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Research Paper

3 Years of GST Implementation in India: A State-Level Performance Analysis

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ABSTRACT
In July 2020, GST completes its three years. GST was expected to be a game changer in the field of indirect tax reforms. Almost all indirect taxes were subsumed under it and it was expected that by its implementation, the governments (Centre and State) would be able to solve many problems such as tax evasion, cascading effect of taxes, competition among states for inviting investment and most importantly tax GSDP/GDP ratio would enhance, permitting all governments, more autonomy and expenditure. Although 3 year is a very short period to evaluate any ambitious policy change such as GST, yet the researcher wishes to analyse some directional change for future.
One of the most debated area of GST implementation was that manufacturing states of India may suffer revenue loss as GST was supposed to benefit morethe consumer states like Uttar Pradesh, Bihar, being a destination-based consumption tax as against VAT. It would be interesting to find out whether after three years of GST (1)Consuming States have become better-off in generating their own revenue? (2) Has their dependence on Centre reduced which would bring greater fiscal autonomy? (3) Have manufacturing States suffered huge losses creating new problems for Centre-State financial relations? The present paper deals with these specific questions. The first part of the paper presents the overview of the problem. The second part comprises objectives, methodology and hypotheses testing. A brief review of literature is also presented. The third part comprises of testing of hypotheses and main findings. The fourth part includes concluding remarks with some recommendations.
Keywords: *Fiscal autonomy, State's own-revenue, Compensation Cess.*

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I. INTRODUCTION

India adopted a dual GST model under which taxes are levied concurrently by the Centre as well as the States on common bases which includes Goods and Services, throughout the territory of India. The main objective behind implementation of GST was to subsume various indirect taxes into one tax net in order to reduce complexity in tax procedure, to eliminate the cascading effect of taxation and reduce tax evasion. GST was also a means to create one nation one market so that free movement of goods and services can help growth of Indian economy. VAT, the earlier tax regime, was based on taxing production while GST is a destination-based consumption tax. This was certain to affect the revenues of different states differently. Some were expected to gain and some especially manufacturing states were expected to lose. For cooperative federalism, it was the duty of the Centre to compensate the losers. So, implementation of GST was not easy as can be seen by the history. It took nearly 12 long years of negotiations to bring every stakeholder on the table.

So far various studies have been conducted to analyse the impact of GST in Indian fiscal environment. One must remember that it would be too early to analyse and comment on a tax reform like GST which needs time to stabilise. GST has completed only 3 years. Some short-term analysis is being done by the researcher to find out whether Indian economy is moving in the right direction and all stakeholders are satisfied as envisioned in the Constitution.

In any federal country, inter-governmental fiscal relations are very much affected by the structural changes. The implementation of GST was one of such structural change which was bound to impact revenues of both Centre and States. Most items of tax base of statesand some important item of Centre were subsumed under GST as most of States own revenue comprised of income through indirect taxation.Hence, importance of GST in terms of revenue in state finances was quite high. Unlike the Union government, States have limited taxation power to cope with any shortfall in revenue.The GST negotiations were very specific to solve this particular problem. A compensation scheme was chalked out to help any State if it suffers any loss due to imposition of GST. The compensation scheme was added to GST Act as a transition act for only five years. Since continuation of GST compensation beyond the transition period is uncertain (depending upon the negotiations in GST Council), it is very important for states to protect their tax base and explore possibilities for additional revenue mobilization from existing sources of tax and non-tax revenues to meet ever increasing demands for public expenditures.During 2015-20, for 13 out of the 29 states, the growth rate of own-tax revenue has beengreater than the GSDP growth rate. The growth rate of own-tax revenue vis-à-vis the GSDP growthrate shows how the ability of a state to generate tax revenue on its own.States having higher growth rate of own-tax revenue than that of GSDP would be able toincrease their own tax-GSDP ratio, i.e., their tax generation potential over the years. In contrast, theratio would decrease for states whose own tax revenue is growing at a lesser rate than their GSDP.

II. LITERATURE REVIEW

In an article "GST: Good for Business, snag for Federalism", by **G. Sampath** published in The Hindu, June 4, 2015, the writer has explained in brief the concept of GST, differentiating it with the existing tax structure. The article throws light on the challenges and problems to be faced by the states with the introduction of GST quoting Ms. Kavita Rao that when one moves to a GST regime in a federal set up, some curtailment of the State's freedom is inevitable. The article further discusses not only the economic but also the social dimension of GST imposition.

