

THE EVOLUTION OF INDIA'S TAX REVENUE SYSTEM: TRENDS, EFFICIENCY, AND ECONOMIC IMPACT (2000-2024)

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ABSTRACT

This paper analyzes the development of India's tax revenue system, with a focus on the roles of direct and indirect taxes, the efficiency of tax administration, and the interplay between economic growth and tax performance. The study covers the period from 2000-01 to 2023-24, utilizing provisional data for the most recent year. Key trends highlighted include a steady rise in overall tax collections, an increasing share of direct taxes, and a declining reliance on indirect taxes. The paper further examines shifts in tax policy, emphasizing progressive taxation, particularly through personal income tax. Additionally, it explores important metrics such as the Direct Tax, GDP Ratio, tax buoyancy, and the cost of tax collection, offering insights into the improvements in the efficiency of India's tax system. The findings indicate a transition towards a more progressive and effective tax structure, which has played a significant role in supporting India's economic growth and fiscal stability.

Keywords: Direct Tax, GDP Ratio, Tax Buoyancy, Fiscal Stability, Economic Growth.

Introduction

India's tax system has undergone substantial transformation over the past few decades, evolving from one heavily reliant on indirect taxes to a structure increasingly dependent on direct taxes. This shift has been driven by factors such as economic liberalization, enhancements in tax compliance, and significant changes in fiscal policy. The aim of this paper is to offer a detailed analysis of the contribution of direct and indirect taxes to total tax revenue in India from the financial year 2000-01 to 2023-24, shedding light on emerging trends, shifts in the tax base, and the rising prominence of direct taxes.

During this period, India's total tax revenue has consistently grown, despite occasional fluctuations. The share of direct taxes has steadily increased, signalling a movement toward a more progressive tax system. In contrast, the role of indirect taxes has diminished. This paper further explores the effectiveness of tax collection, using key metrics such as the Direct Tax GDP Ratio and tax buoyancy, which assess how tax revenues respond to changes in the economy.

Additionally, the paper investigates the efficiency of tax collection, highlighting the significant reduction in the cost of tax administration over the years, suggesting notable improvements in administrative effectiveness. By examining these trends and performance indicators, the paper offers valuable insights into the changing dynamics of India's tax system, its correlation with economic growth, and the success of reforms aimed at improving revenue generation and fiscal sustainability. Ultimately, the paper emphasizes the need for ongoing enhancements in tax policy and administration to support India's long-term economic growth and stability.

Objectives

The objectives of this paper are as follows:

- To analyse the evolution of India's tax revenue system.

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- To examine the contribution of direct and indirect taxes.
- To evaluate trends in tax revenue growth.
- To assess the efficiency of tax collection.
- To explore the relationship between economic growth and tax performance.
- To evaluate the impact of tax policy reforms.
- To provide policy recommendations for enhancing revenue generation and fiscal stability.

Hypotheses

- There is no significant difference in the proportion of direct tax and indirect tax in tax revenue of India during the period of study.
- There is no significant difference in GDP Growth rate and tax growth rate during the period of study.

Research Methodology

This paper, titled "The Evolution of India's Tax Revenue System: Trends, Efficiency, and Economic Impact (2000-2024)" is based on secondary data analysis. Secondary data refers to information that has already been collected, analyzed, and published by other researchers or organizations. It includes both published data, such as government reports, trade statistics, and academic research, as well as unpublished data, such as working papers or internal reports. For this study, the most reliable sources, including original reports from government agencies, trade organizations, and reputable international bodies, have been utilized to ensure the accuracy and validity of the findings. These data sources provide comprehensive insights into the trends, challenges, and economic implications of Indian tax revenue. This methodology allows for a thorough understanding of the broader economic context and enables the paper to present a critical evaluation of the trends in India's tax structure over time.

Importance and Limitation of the Study

This paper provides a comprehensive analysis of the evolution of India's tax system, highlighting key trends, efficiency improvements, and the impact of tax reforms. It offers valuable insights into the role of direct and indirect taxes in shaping fiscal policy and economic growth, supporting evidence-based policy recommendations for enhancing revenue generation and ensuring long-term fiscal stability.

