

A Comparative Study of Indirect Tax Revenue between Pre and Post GST Regime

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Abstract

For the development of a nation, the Government levies taxes. The country may impose and collect taxes in exchange for the sale or purchase of goods and services. With the introduction of GST, a significant portion of the tax burden will be reduced, allowing different sectors to cut the price of their goods; a move that will benefit customers and eventually by lowering the cost of goods to the end users. It has been argued that after introduction of GST, indirect tax revenues have been increased. Accordingly, the study attempts to examine the influence of GST on indirect tax revenue in India by making a comparison of indirect tax revenue between before and after GST regime. For the purpose of our study, we have considered secondary data which have collected from budget documents of the Government of India that ranged from 2011-12 to 2022-23. In this respect, we have employed charts, tables and paired sample t-test. The empirical findings of the study reveal that indirect tax revenue has significantly increased after the introduction of GST.

Keywords: Tax; Indirect tax; Goods and services tax (GST), taxation reforms.

INTRODUCTION

The term “tax” comes from the Latin word taxare, or taxo. What it actually means is “to determine the cost of anything”. For the benefit and use of the nation, the government levies taxes. The country may impose and collect taxes in exchange for the sale or purchase of goods and services. Since taxes provide revenue for the country, they are one of the most

crucial elements of any system of control exercised by any form of government. The Central and State Governments have replaced multiple indirect taxes with GST, which is a unified tax system. The authority to levy and collect taxes on goods and services rests with both the Central and State Governments when it comes to GST. The GST system has two structures, with Central GST (CGST) and State GST (SGST) being levied simultaneously by the Central and State governments. In addition, interstate supplies and imports are subject to an Integrated GST (IGST) that is collected by the Central Government and allocated to the destination state. GST is a destination-based tax, levied at each stage of the supply chain, from the manufacturer to the consumer.

Background of Goods and Services Tax (GST)

The reform of Indian indirect tax was underway in 1986, when modified value-added tax (MODVAT)

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was introduced. The single common goods and services tax (GST) was proposed and given a go-ahead by the cabinet in 1999. A committee was set up headed by the finance minister of West Bengal, Asim Das gupta, to design a GST model and develop the back-end technology and logistics for GST implementation. In 2005, the Kelkar committee recommended rolling out GST. After the change in government in 2004, the new government continued to work on GST and proposed a GST rollout by April 1, 2010. However, due to political instability in the subsequent year, the GST rollout was delayed. In March 2011, the Central Government introduced the 115th Constitution Amendment Bill in the Lok Sabha to bring about the GST. At last, in May 2016, the Lok Sabha passed the constitution amendment bill paving the way for GST. Finally, in August 2016, the amendment bill was passed. After the enactment of various GST laws, Goods and Services Tax was launched all over India, w.e.f. 1st July, 2017.

Gst is One of the Biggest Indirect Tax Reforms in The Country

GST is a wide-ranging indirect tax that is levied on sales and ingesting of goods and facilities at the national level. After the replacement of all the indirect taxes, GST was implemented by the Government on July 1, 2017.

Benefits of GST

Some benefits of GST are given below:

- Elimination of Cascading Effect of Tax.
- Higher Registration Threshold.
- Composition Scheme Under GST for Small Businesses.
- Simplified Online Process.
- Reduced Number of Compliances.
- Defined Treatment for E-commerce Operators.
- Improved Efficiency of Logistics.

Review of Literature

For the purpose of the study, we have reviewed some literature. A few of them are mentioned below:

Aamir, M. et al. (2011) have conducted a study titled as Determinants of Tax Revenue: A Comparative Study of direct taxes and Indirect taxes of Pakistan and India. They have taken 10 years of data, i.e., ranges from 1999–2000 to 2008–2009, over the study period. The result has shown that India

