

SHRI RAM COLLEGE OF COMMERCE

ISSN: 2581-4931 (Print)

STRIDES - A STUDENTS' JOURNAL OF SHRI RAM COLLEGE OF COMMERCE

VOLUME 5 – ISSUE1 & 2

JULY 2020 - JUNE 2021

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ISSUE 1 & 2

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Printed and published by Prof. Simrit Kaur (Principal, Shri Ram College of Commerce) on behalf of 'Shri Ram College of Commerce' and printed at Sudha Printing Press, B-21/3, Okhla Industrial Area, Phase-II, New Delhi-110020 and published at Shri Ram College of Commerce, University of Delhi, Maurice Nagar, Delhi-110007, India. Editor - Dr. Rajeev Kumar

> License No. – DCP / LIC No. F. 2 (S / 37) Press / 2017 Registration No. DELENG / 2018 / 75093 ISSN 2581- 4931 (Print) (Published in November, 2021)

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NATIONAL INSTITUTE OF SCIENCE COMMUNICATION AND INFORMATION RESOURCES

(Council of Scientific and Industrial Research) 14, Satsang Vihar Marg, New Delhi 110 067

S. B. Burde, Head, National Science Library, ISSN Phone: 91-11-26863759 E-Mail: <u>issn.india@niscair.res.in</u>

No. NSL/ISSN/INF/2018/210

Dated: June 01, 2018

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STRIDES - A STUDENTS' JOURNAL OF SHRI RAM COLLEGE OF COMMERCE ISSN 2581-4931 (Print)

Shri Ram College of Commerce is well known for its academic excellence and dedicated approach towards dissemination of knowledge in the academic world. The college appreciates the role of research in education and is committed to developing an inclination towards research in both faculty and students. In this pursuit, the college has taken the initiative to launch a new Journal named 'Strides - A Students' Journal of Shri Ram College of Commerce'.

ABOUT THE JOURNAL

It is a double blind reviewed bi-annual Journal launched exclusively to encourage students to pursue research on the contemporary topics and issues in the area of commerce, economics, management, governance, polices etc. The journal provides an opportunity to the students and faculty of Shri Ram College of Commerce to publish their academic research work.

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Shri Ram College of Commerce is committed to upholding the high academic standards. Therefore, the Committee on Publication Ethics (COPE) follows a 3-Stage Selection Process while approving a paper for publication in this Journal. The policy is as follows:

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- 3. Abstract
- 4. Keywords

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Endnotes should be serially arranged at the end of the article well before the references and after conclusion.

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Table, Figures, Graphs

The first letter of the caption for table, figure, graph, diagram, picture etc. should be in capital letter and the other words should be in small letter - e.g. Table-1: Demographic Data of Delhi, Figure-1: Pictorial Presentation of Population etc.

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Principal's Message



To achieve and promote excellence in research and publish quality academic as well as educational resources as guided by the Mission Statement of the College, Shri Ram College of Commerce had launched a Journal, "Strides- A Students' Journal of Shri Ram College of Commerce" on the occasion of 91st Annual Day of the College held on 13th April, 2017. The Journal was released by then the Hon'ble Union Minister of Human Resource Development, Shri Prakash Javadekar. The Journal publishes the research papers and articles written by students of the College under the mentorship of Faculty Members which go through an intense review mechanism before getting published.

Through the Journal, students get an excellent platform to enhance their research calibre, display their academic perspective, and practically apply their classroom learnings to real-world situations. The present Issue includes several multi-disciplinary and contemporary topics such as "Effects of Globalization on the Indian Health Sector", "Will America Sustain the Wave of Automation?", "Recycling Hoax", "The Role of Corporate Social Responsibility towards Sustainable Education with reference to the FMCG Companies", "COVID-19 and Mental Health of Adolescents", "Cryptocurrency-The Rise of Tokens", and "Discussion of the Link Between Air Pollution and Economic Growth in Indian States".

I wholeheartedly congratulate the Editor, Strides, Dr. Rajeev Kumar and students whose research papers got published in Volume 5 Issue 1 and 2 of the Journal. Simultaneously, I encourage more students to contribute their research papers for the successive Issues.

My best wishes for your future endeavours!

Prof. Simrit Kaur Principal



Visit: http://www.srcc.edu/publications/students-publications

Editor's Message

Shri Ram College of Commerce is well known for its academic excellence and dedicated approach towards dissemination of knowledge in the academic world. The College acknowledges and values the role of research in education and is firmly committed to develop and encourage an inclination towards research in both faculty and students. To reaffirm this ethos, the College has taken the initiative to launch a new Journal named 'Strides - A Students' Journal of Shri Ram College of Commerce' to encourage students to pursue research under the guidance of the faculty of Shri Ram College of Commerce.

It is a bi-annual Journal launched exclusively to publish academic research papers and articles by the students on contemporary topics and issues in the area of commerce, economics, management, governance, policies etc.

In order to maintain high standards of publication, COPE (Committee on Publication Ethics) has been constituted. The COPE is the apex authority which authorises over all the decisions related to publication of research papers and articles in Strides. The recommendations and decision of COPE is final and binding.

