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FISCAL DEFICIT OF THE GOVERNMENT OF INDIA BEFORE AND AFTER GST: A COMPARATIVE ANALYSIS

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ABSTRACT
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Goods and Services Tax (GST) is one of the biggest tax reforms in India since the independence. GST was implemented in whole India on 1st July 2017.GST is a major fiscal reform intended to increase the revenues of the government. The direct impact of this revenue of the government is upon the finances of the government of India. Fiscal deficit is a key indicator of an economy as a whole. It represents the borrowing requirements of the government. Government is forced to borrow as the revenues of the government are not sufficient. This paper is an attempt to compare the fiscal deficit of government of India, before and after implementation of GST. For this purpose, secondary data was collected from RBI official website (Database on Indian Economy) 2026. Independent samples t test was applied by the researcher after checking the normality of the data. However, the results indicated that that there is no statistically significant difference in the mean Gross Fiscal Deficit between the pre-GST and post-GST periods, t (18) = -.922, p = .369. On the bases of the study, some recommendations were also provided by the researcher.

KEYWORDS- *GST, Fiscal Deficit*

INTRODUCTION

The main purpose behind introducing GST was "ONE NATION ONE TAX" (Masih, 2018). Further, another purpose behind implementation of GST was to remove the cascading effect of "tax on tax" where a product was taxed at every step of its supply chain causing the rise in final price. Initially in GST 1.0 there were five major slab rates with 0%, 5%, 12%, 18% and 28%. As every coin has two sides, even the GST has its own set of opportunities and challenges. The recent changes in GST rates also known as GST 2.0 announced in September 2025 simplified the rates mainly to two slabs that are 5% and 18%. GST 2.0 is now more progressive in nature as low rates a charged on essential goods and high rates are charged for luxury goods. Further, in GST 2.0 "Greater use of IT will reduce human interface between the taxpayer and the tax administration, which will go a long way in reducing corruption" (Samuel Lalthanliana, 2025). However, the reduction in GST rates will lead to revenue loss to the government. This loss will ultimately be translated to increasing revenue deficit of the government.

GST 2.0 as fiscal reform also intended to increases government revenues by expanding the formal tax base through simplified compliance and stimulating higher overall consumption volumes. Subsequently, the gap between expenditures and revenue also known as fiscal deficit can be filled. Thus, it is important to analyses the impact of GST on fiscal deficit of the government.

Objectives of Study- The basic objective of the study is -

- To compare the fiscal deficit of government of India, before and after implementation of GST.

Review of Literature-Following research studies provided the valuable literature on the study and helped to identify the research gap.

- **(Mukherjee, 2023)-** The author assessed the revenue performance of GST in India for the period 2012-13 to 2022-23. Both streams of the union and state government in terms of percentage share in GDP. The author found that post-GST tax buoyancy in the GST regime has improved for the Union, state and general governments. Further from the GST-to-GDP ratio of the Union as well as state governments has not yet improved during the post-GST period as compared to the equivalent share of respective revenue streams in GDP during the pre-GST period.
- **(Sodawala and Singh, 2023)-** The researchers explored the impact of GST on India's fiscal landscape. They examined how it has contributed to revenue growth, reduced tax evasion and fostered economic cohesion. According to the researchers GST played a vital role in the country's fiscal consolidation strategy. Researchers

stated that GST's online tax payment and return filing systems enhance fiscal transparency. This transparency not only reduces corruption but also enables better fiscal planning and budget management. The paper highlighted the background of the taxation system, the GST concept along with significant working, comparison of Indian GST taxation system rates with other world economies, and also presented in-depth coverage regarding advantages to various sectors of the Indian economy after levying GST and outlined some challenges of GST implementation.

- **(Yakaiah, 2026)-** The study analyzed the GST revenue performance and also examined the impact of the GST on the finances of the government. The research analyzed revenue data from 2019-20 to 2025-26 obtained from official sources, including the GST Council, Ministry of Finance, Reserve Bank of India. According to the researcher the expected revenue loss from GST 2.0, which is estimated at Rs 48,000 crore, will affect the GDP at 0.15% level. The researcher stated that the impact of GST reforms on the fiscal landscape has been largely cushioned by various compensatory mechanisms as the RBI's record dividend payout of ₹2.7 lakh crore, a compensation cess surplus of ₹45,000 crore, and an estimated ₹52,000 crore generated from increased consumption together helped counterbalance the initial revenue losses that were pegged at around ₹48,000 crore.

