

Revenue Implications of GST on Indian State Finances

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Abstract

Assessing the revenue implications of GST on Indian state finances cannot be contained to compare the revenue stream which is subsumed into GST with State GST collection alone. Since GST subsumes many taxes from state tax bases, comparing the revenue performance of taxes which are outside the GST framework would be equally important. Moreover, in federal system revenue implication of shortfall in tax collection of the federal government is also likely to spill-over to sub-national finance in terms of lower tax devolution. Sustaining revenue streams of state governments is important for sustainable Public Finance Management (PFM) and therefore a comprehensive assessment of state finances before and after GST would be important. This paper attempts to fill the gap in exiting literature by assessing the revenue of 18 major states during pre- and post-GST periods.

Key Words: Revenue assessment, Goods and Services Tax (GST), State Finances, Revenue protection, GST Compensation, India.

JEL Codes: H20, E62, H26

1. Introduction

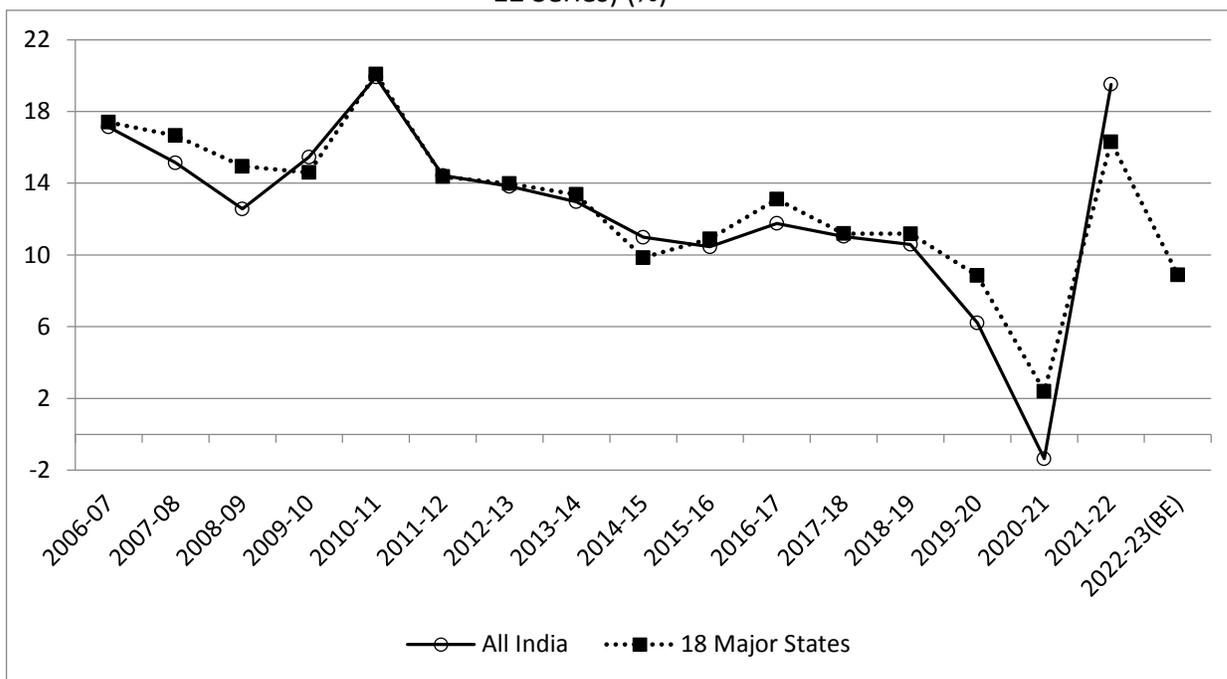
Indian GST completes five years on 30 June 2022. During last five years, many changes are made in the rate structure as well as rules and regulations of GST (Mehta and Mukherjee 2021). Revenue implications of those changes cannot be ignored and therefore assessing the impact of GST on Indian state finances will be important. Moreover like World economy, Indian economy has gone through a major economic shock due to the COVID-19 pandemic. Being a broad measure of tax base, slowing down of economic growth during 2019-21 and increasing demands for public expenditures during the pandemic have impacts on fiscal situation of the economy (Mukherjee 2022). Sustaining the revenue stream which is subsumed into GST is important for sustainable Public Finance Management (PFM) for states. Since GST compensation period ends on 30 June 2022, it will be important for states to assess the revenue performance of both GST as well as other indirect taxes which are outside the GST framework. The present study attempts to fill the gap in exiting literature by assessing the revenue of 18 major states during pre- and post-GST periods. So far actual (or audited) statement of accounts of state finances is available up to 2020-21 either from state Finance Accounts or Budget Documents. We have used both the data sources in this paper and present our analysis.

We present the trends of economic growth of Indian economy as well as aggregate growth rate of 18 major states during 2006-07 to 2021-22 in the next section. Since, revenue mobilization is dependent on economic growth, in section three we present aggregate fiscal health of 18 major states during 2005-06 to 2022-23BE. In section four we present revenue performance of GST and this is followed by discussion on revenue impactions of GST on Indian state finances in section five. We draw our conclusions in section six.

2. State of the Economy

We observe a falling trend in annual economic growth rate since 2006-07. It is to be highlighted that like World economy, Indian economy has also faced two major shocks during 2006-07 to 2021-22 - Global Financial Crisis (GFC, 2008-09 to 2009-10) and COVID-19 Pandemic (2020-21). The impact of COVID-19 pandemic on Indian economic growth was much larger than the impact of GFC (Figure 1). Being a broad measure of tax base of the economy, slowing down of economic growth is expected to have impact on fiscal health of governments.

Figure 1: Annual Growth Rate of GDP / GSDP at Market Prices (at Current Prices, 2011-12 Series) (%)



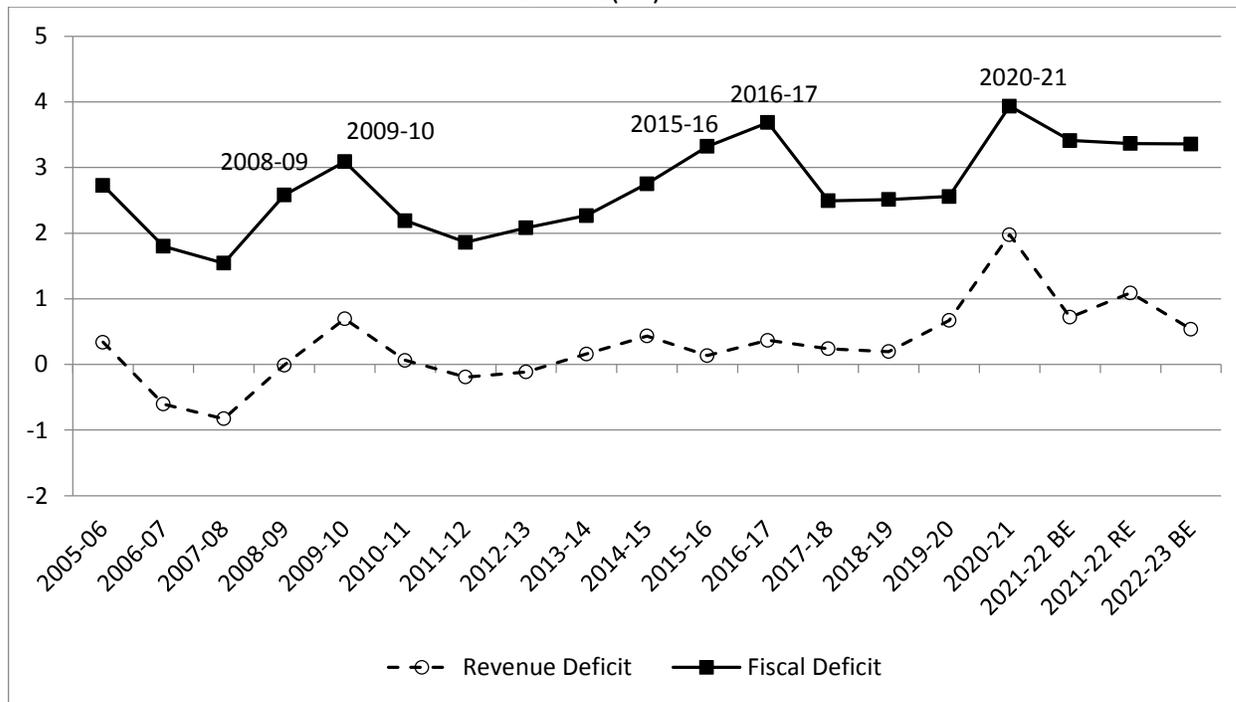
Source: Computed by author based on EPWRF India Time Series Database and Budget Documents of State Governments.

3. Fiscal Health of Indian States

Like economic growth, Indian states also faced fiscal stresses during 2008-10, 2015-17 and 2020-21 onwards (Figure 2). In addition to revenue stress due to GFC, implementations of 6th Pay Commission recommendations by many state governments increased revenue expenditures and resulted in rises of revenue as well as fiscal deficits during 2008-10 (Mukherjee 2019). States faced a relatively stronger fiscal stress during 2015-16 to 2016-17. To improve the financial health and operational efficiency of debt-ridden power distribution companies, the Union government introduced *Ujwal DISCOM Assurance Yojana* (UDAY) scheme in November 2015 to provide debt relief to public Power Distribution Companies (DISCOM). The basic objective of the scheme was to clean up the balance sheet of the DISCOM by taking over 75 per cent of outstanding debt (as on 30 September 2015) by the participating State government and free the credit blocked by creditors (mostly Public Sector Banks). Participating states took over 75 per cent of outstanding debt of public DISCOM in two tranches – 50 per cent in 2015-16 and 25 per cent in 2016-17. This resulted in fiscal stress for states without any impact on revenue deficit (Mukherjee 2019). States again faced fiscal shock during 2020-21 due to the COVID-19 pandemic. The economic contraction during the pandemic created pressures on Public Finance Management (PFM) in terms of lower revenue mobilization and higher public expenditures. Both the Union and state governments faced dual

problems of arresting economic contraction and managing public finance with limited public resources available for disposal (Mukherjee and Badola 2022).

Figure 2: Aggregate Fiscal Health of 18 Major States (% of GSDP) during 2005-06 to 2022-23(BE)

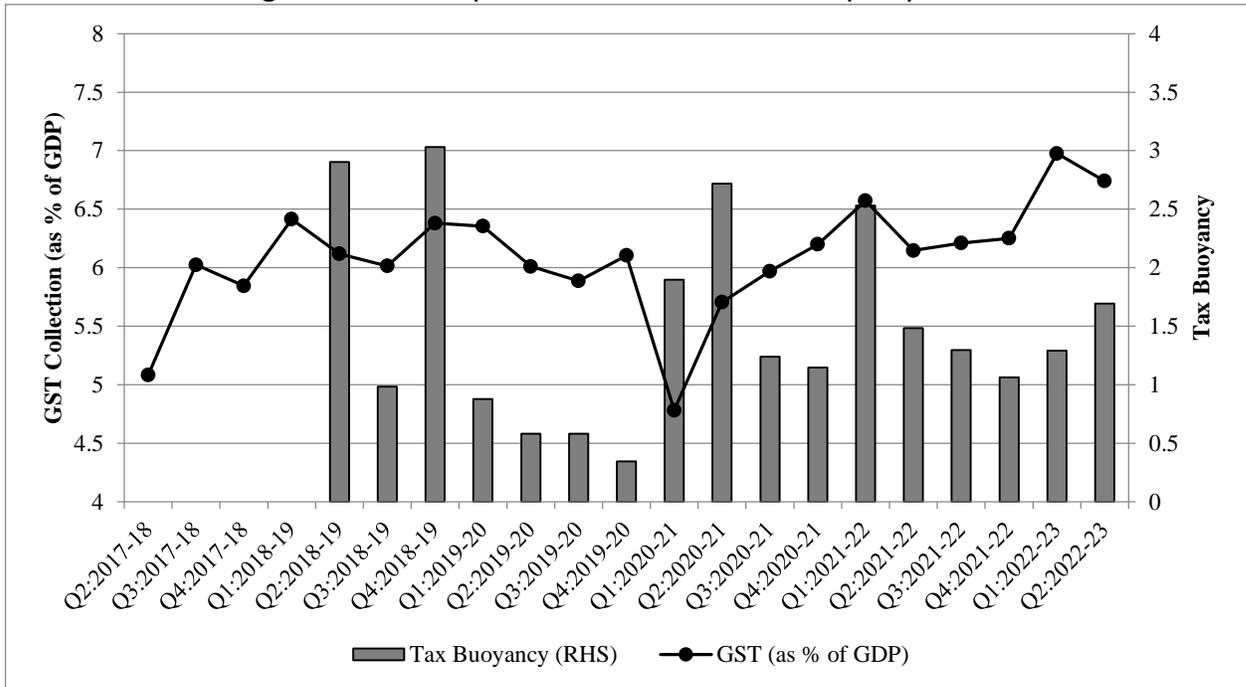


Source: Computed by author based on Finance Accounts and Budget Documents of States.

