



A Trend Analysis Of Revenue Receipts And Expenditure Of The Government Of Assam (2008–2022): Fiscal Growth And Sustainability Perspective

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ABSTRACT

This study presents a comprehensive trend analysis of the revenue receipts and expenditures of the Government of Assam for the period 2008 to 2022. The objective is to examine the fiscal sustainability of the state by exploring growth trends, identifying fiscal imbalances, and establishing statistical relationships between receipts and expenditures. Using descriptive statistics, correlation, paired t-test, and regression analysis, the study evaluates the fiscal health of Assam. The analysis reveals a general upward trend in both revenue receipt and expenditure, with instances of fiscal surplus and deficit across the years. The findings suggest a strong positive correlation between revenue receipt and expenditure. However, fluctuations in the fiscal gap point towards challenges in revenue adequacy and expenditure control. Policy implications highlight the need for better fiscal planning and revenue mobilization.

Keywords: Fiscal Analysis, Revenue Receipt, Expenditure, Assam, Regression, Correlation

1. INTRODUCTION

Fiscal policy serves as a cornerstone in the macroeconomic management and developmental strategy of any government. It encompasses the decisions related to revenue generation, public expenditure, and the overall fiscal balance. These elements together influence economic growth, price stability, resource allocation, and social equity. At the state level in India, fiscal performance is even more crucial given the asymmetric development and revenue-generating capacities across regions. For the state of Assam, located in the strategically significant Northeastern region of India, maintaining fiscal discipline while addressing developmental deficits is a challenging yet vital objective.

Over the years, Assam has had to strike a fine balance between increasing developmental expenditure and ensuring fiscal prudence. The state's economy, largely driven by agriculture, tea production, and petroleum, has limited diversification. Consequently, its tax base remains narrow, and it depends significantly on central transfers and grants to meet its expenditure obligations. The analysis of revenue receipts and expenditure trends offers insights into how the state mobilizes its financial resources and allocates them for development.

Revenue receipts are broadly classified into tax and non-tax revenue. Assam's own tax revenue includes state GST, excise, vehicle tax, and other direct and indirect taxes. Non-tax revenue includes royalties on minerals, fees, and income from state-owned enterprises. Meanwhile, the state's expenditure is categorized into revenue and capital expenditures, with revenue expenditure dominating the budget. Expenditure towards social services (education, health, rural development) and economic services (agriculture, industry, transport) constitutes a major part of revenue spending.

The assessment of fiscal health is often carried out by evaluating the revenue-expenditure gap, commonly referred to as the fiscal deficit or surplus. A persistent fiscal deficit is generally seen as a warning sign, indicating either poor revenue performance or unsustainable expenditure growth. Conversely, a fiscal

surplus may suggest under-spending or robust revenue mobilization. Thus, analysing the trend and nature of this gap can provide a deeper understanding of the sustainability of state finances.

Post the implementation of the Fiscal Responsibility and Budget Management (FRBM) Act in India, states have been encouraged to maintain fiscal discipline through statutory targets on deficits and borrowing. Assam has generally adhered to the FRBM targets, but recent events, including the COVID-19 pandemic, rising pension liabilities, and inflation, have imposed new fiscal challenges. Understanding how these developments have influenced Assam's fiscal trajectory is a key aim of this paper.

A number of academic studies support the importance of state-level fiscal analysis. Rao and Singh (2005) emphasized the role of fiscal decentralization and the impact of intergovernmental transfers. Buiter (2004) argued that fiscal sustainability requires that the present value of future primary surpluses equals the current debt level. Bagchi (2014) underlined the importance of rationalizing expenditures and strengthening revenue institutions at the state level. Recent empirical studies by Chakraborty and Chakraborty (2018), and Dutta and Lahiri (2020), have investigated the fiscal capacity and expenditure behaviour of Indian states, especially in the post-GST and post-pandemic eras.

In this backdrop, the present study is a timely effort to provide a comprehensive analysis of Assam's revenue receipt and expenditure trends over a 15-year period. It attempts to assess whether fiscal behaviour aligns with the principles of sustainability and efficiency, and whether any structural changes are evident in the state's fiscal profile.

2. OBJECTIVES OF THE STUDY:

- To analyse the trends in revenue receipt and revenue expenditure of the Government of Assam from 2008 to 2022.
- To compute and evaluate the revenue-expenditure gap and its implications for fiscal sustainability.
- To examine the statistical relationship between revenue receipts and expenditures using correlation and regression techniques.
- To provide policy recommendations for improving fiscal discipline and financial management.
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3. METHODOLOGY

This study adopts a quantitative analytical approach based on secondary data. The data on revenue receipts and expenditures of the Government of Assam from 2008 to 2022 were collected from official budget documents and finance department reports available through the Government of Assam's Finance Department portal. All figures are recorded in rupees (lakhs) and represent the actuals or revised estimates available in the documents.

