Tax Revenue and Economic Growth Nexus in India: An ARDL Bounds Testing Approach

Pragyan Parimita Nayak[1], Pranati Palai[2], Lipuna Khatei[3] and Rajat Kumar Mallick[4*]

[1]*Research Scholar, P. G. Department of Economics, Maharaja Sriram Chandra Bhanjadeo University, Baripada, Odisha. E-mail: ppnayak100@gmail.com*

[2]*Assistant Professor, Radhanath Institute of Advanced Studies in Education, (RNIASE), Cuttack, Odisha. E-mail: pranatipalai@gmail.com*

[3]*M. Phil. Scholar, Department of Economics, Rajendra University, Balangir, Odisha. E-mail: lkhatei100@gmail.com*

[4]*Principal, Kalinga College of Commerce, Bhubaneswar, Odisha. E-mail: rkmallick970@gmail.com*

[*]*Corresponding Author*

Abstract: This paper examines the effectiveness of direct and indirect tax revenue on gross domestic product (GDP) in the Indian economy over the period 1970-71 to 2020-21. Using autoregressive distributed lag (ARDL) model, the study finds a positive and significant impact of direct and indirect tax on the country's GDP both in long run and in short run. Additionally, by using multiple regression analysis, this study evaluates the short-term effects of the major components of direct and indirect tax on India's economic growth. The GDP of India is significantly and favourably influenced by personal income tax, corporation tax, and total government spending. While customs duties have a substantial and negative impact on GDP, excise duties have a significant and positive effect. In India, there is a unidirectional causality between GDP and direct tax revenue and a bi-directional causality between GDP and indirect tax revenue. To address the issue of economic disparity, governments must exercise caution when establishing the tax components that would promote long-term growth and development.

1. Introduction

Taxation is an important fiscal instrument and a key source of revenue for governments all around the world. It is considered as an important factor that affects economic growth(Li and Lin, 2015). Whereas economic growth is one of the macro economic variables related to tax revenues (Demir, 2014).A significant portion of a country's total revenue comes from both direct and indirect taxes. In India, however, indirect tax revenue accounts a larger portion of total revenue than direct tax does (Panda *et al.*, 2020).

Governments collect a significant amount of revenue through taxation sources in order to effectively carry out numerous welfare programmes for its citizens as well as achieve long-term economic growth and development. When it comes to achieving long-term economic growth, taxation is an important weapon available to most governments across the world. In case of developing country like India, a fiscal challenge is a major concern in terms of deficits. As a result, decreasing the proportion of revenue deficit to GDP is a crucial priority before the Indian government in order to achieve long-term economic growth. However, it's critical to understand which tax components should be addressed.

Different empirical works have various viewpoints in establishing a relation of taxation with GDP. Some studies reveal that tax revenue has an adverse impact on economic growth (Ferede and Dahlby, 2012), (Brian *et al.*, 2012), (Greenidge and Drakes, 2009), (Poulson and Kaplan, 2008), (Gwartney and Lawson, 2006), but some other studies opine that tax revenues have a favourable impact on economic growth of an economy (Padovano and Galli, 2001; Onakoya *et al.*, 2016; Scarlett, 2011; Okafor, 2012). However, other research contends that taxes have both a positive and negative influence on economic growth (Ugwunta and Ugwuanyi, 2015; Lee and Gordon, 2005). The fact that these findings are contradictory encourages us to re-investigate the association that tax revenue establishes with economic growth in India. As a response, we attempt to study the influence of total direct as well as indirect tax revenues on the country's GDP growth. Furthermore, the research also disaggregates the several important components of direct as well as indirect taxes and examined their individual impact on India's economic growth.

