Fiscal Implications of Introduction of Goods and Services Tax in India

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1. Introduction

The introduction of the goods and services tax in July 2017 changed the landscape of central and state taxes in India. The historical trends in the revenue collections were no longer relevant to forecast revenue for the future, since this reform represents both a change in the base for the taxes – state and central – and transforms the regime from origin based taxation to destination based taxation. Further, since all commodities have not been brought within the ambit of GST – petroleum products for instance, the revenue to be garnered from these products too needs to be estimated. This forms the background for the present study. The objectives of the study are

a) to establish a methodology for estimating (forecasting) GST revenues and the shares therein for different governments
b) to forecast of revenues from petroleum taxes

The study is organized as follows: Part I of the study focuses on the first objective while Part II will deal with forecasting the revenue from petroleum taxes. Part I begins with an overview of the data available for analyzing the revenue implications of GST. In the next section, we discuss on data sources and the difficulties in constructing a consistent and comprehensive dataset on GST accruing to Union government and the different state governments. Given the significant change in the structure of taxation with the introduction of GST, we present a discussion on alternative methodologies that can be adopted and presents the arguments for the use of one among them in section 3. It should be mentioned here that the decision is driven by the availability of suitable data. In section 4 we project GST revenue and allocate it between Union government and state governments. The basis for such an allocation too is discussed in this section. In section 5 we discuss on States' revenue under protection and possibility of meeting GST compensation requirement from GST Compensation Cess collection. Section 6 presents alternative estimates of the total revenue from GST forecast for the award period of the finance commission. In this section, alternative scenarios are presented based on assumptions regarding GST buoyancy. Section 7 presents a discussion on overview of the compliance under GST regime and draws certain implications from the same.

2. Data Sources and Limitations

In order to undertake this analysis, we need data on the revenues collected month by month through GST by the Union government as well as by the individual states. There are three sources from which we have obtained data on revenues from GST: data from GSTN, from the

press releases of Department of Revenue (DOR) and from data provided in response to a starred question in Rajya Sabha. The nature of this data is summarized in Table 1.

Table 1: Data on Revenue from GST

	Centre	State	Inter-State
Database	**CGST**	**SGST**	**IGST**
Rajya Sabha Question No. 174 (Answered on 5 February 2019), MoF, GoI		**Post-GST:** The details of total GST accrued to States/UTs including SGST and IGST Settlement (Regular & Provisional) month-wise and State-wise (July-2017 to January-2019) (includes UTs as well)	
Department of Revenue		**Pre-GST:** Collection of VAT/Revenue subsumed under GST for the Year 2015-16 (Revenue Under Protection) (Excluding Arunachal Pradesh, Gujarat, Haryana, Kerala, Punjab & UTs)	
	Pre-GST: 1. Total Central Excise Duty (including cesses & surcharges) collection from Goods subsumed under GST and outside of GST 2. Customs Duty collection (including cesses and surcharges) from Petroleum Products (POL) and Non-POL (Detail break-up of share of Customs (POL) revenue which has been subsumed under GST is not maintained separately) 3. Service Tax collection	**Pre-GST:** Collection of VAT/Revenue Not Subsumed under GST (Except Karnataka and West Bengal, Sales Tax Collection from Liquor is not separated from Sales tax Collection from Out-of-GST Petroleum Products)	Month-wise Settlement of IGST (on account of B2B and B2C transactions) to Union and State Governments is shared with us for the period April-2018 to May-2019.
		Details of GST Compensation released to States for 2017-18 & 2018-19 (Rs. Crore)	

These three sources of data have different coverage and at the same time are not mutually comparable. For instance, while the data released by DOR relates to the actual collection in any given month, irrespective of which filing period it refers to while the data from GSTN provides information based on the filing period it is related to. Further, while the data from DOR does not provide a breakdown of information by state, the same is available from the Rajya Sabha Starred question, where the latter does not provide information on the Union Government. Further, it is information provide at a single point in time and not updated regularly. Department of Revenue (DoR) releases monthly statement of GST collection under different heads based on data obtained from GSTN, Indian Customs (IRIS database) and IGST settlement (regular and ad hoc) while the cover of data provided by GSTN is narrower. All of these together mean that these data series cannot be combined to construct a consistent and comprehensive data set on revenues from GST.