4. Revenue Performance of GST

India introduced Goods and Services Tax (GST) on 1 July 2017 by subsuming taxes from the Union and state tax bases. GST is a comprehensive multi-stage Value Added Tax (VAT) encompassing both goods and services with concurrent taxation power of the Union and state governments.

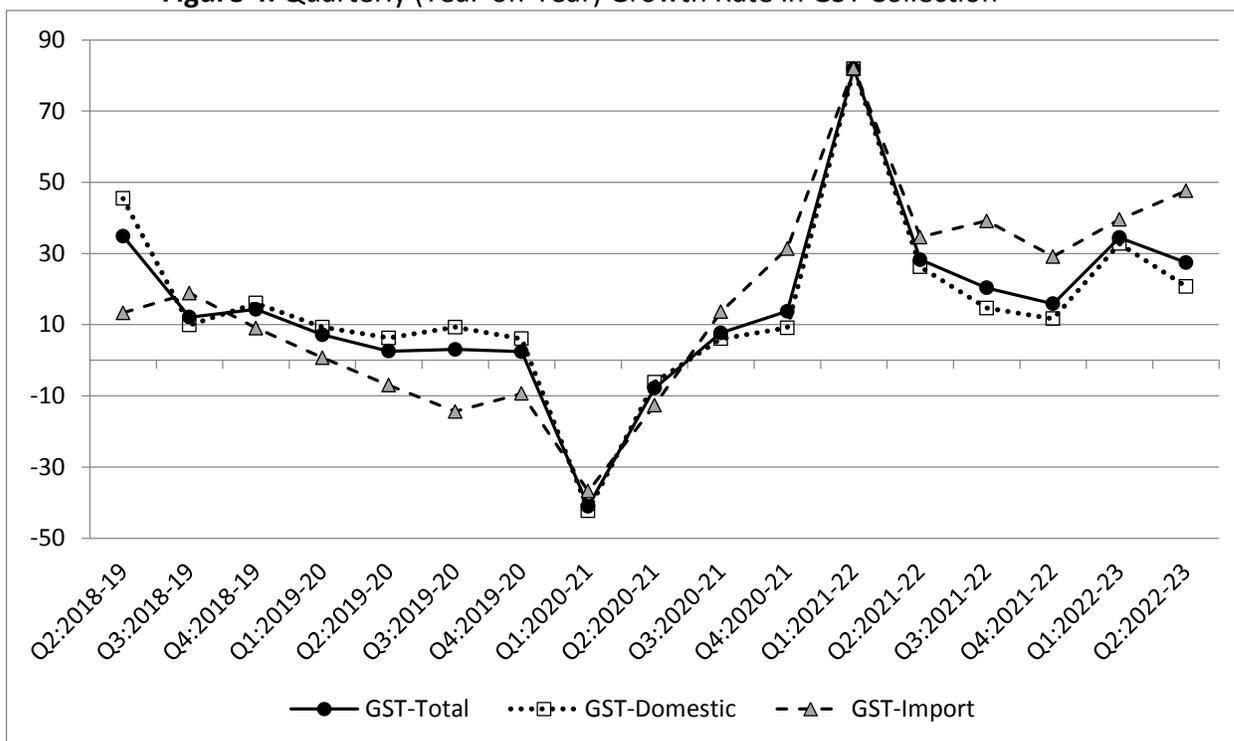
During Q3 of 2017-18 to Q4 of 2021-22, GST collection is hovering between 6 to 6.5 per cent of GDP, except during Q1 & Q2 of 2020-21 (on account of COVID-19 Pandemic). During Q1 & Q2 of 2022-23, GST collection has crossed 6.5 per cent of GDP. Tax Buoyancy in GST (i.e., Growth Rate of GST Collection/ Growth Rate of GDP) was lower during 2019-20, otherwise it lies above 1.

Figure 3: Quarterly GST Collection and Tax Buoyancy


Source: Computed by author based on monthly press releases of Department of Revenue, Government of India.

Before COVID-19 pandemic growth rate in quarterly (year-on-year) GST collection shows a falling trend and the growth rate was hovering between 2 to 16 per cent during Q3 of 2018-19 to Q4 of 2019-20. During Q2 of 2020-21 to Q1 of 2021-22, the growth rate improves and it is mostly attributed to lower base effect post COVID-19 pandemic. In Q2 of 2021-22, the growth rate again falls and thereafter it is hovering between 16 to 34 per cent. The fall in growth rate in GST collection in Q2 of 2021-22 could be due to second wave of the COVID-19 pandemic and associated economic restrictions. It is also to be highlighted that pre-pandemic quarterly growth rate of GST from imports (IGST and GST Compensation Cess from imports) was lower than growth rate of GST from domestic components. However, growth rate in GST from imports surpasses the growth rate in GST from domestic components since Q3 of 2020-21. On average GST from imports contributes one-fourth share in total GST collection in India. The higher growth rate in GST collection from imports may be attributed to post pandemic rise in global prices of goods and services. Improvement in GST collection during 2021-22 and 2022-23 is large driven by rise in prices of goods and services and improvements in the compliance of GST.

Figure 4: Quarterly (Year-on-Year) Growth Rate in GST Collection



Source: Computed by author based on monthly press releases of Department of Revenue, Government of India.

Analysis of GST collections of 18 major states is presented in Table 1. This shows that on average states collected 88.3 per cent of Revenue Under Protection (or aggregate projected revenue of states in GST) in 2018-19.¹ However, there exists variation across states ranging from 63 per cent in Punjab to 103 per cent in Andhra Pradesh in the achievement (appendix Table A1). In 2019-20, on average SGST collection (including IGST settlement) could meet only 76 per cent of the RUP and it further falls to 61 per cent in 2020-21. As compared to 2018-19, in 2019-20 the largest slippage in GST collection with reference to Revenue Under Protection is observed for Rajasthan, followed by Andhra Pradesh. As compared to 2019-20, in 2020-21 GST collection further falls for all states and the largest falls are observed for Maharashtra and Madhya Pradesh. GST compensation helped states to protect revenue and with GST compensation on average states achieved 99.3 per cent of RUP in 2018-19. In 2019-20, with GST compensation states achieved on average 93 per cent of RUP. Due to shortfall in GST compensation cess collection in 2020-21, states could achieve 78.7 per cent of RUP with GST compensation from GST compensation fund. However, in 2020-21 states

¹ During GST transition period (1 July 2017 to 30 June 2022) states receive GST compensation based on the difference between projected state GST revenue and actual state GST collection (including IGST settlement). The projection of state GST revenue is based on the revenue that states collected in 2015-16 (base year) from taxes subsumed into GST (also known as revenue under protection) and 14 per cent annual growth in revenue under protection from the base year 2015-16.

also receive GST compensation in terms of back-to-back loans from the Union government in lieu of shortfall in GST compensation cess collection and this helped states to achieve on average 91.6 per cent of RUP in 2020-21. The analysis shows that state GST collection (as percentage of RUP) is falling over the years during 2018-21 and dependence on GST compensation has grown up.

Table 1: GST Revenue Performance of 18 Major States in India

Description	2018-19	2019-20	2020-21
Revenue Under Protection (Rs. Crore) (A)	530,545	604,821	689,496
SGST Collection (including IGST Settlement) (Rs. Crore) (B)	468,722	457,743	420,025
B as % of A	88.3	75.7	60.9
SGST Collection (including IGST Settlement & GST Compensation) (Rs. Crore) (C)	526,993	562,158	542,887
C as % of A	99.3	92.9	78.7
SGST Collection (including IGST Settlement & GST Compensation from all Sources*) (Rs. Crore) (D)			631,390
D as % of A			91.6

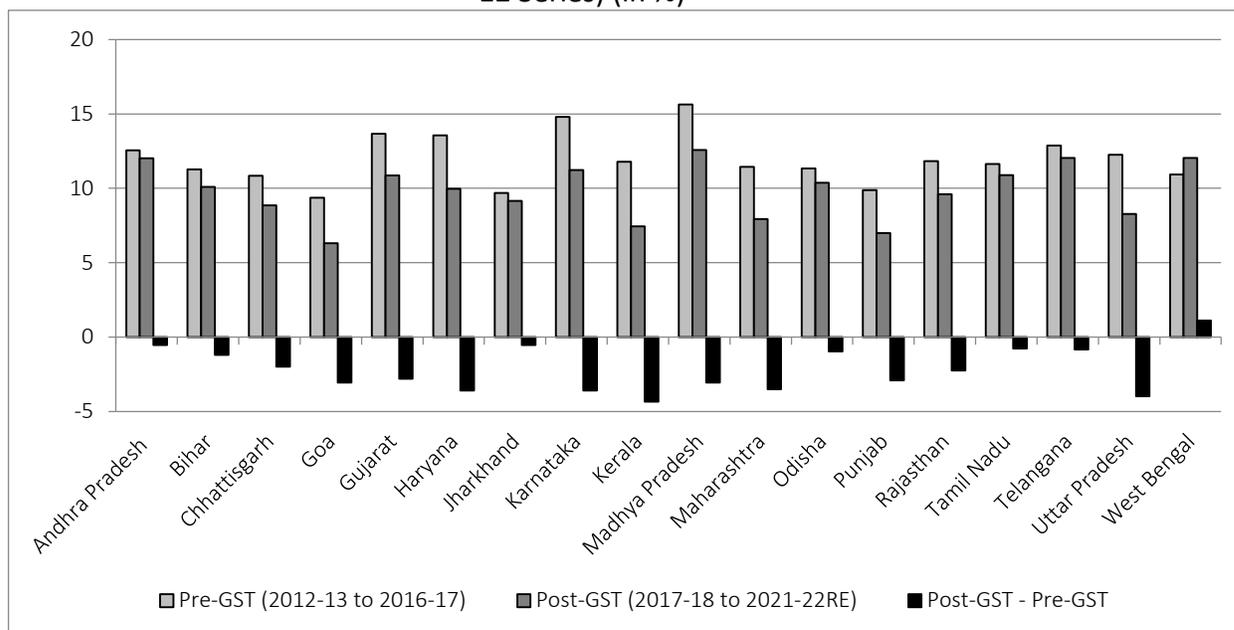
Source: Computed by author based on data obtained from State Finance Accounts / Budget Documents

5. Revenue Implications of GST on Indian State Finances

In this section we assess the revenue impact of GST on Indian state finances. We adopt different measures to assess the revenue stream associated with GST and compare the revenue performance of major states over the periods (pre-GST versus post-GST).