A Jacob, in the writing "The Finance Commission: its role in Adjustment of Union State Financial Relations" (2015) in the book titled 'Constitutional Development Since Independence' concludes that the scheme of distribution of funds in Indian Federation has tended to give the Union more flexible resources, which as a result has created a gap between needs of State and its resources.

Shreya Jain, in her paper "The Goods and Services Tax (GST) Regime through the Lens of Fiscal Federalism in India" Indian Law Institute, Law Review, Summer Issue (2016), seeks to examine the proposed reform from the standpoint of fiscal relations prevailing in India owing to a federalist, rather than a unique quasi-federalist set up. Distinguishing between federalism and fiscal federalism, the paper deals in detail, the taxing powers of Centre and State as mentioned in Schedule 7 of the Constitution under the three lists. The paper also especially discusses the GST tax regime and its impact on Centre-State relations.

Sacchidananda Mukherjee in his paper, "Inter-Governmental Fiscal Transfers in the presence of Revenue Uncertainty: The Case of Goods and Services Tax (GST) in India", NIPFP Working Paper No.255, February 2019, discusses a serious yet emerging issue of shortfall in revenue collections under GST and a need for a modified fiscal management in context of inter-governmental fiscal transfers. The paper tries to explore the various possible reasons for this shortfall like the design and structure of GST system, or the compliance and tax administration related issues. It also attempts to assess the possible impacts of revenue shortfall on Union and State finances. Recognising the need of time for stabilisation of the GST system, this paper has not tried to evaluate the success or failure of GST system.

OBJECTIVES OF THE STUDY

1) To analyse the impact of GST as a destination-based tax on State's own-tax revenue of different States.
2) To make a comparative study between States in terms of performance.

III. METHODOLOGY

The methodology of this paper is multifaceted. It is analytical as well as descriptive. Secondary data is being used for both analysing and testing of hypothesis. The study is based on secondary data sets available in public domain like PRS India State Finance Reports, Budget Analysis of States, Goods and Service Tax Network Data sources etc. For post-GST implementation, yearly data from 2018-19, has been taken for the purpose of the study.For better comprehension, States have been classified as major and minor on the basis of revenue generation. Major States include States like Maharashtra, Tamil Nadu and Karnataka while Minor states are Assam, Himachal Pradesh, Delhi and Uttarakhand.

LIMITATIONS

No study is complete as economic situations change continuously and in case of GST implementation, it is too short a time span to critically analyse its overall impact on revenue collections. In the present paper, the data used for the years 2019-20 and 2020-21 is the revised and budget estimates in the absence of actual data.

HYPOTHESES OF THE STUDY

Based on the objectives following hypotheses have been formed for the purpose of testing:

Hypothesis I:

H_0: There is no significant difference in the proportion of own tax revenue in total revenue of the States, Pre and Post GST implementation.

H_1: There is significant difference in the proportion of own tax revenue in total revenue of the States, Pre and Post GST implementation.

Hypothesis II:

H_0: With the introduction of GST, the State's dependence on Central resources has not reduced substantially.

H_1: With the introduction of GST, the State's dependence on Central resources has reduced substantially.

STATE-WISE GST REVENUE COLLECTIONS: PERFORMANCE EVALUATION

Every State in India generates its revenue from tax and non-tax receipts. Tax receipts are generally 80% of the State's own revenues. In most cases, the Central transfer to States has been greater than State's own generated revenue impacting adversely the State's fiscal autonomy. It is demonstrated in tables given below.

In pre and post GST, for example Bihar's own generated revenue to the total revenue lies between 23% to 25% i.e. Bihar depends on Centre's transfers for nearly three-fourth of its resources in pre as well as post GST periods. On the other hand, Delhi's own revenue is nearly 85% of total revenue in both pre and post GST era. In Karnataka, Kerala, Gujarat, Maharashtra, own tax revenue has risen in post-GST period by very small margin and so also is the case of Uttar Pradesh. As against this, for West Bengal, Uttarakhand, Rajasthan, Madhya Pradesh and Jharkhand, own-tax revenue in post-GST has declined although marginally. The GST act assumed that States income shall rise by 14% per annum post-GST because of both (1) Rise in per capita GSDP (Tax Potential) and (2) Reduction of evasion (Tax Effort).

