GST Revenue Performance

Gainers and Losers after Seven Years

VARUN AGARWAL, DEVASHISH DESHPANDE, JOSH FELMAN, THEERDHA SARA REJI, ARVIND SUBRAMANIAN

This article examines in detail seven years of goods and services tax revenue performance. Our main findings are as follows. First, overall revenues have only now converged to pre-GST levels. Second, the union forewent up to 1% of gross domestic product in GST revenues for each of the seven years. Third, the GST has worked broadly as expected to benefit the poorer states. Fourth, going forward, folding the cess into the regular rate structure can ensure that revenue guarantees for the states may not be necessary. Finally, the revenue guarantee experience holds important lessons.

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Varun Agarwal (*varun@cegis.org*) is programme associate, strategic public finance, Centre for Effective Governance of Indian States. Devashish Deshpande (*devashish@cegis.org*) is lead, strategic public finance, CEGIS. Josh Felman (*joshfelman@gmail.com*) is principal, JH Consulting, Washington, DC. Theerdha Sara Reji (*theerdha@cegis.org*) is senior programme associate, strategic public finance, CEGIS. Arvind Subramanian (*arvindsubramanian2011@gmail.com*) is senior fellow at the Peterson Institute for International Economics, Washington.

It has now been seven years since the goods and services tax (GST) was introduced.[1] The transitional compensation mechanism has expired; the loans taken during the pandemic will soon be repaid and compensation cess needs to be reviewed, probably within the next year. So now is a good time to review the GST's performance and assess its future.

There are many ways, of course, to evaluate the GST's performance. For example, one could attempt to assess the impetus it has given towards creating a common market in India, or the contribution it has made to strengthening federalism. But these are difficult tasks, as concepts like "common market" are elusive and can be defined in different ways. And even if every one of these definitions shows that things have improved since 2017, it would still be impossible to establish how much of these improvements can be attributed to GST.[2]

But for the sake of argument, let us assume that somehow these improvements can be measured. Even then, a comprehensive assessment would need to take two more factors into account. It would somehow need to quantify the cost of states losing a measure of fiscal autonomy as state taxes were being replaced by national ones, and it would need to offset these costs against the benefits of having access to a larger and arguably more dynamic pool of revenues, namely tax on services.[3] All in all, this seems an impossible task.

So, we have adopted a much more straightforward and narrow approach. We assess performance solely in terms of the revenues that GST has brought to both the union and the states. After all, revenue collection was also a key objective of the tax, since these governments need resources if they are to perform their vital role in developing the country. As it happens, assessing performance on this score turns out to be complicated enough.

Our assessment reveals several key findings. First, the predictions of an enormous revenue bounty from the GST have not been realised. In fact, GST revenue (as a percent of gross domestic product [GDP]) has still not surpassed that from the equivalent set of taxes in the pre-GST era, largely because rates were cut in the run-up to the 2019 elections and as an emergency measure during the pandemic, actions that have still not been reversed.

Second, notwithstanding the disappointing overall collections, states have experienced a fiscal bonanza. This has occurred because the GST plan included a generous compensation mechanism, which guaranteed a certain amount of revenue to states, regardless of actual GST collections. As a result, states' revenue increased by as much as half a percentage point of GDP on average (depending on the benchmark), every year from 2017–18 (FY18) to 2023–24 (FY24).[4]

Third, the flip side of the states' bonanza was an average loss in the union governments revenue of up to 1% of the GDP on average (again depending on the benchmark). This sacrifice by the union, essentially ignored in recent discussions of union–state relations, is testament to the remarkable spirit of cooperative federalism that characterised the GST's design.

Fourth, the revenue impact has varied widely across states. The biggest gainers were generally those states with weak growth, as they accrued large windfalls from the compensation mechanism, while slow growth depressed their gross state domestic product (GSDP), resulting in large increases in their tax ratios.[5]

Fifth, because the compensation mechanism has ended, states experienced a sharp drop in GST revenues, starting in FY23. In most states, however, a "fiscal cliff" was avoided because at the same time the pandemic ended and activity rebounded, triggering a surge in revenues from other taxes.

Looking ahead, the GST Council faces a critical question: What should be done with the compensation cess? One possibility would be to allow the cess to expire. But such a strategy would have two major drawbacks. For one, it would reduce tax rates on key goods and deprive the government of considerable revenue; indeed, GST collections could once again fall below pre-GST levels because collections from the cess amount over 0.5% of GDP.[6] Moreover, it would spur the consumption of goods that the GST Council had agreed were "de-merit," whose consumption should be discouraged.

Alternatively, if the cess were folded into the GST at prevailing rates (but with simplification as suggested in the revenue neutral rate [RNR] report of 2015), several advantages would accrue. No state would experience a decline in revenues from current levels. And the biggest benefits would accrue to the states that need it most: the poorer ones. That is because GST is based on consumption, earning more revenues for the more populous, often poorer, states—in marked contrast to the previous regime, where indirect taxes were largely based on production, thereby accruing mainly to the richer states.

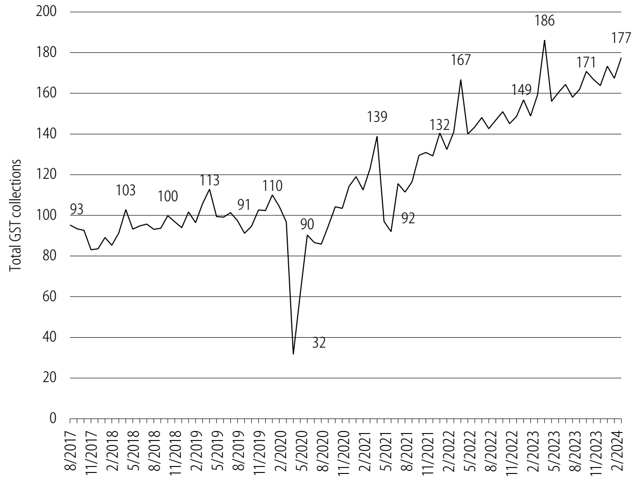
What is the evidence to back these assertions? We can start by examining the GST's revenue performance in more detail.

Overall Revenue Performance

Every month, the news media report on GST collections. Initially, the monthly collections averaged around ₹1 lakh crore. Then, they grew to ₹1.5 lakh crore; and more recently, they have been running around ₹1.8 lakh crore, crossing ₹2 lakh crore for the first time in April 2024. Such reports have given the impression that the GST has produced an enormous and growing revenue bounty for the government. But before jumping to this conclusion, the numbers need to be put into proper perspective. Two factors in particular need to be taken into account when considering whether revenue performance has been "strong."

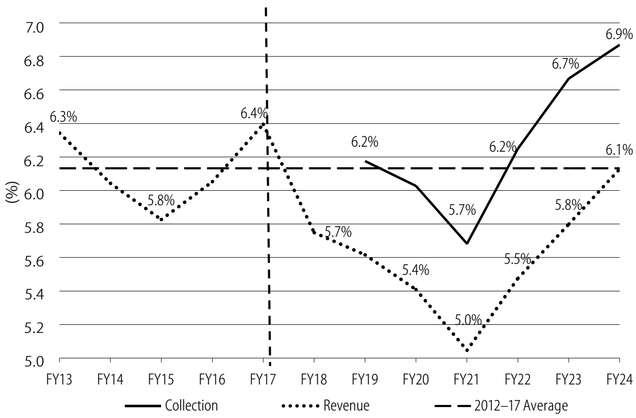
The first factor is that the nominal numbers need to be scaled by consumption. After all, the GST is a tax on final consumption. Since consumption aggregates are very imperfectly

Figure 1: Monthly GST Collections, August 2017–March 2024 (₹1,000 crore)



Source: GST Portal; numbers in the chart are for key peaks.

Figure 2: GST—Gross Collections versus Net Revenues, FY13–FY24 (% of GDP)



Source: NIPFP, RBI, budgets of union and states and PIB for FY24 estimates. Lines show total revenues, including from the compensation cess, accruing to both union and states. Net revenues are gross collections less refunds. Pre-GST revenues refer to the 2012–13 to 2016–17 average of taxes subsumed under the GST, and are overstated somewhat since some refunds which accumulated during the pre-GST period were only cleared in the GST era.

measured, we use GDP as a proxy for consumption. As a result, when GDP increases, GST revenues will automatically increase. So, for revenue performance to be considered strong, collections need to rise relative to GDP.

The second consideration is that the GST–GDP ratio needs to be compared with some alternative. The most obvious alternative is the pre-GST system, that is, the revenues collected from all the various taxes that were abolished when the GST was instituted.[7] So, one can say that revenue has improved if the GST–GDP ratio exceeds the pre-GST system ratio.

But has it? Consider Figure 2. The black line tells an encouraging story. It shows that the gross collections to GDP ratio matched the pre-GST system level (the em dash line) right from the start, understandably dipped during the pandemic, then soared to levels that are significantly higher than under the previous regime. On this metric, the GST would seem to be an unqualified success (see the analysis, for example, by Mukherjee [2023a, 2023b]). But there is another line in Figure 2, a dotted line. And it tells a very different story. It shows that the revenue to GDP ratio fell steadily through FY21 and then slowly began to increase, but still as of FY24 was only barely back to pre-GST levels.

What do these numbers represent? They show net revenues actually accruing to the union and states, that is, the gross collections less refunds to taxpayers. These figures have largely been ignored because until recently, the Goods and Services Tax Network (GSTN) and the government did not publish the refunds data. Starting in February 2024, however, the union government began providing these figures, enabling researchers to ascertain the amounts that actually accrued to the budget since the GST came into force.

The net revenue figures turn out to be quite different from the gross collections data because refunds are non-trivial in magnitude, persistently hovering around 0.6%–0.7% of GDP and declining to 0.4% in FY24. Consider the details for FY24, the last full year for which data are available. In that year, refunds amounted to no less than ₹2.1 lakh crore. As a result, government GST revenues (both union and state, including the cess) amounted to ₹18 lakh crore or 6.1% of GDP, about 0.7% of GDP less than the headline number suggests.

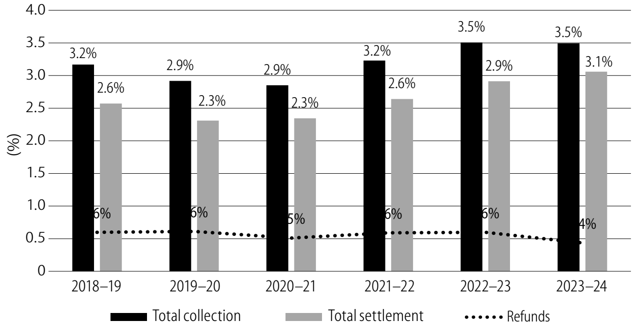
Since refunds are making a qualitative difference in GST performance, we need to understand what they are and why they are so large. To begin with, we need to understand why there are any GST refunds at all. After all, the GST mechanism is very different from the income tax system. With income taxes, corporations and some individuals make advance tax payments based on their expected income. Since actual income is always somewhat different from what was expected, these taxes require *ex post* reconciliation and hence refunds in cases where income was overestimated. But in the GST, taxes are paid on actual revenues, net of the taxes actually paid on inputs. So, in most cases, there is no need for refunds at all.