The methodology involves the following analytical techniques:

Descriptive Statistics: Basic statistical measures such as mean, standard deviation, minimum, and maximum values have been calculated to understand the distribution of revenue and expenditure over time.

Compound Annual Growth Rate (CAGR): This has been calculated to examine the annualized growth of revenue and expenditure over the 15-year period. It provides insight into long-term trends and whether revenue has kept pace with expenditure growth.

Fiscal Gap Analysis: A new variable 'Fiscal Gap' is created by subtracting Revenue Expenditure from Revenue Receipt. Positive values indicate a surplus, while negative values indicate a deficit.

Correlation Analysis: Pearson's correlation coefficient is used to measure the strength and direction of the linear relationship between revenue receipt and revenue expenditure.

Regression Analysis: A simple linear regression model is applied with Revenue Expenditure as the dependent variable and Revenue Receipt as the independent variable. The objective is to evaluate whether revenue receipts can reliably predict expenditure behaviour.

Paired Sample t-Test: This test compares the means of revenue receipt and expenditure to assess if there is a statistically significant difference between them over time.

Data Visualization: A line graph has been plotted to visually represent the trends in revenue receipt and expenditure over the years. This aids in interpreting patterns and variations more intuitively.

All calculations and analyses were performed using Microsoft Excel and SPSS (version 26.0). Assumptions underlying statistical tests, such as normality and linearity, were checked wherever necessary. This methodology enables a comprehensive understanding of both the level and structure of Assam's fiscal management over the study period. By combining statistical rigor with policy interpretation, the study aims to bridge the gap between quantitative fiscal analysis and practical governance concerns.

4. DATA ANALYSIS AND RESULTS

Table 1: Descriptive Statistics (Rs in Lakh)

Variable	Mean	Std. Dev.	Min	Max
Revenue Receipt	4663487.64	2250046.834	1807704	8974229.71
Revenue Expenditure	4657311.70	2470388.571	1424333	10181464.3

Data Source: Computed from Table in Appendix using SPSS

The descriptive statistics of revenue receipt and revenue expenditure for the Government of Assam from 2008 to 2022, measured in rupees lakh, provide a comprehensive view of the state's fiscal dynamics. The average revenue receipt over the period is ₹46,63,487.64 lakh, while the average revenue expenditure is ₹46,57,311.70 lakh. This close alignment in the mean values indicates that, on average, the government maintained a near-balanced budget, spending almost as much as it earned annually. However, the standard deviation for revenue receipt is ₹22,50,046.83 lakh and for revenue expenditure it is even higher at ₹24,70,388.57 lakh, indicating significant year-to-year fluctuations. Such high variability may be attributed to economic changes, variations in central allocations, or policy shifts affecting both income and expenditure levels. The minimum revenue receipt recorded during the period is ₹18,07,704 lakh, while the maximum reached ₹89,74,229.71 lakh, reflecting a substantial rise in revenue mobilisation capabilities. In parallel, the revenue expenditure ranged from ₹14,24,333 lakh to a peak of ₹1,01,81,464.3 lakh, signifying increasing financial commitments over time. The data suggests robust fiscal growth, but also hints at underlying volatility, highlighting the need for consistent and sustainable fiscal management strategies.

Table 2: Compound Annual Growth Rate (CAGR)

Variable	CAGR (%)
Revenue Receipt	12.45
Revenue Expenditure	14.26

Data Source: Computed from Table in Appendix using SPSS

The Compound Annual Growth Rate (CAGR) analysis reveals that Assam's revenue receipt grew at an average annual rate of 12.45%, while revenue expenditure increased at a faster pace of 14.26% during the period 2008 to 2022. This indicates that although the state's income has grown steadily, its expenditure has expanded more rapidly. The widening gap between income and spending growth rates raises concerns about fiscal sustainability. If this trend continues, it may lead to persistent fiscal deficits, making it imperative for the government to either enhance revenue mobilisation or adopt more disciplined expenditure management.

