact on GDP than the government spending shock. Furthermore, they have found in the extended four variable VAR model the effects of fiscal

shocks on private consumption has been assessed using the recursive identification scheme. Their findings indicate that the tax variable has larger impact on private consumption as compared to the government spending variable. They further explain that the short run the impact of expansionary fiscal shocks follow Keynesian tradition but the long run response is mixed.

Rabia Najaf (2016) has done his study on "Impact of Fiscal Policy Shocks on the Indian Economy". The main objective of his study is to analysis the impact of fiscal policy on the economy of India. For this purpose, he has taken the data from 1981 to 2010 and applied the Johansen co integration test, error correction model and variance decomposition model. His results are showing that there is long run association between GDP and other variables. He has attempted to identify the fiscal policy impact on monetary policy and other macroeconomic variables. He has identified the long run phenomena of the fiscal policy on the growth of the economy.

EMPIRICAL STUDIES FROM THE GLOBE

Ogbole, O.F (2011) has done his study on "Fiscal policy: Its impact on economic growth in Nigeria 1970 to 2006" which involves comparative analysis of the impact of fiscal policy on economic growth in Nigeria during regulation and deregulation periods. Results obtained showed that there is a difference in the effectiveness of fiscal policy in stimulating economic growth during and after regulation periods. According to Ogbole, the impact was marginally higher during deregulation, than in the regulation period. He recommends appropriate policy mix, prudent public spending, setting of achievable fiscal policy targets and diversification of the nation's economic base, among others.

Rudolf and Jan (2015) have done their study on "The Impact of Fiscal Policy on Economic Growth Depending on Institutional Conditions" and found the impact of fiscal policy on economic growth depending on the institutional conditions in the OECD countries over the time period 2000-2012. Their analysis is based on the methods and tests of panel regression. From the analysis results they have found that in the case of government spending there is (1) positive impact on economic growth in the countries with lower fiscal transparency; (2) negative impact in countries with higher fiscal transparency. Authors strive in less developed countries there is higher proportion of pro-growth spending within total government spending.

Bogdan Andrei (2015) has done his study on "the fiscal consolidation consequences on economic

growth in Romania" and found that in the context of the economic and financial crisis the modification of the fiscal policy coordinates they have seen either as a way to alleviate the impact of the crisis on the economic growth or as a necessity in order to reinsure fiscal sustainability. In both cases a correct estimation of the fiscal multipliers is crucial. His paper estimates the level of the fiscal multipliers for Romania in order to assess the impact on the economic growth generated by the fiscal consolidation process initiated in 2010. The results show that the levels of the fiscal multipliers are relatively low.

METHODOLOGY

To empirically analyze the impact of fiscal policy on economic growth in the Indian Economy, the study uses following methods of economic investigation.

- Data, Variables and Analytical Tools

To measure the economic growth, we have used Gross Domestic Product (GDP) of India. As the dependent variables we have used taxation (T), Government Spending, Debt for Indian economy for the period 1990 to 2018. To understand the behavior of the variables graphical methods and summary statistics are used. To test for stationary of a series several procedures has been developed. The most popular ones are Augmented Dickey Fuller (ADF) test and Phillip Perron (PP) test. Then Engel Granger co-integration test is employed to understand the long run relationship. The Engel Granger co integration test is employed to understand the long run relationship. For the short run co-integrating relationship, the Error Correction Model is used. In the short run there may be disequilibrium. The Granger causation examines the causal relations among the variables employed in study used in the regression equation. Impulse Response Function has been used to measure the trade balance behavior due to the external shocks. This represents the reactions of the variables to shocks hitting the system. And this test is tested to identify the GDP behavior due to the external shocks to fiscal policy variables in the economy of India. This study attempts to develop a similar model applied by Agu Slyvia (2014) for Nigeria, that the economic growth (Real GDP) is a function of real value of taxation and real value of Government Expenditure for the time period 1990 -2018. A log-linear specification of the Indian model can be stated as follows:

$$GDP_{IND} = f(Texp_{IND}, Ttax_{IND}, Tdebt_{IND})$$

$$\ln GDP_{IND} = \beta_0 + \beta_1 \ln Texp_{IND} + \beta_4 \ln Ttax_{IND} + \beta_6 \ln Tdebt_{IND} \quad (3.1)$$