Research Methodology

This study **"**Fiscal Deficit of the Government of India Before and After GST: A Comparative Analysis" is analytical and quantitative in nature. Research design used as it compares the fiscal deficit of the Government of India during the pre-GST and post-GST periods. For this purpose, secondary data of gross fiscal deficit of central government as percentage to GDP from financial year 2007-08 to 2026-27 was collected from RBI official website (Database on Indian Economy). Further published research available literature was reviewed by the researcher. Independent-samples *t*-test was applied to determine whether a significant difference exists between the two periods. The two periods (From year 2007-08 to 2016-17 Before GST and from year 2017-18 to 2026-27 After GST) are treated as independent groups. Normality of the data was checked separately for pre and post implementation period using Kolmogorov- Smirnov and Shapiro wilk test.

Hypothesis

- **H_{03}:** There is no significant difference in the means of fiscal deficit of the government of India before and after GST.
- **H_{A3}:** There is a significant difference in the means of fiscal deficit of the government of India before and after GST.

Table no. (i) Gross Fiscal Deficit of the Central Government of India (As percentage of GDP)

Year	Gross Fiscal Deficit (Before GST)	Year	Gross Fiscal Deficit (After GST)
2007-08	2.54	**2017-18**	3.46
2008-09	5.99	**2018-19**	3.44
2009-10	6.46	**2019-20**	4.65
2010-11	4.80	**2020-21**	9.16
2011-12	5.91	**2021-22**	6.71
2012-13	4.93	**2022-23**	6.46
2013-14	4.48	**2023-24**	5.49
2014-15	4.10	**2024-25**	4.76
2015-16	3.87	**2025-26**	4.36
2016-17	3.48	**2026-27**	4.31

Source- "Database on Indian Economy." Rbi.org.in (2026)

Table no. 1- Case Processing Summary

	GST_PERIOD	Cases					
		Valid		Missing		Total	
			Percent	N	Percent	N	Percent
GST	BEFORE GST	10	100.0%	0	0.0%	10	100.0%
	AFTER GST	10	100.0%	0	0.0%	10	100.0%

Source- Researchers computation using SPSS 27 Software

Table no. 2- Descriptives

	GST_PERIOD			Statistic	Std. Error
GST	BEFORE GST	Mean		4.6560	.38759
		95% Confidence Interval for Mean	Lower Bound	3.7792	
			Upper Bound	5.5328	
		5% Trimmed Mean		4.6733	
		Median		4.6400	
		Variance		1.502	
		Std. Deviation		1.22568	
		Minimum		2.54	
		Maximum		6.46	
		Range		3.92	
		Interquartile Range		2.16	
		Skewness		-.115	.687
		Kurtosis		-.599	1.334
	AFTER GST	Mean		5.2800	.55466
		95% Confidence Interval for Mean	Lower Bound	4.0253	
			Upper Bound	6.5347	
		5% Trimmed Mean		5.1667	
		Median		4.7050	
		Variance		3.076	
		Std. Deviation		1.75399	
		Minimum		3.44	
		Maximum		9.16	
		Range		5.72	
		Interquartile Range		2.42	
		Skewness		1.252	.687
		Kurtosis		1.588	1.334

Source- Researchers computation using SPSS 27 Software

From Table no. 2 it was observed that, the average Gross Fiscal Deficit was 4.65% in the Pre-GST period and shifted to 5.58% in the Post-GST period. The standard deviation increasing trend in the Post-GST period, rising from 1.22 to 1.75. The variance in the Post-GST period is nearly double that of the Pre-GST period. When we compare the periods before and after the introduction of the GST, we see that the average Gross Fiscal Deficit has remained relatively stable. However, the data reveals a increase in fiscal volatility during the post-GST era. This indicates that while the GST may not have exceptionally altered the average level of the fiscal deficit, the fiscal environment has become less predictable, likely influenced by the significant economic disruptions that occurred during the post-reform window. Additionally, the fiscal deficit has become notably more volatile since the introduction of the GST. This is likely due to the inclusion of the COVID-19 pandemic years and subsequent economic adjustments, which caused temporary spikes in the deficit.