Table 3: Fiscal Gap (Receipt – Expenditure) ((Rs. in Lakh)

Year	Fiscal Gap
2008	383371
2009	-134771
2010	5311
2011	92684
2012	155406
2013	24099
2014	-89667
2015	544628
2016	-14292
2017	-134000
2018	658016.12
2019	-132219.27
2020	38200
2021	-95892.27
2022	-1207234.59

Data Source: Computed from Table in Appendix using SPSS

Table: 4: One sample t test of Fiscal Gap

Mean Difference	t-value	df	p-value
6242.599	.058	14	0.955

The one-sample t-test for the fiscal gap evaluates whether the average difference between Assam's revenue receipt and expenditure from 2008 to 2022 is significantly different from zero. The results show a mean difference of ₹6,242.60, with a t-value of 0.058 and degrees of freedom (df) = 14. The p-value is 0.955, which is much higher than the standard significance threshold of 0.05. This indicates that the mean fiscal gap is not statistically significant, suggesting that over the 15-year period, the state's revenue receipt and expenditure were nearly balanced on average. The small mean value and high p-value imply that fiscal surpluses and deficits occurred in alternating years but largely cancelled each other out over time. Thus, while there may have been specific years with notable deficits or surpluses, the overall long-term trend does not show a significant deviation from fiscal neutrality.

Table 5: Correlation between Revenue Receipt and Expenditure

Variables	Correlation Coefficient (r)	Significance (p-value)
Revenue Receipt & Expenditure	0.989	<0.001 (Highly significant)

Data Source: Computed from Table in Appendix using SPSS

The correlation analysis between revenue receipt and revenue expenditure for Assam reveals a very strong positive correlation coefficient (r) of 0.989, with a p-value less than 0.001, indicating the relationship is highly statistically significant. This means that as revenue receipts increase, revenue expenditure also rises almost proportionally. The near-perfect linear association suggests that the government's spending patterns are closely tied to its income generation, reflecting a responsive fiscal structure. The high significance level confirms that this relationship is not due to chance, and the state's fiscal policy appears to maintain a consistent balance between income and expenditure over time.

Table 6: Regression Analysis

Variable	Coefficient (B)	P-Value	Adjusted R ²	Tolerance	VIF
Constant	-404965.141	.108	0.976		
Revenue Receipt	1.086	<0.001		1.000	1.000

Data Source: Computed from Table in Appendix using SPSS

The linear regression analysis examines the impact of revenue receipt on revenue expenditure for the Government of Assam over the period 2008–2022. The regression coefficient (B) for Revenue Receipt is 1.086 with a p-value < 0.001, indicating a strong and statistically significant relationship. This suggests that for every 1 lakh rupee increase in revenue receipt, revenue expenditure rises by approximately ₹1.086 lakh. The intercept (constant) is -₹404,965.14, which is not statistically significant (p = 0.108), indicating that the expenditure does not significantly differ from zero when revenue is zero — a value that is mostly theoretical in this context.

The model's Adjusted R² is 0.976, meaning that 97.6% of the variation in revenue expenditure is explained by changes in revenue receipt. This reflects a highly explanatory and well-fitting model, suggesting that revenue receipt is a reliable predictor of expenditure. Furthermore, the Tolerance and VIF values are both 1.000, indicating no multicollinearity, since only one independent variable is involved.

Overall, this regression confirms that the Government of Assam maintains a tight link between income and spending, and the fiscal behaviour appears to be highly dependent on revenue trends. Such a model is useful for budget forecasting and fiscal planning.

