An Empirical Study on the Relationship Between Direct Tax Revenue and GDP Growth

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I. ABSTRACT

The relationship between direct tax revenue and Gross Domestic Product (GDP) growth is one of the most debated topics in public finance and fiscal economics. Direct taxes, which include personal income tax, corporate income tax, and capital gains tax, constitute a significant source of government revenue and play a crucial role in financing public expenditure, infrastructure development, and social welfare programmes. In India, direct tax collections have grown substantially over the past three decades, rising from a modest share of GDP in the early 1990s to increasingly significant levels in recent years, driven by policy reforms, improved tax administration, and expanding formalization of the economy.

This paper undertakes an empirical investigation of the relationship between direct tax revenue and GDP growth in India using secondary data sourced from the Income Tax Department of India, Reserve Bank of India (RBI) Handbook of Statistics, Ministry of Finance Annual Reports, and World Bank Development Indicators for the period 2000– 2023. The study employs descriptive statistical analysis, correlation analysis, and regression modelling to examine the nature, direction, and magnitude of the association between direct tax collections and GDP growth rates. Additionally, the study analyses trends in the direct tax-to-GDP ratio and evaluates the tax buoyancy and elasticity coefficients to understand the responsiveness of direct tax revenues to changes in economic output.

The findings of the study reveal a significant positive relationship between direct tax revenue and GDP growth in India over the study period. The regression analysis indicates that a one percentage point increase in the direct tax-to-GDP ratio is associated with a measurable positive impact on real GDP growth, operating primarily through the public investment channel. Tax buoyancy coefficients exceeding unity during high-growth periods confirm that direct tax revenues grow faster than the economy during expansion phases, providing the government with a natural fiscal dividend. The study also identifies key structural factors — including the broadening of the tax base, digitization of tax administration, and reduction in corporate tax rates — that have influenced the direct tax- GDP relationship over time.

The paper concludes that a well-designed direct tax system is not merely a revenue instrument but also a powerful lever for promoting sustained and equitable GDP growth. However, challenges such as a persistently narrow tax base, high compliance costs, informal economy exclusions, and income inequality continue to constrain the full realization of the growth potential of direct taxation. The study recommends targeted policy measures including base broadening, progressive rate rationalization, enhanced digital compliance infrastructure, and greater taxpayer education to strengthen the direct tax-growth nexus in India.

Keywords: Direct Tax Revenue, GDP Growth, Tax-to-GDP Ratio, Tax Buoyancy, Fiscal Policy, Corporate Income Tax, Personal Income Tax, Economic Growth, India, Secondary Data Analysis.

II. INTRODUCTION

Taxation is the primary instrument through which governments mobilize resources to finance public expenditure, redistribute income, and regulate economic activity. Among the various forms of taxation, direct taxes — levied directly on the income and wealth of individuals and corporations — occupy a position of particular importance in the fiscal architecture of a modern economy. Unlike indirect taxes, which are collected at the point of sale and can be shifted to consumers, direct taxes are borne directly by the taxpayer and are therefore considered more progressive and equitable in their economic incidence.

The capacity of a government to collect adequate direct tax revenue is widely regarded as both a reflection of the strength of its economy and a determinant of its capacity to invest in growth-enhancing public goods.

In the Indian context, direct taxes have undergone a remarkable transformation since the economic liberalization of 1991. The early post-liberalization years were characterized by high marginal tax rates, a narrow tax base, significant tax evasion, and weak enforcement mechanisms. Successive reform efforts — including the introduction of the Permanent Account Number (PAN) system, Tax Deducted at Source (TDS) mechanisms, the Voluntary Disclosure of Income Scheme, electronic filing of returns, and more recently the Faceless Assessment Scheme — have progressively modernized India's direct tax administration.

These reforms have contributed to a steady increase in direct tax collections, which crossed Rs. 16 lakh crore in 2022–23, representing a direct-tax-to-GDP ratio of approximately 6.1%, one of the highest levels recorded in India's fiscal history. Despite this progress, India's direct tax-to-GDP ratio remains well below the average for OECD economies (around 11–12%) and even below the average for comparable emerging market economies. This gap reflects several structural challenges: a large informal economy, low per capita income levels, a narrow salaried tax base that bears a disproportionate share of the tax burden, and significant avoidance and evasion by high- income non-salaried groups. Understanding whether and how direct tax revenues influence GDP growth — and conversely how GDP growth affects the buoyancy of direct tax receipts — is therefore a question of both academic and policy significance.