To maintain high academic standards, academic ethics and academic integrity, a rigorous process of double-blind review of research papers is followed along with screening of plagiarism of each manuscript received by the COPE for



publication. The research work published in Strides is absolutely original and not published or presented in any form at any other public forum.

The foundation issue of the Journal "Strides - A Students' Journal of Shri Ram College of Commerce, Volume 1, Issue 1, 2016-17" was successfully released on 91st Annual Day of SRCC held on 13th April, 2017 by Shri Prakash Javadekar, Honb'le Union Minister of Human Resource Development, Government of India. The successive issues of 'Strides - A Students' Journal of Shri Ram College of Commerce' have been released biannually. However, due to the COVID19 pandemic and ensuing lockdowns the current issue has been delayed.

I congratulate all the students whose research papers are published in this issue of Strides and express my sincere thanks to their mentors and referees.



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STRIDES - A STUDENTS' JOURNAL OF SHRI RAM COLLEGE OF COMMERCE

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Somya Garg B.A. (Hons.) Economics SRCC, DU



Mentor: Dr. Ravi Kant Assistant Professor Department of Economics SRCC, DU

The Nexus Between Economic Growth and Public Outlays and Deficits in India: An Econometric Analysis

ABSTRACT

In recent years there has been a slew of debate about the impact of fiscal deficit on GDP growth. Different theories describe different processes behind this impact, thus creating contradictory results in terms of magnitude and even the direction of the impact. This paper examines the relationship between fiscal deficit and GDP growth rate in the Indian economy. We also determine whether the capital expenditure is more successful in boosting economic activity than revenue expenditure as propounded by many. The study conducts a regression analysis using data covering the period of 1978-2019 by using the Autoregressive Distributed Lag (ARDL) and Error Correction Model (ECM) technique. Both the long-run and short-run analysis is done. The results of the study showed that both the revenue expenditure and capital expenditure positively impact GDP growth rate in the long run

whereas fiscal deficit does not have a significant long-run relationship with GDP growth.

Keywords: Fiscal Deficit, Government Expenditure, Capital Expenditure, Revenue Expenditure, Autoregressive Distributed Lag, Error Correction Model, India.

INTRODUCTION

A government incurs various kinds of expenditures to ensure the provision of public welfare schemes, boost the economy, and bring in economic stability. These outflows sometimes result in deficits as well. India has been getting high levels of fiscal deficit even after the adoption of the Fiscal Responsibility and Budget Management Act (FRBM) in 2003. This has in turn posed a major threat to the stability of the economy. However, the impact is widely contested in terms of magnitude and direction. Thus, the question of interest is how have fiscal deficits impacted India's economic growth?

A large fiscal deficit can affect a country's economic growth adversely. It forces the government to take on large amounts of loans and a high debt servicing cost which leads to a cut back in spending on sectors like health, education, and infrastructure. This reduces the growth prospects of a country because of a reduction in the investments in human and physical capital. Large public borrowing can also lead to crowding out of private investment and higher inflation. However, if public and private investments are complementary, then the impact of high public borrowings on private investments and consequently economic growth may be positive. Also, different kinds of expenditures are expected to affect the economy in different ways. Fiscal deficit used for creating infrastructure and human capital will have a greater positive impact on the economy than if it is used for financing ill-targeted subsidies and recurrent expenditure. Therefore, the fear about a high fiscal deficit is justified if the government incurs a deficit to finance its current expenditure rather than capital expenditure.

In this context, it is important to understand the consequences of rising fiscal deficit, current expenditure, and capital expenditure on the GDP of a country. This analysis will also contribute to the rules vs discretion debate. In other

words, whether the government should keep its commitment on a balanced budget strategy (rule) or run a deficit in case of need (discretion). If the analysis results in favour of a balanced budget then it means that it is more beneficial to follow the rule and not practice any discretion. On the other hand, budget deficits may not impact the economy in a negative way significantly which makes it worthwhile for a government to practice discretion.

LITERATURE REVIEW

- Fiscal Deficit and Economic Growth

Schools of thought-

There are many theories around the subject of fiscal deficit and its impact on growth. It has invited considerable debate but there is no conclusive answer. Even the empirical results have been contradictory to each other. Fiscal deficit is the excess of public expenditure over public revenue. It is a significant variable that may have an impact on economic activity by boosting the economy through demand creation. On the other hand, it may prove to be detrimental because an increase in fiscal deficit implies increased financing needs of the government which may hamper economic activity through various processes. There are different schools of thought in economics that confirm different impacts of fiscal deficit on economic growth.

According to the **Keynesian theory** (Eisner, 1989), government expenditure is one of the determinants of aggregate demand of the economy. An increase in government expenditure either through consumption expenditure or investment expenditure raises the aggregate demand which in turn causes the output to expand when the resources are not fully employed. The multiplier effect further increases the output which leads to an increase in money demand and if money supply is fixed then interest rates would rise, thus partially offsetting the multiplier effect. However, increased aggregate demand enhances the profitability of private investment and leads to higher investment at any given rate of interest. The effect of an interest rate rise is thus more than offset by an increase in the prospect of profitability of investment. Thus, investment and savings may rise even after an increase in interest rate when there is less than full employment. In the case of full employment, fiscal deficit may lead to crowding out in Keynesian economics as well.