Figure 1 depicts the growth rates of GDP, direct tax as well as indirect tax revenue in India. It shows that direct and indirect taxes have negative growth rate in 2020-2021 as well as GDP also
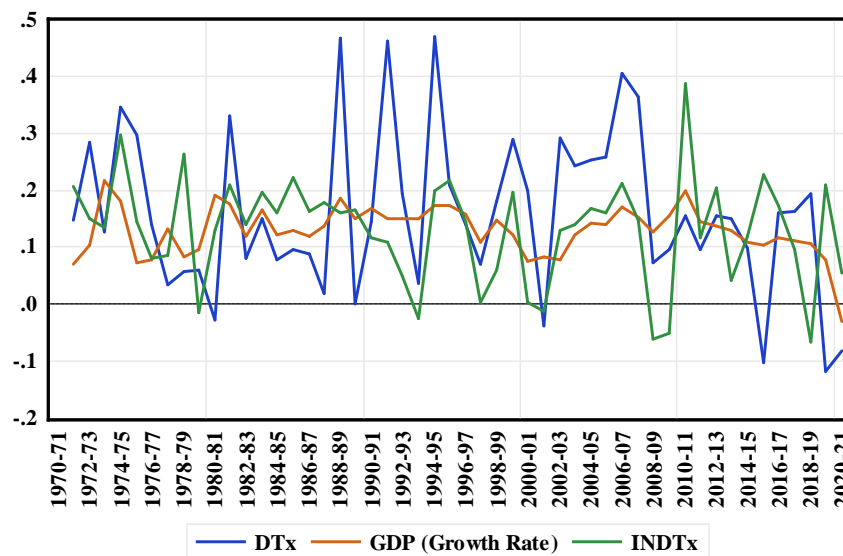

Figure 1: Growth Rate of GDP, Direct Taxes and Indirect Taxes in India

Source: Authors' Own Compilation

exhibits the same behaviour in 2020-21. The growth rate of direct tax was 15 per cent in 1970-71, but it decreases and becomes negative, -8 per cent in 2020-21. Similarly, the growth rate of indirect tax is 21 per cent in 1970-71, then decreases over the year and becomes negative (6 per cent) in 2020-21. Additionally, the GDP growth rate is 7 per cent in 1970-71, which increases with time, although it is negative in 2020-21, i.e. -3 percent.

2. Review of Literature

Arvin *et al.* (2021) opined that there are endogenous temporal causal links exist among government spending, tax revenue, institutional quality and economic growth in lower-income and lower-middle-income countries (LICs and LMICs) in the short run as well as in the long run. The short-term outcomes are not uniform, but they do reflect a variety of causal connections that occasionally promote one another. However, the long-run outcomes are relatively consistent, namely government spending, tax revenue and institutional quality.

Neog and Gaur (2020) have established the linkage between tax structure and GDP growth in India, taking the share of tax revenue to GDP as a control variable from 1980-2016 and conforms the presence of a long-term relationship between these two variables. The study depicts that the growth rate is reduced by income tax, corporate tax and excise duty, but the custom duty improves the economic performance in the long-run. So far as corporate tax is concerned, it adversely affects the growth during the short-run. This analysis, however, finds no evidence of a minimum effect in the tax-growth connection for India.

Geetanjali and Venugopal (2018) investigate the influence of direct taxation on GDP growth in India from 2000 to 2016 putting Ordinary Least Squares method. According the study direct taxes has a substantial impact on growth rate of GDP. Therefore emphasis should be placed on tax collection as well as addressing concerns of tax evasion. Ogundana *et al.* (2017) have used ordinary least square regression technique to investigate the evolution of direct as well as indirect taxes and their influence on Nigerian GDP growth from 1994 to 2013. According to the study, indirect taxes have a favourable substantial influence on growth of the economy, but direct taxes have a favourable but negligible effect on growth of Nigeria's economy. For this reason, the study recommends that the government must concentrate more on indirect taxes when it comes to non-essential goods so that the well-being of the poor is not compromised.

Helhel and Demir (2014) have examined a connection between tax revenues and Turkish economic development both for short and long time period spanning 1975 to 2011 by using cointegration model and Granger causality technique. According to the research, there is a long-term association between tax revenue and economic growth, but no such connection exists during short time period. Ray *et al.* (2012) has found long-run linkages between taxation and real GDP growth in India. The pair-wise granger- causality test reveals bidirectional causation between economic growth and total tax revenue, as well as economic growth and indirect tax. However, there is no discernible link between economic growth and direct taxes. Furthermore, it has been found that more of indirect tax revenues, as well as total revenues, encourages substantial economic growth in the country.

Ilaboya and Mgbame (2012) have carried out an assessment of the dynamic behaviour of indirect taxes and economic growth in Nigeria. The study discovered an adverse and negligible influence of

indirect taxation on Nigerian economic growth. Furthermore, trade openness has a considerable and favourable influence on the growth of Nigerian economy. Aamir *et al.* (2011) looked at each of the direct and indirect tax effects on total revenue in India and Pakistan, and then compared the results. Indirect taxes generate more revenue in Pakistan, while direct taxes generate more revenue in India. As per the study, direct taxes should be given more consideration in Pakistan because the growing gap between rich and poor could be worse in the country.