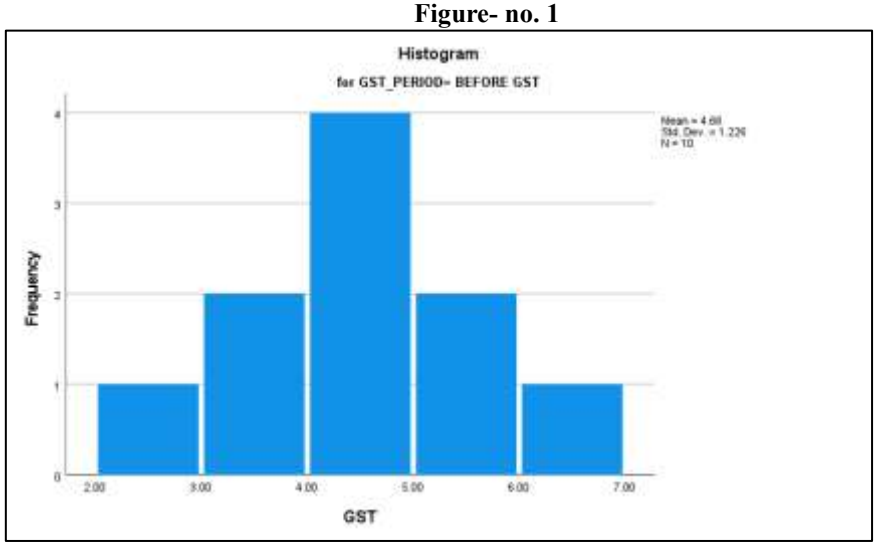
Table no. 3- Tests of Normality

	GST_PERIOD	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
		Statistic	Df	Sig.	Statistic	Df	Sig.
GST	BEFORE GST	.147	10	.200*	.973	10	.916
	AFTER GST	.217	10	.200*	.887	10	.155
*. This is a lower bound of the true significance.							
a. Lilliefors Significance Correction							

Source- Researchers computation using SPSS 27 Software

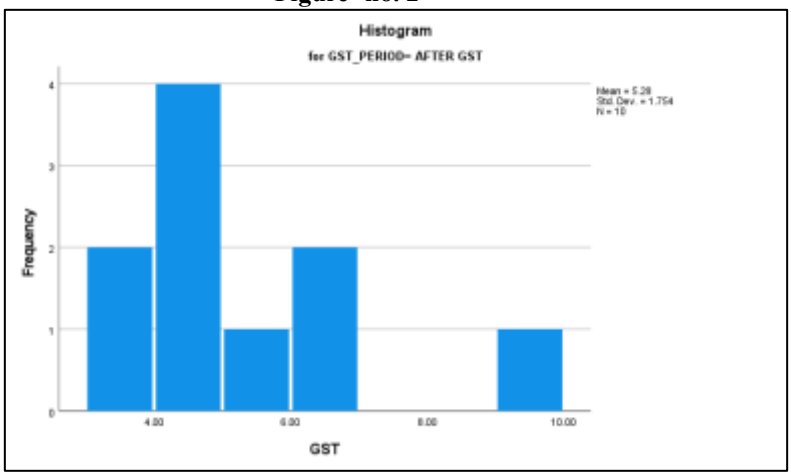
From table no. 3 it was observed that, for both the "Before GST" and "After GST" periods, the Shapiro-Wilk p-values are .973 and .887, respectively. Since both p-values are well above the 0.05 threshold, we fail to reject the null hypothesis of normality. This indicates that the Gross Fiscal Deficit data in both groups follow a normal distribution, allowing us to proceed with the Independent Samples t-Test.