In contrast, the **classical theory** posits that increased government expenditure financed by borrowings (with no increase in money supply) increase government investment at the cost of private investment. When the government borrows from the market interest rates increase due to competition which then decreases the private investment. Thus it doesn't lead to any increased growth in the long run. This is called crowding out effect. Classical economists believe that the invisible hand guarantees full employment equilibrium in the economy and thus it should be left to operate on its own. They saw government intervention in the economy as a serious problem which can stifle growth and therefore lead to less output.

In the **neo-classical** view the crowding out effect of the government borrowing is given pre-eminence. The increase in government expenditure is thus detrimental on economic growth. Also any increase in taxes to make up for this increased expenditure is believed to have distortionary effects. Neoclassical economists favour low taxes and limited government spending. They believe in spending on national defense, but not for welfare policies like Social Security and Medicare.

Under classical and neoclassical theories the long run impact is postulated to be negative. However under the short run, the impact depends upon the transmission of increased interest rates on private investment and any increase in tax rates.

The difference between Keynesian theory and classical and neoclassical theories lies in the fact that classical economists believe in a fixed flow of savings. In Keynesian economics, government deficits also raise output, resulting in increased income and savings. This increased saving will ensure an increase in government expenditure without decreasing private investment, or even increasing it in some cases.

Another school of thought is the **Ricardian Equivalence** (e.g. Barro, 1974, 1976, 1979, 1987, 1989), which views fiscal deficit as being neutral in terms of stimulating economic activity. The increased deficits imply increased future

taxes and the present value of these taxes is exactly equal to the amount of the deficit. Thus, government deficit just implies postponement of taxes. In this theory, fiscal deficits are used as a device for smoothening out the public expenditure in case of revenue shocks over a period of time. As household spending decisions are based on the present value of their incomes, the aggregate demand remains unaffected. Households should be long-sighted under this model. This is in contrast to the Keynesian theory where individuals are myopic.

Besides these the **Modern Monetary Theory** posits that the government can spend as much as possible without incurring any debt or applying increased taxes. As there is no limit to the quantity of money that can be created by a central bank, the governments can pay using new money creation. But this view has the problem that an economy can run into inflation. Then the only option to finance the expenditure will be by increasing taxes. It is a relatively new theory but in this study this theory can't be taken in its full scope as the basis of it is that the government finances through money creation which is not true for India at present.

Empirical Studies-

Baskins' (1987) showed that fiscal policy can affect real economic activity. Federal deficits increase private savings and decrease domestic and foreign net investment. These results indicate that an increase in public capital stock increases private capital efficiency and private investment rises.

Navaratnam and Mayandy (2016) examined the impact of fiscal deficit on economic growth in Bangladesh, India, Nepal, Pakistan, and Sri Lanka, using time series annual data over the period 1980–2014. The results from their study confirmed that the fiscal deficit had a negative impact on economic growth in these South Asian countries except Nepal, which confirmed the positive impact.

Ramu and Gayithri (2016) found that fiscal deficit negatively affected the short-run and long-run economic growth prospects while studying the data covering the time period from 1970–1971 to 2011–2012 in India.

Mohanty (2012) also examined the short and long-run relationship between fiscal deficit and economic growth in India from 1970 to 2012. The study found a significant negative relationship between fiscal deficits and economic growth in the long run while no significant relationship was found in the short run.

- Disaggregated Government Expenditure and Economic Growth

Government capital and revenue expenditure are imperative from the standpoint of economic policy. While capital expenditure results in asset creation, employment expansion, and thus economic development, revenue expenditure essentially helps in the smooth functioning of government and helps in the redistribution of income through subsidies and other grants to the weaker sections of the country.

In economic literature, capital expenditure has been viewed as a productive component of government outlays and revenue expenditure has been looked down upon because more revenue expenditure corresponds to lower expenditure on activities that would have helped in asset creation and economic development. However, public capital expenditure is also an area where grossly unproductive white elephants can be found. However the economic theories do not explicitly mention the preferences of the kind of expenditures but according to the theories of economic development capital acts as a primary source of growth and thus given primary importance. The empirical studies have found mixed results regarding the impact of these two kinds of expenditures on economic development.

Empirical Studies-

R.J. Barro (1999) carried out an empirical investigation into the determinants of economic growth for a panel of 100 countries (1960 to 1995). Government investment expenditure was proven to have a positive impact on economic growth and an increase in investment spending by a government was recommended.

M.I.J. Attari and A.Y. Javed (2013) explored the relationship between government expenditure and economic growth in Pakistan using time series

data from 1980 to 2010. The results of the study revealed that both types of government expenditure have a positive impact on economic growth in the study country, both in the short run and in the long run.

S. Ghosh and A. Gregoriou (2008) also investigated the relationship between disaggregated government expenditure and economic growth in developing countries. Capital spending had a negative impact on economic growth as opposed to current spending which contributed to growth. Also, government expenditure on operations and maintenance had a stronger positive impact on economic growth than expenditure on education and health which had a significant negative effect. These results conform to Devarajan et al. (1996). They explained that expenditures that are considered productive could become unproductive if they are carried out in an excessive amount, and excessive capital spending may have brought current spending to a non-optimal level.