There is one major exception: exporters. In the GST, exports are zero-rated, which means that exporters do not pay taxes on their output and are entitled to refunds on the taxes paid on their inputs. This segment constitutes the major chunk of refunds under the GST.[8] (Recall that zero-rated items are different from exempt items, which are not taxed but are also not entitled to input tax credits.)

Table 1 provides a breakdown of refunds in nominal terms and Figure 3 shows IGST collections, revenues and refunds as a percent of GDP. Almost the entire bulk of refunds is due to IGST, that is GST payments on goods shipped across state lines or imported from abroad.[9] The line in Figure 3 shows that the difference between IGST collections and settlements (the amounts distributed as revenue to the union and the states) is similar to the gap between overall collections and revenues shown in Figure 2.

Putting the pieces together, it seems that the gap between collections and revenues primarily reflects refunds paid to exporters to reimburse them for the IGST they paid. We can hypothesise further that this IGST relates mainly to imports used in production, rather than goods imported from other states. (Other data suggests that many exports, such as iPhones, rely heavily on imported parts.) In other words, the refunds are given mainly to compensate exporters for the IGST paid on their imported inputs.

Figure 3: IGST—Collections, Settlement and Refunds (% of GDP)



IGST settlement to the states includes ad hoc settlements which were discontinued in October 2022.
Source: GST Portal.

But the big and sobering lesson from Figure 2 is that actual revenue from the GST has only now, after seven years of its implementation, converged to pre-GST levels.[11] A big part of the reason is the rate cutting that has happened, especially between 2017 and 2019. Just to take a few examples, rates were reduced on electric appliances, fans, furniture, mobile phones, cosmetics, detergent, and even honey. For FY21 relative to FY18, Mukherjee of the National Institute of Public Finance and Policy (NIPFP) estimates that the effective tax rate went down from 13.2% to 10.8%, resulting in a revenue loss of ₹1.25 lakh crore. The Reserve Bank of India estimated that the effective GST rate declined from over 14.4% to about 11.6% and again back to 12.2% in FY23 (*EPW* 2024; RBI 2019).

Of course, there is a more positive way to describe revenue performance. One could say that the GST has managed to sustain government revenue, even as rates have been reduced, benefiting consumers. Improvements in collection efficiency and favourable composition effects—towards imports and towards high-taxed goods—probably helped.[12] The K-shaped recovery after the pandemic which led to output and consumption towards taxed and more highly taxed goods could explain why revenues increased despite slowing consumption growth.

Table 2 shows how the different components of GST revenues (not collections) have behaved. An important point to note is that even the recovery of revenues post-pandemic has been driven by revenues from IGST, which in turn is probably due to

Table 1: IGST Collections, Settlement and Refunds (₹ trillion)

	2018–19	2019–20	2020–21	2021–22	2022–23	2023–24[10]
IGST collections	6.0	5.9	5.7	7.6	9.5	10.3
IGST settlement	4.9	4.6	4.6	6.2	7.8	9.0
IGST refunds	1.1	1.2	1.0	1.4	1.6	1.3
CGST refunds*	0.0	0.0	0.0	0.0	0.3	0.4
SGST refunds*	0.0	0.0	0.3	0.4	0.4	0.5

* CGST and SGST refunds are calculated as a difference between the CGST/SGST collections in the GST Portal vs the CGST/SGST revenues reported in the union/state budgets.
Source: GST Portal and author's own calculation.

Table 2: Net Revenues from Components of GST, FY19–FY24 (as % of GDP)

Year	CGST	SGST	IGST (Imports + Domestic) (%)	Cess	Total GST	Non-oil Imports/ GDP (%)
2018–19	1.1	1.5	2.6	0.5	5.6	18.5
2019–20	1.1	1.5	2.3	0.4	5.4	16.6
2020–21	1.1	1.2	2.3	0.4	5.0	16.0
2021–22	1.1	1.3	2.6	0.4	5.5	18.9
2022–23	1.1	1.4	2.9	0.4	5.8	20.3
2023–24	1.1	1.4	3.1	0.5	6.1	19.0

Source: Authors' own calculations.

the fact that imports have been buoyant and also that there has been a shift towards some high-taxed goods such as automobiles. So, composition effects (a higher share of imports and higher collections because goods such as special utility vehicles [SUVs] have become more important) may have driven some of the recent buoyancy in GST revenues.

The import share of GDP has rebounded by about 3–4 percentage points from the pandemic trough and if the tax incidence on imports is greater than on consumption from domestic production (for example, because imports have a large share of luxury goods such as automobiles), the shift in the composition of the tax base can increase revenues as a share of GDP.

The case of automobiles is striking because there has been a clear shift within automobiles from regular cars towards SUVs. Based on data compiled from the Society of Indian Automobile Manufacturers (SIAM), we estimate that the share of SUVs in the total automobile sales rose from 66% to 75% between FY22 (post-pandemic) and FY24. Since SUVs attract an effective GST rate of about 50% and other vehicles about 35%, we estimate that the compositional shift itself could account for about one-third (0.2–0.3 percentage points of GDP) of the total GST/GDP increase between those years.

Time Pattern of GST Revenues

Now that we have an overall picture of GST performance, we need to disaggregate the numbers to see how the union, the states as a whole, and the individual states fared under the GST. This is a more complicated question than meets the eye. To understand why, consider that there have been several changes in the overall GST regime since 2017 (Table 3).

The GST regime in the different periods are as follows:

Pre-GST Regime

When the GST was instituted, a whole set of indirect taxes was subsumed into the GST. Collections of these taxes as a share of state GDP are denoted by *X*, which of course varies from state to state. The union's share of subsumed taxes is *Y* and this was greater than *X* because the union alone was collecting services tax which after the GST became part of the common GST pool.

Transition regime I—GST with compensation: Under the new regime, the union and the states were meant to receive the same amount of revenues from the basic GST, because within state collections were divided equally into central GST (CGST) and state GST (SGST), while IGST collections from interstate transactions and imports were equally shared. At the same time, states were promised that during the initial five years of the GST, their revenues would grow at 14% annually, compounded from an agreed pre-GST 2015–16 base.[13] To fund this guarantee, a cess was introduced on "de-merit goods" (unhealthy goods such as tobacco and aerated drinks) and luxury goods such as automobiles.[14]

The revenues from this cess were to accrue into a compensation fund, which in turn would be used to pay out the revenue guarantees. Any excess amounts from the cess fund, beyond those needed to implement the guarantee, were meant to go to the union, but in the event, the union received virtually nothing from the compensation cess because economic growth and revenues fell well short of projections.

When the pandemic hit in 2020, economic activity and revenues collapsed, leaving the fund far short of the resources needed to fill the now-far-more-sizeable revenue shortfalls in the states. This situation—where the guarantee requirements proved much larger than anyone anticipated—had a profound effect on the distribution of GST resources.

In terms of Table 5, from FY18 to FY22, total receipts of states are denoted as *R+C*, where *R* refers to their collections from the SGST and their share from the IGST, while *C* refers to their compensation.

Transition regime II—GST without compensation: The 14% guarantee ended in July 2022, though actual compensation continued into the next fiscal year, owing to lags in the certification of state accounts. But this did not signal the end of the cess or the compensation fund, because circumstances conspired to extend the transition period. When the pandemic struck in 2020–21 and economic activity and revenues collapsed, it was decided in the GST Council (after considerable pressure from the states) that the 14% guarantee had to be met even in those circumstances. After considering two options, it was decided that the union, on behalf of the states, would borrow about ₹2.7 lakh crore[15] to make up for the shortfall. It was further decided that after the guarantee expired in July 2022, revenues from the cess would be used to repay the loan as well as pay interest on the remaining borrowings outstanding.

In other words, the transition arrangements, which were intended to last for five years, will end up lasting eight years, from FY18 through FY25. As states went into the

Table 3: GST Revenues Accruing to Union and States Over Time (Share of GDP/ GSDP)

	Pre-GST Regime (FY13-FY17)	GST Transition Regime with Compensation, including Borrowing and Repayment of Pandemic Loans (FY18-FY25): Compensation and Borrowing (2017–22)	GST Transition Regime with Compensation, including Borrowing and Repayment of Pandemic Loans (FY18-FY25): No Compensation Because of Loan Repayment (2022–25)	GST Regime in the Steady State (Compensation Absorbed into Rate Structure) (Beyond FY25)
State's actual revenue	X	R+C	R	R+C*
State's hypothetical revenue (GST without compensation, but with compensation cess absorbed into rate structure)	X	R+C*	R+C*	R+C*
Union's actual revenue	Y	R	R	R+C*
Union's hypothetical revenue (GST without compensation, but with compensation cess absorbed into rate structure)	Y	R+C*	R+C*	R+C*

X and Y= pre-GST taxes of states and union, respectively, absorbed into GST; R = SGST +IGST for states and CGST+IGST for union which should be close to each other; C = actual compensation; C* = revenues if cess had been part of normal rate structure.
Source: Authors' own calculations.

second part of the transition period, from FY23 to FY25, some have faced a "fiscal cliff" where revenues fall sharply, because they went from a regime with compensation to one without compensation (from $R+C$ to just R).

Steady-state Regime

GST without compensation but with cesses absorbed into the regular rate structure: Once the pandemic loans are repaid, the GST Council will need to decide what to do with the compensation cess. One option would be to abolish the cess. But this is unlikely—and undesirable—because it is levied on demerit goods, which the government wants to discourage, and fetches no less than 7%–8% of overall GST revenues. Instead, the cess is likely to and should become part of the regular rate structure and the union and the states should receive equal amounts of revenues.

In this case—and assuming no other changes are made—total collections will not change, but the distribution of revenues will be profoundly affected, for two reasons. First, the (former) cess collections would no longer go exclusively to the states but would instead be shared 50:50 between the states and the union. Second, the states which collect the cess will now retain their portion instead of transferring it to cover the shortfall of other states. We use the variable C^* to denote revenues from the (former) cess accruing to each state in this period. These revenues would naturally vary from state to state, posing a question of how individual state revenues would be affected by such a change in regime.