generates more tax revenue through direct tax, whereas Pakistan generates it through indirect tax. The authors have used a simple linear regression statistical technique for analysing the data. **Gupta, V. M., & Rastogi, S. K. (2015)** have analysed the comparative study of direct tax revenue and indirect tax revenue in India and additionally recommended specific actions to raise the same. The study is based on purely secondary data collected from various books, research papers, newspapers, the Union Budget and Economic Survey, the Ministry of Finance, and other websites and other published resources over a period of twelve years, from the financial year 2000–2001 to 2011–2012. For analysis, the researcher employed a number of tools, including the average, the simple percentage approach, and diagram presentation. The study unequivocally demonstrates that taxes are crucial to the growth of the Indian economy. The study came to the conclusion that while tax income has increased, several deficiencies still exist and need to be addressed. **Choudhari, A. N., & Jain, A. N. (2019)** found that GST implementation has a negative impact on the value of the Indian rupees, which indicates an adverse sign for the Indian economy. In this study, the data nature is basically secondary, and this data analysis uses statistical tools like tabulations, grouping, percentages, and averages. According to **Singh, A. (2021)**, the GST would not significantly increase tax burdens over pre-GST periods, and in some cases, consolidating many tax structures into one will decrease cumulative tax burdens by removing the cascading effect. **Shukla, K. S., Dwivedi, A., & Mishra, N. (2022)** have investigated the effects of digitisation on collection of tax revenue before and after GST in this research. They opined that GST collection has shown positive trend as per Compounded Annual Growth Rate (CAGR), and paired sample t-test has shown that indirect tax revenue has drastically increased after GST implementation. **Rana, S. (2023)** examined the impact of the pre and post-Goods and Services Tax (GST) on agriculture in Harda District, India. The study uses both primary and secondary data, with a sample survey of 103 farmers, using frequency tabulation, Percentages and Chi Square test by SPSS software and the study reveals that the GST has adversely affected the farmers from 2017 until now.

OBJECTIVE OF THE STUDY

The key objective of the study is to examine the influence of GST on tax revenue of India in general. To attain this key objective, the following sub-objectives are sought to be achieved:

- To study the trend of indirect tax revenue.
- To compare indirect tax revenue collection before and after GST.

Hypothesis of the Study

In conformity with the above stated objectives, the following hypotheses have been formulated:

- H_{01} : There is no significant trend in indirect tax revenue.
- H_{A1} : There is significant trend in indirect tax revenue.
- H_{02} : There is no significant difference of indirect tax revenue between before and after GST.
- H_{A2} : There is no significant difference of indirect tax revenue between before and after GST.

Nature and Methodology of the Study

Our study is analytical nature and the data for the study purely secondarily sourced from the official website of the central board of indirect taxes and customs, Budget documents of the government in India and the State Government and Google Search engine. Financial data were collected for a period of 12 years (2011-12 to 2022-2023). The trend growth of indirect tax revenue has been examined by computing Compound Annual Growth Rate (CAGR). The CAGR is computed in the following way:

For Calculating CAGR we have taken first and last year's indirect tax value which is denoted by A and B, where $B - A = C$, is the total number of years between the two given years. CAGR, year A to year B = $[(\text{value in year B} / \text{value in year A})^{1/(C-1)}]$.

To examine whether there exists any significance difference between before and after GST, we have used paired sample t-test. The paired t statistics is computed below:

$$t = \sum d / \{(\sqrt{n}(\sum d^2) - (\sum d)^2 / n - 1)\}$$

Here, $\sum d$ is the sum of the differences.

Digitisation Impact in the Indian Taxation System

From the concept of digital payment which has been introduced many years ago, the implementation

of digitisation has increased rapidly in India. In case of business, it has seen tremendous changes as well. After introduction of digitisation the tax revenue collection has been increased in innovative way. Digitization offers businesses a number of advantages. Digitalizing invoices is the first of them. Digital technologies have allowed businesses to follow regulations without making mistakes, and the government and business have also profited immensely from this. Some applications of digital technology in collection of indirect tax revenue in India (*i.e.*, GST) indicate an increasing trend in tax collection, which is given below:

Electronic filing of GST forms and returns: The implementation of the Goods and Services Tax (GST) legislation compelled companies to embrace technology. The new system replaced a number of indirect tax regulations, including VAT and excise, CST, which were mostly concerned with the physical compliance process. To recognize sales and input tax credits on a regular basis, the business switched to online systems to submit forms and returns.

E-way bills for movement of goods: The nationwide adoption of a single electronic waybill system will result in significant benefits for businesses and carriers. Thanks to these measures, tax payers were able to avoid the inconvenience of long lines and endless paperwork. On the other hand, the online process allows governments to track non-compliances more easily. Therefore, the digitalization of GST compliance brought benefits to both the government and taxpaying citizens.

E-Invoicing: The e-invoicing system finally simplifies multifunctional reporting by uploading the invoice to the common portal. The e-way bill and GST portals move in real-time after authenticating all B2B invoices. E-invoicing speeds up data transfer by automatically filling out GSTR-1. The process is made accessible to both the regulator and the parties like suppliers, and recipients.

RESULT AND DISCUSSION

Compound Annual Growth Rate (CAGR)-The (CAGR) is the annualized mean rate of progress between two given years, assuming progress takes place at an exponentially compounded rate.