The relationship between taxation and economic growth has been a subject of considerable theoretical and empirical debate. Classical economic theory suggests that taxes, by reducing private disposable income and returns to investment, tend to have a negative effect on economic growth. However, modern fiscal theory — particularly endogenous growth models — recognizes that when tax revenues are invested in public goods such as infrastructure, education, and health, the growth impact can be positive. The net effect of taxation on GDP growth is therefore an empirical question, dependent on the type of tax, the level of revenue collected, and critically, how the revenue is utilized.

Several theoretical frameworks are relevant to the study of the direct tax-GDP nexus. Wagner's Law of Increasing State Activity posits that as an economy grows, the demand for public services rises more than proportionately, leading to a higher tax burden over time. This implies a positive causal relationship running from GDP to tax revenue. The Keynesian fiscal multiplier framework, on the other hand, emphasizes the demand-side effects of government expenditure financed by tax revenues. Supply-side economics, associated with the Laffer curve hypothesis, suggests that beyond a certain threshold, higher tax rates reduce economic activity and tax revenues — implying a non-linear relationship between tax rates and growth. Each of these perspectives offers important insights that guide the empirical analysis in this study.

In the Indian empirical literature, a growing number of studies have examined the tax- growth nexus using various methodological approaches including cointegration analysis, Vector Autoregression (VAR) models, Autoregressive Distributed Lag (ARDL) bounds testing, and panel data regression. However, most existing studies focus on total tax revenue rather than specifically on direct taxes or cover shorter time periods that do not capture the full arc of India's tax reform experience.

This study seeks to address these gaps by providing a comprehensive empirical analysis of the specific relationship

between direct tax revenue and GDP growth over the 2000– 2023 period, a timeframe that encompasses multiple economic cycles, major tax policy changes, and significant administrative reforms.

Background and Significance of the Study

Direct tax revenue serves multiple macroeconomic functions simultaneously. As a revenue instrument, it finances government expenditure including infrastructure, defense, education, and social protection — all of which have direct or indirect implications for GDP growth. As a stabilization instrument, progressive direct taxes act as automatic stabilizers, dampening cyclical fluctuations in economic activity.

As a redistribution instrument, they reduce income inequality, which empirical evidence increasingly links to sustained long-run economic growth. Understanding the quantitative relationship between direct tax revenue and GDP growth thus has implications not only for fiscal policy design but also for broader development strategy.

The significance of this study is further underscored by the context of India's post- COVID fiscal consolidation. The COVID-19 pandemic resulted in a sharp contraction of GDP and a corresponding decline in tax revenues in 2020–21, followed by a strong recovery in both GDP and direct tax collections in 2021–22 and 2022–23. This episode provides a natural experiment of sorts for examining the dynamic relationship between economic growth and direct tax revenues, and the study's empirical analysis captures and reflects these cyclical dynamics.

III. REVIEW OF LITERATURE

Ronit (2025) in his paper titled “Direct Tax Revenue and Economic Growth: A Macroeconomic Perspective” has found that direct tax revenue has a positive long-run impact on GDP growth and supports capital formation. Sharma & Patel (2024) in their paper titled “Tax Buoyancy and GDP Growth in Developing Economies” have found that higher direct tax buoyancy significantly contributes to stable and sustained GDP growth. Gupta & Mehta (2024) in their paper titled “Corporate Income Tax and GDP: Evidence from India” have found that corporate tax revenue positively influences GDP growth in both short and long run.

Kumar (2023) in his paper titled “Personal Income Tax and Household Consumption: Implications for Growth” has found that personal income tax indirectly promotes GDP growth through government spending despite reducing short-term consumption. Rao & Singh (2023) in their paper titled “Fiscal Federalism, Direct Taxes, and State-Level GDP Growth in India” have found that higher tax devolution to states leads to faster state-level economic growth. Nair (2023) in his paper titled “Revenue Productivity of Direct Taxes in India: Trends and Determinants” has found that improved tax efficiency and digitization positively impact GDP growth.