Because the GST has gone—and will go—through several different regimes, we have three different benchmarks for our evaluations. We can compare actual revenues accruing during the transition of "the GST with compensation" regime to (i) the pre-GST regime; (ii) the GST regime without compensation; and (iii) the no-GST regime where taxes would have evolved in line with pre-GST levels of buoyancy.

With these preliminaries, we are now in a position to evaluate performance under the GST. We first do so at the level of the union and the states as a whole. In subsequent sections, we focus on individual states.

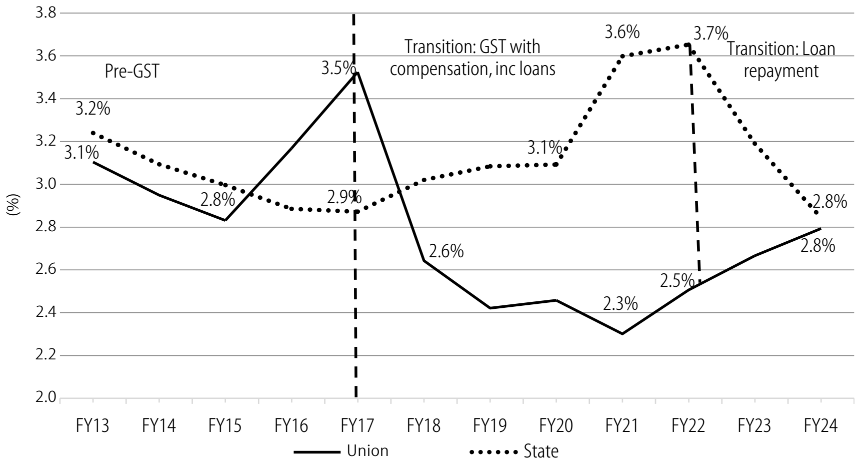
Gainers and Losers during Transition

The first set of questions that we want to answer relates to the transition period so far. Who has gained and who has lost? The union or the states or both? And to what extent?

To answer these questions, we need to look at actual revenues over time. Figure 4 is the disaggregated counterpart of Figure 2, showing the evolution in revenues during the pre-GST regime and the transition as defined as already discussed.[16]

Focus first on the states. It is clear that the states' GST/GDP ratio increased substantially, from the time GST was introduced

Figure 4: Evolution in GST Revenues, FY13–FY24 (as % of GDP)



Source: GST Portal, RBI and budgets. RE for FY24 have been adjusted to reflect the historical ratio of revenues (excluding the cess) accruing to the union and states.

until FY22, in large part because they received the 14% guarantee during this period. Thereafter, compensation stopped and the revenues from the compensation cess were used to repay the loans. As a result, states' GST/GDP ratio declined in FY23 and FY24—and possibly FY25, unless overall GST performance improves further.

The flip side of these trends can be seen in the union's revenues, which declined until FY22, then registered a steady increase. The latter was due to a significant improvement in net revenue performance (R in our notation). The states also benefited from this improvement, but their overall GST revenues were undermined by the loss of compensation revenues.

Going forward, once the loans are repaid and the GST reaches a steady state, both the union and the states will see an increase in their revenues, since funds from the compensation cess will once again become available for government budgets.

We are now in a position to assess revenue performance during the transition period. For this, we need a benchmark. Three possibilities suggest themselves.

Benchmark 1—Pre-GST regime: The simplest comparison is the before–after one: How much did the union and states gain (or lose) during the GST transition period compared to the pre-GST regime? More specifically, we compare the yearly average over FY17 to FY24 with the yearly average during FY13 to FY17.[17] In symbols, we compare the average of $R+C$ in the first five years of the transition and R in the last two years of the GST regime.

Benchmark 2—GST regime without compensation: One alternative to the actual GST arrangements would have been the GST regime without compensation. In that case, the collections from the cess could have been distributed just like any other GST revenue. We describe this as $R+C^*$, where C^* represents what each state would have received if the cess had been divided in the same proportions as standard GST collections. In symbols, we take the difference between what the union and the states actually received ($R+C$) and what they would have received (*R*+*C**). This difference, which is *C*-*C**, is the hypothetical gain from the compensation arrangements, relative to not having had them.

Benchmark 3—No GST: The alternative to the GST was, of course, continuing with the pre-GST arrangements. This scenario requires a bit of calculation, since one cannot simply assume that the union and the states would have continued to collect the same tax ratios as they had in 2017. That is because the relevant state taxes had been on a declining trend in the years leading up to the reform.

Table 4 shows some key revenue aggregates that allow us to take this factor into account. Pre-GST, the average revenue collection from the relevant indirect taxes (excluding alcohol, petroleum and electricity) was around 6% of GDP, split almost equally between the union and the states. But while the levels may have been similar, the growth rates were very different. For the union, pre-GST revenues grew on average by 15.4% during 2012–17, a robust performance fuelled by a pronounced growth in service taxes. For the states, however, pre-GST revenues grew at a more modest 8.2%. Over this period, GDP averaged 11.5%, yielding a buoyancy of above 1 for the union and about 0.71 for the states.

Table 4: Selected Revenue Indicators for Union and States, Pre- and during GST

(Annual averages)

Revenues	Union (% of GDP)	States (% of GDP)	Union (Annual Average Growth)	States (Annual Average Growth)	Union's Share (%)
Pre-GST (2012–17)	3.1	3.0	15.4	8.2	50.8
GST (actual, including loans; 2017–24)	2.5	3.2	7.2	9.9	43.8
GST (notional; 2017–24)	2.8	2.9	8.3	11.5	49.2
Cess, including loans (2017–24)	~0	0.8	–	17.4	~0

Source: Authors' own calculations.

We consequently use these tax buoyancies to estimate a path for revenues that would have accrued had the old system remained in place.[18] Then, we compare this path with actual $R + C$ revenues to calculate the gains or losses from shifting to GST.

With these benchmarks in place, we are now in a position to calculate the gains and loss, for the union and the aggregate of the states (Table 5).

Table 5: Gains and Losses during Transition, Union and States

(% of GDP; average for FY18–FY24)

Benchmark	Union (%)	States (%)
Scenario 1: Relative to pre-GST (R+C-X (or Y))	-0.6	0.2
Scenario 2: Relative to GST without compensation (C-C*)	-0.2	0.4
Scenario 3: Relative to pre-GST buoyancy /	~ -1.0	0.6

Because of the surge in the union's revenues in FY 2015 and FY 2016, the buoyancy increases to about 1.4 for the pre-GST regime. We assumed that this would have been in the more realistic range of 1-1.1.
Source: Authors' own calculations.

Benchmark 1—Relative to pre-GST: Between 2017–18 and 2023–24 (when all compensation ceased), the country as a whole suffered a revenue loss of about 0.4% of GDP, from 6.1% in the pre-GST regime to an average of 5.75% during the transition (as shown in Figure 1). This loss was due to several factors, including initial difficulties in implementing the GST and disruptions caused by the pandemic. But surely a large part of the loss was caused by a spate of reductions in GST rates, which reduced the average rates by about 2–2.5 percentage points (RBI 2019).

Who bore the brunt of the 0.4 percentage point average loss? The union. Its relevant tax to GDP ratio declined by 0.6 percentage points on average to 2.5%. The states on the other hand gained about 0.2 percentage points of GDP every year of the transition because of the compensation guarantee. Note that this calculation includes the years after FY22, when the compensation ceased. If the transition had been defined to include only the years when the 14% guarantee was in force, the state revenue bounty would have been about 0.3% of the GDP.

There are two other ways of looking at the burden-sharing between the union and the states, Pre-GST, the union's share of GST revenues was nearly 51%; in the transition it was reduced to 44% (on average). Pre-GST, the union experienced much greater revenue growth than the states (15.4% versus 8.2%) but it experienced slower revenue growth during the transition (7.2% versus 9.9%).

Benchmark 2—GST without compensation: Had there been no compensation guarantee, the union and the states would have roughly shared the losses that the entire system suffered, collecting roughly 0.5 percentage points of GDP less than before. But the guarantee skewed the burden of the aggregate loss, so that states' revenue–GDP ratio did not fall but actually increased. If we compare actual revenues to those that would have accrued without the 14% guarantee, the union lost about 0.2 percentage points while the states gained 0.4 percentage points of GDP (all these are averages for the entire transition period). The states gained more than the union lost because the total pie was expanded by the loans taken during the transition.

There are two reasons why this happened. The compensation guarantee cost the union 5.5 percentage points of the kitty. In addition, a 1.5 percentage point's cost to the union arose from a quirk of the design. Post-GST, the union and the states were meant to split the kitty equally, as reflected in the equality between the CGST and the SGST rates. This did not happen because of the hierarchy of input tax credits that are allowed.[19] The essence is that the credits and refunds are initially applied against the union's share of collections. The result is that the union only received 49% of the total revenues collected.

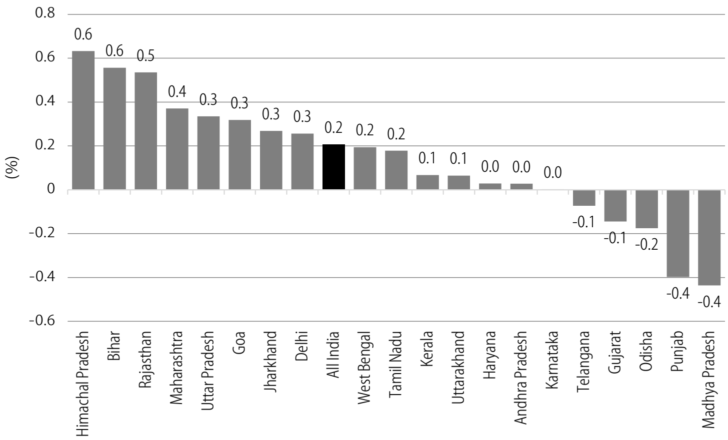
Benchmark 3—Pre-GST buoyancy: Finally, we compare actual GST revenues with the estimated path if the pre-GST system had remained in place. Under this estimated path, the union's revenue growth would have been 15% on average during the transition, while states' revenue would have grown by 7.5%. In the event, their revenues grew by 7.2% and 9.9%, respectively. So, for the union, the counterfactual loss was about 1% of GDP on average while, for the states, the gain was about 0.5% of GDP on average. Indeed, if we look at the pre-GST revenue of many of the large states such as Maharahstra, Gujarat, Delhi, Haryana, Karnataka, and Tamil Nadu (shown in the Appendix, pp 47–49), they were experiencing a steady—and in some cases sharp—decline in their "GST" revenues to GDP ratio, implying a buoyancy of less than 1.

Summing up these arguments, the broad finding is that the GST regime with guaranteed compensation cost the union between 0.5% and 1% of GDP on average for seven years, depending on the particular benchmark used. Meanwhile, the states gained between 0.2% and 0.5% of GDP on average.