We present state-wise average annual growth rate in GSDP (at market prices, current prices, 2011-12 series) during pre-GST (2012-13 to 2016-17) and post-GST (2017-18 to 2021-22RE) periods in Figure 5. We see that except in West Bengal, all other major states show fall in average annual growth rate of GSDP during post-GST period (2017-18 to 2021-22RE) as compared to pre-GST period (2012-13 to 2016-17). It is expected that fall in growth rate in GSDP may have some impact on GST collection for states. Slowdown in economic growth in 2019-20 and COVID-19 pandemic in 2020-21 resulted in revenue as well as fiscal stresses for states (Mukherjee and Badola 2022).

Figure 5: Average Annual Growth Rate of GSDP (at Current Prices, Market Prices, 2011-12 Series) (in %)



Source: Computed by author based on data obtained from EPWRRF India Time Series Database.

In this paper we assess the revenue implications of GST for States only. In this exercise we carry out the following comparisons:

- Comparison of Revenue Under Protection (RUP) for Pre-GST period with State GST collection (including IGST Settlement) for Post-GST period
- Comparison of State Revenue Basket (either partially or fully subsumed into GST) for Pre-GST period with Post-GST period (as % of GSDP)
- Comparison of State's Share in the Union Taxes (either fully or partially subsumed into GST) for Pre-GST with Post-GST period (as % of GSDP)
- Comparison of State's Own Tax Revenue (OTR) for Pre-GST period with Post-GST period (as % of GSDP)
- Comparison of State Tax Revenue (OTR & State's Share in the Union Taxes) for Pre-GST period with Post-GST period (as % of GSDP)

It is to be mentioned that by Revenue Under Protection (RUP) we mean the revenue from taxes (from state tax base) which are subsumed into GST. Being the transition year we avoid taking into account GST collection in 2017-18 in our empirical analysis. Since both the Union and state governments settled transitional credits of pre-GST taxes with GST liability, GST collection is not likely to reflect actual GST potential in 2017-18. We estimate growth rate in GST collection in 2019-20 with reference to GST collection in 2018-19 and so on. Since data on RUP for Gujarat and Haryana is not available for pre-GST period, except for 2015-16, it has restricted our analysis.

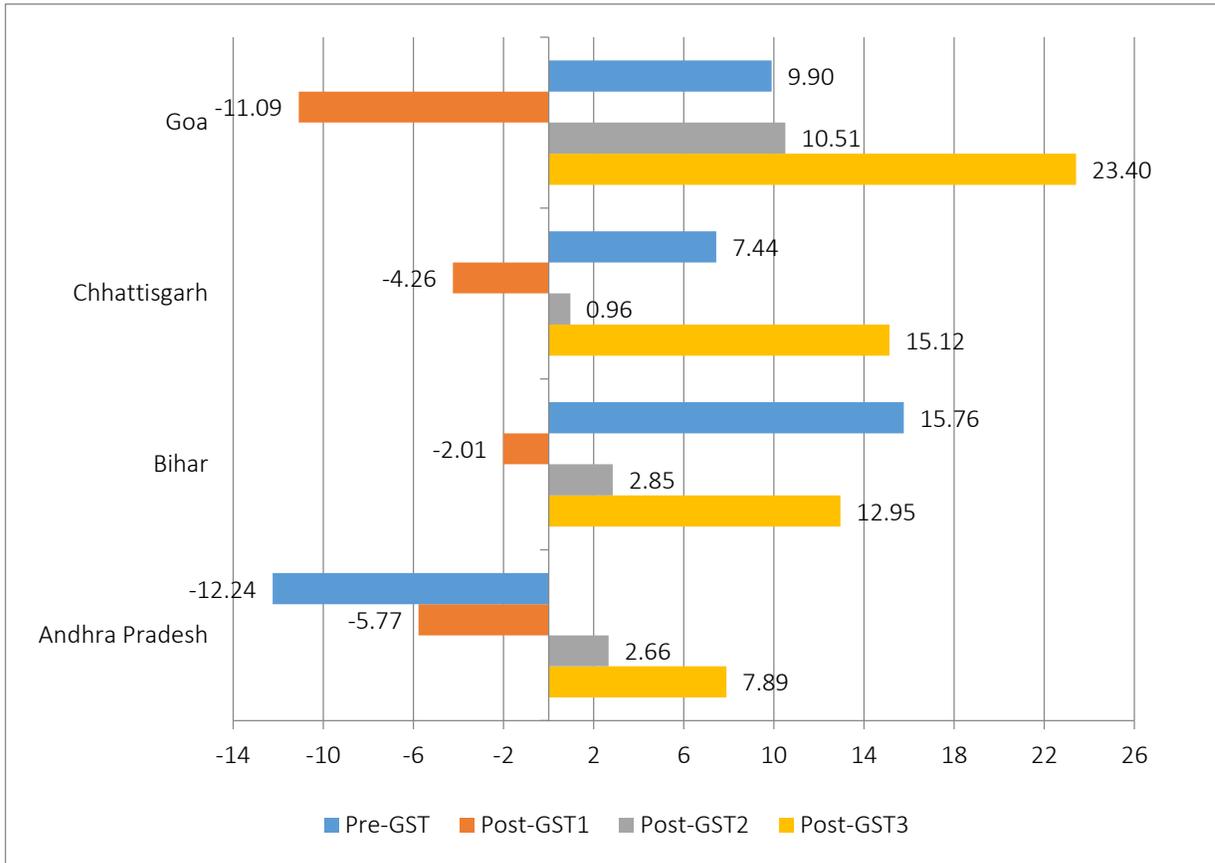
5.1 Comparison of Revenue Under Protection with State GST

We first compare average annual growth rate of RUP for Pre-GST period with State GST (including IGST settlement) for post-GST period. In addition to State GST (including IGST settlement), states receive GST compensation. To make comparable series of revenue for pre- and post-GST, we add GST compensation receipts of states with SGST revenue. We construct three alternative streams of revenue for post-GST period by adding GST compensation receipts from the GST compensation fund and back-to-back loans that states receive in lieu of shortfall in GST compensation cess collection. The four series of data that we have created are presented below:

- Pre-GST: Average Annual Growth Rate in Revenue Under Protection during 2014-15 to 2016-17
- Post-GST1: Average Annual Growth Rate in State GST Collection (including IGST Settlement) during 2019-20 to 2020-21
- Post-GST2: Average Annual Growth Rate in State GST Collection (including IGST Settlement and GST Compensation) during 2019-20 to 2020-21
- Post-GST3: Average Annual Growth Rate in State GST Collection (including IGST Settlement, GST Compensation, and Back-to-Back Loans) during 2019-20 to 2020-21

Figure 6a shows that in Goa pre-GST average annual growth rate in RUP was 9.9 per cent and average annual growth rate in SGST (including IGST settlement) was -11.1 per cent during 2019-20 to 2020-21 (hereafter Post-GST1). Average annual growth rate in SGST with GST compensation (from GST compensation fund) was 10.5 per cent during 2019-21 (hereafter Post-GST2). This implies that GST compensation payments helped Goa to achieve average annual growth rate in SGST which is higher than what was prevailing during pre-GST period. States receive back-to-back loans from the Union government in 2020-21 and 2021-22 in lieu of shortfall in GST compensation cess collection in addition to GST compensation from the GST compensation fund. Since the obligations of servicing the debt (both interest and principal payments) of these loans rest on the Union government and for this GST Compensation cess collection has been extended till 31 March 2026, we take into account GST compensation (from all sources) as revenue receipts of states and estimate growth rate in SGST collection. We find that with all GST compensation, Goa achieved average annual growth rate of 23.4 per cent during 2019-21 (hereafter Post-GST3). Except Bihar, other three states (viz., Andhra Pradesh, Chhattisgarh, Goa) achieved growth rate in Post-GST3 higher than the growth rate that was prevailing prior to introduction of GST (Figure 6a). It is to be highlighted that Telangana is created from undivided Andhra Pradesh in June 2014 and therefore pre-GST growth rate of Andhra Pradesh is lower.

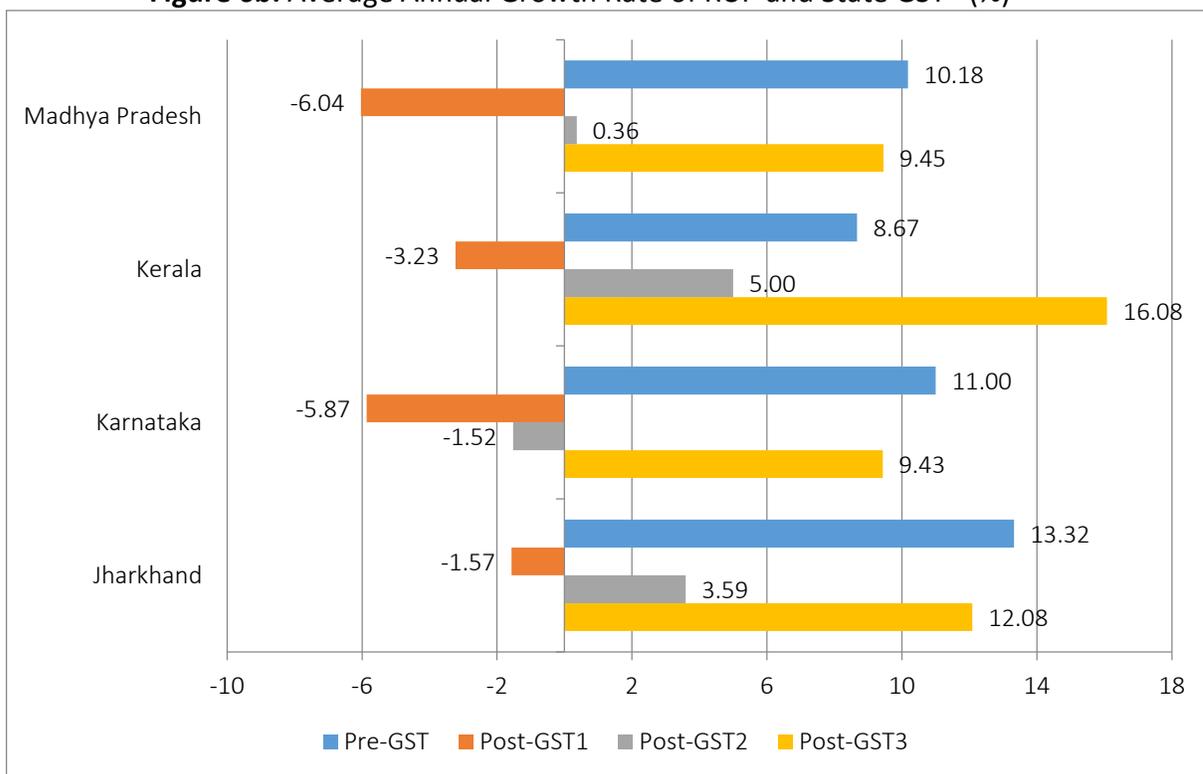
Figure 6a: Average Annual Growth Rate of RUP and State GST* (%)



Note: *-including IGST settlement.

Source: Computed by author based on Data obtained from State Finance Accounts / Budget Documents

Figure 6b shows that all four states attain lower average annual growth rate in GST collection during Post-GST1 than the growth rate prevailing during pre-GST period. Even with GST compensation from all sources (under Post-GST3), except Kerala none of the other three states could attain average annual growth rate that was prevailing during pre-GST period.

