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Tax collection, Public Consumption Expenditure and Gross Domestic Product Analysis of India

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Abstract:

Since ages it has been evidenced that, be it a king of an Empire or a ruling government of a country both have a practise of collecting taxes in a fair way. The people of the state also agree for payment of taxes to the government or the King. The main reason behind this is that the people of the state believe that the taxes that they pay to the government are being utilised by the government for the welfare of the people of the state. The levy of taxes on the income of the people is for the better. According to Kautilya the power of government lies in its treasury. He stated – "From the treasury, comes the power of the government, and the Earth whose ornament is the treasury, is acquired by means of the Treasury and Army". He said that the main reason for collection of taxes and revenue was for the protection of the people and maintenance of law and order in the state which was a prime duty of any King. He also mentioned that it was not mandatory for the subjects to pay taxes to the state but it was relationship based on dharma and it was the primary duty of the King to protect the people in view of taxes collected and if the King failed to do so the people had an exclusive right to abstain from paying taxes and also could even ask for the refund of their taxes paid. This paper throws light on the collection of taxes post Goods and Services Tax implementation in India and also on the public expenditure made by the government since the launch of GST in India. The paper also explains the importance of government spending on the sustained growth the economy.

Keywords: Taxation, Public welfare, Public Consumption Expenditure, Economic Growth, GDP.

Introduction:

The political, economic and social goals of any nation are reflected in the taxation system followed in the economy. Taxation system in India is always seeing positive changes and improvement in the amendments made since its evolution which began in since 1860. There is continuous updating in the taxation system with corrections (Alagapan.S.M., 2018). The reason for evolving success of an economy is the approach of the government towards taxation. The nature of

the economy and its structural characteristics influences the ability to tax and the types of taxes that can be imposed. Economic development and tax system have a close connection with each other. Widening the extent of taxation to broad bases as income and value added is only possible if assisted and approached by investments in compliance structures. Drivers of change are economic development, politics, public spending, non tax revenues and compliance technologies (Besley & Persson, 2013). The productive government expenditure is very essential for the balanced growth and vastness of per capita income along with sustained economic growth. Growth in an economy is stimulated by the higher investment outlays. Public expenditure made on roads, ports, communication systems, public research, provision of basic education and medical services increase the potential economic growth (Irmen & Kuehnel, 2009). Taxation is the core system that helps the country to prosper and become politically stable. Taxation is necessary for state-building welfare activities (Everest-Phillips, 2010). The rationale of taxation is to gather resources for funding government expenses and this is done in a way that is administratively and politically feasible upholding equitability and efficiency in the taxation system (Burgess et al., 1993). India launched GST on 1st July 2017 and its implementation has lead to economic growth, GST and GDP are correlated (Usha & Akhil, 2022). The productive public spending is designed to externally increase production and the consumption public expenditure is formulated to enhance household's utility of the economy.

Literature Review:

The government decides to spend for public welfare goods such as gas water electricity etc based on the existing rate of taxes. Taxes are the important source of revenue for the government to carry out public expenditure. Taxes are imposed by the government for carrying out welfare activities for the people of the state. Higher tax rates in the economy will reduce the disposable income in the hands of individuals. Productive spending in the economy is associated with long run economic growth (Chen, 2006). The basic and important characteristic that differentiates the developed economies from others is the proportion of national income spent on public consumption goods. Economists say that government spending for providing the goods and services for the public is nothing but redistribution of income in the economy. Social mobility of people of the economy is also one of the important features of a developed economy (Dorsch, 2010). To let off saving from being taxed the government must levy tax on consumption. Income tax must be replaced by consumption tax. The government must provide tax incentives to encourage savings and growth in the economy. Tax must be levied on what is consumed rather than taxing what is produced (Turnovsky, 1996). Increase in public consumption expenditure by the government will lead to multiplier effects on employment, increase in imports and increase in private consumption.

Depending on the type of activity carried out by the state and central government and the mix of input employed on public expenditure such as Defence, Public order and safety Universities and higher education Research, hospitals, Social security, State roads, Fire protection, Lower education, Health Welfare services, Local roads and streets and other services the multiplier effects vary. (Jakobsson & December, n.d.) A study conducted in Tanzania's Tabora District on analysis of government revenue collection and expenditure in relation to service delivery found that the local government authority was diverting 57% funds collected for the education expenditure. Funds were misused through corruption embezzlement, political interference and existence of weak internal control system. There was improvement in the service delivery to some extent towards the public by the government after the placement of internal control audit units and Prevention and Combating of Corruption Bureau. (Nsana, 1999)