3. Objectives and Hypotheses of the Study

3.1. Objectives of the Study

The main objectives of the study are:

- To examine the linkages between gross domestic products (GDP), direct and indirect tax revenue in India.
- To investigate the short-run effects of personal income tax, corporate tax, and total government spending on GDP.
- To examine short run linkage among custom duty, excise duty, total expenditure and GDP.

3.2. Hypotheses of the Study

H_{01}: There is no significant linkage among gross domestic products, direct taxation and indirect taxation in India.

H_{02}: Personal income tax, corporate tax and total expenditure do not influence GDP.

H_{03}: GDP is unaffected by excise duty, customs duty and total expenditure.

4. Research Methodology

4.1. Data Description

The present research relies on secondary data from the Reserve Bank of India (RBI) Database, which spans the years 1970-1971 to 2020-21. The study includes variables such as Gross Domestic Product *(GDP)* taking base year 2011-12 as a proxy measure for growth, Direct taxation*(DTx),* Indirect taxation *(IndTx),* Personal income tax *(PITx),* Corporate tax *(CTx),* Excise duty (*ED*), Custom duty (*CD*) and Total expenditure (*TExp*) measured in Indian Rupee. All these variables have been converted to natural logarithms form to reduce the difficulties of heteroscedasticity to a minimum possible level. Augmented Dickey Fuller (ADF) model of Dickey and Fuller (1979) and Phillip Perron (*PP*) unit root test of Phillips & Perron (1988) have been used to check the stationary properties of the variables.

4.2. Model Specification

Model – 1: ADF Model Unit Root Test

$$\Delta Y_t = \alpha + \phi t + \delta Y_{t-1} + \gamma_1 \Delta Y_{t-1} + \gamma_2 \Delta Y_{t-2} + ... + \gamma_p \Delta Y_{t-p} + U_t \qquad (1)$$

Where, Y_t denotes a series, α is intercept, $\delta = \beta - 1$, $\beta = $ Coefficient of Y_{t-1} $\Delta Y_t = $ first difference of Y_t and U_t represents error terms. In this model null hypothesis is d $\delta = 0$ while the alternative hypothesis is $\delta < 0$ (Dickey and Fuller, 1979). The lag length is selected according to Schwarz Bayesian criterion (SBC).

Model – 2: Phillipse Perron (PP) model of unit root test

$$\Delta Y_t = JIY_{t-1} + \beta_i D_{t-i} + e_t \tag{2}$$

Where is an I(0) with zero mean and is a deterministic trend component. The hypothesis is tested for (Shrestha and Bhatta, 2018).

Model – 3: ARDL Bounds Testing Cointegration Approach

The series are tested for stationarity in the first phase, and cointegration analysis (ARDL bounds test) is performed in the second phase to investigate the short run and long run impact of the of direct tax and indirect tax revenue on economic growth in India. The ARDL modelof Pesaran *et al.* (2001)is put forth in the following equation.

$$\Delta Y_t = \alpha_0 + \sum_{i=1}^{p}\beta_{1i}\Delta Y_{t-i} + \sum_{i=0}^{p}\beta_{2i}\Delta x_{t-i} + \sum_{i=0}^{p}\delta\varepsilon_i\Delta z_{t-i} + \lambda_1 y_{t-1} + \lambda_2 x_{t-1} + \lambda_3 z_{t-1} + v_t$$

$$\Delta LnGDP_t =$$

$$\alpha_0 + \Sigma_{i=1}^{p}\beta_{1i}(\Delta LnGDP)_{t-i} + \Sigma_{i=0}^{p}\beta_{2i}(\Delta LnDTx)_{t-i} + \Sigma_{i=0}^{p}\delta\varepsilon_i(\Delta LnIndTx)_{t-i} + \tag{3}$$

$$\lambda_1 LnGDP_{t-1} + \lambda_2 LnDTx_{t-1} + \lambda_2 LnIndTx_{t-1} + v_t$$

Here 'λs' and 'βs' represent long run and short run coefficients, respectively. The null hypothesis assumption of the equation is $\lambda1 = \lambda2 = \lambda3 = 0$, which describes the absence of long run relationship, Whereas alternative hypothesis states that $\lambda1 \neq \lambda2 \neq \lambda3 \neq 0$ (Shrestha & Bhatta, 2018).