Figure- no. 1



Source- Researchers computation using SPSS 27 Software

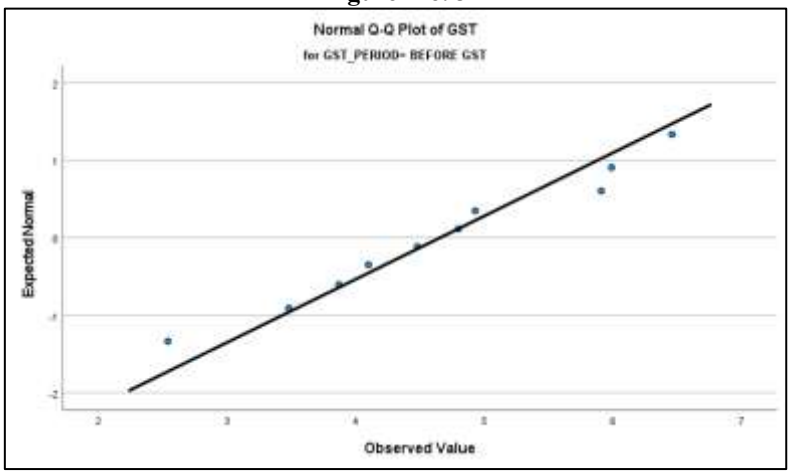
Figure- no. 2



Source- Researchers computation using SPSS 27 Software

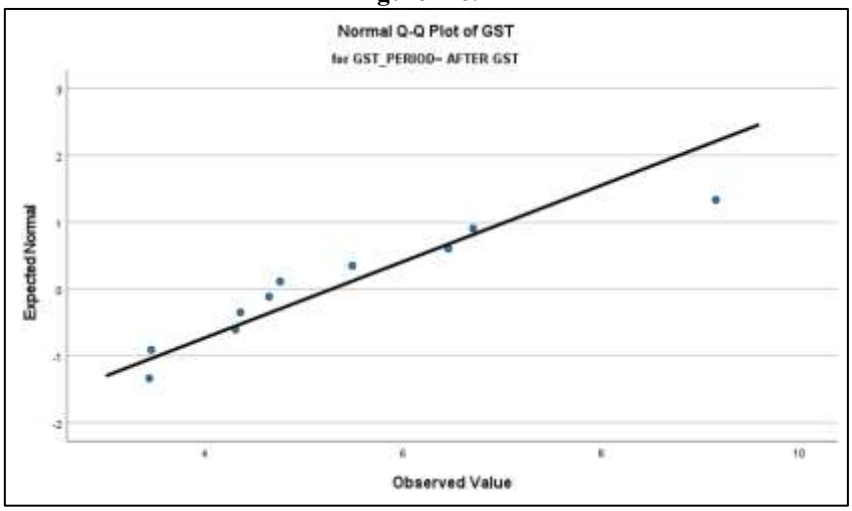
From figure no. 1 it was observed that, Before GST, the data shows a relatively symmetric distribution centered around a mean of 4.65. Most of the observations are clustered between 4.00 and 6.00, indicating a period of moderate fiscal stability. From figure no. 2 it was observed that After GST, the distribution is noticeably flatter and more spread out, with a mean of 5.28. The increased spread reflects the higher standard deviation of 1.75 we observed earlier, with data points pushing toward the higher end of the scale near 9.00, likely representing fiscal stress during the pandemic years. Visually, while the central tendency of the fiscal deficit has remained relatively stable across the GST transition, the post-GST histogram reveals a clear increase in dispersion. The After period is characterized by more frequent extreme values compared to the Before period, showing that the fiscal deficit became significantly more volatile following the introduction of the GST, largely due to the onset of external economic shocks during that specific timeframe.

Figure- no. 3



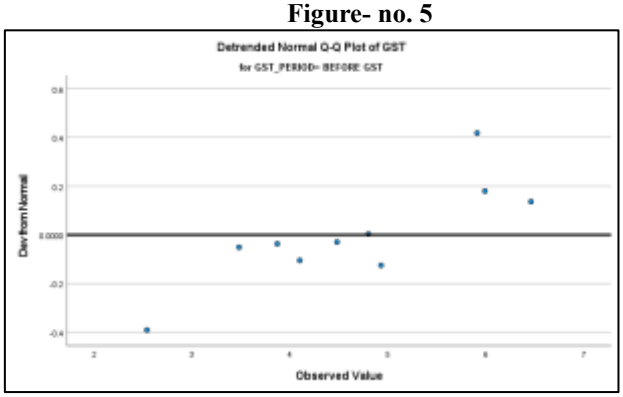
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Figure- no. 4



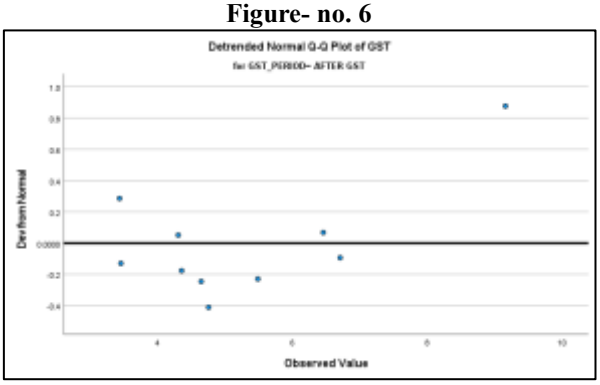
Source- Researchers computation using SPSS 27 Software