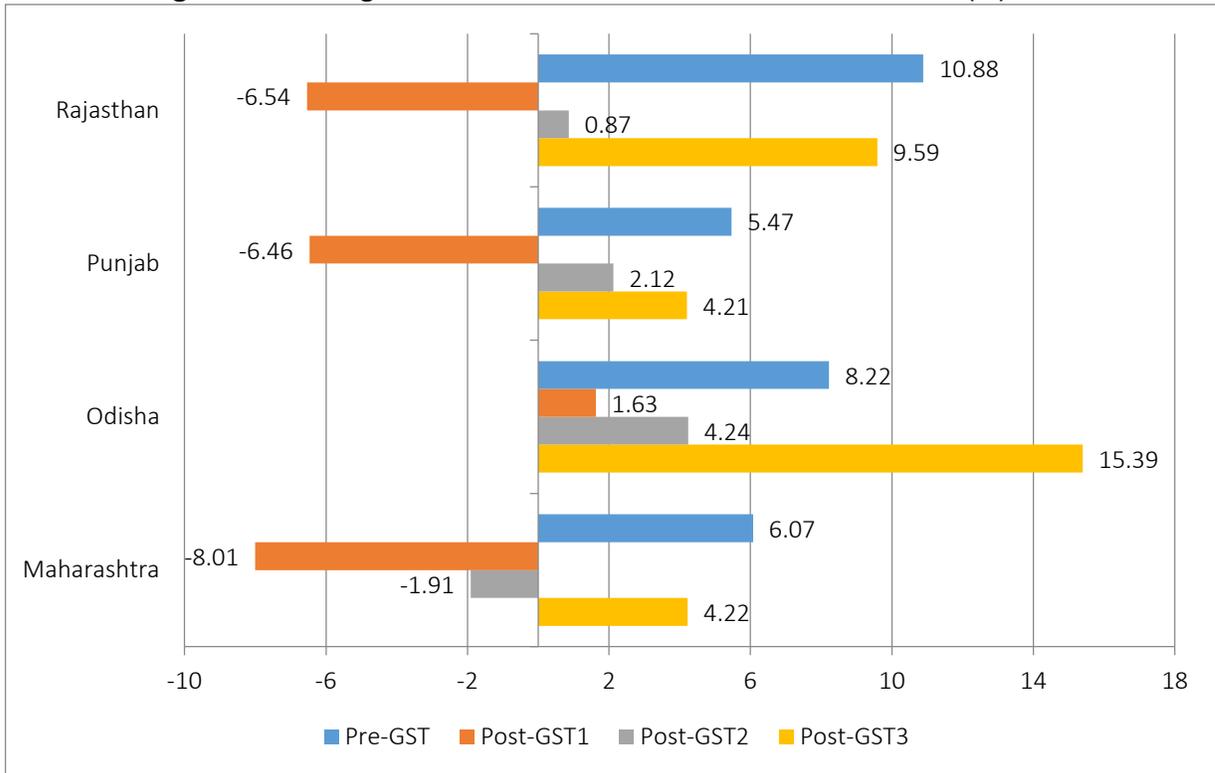
Figure 6b: Average Annual Growth Rate of RUP and State GST* (%)


Note: *-including IGST settlement.

Source: Computed by author based on State Finance Account / Budget Documents

Figure 6c shows that except Odisha none of the other three states could achieve average annual growth rate in the Post-GST3 higher than average annual growth rate in taxes subsumed into GST prior to introduction of GST (Pre-GST). Among major states, Odisha is the only state which has achieved a positive average annual growth rate in GST collection without any GST compensation in the Post-GST1. GST compensation in terms of back-to-back loans helped states to moderate the impact of shortfall in GST collection in 2020-21. Except a few states (viz., Chhattisgarh, Goa, Kerala, Odisha, Tamil Nadu), with GST compensations (from all sources) annual average growth rate in GST collection falls short of 14 per cent.

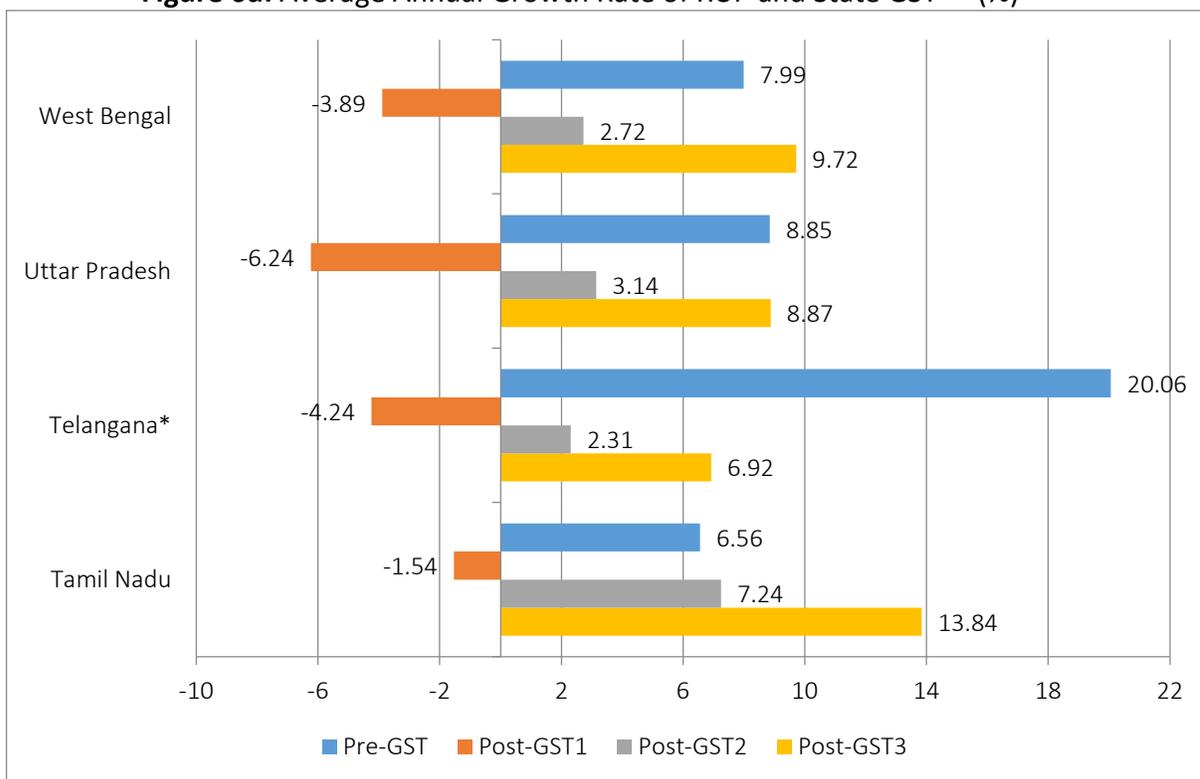
Figure 6c: Average Annual Growth Rate of RUP and State GST* (%)



Note: *-including IGST settlement.

Source: Computed by author based on State Finance Account / Budget Documents

Barring Telangana, all other states in Figure 6d achieved average annual growth rate in the Post-GST3 higher than the average annual growth rate prevalent in the Pre-GST. None of the states achieved average annual growth rate in the post-GST1 that was prevailing in the pre-GST period. This shows that GST compensation was necessary for states to sustaining revenue stream which has subsumed into GST. Telangana is created from undivided Andhra Pradesh on June 2014 and we have taken growth rate of 2016-17 only for Telangana for pre-GST period.

Figure 6d: Average Annual Growth Rate of RUP and State GST (%)**


Note: *-Since the state is created on June 2014, we consider annual growth in RUP for 2016-17 only. **-including IGST settlement.

Source: Computed by author based on data obtained from State Finance Accounts / Budget Documents

Except Bihar, average annual Pre-GST growth rate in subsumed taxes was lower than 14 per cent for other states. Many states could not attain 14 per cent average annual growth rate in GST collection during 2019-20 to 2020-21 even with GST Compensation. Though, GST compensation helped states to moderate the revenue impact of shortfall in GST collection, it could not wipe out the entire shortfall in GST collection for some states.

5.1.1 Analysis of GST Revenue: Pre- vs. Post-GST

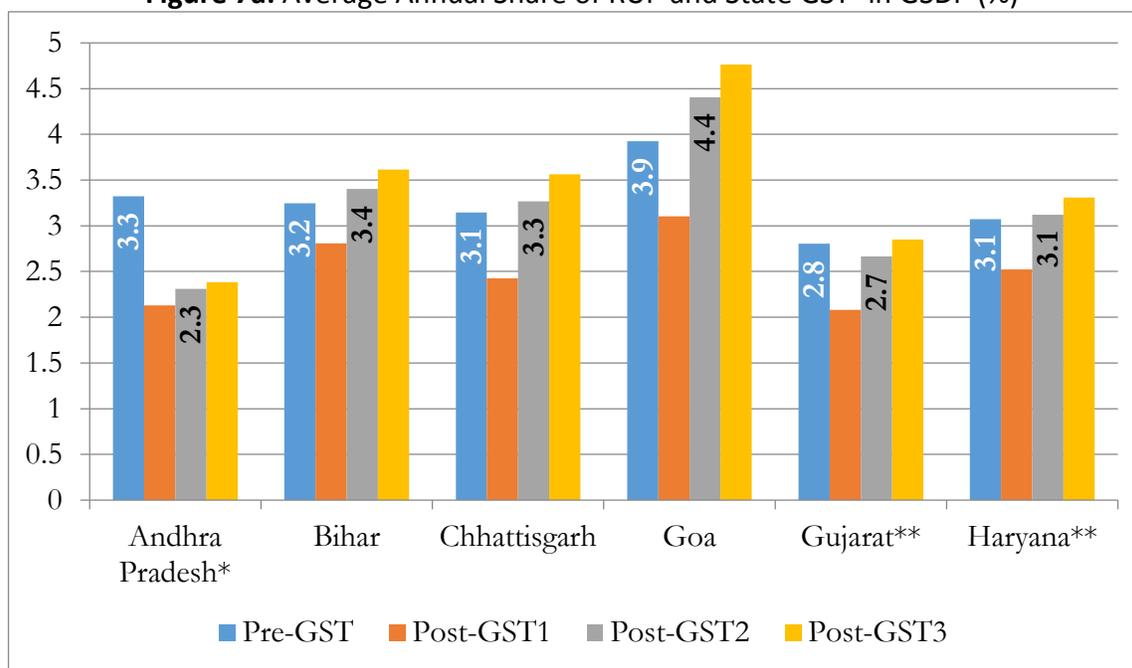
Protection of revenue from taxes subsumed into GST could also be seen in terms of sustaining the revenue stream as percentage of GSDP. In this sub-section, we compare revenue from taxes subsumed into GST for pre-GST period with State GST (including IGST settlement) for post-GST period. We have also taken into account GST compensation receipts of states and created two scenarios Post-GST2 and Post-GST3 as presented below.

- Pre-GST: Average Annual Growth Rate in Revenue Under Protection during 2014-15 to 2016-17

- Post-GST1: Average Annual Growth Rate in State GST Collection (including IGST Settlement) during 2019-20 to 2020-21
- Post-GST2: Average Annual Growth Rate in State GST Collection (including IGST Settlement and GST Compensation) during 2019-20 to 2020-21
- Post-GST3: Average Annual Growth Rate in State GST Collection (including IGST Settlement, GST Compensation, and Back-to-Back Loans) during 2019-20 to 2020-21

Figure 7a shows that none of the states could sustain the revenue stream corresponding to taxes subsumed into GST (in terms of percentage share in GSDP) in the post-GST period without GST compensation. With GST compensation all states, except Andhra Pradesh, have managed to attain average revenue which is marginally higher than the revenue that is subsumed into GST. In other words, GST compensation helped states to sustain the revenue stream which is subsumed into GST. Telangana is created from undivided Andhra Pradesh on June 2014 and it has an impact on the revenue stream of Andhra Pradesh.