The study is based on available data up to 2023-24, which may not capture the full impact of any recent or upcoming reforms. Additionally, regional variations and external economic factors are not deeply explored, which could influence tax performance.

Table 1: Contribution of Direct and Indirect Taxes to Total Tax Revenue

Sr.	Financial Year	Direct Taxes* (Rs. crore)	Indirect Taxes** (Rs. crore)	Total Taxes (Rs. crore)	Direct Tax as % of Total Taxes	Indirect Tax as % of Total Taxes	% Change in Tax Collection
1	2000-01	68,305	1,19,814	1,88,119	36.31%	63.69	
2	2001-02	69,198	1,17,318	1,86,516	37.10%	62.90	-0.85
3	2002-03	83,088	1,32,608	2,15,696	38.52%	61.48	15.64
4	2003-04	1,05,088	1,48,608	2,53,696	41.42%	58.58	17.62
5	2004-05	1,32,771	1,70,936	3,03,707	43.72%	56.28	19.71
6	2005-06	1,65,216	1,99,348	3,64,564	45.32%	54.68	20.04
7	2006-07	2,30,181	2,41,538	4,71,719	48.80%	51.20	29.39
8	2007-08	3,14,330	2,79,031	5,93,361	52.97%	47.03	25.79
9	2008-09	3,33,818	2,69,433	6,03,251	55.34%	44.66	1.67
10	2009-10	3,78,063	2,43,939	6,22,002	60.78%	39.22	3.11
11	2010-11	4,45,995	3,43,716	7,89,711	56.48%	43.52	26.96
12	2011-12	4,93,987	3,90,953	8,84,940	55.82%	44.18	12.06
13	2012-13	5,58,989	4,72,915	10,31,904	54.17%	45.83	16.61
14	2013-14	6,38,596	4,95,347	11,33,943	56.32%	43.68	9.89
15	2014-15	6,95,792	5,43,215	12,39,007	56.16%	43.84	9.27
16	2015-16	7,41,945	7,11,885	14,54,180	51.03%	48.95	17.37

17	2016-17	8,49,713	8,61,515	17,11,228	49.65%	50.34	17.68
18	2017-18	10,02,738	9,15,256	19,17,994	52.28%	47.72	12.08
19	2018-19	11,37,718	9,37,322	20,75,040	54.83%	45.17	8.19
20	2019-20	10,50,681	9,53,513	20,04,194	52.42%	47.58	-3.41
21	2020-21	9,47,176	10,74,809	20,21,985	46.84%	53.16	0.89
22	2021-22	14,12,422	12,89,662	27,02,084	52.27%	47.73	33.64
23	2022-23	16,63,686	13,81,935	30,45,621	54.63%	45.37	12.71
24	2023-24 [@]	19,60,166	14,95,853	34,56,019	56.72%	43.28	13.48
Sources : * Pr. CCA, CBDT & ** TRU Division, CBIC							

[@] Provisional.

Table 1 presents data on the contribution of direct and indirect taxes to India's total tax revenue from the financial year 2000-01 to 2023-24 (with provisional data for the most recent year). The key variables in the table include Direct Taxes, Indirect Taxes (all in Rs. crore), Total Tax Revenue (in Rs. crore), the percentage share of Direct and Indirect Taxes in Total Taxes, and the percentage change in tax collections.

Total tax revenue has demonstrated a consistent upward trend over the years, with the exception of two periods: 2000-01 to 2001-02 and 2018-19 to 2019-20. It has grown from Rs. 1,88,119 crores in 2000-01 to a provisional Rs. 34,56,019 crores in 2023-24. While the increase in tax collections is generally upward, it is not uniform, exhibiting fluctuations. Notable surges occurred in years such as 2005-06 (20.04%), 2010-11 (26.96%), 2015-16 (17.37%), and 2021-22 (33.64%).

Direct taxes have steadily increased as a percentage of total taxes, rising from 36.31% in 2000-01 to 56.72% in 2023-24. Conversely, the share of indirect taxes has declined, dropping from 63.69% in 2000-01 to 43.28% in 2023-24. This shift reflects a move towards a more progressive tax system, with direct taxes taking up a larger portion of the overall tax structure.