Public Consumption Expenditure is the expenditure made by the government on the citizens of the nation. The expenditure is made for providing social services to the general public such as education, health, transportation, housing, water, electricity, roads, ports, defence etc. One third of the national income of India is spent on public expenditure. (Nipun S, n.d.). Divya and Ahmad in their article "Do Public Consumption Investments have an impact on Economic Growth?" say that infrastructure development has an impact on the economic growth. Investments made on human capital by spending on education and training is also an essential component of economic growth (Sangaraju & Bayhaqi, 2020). There are 2 types of government spending viz., revenue consumption expenditure and capital consumption expenditure. Revenue expenditure is the current or ongoing expenditures made by the government on the public. Some examples of revenue expenditures are paying interest on loans taken by the government, salaries and pensions expenditures, subsidies, spending made on different ministries and departments, grants made to state governments and other parties etc. For 2021-22, the Central government has budgeted a revenue expenditure of ₹29.3 lakh crore. Consumption expenditure are those that the government makes on building infrastructure facilities like roads, buildings, health, education, purchase of machinery and equipments etc. Increase in the Consumption expenditure made by the government will create more demand in the economy and help attain economic growth. According to the data released by the Controller General of Accounts (CGA) the Centre's Consumption expenditure outlay till November 2021 was ₹2.74 lakh crore. There are 2 important sources that the government depends upon for making public expenditure, 1. Tax collections done through direct and indirect ways, 2. Government borrowings from own citizen and foreign (Businessline & The, n.d.). Consumption expenditure made by the government has many positive points such as it help to create asset for the nation whose benefits can be drawn in the long run. Public Consumption expenditure helps to generate more employment

opportunities for the people, attracts foreign investment, helps to increase production facilities and boots operational efficiency. It helps the people to have more disposable income in their hands. "We are not distributing cash but we are spending a lot of cash which gets into people's pocket. Government infrastructure spending will provide the best amount of cash in everyone hands and economy," said Finance Secretary of India T.V. Somanathan.

Objective of the Study:

1. To highlight the importance of taxation
2. To understand the relationship between tax collection after inception of GST in India an Public Consumption Expenditure
3. To analyse the relationship between public consumption expenditure and Gross Domestic Product (GDP) of the nation since inception of GST.

Research Methodology:

Data Collection: Data of Tax Collection, Public consumption expenditure and GDP are collected from year 2016-2017 to 2020-2021. As the data of GST for year 2016-2017 is not present due to its initiation was done on 1st July 2017.

Source of Data: <https://www.ceicdata.com/en/indicator/india/public-consumption-expenditure>

GDP: <https://statisticstimes.com/economy/country/india-gdp.php>

<https://rbidocs.rbi.org.in/rdocs/Publications/PDFs/107T50C97F63BD744051A2DE5AD883267658>.

PDF

https://www.indiabudget.gov.in/budget_archive/rec.asp

GST: <https://taxguru.in/goods-and-service-tax/gst-collections-fy-2017-18-fy-2020-21.html>

Data Collection:

The following data has been collected from secondary source.

Part I. Understanding the Correlation between Tax Collection and Public Consumption Expenditure (PCE)

| Year | Tax (Direct & Indirect)(Rs Cr) | PCE (Rs Cr) |
|---------|---------------------------------|-------------|
| 2017-18 | 2306196 | 290862.687 |
| 2018-19 | 2519311 | 236847.836 |
| 2019-20 | 1689866 | 145460.43 |
| 2020-21 | 1046252 | 269743.92 |

Correlation Analysis:

| X | Y | X ² | Y ² | XY |
|---------|------------|----------------|----------------|-------------|
| 2306196 | 290862.687 | 5.31854E+12 | 84601102689 | 6.70786E+11 |

| | | | | |
|---------|------------|-------------|-------------|-------------|
| 2519311 | 290862.687 | 6.34693E+12 | 56096897418 | 5.96693E+11 |
| 1689866 | 145460.43 | 2.85565E+12 | 21158736696 | 2.45809E+11 |
| 1046252 | 269743.92 | 1.09464E+12 | 72761782377 | 2.8222E+11 |

Correlation Formula:
$$\frac{n\sum xy - \sum x \sum y}{\sqrt{\{[n\sum x^2 - (\sum x)^2][n\sum y^2 - (\sum y)^2]\}}$$

Substituting the values of variables in the equation

$n\sum xy = 7.18203E+12,$ $\sum Y = 942914.9$
 $\sum X = 7561625,$ $n\sum x^2 = 6.2463E+13,$
 $n\sum y^2 = 9.38474E+11,$ $\sum y = 7561625$
 $n\sum x^2 = 6.2463E+13,$ $n\sum y^2 = 7.18203E+12$

Correlation Coefficient Value = 0.101913

Regression Analysis:

| X | Y | X - \bar{X} | Y - \bar{Y} | (X - \bar{X}) ² | (X - \bar{X})(Y - \bar{Y}) |
|----------|---------|---------------|---------------|-------------------------------|----------------------------------|
| 290862.7 | 2306196 | 55133.96875 | -1835272 | 3039754510 | -1.01186E+11 |
| 236847.8 | 2519311 | 1119.11775 | 628904.8 | 1252424.538 | 703818468.8 |
| 145460.4 | 1689866 | -90268.2883 | -200540 | 8148363864 | 703818468.8 |
| 269743.9 | 1046252 | 34015.20175 | -844154 | 1157033950 | -28714077122 |

Regression Coefficient =
$$\frac{\sum(X - \bar{X}) \sum(Y - \bar{Y})}{\sum(X - \bar{X})^2}$$