Figure- no. 5



Source- Researchers computation using SPSS 27 Software

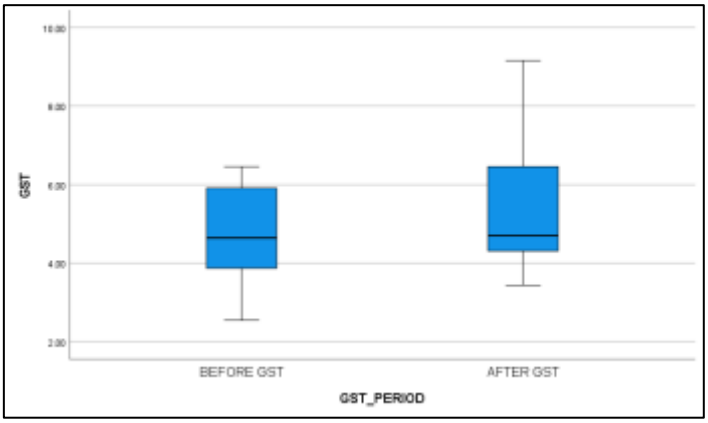
Figure- no. 6



Source- Researchers computation using SPSS 27 Software

From above figures it is observed that in both the Before GST and After GST plots, the data points generally track along the diagonal line, indicating that the data is normally distributed. In case of detrended plots, before GST, the points are clustered closely around the zero, confirming a normally distributed dataset. In the case of after GST, the points remain relatively scattered around the horizontal axis, suggesting no severe systematic bias, although the outlier noted earlier is visible again here. The diagnostic plots confirm the validity of our approach for testing the impact of GST. The Q-Q plots confirm that our fiscal deficit data adhere to a normal distribution, and the detrended plots show that, despite some expected volatility in the post-reform period, there are no structural outliers that would invalidate a parametric comparison.

Figure- no. 7



Source- Researchers computation using SPSS 27 Software

From figure no.7 it is observed that, the median line, the horizontal bar within each box, is slightly lower in the After GST period compared to Before GST, mirroring the small decrease in the mean as shown earlier. The After GST box is notably taller, representing a larger interquartile range (IQR). The extended tails for the post-GST period clearly show the higher volatility, confirming that fiscal deficits have been less stable since the tax reform. The box plot visually confirms that while the central fiscal deficit has not undergone a major shift downward, the range of possible outcomes has widened significantly in the post-GST environment.

The box plot analysis demonstrates that while the median Gross Fiscal Deficit remains comparable across both periods, the Post-GST regime is marked by greater variability. This visual evidence suggests that the introduction of the GST has not yet led to a statistically significant narrowing of the fiscal deficit, but rather a more volatile fiscal landscape, likely reflecting the influence of major external economic disruptions during the post-reform years.

Table no. 4- Group Statistics

	GST_PERIOD	N	Mean	Std. Deviation	Std. Error Mean
GST	BEFORE GST	10	4.6560	1.22568	.38759
	AFTER GST	10	5.2800	1.75399	.55466

Source- Researchers computation using SPSS 27 Software

From table no. 4 it is observed that, the data parameters that have been analyzed have a mean of 4.65% Before GST, compared to 5.28% After GST; the numerical difference is quite marginal.

Table no. 5- Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	Df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
GST	Equal variances assumed	.919	.351	-.922	18	.369	-.62400	.67667	-2.04562	.79762
	Equal variances not assumed			-.922	16.097	.370	-.62400	.67667	-2.05777	.80977

Source- Researchers computation using SPSS 27 Software

From table no. 5 it was observed that, for Levene's Test for Equality of Variances, the significance value is .351. Since this is greater than .05, we fail to reject the null hypothesis of equality of variances, meaning we use the Equal variances assumed row for the interpretation. Since the p-value of .369 is substantially higher than the conventional alpha level of .05, we fail to reject the null hypothesis.

The Independent Samples t-test indicates that there is no statistically significant difference in the mean Gross Fiscal Deficit between the pre-GST and post-GST periods, t (18) = -.922, p = .369. Hence, the empirical evidence does not support the claim that the implementation of the GST regime caused an immediate, statistically significant alteration in the mean Gross Fiscal Deficit baseline of the Government of India.

Conclusion and Recommendations - The present study, was undertaken to compare the fiscal deficit of government of India, before and after implementation of the Goods and Services Tax (GST) in July 2017. The study compares the fiscal deficit during the pre-GST and post-GST periods using independent t test. However, the results indicated that that there is no statistically significant difference in the mean Gross Fiscal Deficit between the pre-GST and post-GST periods, t (18) = -.922, p = .369. As Fiscal deficit is also affected by other factors on expenditure part as well, Recent changes to the policy will certainly bring simplicity. Hence, the fruits of these efforts will be seen in long run not immediately in the short run. Further, a consolidated efforts for sustained fiscal consolidation are the need of an hour. Better coordination between tax authorities should be strengthened to reduce tax evasion. Improving compliance can increase government revenue. Greater use of technology and data analytics can help identify tax leakages and improve revenue efficiency.

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