In other words, the union made significant revenue sacrifices to reassure risk-averse states and thereby ensured the GST could be implemented. This sacrifice has been overlooked in the often-heated discussion of GST performance. But it should not be ignored, for it is a shining example of cooperative federalism.

The flip side to this sacrifice was a revenue bounty received by the states. No matter what benchmark is used—whether actual revenues received are compared with pre-GST levels, a no-GST scenario or a GST without compensation scenario—the conclusion is the same: the states have gained enormously.

Figure 5: Fiscal Bounty for States—Revenues during Transition Compared to Pre-GST Regime*
(average of FY18 to FY24 relative to average of FY13 to FY17)

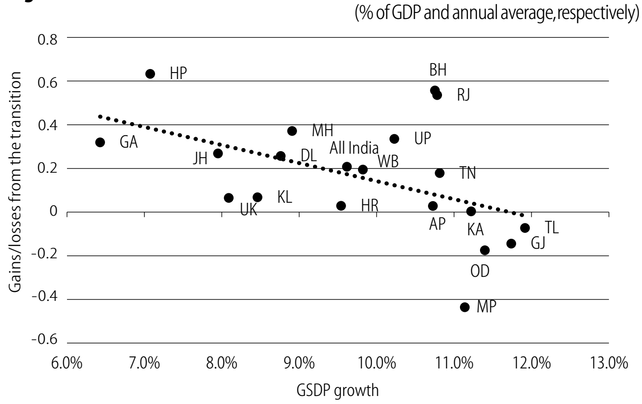


* For 2023–24, instead of directly using the revised estimate (RE) revenue numbers from the state budgets, we revised the numbers as per the actual overall revenue to states as the RE numbers were highly overestimated for certain states.
Sources: GST Portal, RBI and respective state budgets. In all the state-level charts, states for which all the data (especially on loans) are unavailable are excluded. Pre-GST revenues of Andhra Pradesh and Telangana averaged for FY15 to FY17 (post-split years).

Of course, what we have calculated is the gains to the states as a group, rather than examining the experiences of each individual state. We will discuss this later, but it is worth previewing a key result at this stage: no state really lost out from the GST reform.

Finally, our assessments have been the seven-year transition period as a whole. But Figure 4 is a useful reminder that there were in fact two sub-periods, because FY22 was the last year in which full compensation was paid. As a result, revenues peaked in FY22 at 3.7% of GDP and have since declined to 2.8% in FY24. This sharp fall has posed problems for some states, which we will later discuss in detail.

Figure 6: Transitional Gain and GSDP Growth
(% of GDP and annual average, respectively)



Source: GST Portal, RBI and respective state budgets. Excludes Punjab, which is an outlier.

Gainers and Losers: State-level Outcomes

We now turn from the aggregate to state-wise assessments of revenue performance. We focus on two benchmarks. We start by assessing performance relative to benchmark 1, that is, the average of pre-GST receipts during FY12–FY17. We then compare performance to benchmark 2, that is, the hypothetical option of a GST without the 14% guarantee.

(A) GST with compensation relative to pre-GST regime: How did the states do during the transition compared to the pre-GST regime? Figure 5 provides the answer: they experienced a fiscal boost amounting to around 0.2 of GDP on average for every year of the transition (black bar in figure). But this overall gain was distributed very unevenly across states.

Perhaps most striking, some states incurred losses, most notably Odisha and Madhya Pradesh. How did this happen, when states were guaranteed 14% annual revenue growth? There are two reasons. First, the transition period includes the most recent two years, when the guarantee was no longer in force. Second, and more subtly, the guarantee was given relative to FY16 revenue, whereas in Figure 4, the pre-GST revenue is averaged over five years. So, states that had exceptionally low revenue levels in FY16 would have received little compensation, compared to the FY12–FY17 average.[20]

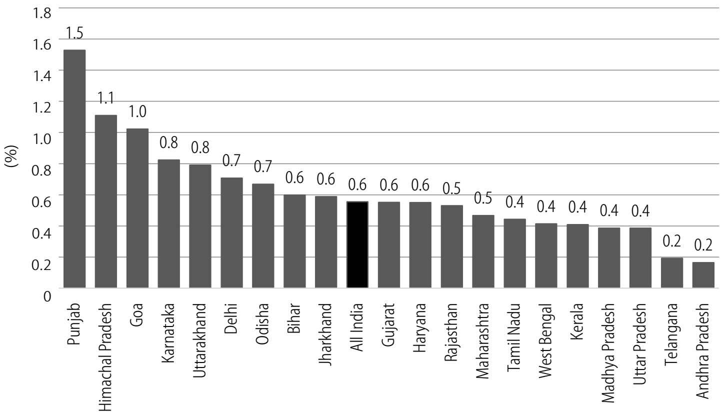
Even apart from these special cases, the variation in fiscal bounty was really quite wide. Some states benefited substantially, led by Rajasthan, Bihar, Himachal Pradesh and Goa, which gained around 0.5%–0.6% of GSDP every year compared to the pre-GST regime. The wealthy state of Maharashtra and Karnataka also gained more than average.

How can we explain this wide variation? A few factors seem to have been in play. At first blush, one might think that state revenue performance was the determining factor. But it was not, largely because all states were given the same 14% revenue growth guarantee. Consequently, a much more important factor was the pre-GST indirect tax level, which we have denoted above by the variable *X*. That is because the 14% (compounded) growth guarantee was applied to the pre-GST level, so the larger the base the greater the guaranteed increment in nominal terms.

Even more important than this base effect was nominal state GDP growth. Curiously, the states that did better were the ones with worse nominal growth, as one can see from Figure 6, where the regression line slopes down. This may seem odd, but the explanation is straightforward. In states where nominal growth was poor, the compensation guarantee ensured that revenue growth far outpaced GSDP growth, leading to a sharp rise in the revenue/GSDP ratio. Conversely, states where economic growth was rapid experienced a fall in the revenue ratio.[21]

In fact, the notable beneficiaries of Goa, Maharashtra, Delhi, and Himachal Pradesh had among the lowest overall GSDP growth rates. Conversely, states with the most rapid growth in GSDP were Madhya Pradesh, Assam, Karnataka, Gujarat, and Andhra Pradesh—and they gained the least.

Figure 7: Cumulative Compensation, FY18 to FY24 (% of cumulative GSDP)



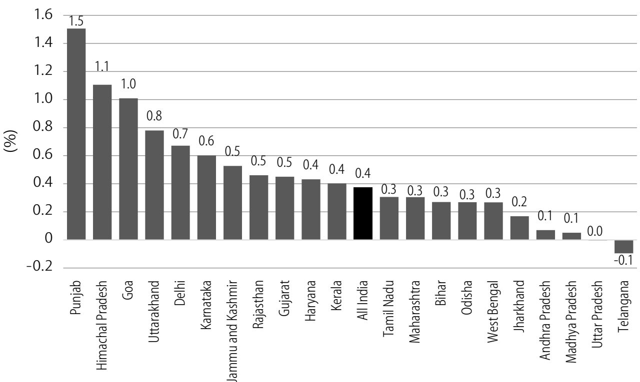
Source: RBI and respective state budgets.

(B) GST with compensation relative to GST without compensation: How much did the states gain from the revenue guarantee compared to the counterfactual of not having had the guarantee? One way to answer this question is by looking at the amounts actually paid out under the guarantee. Accordingly, we estimate the magnitude of compensation paid to major states, where such data are available and express it as a share of a state's cumulative GSDP (Figure 7).

In the case of major states, a significant 0.6% of GSDP was paid as cumulative compensation (black bar in the figure). The largest beneficiaries were unsurprisingly the major losers from the GST, namely Punjab (which lost its agricultural taxes), and Himachal Pradesh and Uttarakhand, which probably lost revenues from the switch from production-based taxes in the pre-GST regime to the consumption-based GST. Surprisingly, some of the richer states were also major beneficiaries, such as Karnataka, Delhi, and Haryana.

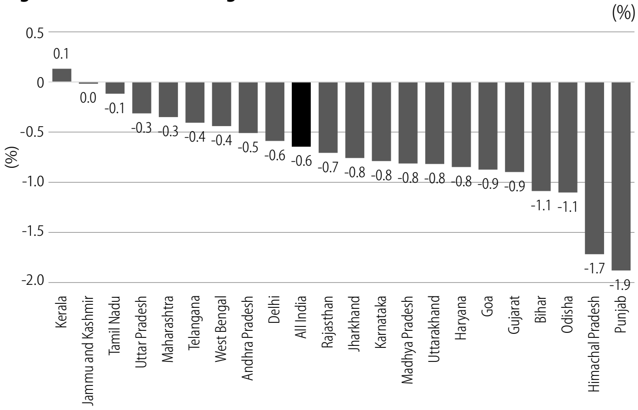
A better way to measure the gains from the transitional system, however, is to compare what the states actually received with the amounts that would have accrued if India had moved directly to the steady state, that is, benchmark 2. Since states actually received $R + C$ during the transition, as opposed to $R + C^*$ in the steady state, the gains to states from transition can be measured as $C - C^*$. Figure 8 shows this difference for the various states.

Figure 8: GST with Compensation Relative to without Compensation, FY19–FY24 (% of GSDP; average)



Source: GST Portal, RBI and respective state budgets.

Figure 9: Fiscal Cliff—Change in GST Revenues between FY23–FY24 over FY22 (%)



Source: GST Portal, RBI and respective state budgets.

Before we do so, we need to explain how we calculate C^*, the notional compensation that would have accrued to individual states had there been no compensation guarantee and had the cess been just another GST rate. Ideally, if we had data on disaggregated cess collections and distribution, we could calculate this with greater precision. Because we do not, we need to estimate this notional cess. We take the cess collections by state, divide it by two (since half would have gone to the union government) and apportion the remaining between SGST and IGST in the same ratio of SGST and IGST collections for all other goods. We then total up all these IGST collections and then reapportion them to the states in the same proportion of other IGST settlements. This method potentially suffers from one problem: that the consumption of cess-related goods across states is different from the consumption of all other goods across states. For example, four-wheelers are luxury items and could be disproportionately consumed in the richer states. We do some robustness checks to see what the magnitude of error could be. We suspect that this magnitude should not easily distort our findings because the cess accounts for only 6.6% of overall GST collections.[22]

Once again, we see Punjab, Himachal and Uttarakhand as big gainers, because their losses from the GST were temporarily staved off by the guarantee. We also see that richer net exporting states such as Gujarat, Haryana, and Karnataka benefited, since the transition period postponed the losses that will arise from shifting from production-based excise to consumer-based GST.