Substituting the values

$\sum(X - \bar{X}) = 5.82077E-11,$ $\sum(Y - \bar{Y}) = -2251062,$ $\sum(X - \bar{X})^2 = 12346404748$

Regression Coefficient = -8.998058984

Regression Equation: $(Y - \bar{Y}) = b(X - \bar{X})$

$(Y - 1890406) = -8.998058984(X - 235728.7)$

$(Y - 1890406) = -8.998058984X + 2121100.747$

$Y = -8.99X + 4011506.747$

Part II. Understanding the Calculation of correlation between Public Consumption Expenditure (PCE) and Gross Domestic Product (GDP)

| Year | PCE (Rs Cr) X | GDP (Rs. Crores) Y |
|---------|---------------|--------------------|
| 2017-18 | 290862.687 | 17098304 |
| 2018-19 | 236847.836 | 18971237 |

| | | |
|---------|-----------|----------|
| 2019-20 | 145460.43 | 20339849 |
| 2020-21 | 269743.92 | 19481975 |

| X | Y | X ² | Y ² | XY |
|------------|----------|----------------|----------------|-----------|
| 290862.687 | 17098304 | 84601102689 | 2.92352E+14 | 4.973E+12 |
| 236847.836 | 18971237 | 56096897418 | 3.59908E+14 | 4.493E+12 |
| 145460.43 | 20339849 | 21158736696 | 4.13709E+14 | 2.959E+12 |
| 269743.92 | 19481975 | 72761782377 | 3.79547E+14 | 5.255E+12 |

Correlation Formula:
$$\frac{n\sum xy - \sum x \sum y}{\sqrt{\{[n\sum x^2 - (\sum x)^2][n\sum y^2 - (\sum y)^2]\}}}$$

Substituting the values of variables in the equation

$n\sum xy = 7.07214E+13$

$\sum Y = 75891365, \quad \sum X = 942914.873, \quad n\sum x^2 = 9.38474E+11, \quad n\sum y^2 = 5.78207E+15$

Correlation Coefficient Value = -0.793528306

Regression Analysis

| X | Y | X - \bar{X} | Y - \bar{Y} | (X - \bar{X}) ² | (X - \bar{X})(Y - \bar{Y}) |
|----------|----------|---------------|---------------|-------------------------------|----------------------------------|
| 290862.7 | 17098304 | 55133.96875 | 1874537.25 | 3.51389E+12 | -1.03351E+11 |
| 236847.8 | 18971237 | 1119.11775 | -1604.25 | 2573618.063 | -1795344.65 |
| 145460.4 | 20339849 | -90268.28825 | 1367007.75 | 1.86871E+12 | -1.23397E+11 |
| 269743.9 | 19481975 | 34015.20175 | 509133.75 | 2.59217E+11 | 17318287224 |

Regression Coefficient =
$$\frac{\sum(X - \bar{X})(Y - \bar{Y})}{\sum(X - \bar{X})^2}$$

Substituting the values

$\sum(X - \bar{X})(Y - \bar{Y}) = -2.09432E+11, \quad \sum(X - \bar{X})^2 = 5.64182E+12$

Regression Coefficient = -0.037121291

Regression Equation:

$(Y - \bar{Y}) = b(X - \bar{X})$

$(Y - 235728.718) = -0.037121291(X - 18972841.25)$

$$(Y-235728.7) = -0.037121291X + 704296.36$$

$$Y = -0.03721291X + 940025.06$$

Findings and Suggestions:

Part I

1. The correlation coefficient between Tax collection and Public Consumption Expenditure is 0.1019. This implies that both the parameters are positively correlated to each other.
2. The regression coefficient is -8.9.
3. The constant value is +4011506.747. This implies that for every value of x, y will increase by 4011506.747
4. There is a linear regression relationship between the two variables. As one variable increase in Public Consumption Expenditure will lead to reduction in the Tax collection.

Part II

1. The correlation coefficient between Public Consumption Expenditure and Gross Domestic Product is -0.793528306. This implies that both the parameters are negatively correlated to each other.
2. The regression coefficient is -0.037121291.
3. The constant value is +940025.06. This implies that for every value of x, y will increase by +940025.06
4. There is a linear relationship between the two variables. As one variable increase in Public consumption expenditure will lead to reduction in the Gross Domestic Product.

Conclusion:

Taxation is one of the forms of raising revenue to the government with the motto of spending it for the public welfare and also to bring equality by reducing the gap between the haves and the have-nots. Government collects taxes and spending them on the goods and services for the satisfaction of the needs and wants of the public. According the analysis made the data shows that tax collection and public consumption expenditure are related but more the government spending money into the public consumption expenditure will lead to reduction in the amount of collection of taxes by the government. Reducing of public consumption expenditure is less harmful than raising taxes in the economy and this is also one of the ways to reduce debt in the economy. (Alberto Alesina, Carlo A. Favero, 2018). The analysis made using public consumption expenditure and GDP shows a negative correlation between the two. However there is a scope for future research to analyse which component of public expenditure is a reason for reduction in the GDP of the nation (Afonso & Furceri, 2010).

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