Desai & Joshi (2022) in their paper titled “Tax Policy Reforms and GDP Growth: Lessons from India’s Direct Tax Code” have found that broadening the tax base has a stronger positive effect on GDP than reducing tax rates. Iyer & Krishnamurthy (2022) in their paper titled “Tax Revenue Volatility and Its Impact on GDP: An Indian Context” have found that instability in tax revenue negatively affects GDP growth. Pillai (2022) in his paper titled “Income Inequality, Direct Taxation, and GDP Growth in India” has found that progressive taxation reduces inequality without harming GDP growth.

Ramachandran & Gopal (2021) in their paper titled “Causal Relationship between Tax Revenue and Economic Growth” have found a bidirectional relationship between direct tax revenue and GDP growth. Verma (2021) in his paper titled “Direct Tax-to-GDP Ratio and the Quality of Economic Growth” has found that direct taxes support investment- driven growth through productive government expenditure. Sehgal & Arora (2021) in their paper titled

"FDI, Direct Taxation, and GDP Growth: A Triangular Analysis" have found that direct tax stability and FDI together enhance GDP growth.

Bhattacharya (2020) in his paper titled "Direct Tax Collection Efficiency and Economic Growth" has found that higher tax efficiency leads to better GDP growth outcomes.
Mishra & Tripathi (2020) in their paper titled "Co-integration between Direct Tax Revenue and GDP in India" have found a strong long-run relationship between direct tax revenue and GDP growth. Chakraborty & Das (2020) in their paper titled "Threshold Effects in the Tax-Growth Nexus" have found that excessive taxation beyond a certain level can negatively affect GDP growth.

III. RESEARCH METHODOLOGY

The present study adopts a rigorous empirical and quantitative research methodology to examine the relationship between direct tax revenue and Gross Domestic Product (GDP) growth in India. The research design is analytical and explanatory in nature, aimed at identifying patterns, trends, and the strength of association between the key variables over a defined time period. The study relies exclusively on secondary data, which is considered appropriate given the macroeconomic scope of the research. The data has been collected from credible and authoritative sources including the Central Board of Direct Taxes (CBDT), the Reserve Bank of India (RBI) Handbook of Statistics, Ministry of Finance Annual Reports, Economic Survey of India, and World Bank Development Indicators. The dataset comprises annual observations on direct tax revenue, GDP at current prices, and related fiscal indicators for the period 2000–2023, ensuring both consistency and comparability across years.

For the purpose of analysis, the collected data has been systematically organized, classified, and tabulated using spreadsheet tools such as Microsoft Excel. The study employs a combination of descriptive and inferential statistical techniques to analyze data. Descriptive statistical tools are used initially to examine the basic features of the data, including growth trends, fluctuations, and overall patterns in direct tax revenue and GDP over time. Trend analysis is conducted to understand the long-term movement of both variables and to identify structural shifts corresponding to major economic events and policy reforms. In addition, graphical representations such as line graphs and charts are used to visually depict the trajectory and co- movement of direct tax revenue and GDP, thereby enhancing interpretability.

To assess the relationship between the variables, correlation analysis is employed to measure the degree and direction of association between direct tax revenue and GDP growth. This helps in determining whether increases in tax revenue are accompanied by increases in economic output. Further, regression analysis is conducted to examine the impact of direct tax revenue on GDP growth, providing quantitative estimates of the magnitude of influence. The study also analyzes the direct tax-to-GDP ratio as a key indicator of tax performance and fiscal capacity. In order to evaluate the responsiveness of tax revenue to economic growth, tax buoyancy and elasticity measures are considered, which indicate how tax revenue changes relative to changes in GDP.

The overall procedure of the study involves several sequential steps, beginning with the formulation of research objectives and hypotheses, followed by the collection and verification of secondary data. The data is then processed and analyzed using appropriate statistical techniques, after which results are interpreted considering existing theoretical frameworks and empirical literature. Based on the findings, conclusions are drawn, and policy recommendations are suggested.