Figure 1: Composition of Revenue Receipts of States (2016-17)

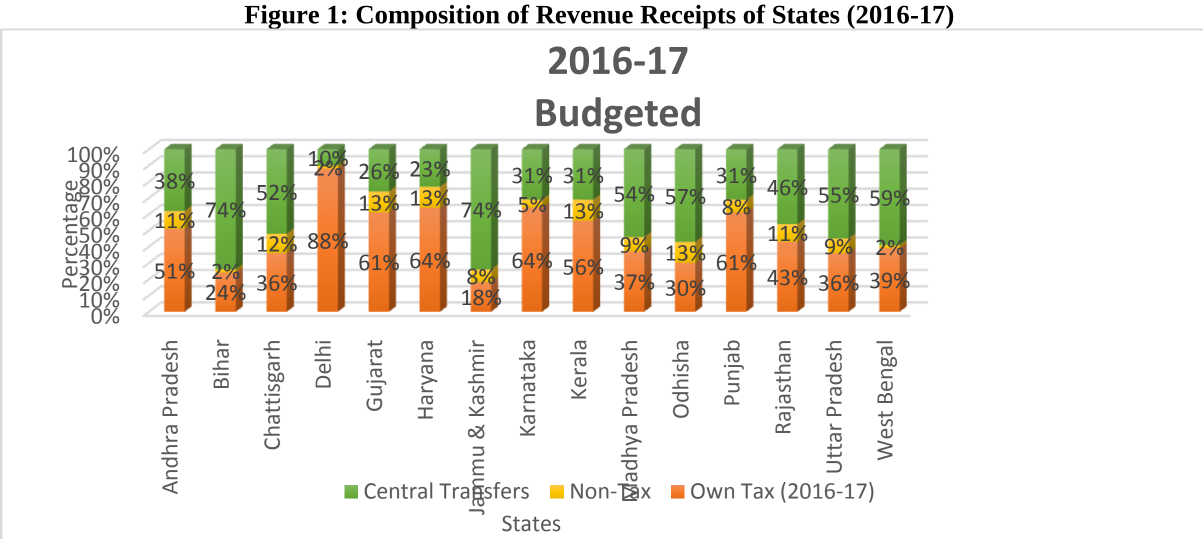


Figure 2: Composition of Revenue Receipts of States (2017-18)

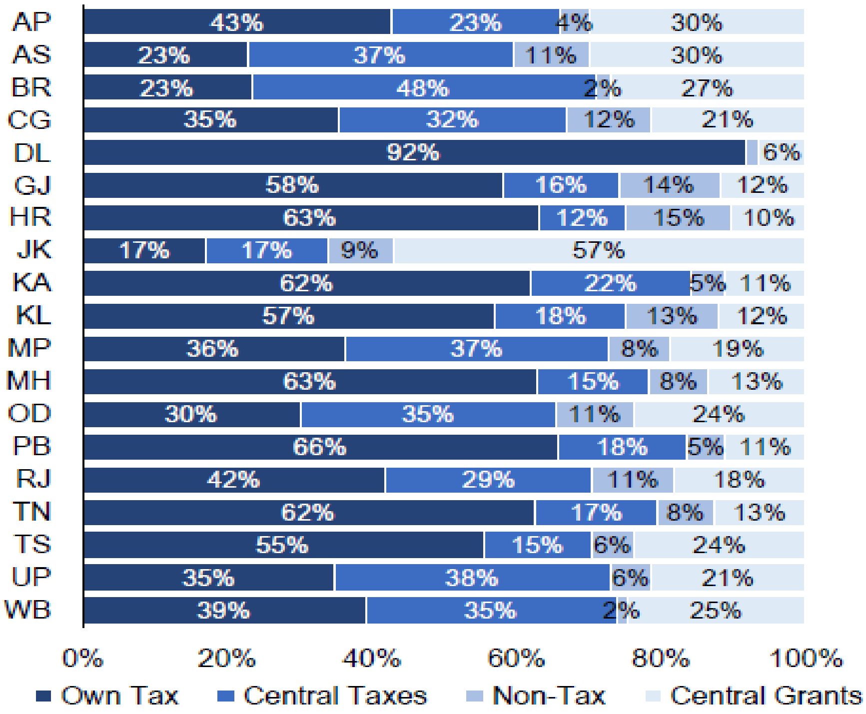


Figure 3: Composition of Revenue Receipts of States (2018-19)