Table 1: Compound Annual Growth Rate of GST in India

							(In crores)
Month	2017-18 Collections	2018-19 Collections	2019-20 Collections	2020-21 Collections	2021-22 Collections	2022-23 Collections	CAGR%
April	NA	103459	113865	32294	139708	167540	

Table cont...

May	NA	94016	100289	62009	97821	140885	0
June	NA	95610	99938	90917	92800	144616	0
July	21572	96483	102083	84722	116393	144995	0
August	95633	93960	98203	86449	112020	143612	46.38
September	94064	94442	91917	95480	117010	147686	8.47
October	93333	100710	95380	105155	130127	151718	9.44
November	83780	97637	103491	104963	131526	167929	10.20
December	84314	94726	103184	115174	129780	149507	14.92
January	89825	102503	110818	119875	140986	155922	12.14
February	85962	97247	105366	113143	133026	149577	11.66
March	92167	106577	97597	123902	142095	160122	11.72
Total	740650	1177370	1222131	1134083	1483292	1824109	11.68
Average	61720.83	98114.17	101844.3	94506.92	123607.7	152009.1	19.75

Sources: Budget documents of the government in India and the State Government



Table & Chart-1, reveal that GST collection shows positive trends as per CAGR over the period of the study due to digitization and other macro-economic

indicators. From the above graph, it can be found that there is a significant growth in GST collection during the research period.

Table 2: Indirect Tax collection before and after GST

(GST and other Indirect Tax)

(In crores)

Indirect Tax collection Before and After GST			
Year	Before GST	Year	After GST
2011-12	871505	2017-18	1856945
2012-13	1036732	2018-19	2032864
2013-14	1119772	2019-20	2161306
2014-15	1217289	2020-21	2441371
2015-16	1466981	2021-22	3173782
2016-17	1662518	2022-23	3563841

Sources: Budget documents of the government in India and the State Government

Table 3: Paired Sample Statistics

Paired Sample Statistics					
	Mean		N	Std. Deviation	Std. Error Mean
Pair 1	Before GST Indirect Taxes of 5 Years	1229132.83	6	290313.71	118520.07
	After GST Indirect Taxes of 5 Years	2525375.83	6	659116.94	269083.36

Source: Own calculation from secondary data

From the Table 3, it is seen that the mean indirect tax revenue has been drastically increased after the implementation of GST.

Table 4: Paired Sample correlation

	N	Correlation
Pair 1 Indirect Taxes before GST & After GST	6	0.987

Source: Own calculation from secondary data

Table 4 presents the correlations between indirect tax revenue before and after GST implementation. The correlation coefficient shows that there is a

significant positive relationship between GST and Indirect tax revenue ($r = 0.987$).

Table 5: Paired Sample t-test

		Paired Difference			t	df	Sig. (2 tailed)
	Mean	Std. Deviation	Std. Error Mean				
Pair 1	Indirect Taxes before GST & after GST	1296243.00	368803.23	150563.28	8.47	5	0.000

Source: Own calculation from secondary data

Table 5 exhibits the result of the paired sample t-test. The p value is 0.000 which is less than 0.05 (*i.e.*, $p=0.000 < 0.05$) then we reject the null hypothesis. So, we may conclude that there is a significant impact that exists on the increase of indirect tax revenue after GST implementation.

CONCLUSION

After introduction of GST, an enormous amount of tax burden will be reduced and in the long run, producers will be able to lower the prices of their commodities which will be beneficial for the ultimate consumers. The Government of India always tries to ensure that enough money will be raised for the nation with the least number of negative effects on people and resources together with raising the living standards of the underprivileged people. With the introduction of GST, a significant portion of the tax burden will be lifted, allowing the producers eventually to cut the price of their goods which will ultimately benefit customers for lower pricing of goods. In our study, it is clearly evident that after quick recovery from the COVID-19 pandemic, the

monthly GST revenue has constantly increased in India. Moreover, after implementation of GST, indirect tax revenues have rapidly increased, which will have a major contribution to the development of the Indian economy.

Limitations of the Study and Scope for future Research

GST is still in the maturity phase, so tax reforms can occur from time to time via GST council meetings regarding finalization of tax rates and even imposition of new rates and even deduction of existing rates.

After GST implementation, there is an emergent requirement of modern technology-based infrastructure like GSTNET for successful monitoring of taxation system as well as the GST Council should regularly conduct meetings for change in tax reflections. These areas can be covered by researchers in future studies.

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