Model – 4: Multiple Regression Model

To investigate the linkage among GDP growth and the important components of direct tax revenue like personal income tax and corporate tax, multiple regression model has been used in third phase.

$$Y = \beta_0 + \beta_1 X_1 + + \beta_2 X_2 + \beta_3 X_3 + \varepsilon_t \tag{4}$$

Where;

Y = Gross Domestic Product

X_1 = Personal Income Tax

X_2 = Corporate Tax

X_3 = Total Government spending

β_0 = The intercept

β_1 = The rate of change in GDP per unit change in Personal Income Tax

β_2 = The rate of change in GDP per unit change in Corporate Tax

β_3 = The rate of change in GDP per unit change in Total Government spending

ϵ_t = Random error

Therefore the Multiple Regression Model can be expressed as following manner;

$$LnGDP = \beta_0 + \beta_1 LnPITx + \beta_2 LnCTx + \beta_3 LnTEx + \epsilon_t \qquad (4a)$$

In fourth phase we have also employed multiple linear regression equation to examine the short run relationship among the GDP (dependent variable) and major components of indirect tax which includes excise duty and custom duty revenue (independent variables).

$$LnGDP = \beta_0 + \beta_1 LnCD + \beta_2 LnED + \beta_3 LnTEx + \epsilon_t \qquad (4b)$$

Model – 5: Ganger Causality Test

The bi-variate Granger causality test by Granger (1969) has been utilised to investigate the causality between the time series variables GDP, direct tax and indirect tax revenues. The following two regression equations were estimated using the Granger causality test (Maziarz 2015; Gokmenoglu *et al.* 2015; Ginevičius *et al.* 2019; Stern 2011):

$$y_t = \beta_{1,0} + \Sigma_{i=1}^{p} \beta_{1,i} y_{t-i} + \Sigma_{j=1}^{p} \beta_{1,p+j} x_{t-j} + \epsilon_{1t} \qquad (5)$$

$$x_t = \beta_{2,0} + \Sigma_{i=1}^{p} \beta_{2,i} y_{t-i} + \Sigma_{j=1}^{p} \beta_{2,p+j} x_{t-j} + \epsilon_{1t} \qquad (6)$$

Here P refers to number of lags, and β is the parameter while ϵ implies the error term. If the p parameters $\beta_{1,p+j}$ are simultaneously significant then the null hypothesis of x does not Granger causes y. is rejected. On the contrary, if the p parameters $\beta_{2,i}$ are simultaneously significant then we do not accept the null hypothesis that y does not cause x. The assumption of Granger causality model is that if past values of X can forecast the current period value of y then Granger causality exists from x to y. We utilise Granger causality test to investigate the presence of any causality, whether unidirectional or bidirectional between government expenditure, direct and indirect tax revenues.

5.   Results

Table 1: Unit Root Test Results

Test	ADF		PP	
	Level- I(0)	*1ˢᵗ Diff.- I(1)*	*Level- I(0)*	*1ˢᵗ Diff.- I(1)*
LnCTx	-1.445977	-5.367448**	-1.372307	-5.323446**
	(0.5524)	(0.0000)	(0.5884)	0.0000
LnPITx	-2.300931	-8.55577*	-2.230953	-8.613791*
	(0.4256)	(0.0000)	(0.4626)	(0.0000)
LnGDP	-0.736036	-3.22835***	0.92999	-3.197335***
	(0.9644)	(0.0909)	(0.9442)	(0.0969)

contd. table 1

Test	ADF		PP	
	Level- I(0)	*1ˢᵗ Diff.- I(1)*	*Level- I(0)*	*1ˢᵗ Diff.- I(1)*
LnCD	-0.762392	-6.228007*	-0.837839	-6.194461*
	(0.9622)	(0.0000)	0.9548	(0.0000)
LnED	-3.278756***	____	-3.226481***	____
	0.0816		(0.0910)	
LnTEx	-1.995736	-5.628103*	-2.079590	-5.439820***
	(0.5890)	(0.0001)	0.5442	0.0002
LnDTx	-0.884119	-6.152045*	-1.123415	-6.133152*
	(0.9497)	(0.0000)	0.9146	0.0000
LnIndTx	-2.445149	-7.103628*	-2.317925	-8.195922*
	0.3530	0.0000	0.4168	0.0000

Note: *, ** and *** represent the significance at 1per cent, 5 per cent and 10 per cent level respectively.