Figure 7a: Average Annual Share of RUP and State GST[#] in GSDP (%)



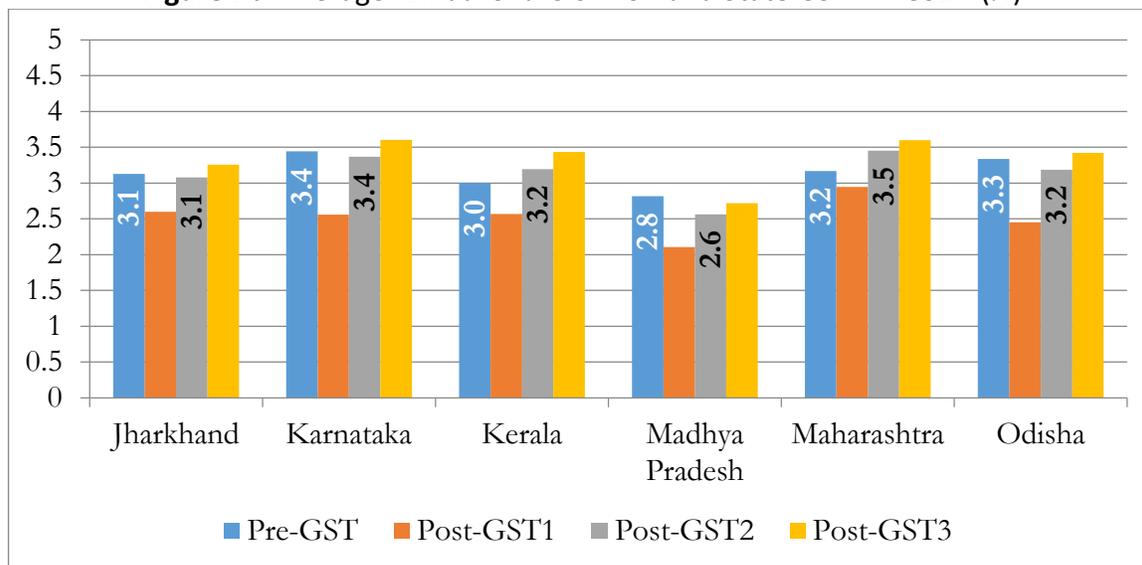
Note: *-Telangana is created in June 2014 from undivided Andhra Pradesh and it results fall share of RUP in GSDP. **-for Pre-GST the revenue corresponds to 2015-16 only. #- including IGST settlement.

Source: Computed by author based on data obtained from State Finance Accounts / Budget Documents

Figure 7b shows that GST compensation helped states to maintain the revenue corresponding to taxes subsumed into GST and there was no windfall benefit to any state from the GST compensation in terms of substantial higher share of GST in GSDP. It

is to be highlighted that without GST compensation it would have been difficult for states to sustain the revenue that is subsumed into GST.

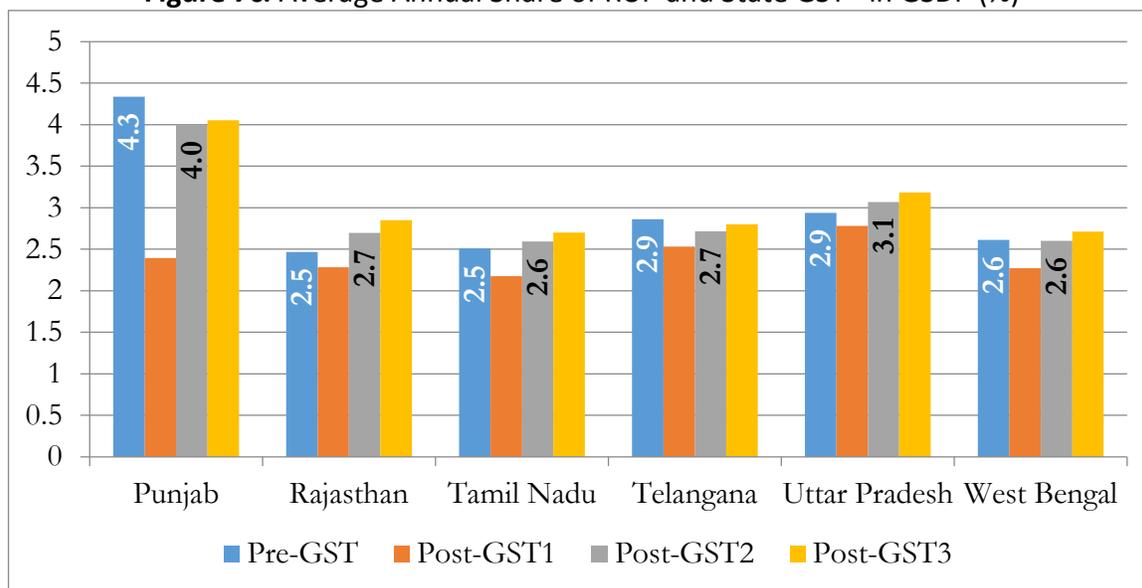
Figure 7b: Average Annual Share of RUP and State GST* in GSDP (%)



Note: *- including IGST settlement.

Source: Computed by author based on data obtained from State Finance Accounts / Budget Documents

Figure 7c shows that even after GST compensation (from all sources), Punjab and Telangana are not able to sustain the revenue corresponding to taxes subsumed into GST post introduction of GST. Other states with GST compensation could manage the revenue sustainability. This shows that both GST compensation from GST compensation fund and back-to-back loans in lieu of shortfall in GST compensation cess collection were necessary for sustaining the revenue streams of state governments.

Figure 7c: Average Annual Share of RUP and State GST* in GSDP (%)


Note: *- including IGST settlement.

Source: Computed by author based on data obtained from State Finance Accounts / Budget Documents

We present summary results of 18 major states in terms of share of either RUP or SGST in GSDP over the periods in Table 2. This shows that distribution of states across value range of share of RUP/SGST in GSDP (excluding GST compensation) has moved towards lower value ranges during 2018-21 as compared to 2015-16. In other words, post-GST State GST (including IGST settlement) collection has suffered for states.

Table 2: Distribution of 18 Major States by Share of RUP or State GST* in GSDP

Share of RUP/ SGST in GSDP	2015-16	2018-19	2019-20	2020-21
<2.0%	0 (0)	0 (0)	0 (0)	5 (28)
2.0-2.5%	1 (6)	4 (22)	12 (67)	8 (44)
2.5-3.0%	8 (44)	10 (56)	4 (22)	5 (28)
3.0-3.5%	6 (33)	3 (17)	2 (11)	0 (0)
>3.5%	3 (17)	1 (6)	0 (0)	0 (0)
Total No. States	18	18	18	18

Notes: *- including IGST settlement but excluding GST compensation

Figures in the parenthesis show the percentage share in Total Number of States

Source: Computed by author

5.2 Analysis State Tax Revenue: Pre- vs. Post-GST

Various taxes from tax bases of the Union and state governments have subsumed into GST. Separation of revenue stream of individual taxes, those are subsumed into GST, is difficult. The problem of separation of revenue stream becomes difficult when GST subsumes only one or two components (or leave out a few commodities from the GST

system) of a major tax head (Table 1). In other words, if subsummation of taxes into GST is partial for a tax head, it becomes difficult to separate revenue stream into GST and non-GST components, given the disaggregated level of data available either from State Budget Documents or Finance Accounts. Since GST subsumes various tax components from multiple tax heads, GST collection may improve, depending on size and buoyancy of the concerned tax base or tax, whereas tax collections of original tax heads (i.e., tax heads from where tax components are subsumed into GST) may suffer if the entire tax head is not subsumed into GST. Comparison of RUP for pre-GST period with SGST for post-GST period may not necessarily reveal all the revenue effects of GST. To overcome this data related problem, in this section we take up revenue analysis of all tax heads from where tax components are subsumed into GST. To make the series comparable with pre-GST period we also consider State GST (including IGST settlement) for post-GST period. It is to be mentioned that in 2017-18 and 2018-19 IGST settlements were based on tax devolution formula of the 14th Finance Commission. So, we have separately taken into account state's share in IGST (under the major head 0008) in our analysis. Like State Basket of Revenue where taxes are either partially or fully subsumed into GST, we have separately prepared revenue stream corresponding to the Union taxes which are either partially or fully subsumed into GST and from where states' receive their share through tax devolution (Table 2).

Table 3: State Revenue Basket (either partially or fully subsumed into GST)

Major Head	Description	Taxes Subsumed into GST
0040	Taxes on sales, trade etc.	Partial <ul style="list-style-type: none"> • Except petrol, diesel, ATF, natural gas, crude petroleum and alcoholic beverages for human consumption
0042	Tax on goods and passengers	Partial <ul style="list-style-type: none"> • Tax on entry of goods into Local Areas (0042-106)
0045	Other taxes & duties on commodities & services	Partial E.g., <ul style="list-style-type: none"> • Entertainment Tax (0045-101) • Betting Tax (0045-102) • Luxury Tax (0045-105) • Taxes on Advertisement exhibited in Cinema Theatres (0045-111)
0023	Hotel Receipts Tax	Fully
0006	State Goods and Services Tax (SGST)	Fully
0008	Integrated Goods and Services Tax(IGST)	In 2017-18 and 2018-19, IGST Settlement was based on Tax Devolution Formula of the 14 th Finance Commission

Source: Author

Table 4: Union Government Revenue Basket (either partially or fully subsumed into GST)*

Major Head	Description	Taxes Subsumed into GST
0005	Central Goods and Services Tax (CGST)	Central GST (including IGST settlement)
0037	Customs	Partial <ul style="list-style-type: none"> • Additional Customs Duty commonly known as Countervailing Duty (or CVD) • Special Additional Duty of Customs (or SAD) • Cesses and surcharges
0038	Union Excise Duties (UED)	Partial <ul style="list-style-type: none"> • Union Excise Duty (except petrol, diesel, ATF, crude petroleum, natural gas, tobacco) • Additional Excise Duty • Excise Duty levied under the Medicinal and Toilet Preparations (Excise Duties) Act, 1955 • Cesses and surcharges
0044	Services tax	Full
0045	Other taxes & duties on commodities & services	Partial <ul style="list-style-type: none"> • State's Share in the Tax

Note: *-Pertaining to the Union f taxes from where States receive their share through tax devolution.

Source: Author

Table 3 shows that except Maharashtra, average share of State Revenue Basket in GSDP has fallen during 2018-19 to 2020-21 (hereafter Post-GST period) for all other major states as compared to pre-GST period (2014-15 to 2016-17). Except Goa, average state's share in the Union Taxes (in selected indirect taxes, as % of GSDP) has fallen during 2018-19 to 2020-21. Even with GST compensation, five states (viz., Andhra Pradesh, Gujarat, Madhya Pradesh, Tamil Nadu, West Bengal) could not meet the average share of State Revenue Basket in GSDP as it was prevalent during 2014-15 to 2016-17 (Table 4). The end of GST compensation regime from 1 July 2022 may have serious fiscal implication for some states.

Table 3: State-wise Average Share of State Revenue as well as State's Share in the Selected Union Taxes - without GST Compensation (% of GSDP)*

State	State Revenue Basket (1)			State's Share in the Selected Union Taxes (2)			Combined Revenue Basket of State (1+2)		
	Pre-GST (A)	Post-GST (B)	B-A	Pre-GST (C)	Post-GST (D)	D-A	Pre-GST (E)	Post-GST (F)	F-E
Andhra Pradesh	5.15	4.29	-0.86	1.54	1.16	-0.38	6.69	5.45	-1.24
Bihar	4.22	3.92	-0.30	5.62	4.39	-1.23	9.84	8.31	-1.53
Chhattisgarh	4.33	3.66	-0.68	2.68	2.44	-0.24	7.01	6.10	-0.91
Goa	5.43	4.56	-0.87	1.34	1.37	0.03	6.77	5.94	-0.84
Gujarat**	4.42	3.42	-1.00	0.63	0.52	-0.12	5.05	3.94	-1.11
Haryana**	4.39	3.70	-0.69	0.46	0.38	-0.08	4.85	4.08	-0.77
Jharkhand	4.19	3.85	-0.34	3.01	2.62	-0.39	7.20	6.47	-0.73
Karnataka	4.38	3.53	-0.85	0.93	0.71	-0.22	5.31	4.24	-1.07
Kerala	5.43	4.92	-0.52	0.92	0.74	-0.18	6.36	5.66	-0.70
Madhya Pradesh	4.24	3.43	-0.81	2.85	2.17	-0.68	7.09	5.60	-1.49
Maharashtra	3.87	4.34	0.47	0.59	0.55	-0.04	4.46	4.89	0.43
Odisha	4.23	3.90	-0.33	2.90	2.27	-0.63	7.13	6.17	-0.96
Punjab	4.20	3.47	-0.73	0.84	0.80	-0.04	5.04	4.27	-0.76
Rajasthan	4.00	3.93	-0.07	1.74	1.50	-0.24	5.74	5.43	-0.31
Tamil Nadu	5.24	4.64	-0.61	0.77	0.60	-0.17	6.01	5.23	-0.78
Telangana#	4.96	4.78	-0.19	0.89	0.66	-0.23	5.86	5.43	-0.42
Uttar Pradesh	4.21	4.11	-0.10	3.41	2.78	-0.63	7.62	6.89	-0.73
West Bengal	3.46	3.01	-0.45	1.96	1.60	-0.36	5.42	4.61	-0.81

Note:*- Pre-GST implies Average Share during 2014-15 to 2016-17 and Post-GST implies Average Share during 2018-19 to 2020-21.**-Pre-GST figure corresponds to 2015-16 only.#-Pre-GST figure corresponds to average of 2015-16 and 2016-17.