(C) The fiscal cliff: Beginning in July 2022, the compensation guarantee to the states expired. We showed the consequences for the union and the states as a whole in Figure 3. In Figure 9, we show the consequences for individual states. (In Appendix, we show the evolution of revenues for each of the major states.) As Figure 9 shows, all the states have already experienced a serious tax decline, which has averaged about 0.6% of GDP (black bar), creating a "fiscal cliff." Adverse impacts were particularly strong for Punjab and Himachal Pradesh but also for Gujarat, Odisha and Bihar.

Going Forward

Thus far, we have focused on the transitional period, emphasising the period when the GST operated with guaranteed compensation. Now, let us consider what might happen when the transition ends and the system moves into what could be called the "steady state".[23]

Once the pandemic loans are repaid by FY25, the GST Council will need to decide what to do with the compensation cess. It is unlikely that the cess will simply be abolished, because it is levied on the consumption of luxury and demerit goods (which the government wants to discourage) and fetches about 0.5% of GDP. So, it is interesting to explore what would happen if the cess becomes part of the regular rate structure, with the union and states receiving equal amounts of revenues.

In this case—and assuming no other changes are made—total collections will not change, but the distribution of revenues will be profoundly affected for two reasons.

First, the distribution between the union and the states as a whole will change since the (former) cess collections would no longer be channelled exclusively to the states as compensation but would instead be shared 50:50 between the union and the states. Second, the distribution among the states will change because the cess will no longer be allocated according to shortfalls from 14%, but on the basis of consumption levels of the affected goods. We denote the revenues from the (former) cess accruing to each state by the variable C^*.

Looking ahead, there are two key questions: First, what should be done to the monstrously complex cess? Second, is a bigger question of whether in the steady state there will have been a fundamental change in the pattern of taxes compared to the pre-GST regime? We will address both these questions now.

The compensation cess: This cess is due to be reviewed over the coming year because it has now lost its major rationale, which was to fund the temporary revenue guarantee that the union had provided to the states—a guarantee which has now expired. Accordingly, the GST Council's review will need to answer two important questions. First, what should be done with the cess? Second, should the revenue guarantee be revived?

With respect to the first question, some have proposed that the cess be eliminated on the grounds that such an action could boost consumption growth. But it is a long-standing principle that tax rates should not be dictated by short-term cyclical considerations. It is true that consumption growth has been quite weak in recent quarters. But perhaps next year it could prove quite strong. Would anyone then recommend raising GST rates? We think not.

Instead, GST rates should be set according to long-term considerations. Foremost among these is the consideration that some goods are "demerit goods" which should be taxed more heavily to discourage their consumption. In India, these demerit goods include tobacco, aerated drinks, and motor vehicles. So, for example, a cess of 2%–22% has been levied on top of the 28% GST rate for motor vehicles.

Another important consideration when designing the GST is the need for the government to fund its activities. At present, the cess raises considerable revenue, nearly half a percentage point of GDP. Accordingly, if it were simply eliminated, the government would need to find other sources of income, which would involve (by definition) taxing goods and services whose consumption it really does not want to discourage. And if the states were not confident about the revenue prospects from such taxes, they might ask for revenue guarantees.

That said, there is no reason for the cess to be retained in its current form. That is because the cess rates themselves are monstrously complicated, varying not only in magnitude but also according to end-use. So, there is a strong argument for simplifying the system.

Our view is that the cess should be drastically rationalised, reducing it to just one rate as suggested in the RNR report of 2015. This rate should be set so that no additional fiscal burden arises, which probably implies a rate of 12%–15%. And proceeds from this revamped cess should be shared between the union and the states, just like revenues from any other GST rate.

Once that is decided, the GST Council will need to tackle the thorny second question of whether the revenue guarantee should be revived. Our answer is no.

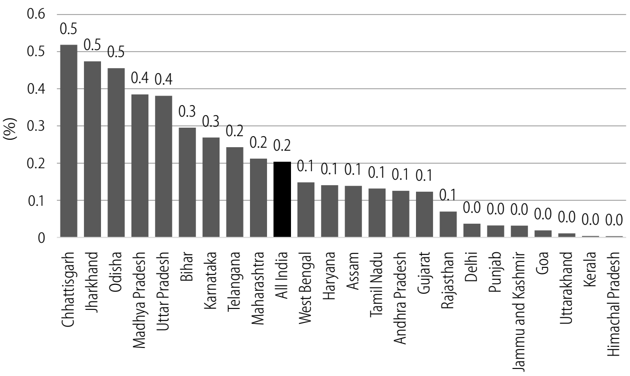
We say this for several reasons. For a start, the guarantee was always understood to be temporary, a compensation for any initial teething problems with the new GST system. It was never envisaged to be a permanent feature of the system.

Nor do we think that guarantees will be needed. We calculate the revenue consequences of our proposal for the states. If revenues remain as buoyant as they have been in the past two years, the rising tide will lift all boats. Even if revenue to GSDP collections remain at current levels, our calculations suggest that states as a whole and nearly all states individually will see an increase in revenues from current levels. So too will the union government.

What is the intuition behind our finding? Right now, states are not receiving any revenues from the cess because it is being used to repay loans taken by the compensation fund during the pandemic (nor too is the union). As a result, once the loans are repaid, cess revenues of roughly half a percentage point of GDP will be available for distribution both to the union and the states. If we assume that the state-wise distribution of cess revenues is similar to that for other GST revenues, all states should gain.

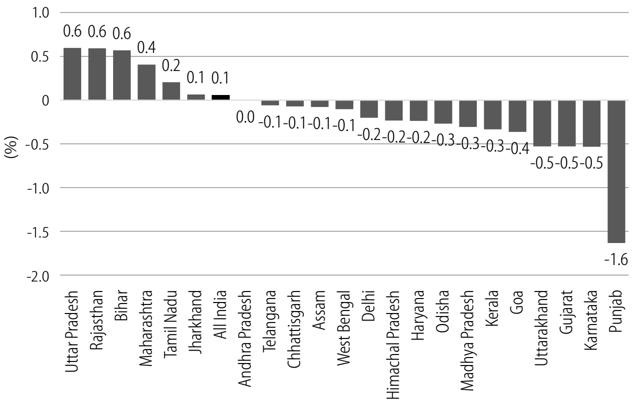
In Figure 3, we plotted the trajectory of revenues until FY24. In FY24, the union and the states both netted revenues to the extent of 2.8% of GDP each. Even if overall GST revenues remain at the level of FY25 (6.1% of GDP), we know that the union and the states will gain and share the extra 0.5% of GDP (which was being used to repay the loans). We can be confident then that no state will really lose.

Figure 10: Fiscal Revival—Actual and Notional Revenues in FY24 (% of GDP)



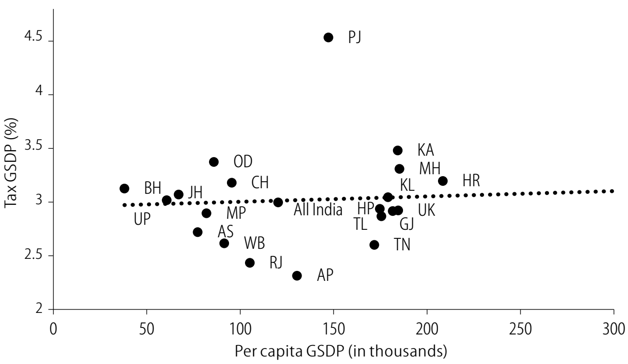
Source: GST Portal, RBI and respective state budgets.

Figure 11: Notional Revenues Compared to Pre-GST Revenues, FY24 versus FY13–17 (% of GDP)



Source: GST Portal, RBI and respective state budgets. Notional revenues are for FY24.

Figure 12: Pre-GST Taxes and Per Capita GSDP* (average 2012–17)



* In all per capita calculations, population is taken constant for all the years at the official 2011 Census numbers. There might be slight variation in growth rates of the populations of different states but these will be minimal.

Source: GST Portal, RBI, respective state budgets and Census 2011. Excludes Goa which is an outlier.

One way of showing this without making any assumptions about future revenue development is simply by comparing the actual revenues that states received in the most recent year FY24 which did not have any compensation with the revenues they would have received had the cesses been available for distribution like any other GST rate. Figure 10 illustrates this. It shows clearly that no state loses simply because the size of the kitty expands which is what will happen going forward. Of course, the gains will vary across states but no state will come under fiscal stress. Figure 10 is also evidence for not reintroducing compensation guarantees going forward.

Admittedly, the gains will not be uniform, but even this would not be a problem, since broadly (with exceptions) the large gainers would be the poorer states, such as Chhattisgarh, Jharkhand, Bihar, Uttar Pradesh (UP) and Rajasthan. And it is precisely the poorer states that are most in need of additional revenues.

But what if we are wrong? Why not revive the guarantee, just in case there are teething problems with the reformed cess? We would not favour such a move on the grounds of moral hazard. We say this not just for theoretical reasons, but also based on experience. In the first two years of the GST, the union and the states pressed to reduce GST rates in the council, the latter knowing that they would not have to bear the revenue consequences because their own revenues were guaranteed. The council acquiesced, cutting rates on a wide range of goods ranging from detergents to honey. As a result, overall GST collections fell far below the level collected by the equivalent taxes in the pre-GST era. With debt and deficit levels still high, the country cannot afford to repeat that mistake.

Accordingly, we would propose a different solution. If it turns out that some states have lost out from our proposal, the Sixteenth Finance Commission could fill in the gaps through grants, as is customary for special cases.

Has there been a fundamental change in the pattern of indirect taxes? When the GST was introduced, one expected benefit was that tax resources would shift towards the poorer states. The council expected that GST could achieve this goal because it entailed a shift from excise taxes collected largely by rich producing states to consumption taxes collected largely by populous poor ones. So, we need to ask: Did this shift occur in practice? Figure 11 shows the difference in notional revenues in FY24 (a proxy for the steady state) with pre-GST revenues. The figures shows that broadly—but with some exceptions—the poorest states (Bihar, UP and Rajasthan) gained while the rich net producing (Gujarat, Karnataka) states lost.

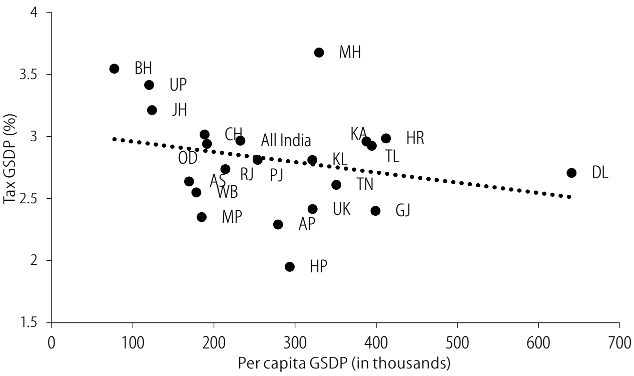
We can look at this comparison between the steady state and the pre-GST regime in a different way. We can examine the distribution of revenue under the pre-GST tax regime. Note that states with low GSDP per capita need *higher* revenue–GSDP ratios merely to provide the same services as in richer states. So, maintaining all-India standards requires that there is a positive relationship between state tax ratios and per capita GSDP. Figure 12 plots the actual relationship for the taxes that were abolished when the GST was introduced. It is clear that there is no real pattern; the line of best fit is essentially flat. This is why the GST Council saw a problem that needed to be solved.