Source: Authors' Own Calculation

Empirical results of unit root test through both ADF and PP test as per Table 1 shows that the GDP, corporation tax, personal income tax, customs duties, direct tax, indirect tax and total expenditure are stationary at the first difference. Only excise duties becomes stationary at level. It describes variables are stationary at mixed order. We have used ARDL model to examine the relationship among GDP, direct tax revenue and indirect tax revenue both in short and long run. On the other hand multiple regression analysis of the Ordinary Least Square (OLS) technique (Gujarati and Porter, 2012) is utilised to study short run relationship among GDP, total expenditure and major components of direct tax as well as indirect tax. In this regard two models have been developed as in Eqn. (4a) and Eqn. (4b).

Table 2: Bounds Test Results for Cointegration as per Akaike Information Criteria (AIC)

Model	F-statistic	k
$LnGDP_t = f(LnDTx_t, LnIndTx_t)$	6.516575*	2

Critical Bound Values		
Level of Significance	*Lower Bound I(0)*	*Upper Bound I(1)*
1%	4.13	5
2.5%	3.55	4.38
5%	3.1	3.87
10%	2.63	3.35

Note: * indicates significance at 1per cent level.

Source: Authors' Own Calculation

Table 2 shows the result of ARDL bound test for conforming Cointegration among variable in long run. The Cointegration results demonstrate that there is existence of long run positive and substantial impact of the direct tax and indirect tax on India's GDP. The F-statistic value 6.516575 > 5 of critical upper bound value at 1% level of significance.The examination of the cointegration results allow us to use the ARDL model in the data series taken under study. Optimal lag structure for all models is based on Akaike information criterion (Sakamoto *et al.*, 1986). The ARDL estimation is given in the following table 3.

Table 3: ARDL Estimation Result for Short run and Long run

Dependent Variable: GDP, Selected Model: ARDL(1, 0, 0)

	Cointegrating Form (Short Run Coefficients)			
Variable	*Coefficient*	*Std. Error*	*t-Statistic*	*Prob.*
D(LnGDP)	0.771119*	0.054064	14.26319	0.0000
D(LnDTx)	0.078181*	0.023187	3.371738	0.0015
D(LnIndTx)	0.144624*	0.037752	3.830920	0.0004
Constant	0.927073	0.194951	4.755405	0.0000
CointEq (-1)	-0.228881*	0.008487	-26.96933	0.0000
Adj. R-squared	0.999681			
	Long Run Coefficients			
Variable	*Coefficient*	*Std. Error*	*t-Statistic*	*Prob.*
LnDTx	0.355015*	0.060357	5.881938	0.0000
LnIndTx	0.601968*	0.082858	7.265047	0.0000
C	4.17	0.384518	10.86657	0.0000

Note: *, ** and *** represent the significance at 1per cent, 5 per cent and 10 per cent level respectively.
Source: Authors' Own Calculation

Table 3 shows the ARDL estimation findings of the long and short run coefficients. The long-term data demonstrate that the direct tax and indirect tax has a positive and significant impact on India's GDP. According to the results, a 1per cent rise in Direct tax (DTx) corresponds to a 0.078 per cent increase in GDP in short run, and 0.35 per cent in long run and vice versa. There are numerous reasons for the beneficial influence of the direct tax on GDP because of the share of direct tax to GDP is high as compared to indirect tax, thus higher the tax leads to higher the govt. expenditure and higher the GDP in return. Secondly, the study discovers that in India, indirect tax also has a favourable impact on GDP. In case of indirect tax (INDTx) the coefficient is 0.6019 and P-value is 0.0000<0.01 in long run whereas it is 0.144624 and P-value is 0.0004< 0.01 in short run.It depicts thatif indirect tax

increases 1per cent it leads to affect GDP positively and significantly by 0.60 per cent in long period whereas it is 0.14 per cent in short period.