Source: Computed by author based on data obtained from State Finance Accounts/ Budget Documents.

For some states (viz., Bihar, Jharkhand, Karnataka, Telangana, Uttar Pradesh) fall in the share of Union taxes (related to indirect taxes having bearing with the GST) during post-GST period exceeds the gain (or positive difference between post-GST and pre-GST average share of the State Revenue Basket in GSDP) from the GST regime (post GST compensation) (Table 4). This results in fall in the share of Combined Revenue Basket of concerned states during post-GST period. This shows that states not only faced the revenue shortage due to State GST collection (including IGST settlement) but also fall in revenue of selected Union taxes (related to GST) which resulted in lower tax devolution from the Union government. For some states, the spill-over effect of revenue shortage of the Union taxes in terms lower tax devolution is stronger than fall in own GST collection (including GST compensation receipts). Therefore, in a federal system, sub-national governments may face the impact of revenue shortfall differently than the

federal government and also the impact will vary across sub-national governments. The revenue impact on sub-national government will depend not only on their own revenue performance but also on revenue performance of the federal government, as the latter may spill-over to sub-national finances through tax devolution. In other words, revenue implications of any tax reform may be felt differently by different levels of governments and across sub-national governments. Revenue compensation to sub-national governments to mitigate revenue uncertainty associated with any tax reform may not completely take care of revenue uncertainties which are related to revenue shortfall of the federal government.

Table 4: State-wise Average Share of State Revenue as well as State's Share in the Selected Union Taxes - with GST Compensation (% of GSDP)*

State	State Revenue Basket (1)			State's Share in the Selected Union Taxes (2)			Combined Revenue Basket of State (1+2)		
	Pre-GST (A)	Post-GST (B)	B-A	Pre-GST (C)	Post-GST (D)	D-C	Pre-GST (E)	Post-GST (F)	F-E
Andhra Pradesh	5.15	4.55	-0.60	1.54	1.16	-0.38	6.69	5.71	-0.98
Bihar	4.22	4.73	0.50	5.62	4.39	-1.23	9.84	9.11	-0.73
Chhattisgarh	4.33	4.79	0.46	2.68	2.44	-0.24	7.01	7.23	0.22
Goa	5.43	6.22	0.79	1.34	1.37	0.03	6.77	7.59	0.82
Gujarat**	4.42	4.19	-0.23	0.63	0.52	-0.12	5.05	4.71	-0.34
Haryana**	4.39	4.49	0.10	0.46	0.38	-0.08	4.85	4.87	0.02
Jharkhand	4.19	4.50	0.32	3.01	2.62	-0.39	7.20	7.12	-0.07
Karnataka	4.38	4.57	0.19	0.93	0.71	-0.22	5.31	5.28	-0.03
Kerala	5.43	5.78	0.35	0.92	0.74	-0.18	6.36	6.53	0.17
Madhya Pradesh	4.24	4.04	-0.20	2.85	2.17	-0.68	7.09	6.21	-0.88
Maharashtra	3.87	4.99	1.12	0.59	0.55	-0.04	4.46	5.55	1.08
Odisha	4.23	4.87	0.64	2.90	2.27	-0.63	7.13	7.14	0.01
Punjab	4.20	5.13	0.93	0.84	0.80	-0.04	5.04	5.93	0.89
Rajasthan	4.00	4.50	0.50	1.74	1.50	-0.24	5.74	6.00	0.26
Tamil Nadu	5.24	5.16	-0.08	0.77	0.60	-0.17	6.01	5.76	-0.25
Telangana#	4.96	5.04	0.08	0.89	0.66	-0.23	5.86	5.70	-0.15
Uttar Pradesh	4.21	4.52	0.31	3.41	2.78	-0.63	7.62	7.30	-0.33
West Bengal	3.46	3.45	-0.01	1.96	1.60	-0.36	5.42	5.05	-0.37

Note: Pre-GST implies Average Share during 2014-15 to 2016-17 and Post-GST implies Average Share during 2018-19 to 2020-21. GST Compensation includes Compensation from the GST Compensation Fund as well as Back-to-Back Loan from the Union Government. **-Pre-GST figure corresponds to 2015-16 only. #-Pre-GST figure corresponds to average of 2015-16 and 2016-17.

Source: Computed by author based on data obtained from State Finance Accounts/ Budget Documents.

5.2.1 Comparison of Tax Revenue of States: Pre-GST vs. Post-GST

We compare state's Own Tax Revenue (OTR) and state's Tax Revenue (STR=OTR + state's share in the Union taxes) between pre- and post-GST period to see if there is any change in the share of GSDP over the periods (Table 5). Except Maharashtra and Telangana, there is fall in the average share of OTR in GSDP for all other major states during post-GST period. Except Chhattisgarh, Goa, Jharkhand, Maharashtra and Punjab, average state's share in the Union taxes (as % of GSDP) has also fallen during post-GST period for all other major states. As a result, average share of STR (in GSDP) has fallen for states, except Maharashtra and Tamil Nadu during post-GST period. Introduction of GST may not be the only reason behind this fall in the shares of OTR and STR in GSDP, there may be several other factors like slowing down of economic growth and COVID-19 pandemic. However, in this analysis we do not take into account GST compensations receipts of states.

Table 5: State-wise Average share of Own Tax Revenue and State's Tax Revenue (% of GSDP) – Without GST Compensation

State	State's Own Tax Revenue			State's Tax Revenue		
	Pre-GST (A)	Post-GST (B)	B-A	Pre-GST (C)	Post-GST (D)	D-C
Andhra Pradesh	7.06	6.09	-0.97	10.52	9.12	-1.40
Bihar	6.18	5.18	-1.00	18.82	16.61	-2.21
Chhattisgarh	7.30	6.56	-0.74	13.27	12.91	-0.36
Goa	7.38	6.17	-1.21	10.39	9.62	-0.76
Gujarat	6.09	4.82	-1.27	7.51	6.17	-1.34
Haryana	6.21	5.75	-0.46	7.24	6.74	-0.50
Jharkhand	5.31	5.12	-0.18	12.03	11.94	-0.09
Karnataka	7.26	6.17	-1.09	9.35	8.03	-1.32
Kerala	6.82	6.16	-0.65	8.89	8.11	-0.77
Madhya Pradesh	7.28	5.89	-1.40	13.69	11.55	-2.13
Maharashtra	6.37	6.76	0.38	7.69	8.19	0.50
Odisha	6.33	6.10	-0.23	12.84	12.01	-0.83
Punjab	6.85	5.75	-1.09	8.72	7.83	-0.89
Rajasthan	6.13	6.06	-0.07	10.04	9.96	-0.08
Tamil Nadu	6.92	6.01	-0.91	8.65	7.56	-1.09
Telangana	6.69	7.18	0.50	8.69	8.90	0.21
Uttar Pradesh	7.04	7.25	0.21	14.73	14.50	-0.24
West Bengal	5.34	5.06	-0.29	9.74	9.21	-0.53

Note: Pre-GST implies Average Share during 2014-15 to 2016-17 and Post-GST implies Average Share during 2018-19 to 2020-21.

Source: Computed by author based on data obtained from State Finance Accounts/ Budget Documents.

Except Andhra Pradesh, Bihar, Gujarat, Karnataka, Madhya Pradesh and Tamil Nadu, difference in the average share of state's OTR (with GST compensation) in GSDP between post- and pre-GST period becomes positive for other major states. Commensurate with GST compensation receipt of a state, average share of state's STR in GSDP improves during post-GST period. However, as mentioned earlier average state's share in the Union taxes has fallen for many states during post-GST period. As a result, the improvement in average share of STR in GSDP is restricted to only some states during post-GST period. Like state governments, the Union government has also faced revenue shortfall in GST collection and in absence of any mechanism for revenue compensation from the GST compensation fund, the Union government has raised the "Non-Shareable Duties" and "Cesses on Commodities" under Union Excise Duties (Mukherjee 2022). Though this helped the Union government to mitigate the revenue shortfall in GST collection to some extent, this has resulted in lower tax devolution to states.

Table 6: State-wise Average share of Own Tax Revenue and State's Tax Revenue (% of GSDP) – With GST Compensation

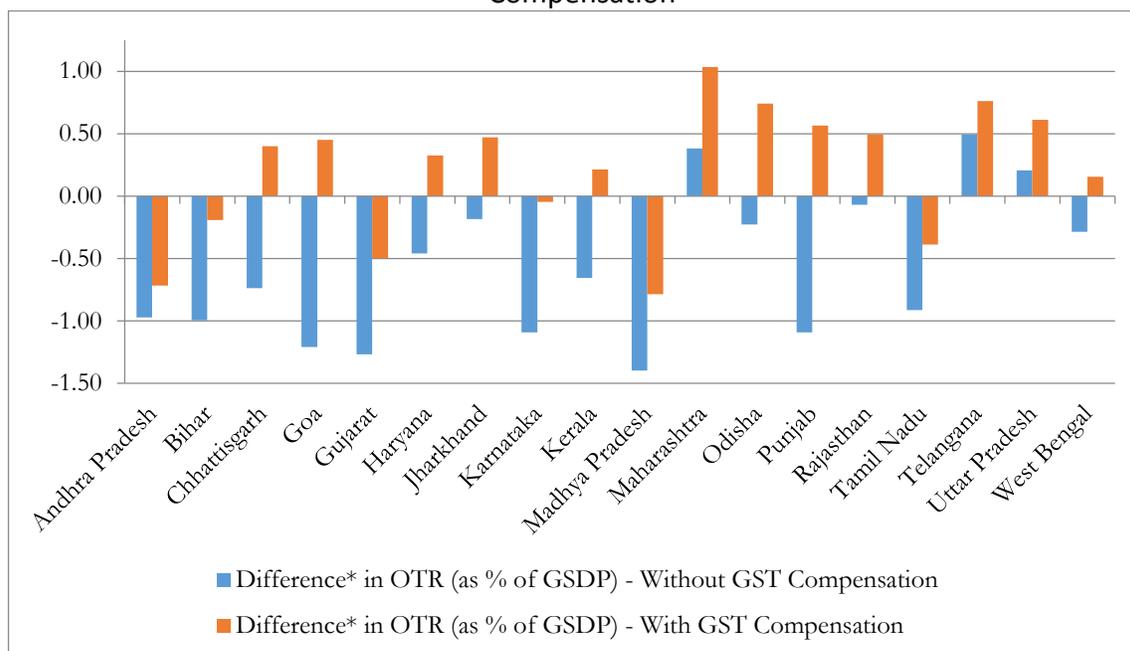
State	State's Own Tax Revenue			State's Tax Revenue		
	Pre-GST (A)	Post-GST (B)	B-A	Pre-GST (C)	Post-GST (D)	D-C
Andhra Pradesh	7.06	6.34	-0.72	10.52	9.37	-1.15
Bihar	6.18	5.99	-0.19	18.82	17.42	-1.40
Chhattisgarh	7.30	7.70	0.40	13.27	14.04	0.77
Goa	7.38	7.83	0.45	10.39	11.28	0.90
Gujarat	6.09	5.59	-0.50	7.51	6.93	-0.57
Haryana	6.21	6.54	0.33	7.24	7.52	0.28
Jharkhand	5.31	5.78	0.47	12.03	12.59	0.56
Karnataka	7.26	7.21	-0.05	9.35	9.08	-0.27
Kerala	6.82	7.03	0.21	8.89	8.98	0.10
Madhya Pradesh	7.28	6.50	-0.78	13.69	12.17	-1.52
Maharashtra	6.37	7.41	1.04	7.69	8.84	1.15
Odisha	6.33	7.07	0.74	12.84	12.98	0.14
Punjab	6.85	7.41	0.57	8.72	9.49	0.76
Rajasthan	6.13	6.62	0.49	10.04	10.53	0.49
Tamil Nadu	6.92	6.54	-0.39	8.65	8.09	-0.56
Telangana	6.69	7.45	0.76	8.69	9.17	0.48
Uttar Pradesh	7.04	7.66	0.61	14.73	14.90	0.17
West Bengal	5.34	5.50	0.15	9.74	9.66	-0.09

Note: Pre-GST implies Average Share during 2014-15 to 2016-17 and Post-GST implies Average Share during 2018-19 to 2020-21. GST Compensation includes Compensation from the GST Compensation Fund as well as Back-to-Back Loan from the Union Government.