To see whether the relationship has changed, we plot the same figure for the two most recent years when we think GST revenue patterns may have stabilised after the pandemic shock.

Figure 13 (p 45) shows that the relationship has clearly changed in the desired direction; line of best fit is now downward sloping. True, the relationship is not a very tight one. But the details are nonetheless encouraging. Bihar, UP, and Rajasthan are now among the highest GST revenue-receiving states, unlike in the pre-GST regime. This is what Figure 12 showed.

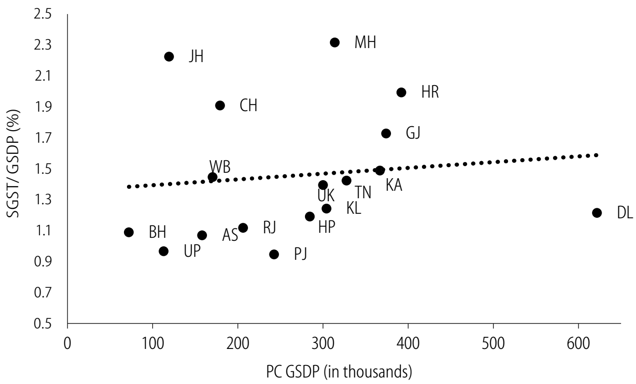
Figure 13: Likely Pattern of GST Revenues in the Steady State

(average FY22–FY24)



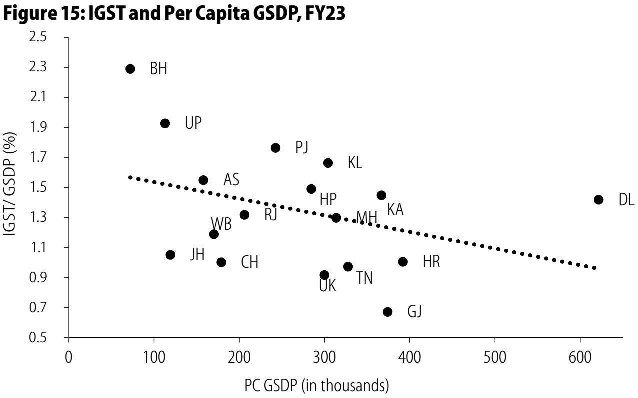
Source: GST Portal, RBI, respective state budgets and Census 2011. Excludes Goa which is an outlier.

Figure 14: SGST and Per Capita GSDP, FY23



Source: GST Portal, RBI, respective state budgets and Census 2011. Excludes Goa which is an outlier.

Figure 15: IGST and Per Capita GSDP, FY23



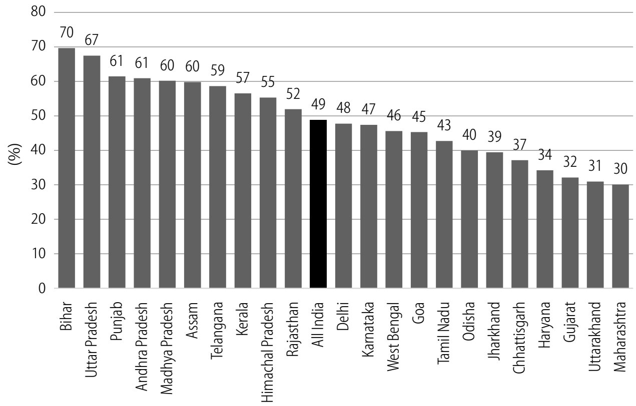
Source: GST Portal, RBI, respective state budgets and Census 2011. Excludes Goa which is an outlier.

We can decompose this overall GST-income relationship between the two components of GST, namely SGST and IGST (Figures 14 and 15).[24]

The SGST–income relationship is positive, suggesting that richer states continue to have higher indirect tax ratios (Figure 14). However, the IGST-income relationship is progressive (downward sloping line) (Figure 15). SGST performance reflects to an extent a state's own production and tax capacity and IGST performance less so; indeed, IGST revenues reflect the net consuming/importing status of a state.[25]

In other words, the introduction of the GST benefits the poorer states because of the change in the nature of the tax

Figure 16: 'Openness Ratio'—Share of GST Revenues from IGST, FY23



Source: GST Portal, RBI, respective state budgets.

from one based on production to one based on consumption and also because IGST collection is administratively centralised. If left on their own, poorer states would not be generating more taxes as Figure 12 shows. They would be hobbled by their political and administrative circumstances as indeed they were in the pre-GST regime (Figure 9). Once consumption possibilities open up with trade within (and outside) the country, their tax revenues increase—they can consume more and crucially the collection of the IGST is less reliant on their own tax capacity.

In fact, we can calculate an openness index which is the ratio of revenues that comes from the IGST versus those from the SGST (Figure 16). Broadly, the poorer states, especially Bihar and UP, have the highest share of revenues from trade (across states and imports) and the richest states—Maharashtra, Gujarat, and Haryana—have the lowest shares. Surprises include Punjab and Kerala which have little domestic manufacturing and hence rely on "trade" for their revenues.

Conclusions

If one were to look back at the last seven years of GST implementation, it would be a remarkable story of cooperative federalism, with the union government sacrificing substantial revenues to get the states on board with the reform. If the union had not provided any compensation to the states but instead split the compensation cess revenues equally with the states, its revenue would have been 0.6% of GDP higher in every year of the eight-year-long transition (and about 1% of GDP if the GST had not come into being at all). Until now, this sacrifice has neither been quantified, nor (perhaps for this reason) has it been generally appreciated.

Overall GST revenues have proved disappointing because of the rate cuts implemented early in the life of the GST. Part of the reason was that the compensation guarantee created a sort of moral hazard. States could vote in the GST Council to cut rates, fully aware that they would not bear the revenue consequences (at least not immediately), since their revenue was guaranteed.

But the compensation experiment yields a deeper lesson for fiscal federalism. The compensation guarantee turned out to be, inadvertently, an excellent mechanism for countercyclical fiscal transfers to the states which cannot tap finance as easily as the union. Without it, state finances would have been devastated by the pandemic. This must become embedded in fiscal federalism because as India's integration rises, common shocks will become more likely.

With the end of the transition looming, the good news is that the period of rate cutting seems to have ended, allowing the system to regain buoyancy. Our analysis suggests that going forward, there will be no need for compensation because all states should see a rise in revenues. Our strong recommendation is that the cess should be folded into the current rate structure (of course with rationalisation) and imposed uniformly at the demerit rate recommended in the RNR report of 2015, ensuring no revenue loss. There should be no revenue guarantees going forward as we explained above. The union and the states should complement the cess reform by simplifying the GST system. Some lower rates should be increased, bringing the total number of rates to two, say 10% and 18% in addition to the uniform cess rate.

The Prime Minister unveiled the GST on 1 July 2017 as the good and simple tax. Alas, the GST has turned out to be anything but simple. And in terms of revenue only after seven years, it can merit the label of "good."

On the positive side, the consumption-based GST which replaced its production-based predecessor, has turned out to be a reform that, on balance, has helped the poorer consuming states. It is also true that despite rate-cutting revenues have returned to pre-GST levels, suggesting collection efficiency gains. At least, in terms of its revenue promise, the GST, after a wobbly start, could yet have a very happy ending. But hard work lies ahead.

NOTES

1 The GST was introduced on 1 July 2017.

2 But see Mukherjee (2023a) and Debroy (2023a, 2023b) for an attempt to measure performance on this score. Other important assessments of the GST are in Kelkar et al (2021), Mukherjee (2023a, b), Rao (2022), and Rajaraman (2019, 2021). The scope of the analysis in Rao (2022) and Rajaraman (2021) is closest to that in our paper.

3 Until the GST amendments, taxes on services were reserved for the union government.

4 Hereafter, all references to years will be expressed as "FYxx" so that FY18 will refer to the fiscal year 2017–18 and so on. Note that phrases such as "revenue increases" refer narrowly to GST taxes, rather than revenue from all sources. When we need to refer to the latter, we use "overall revenue."

5 Throughout the paper, "tax ratios" and similar terms refer narrowly to the ratio of GST receipts to GDP or GSDP—not to the overall tax ratio.

6 Pre-GST levels refer to collections from all the taxes that were abolished when the GST was introduced, as a ratio to GDP, over the 2012–17 period. When we need to refer to both these pre-GST taxes and the current GST taxes, we use the phrase "indirect taxes," even though of course there are other indirect taxes other than these two tax categories. The GST subsumed indirect taxes previously levied by both central and state governments, including central excise duty, service tax; additional customs duty; special additional duty of customs; central surcharges and cesses; state VAT; sales tax; central sales tax; purchase tax; luxury tax; entertainment tax; entry tax; taxes on advertisements; and taxes on lotteries, betting, and gambling.

7 To be clear, in this paper the "pre-GST system" refers only to the taxes abolished to make way for the GST, not to all taxes levied before the GST. Thus, income taxes, customs duties, and all remaining indirect taxes are not included in this analysis.

8 In addition to exports, refunds are also made for excess tax payment, inverted duty structures, finalisation of provisional assessments, pre-deposits for appeals, supplies to special economic zone units and developers, and specific purchases by United Nations bodies and embassies, among others. The magnitudes are relatively small.

9 IGST is an acronym for integrated goods and services tax.

10 For 2023–24, in order to avoid using revised estimates (RE) numbers from the budgets, we calculate the CGST/SGST refunds based on the overall revenue (net of refunds) as reported by the Ministry of Finance and dividing the same as per the average ratio of union:state shares in total revenue between 2019 and 2023.

11 Pre-GST revenues maybe slightly overstated because refunds had built up in part in anticipation of the introduction of the GST. These refunds were made in the GST era although it is not clear whether they were reflected in GST revenues or were settled outside the GST framework. It is difficult to track and quantify these refunds but since they were cumulative it is unlikely that they will significantly affect (reduce) the pre-post comparison.

12 See Doshi (2024). Assessing the relative importance of these factors would require detailed data on revenues by goods and services, which is not publicly available.

13 Referred to henceforth at the 14% revenue guarantee. We must be clear on this point. The legal compensation guarantee was set relative to the revenues in FY16. In this paper, since we are making comparisons across regimes, we use the entire period FY13 to FY17 as the benchmark.