Where,

$lnGDP_{IND,}$ implies logarithm of Gross Domestic Product of I

$lnTexp_{IND,}$ implies the logarithm of real total expenditure of India

$lnTtax_{IND,}$ implies the logarithm of real total tax of India

$lnTdebt_{IND,}$ implies the logarithm of debt of India

RESULTS AND DISCUSSION

This study endeavors to highlight the major moves in the economic policies in the face of the changing economic growth in India. This leads a policy analysis of countries towards an effective fiscal policy recommendation.

- **Graphical Methods and Summary Statistics**

The study is based on the annual time series data observed from 1990 to 2018 for twenty-eight observations. In this chapter the results of the impact of fiscal policy changes on Economic growth in India are discussed. The discussion begins by describing the data set and the results from the model selection procedure.

Table 4.1: Descriptive Statistics

	GDP	DEBT	GGFCE	TAX
Mean	9.95E+11	5.07E+11	1.33E+11	1.02E+11
Median	6.50E+11	4.07E+11	1.10E+11	6.10E+10
Maximum	2.60E+12	1.06E+12	2.85E+11	2.62E+11
Minimum	2.67E+11	1.46E+11	5.79E+10	2.66E+10
Std.Dev	7.34E+11	3.26E+11	6.53E+10	7.86E+10
Skeewness	0.721244	0.362154	0.690478	0.684938
Kurtosis	2.083454	1.538154	2.413012	1.986760
Jarque-Bera	3.407633	3.105216	2.626858	3.387086
Probability	0.181988	0.211695	0.268896	0.183867
Sum	2.79E+13	1.42E+13	3.73E+12	2.86E+12
Sum.Sq.Dev	1.46E+25	2.87E+24	1.15E+23	1.67E+23
Observations	28	28	28	28

Table 4.1 indicates the descriptive statistics of the main variables used in the study for India for the period of twenty-eight years. According to that we can see how big the Indian economy in

terms of scale. Therefore, the country should concern in outline of the budget includes substantial reductions in government spending and also expanding its tax ratios in order to minimize the debt levels since both economies are following an expansionary fiscal policy regime.

The government should grow GDP and reduce deficits that are run every year and try to balance the debt portfolio. In order to simplify these relationships to identify the composite relationship we have used the other significant econometric tools as discussed below.