Ghosh and Gregoriou argued against this reasoning by claiming that current spending as a proportion of GDP has typically been above 17% in contrast to capital spending as a ratio of GDP, which has been below 3%. Countries that have correctly perceived current spending as being more productive have increased the share of spending on this category which has led to higher growth, and countries that have not done this have faced negative consequences.

The other reason was that countries that have allocated funds towards capital spending have done it for reasons other than productivity considerations, and this is where the role of corruption assumes importance. Tanzi and Davoodi (1997) noted that private enterprises often get contracts for large public investment projects by paying a hefty commission to government officials. Capital spending is highly discretionary but current spending reflects spending on previous commitments (for example, wages, salaries, pensions, subsidies) allowing limited discretion to the politicians in the short run.

DATA SOURCE AND METHODOLOGY

The study is based on secondary data. The objectives of the study are examined by using time series data covering the period from 1977-78 to 2018-19. Relevant data for the study are obtained from Handbook on Indian

Economy from the Reserve Bank of India and World Development Indicators by World Bank. This paper has examined the effects of fiscal deficit, capital expenditure, and revenue expenditure on economic growth in India by using empirical data. The objectives of the study are being examined by using the Unit root test (ADF test), Autoregressive-Distributed Lag (ARDL), and Error-Correction Model (ECM) technique. To carry out the regression, the paper takes gross capital formation as a percentage of GDP, inflation rate, and annual change in the exchange rate as control variables to separate their effects from the explanatory variables of interest. The following table lists all the variables used in the study along with their data source.

Variable	Definition of Variables	Data Source
GDPR	Real GDP annual growth rate (in percentage)	World Bank Open Data
GFD	Gross Fiscal Deficit as a percentage of GDP	Handbook of Statistics on the Indian Economy - RBI
RE	Revenue Expenditure as a percentage of GDP	Handbook of Statistics on the Indian Economy- RBI
CE	Capital Expenditure as a percentage of GDP	Handbook of Statistics on the Indian Economy - RBI
INVT	Gross Capital Formation as a percentage of GDP	World Bank Open Data
INF	Annual growth rate of general price level (in percentage)	World Bank Open Data
DEX	Annual change in exchange rates (in percentage) (a positive figure represents depreciation and a negative figure represents appreciation of the domestic currency)	OECD Data

Table 1: Data Description

- Model Specification

Unit Root Test (Test for Stationarity): The first step in this model is to test for stationarity in the variables. Stationarity means that the mean and variance of the series are constant over time and the covariance between any two time periods depends only on the gap between the periods and not the actual time at which covariance is calculated. If either of these conditions is not satisfied, then the series is nonstationary. In this study, we apply the Augmented Dickey-Fuller (ADF) test to examine if the series is stationary or not.

Cointegration: Next step is to test whether the variables are cointegrated. Variables are cointegrated if there is a linear combination of them that is stationary. If the variables are integrated of the same order, the relationship between variables, in the long run, can be studied by either the Engle-Granger approach, the Johansen-Juselius procedure, or the ARDL approach. However, the former two approaches can only be used if the variables are integrated of the same order. Therefore, in this study, the ARDL method was applied since the order of integration of variables was unequal.

The ARDL model to be studied takes GDP growth rate as the dependent variable and Gross Fiscal Deficit, Revenue Expenditure, Capital Expenditure, Investment, Inflation rate, and Exchange Rate changes as independent variables. Note that investment, inflation rate, and exchange rate changes are used as control variables to separate any impact they have on GDP growth from that of the actual variables of interest under study. The functional form specification is displayed in equation (1) below:

$$GDPR_{t} = f(GFD_{t}, RE_{t}, CE_{t}, INVT_{t}, INF_{t}, DEX_{t})$$
(1)

The standard ARDL equation (2) is displayed below:

$$GDPR_{t} = \gamma_{0} + \sum_{i=1}^{j} \lambda_{i} GDPR_{t-i} + \sum_{i=0}^{m} \alpha_{i} GFD_{t-i} + \sum_{i=0}^{p} \beta_{i} RE_{t-i} + \sum_{i=0}^{q} \phi_{i} CE_{t-i} + \sum_{i=0}^{s} \nu_{i} INVT_{t-i} + \sum_{i=0}^{y} \xi_{i} INF_{t-i} + \sum_{i=0}^{z} \Psi_{i} DEX_{t-i} + \omega_{t}$$
(2)

where j, m, p, q, s, y, and z are lag length of GDP growth rate, Gross Fiscal Deficit, Revenue Expenditure, Capital Expenditure, Investment, Inflation rate, and exchange rate changes, respectively. ω represents white noise error term

and γ is the drift component.

Model (3) presents the long-run ARDL specification of the relationship between GDP growth rate, Gross Fiscal Deficit, Revenue Expenditure, Capital Expenditure, Investment, Inflation rate, and exchange rate changes.