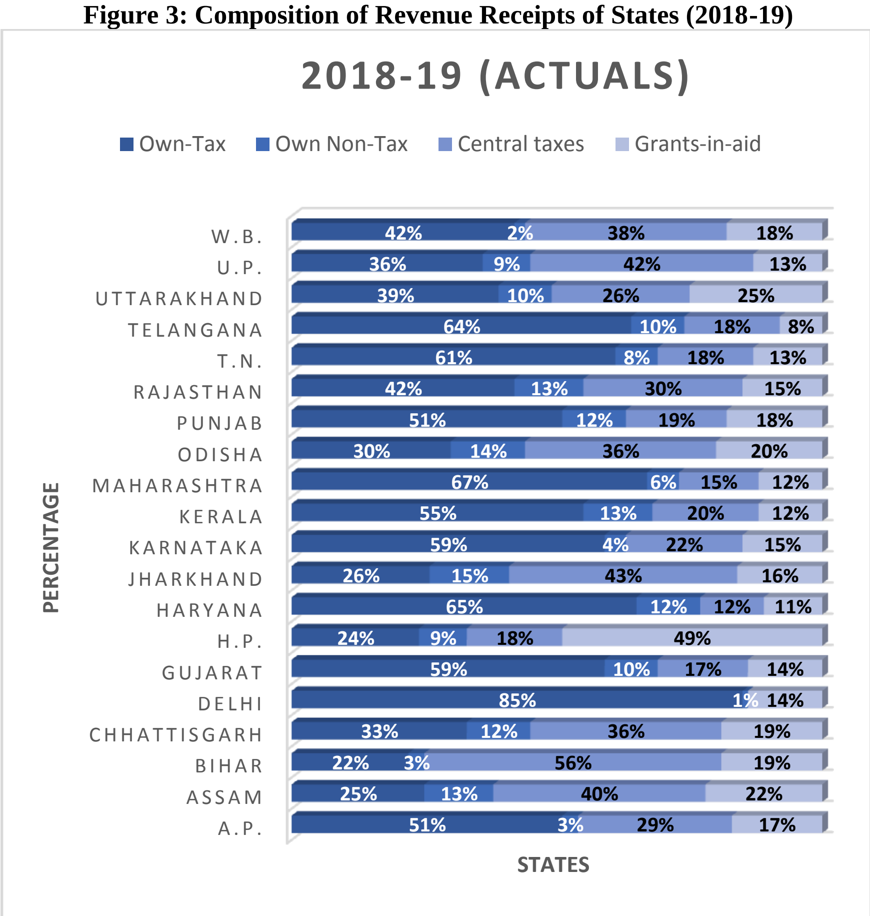


Figure 4: Composition of Revenue Receipts of States (2019-20)