Source: Computed by author based on data obtained from State Finance Accounts/ Budget Documents.

GST compensation has helped states to reduce the difference between post- and pre-GST average share of OTR in GSDP. However, even after GST compensation the difference remains negative for Andhra Pradesh, Bihar, Gujarat, Madhya Pradesh and Tamil Nadu. This shows that though GST compensation helped states to moderate the revenue shortfall but it could not wipe out the entire difference between the average shares of OTR in GSDP between pre- and post-GST periods for all states. Some states could not maintain average share of OTR in GSDP during 2018-19 to 2020-21 even after receiving GST compensation.

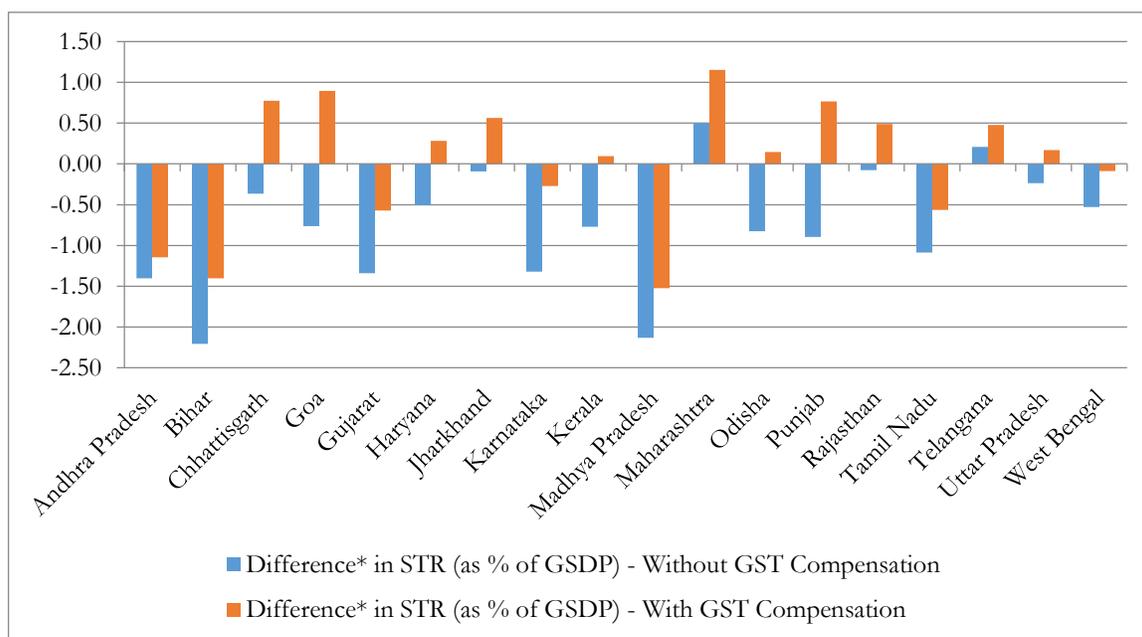
Figure 8: Difference in State's Own Tax Revenue (OTR) with and without GST Compensation



Note: *-Difference: Average Post-GST Own Tax Revenue (OTR, as % of GSDP) – Average Pre-GST Own Tax Revenue (OTR, as % of GSDP).

Source: Computed by author based on data obtained from State Finance Accounts/ Budget Documents.

Like state's OTR, the difference in state's Tax Revenue (STR=OTR+ State's share in the Union taxes) in GSDP between post- and pre-GST periods varies across states. Even with GST compensation the difference cannot be wiped out for some states, as a result those states faced revenue stress during post-GST period.

Figure 9: Difference in State's Tax Revenue (STR) with and without GST Compensation


Notes: *-Difference: Average Post-GST State Tax Revenue (STR, as % of GSDP) – Average Pre-GST State Tax Revenue (STR, as % of GSDP)

Source: Computed by author based on data obtained from State Finance Accounts/ Budget Documents.

5.3 Fiscal Health of States: Pre- versus Post-GST

Except Maharashtra, Uttar Pradesh and West Bengal, rise in average revenue deficit is observed for all major states during post-GST period (2017-18 to 2020-21) as compared to pre-GST period (2013-14 to 2016-17). Since GST compensation receipts are accounted under “Grants-in-Aids from the Centre” in the State Accounts, total revenue receipts accounts for GST compensation receipts also. The rise in revenue deficits during post-GST period may not be solely attributed to revenue shortfall on account of GST collection; there are various other drivers for rising revenue deficits, e.g., COVID-19 pandemic, economic slowdown, rise in public expenditure due to the pandemic. Except 8 states (viz., Bihar, Chhattisgarh, Goa, Karnataka, Kerala, MP, Odisha, Tamil Nadu) average fiscal deficit has fallen during post-GST period as compared to pre-GST period. Since back-to-back loan received by states from the Union government in lieu of shortfall in GST compensation cess collection is accounted under “Loans and Advances from the Central Government” in State Accounts, fiscal deficit figures for 2020-21 are not corrected for back-to-back loans received by states. This shows that despite rising average revenue deficit during post-GST period, many states have contained average fiscal deficit during post-GST period.

Table 7: State-wise Average Revenue and Fiscal Deficits (as % of GSDP)

State	Average Annual Revenue Deficit (% of GSDP)			Average Annual Fiscal Deficit (% of GSDP)		
	2013-14 to 2016-17 (A)	2017-18 to 2020-21 (B)	B-A	2013-14 to 2016-17 (C)	2017-18 to 2020-21 (D)	D-C
Andhra Pradesh	2.07	2.47	Rise	4.52	4.43	Fall
Bihar	-2.42	-0.69	Rise	3.14	3.14	Rise
Chhattisgarh	-0.51	0.83	Rise	2.51	3.69	Rise
Goa	-0.24	-0.02	Rise	2.49	2.71	Rise
Gujarat	-0.46	0.16	Rise	1.98	1.83	Fall
Haryana	2.02	2.11	Rise	4.00	3.48	Fall
Jharkhand	-1.03	-0.56	Rise	3.47	3.15	Fall
Karnataka	-0.09	0.16	Rise	2.11	2.79	Rise
Kerala	2.32	2.40	Rise	3.66	3.82	Rise
Madhya Pradesh	-1.07	0.12	Rise	2.87	3.59	Rise
Maharashtra	0.41	0.40	Fall	1.64	1.63	Fall
Odisha	-2.11	-2.00	Rise	1.95	2.35	Rise
Punjab	2.00	2.60	Rise	5.63	3.27	Fall
Rajasthan	0.99	3.34	Rise	5.25	4.11	Fall
Tamil Nadu	0.70	2.05	Rise	2.94	3.48	Rise
Telangana*	-0.13	0.50	Rise	4.28	3.77	Fall
Uttar Pradesh	-1.53	-1.62	Fall	3.80	1.67	Fall
West Bengal	2.04	1.46	Fall	3.29	3.14	Fall

Note: *-Pre-GST figure is average of 2015-16 and 2016-17.

Source: Computed by author based on data obtained from State Finance Accounts/ Budget Documents.

6. Summary and Conclusions

We observe a falling trend in annual economic growth rate of India since 2006-07. Like World economy, Indian economy has also faced two major shocks during 2006-07 to 2021-22 - Global Financial Crisis (GFC, 2008-09 to 2009-10) and COVID-19 Pandemic (2020-21). The impact of COVID-19 pandemic on Indian economic growth was much stronger than the impact of GFC. We observe that except in West Bengal, all other major states show fall in average annual growth rate of GSDP during post-GST period (2017-18 to 2021-22RE) as compared to pre-GST period (2012-13 to 2016-17). It is expected that fall in growth rate in GSDP may have some impact on GST collection. Slowdown in economic growth in 2019-20 and COVID-19 pandemic in 2020-21 resulted in revenue as well as fiscal stresses for states.

Like economic growth, Indian states also faced fiscal stresses during 2008-10, 2015-17 and 2020-21 onwards. In addition to revenue stress due to GFC, implementations of 6th Pay Commission recommendations by many states increased revenue expenditures and

resulted in rises of revenue as well as fiscal deficits during 2008-10. States also faced a relatively stronger fiscal stress during 2015-16 to 2016-17 due to adoption of *Ujwal DISCOM Assurance Yojana (UDAY)* scheme to provide debt relief to public Power Distribution Companies (DISCOM). States again faced fiscal shock during 2020-21 due to the COVID-19 pandemic. The economic contraction during the pandemic created pressures on Public Finance Management (PFM) in terms of lower revenue mobilization and higher expenditure demands. Both the Union and state governments faced dual problems of arresting economic contraction and managing public finance with limited public resources available for disposal

Analysis of GST collections of 18 major states shows that on average states collected 88.3 per cent of Revenue Under Protection (or aggregate projected revenue of states in GST) in 2018-19. In 2019-20, on average SGST collection (including IGST settlement) could meet only 76 per cent of the RUP and it further falls to 61 per cent in 2020-21. GST compensation helped states to protect revenue and with GST compensation on average states achieved 99.3 per cent of RUP in 2018-19. In 2019-20, with GST compensation states achieved on average 93 per cent of RUP. Due to shortfall in GST compensation cess collection in 2020-21, states could achieve 78.7 per cent of RUP with GST compensation from GST compensation fund. However, in 2020-21 states also received GST compensation in terms of back-to-back loans from the Union government in lieu of shortfall in GST compensation cess collection and this helped states to achieve on average 91.6 per cent of RUP in 2020-21. The analysis shows that state GST collection (as percentage of RUP) is falling over the years during 2018-21 and dependence on GST compensation has grown up.

To assess the revenue impact of GST on Indian state finances, we adopt different measures to assess the revenue streams associated with GST and compare the revenue performance of major states over the periods (pre-GST versus post-GST).

We compare average annual growth rate of RUP for Pre-GST period with State GST (including IGST settlement) for post-GST period. In addition to State GST (including IGST settlement), states receive GST compensation. To make comparable series of revenue for pre- and post-GST periods, we add GST compensation receipts of states with SGST revenue. We construct three alternative revenue streams for post-GST period by adding GST compensation receipts from the GST compensation fund and back-to-back loans that states receive in lieu of shortfall in GST compensation cess collection. Our observations are as follows:

- Except Andhra Pradesh, average annual growth rate in RUP during pre-GST period (2014-15 to 2016-17) is higher than average annual growth rate in SGST (including IGST settlement but excluding GST compensation) during post-GST period (2019-20 to 2020-21) for other major Indian states. It is to be highlighted

that Telangana is created from undivided Andhra Pradesh in June 2014 and therefore pre-GST growth rate of Andhra Pradesh was lower.