 $\begin{array}{lll} D(GDPR_{t}) &=& \gamma_{0} + \sum_{i=1}^{j} \lambda_{i} D(GDPR_{t,i}) + \sum_{i=0}^{m} \alpha_{i} D(GFD_{t,i}) + \sum_{i=0}^{p} \beta_{i} D(RE_{t,i}) + \sum_{i=0}^{q} \phi_{i} \\ D(CE_{t,i}) &+& \sum_{i=0}^{s} \nu_{i} D(INVT_{t,i}) + \sum_{i=0}^{y} \xi_{i} D(INF_{t,i}) + \sum_{i=0}^{z} \Psi_{i} D(DEX_{t,i}) + \beta_{1} GDPR_{t,1} + \beta_{2} \\ GFD_{t,1} &+& \beta_{3} RE_{t,1} + \beta_{4} CE_{t,1} + \beta_{5} INVT_{t,1} + \beta_{6} INF_{t,1} + \beta_{7} DEX_{t,1} + \varepsilon_{t} \end{array}$

where D(.) denotes the difference operator. The ARDL bounds test for cointegration tests for joint significance of the coefficient of lagged variables to check if there is a long-term relationship among the variables. The null hypothesis of no cointegration among the variables (H0: $\beta 1 = \beta 2 = \beta 3 = \beta 4 = \beta 5 = \beta 6 = \beta 7 = 0$) is tested following Pesaran et al. (2001). If the value of F-test > upper critical bound (UCB), then we reject H0 and the variables are co-integrated. If the value of F-test < lower critical bound (LCB), then we accept H0 and the variables of the study are not co-integrated. However, if the value of the F-test is between the UCB and LCB, then the decision is inconclusive.

Error Correction Model: If long-run cointegration is found among the variables then Error Correction Model (ECM) is used for the estimation of the short-run linkages. It corrects for the long-run relationships while estimating the short-run coefficients. The ECM can be represented through the equation (4) below:

$$D(GDPR_{t}) = \gamma_{0} + \sum_{i=1}^{j} \lambda_{i} D(GDPR_{t-i}) + \sum_{i=0}^{m} \alpha_{i} D(GFD_{t-i}) + \sum_{i=0}^{p} \beta_{i} D(RE_{t-i}) + \sum_{i=0}^{q} \phi_{i}$$

$$D(CE_{t-i}) + \sum_{i=0}^{s} \nu_{i} D(INVT_{t-i}) + \sum_{i=0}^{y} \xi_{i} D(INF_{t-i}) + \sum_{i=0}^{z} \Psi_{i} D(DEX_{t-i}) + \lambda_{1} ECM_{t-1} + \mu_{1t}$$

$$(4)$$

The statistically significant and negative sign of ECM_{t-1} coefficient (λ_1) implies that any long-run disequilibrium among dependent variables and a number of independent variables will converge back to the long-term equilibrium association.

EMPIRICAL ANALYSIS

The statistical analysis begins with a diagnostic analysis of the stationarity of the variables in the study. This is then followed by the autoregressive distributed lag (ARDL) and error correction model (ECM) methodology, which is used in determining the long and short-run relationships between the variables respectively.

- Stationarity Test

Time series plot of the yearly GDP growth rates for the period from 1977-78 to 2018-19 is shown in part B of the appendix. From the figure, it appears that there is an indication of stationarity of the GDP growth rates. To confirm this, the Augmented Dickey-Fuller (ADF) test was performed. The p-value of the test was less than 0.01; hence, we reject the null hypothesis of unit root (nonstationarity) at 1% level of significance and thus conclude that the GDP growth rates are stationary over the period from 1977-78 to 2018-19. The result of the Augmented Dickey-Fuller (ADF) test is shown in Table 2. This means that the GDP growth rates are integrated of order zero (I(0)) since they are stationary without differencing. Table 2 also shows the ADF test of stationarity for Gross Fiscal Deficit, Revenue Expenditure, Capital Expenditure, Investment, Inflation rate, and exchange rate changes. The pvalues show that inflation rate and changes in the exchange rate are stationary. Other variables, namely, Gross Fiscal Deficit, Revenue Expenditure, Capital Expenditure, and Investment are non-stationary at level. Appendix B clearly confirms this, since the plot of the level values of GFD, RE, CE, and INVT shows that the mean and variance are not constant over time. This called for checking the stationarity at the first difference for these variables. The ADF test of stationarity is thus applied at the first difference of these variables. Since the p-values from Table 2 are each less than 0.01, we conclude that the variables are stationary. Hence, this shows that, after first difference, GFD, RE, CE, and INVT became stationary. This means that GFD, RE, CE, and INVT are all integrated of order one (I(1)).

Level			1 st Difference		
Variables	Intercept Trend and Intercept		Intercept	Trend and Intercept	Conclusion
GDPR	-6.140879*	-7.104942*	****	****	I(0)
GFD	-2.526635	-3.669296*	-6.337335*	-6.464919*	l(1)
RE	-2.351275	-1.422859	-5.094722*	-5.367626*	I(1)
CE	-0.745823	-1.935289	-6.206365*	-6.109339*	l(1)
INVT	-1.290246	-1.302306	-6.723786*	-6.730371*	l(1)
INF	-3.904939*	-4.321073*	****	****	I(0)
DEX	-4.658827*	-4.868248*	****	****	I(0)

Table 2: Unit root test (Augmented Dickey-Fuller test)

Null hypothesis: Existence of unit root, *denotes rejection of null at 1% level of significance, **denotes rejection of null at 5% level of significance. Note: the figures reported are t-statistics

As some variables are I(0) and some are I(1), we will use the ARDL approach to check long-run cointegration between variables, if any.