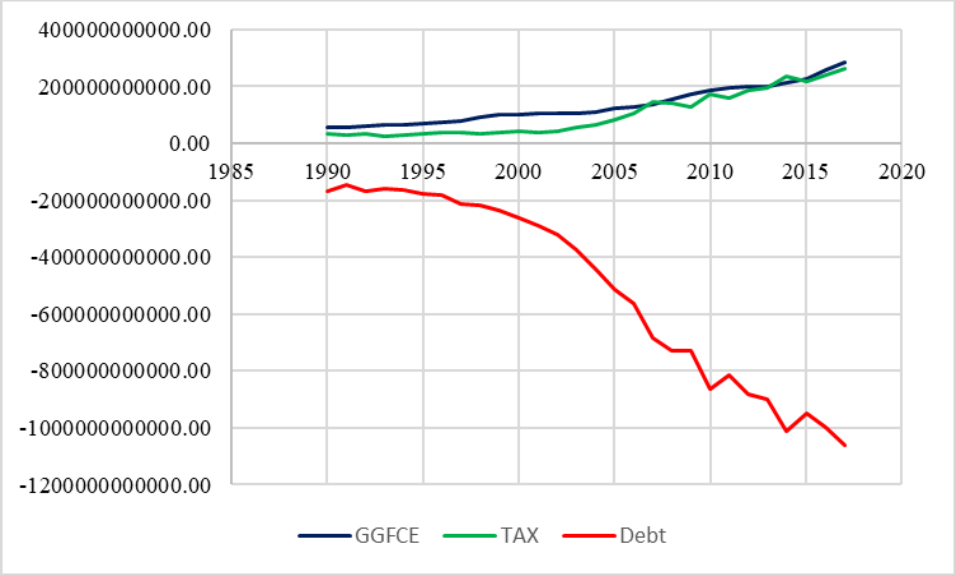

Figure 4.1: Taxation, Expenditure and Debt in India

According to figure 4.1, both countries record the same pattern of expansionary expenditure policy with higher debt levels. Since this budget deficit is widening continuously, the debt level is worsening as a chronic epidemic during the period.

- **Tests on Time Series Data: Unit Root, Stationary and ADF Test.**

The regression model assumes that the dependent and independent variables are stationary over time that is, mean of zero and a constant variance. `Applying the classical regression technique to the level variables, leads to a spurious correlation, especially when the variables involved exhibit consistent trend either upward or downward, Geda et al (2012).

- **Stationary of data**

Statistically it has been established that many economic time series data such as inflation rate, interest rates and stock indices just to mention a few exhibit trending behavior of nonstationary in the mean, standard deviation and other statistical inferences.

Though the unit root testing has been criticized as unnecessary and complicated because the test does not exploit prior knowledge of the growth status of the time series (Nymong and Misati, 2010), yet the unit root tests will help to determine the difference time series data and ensure stationarity.

When conducting a valid statistical inference, we make a key assumption in time series analysis: We must assume that the time series we are modeling is covariance stationary. A time series is stationary if its properties, such as mean and variance, do not change over time. A stationary series must satisfy three principal requirements. If a time series that we model is not stationary, the estimation results will have no economic meaning. For a non-stationary time series, spurious results will be yielded.

However, we can attempt to convert the data to a stationarity time series if the time series is non-stationary. The solution is to take the first difference. Before that, we must determine whether a time series is stationary. The tests ensure that shocks are only temporary and will dissipate and revert to their long-run means. Currently, most popular test for non stationary is the Augmented Dickey-Fuller test for a unit root DeFusco et al. (2007). Therefore, the Augmented Dickey-Fuller (ADF) test is employed to determine whether there is a unit root in economic variables used in the study.

ADF is applied to the level variables as well as to their first differences in logarithmic terms. The null hypothesis tested that the variables under investigation have a unit root, against the alternative that they do not have.

The ADF tests the null hypothesis (H_0) against the alternative (H_1) hypothesis;

- H_0: Each economic variable has a unit root
- H_1: Each economic variable does not have a unit root

If the probability of the ADF test statistic is less than 5%, and the absolute value of ADF test statistic is less than the 5% test critical value, then the null hypothesis is not rejected.

However, because the ADF test is sensitive to the lag length of the series, first the optimal lag length was determined by performing a test. A maximum lag order of 2 was selected since it is

the lowest of LR,FPE,AIC,SC and HQ.

Table:4.2 Lag Order Selection Criteria

Lag	LogL	LR	FPE	AIC	SC	HQ
0	53.57754	NA	2.59e-07	-3.813657	-3.620104	-3.757921
1	170.1339	188.2834*	1.16e-10	-11.54877	-10.58100*	-11.27008*
2	188.6929	24.26938	1.05e-10*	-11.74561*	-10.00363	-11.24398

After selecting the maximum lag length, Augmented Dickey-Fuller test was performed on each variable at level form and the results are shown in table 4.3

Table 4:3 Unit root test for Level data

Variables	**Level Data(India)** **ADF Test Statistic**			H_0 : Variable has a Unit Root H_1 : Variable has no unit root
	I &T	**I**	**N**	
LNGDP	-3.231 (0.083) [-3.587]	0.925 (0.991) [-2.976]	4.896 (1.000) [-1.956]	H_0 is not rejected Series is not stationary
LNGGFCE	-2.365 (0.515) [-3.587]	0.252 (0.970) [-2.981]	3.680 (0.998) [-1.956]	H_0 is not rejected Series is not stationary
LNDEBT	-1.207 (0.888) [-3.587]	0.001 (0.248) [-2.998]	4.326 (1.000) [-1.956]	H_0 is not rejected Series is not stationary
LNTAX	-2.693 (0.273) [-3.587]	0.417 (0.980) [-2.998]	3.011 (0.998) [-1.956]	H_0 is not rejected Series is not stationary

ADF unit root test with Mackinnon one side p-values done for level data establishes the fact that all the level data in the variables used in this modal are non-stationary at 5% significant level and in with intercept and trend included in the equation. Therefore, developing a model based on non-stationary data series is not desirable.