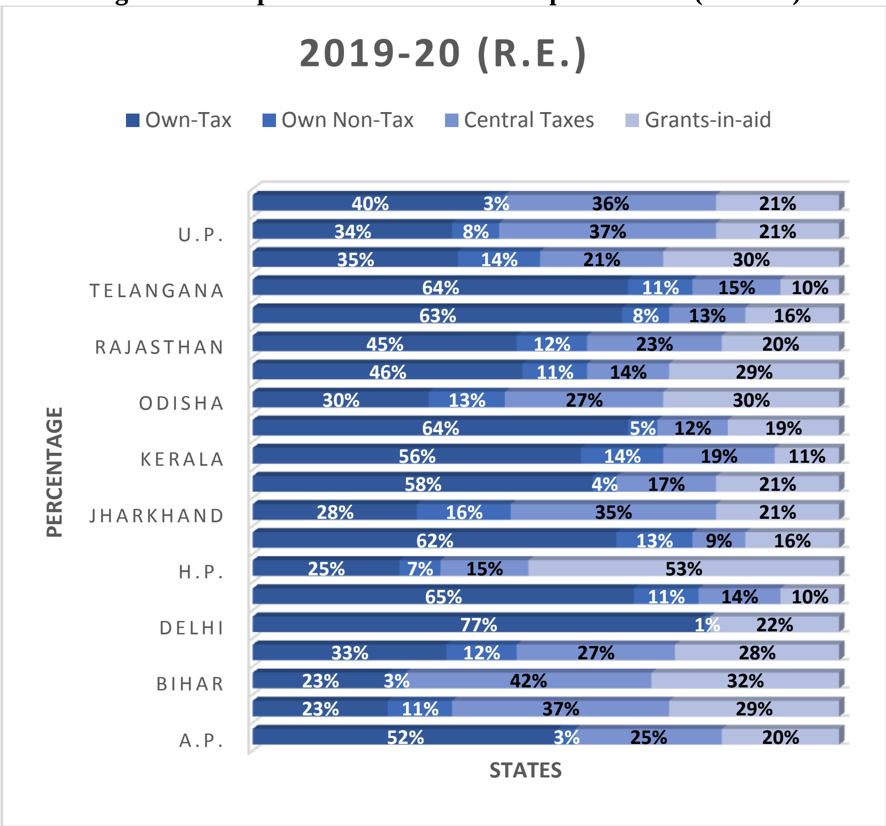
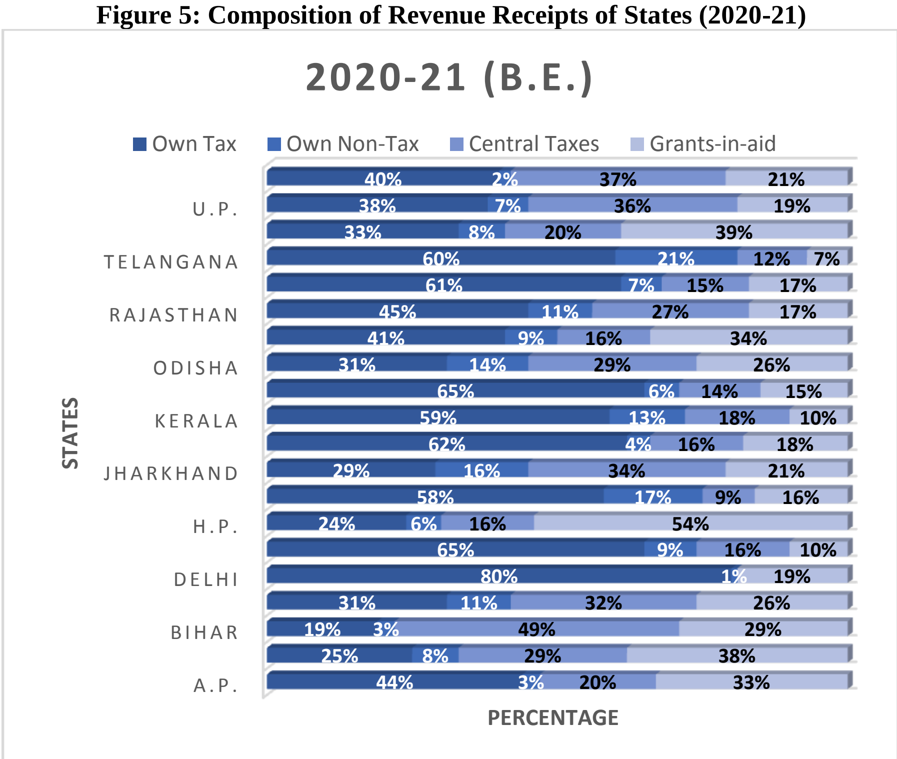


Figure 5: Composition of Revenue Receipts of States (2020-21)



IV. HYPOTHESIS TESTING

Hypothesis I:

H_0: There is no significant difference in the proportion of own-tax revenue in total revenue of the States, pre and post GST implementation.

For the purpose of testing this hypothesis, average has been taken for each state for pre-GST and post-GST period.

States	Andhra Pradesh	Bihar	Chhattisgarh	Delhi	Gujarat	Haryana	Karnataka	Kerala	Odisha	Punjab	Rajasthan	Uttar Pradesh	West Bengal
Pre GST	47%	24%	36%	90%	60%	64%	63%	57%	30%	64%	43%	36%	39%
Post GST	49%	21%	32%	81%	63%	62%	60%	57%	30%	46%	44%	36%	41%

Proportion of Own-Tax Revenue in Total Revenue of States
Source: Computed
Source: PRS India Reports

Result: P value is greater than 0.05, so the test fails to reject the null hypothesis i.e. there is no significant difference in the proportion of own tax revenue in total revenue of the States, pre and post GST implementation.