The information obtained from GSTN relates to the different fields of information in the returns filed by the taxpayers. Using this information, we put together the revenue that would accrue to the Union and State governments in table 2. Table 2 shows the method of obtaining GST collection for the Union as well as States based on GSTN database. From GSTN database, one could estimate the expected IGST settlement on account of business-to-business (B2B) transactions (Table 6.1, GSTR-3B). Unless GSTN provides details of business-to-consumer (B2C) transactions by origin and destination states, it is not possible formula based assignment / settlement of IGST among states. Moreover, in the present structure of GSTR-3B return GSTN collects only Place Of Supply (POS) information for transactions above Rs. 2.5 lakh (Table 3.2, GSTR-3B) and therefore there will be always a scope for ad hoc settlement of IGST, unless the return format is changed. In the absence of IGST settlement information from GSTN database, the usability of GSTN data for our analysis is reduced.

Table 2: Components of GST Revenue Accruable to Centre and State based on GSTN Database

	Centre	**State**
Database	**CGST**	**SGST**
GST Network (GSTN)	**CGST Collection**: CGST Collection in Cash (including Interest and Late Fee) +(CGST Liability Paid using IGST Credit - IGST Liability Paid using CGST Credit) + CGST Collection from Composition Dealer + IGST Settlement (on account of B2C Transactions, *ad hoc* and any other settlement) (GSTN did not share IGST Settlement details with us, and asked for approval from Department of Revenue)	**SGST Collection**: SGST Collection in Cash (including Interest and Late Fee) +(SGST Liability Paid using IGST Credit - IGST Liability Paid using SGST Credit) + SGST Collection from Composition Dealer + IGST Settlement (on account of B2C Transactions, *ad hoc* and any other settlement) (GSTN did not share IGST Settlement details with us, and asked for approval from Department of Revenue)

The GSTN has shared with us information from GSTR-1, GSTR-3B and GSTR-4 (Table 3). Data obtained from GSTN is for the period July-2017 to November-2018 for GSTR-1 and GSTR3B. However, for October – November 2018 the GSTR-1 data shared with us do not contain information for Chandigarh, Haryana, Uttar Pradesh, Arunachal Pradesh, Meghalaya, Odisha, Maharashtra, Lakshadweep and Telangana (Table 3). For composition scheme holders, GSTN has shared with us state-wise collection of CGST and IGST up to June-2018. Information on State-wise collection of SGST from composition scheme holders is not shared with us. Moreover, not sharing GSTR-4 data beyond June-2018 reduces usability of GSTN data. Therefore, effectively GSTN data is pertaining to the period July-2017 to September-2018. This also constrains our analysis in validation of GST data obtained from other sources as well as projection of GST revenue.

Table 3: Information received from GSTN Database

Return Form	Table No.	Description	Comments/ Limitations
GSTR-1		Return filing Statistics	Information for Oct-Nov 2018 is not available for Chandigarh, Haryana, Uttar Pradesh, Arunachal Pradesh, Meghalaya, Odisha, Maharashtra, Lakshadweep and Telangana
	4A	Outward Supply (B2B)	
	7A(1),7B(1) & 5A	Outward Supply (B2C)	
	6(A),6(B),6(C)	Exports/SEZ/Deemed Export	
GSTR-3B		Return filing Statistics (Migrated & New taxpayer details)	
	3.1	Outward supply and Inward Supply on reverse charges	Outward Taxable Supplies, other than zero rated (OOZ), Zero Rated (OZR), Other Outward Supplies (OOS), Inward Supplies (ISR), Non GST outward Supplies (NGS)
	3.2	B2C Transaction (value ≥ Rs. 2.5 lakh)	Outward supply to Unregistered Persons (UNRG), UIN Holders (UIN), composition taxable persons (COMP)
	4A	Eligible ITC	Import of Goods (IMPG), Import of Services(IMPS), Inward Supplies Liable to Reverse Charge (ISRC), Inward Supplies from ISD (ISD) & All other ITC (OTH)
	6.1	Payment of taxes (cash, ITC, Interest, Late fee) and cross utilization of ITC	
GSTR-4	4(A), 4(B) & 4(C)	Tax paid by Composition Taxpayers	Information is not available beyond June-2018 and State-wise SGST

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			information is missing.