- Except Andhra Pradesh, Goa and Tamil Nadu, pre-GST average annual growth rate in RUP is higher than post-GST average annual growth rate in SGST (including IGST settlement and GST compensation from GST compensation fund) for other major states.
- Except, Bihar, Jharkhand, Karnataka, Madhya Pradesh, Maharashtra, Punjab, Rajasthan and Telangana, pre-GST average annual growth rate in RUP is lower than post-GST average annual growth rate in SGST (including IGST settlement and GST compensation from GST compensation fund as well as back-to-back loans from the Union government) for other major states.
- Among major states, Odisha is the only state which has achieved a positive average annual growth rate in GST collection without any GST compensation in the Post-GST period.
- Except a few states (viz., Chhattisgarh, Goa, Kerala, Odisha), post-GST average annual growth rate in GST collection (with GST compensations from all sources) is lower than 14 per cent.
- Many States could not attain 14 per cent average annual growth rate in GST collection during 2019-20 to 2020-21 even with GST Compensation (from all sources).

This implies that though GST compensation helped states to moderate the revenue shortfall in GST collection during 2019-20 to 2020-21, it could not wipe out the entire revenue shortfall in the GST collection for some states. Therefore, GST compensation was necessary for states to sustain the revenue stream which has subsumed into GST.

Protection of revenue from taxes which are subsumed into GST could also be seen in terms of sustaining the revenue stream as percentage of GSDP. Our analysis shows that none of the states could sustain the revenue stream corresponding to taxes subsumed into GST (in terms of percentage share in GSDP) in the post-GST period without GST compensation. Even after GST compensation (from all sources), Andhra Pradesh, Madhya Pradesh and Telangana are not able to sustain the revenue corresponding to taxes subsumed into GST post introduction of GST. This shows that GST compensation helped states to maintain the revenue corresponding to taxes subsumed into GST and there was no windfall benefit to any state from the GST compensation in terms of substantial higher share of GST in GSDP. It is to be highlighted that without GST compensation it would have been difficult for states to sustain the revenue that is subsumed into GST.

Comparison of RUP for pre-GST period with SGST for post-GST period may not necessarily reveal the all revenue effects of GST. To overcome this data related problem, we take up revenue analysis of all tax heads from where tax components are subsumed into GST. To make the series comparable with pre-GST period we also consider State

GST (including IGST settlement) for post-GST period. Like State Basket of Revenue where taxes are either partially or fully subsumed into GST, we have separately prepared revenue stream corresponding to the selected Union taxes which are either partially or fully subsumed into GST and from where states' receive their share through tax devolution.

We notice that except Maharashtra, average share of State Revenue Basket in GSDP has fallen during 2018-19 to 2020-21 for all other major states as compared to pre-GST period (2014-15 to 2016-17). Except Goa, average state's share in the Union Taxes (in indirect taxes, as % of GSDP) has fallen during 2018-19 to 2020-21 for other states. Even with GST compensation, five states (viz., Andhra Pradesh, Gujarat, Madhya Pradesh, Tamil Nadu, West Bengal) could not meet the average share of State Revenue Basket in GSDP as it was prevalent during 2014-15 to 2016-17. The end of GST compensation regime from 1 July 2022 may have serious fiscal implication for some states.

For some states (viz., Bihar, Jharkhand, Karnataka, Telangana, Uttar Pradesh) fall in the share of Union taxes (related to indirect taxes having bearing with the GST) during post-GST period exceeds the gain (or positive difference between post-GST and pre-GST average share of the State Revenue Basket in GSDP) from the GST regime (post GST compensation). This results in fall in the share of Combined Revenue Basket (State's Revenue + Share in the Selected Union taxes) of concerned states during post-GST period. This shows that states not only faced the revenue shortage due to State GST collection (including IGST settlement) but also fall in the selected Union taxes collections (related to GST) which resulted in lower tax devolution from the Union government. For some states, the spill-over effect of revenue shortage of the Union taxes in terms lower tax devolution is stronger than fall in own GST collection (including GST compensation receipts). Therefore, in a federal system, sub-national governments may face the impact of revenue shortfall differently than the federal government and also the impact will vary across sub-national governments. The revenue impact on sub-national government will depend not only on their own revenue performance but also on revenue performance of the federal government, as the latter may spill-over to sub-national finances through tax devolution. In other words, revenue implications of any tax reform may be felt differently by different levels of governments and across sub-national governments. Revenue compensation to sub-national governments to mitigate revenue uncertainty associated with any tax reform may not completely take care of revenue uncertainties which are related to revenue shortfall of the federal government.

We compare state's Own Tax Revenue (OTR) and state's Tax Revenue (STR=OTR + state's share in the Union taxes) between pre- and post-GST period to see if there is any change in the share of GSDP over the periods. Except Maharashtra and Telangana, there is fall in the average share of OTR in GSDP for all other major states during post-GST period. Except Chhattisgarh, Goa, Jharkhand, Maharashtra and Punjab, average state's share in the Union taxes (as % of GSDP) also fall during post-GST period for all

other major states. As a result, average share of STR (in GSDP) falls for states, except Maharashtra and Telangana during post-GST period. Introduction of GST may not be the only reason behind this fall in the shares of OTR and STR in GSDP, there may be several other factors like slowing down of economic growth and COVID-19 pandemic. However, in this analysis we do not take into account GST compensations receipts of states.

Except Andhra Pradesh, Bihar, Gujarat, Karnataka, Madhya Pradesh and Tamil Nadu, difference in the average share of state's OTR (with GST compensation) in GSDP between post- and pre-GST period becomes positive for other major states. Commensurate with GST compensation receipt of a state, average share of state's STR in GSDP improves. However, as mentioned earlier average state's share in the Union taxes has fallen for many states during post-GST period. As a result, the improvement in average share of STR in GSDP is restricted to some states during post-GST period. Like state governments, the Union government also faced revenue shortfall in GST collection and in absence of any mechanism for revenue compensation from the GST compensation fund, the Union government raised the "Non-Shareable Duties" and "Cesses on Commodities" under Union Excise Duties (Mukherjee 2022). Though this helped the Union government to mitigate the revenue shortfall in GST collection to some extent, it has resulted in lower tax devolution to states.

Except Maharashtra, Uttar Pradesh and West Bengal, rise in average revenue deficit is observed for all major states during post-GST period (2017-18 to 2020-21) as compared to pre-GST period (2013-14 to 2016-17). Since GST compensation receipts are accounted under "Grants-in-Aids from the Centre" in the State Accounts, total revenue receipts accounts for GST compensation receipts also. The rise in revenue deficits during post-GST period may not be solely attributed to revenue shortfall on account of GST collection only; there are various other drivers for rising revenue deficits, e.g., COVID-19 pandemic, economic slowdown, rise in public expenditure due to the pandemic.

Except 8 states (viz., Bihar, Chhattisgarh, Goa, Karnataka, Kerala, MP, Odisha, Tamil Nadu) average fiscal deficit has fallen during post-GST period as compared to pre-GST period. Since back-to-back loans received by states from the Union government in lieu of shortfall in GST compensation cess collection is accounted under "Loans and Advances from the Central Government" in State Accounts, fiscal deficit figures for 2020-21 are not corrected for back-to-back loans received by states. This shows that despite rising average revenue deficit during post-GST period, many states have contained average fiscal deficit during post-GST period.

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Appendix

Table A1: State-wise Revenue Performance in GST (Rs. Crore)

State	2018-19					2019-20					2020-21						
	Revenue Under Protection	SGST (including IGST Settlement)	SGST (including IGST Settlement & GST Compensation)	Revenue Under Protection	SGST (including IGST Settlement)	SGST (including IGST Settlement & GST Compensation)	Revenue Under Protection	SGST (including IGST Settlement)	SGST (including IGST Settlement & GST Compensation)	Revenue Under Protection	SGST (including IGST Settlement)	SGST (including IGST Settlement & GST Compensation)	SGST (including IGST Settlement & GST Compensation from all sources*)				
Andhra Pradesh	20,554	21,257	(103)	21,257	(103)	23,431	20,227	(86)	22,068	(94)	26,712	18,871	(71)	22,399	(84)	24,710	(93)
Bihar	18,698	16,738	(90)	19,309	(103)	21,316	15,801	(74)	19,325	(91)	24,300	16,050	(66)	20,410	(84)	24,315	(100)
Chhattisgarh	11,956	8,665	(72)	10,926	(91)	13,630	7,895	(58)	10,976	(81)	15,538	7,925	(51)	11,137	(72)	14,246	(92)
Goa	3,232	2,529	(78)	3,005	(93)	3,684	2,438	(66)	3,257	(88)	4,200	1,985	(47)	3,668	(87)	4,508	(107)
Gujarat	42,752	35,351	(83)	41,500	(97)	48,737	34,107	(70)	44,753	(92)	55,561	29,459	(53)	40,793	(73)	50,015	(90)
Haryana	22,565	18,775	(83)	21,595	(96)	25,724	18,873	(73)	24,326	(95)	29,325	18,236	(62)	23,302	(79)	27,654	(94)
Jharkhand	9,497	8,201	(86)	9,230	(97)	10,827	8,418	(78)	9,950	(92)	12,343	7,931	(64)	9,889	(80)	11,578	(94)
Karnataka	53,549	42,663	(80)	53,417	(100)	61,046	42,147	(69)	56,644	(93)	69,592	37,711	(54)	51,500	(74)	63,907	(92)
Kerala	24,922	21,390	(86)	24,274	(97)	28,411	20,447	(72)	26,022	(92)	32,388	20,028	(62)	26,750	(83)	32,516	(100)
Madhya Pradesh	22,711	19,751	(87)	22,617	(100)	25,890	20,448	(79)	24,979	(96)	29,515	17,257	(58)	22,551	(76)	27,093	(92)
Maharashtra	89,640	83,181	(93)	91,511	(102)	102,190	82,602	(81)	97,620	(96)	116,496	69,949	(60)	87,372	(75)	99,349	(85)
Odisha	16,370	12,639	(77)	16,029	(98)	18,662	13,204	(71)	17,132	(92)	21,275	13,043	(61)	17,405	(82)	21,227	(100)
Punjab	21,441	13,510	(63)	20,639	(96)	24,442	12,751	(52)	21,556	(88)	27,864	11,819	(42)	21,513	(77)	22,411	(80)
Rajasthan	25,421	23,763	(93)	25,939	(102)	28,980	21,954	(76)	26,394	(91)	33,037	20,755	(63)	26,388	(80)	30,992	(94)
Tamil nadu	44,130	39,137	(89)	42,288	(96)	50,308	38,376	(76)	47,298	(94)	57,351	37,942	(66)	48,545	(85)	54,786	(96)
Telangana	23,866	24,206	(101)	24,206	(101)	27,207	23,517	(86)	25,780	(95)	31,016	22,190	(72)	25,293	(82)	27,673	(89)
Uttar Pradesh	49,466	48,802	(99)	49,110	(99)	56,391	47,232	(84)	52,412	(93)	64,285	42,860	(67)	52,184	(81)	58,191	(91)
West Bengal	29,776	28,166	(95)	30,143	(101)	33,944	27,308	(80)	31,666	(93)	38,696	26,013	(67)	31,790	(82)	36,221	(94)
Major States	530,545	468,722	(88)	526,993	(99)	604,821	457,743	(76)	562,158	(93)	689,496	420,025	(61)	542,887	(79)	631,390	(92)

Note: *-includes GST compensations from GST Compensation Fund as well as Back-to-Back Loans from the Union government in lieu of shortfall in GST Compensation Cess collection. Figures in the parenthesis show the percentage share in Revenue Under Protection.

Source: Computed by author based on data obtained from State Finance Accounts / Budget Documents.

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