Year	Andhra Pradesh	Bihar	Chhattisgarh	Delhi	Gujarat	Haryana	Karnataka	Kerala	Odisha	Punjab	Rajasthan	Uttar Pradesh	West Bengal
2016-17	51%	24%	36%	88%	61%	64%	64%	56%	30%	61%	43%	36%	39%
2017-18	43%	23%	35%	92%	58%	63%	62%	57%	30%	66%	42%	35%	39%
2018-19	51%	22%	33%	85%	59%	65%	59%	55%	30%	51%	42%	36%	42%
2019-20 R.E.	52%	23%	33%	77%	65%	62%	58%	56%	30%	46%	45%	34%	40%
2020-21 B.E.	44%	19%	31%	80%	65%	58%	62%	59%	31%	41%	45%	38%	40%

t-test

Data source: Data 1 in Notebook1

Normality Test: Passed (P = 0.316)

Equal Variance Test: Passed (P = 0.613)

Group Name	N	Missing	Mean	Std Dev	SEM
Pre GST	13	0	0.499	0.182	0.0505
Post GST	13	0	0.478	0.163	0.0451

Difference 0.0213

t = 0.314 with 24 degrees of freedom. (P = 0.756)

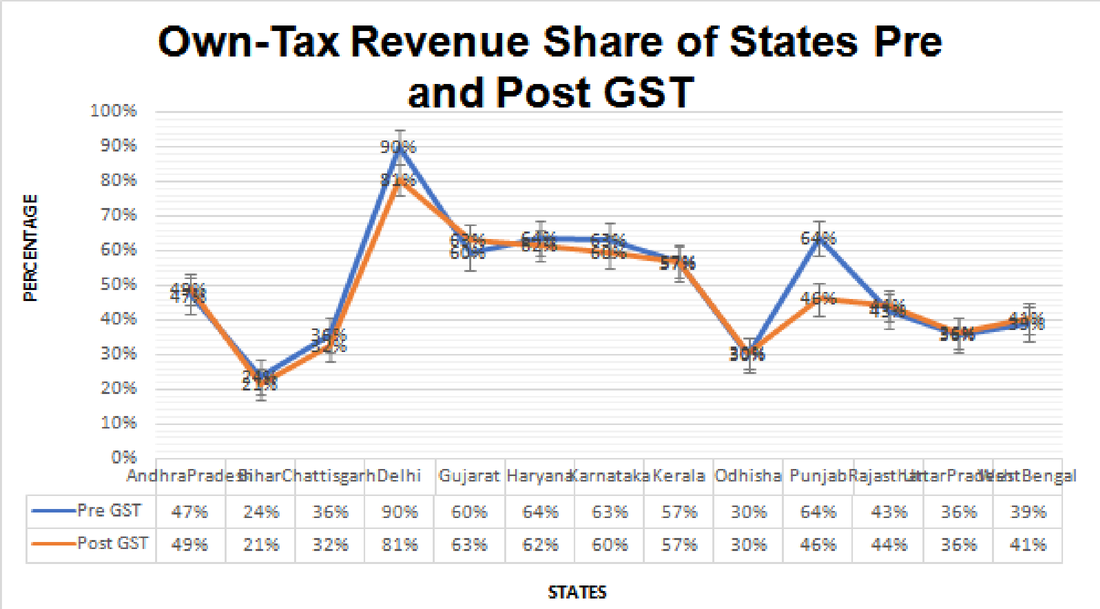
95 percent confidence interval for difference of means: -0.118 to 0.161

The difference in the mean values of the two groups is not great enough to reject the possibility that the difference is due to random sampling variability. There is not a statistically significant difference between the input groups (P = 0.756).

Power of performed test with alpha = 0.050: 0.050

The power of the performed test (0.050) is below the desired power of 0.800.

Less than desired power indicates you are less likely to detect a difference when one actually exists. Negative results should be interpreted cautiously.



Explanation: With implementation of GST it was expected by one and all that revenues of both National and Sub-National Governments would increase. But the statistical evidence does not satisfy the hypothesis when tested at 24 degrees of freedom. One must remember that when GST was in its introductory stage, Gujarat and some other industrial states have claimed that they will lose because of GST being a destination-based consumption tax and it was because of their insistence that Compensation Scheme was proposed. But the above statistics proves that all state's own tax revenue has not increased at expected rates.

Hypothesis II:

H_0: With the introduction of GST, the State's dependence on Central resources has not reduced substantially.