14 The range of cess rates for the important goods covered by them are: 1%–22% for motor vehicles, 5%–290% for tobacco products and pan masala, and 12% for aerated drinks.

15 The union borrowed and released ₹1.1 lakh crore in 2020–21 and ₹1.59 lakh crore in 2021–22 as back-to-back loan to meet a part of the shortfall in cess collections.

16 In discussing GST revenues, we need to be clear about the accounting of GST, especially in the first two years of transition, that is, in FY18 and FY19. In those two years, in large part because IGST settlements were a work-in-progress and could not be easily attributed and hence allocated to the states, unsettled balances accumulated. These were about ₹1.6 lakh crore in FY18 and ₹65,000 crore in FY19. The union appropriated these sums as its own tax revenues, a portion of which was passed on to the states as part of normal devolution. As a result, states received only 42% of these collections (the devolution coefficient), rather than the 50% that would have accrued had the sums been distributed through the GST settlement mechanism. But this is largely a technicality, mattering mainly for accounting, since the shortfall in the IGST settlement was offset by the additional revenue that went to the states under the 14% revenue guarantee. In the 42nd GST Council meeting in 2020, it was decided that the discrepancies in the IGST allocation to the states would be rectified which led to the "ad hoc" IGST settlements. Again, these settlements would not have affected the total revenue going to the states because of compensating adjustments in the distribution from the cess.

17 Data on revenues for the pre-GST regime subsequently subsumed under the GST are available only for the five-year period, FY13–FY17.

18 To give a simple example, if relevant revenues (from the taxes that were folded into the GST) had been ₹100 in FY17 and nominal GSDP growth was 10% in FY18, we estimate that revenues in FY18 would have been 100 + 100* 0.10 * 0.75 = 107.5.

19 Briefly put, in the GST regime, the Input Tax Credit (ITC) hierarchy mandates that IGST credit is first used to pay IGST, followed by CGST and SGST/UTGST liabilities. CGST credit is used for CGST liabilities, and SGST/UTGST credit is used for SGST/UTGST liabilities, ensuring no cross-utilisation between CGST and SGST/UTGST.

20 The compensation guarantee or the protected revenue was calculated in reference to revenue in FY16. Our analysis suggests that states received that protected revenue so that relative to the FY16 benchmark no state lost revenue.

21 Consider two examples. In the first, suppose there are two states. Each state has the same initial conditions, pre-GST revenues of 100 and GSDP of 1,000, but they have very different growth rates, with state A expanding at 10% and state B at 20%. Assume that both states tap the 14% guarantee, so in the end both states have the same revenue growth of 14%. Accordingly, the revenue–GSDP ratio for state A would go from 10% to 10.36% (=114/1100), while that for state B would fall from 10% to 9.5% (114/1200). State B does worse simply because its higher GSDP growth depresses its tax ratio.

Now consider the second example, where both states grow at the same 10% rate and tap the 14% guarantee. But assume that initial conditions vary, with state A collecting pre-GST revenues of 100 and state B collecting only 50. In that case, state A's tax ratio will increase as in the first example, from 10% to 10.36%. State B's tax ratio would also increase, from 5% to 5.18%—a much smaller amount in percentage points. Clearly, then, the base matters: state A has gained more because its initial higher tax level guarantees larger increments in protected revenues.

22 Our estimate of the notional cess will lead to errors if the distribution of consumption across states for the cess-related goods (automobiles, tobacco, aerated drinks, etc) are different from the distribution of consumption in general. As one cross-check, we compared this estimate of the notional cess with actual cess collections and found the two to be highly correlated and the differences, where they exist, to be relatively small.

23 We recognise that, of course, the GST will always be evolving—and should indeed continue to change, as there are still too many rates, with too many products excluded from the system. But we need a phrase to capture the post-transition period.

24 Since we do not yet have this disaggregated data for FY24, we show the pattern for FY23.

25 When we re-do these relationships using consumption data from the NSS, including the most recent release, we find that they are less pronounced than when we use per capita GDP. As these newly released data are still the subject

of debate, we leave the exploration of these relationships between taxes and income/consumption as subjects for future research.

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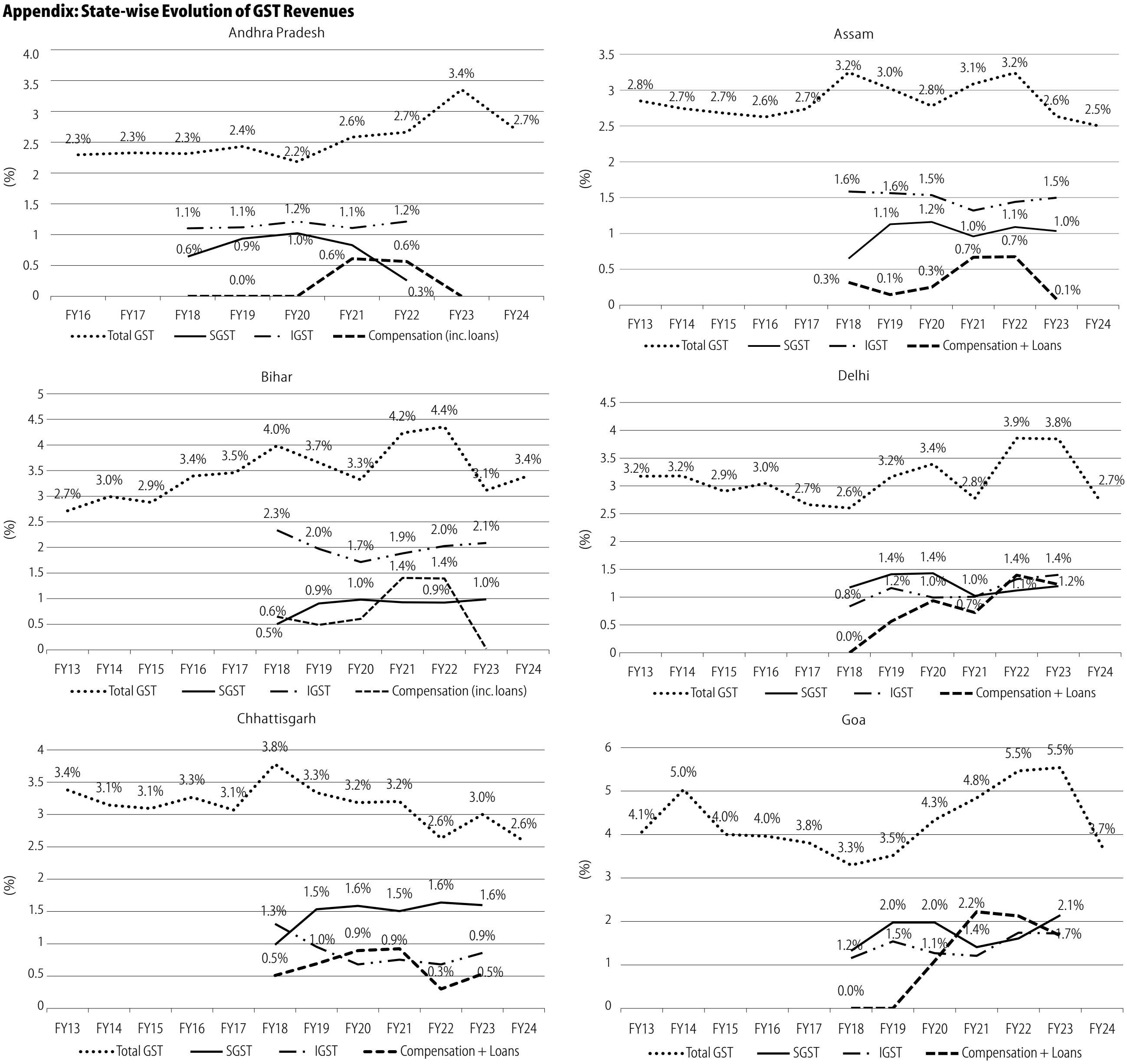
Appendix: State-wise Evolution of GST Revenues



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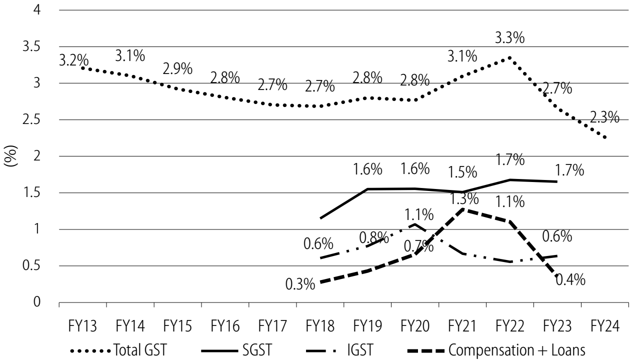
Appendix: State-wise Evolution of GST Revenues *(Continued)*

Gujarat



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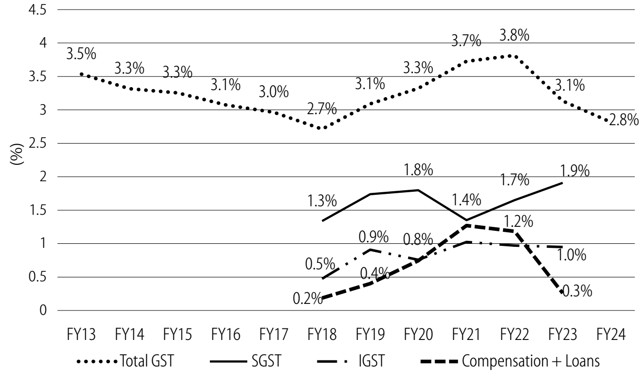

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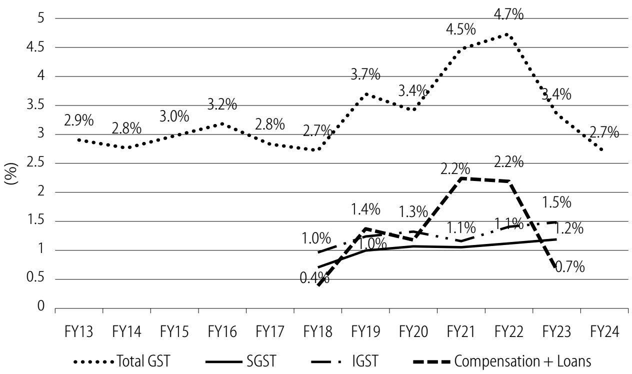