5.1. Cusum and Cusumsq Test

We utilise the cumulative sum (CUSUM) and cumulative sum of squares (CUSUMSQ) test technique (Brown *et al.*, 1975) to investigate the recursive residuals shown in Figs 2 and 3 and to check the stability of the calculated ARDL model. The critical boundaries at the 5per centlevel of significance are represented by the straight lines. The null hypothesis of instability is accepted when the CUSUM and CUSUMSQ of the recursive residuals cross these two straight lines. The CUSUM and CUSUMSQ, on the other hand, remain within the lines' restricted area, indicating that the calculated ARDL model is suitable and effective.
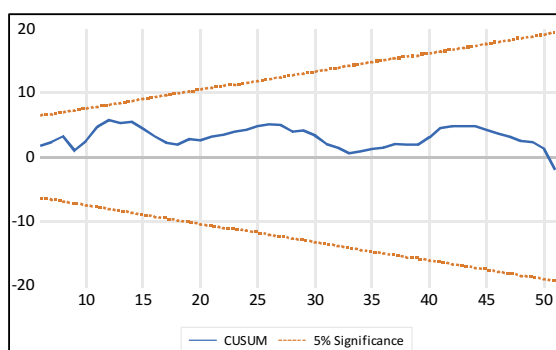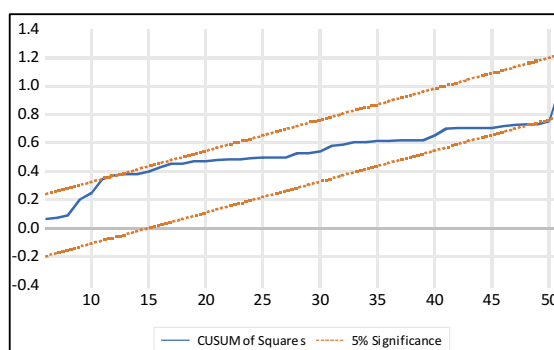

Figure 2: CUSUM Test

Source: Authors' Own Compilation

Figure 3: CUSUM-of- Squares Test

Source: Authors' Own Compilation

Table 4: Multiple Regression Analysis

Dependent Variable: LNGDP
Method: Least Square

Variables	*Coefficient*	*t-Statistics*	*Prob.*
C	3.221754	15.37689	0.0000*
LnPITx	0.060983	2.130527	0.0384**
LnCTx	0.212353	3.643545	0.0007*
LnTEx	0.674246	13.20591	0.0000*
R-squared	0.998097		
Adjusted R- squared	0.997976		
F-statistics	8217.663		
Prob(F-statistics)	0.000000		
Durbin-Wals on stat	0.462268		

Note: *, ** and *** represent the significance at 1per cent, 5 per cent and 10 per cent level respectively.
Source: Authors' Own Compilation

Based on Table 4 it can be stated that F Prob. value = 0.00000 < 0.05 which means simultaneously significant effect. This shows that Personal income tax, Corporation tax, and Total expenditure have a significant effect on the Gross domestic product in India. In-case of Personal income tax, coefficient is 0.060983 and P-value = 0.0384< 0.05, so it can be inferred that one per cent rise in personal income tax leads to increase in GDP by 0.06 per cent which is significant. Similarly, the Corporation tax has a 0.21 per cent positive impact on growth of GDP at one per cent level of significance where P-value = 0.0007< 0.01. In a partial test of total expenditure where P-value = 0.0000 < 0.01, it has 67 per cent positive impact on GDP. So it can be inferred that there is significant and positive effect of these variables on India's GDP. As the value of Adjusted R-squared = 0.997976, all the concerned independent variables have a very strong effect of 99.79 per cent on growth of gross domestic product of India.

Table 5: Multiple Regression Analysis

Dependent Variable: LNGDP
Method: Least Square

Variables	Coefficient	t-Statistics	Prob.
C	1.833484	18.27405	0.0000*
LnCD	-0.114643	-3.032622	0.0039**
LnED	0.163691	1.723187	0.0914***
LnTEx	0.960922	9.933864	0.0000*
R-squared	0.997039		
Adjusted R- squared	0.996850		
F-statistics	5275.708		
Prob(F-statistics)	0.000000		
Durbin-Wals on stat	0.614257		

Note: *, ** and *** represent the significance at 1per cent, 5 per cent and 10 per cent level respectively.
Source: Authors' Own Compilation

Table 5 depicts that Prob. (F-statistics) = 0.00000 <0.05, indicating that there is simultaneous significant effect of independent variables. It demonstrates that custom duties, excise duties, and total expenditure all have a major impact on India's GDP growth. The coefficient value is -0.114643 and P-value = 0.0039< 0.05 in the case of custom duties implies that it has a significant and negative effect on India's GDP growth. Similarly, the excise duties, with coefficient 0.163691 and P-value of 0.0914< 0.10has a significant and positive effect on GDP of Indian economy. On the other hand coefficient 0.960922 and P-value = 0.0000< 0.05 in a partial test of total expenditure can be inferred that there is a significant and positive influence on GDP. The value of adjusted R-squared = 0.996850 indicates that all the independent variables have a 99.68 per cent effect on India's GDP.