Yearly Growth in SGST Collection of States

States	2018-19	2019-20
Punjab	54.30%	-20.90%
Haryana	62.70%	-17.80%
Rajasthan	79.70%	-25.40%
U.P.	71.60%	-20.50%
Bihar	113.80%	-20.20%
W.B.	68.60%	-20.40%
Jharkhand	86.20%	-18.90%
Odisha	72.30%	-14.80%
Chhattisgarh	72.80%	-21.00%
M.P.	82.50%	-22.60%
Gujarat	57.60%	-22.00%
Maharashtra	57.60%	-22.50%
Karnataka	63.20%	-19.60%
Goa	60.80%	-27.30%
Kerala	58.90%	-25.20%
T.N.	56.40%	-20.50%
Telangana	73.10%	-23.50%
Andhra Pradesh	81.30%	-26.00%
H.P.	69.90%	-21.50%
U.K.	70.20%	-11.80%
Delhi	29.70%	-21.20%

Sikkim	101.60%	-7.10%
Arunachal Pradesh	162.40%	-10.60%
Nagaland	141.80%	-10.90%
Manipur	122.30%	-12.20%
Mizoram	161.70%	-19.60%
Tripura	90.80%	-19.30%
Meghalaya	101.70%	-13.20%
Assam	94.70%	-18.80%
Puducherry	57.50%	-31.30%

Source: Computed from GSTN Data Base

Result: P value is more than 0.05, so the test fails to reject the null hypothesis i.e. with the introduction of GST, State's dependence on Central resources has not reduced substantially.

One Way Analysis of Variance

Data source: Data 1 in Notebook1

Normality Test: Failed (P < 0.050)

Test execution ended by user requests ANOVA on Ranks begun

The differences in the median values among the treatment groups are not great enough to exclude the possibility that the difference is due to random sampling variability; there is not a statistically significant difference (P = 0.998)

Kruskal-Wallis One Way Analysis of Variance on Ranks

Data source: Data 1 in Notebook1

Group	N	Missing	Median	25%	75%
Punjab	2	0	0.167	-0.209	0.543
Haryana	2	0	0.225	-0.178	0.627
Rajasthan	2	0	0.272	-0.254	0.797
Uttar Pradesh	2	0	0.256	-0.205	0.716
Bihar	2	0	0.468	-0.202	1.138
West Bengal	2	0	0.241	-0.204	0.686
Jharkhand	2	0	0.337	-0.189	0.862
Odisha	2	0	0.287	-0.148	0.723
Chhattisgarh	2	0	0.259	-0.210	0.728
Madhya Pradesh	2	0	0.175	-0.225	0.576
Gujarat	2	0	0.218	-0.196	0.632
Maharashtra	2	0	0.299	-0.226	0.825
Karnataka	2	0	0.178	-0.220	0.576
Goa	2	0	0.167	-0.273	0.608
Kerala	2	0	0.168	-0.252	0.589
Tamil Nadu	2	0	0.179	-0.205	0.564
Telangana	2	0	0.248	-0.235	0.731
Andhra Pradesh	2	0	0.276	-0.260	0.813
Himachal Pradesh	2	0	0.242	-0.215	0.699
Uttarakhand	2	0	0.292	-0.118	0.702
Delhi	2	0	0.0425	-0.212	0.297
Sikkim	2	0	0.473	-0.0710	1.016
Arunachal Pradesh	2	0	0.759	-0.106	1.624
Nagaland	2	0	0.654	-0.109	1.418
Manipur	2	0	0.550	-0.122	1.223
Mizoram	2	0	0.711	-0.196	1.617
Tripura	2	0	0.358	-0.193	0.908
Meghalaya	2	0	0.442	-0.132	1.017
Assam	2	0	0.379	-0.188	0.947
Puducherry	2	0	0.131	-0.313	0.575

H = 11.476 with 29 degrees of freedom. (P = 0.998)

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Annexures are enclosed from which the table has been calculated.
Annexure 1

Major States	State GST* Collection (Rs. Crore)		
	2017-18	2018-19	2019-20
Punjab	7,268	11,218	8,867
Haryana	10,183	16,567	13,625
Rajasthan	11,439	20,552	15,342
Uttar Pradesh	**23,995**	**41,183**	**32,726**
Bihar	6,194	13,240	10,565
West Bengal	14,300	24,104	19,190
Jharkhand	3,844	7,159	5,806
Odisha	6,146	10,588	9,055
Chhattisgarh	4,064	7,023	5,545
Madhya Pradesh	9,147	16,965	13,130
Gujarat	20,320	32,030	24,978
Maharashtra	**48,238**	**76,004**	**58,881**
Karnataka	**22,733**	**37,017**	**29,832**
Goa	1,369	2,202	1,601
Kerala	11,566	18,385	13,755
Tamil Nadu	**23,604**	**36,925**	**29,348**
Telangana	12,369	21,412	16,371
Andhra Pradesh	10,235	18,559	13,728