Hence to make our modal validate, we can test the stationary in the first difference level and performing a Engal –Granger co-integrating test we can make sure that our modal is valid as a result of the variables become stationary in first difference and the said variables co-integrated in long run making a long run relationship between our variables. Table 4:4 shows the ADF results when the test is performed on 1st Difference on each variable.

Table 4.4: Unit root test for First Difference

Variables	First difference Data(India)			H_0 : Variable has a Unit Root H_1 : Variable has no unit root
	ADF Test Statistic			
	I &T	I	N	
LNGDP	-5.411 (0.000) [-3.595]	-5.552 (0.000) [-2.998]	-1.189 (0.183) [-1.956]	H_0 is rejected Series is stationary
LNGGFCE	-3.707 (0.050) [-3.622]	-3.627 (0.020) [-2.998]	-1.236 (0.192) [-1.956]	H_0 is rejected Series is stationary
LNDEBT	-6.589 (0.000) [-3.592]	-2.093 (0.133) [-2.986]	-0.599 (0.447) [-1.956]	H_0 is rejected Series is stationary
LNTAX	-5.285 (0.000) [-3.233]	-5.624 (0.000) [-2.998]	-4.311 (0.000) [-1.956]	H_0 is rejected Series is stationary

ADF Unit root test of first difference data makes us to reject the null hypothesis and accept the alternative hypothesis. This makes sure that all the variables concerned are stationary at difference level and their level of integration is I (1).

- **Co-integration**

If the variables are not stationary at level form, but stationary at first difference, then we can build a valid long run relationship modal on level data provided that the series are co-integrated in long run. Engle and Granger (1987) established that "if each element of a vector of time series $\mathbf{X_t}$ is stationary only after differencing, but a linear combination $\propto' \mathbf{X_t}$ need not be differenced,

the time series $\mathbf{X_t}$ have been defined to be co-integrated of order (1,1) with co-integration vector $\propto$**.** Interpreting $\propto' \mathbf{X_t} = 0$ as a long run equilibrium, co-integration implies that equilibrium holds except for a stationary, finite variance disturbance even though the series themselves are non-stationary and have finite variance." To test the co-integration, the Engle- Granger test on residual of the model should be run using level data.

The long run relationship of the study for India is,

$\ln GDP_I = \beta_0 + \ln Texp + \beta_2 \ln Tex + \beta_3 \ln Tdebt + Ut$

Applied model is

$\ln GDP_I = \beta_0 + \ln Texp + \beta_2 \ln Texp + \beta_3 \ln Tdebt$

lnGDP= gross domestic production in India

lntexp= log expenditure

lntax=log tax

lntdebt=log debt

U = error term.

U is the residual of the modal and it is called as error correction term and to test the co-integrating property of the residual using Engle- Granger test is conducted.

In Engle- Granger test hypothesis would be

- H_0: Residual series has a unit root
- H_1: Residual series does not have a unit root.

Testing the model's stationary. Beta coefficients and t-statistics were obtained by running the model in Eviews and the statistical data are shown in the Table 4.5 as follows.