ARDL Bounds Cointegration Test

The result of the cointegration test, based on the ARDL bound testing approach, is presented in Table 3. From the table, the calculated F-statistic is 23.65262. This value is above the upper bounds critical value of 3.99 at the 1% significance level. This means that the null hypothesis of no cointegrating relationship can be rejected. This implies that the GDP growth rate is cointegrated with the chosen independent variables (GFD, RE, CE, INVT, INF,

and DEX). This indeed implies that the selected independent variable and GDP growth rate are bound by a long-run relationship in India.

F-Bounds Test		Null Hypothesis: No levels relationship		
Test Statistic	Value	Significance level	l(0)	I(1)
F-statistic	23.65262	10%	1.99	2.94
k	6	5%	2.27	3.28
		2.5%	2.55	3.61
		1%	2.88	3.99

Table 3: ARDL Bounds Test

Next, we compute the estimates of the ARDL long-run coefficients and of the error correction model (ECM). Appendix C contains the long-run estimates, while Appendix D contains the estimates of the corresponding ECM. ARDL (4, 4, 3, 4, 4, 2, 4) means that the dependent variable (GDPR) has a lag of four, while each independent variable, GFD, RE, CE, INVT, INF, and DEX, have a lag of four, three, four, four, two, and four respectively.

ARDL Long-Run Estimation:

GDPR = -3.1610 GFD -1.0607 GPD + 3.0561 RE + 3.0509*CE + 0.0194 INVT + 0.3664 INF -0.5588*DEX - 22.2984

The result of the long-run relationship shows that capital expenditure and revenue expenditure have a positive and significant impact on GDP growth at 10% level of significance. An increase in capital expenditure as a percentage of GDP of 1% will increase the GDP growth rate by 0.98% and an increase in revenue expenditure as a percentage of GDP of 1% will increase the GDP growth by 2.3%. This is in contrast to the view that says that capital expenditure is imperative for economic growth as it helps in employment generation and thus creates a multiplier effect. Also, note that the fiscal deficit has no impact on the long-run GDP growth rate as the coefficient is insignificant. This is in line with the Ricardian equivalence theory.

ARDL Error Correction Model (ECM):

The following results are from the short-run model. The error correction term (CointEq(-1)) has a negative and statistically significant coefficient of -1.4583

(p-value = 0.000). It suggests a high speed of convergence of GDP growth rate to its long-run equilibrium after a change in other variables. The results also show that gross fiscal deficit has a negative impact on GDP growth rate in the short run. An increase in the fiscal deficit as a percentage of GDP of 1% will decrease the GDP growth rate by 1.01%. This confirms the theory of classicals and neo-classicals. Revenue expenditure has a positive impact on GDP growth in the short run while the lagged values of the same have a negative impact. On the other hand, capital expenditure of the same period does not impact the GDP growth while the lagged values of the same impact GDP growth positively.

*NOTE- The lag length of different variables in the model was selected using the Akaike Info Criterion (AIC). It compares various models and selects the best one out of them. A low AIC score is expected to ensure that the model fits the data well without overfitting it.

Diagnostic and Stability Tests

The adjusted R-square value of the Error Corrected model is 0.9723 which confirms that the model is a good fit. The Jarque-Bera normality test has a pvalue of 0.9695 which is greater than 0.05 and hence it implies that the residuals are normally distributed. The LM serial correlation test implies that there is no autocorrelation between the residuals as the probability of chisquare (0.1448) is greater than 0.05. The data is also homoscedastic as the probability of chi-square (0.3386) is greater than 0.05 under the Breusch-Pagan-Godfrey test. Ramsey RESET test is conducted to test the linearity between variables. The t-statistic, F-statistic, and Likelihood ratio are all insignificant i.e. they are greater than 0.05, therefore there are no specification errors. The study also conducts two stability tests, namely, CUSUM and CUSUMSQ to investigate the stability of long and short-run parameters. The graphs of both stability tests presented in Figure 1 identify that plots for both stability tests are between critical boundaries at 5% level of significance. This confirms the accuracy of long-run and short-run parameters which have an impact on GDP growth rate over the period 1978-2019.

From the diagnostic test results, there is no evidence of serial correlation,

absence of normality, or heteroscedasticity and the model is well specified. The results also indicate the absence of any instability of the coefficients.



Figure 1: CUSUM and CUSUMSQ test of stability

POLICY PRESCRIPTIONS

According to the econometric analysis, the fiscal deficit doesn't affect the economic growth rate in the long run significantly however it has a negative impact in the short run. This result reinforces the idea of the classical and

neoclassical economists although only in the short run. The insignificant effect of government deficit in the long run may be due to the fact that it was not financed through increased taxation and that the productivity of government expenditure is not far off from that of the private sector. Keeping in mind these results, a balanced budget policy is recommended. A fiscal policy to boost the economy or stabalize it may not have long-lasting impact but it negatively impact the economy in the short run and thus deficits should be avoided.