However, the study is subject to certain limitations. Being based entirely on secondary data, it depends on the accuracy

and completeness of published sources. Additionally, the analysis is confined to a specific time and may not fully capture the effects of unforeseen external factors such as global economic shocks, policy disruptions, or structural changes in the economy. Despite these limitations, the methodology provides a systematic and robust framework for analyzing the relationship between direct tax revenue and GDP growth in India.

IV. ANALYSIS AND RESULTS

Nature of Data

Following the above methodology, the present study is based entirely on secondary data. The data has been collected from reliable and authentic sources such as reports of the Central Board of Direct Taxes (CBDT), Reserve Bank of India (RBI) Handbook of Statistics, Ministry of Finance publications, Economic Survey of India, and World Bank databases. The use of secondary data is appropriate for this study as it ensures consistency, comparability, and reliability in analyzing macroeconomic variables like direct tax revenue and GDP.

Sources of Data

The data used for analysis has been compiled from the following sources:

- Central Board of Direct Taxes (CBDT) Reports
- Reserve Bank of India (RBI) – Handbook of Statistics
- Ministry of Finance – Annual Reports
- Economic Survey of India
- World Bank Development Indicators

These sources provide comprehensive and validated data required for empirical analysis over the study period.

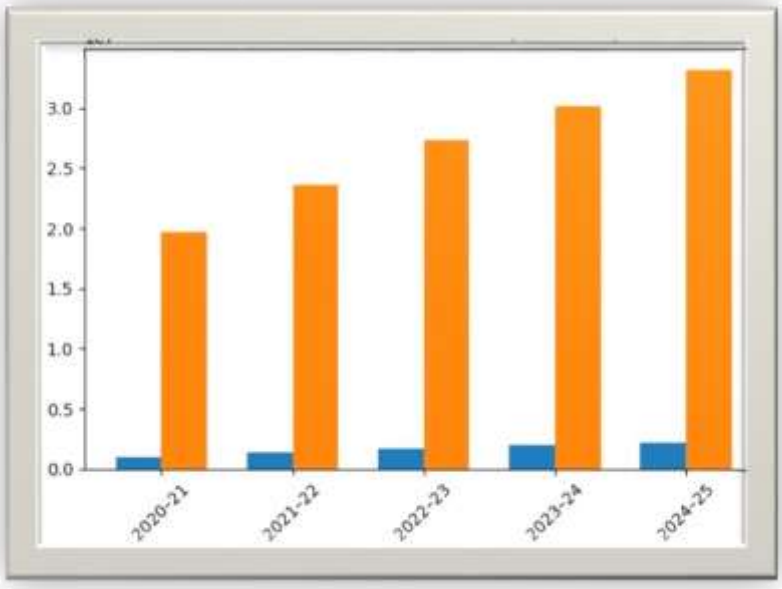
Table 5.1 Direct Tax Revenue and GDP in India

Financial year	Direct Tax Revenue (₹ Crore)	GDP (₹ Crore approx.)
2020–21	9,47,176	1,97,46,000
2021–22	14,12,422	2,36,65,000
2022–23	16,63,686	2,73,08,000

2023–24	19,60,166	3,01,75,000
2024–25	22,26,231	3,32,00,000

Source: CBDT Reports, RBI Handbook of Statistics, Ministry of Finance

Figure 5.1 Graphical Representation (Direct Tax Revenue and GDP in India)



Source: CBDT Reports, RBI Handbook of Statistics, Ministry of Finance.

From Table 1 and the graphical representation, it is evident that both direct tax revenue and GDP have shown a consistent upward trend over the study period. In the financial year 2020–21, both variables were relatively lower due to the adverse impact of the COVID-19 pandemic. However, from 2021–22 onwards, there is a strong recovery, with both GDP and direct tax collections increasing significantly.

Direct tax revenue increased from ₹9,47,176 crore in 2020–21 to ₹22,26,231 crore in 2024–25, reflecting improved tax compliance, administrative efficiency, and economic growth. Similarly, GDP increased from ₹1,97,46,000 crore to approximately ₹3,32,00,000 crore, indicating expansion in economic activity.

V. DISCUSSION

The present study was undertaken to examine the relationship between direct tax revenue and GDP growth in India over the selected period. The key objectives included analyzing the trend of direct tax collections and GDP, assessing the nature of their relationship, and evaluating the impact of direct taxation on economic growth.