The percentage change in tax collection has fluctuated annually, with both negative and positive variations across different years. Negative changes were recorded in 2001-02, 2009-10, and 2019-20, likely due to economic slowdowns or external factors, such as the global financial crisis of 2008 and the COVID-19 pandemic in 2020. On the other hand, notable positive growth was seen in years like 2002-03 (15.64%), 2006-07 (29.39%), and 2021-22 (33.64%).

The overall trend in the table indicates a shift towards a more balanced and progressive tax system, with a growing reliance on direct taxes. However, indirect taxes still play a crucial role in revenue generation, particularly during periods of economic disruption or fiscal adjustments. The consistent growth in tax revenue reflects a strong economy and ongoing improvements in tax administration.

Table 2: Direct Tax Collection

Sr. No	Financial Year	(Rs. crore)						
		Corporate Tax		Personal Income Tax [@]		Other Direct Tax		Total Amount
		Amount	Percentage	Amount	percentage	Amount	percentage	
1	2000-01	35,696	52.26	31,764	46.50	845	1.24	68,305
2	2001-02	36,609	52.90	32,004	46.25	585	0.85	69,198
3	2002-03	46,172	55.57	36,866	44.37	50	0.06	83,088
4	2003-04	63,562	60.48	41,386	39.38	140	0.13	1,05,088
5	2004-05	82,680	62.27	49,268	37.11	823	0.62	1,32,771
6	2005-06	1,01,277	61.30	63,689	38.55	250	0.15	1,65,216
7	2006-07	1,44,318	62.70	85,623	37.20	240	0.10	2,30,181
8	2007-08	1,93,561	61.58	1,20,429	38.31	340	0.11	3,14,330
9	2008-09	2,13,395	63.93	1,20,034	35.96	389	0.12	3,33,818
10	2009-10	2,44,725	64.73	1,32,833	35.14	505	0.13	3,78,063
11	2010-11	2,98,688	66.97	1,46,258	32.79	1,049	0.24	4,45,995
12	2011-12	3,22,816	65.35	1,70,181	34.45	990	0.20	4,93,987
13	2012-13	3,56,326	63.74	2,01,840	36.11	823	0.15	5,58,989
14	2013-14	3,94,678	61.80	2,42,888	38.03	1,030	0.16	6,38,596
15	2014-15	4,28,925	61.65	2,65,772	38.20	1,095	0.16	6,95,792
16	2015-16	4,53,228	61.09	2,87,637	38.77	1,079	0.15	7,41,945
17	2016-17	4,84,924	57.07	3,49,503	41.13	15,286	1.80	8,49,713
18	2017-18*	5,71,202	56.96	4,20,084	41.89	11,452	1.14	10,02,738
19	2018-19*	6,63,572	58.32	4,73,179	41.59	967	0.08	11,37,718

20	2019-20*	5,56,876	53.00	4,92,717	46.90	1,088	0.10	10,50,681
21	2020-21*	4,57,719	48.32	4,87,560	51.48	1,897	0.20	9,47,176
22	2021-22*	7,12,037	50.41	6,96,604	49.32	3,781	0.27	14,12,422
23	2022-23*	8,25,834	49.64	8,33,307	50.09	4,545	0.27	16,63,686
24	2023-24*	9,11,055	46.48	10,45,139	53.32	3,972	0.20	19,60,166 [#]
Source: Union Finance Accounts of respective years and reports of C&AG/Receipt Budget up to FY 2016-17.								
* Pr. CCA, CBDT								
@ Figures under Personal Income Tax include collections of Security Transaction Tax also.								
# Provisional.								

Table no-2 provides a comprehensive breakdown of India's direct tax collections from 2000-01 to 2023-24 (with provisional data for 2023-24). It classifies direct tax collections into three categories: Corporate Tax, Personal Income Tax, and Other Direct Taxes, presenting both the amounts collected and their respective percentage contributions to the total direct tax revenue for each financial year.

Interpretation of the Table: Direct Tax Collection Breakdown (Rs. crore).

The total direct tax collection has consistently risen over the years, increasing from Rs. 68,305 crore in 2000-01 to a provisional Rs. 19,60,166 crore in 2023-24. This growth highlights an expanding tax base, enhanced tax compliance, and sustained economic activity, contributing to higher revenue generation.