Given the results, we should also emphasize on the quality of government expenditure. In the long run, revenue expenditure has a greater positive impact on GDP growth than capital expenditure. Low effectivity of capital expenditure on long-run growth is due to an ineffective utilization of public funds. The reason for low productivity might be corruption by politicians and officials in the government. The funds for capital expenditure get transferred from the central government to the state government and then to the local governments. At each stage in this process, the grant provided keeps on reducing due to the fact that the politicians and officials pocket most of the money for their personal benefits. Thus, the actual amount of money spent is very low and doesn't add much value to the economy in terms of productive capacity. Also, very often private enterprises often get contracts for large public investment projects by paying a hefty 'commission' to government officials. This shows that capital spending is highly discretionary in opposition to current spending which reflects spending on previous commitments (for example, wages, salaries, pensions, subsidies) allowing limited discretion to politicians and government officials. Noting all these possibilities, there are crucial steps to be taken to make the process of investing in projects more seamless. Firstly, useful and rightful projects should be recognized which can be done through consulting with experts in the field and getting more diverse views. Second, the process of funds transfer should be made more transparent so that the possibility of corruption becomes unlikely. And lastly, allocating projects to private entities should not be the responsibility of a single person. A committee could be formed whose members can then decide the allocation of the project with their votes. It should be effectively implemented so that benefits of such projects are substantial.

These suggestions and prescriptions are important to consider but it should also be seen that this study is limited in its scope with regards to the real practice. Although capital expenditures are not perfectly efficient they are very important for the purpose of economic development. Also, when the economy is in a big slump, the government needs to run a deficit atleast to appeal to the masses. All the points need to be contemplated on before taking any decisions and not only the economic but the social and political ramifications should be taken into account.

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Appendix

A. Su	mmary of	descri	ptive	statistics
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	GDPR	GFD	RE	CE	INVT	INF	DEX
Mean	5.821286	5.295476	11.68762	3.689762	29.03088	7.735738	5.337619
Median	6.063000	5.290000	11.94500	3.390000	27.50300	7.775500	4.563000
Maximum	9.628000	8.130000	14.10000	7.050000	41.93100	13.87000	29.93200
Minimum	-5.238000	2.540000	8.600000	1.540000	20.03000	2.491000	-8.736000
Std. Dev.	2.541659	1.332193	1.346158	1.838314	6.362010	3.091111	7.349707
Skewness	-2.010773	0.122583	-0.613153	0.350606	0.505662	0.173743	0.742118
Kurtosis	9.691194	2.408430	2.859877	1.611318	2.132990	2.055827	4.519162
Jarque-Bera	106.6536	0.717608	2.666052	4.235236	3.105348	1.771368	7.893918

Source: eviews11

B. Time series plot of variables used in the study







Source: eviews11

Variable	Coefficient	Std. Error	t-Statistic	Prob.	
GFD	-0.938630	0.862137	-1.088725	0.3181	
RE	2.301888	0.986024	2.334515	0.0583	
CE	0.981132	0.473093	2.073866	0.0834	
INVT	-0.167271	0.133818	-1.249984	0.2578	
INF	0.565762	0.139310	4.061162	0.0066	
DEX	-0.461807	0.111473	-4.142782	0.0061	
С	-16.29542	5.807105	-2.806118	0.0309	
EC = GDPR - (-0.9386 GFD + 2.3019 RE + 0.9811 CE – 0.1673 INVT + 0.5658 INF -0.4618 DEX – 16.2954)					

C. Long-run Estimation results using GDPR as Dependent Variable: ARDL (4, 4, 3, 4, 4, 2, 4) selected by Akaike Info Criterion (AIC)

D. Error Correction Representation using GDPR as Dependent variable: ARDL(4, 4, 3, 4, 4, 2, 4) selected by Akaike Info Criterion (AIC)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(GDPR(-1))	0.263923	0.075247	3.507415	0.0127
D(GDPR(-2))	0.199627	0.057953	3.444631	0.0137
D(GDPR(-3))	0.429070	0.043350	9.897854	0.0001
D(GFD)	-1.018889	0.176209	-5.782272	0.0012
D(GFD(-1))	-0.144668	0.186967	-0.773763	0.4685
D(GFD(-2))	-0.500231	0.194687	-2.569409	0.0424
D(GFD(-3))	-1.770774	0.162653	-10.88683	0.0000
D(RE)	2.998919	0.366639	8.179494	0.0002
D(RE(-1))	-1.296094	0.323862	-4.001992	0.0071