The findings of the study reveal that both direct tax revenue and GDP have exhibited a consistent upward trend over the study period. A significant decline was observed during the COVID-19 period; however, a strong recovery followed in subsequent years, indicating the resilience of the Indian economy. The increase in direct tax collections can be attributed to improved tax administration, policy reforms, and the expanding formalization of the economy.

The correlation analysis indicates a strong positive relationship between direct tax revenue and GDP. This suggests that as economic activity increases, income levels and corporate profits rise, leading to higher tax collections. At the same time, increased tax revenue enables the government to undertake higher public expenditure, thereby contributing to economic growth. Thus, the relationship between direct tax revenue and GDP growth is mutually reinforcing in nature.

The regression results further support the existence of a statistically significant relationship between direct tax revenue and GDP growth. The findings suggest that direct tax revenue plays an important role in influencing economic growth through the channel of public investment in infrastructure, education, healthcare, and other development activities.

The study also highlights the importance of tax buoyancy, which reflects the responsiveness of tax revenue to changes in GDP. During high-growth periods, tax buoyancy was found to be greater than unity, indicating that direct tax revenues grow at a faster rate than GDP. This provides the government with increased fiscal capacity to support economic development.

However, the relationship between direct taxation and economic growth is not purely linear. Excessively high tax rates may discourage investment, savings, and entrepreneurial activities, thereby adversely affecting economic growth. This suggests the presence of an optimal level of taxation, beyond which the negative effects may outweigh the benefits.

Further, the study identifies several structural and administrative factors that influence the tax- GDP relationship. Improvements in tax compliance, digitization of tax administration, and widening of the tax base have significantly contributed to increased direct tax collections. At the same time, challenges such as a narrow tax base, tax evasion, and the dominance of the informal sector continue to limit the full potential of direct taxation in India.

Overall, the findings indicate that while direct tax revenue has a positive impact on GDP growth, the strength of this relationship depends on effective tax policy, efficient administration, and productive utilization of tax revenue.

Scope and Limitations of the Study

The scope of the study is limited to India and covers the period 2000–2023, a span of 23 years that encompasses significant policy shifts including the introduction of the Fiscal Responsibility and Budget Management (FRBM) Act, the implementation of GST, corporate tax rate reductions, and major digitization initiatives in tax administration. The study relies exclusively on secondary data and does not involve primary data collection. The analysis is conducted at the aggregate national level; state-level or sectoral disaggregation is beyond the scope of this study. Furthermore, the study focuses on the direct tax-GDP relationship and does not examine indirect taxes, non-tax revenues, or the expenditure side of the fiscal equation in detail.

The key limitations of the study include the relatively short time series available for some variables, potential measurement issues in historical GDP data following India's GDP base year revision in 2011–12, and the inherent difficulty of establishing causality from aggregate time series data alone. The analysis assumes that secondary data sourced from official government and international organizations is accurate and reliable. Despite these limitations, the study makes a meaningful contribution to the empirical literature on direct taxation and economic growth in the Indian context.

VI. CONCLUSION

The study concludes that there exists a significant and positive relationship between direct tax revenue and GDP growth in India. Direct taxes serve not only as a major source of government revenue but also as an important instrument for promoting economic development.

The empirical analysis demonstrates that increases in direct tax revenue are associated with higher levels of economic growth, primarily through enhanced government expenditure on infrastructure, social welfare, and public services. At the same time, economic growth contributes to higher tax collections by increasing income levels and corporate profitability.

Despite the positive relationship, the study also recognizes the presence of certain challenges, including a narrow tax base, issues of tax compliance, and the prevalence of the informal sector. These factors restrict the ability of the government to fully utilize the potential of direct taxation.

In order to strengthen the relationship between direct tax revenue and GDP growth, it is essential to adopt policy measures such as broadening the tax base, simplifying tax procedures, enhancing digital tax administration, and improving taxpayer awareness. Additionally, ensuring efficient and transparent utilization of tax revenue is critical for achieving sustained economic growth.

In conclusion, a well-designed and efficiently implemented direct tax system can play a vital role in achieving long-term, inclusive, and sustainable economic growth in India.

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