5.2. Residual Tests

Table 6: Diagnostic Test Results for Multiple Regression

Diagnostic test	(Eqn. 4a)	(Eqn. 4b)
Heteroscedasticity Test: (Breusch-Pagan-Godfrey test)	Obs. R-squared =6.890053 Prob. = 0.0755	Obs. R-squared =4.635462 Prob. = 0.2005
Test of Normality	Jarque-Bera statistics = 1.105809** Prob.= 0.575277	Jarque-Bera statistics = 2.235887** Prob.= 0.326951
Q statistics	All Prob. > 0.05	All Prob. > 0.05

Note: *, ** and *** represent the significance at 1per cent, 5 per cent and 10 per cent level respectively.

Source: Authors' Own Compilation

From the diagnostic test (table 6) it is observed that this growth model is efficient for this study because there no heteroscedasticity, the residuals are normally distributed and also the residuals are stationary. So it satisfies most of the assumption of OLS and provides adequate description of the data therefore it can be accepted as final growth model.

5.3. Granger Causality Test

As per table 2 and 3, a long-run linkages exists among GDP, direct and indirect tax revenue in India. But to investigate the presence of causal link among variables the study employs granger causality technique. As depicted in table 7, the bi-directional causal relationship between gross domestic products on indirect tax revenue is statistically consistent at the 5 per cent level, which implies that causality exists from gross domestic product to indirect tax revenue. Therefore the null hypothesis of gross domestic products which does not cause indirect tax revenue can be rejected. In addition, null hypothesis

Table 7: Result of Granger Causality Test

Null Hypothesis, Lags:3	F-Statistic	Prob.
LNDTX does not Cause LNGDP	0.25111	0.8601
LNGDP does not Cause LNDTX	2.52980	0.0704***
LNINDTX does not Cause LNGDP	2.94973	0.0438**
LNGDP does not Cause LNINDTX	3.58963	0.0215**
LNINDTX does not Cause LNDTX	0.45773	0.7133
LNDTX does not Cause LNINDTX	1.29022	0.2906

Note: *, ** and *** represent the significance at 1per cent, 5 per cent and 10 per cent level respectively.

Source: Authors' Own Compilation

of indirect tax revenue which does not cause gross domestic products can also be rejected. Moreover causality between indirect tax and direct tax revenue is not significant. However only unidirectional causation exists between two variables which is from gross domestic products to direct tax.

6. Findings

In the short run, 1(one) percent increase in direct tax leads to a 0.078 percent increase in GDP and 0.35 percent in the long run. In case of indirect tax, GDP is positively and significantly influenced by 0.14 percent in short period and 0.60 percent in long period. Therefore indirect tax impacts more on GDP growth than direct tax in India. Personal income tax has a 0.06 percent impact on GDP growth, whereas corporation tax has a 0.21 percent positive impact. Custom duties has a significant and negative effect on India's GDP growth by -0.11 percent. But excise duties with coefficient 0.163691 has a significant and positive effect on India's GDP. On the other total expenditure of the government has much higher positive impacts than tax revenues on GDP of the country. It is also evident that bi-directional causality exists between gross domestic products and indirect tax revenue as well as unidirectional causality prevails from gross domestic products to direct tax revenue in India. On the other hand there is no any causal relationship is found between direct and indirect taxation.

7. Conclusion

The results of ARDL model evident that indirect tax has a more favourable and significant impact on economic growth than direct tax on economic growth of India both in a short as well as long period. Government of India should enhances economic growth through realizing the increase in tax revenues in terms of both direct and indirect tax. The government should concentrate on increasing indirect tax collection while expanding the number of people who are required to pay direct taxes, particularly those in the informal sector. So far as GST is concerned in form of indirect tax, essential goods and services are to charge either very less or to be exempted from taxation. In the same time more GST has to be imposed on luxury goods of any kind. Indirect tax structure in terms of goods and services tax (GST) needs to be restructured. Otherwise it harms the interest of economically weaker section. However in order to raise tax revenue from direct tax, government should look into the issues of tax evasion and can extend tax base to generate more revenue. So far as government expenditure is concerned it should be channelized for investment in utilising natural wealth as well as human resources to promote sustainable growth.

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