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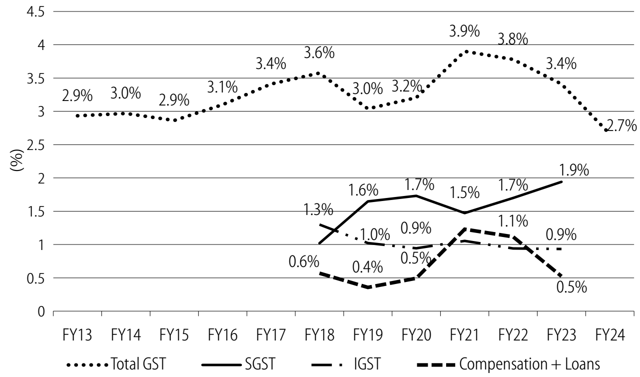

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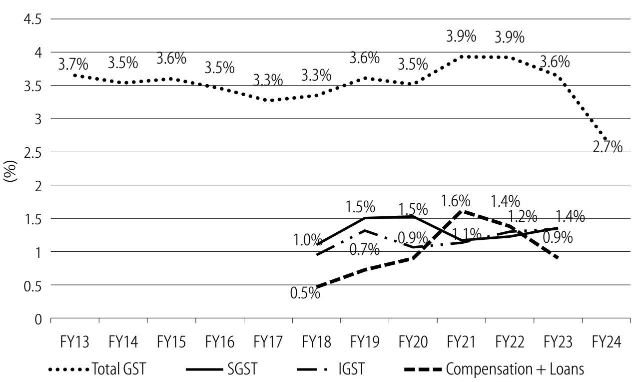
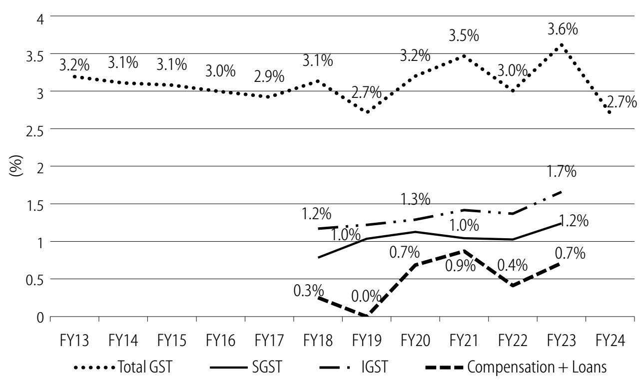


Kerala



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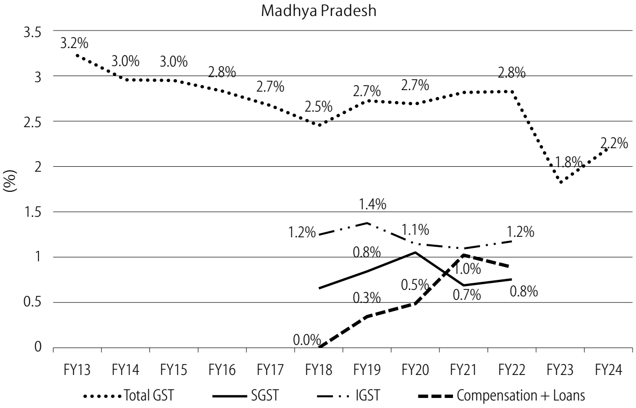

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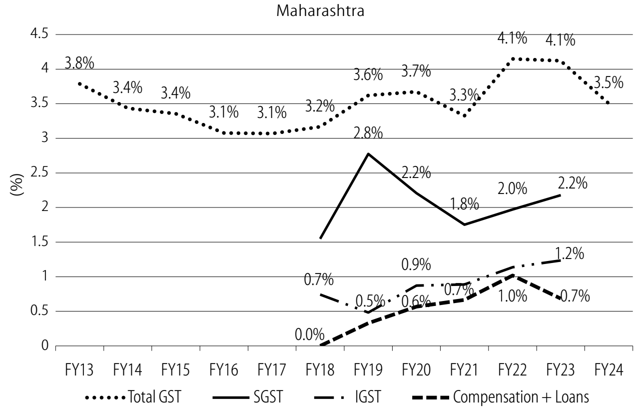

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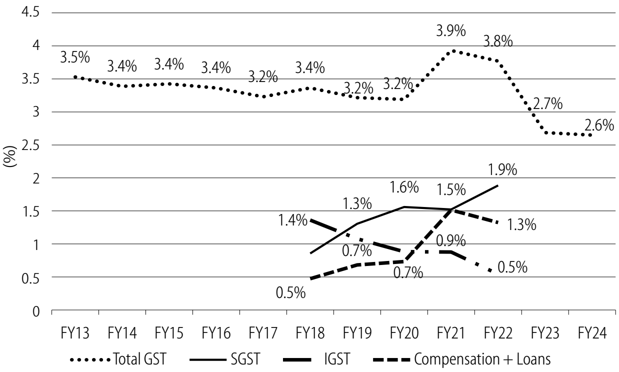
Appendix: State-wise Evolution of GST Revenues *(Continued)*

Odisha



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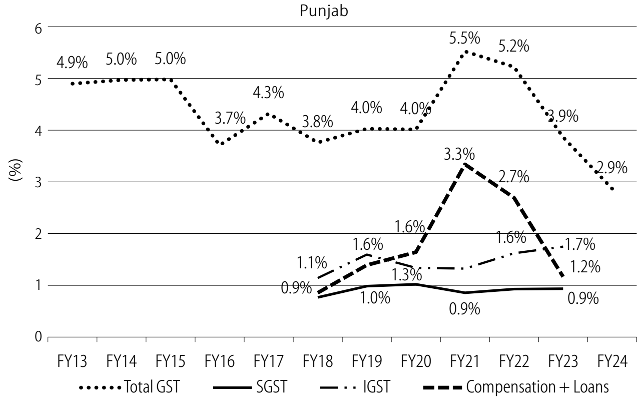

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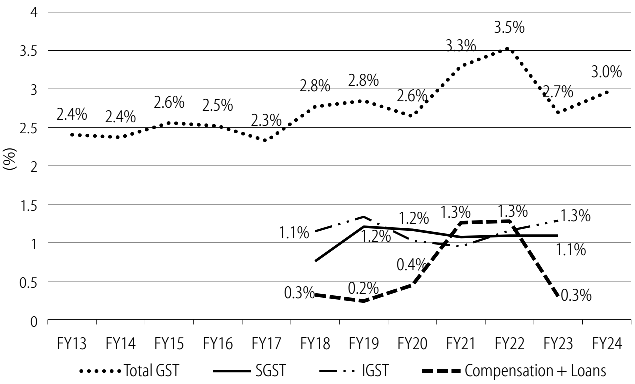

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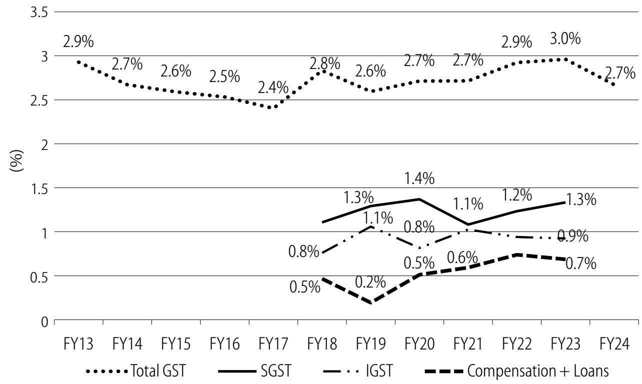

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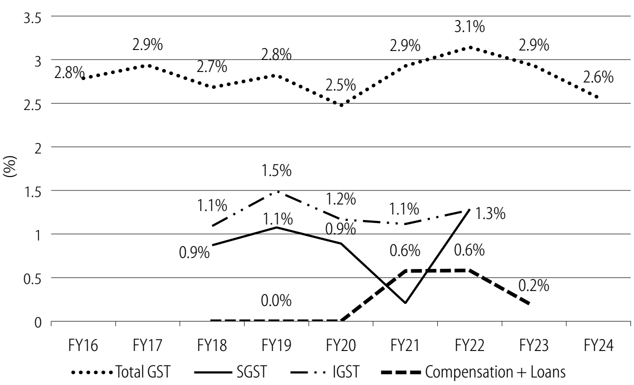
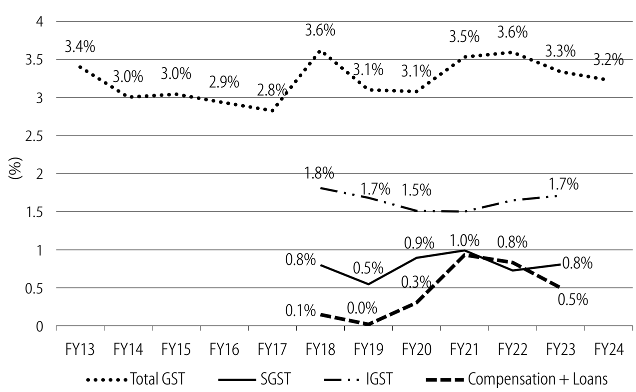
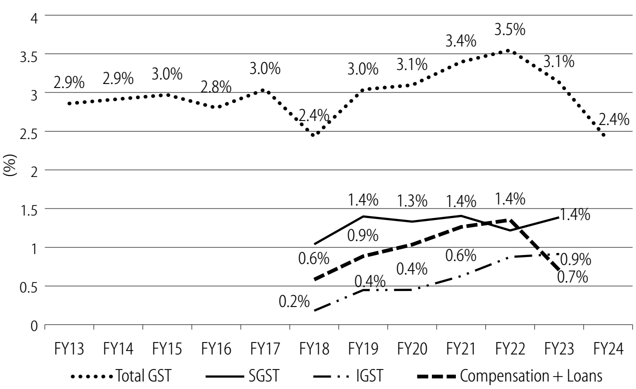


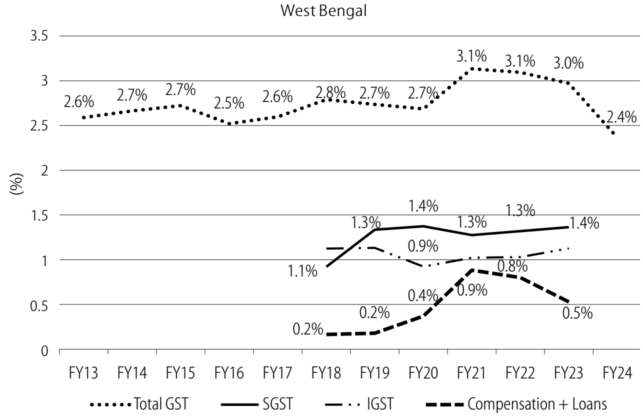
Uttar Pradesh



Uttarakhand



West Bengal



Source: All the figures in the appendix are from respective state budgets and authors' own calculations.