Note: *-includes IGST settlement
Data Source: Goods and Services Tax Network

Annexure 2

Minor States	State GST* Collection (Rs. Crore)		
	2017-18	2018-19	2019-20
Himachal Pradesh	1,674	2,844	2,484
Uttarakhand	2,394	4,074	3,566
Delhi	**12,891**	**16,718**	**13,170**
Sikkim	182	367	341
Arunachal Pradesh	213	559	500
Nagaland	177	428	381
Manipur	287	638	560
Mizoram	162	424	341
Tripura	445	849	685
Meghalaya	348	702	609
Assam	3,816	7,428	6,030
Puducherry	471	742	510

Note: *-includes IGST settlement
Data Source: Goods and Services Tax Network

Explanation: A cursory glance at the data provides that the State-GSDP ratio did improve in 2018-19 compared to 2017-18 but not significantly. States still have to depend upon central transfers largely to meet their revenue and capital expenditure. The devolution of funds in total amount has increased in 2018-19 as well as 2019-20 and estimated even higher in 2020-21 against the expectations of policymakers and null hypothesis is accepted.

V. FINDINGS AND CONCLUSION

GST was supposed to be a game changer and was implemented after negotiations between different stakeholders for more than a decade. The most important issue was to decide a revenue neutral rate of tax so that tax-GDP ratio shall not be significantly impacted. Moreover, both tax-GDP ratio and tax revenue of Centre and States shall rise because of tax efficiency and reduction in tax evasion of indirect taxes. As almost all indirect taxes were in the control of state governments. It was presumed that their revenues would rise and their dependence on Centre will be reduced and their fiscal autonomy would get a boost. Although it was expected that the impact of GST would be different for different states mainly because of the nature of the tax.

The main findings of the analysis are (1) Tax-GDP ratio or Tax Revenue as a percentage of total revenue for most states has been stagnant i.e. imposition of GST has not impacted the tax revenue of States as was expected at least in first three years of implementation. (2) The State's dependence on Centre has also remained stagnant over three years period i.e. almost every State's dependence on Centre in post-GST period has been same as that in pre-GST period. (3) It can safely be concluded that there is no significant difference of implementation of GST on tax-GDP ratio in general or tax-GSDP ratio in particular. (4) In India digitalisation as well as digital infrastructure, digital literacy is not up to the mark till date which also creates problems of delays, fines, refunds due to which businesses and industries have not been able to provide the cooperation which is a must in case of indirect taxes. Does this mean that implementation of GST or conceptualisation of GST has miserably failed? At least the present analysis does demonstrate this with evidence.

The next question that arises is whether GST implementation in India shall be scrapped because now states have lost their autonomy to great extent (rates of 98% goods and services are fixed by GST council) in the context of changing, modifying, exempting tax rates and their revenues have not increased a bit. Their dependence on Centre is almost same. Then why loose autonomy. The whole Centre state financial relations have changed without any meaningful impact on tax-GDP ratio. Before making any recommendation, one must try to find all plausible explanations as to what were/are the reasons of failure of GST implementation in bringing desired results. The reasons could be divided into two categories theoretical as well as practical.

Theoretically, it is claimed that all over the world, GST implementation takes some time (3 to 5 years) to stabilise (Ernst and Young Roundtable Conference 2019). It is also claimed that finding a Revenue Neutral Rate (in most countries there a single rate but in India, there are five rates) is difficult if not impossible in a developing federal democratic country. The main reason is that populism of different governments generally forces the tax rates to be lower than the Revenue Neutral Rate. Fixing Revenue Neutral Rate, divided in five categories, generally creates lot of confusion and debate impacting the tax collection due to wait and watch policy of the taxpayers. Looking for practical problems, one finds that GST was implemented in a period where economy was slowing down due to various economic policies such as demonetisation, high repo rates. The slowdown was further fuelled by implementation of half-baked GST. One must remember that present analysis does not contain the impact of Covid-19 which has further pushed the whole world into negative growth zone. Thus, one must remember that Covid-19 impact is different from GST but Covid-19 paused the economy, and when businesses are closed, GST collections would also be low. Centre's support maybe reduced creating tensions in Centre-State financial relations. Thus, this is a time where policymakers and planners should try extraordinary methods which were required even prior to Covid-19 and create an atmosphere of peace, harmony and cooperation.

The success of GST apart from slowdown also depends upon digital transformation which is a necessary condition for success of GST. E-invoicing,Rate Rationalisations, improved compliance procedures, new returns system which could curb tax evasion are immediately needed for success of GST.

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