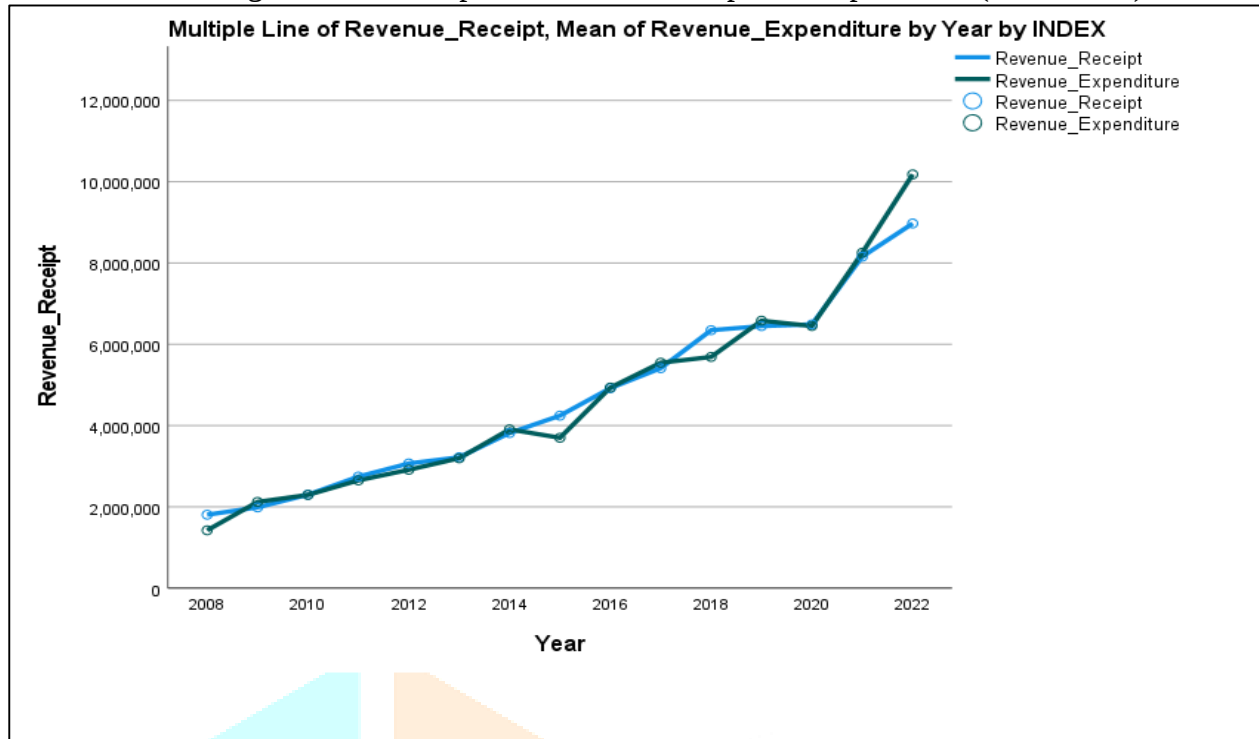
Table 7: Paired Sample t-Test

Mean Difference	t-value	df	p-value
6175.933	.057	14	0.955

Data Source: Computed from Table in Appendix using SPSS

The paired sample t-test results show a mean difference of ₹6,175.93 between revenue receipt and revenue expenditure in Assam over the period 2008–2022. The t-value is 0.057 with 14 degrees of freedom, and the p-value is 0.955, which is far above the 0.05 threshold for statistical significance. This indicates that the difference between the two variables is not statistically significant, suggesting that revenue receipt and expenditure were almost equal on average. Thus, despite fluctuations in individual years, the state's fiscal operations have been largely balanced over time, showing no persistent surplus or deficit trend in the long run.

Figure 1: Line Graph of Revenue Receipt and Expenditure (2008–2022)



Data Source: Computed from Table in Appendix using SPSS

The line graph comparing revenue receipt and revenue expenditure of Assam from 2008 to 2022 shows a consistently rising trend for both variables, indicating steady fiscal growth over the years. While the two lines move closely together, revenue expenditure occasionally exceeds revenue receipt, reflecting periods of fiscal deficit. Notably, from 2018 onward, the gap between the two lines widens slightly, suggesting increasing expenditure pressure. Despite minor fluctuations, the overall trajectory of both lines highlights a positive correlation, with expenditure closely tracking revenue. This visual representation confirms the state's effort to maintain a balanced fiscal policy while gradually expanding its budget size.

5. CONCLUSION AND POLICY RECOMMENDATIONS

The fiscal health of Assam from 2008 to 2022 indicates both strengths and challenges. Although the state has maintained a close alignment between revenue and expenditure, recent years show increasing fiscal stress. The positive correlation between receipt and expenditure suggests predictable fiscal behaviour, but growing deficits necessitate urgent policy interventions.

Policy Recommendations:

- Enhance internal revenue generation (tax and non-tax)
- Rationalize expenditure, especially subsidies and administrative costs
- Improve budget forecasting and fiscal management systems
- Diversify revenue sources to reduce dependency on central grants

This analysis offers policymakers insights into the importance of balanced fiscal planning and prudent expenditure strategies for Assam's long-term financial sustainability.

6. REFERENCES

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APPENDIX

Table: A: Revenue receipt and Expenditure of Govt. of Assam (2008-2022) ((Rs. in Lakh)

Year	Revenue Receipt	Revenue Expenditure
2008	1807704	1424333
2009	1988449	2123220
2010	2300493	2295182
2011	2745539	2652855
2012	3069098	2913692
2013	3221279	3197180
2014	3818149	3907816
2015	4245770	3701142
2016	4921980	4936272
2017	5413094	5548094
2018	6347915.73	5689899.61
2019	6449508.47	6581727.74
2020	6490200	6452000
2021	8158905.62	8254797.89
2022	8974229.71	10181464.30