Corporate tax has consistently been the largest contributor to total direct taxes, accounting for 52.26% in 2000-01 and 46.48% in 2023-24. Although its percentage share has decreased slightly over time, the absolute amount of corporate tax collected has grown substantially, from Rs. 35,696 crore in 2000-01 to Rs. 9,11,055 crore in 2023-24. This growth in corporate tax collections reflects the increase in corporate profits, alongside improved tax compliance mechanisms.

Personal income tax has experienced a significant rise in its share of total direct taxes, increasing from 46.50% in 2000-01 to 53.32% in 2023-24. The absolute collection from personal income tax has also grown substantially, from Rs. 31,764 crore in 2000-01 to Rs. 10,45,139 crore in 2023-24. This growth reflects both an increase in income across the population and enhanced tax compliance, driven by measures such as the Goods and Services Tax (GST) and digitalization initiatives. Since 2009-10, personal income tax has consistently represented a larger share of total direct taxes, at times surpassing corporate tax. This shift underscores a broader trend towards progressive taxation, with a greater focus on taxing individual incomes.

"Other Direct Taxes" (such as wealth tax, estate duty, etc.) have made a negligible contribution to total direct taxes, fluctuating between 0.06% and 1.80% over the years. The absolute collection from these taxes has remained relatively low, highlighting their minimal contribution to the overall direct tax revenue.

The table highlights the consistent growth of direct taxes in India, showcasing a notable shift towards a larger contribution from personal income tax. While corporate taxes remain a crucial revenue source, their share has slightly decreased in comparison to personal income taxes. The overall increase in direct tax collections reflects a strengthening economy, a broader tax base, and improved government efforts in enhancing compliance. The gradual transition towards a more progressive tax system, with personal income tax growing as a percentage of total collections, indicates a stronger emphasis on wealth redistribution and higher taxation of incomes.

Table 3: Direct Tax GDP Ratio

Sr. No.	Financial year	Net Collection of Direct Taxes (Rs. Crore)	GDP Current Market Price (Rs. Crore)	Direct Tax GDP Ratio	GDP Growth Rate	Tax Growth Rate	Buoyancy Factor
1	2000-01	68,305	21,02,376	3.25%	7.7%	17.85%	2.32
2	2001-02	69,198	22,81,058	3.03%	8.5%	1.31%	0.15
3	2002-03	83,088	24,58,084	3.38%	7.76%	20.07%	2.59
4	2003-04	1,05,088	27,54,621	3.81%	12.06%	26.48%	2.19
5	2004-05	1,32,771	32,42,209	4.1%	17.7%	26.34%	1.49
6	2005-06	1,65,216	36,93,369	4.47%	13.92%	24.44%	1.76
7	2006-07	2,30,181	42,94,706	5.36%	16.28%	39.32%	2.42
8	2007-08	3,14,330	49,87,090	6.3%	16.12%	35.56%	2.27
9	2008-09	3,33,818	56,30,063	5.93%	12.89%	6.20%	0.48
10	2009-10	3,78,063	64,57,352	5.85%	14.69%	13.25%	0.90

11	2010-11	4,45,995	76,74,148	5.81%	18.84%	17.97%	0.95
12	2011-12	4,93,987	90,09,722	5.48%	17.4%	10.76%	0.62
13	2012-13	5,58,989	1,01,13,281	5.53%	12.25%	13.16%	1.07
14	2013-14	6,38,596	1,13,55,073	5.62%	12.28%	14.24%	1.16
15	2014-15	6,95,792	1,25,41,208	5.55%	10.45%	8.96%	0.86
16	2015-16	7,41,945	1,35,67,192	5.47%	8.25%	6.63%	0.80
17	2016-17	8,49,713	1,53,62,386	5.53%	13.23%	14.53%	1.10
18	2017-18	10,02,738	1,70,98,304 [®]	5.86%	11.30%	18.00%	1.59
19	2018-19	11,37,718	1,88,86,957 [®]	6.02%	10.46%	13.46%	1.29
20	2019-20	10,50,681	2,00,74,856 [®]	5.23%	6.29%	-7.65%	-1.21
21	2020-21	9,47,176	1,98,29,927 [®]	4.78%	-1.22%	-9.85%	--**
22	2021-22	14,12,422	2,35,97,399 [®]	5.97%	19.34%	49.12%	2.54
23	2022-23	16,63,686	2,69,49,646 [®]	6.17%	14.21%	17.79%	1.25
24	2023-24	19,60,166 [#]	2,95,35,667 [®]	6.64%	9.60%	17.82%	1.86
Source: @ MOSPI Press releases dated 29.5.2020, 31.5.2021, 31.5.2022, 31.5.2023 and 31.5.2024.							
**As both GDP and Tax growth rate were negative, tax buoyancy has not been computed for FY 2020-21.							
# Provisional figures.							