D(RE(-2))	-2.002697	0.291116	-6.879368	0.0005
D(CE)	-0.360049	0.203307	-1.770961	0.1270
D(CE(-1))	-0.321383	0.195292	-1.645660	0.1509
D(CE(-2))	0.756114	0.183263	4.125829	0.0062
D(CE(-3))	1.331850	0.194201	6.858086	0.0005
D(INVT)	-0.192931	0.060619	-3.182675	0.0190
D(INVT(-1))	0.064039	0.058300	1.098428	0.3141
D(INVT(-2))	-0.653184	0.066400	-9.837138	0.0001
D(INVT(-3))	-0.585306	0.058344	-10.03202	0.0001
D(INF)	-0.098952	0.049573	-1.996069	0.0929
D(INF(-1))	-0.395845	0.063464	-6.237347	0.0008
D(DEX)	-0.216593	0.018022	-12.01828	0.0000
D(DEX(-1))	0.300162	0.021651	13.86337	0.0000
D(DEX(-2))	-0.058854	0.014443	-4.074950	0.0065
D(DEX(-3))	0.021198	0.014251	1.487553	0.1874
CointEq(-1)*	-1.458322	0.072023	-20.24793	0.0000
R-squared	0.990276	Mean dependent var		-0.048026
Adjusted R-squared	0.972324	S.D. dependent var		2.635552
S.E. of regression	0.438451	Akaike info criterion		1.432018
Sum squared resid	2.499116	Schwarz	criterion	2.509377
Log likelihood	-2.208333	Hannan-	1.815334	
Durbin-Watson stat	1.755353			

STRIDES - A STUDENTS' JOURNAL OF SHRI RAM COLLEGE OF COMMERCE ISSN 2581- 4931 (PRINT)

HISTORY OF THE JOURNAL

The idea to launch this Journal was discussed in December 2016 by the former Officiating Principal, **Dr. R. P. Rustagi** with **Dr. Santosh Kumari**, the Editor of the Journal. Since the idea appealed to **Dr. Santosh Kumari**, she took the initiative to contribute to SRCC by creating this new academic research Journal and took the responsibility for its Creation, Registration, License and ISSN (International Standard Serial Number) etc. along with *Editorship*. Therefore, **Dr. Santosh Kumari**, **Assistant Professor in the Department of Commerce, Shri Ram College of Commerce** was appointed as the Editor of the Journal vide. Office Order – SRCC/AD-158/2017 dated March 14, 2017. She meticulously worked hard in creating the concept and developing the structure of the Journal. She introduced the concept of COPE (Committee On Publication Ethics) to maintain the high academic standards of publication.

On behalf of SRCC, **Dr. Santosh Kumari** made every effort in seeking License from Deputy Commissioner of Police (Licensing), Delhi to register the Journal at "The Registrar of Newspapers for India, Ministry of Information and Broadcasting, Government of India". The paper work for seeking license started under the former Officiating Principal, **Dr. R.P. Rustagi** on March 27, 2017. The foundation Issue of the Journal "**Strides – A Students' Journal of Shri Ram College of Commerce, Volume 1, Issue 1, 2016-17**" was successfully released on the 91st Annual Day of SRCC held on April 13, 2017 by **Shri Prakash Javadekar, Honb'le Union Minister of Human Resource Development, Government of India**. The title of the Journal got verified and approved by the Registrar of Newspapers for India, Ministry of Information and Broadcasting, Government of India on April 21, 2017. On September 1, 2017, **Prof. Simrit Kaur** joined SRCC as Principal and signed each and every legal document required for further processing and supported **Dr. Santosh Kumari**.

On December 18, 2017, the College got the license "License No. - DCP / LIC No. F. 2 (S / 37) Press / 2017" to publish 'Strides – A Students' Journal of Shri Ram College of Commerce'. Due to change of Printing Press, the License got updated on March 09, 2018. On April 26, 2018, the SRCC Staff Council unanimously appointed **Dr. Santosh Kumari as the 'Editor of Strides**' for the next two academic years.

On April 27, 2018 (The Foundation Day of the College), **Dr. Santosh Kumari** submitted the application for the registration of the Journal. On May 04, 2018, the SRCC received the '**Certificate** of Registration' for "*Strides – A Students' Journal of Shri Ram College of Commerce*" and got the Registration No. DELENG/2018/75093 dated May 04, 2018. On behalf of Shri Ram College of Commerce, it was a moment of pride for Dr. Santosh Kumari to receive the 'Certificate of Registration' on May 04, 2018 at the Office of Registrar of Newspapers for India, Ministry of Information and Broadcasting, Government of India (website - www.rni.nic.in).

On May 07, 2018, **Dr. Santosh Kumari** submitted the application for seeking ISSN (International Standard Serial Number) at "ISSN National Centre – India, National Science Library, NISCAIR (National Institute of Science Communication and Information Resources). Weblink - http://nsl.niscair.res.in/ISSNPROCESS/issn.jsp". Finally, the College received the International Standard Serial Number "**ISSN 2581-4931 (Print)**" **on June 01, 2018.**

We are proud that this journal is an add-on to the enriched catalogue of SRCC's publications and academic literature.

STRIDES - A STUDENTS' JOURNAL OF SHRI RAM COLLEGE OF COMMERCE ISSN 2581-4931 (Print)



RELEASE OF FOUNDATION ISSUE OF STRIDES



The foundation issue of the Journal "Strides - A Students' Journal of Shri Ram College of Commerce, Volume 1, Issue 1, 2016-17" was successfully released on 91st Annual Day of SRCC held on 13th April, 2017 by Shri Prakash Javadekar, Honb'le Union Minister of Human Resource Development, Government of India.



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