Table 4.5: Beta coefficients and t-statistics

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LNGGFCE	0.591582	0.085600	6.911014	0.0000
LNTAX	0.576885	0.067187	8.586210	0.0000
LNDEBT	0.019898	0.091755	0.216866	0.8301
C	-2.713388	0.825042	-3.288789	0.0031

The R^2 is 0.996 and the Durbin-Watson statistic is 1.2638 Since R^2<DW Statistic, the series is not spurious and suitable for regression. Also the residual of this regression estimate is stationary at level form, the model is suitable for regression and to obtain log run relationship (Engle and Granger 1987). Statistical results after applying DF unit root test for the residual is shown in table 4:6

Table 4:6 Residual unit roots

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-4.419625	0.0091
Test critical values:	1% level	-4.374307	
	5% level	-3.603202	
	10% level	-3.238054	

Engle- Granger test required that the calculated ADF test statistic is compared with the Davidson & Mackinnon co-integration critical value with a trend. The Davidson & Mackinnon co-integration critical value at 5% for four variables is -4.09600. To test the hypothesis, the absolute value of ADF test statistic is compared with absolute value of Davidson & Mackinnon co-integration critical value. ADF t-statistic 4.419 & D&M is 4.9600. Since ADF test statistic is less than Davidson & Mackinnon value, we reject the null hypothesis and accept the alternative hypothesis that the residual series has no unit root. Therefore, the series co-integrated and build long run relationship as per the applied model. Since p value for ADF is less than 0.05 (0.0091), it also supports to decide that the null hypothesis of the residual series has a unit root can be rejected and accept the alternative hypothesis that the residual series has no unit root.

The variables used in the model are non-stationary at level, but stationary at first difference. Then the residual series of the model is stationary at level. Therefore, the model co-integrated and can be considered as long run model.

- **Long Run Relationship (Engel Granger Co-Integration Test Results)**

The existence of co-integration relationship between gross domestic production and macroeconomic variables were verified by implementing the following long-run regressions through Engel Granger Co-integration test on the levels variables and residual series of the regression. The Engel-Granger test is done first by running co-integrating regression (long run relationship) using OLS, then test if the residual in the estimated equation comes out being is stationary. If it is stationary, then co-integrating relationship exists.

Table 4.7 The Estimated Regression Result for Long run relationship

Variable	Coefficient	Std. Error	t-Statistic	Prob.

LNGGFCE	0.591582	0.085600	6.911014	0.0000
LNTAX	0.576885	0.067187	8.586210	0.0000
LNDEBT	0.019898	0.091755	0.216866	0.8301
C	-2.713388	0.825042	-3.288789	0.0031

Engel Grager Cointegration between the levels variables, estimated through the OLS method for India as follows.

$$\mathbf{lnGDP = \beta_0 + lnTexp + \beta_2 lnTexp + \beta_3 lnTdebt}$$

$$\mathbf{lnGDP_{IND} = -2.713388 + 0.59lnTexp + 0.57lnTtax - 0.01lnTdebt} \quad (4.2)$$

According to the equation 4.2, estimated results confirms that in the long run following relationships are existing;

- ✓ 100% increase in Total Government Spending will improve the GDP by 59% in the long run in India during the study period.
- ✓ 100% increase in Total tax revenue will improve the GDP by 57% in the long run in India during the study period.
- ✓ The impact of debt on economic growth in India is not significant as the probability value is (0.8301).

Therefore, according to the results, the main conclusion is that India's expenditure policy directly enhances countries economic growth (59%).

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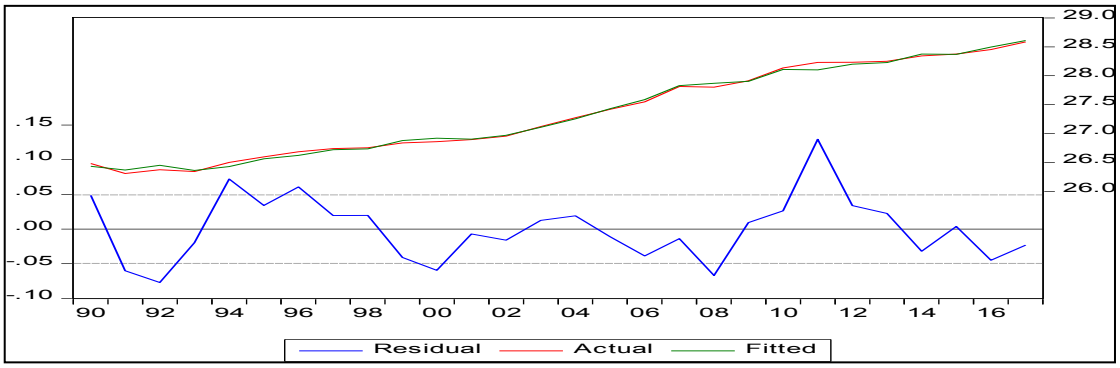