This table presents key metrics including the Direct Tax GDP Ratio, GDP Growth Rate, Tax Growth Rate, and Tax Buoyancy Factor for India from the financial year 2000-01 to 2023-24 (with provisional data for 2023-24). It offers valuable insights into the relationship between the growth of direct tax collections and the overall economy, revealing how sensitive tax revenue is to changes in GDP and providing a perspective on the effectiveness of tax collection systems in an evolving economic landscape. These metrics highlight trends in tax performance and economic expansion, shedding light on India's tax policy and its responsiveness to economic changes.

The Direct Tax GDP Ratio has demonstrated a consistent upward trend, increasing from 3.25% in 2000-01 to a provisional 6.64% in 2023-24. This growth reflects the expanding role of direct taxes in India's economy, suggesting enhanced tax revenue generation relative to the country's GDP. It indicates that as the economy has grown, the tax system has become more efficient in capturing a larger share of economic output through direct taxation.

India's GDP growth rate has varied significantly over the years, reflecting both periods of strong economic expansion and periods of slowdown. Notable years of robust growth include 2004-05, with a remarkable 17.7% increase, and 2021-22, which saw a post-pandemic recovery with a growth rate of 19.34%. Conversely, the lowest growth rate occurred in 2020-21, when the economy contracted by -1.22% due to the severe impact of the COVID-19 pandemic. These fluctuations highlight the vulnerability of the economy to external shocks, as well as its ability to recover during periods of strong economic activity.

The tax growth rate has shown significant variation over the years. It peaked at 49.12% in 2021-22, marking a strong recovery following the pandemic's economic impact. In contrast, the tax growth rate turned negative in 2020-21, dropping by -9.85%, reflecting the severe economic contraction caused by the pandemic. During periods of robust economic growth, such as 2003-04 and 2006-07, the tax growth rate was also strong, aligning with overall economic performance. These fluctuations demonstrate the close relationship between economic activity and tax revenue generation.

Tax buoyancy measures the responsiveness of tax revenue to changes in GDP. A buoyancy factor greater than 1 indicates that tax revenue is growing faster than GDP, while a factor below 1 suggests that tax revenue is growing more slowly than GDP. Over the years, tax buoyancy has fluctuated, with some years exhibiting strong responsiveness. For instance, in 2000-01 (2.32), 2006-07 (2.42), and 2021-22 (2.54), tax collection growth outpaced GDP growth, indicating effective tax generation. However, in 2020-21, the buoyancy factor turned negative, reflecting both a contraction in GDP and a decline in tax growth due to the pandemic's economic impact. These variations highlight the dynamic relationship between economic performance and tax revenue collection efficiency.

In 2023-24, the Direct Tax GDP ratio is projected to reach 6.64%, indicating a continued rise in tax revenue as a proportion of GDP. This suggests that direct taxes are becoming an increasingly important source of revenue relative to the size of India's economy. The tax growth rate is expected to be 17.82%, reflecting a strong recovery in tax collections following the economic disruptions caused by the pandemic. Moreover, the tax buoyancy factor is projected to be 1.86, indicating that tax revenue is expected to grow at a faster rate than GDP, signalling effective tax administration and a robust economic rebound.