Figure 4.4: Observed Gross Domestic Production and fitted Gross domestic with residuals

- ➢ **Short Run Relationship (Error Correction Test Results)**

The short run model was derived from the equation 1 by taking the first differences of all variables and with one-month lag of residual series and one-month lag of Stock Market return as

follows and using error correction test the coefficients were obtained,

Table (4.8): Estimated regression results of the regression of equation (2) (Error correction estimates).

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(LNDEBT)	-0.105719	0.191238	-0.552811	0.5860
D(LNGGFCE)	0.601624	0.229931	2.616545	0.0158
D(LNTAX)	0.599262	0.121137	4.946991	0.0001
RESID02(-1)	-0.665226	0.207961	-3.198808	0.0041
C	0.004204	0.017192	0.244556	0.8091

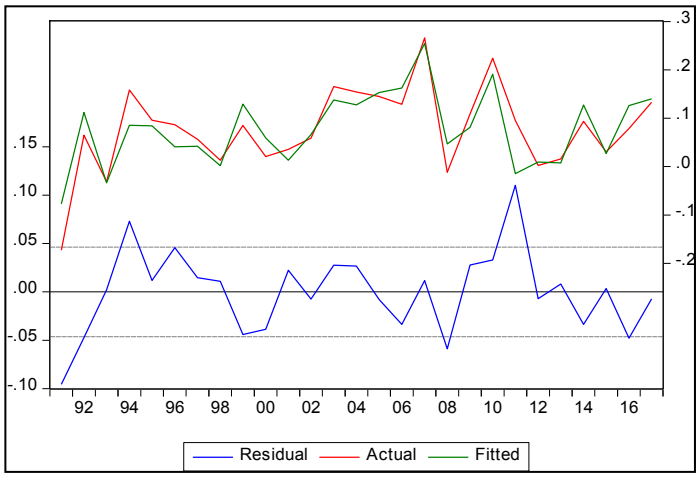

Figure4: 5: Observed Gross Domestic and fitted Gross Domestic Production

$\Delta lnGDP_{IND}$= 0.004204+ 0.6 lnTexp+0.59lnTta+-0.01lnTdebt

As shown in equation 4.5, estimated results confirms that in the short run following relationships are existing;

- ✓ 100% increase in Total Government Spending will improve the GDP by 60% in the short run in India.
- ✓ 100% increase in Total tax revenue will increase the GDP by 59% in the short run during the study period in India.
- ✓ 100% increase in Total debt will improve the GDP by 1% in the short run during the study period in India.

According to the estimated results for the short run relationship, India's budgetary policy is very effective in enhancing economic growth.

- **Causal Relationship (Pairwise Granger Causality Test Results)**

Causality is closely related to the idea of cause-and-effect, although it isn't exactly the same. A variable **X** is causal to variable **Y** if **X** is the cause of **Y** or **Y** is the cause of **X**. However, with Granger causality, true cause-and-effect relationship cannot be tested. What we can know is **if** a particular variable comes before another in the time series. In other words, if we find Granger causality in our data, there isn't a causal link in the true sense of the word. (for example, sales of Easter baskets Granger-cause Easter!). When econometricians say "cause," what they mean is "Granger-cause," although a more appropriate word might be "precedence" (Leamer, 1985).

Granger causality test was conducted with 2 lag lengths and results are shown in Table (11111). The null hypothesis is that The variable does not cause granger causal on the other considered variable. The null hypothesis was rejected if the p value for F statistic is less than 0.05 (at 95% confidence level). analysis suggests that there exists a long-run relationship between government revenue and expenditure in country. But in the direction of determining which variable causes the other, granger causality test was used. The granger causality test results are presented in Table 4.9 for India.

Table 4.9 : Pairwise Granger Causality Tests

Null Hypothesis:	Obs	F-Statistic	Prob.
LNGGFCE does not Granger Cause LNGDP	26	0.25079	0.7805
LNGDP does not Granger Cause LNGGFCE		2.00402	0.1598
LNTAX does not Granger Cause LNGDP	26	0.18267	0.8344
LNGDP does not Granger Cause LNTAX		1.82924	0.1852
LNDEBT does not Granger Cause LNGDP	26	7.20142	0.0042
LNGDP does not Granger Cause LNDEBT		3.08198	0.0670
LNTAX does not Granger Cause LNGGFCE	26	2.46822	0.1090
LNGGFCE does not Granger Cause LNTAX		1.07536	0.3592

LNDEBT does not Granger Cause LNGGFCE	26	0.92152	0.4134
LNGGFCE does not Granger Cause LNDEBT		0.36020	0.7018
LNDEBT does not Granger Cause LNTAX	26	22.0036	7.E-06
LNTAX does not Granger Cause LNDEBT		9.67611	0.0011

- **Impact of External Shocks (Impulse Response Function Results**

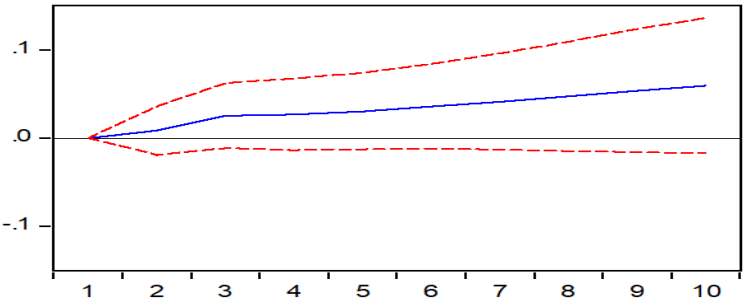

Figure 4.6: Response of GDP due to the shocks to the Government Spending in India

When there is a shock to the Government Spending in India, that will positively affect to the GDP and the GDP will improve sharply during the first 3 years because of the external shock. Then the impact will decay slowly. According to the results obtained from the Impulse Response Function, we can conclude that, the Indian economy is comparatively strong enough to handle external shocks with compared to Sri Lankan economy.

CONCLUSION

The theoretical framework discussed in this study is premised on the endogenous growth theory which analyses the nature of the relationship between fiscal policy variables and economic growth in the economies of India. With this, the relationship between output in the economies and the other variables to be used for this study are specified are tested. Estimated results confirm that in the long run following relationships are existing; 100% increase in Total Government Spending will improve the GDP by 59% I Indian economy. Total tax revenue will increase the GDP by India's 57%. In the short run there is significant impact of fiscal policy variables on economic growth in Indian. Indian economy grows with the expansionary budgetary policy in the short run. According to the Impulse Response Function results, when an external

shock affects to the total government spending level, Indian economy is strong enough to handle the external shocks which affects the country's spending level.

POLICY RECOMMENDATIONS

There is overwhelming evidence that government spending is not effective in Sri Lanka with compared to Indian economy and that Sri Lanka's economy could grow much faster if the burden of government was reduced. Taxes on goods and services and deficits are both harmful, but the real problem is that government is taking money from the private sector and spending it in ways that are often counterproductive in Sri Lankan context. Fiscal policy should focus on reducing the level of government spending on nonproductive purposes as Indian economy does, with particular emphasis on those programs that yield the lowest benefits or impose the highest costs. Therefore, shrinking the size of recurrent expenditures and enhancing capital expenditure should be a major goal for policymakers in Sri Lanka. If this is concerned, the Sri Lankan economy certainly would perform better, and this would boost prosperity and make Sri Lanka more competitive. India also should continue this towards the "East Asian Model" of economic growth.

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