The table illustrates a consistent upward trend in the Direct Tax GDP Ratio, highlighting India's growing reliance on direct taxes as a share of its GDP. This increase reflects the country's expanding tax base, bolstered by both economic growth and improvements in tax administration. During periods of economic expansion, especially in the early 2000s and the post-pandemic recovery phase, tax buoyancy has remained relatively high, indicating that tax revenue has grown faster than GDP. The provisional data for 2023-24 further underscores this trend, with tax revenue expected to outpace GDP growth. This suggests that India's ongoing efforts to enhance tax collection efficiency and strengthen its tax system are proving effective, ensuring the resilience of the tax framework even in challenging economic conditions.

Table 4: Cost of Tax Collection

Sr. No.	Financial Year	Total Collections (Rs. Crore)	Total Expenditure (Rs. Crore)	Cost of Collection
1	2000-01	68,305	929	1.36%
2	2001-02	69,198	933	1.35%
3	2002-03	83,088	984	1.18%
4	2003-04	1,05,088	1,050	1.00%
5	2004-05	1,32,771	1,138	0.86%
6	2005-06	1,65,216	1,194	0.72%
7	2006-07	2,30,181	1,349	0.59%
8	2007-08	3,14,330	1,687	0.54%
9	2008-09	3,33,818	2,248	0.67%
10	2009-10	3,78,063	2,726	0.72%
11	2010-11	4,45,995	2,698	0.60%
12	2011-12	4,93,987	2,976	0.60%
13	2012-13	5,58,989	3,283	0.59%
14	2013-14	6,38,596	3,641	0.57%
15	2014-15	6,95,792	4,101	0.59%
16	2015-16	7,41,945	4,593	0.61%
17	2016-17	8,49,713	5,578	0.66%
18	2017-18	10,02,738	6,087	0.61%
19	2018-19	11,37,718	7,074	0.62%
20	2019-20	10,50,681	6,952	0.66%
21	2020-21	9,47,176	7,223	0.76%
22	2021-22	14,12,422	7,479	0.53%
23	2022-23	16,63,686	8,452	0.51%
24	2023-24 [@]	19,60,166	8,634	0.44%

Source: Pr. CCA, CBDT (figures rounded off) @ Provisional.

The table illustrates the cost of tax collection in India from the financial year 2000-01 to 2023-24 (with provisional data for 2023-24). It contrasts the total tax collections (in Rs. crore) with the corresponding expenditures (in Rs. crore) required for tax collection, presenting the cost of collection as a percentage of total tax revenue for each year. This analysis provides a clear picture of the efficiency in India's tax collection process over time.

The cost of collection has consistently declined over the years, dropping from 1.36% in 2000-01 to an expected 0.44% in 2023-24. This downward trend underscores the remarkable progress in the efficiency of India's tax collection mechanisms. The projection for 2023-24 marks the lowest cost of collection in the entire period, symbolizing the peak of operational efficiency in tax administration.

While the expenditure on tax collection has increased in absolute terms alongside growing tax revenues, the cost relative to total collections has steadily decreased, reflecting improved cost management in tax administration. In the early years (2000-01 to 2006-07), the cost of collection was relatively higher. However, as India's tax administration evolved and its tax base expanded, the cost efficiency significantly improved, leading to a consistent decline in the cost of collection in later years.

The growth in total collections, coupled with enhanced management practices and streamlined processes, has resulted in a declining cost-to-revenue ratio in recent years, signalling a marked improvement in efficiency. This trend underscores the effectiveness of initiatives focused on refining tax administration, such as automation, digitalization, and strengthened compliance systems, all of which have played a crucial role in reducing the cost of collection and enhancing overall revenue generation.

The rise in total collections, alongside enhanced management and streamlined processes, has resulted in a lower cost-to-revenue ratio in recent years, reflecting a clear shift towards greater efficiency

in revenue generation. This trend emphasizes the success of initiatives aimed at optimizing tax administration, such as automation and improved compliance systems, which have significantly contributed to reducing the cost of collection and driving more effective revenue generation.

Analysis and Interpretation of Hypothesis

H₀: There is no significant difference in the proportion of direct tax and indirect tax in tax revenue of India during the period of study.

t-Test: Two-Sample Assuming Equal Variances

	Direct Tax as % of Total Taxes	Indirect Tax as % of Total Taxes
Mean	0.504125	49.58699971
Variance	0.004608	46.07667203
Observations	24	24
Pooled Variance	23.04064	
Hypothesized Mean Difference	0	
df	46	
t Stat	-35.422	
P(T<=t) one-tail	2.47E-35	
t Critical one-tail	1.67866	
P(T<=t) two-tail	4.93E-35	
t Critical two-tail	2.012896	

Results Interpretation

- **t-Statistic (t Stat):** -35.422

This is the calculated value of the t-statistic for the difference in means. A large negative value (in absolute terms) indicates a significant difference between the two proportions.

- **Degrees of Freedom (df):** 46

The degrees of freedom are based on the sample sizes of both groups (each has 24 observations). With 46 degrees of freedom, you can look up critical values for the t-distribution.

- **P-value (Two-tail):** 4.93E-35

The p-value represents the probability of observing the data given that the null hypothesis is true. A very small p-value (much less than 0.05) suggests that the null hypothesis can be rejected. In this case, the p-value is extremely small, indicating strong evidence against the null hypothesis.

- **t Critical (Two-tail):** 2.012896

This is the critical value for the t-test with 46 degrees of freedom at a 5% significance level. If the absolute value of the t-statistic exceeds this critical value, you would reject the null hypothesis.

Since the absolute value of the t-statistic (-35.422) is much larger than the critical t-value (2.012896), and the p-value is very small (4.93E-35), we reject the null hypothesis. Thus, **there is a significant difference** between the proportion of direct tax and indirect tax in India's tax revenue during the period of study. The data strongly suggests that direct and indirect taxes contribute different amounts to the total tax revenue.

H₀: There is no significant difference in GDP Growth rate and tax growth rate during the period of study.

t-Test: Two-Sample Assuming Equal Variances

	GDP Growth Rate	Tax Growth Rate
Mean	0.120958333	0.1649
Variance	0.002160071	0.017702121
Observations	24	24
Pooled Variance	0.009931096	
Hypothesized Mean Difference	0	
df	46	
t Stat	-1.527455467	
P(T<=t) one-tail	0.066747661	
t Critical one-tail	1.678660414	
P(T<=t) two-tail	0.133495321	
t Critical two-tail	2.012895599	

Results Interpretation

- **t-Statistic (t Stat): -1.527**

The t-statistic of -1.527 indicates how much the observed difference in means deviates from zero, scaled by the variability of the data. The negative value suggests that the GDP growth rate is lower than the tax growth rate in the dataset, but the magnitude of the t-statistic (in absolute terms) is relatively small, suggesting the difference is not large.

- **Degrees of Freedom (df): 46**

The degrees of freedom for the test are based on the sample sizes (24 observations for each group), so we have 46 degrees of freedom for the test.

- **P-value (Two-tail): 0.1335**

The p-value indicates the probability of obtaining a result as extreme as the observed one, assuming the null hypothesis is true. Since the p-value (0.1335) is greater than the standard significance level of 0.05, we fail to reject the null hypothesis.

- **t Critical (Two-tail): 2.0129**

This is the critical t-value at a 5% significance level for a two-tailed test with 46 degrees of freedom. If the absolute value of the t-statistic is greater than this critical value, we would reject the null hypothesis.

Since the absolute value of the t-statistic (1.527) is smaller than the critical value (2.0129), and the p-value (0.1335) is greater than 0.05, we fail to reject the null hypothesis. Thus, there is no significant difference between the GDP growth rate and tax growth rate based on this data. The results suggest that any observed difference in the means is likely due to random variation rather than a true effect.

Conclusion

The evolution of India's tax revenue system from 2000 to 2024 reflects a significant shift towards a more progressive and efficient structure. Direct taxes, particularly personal income tax, have steadily increased in proportion, while the contribution of indirect taxes has declined. This change signifies improvements in tax compliance, administrative efficiency, and a greater emphasis on wealth redistribution. The Direct Tax to GDP Ratio has consistently risen, indicating a more robust tax system that captures a larger share of economic output. Despite economic fluctuations, tax revenue has continued to grow, supporting both fiscal stability and economic resilience. Ongoing tax reforms will be crucial for sustaining India's long-term growth and stability.

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