There are also issues related to reconciliation of GST data obtained from GSTN across tables and return forms (Table 4). Some of the discussions we have already presented above and some of them we will discuss here.

<div align="center">Table 4: Mismatch between GSTR-1 and GSTR-3B Data of GSTN Database</div>

NIPFP Queries	GSTN Replies
1. The turnover and the amount of tax paid as reported in GSTR-1 and GSTR-3B do not match. The former is significantly smaller than the latter.	1. There is a consistent gap in filing of GSTR-1 vis-à-vis the filing of GSTR-3B, with the filing of GSTR-1 lagging behind the filing of GSTR-3B. The gap in percentage filing of GSTR-1 vis-à-vis GSTR-3B for the return periods for the FY 2018-19 is as under:
	2. In GSTR-3B, the taxable value field is free text in ALL the categories (meaning without any Validation). However, in GSTR-1, except in Tables-7 & 8 (pertaining to B2C less than Rs. 2.5 lakhs, and, Nil/Exempted/Non-GST Supplies, respectively), all other Supplies are derived from Invoice level values. This probably ensures cleaner data, with fewer outliers.
2. The Effective tax rate in GSTR-3B is too low. GSTR-1 effective tax rate is about 14 percent, while in GSTR-3B the effective tax rate barely reaches 7.5 percent in one month. Would it be correct to say that the turnover data in GSTR-3B is consistently unreliable?	1. This would depend on the data used and the methodology adopted for arriving at the Effective Tax rate. It would be ideal if this is arrived ONLY on the basis of the Turnover pertaining to Taxable Outward Supplies. It may be noted that Table-3.1(b) mentions Zero rated outward Supplies, which could be made either on payment of IGST, or, without payment of IGST (under LUT). The other two categories of ourtward supplies mentioned in Table-3.1, namely, 3.1(c) & 3.1(e) are also non-taxable outward supplies under GST. The problem persists even if we consider only Taxable Outward Supplies.
	2. Moreover, as mentioned above, in point no. 1, since the data in GSTR-3B is not captured at an Invoice level, the chances of outliers being present in GSTR-3B data is higher.
3. With reference to GSTR-3B table 6.1, it is expected that the tax payable should be equal to the sum of ITC claimed and cash paid, but for the period until Jan 2018, this does not hold. Is there any reason for the same? How to understand this deviation?	Revised data sent by GSTN. The problem persists.

NIPFP Queries	GSTN Replies
4. the Sum total of ITC claimed by tax as provided in "IGST CGST SGST.xlsx" and that provided in the "GSTR 3B 6.1.xlsx" files are not matching. The units of the two files are perhaps different. However, even if one assumed that the former is in Rs, correcting it to crores still does not give comparable numbers.	Revised data sent by GSTN. The problem persists.

It is expected that the tax payable should be equal to the sum of ITC claimed and cash paid, but for the period until Q1: 2018-19, this does not hold (Table 5). We have not received any reply from GSTN on this issue.

Table 5: Mismatch between Tax Payable and Tax Paid in GSTN database (GSTR—3B)

GSTR3B_6.1	Tax Payable (TP)	Cash Paid (CP)	CP % of TP	Paid ITC	Tax Paid (Cash + ITC)	Tax Payable - Tax Paid	Interest	Late Fee
Q2:2017-18	782,075	217,903	27.9	564,008	781,911	163.93	125	406
Q3:2017-18	1,104,390	196,423	17.8	907,847	1,104,270	119.20	165	1,052
Q4:2017-18	992,903	220,919	22.2	772,173	993,092	-188.44	287	1,139
Q1:2018-19	932,116	204,766	22.0	727,351	932,117	-0.42	321	909
Q2:2018-19	1,669,851	200,665	12.0	1,469,186	1,669,851	0.02	418	509

Source: Table 6.1, GSTR-3B, GSTN Database

Table 6 shows that discrepancy between tax payable and tax paid is not specific to any one head but general across all heads. Table 5 and 6 also shows that in Q2 and Q3 of 2017-18, tax payable was higher than tax paid, in Q4: 2017-18 it is reverse. Unless the data matches, any analysis based on such data may be erroneous.

Table 6: Tax Head-wise Mismatch between tax Payable and Tax Paid in GST Database (GSTR-3B)

		Q2:2017-18	Q3:2017-18	Q4:2017-18	Q1:2018-19	Q2:2018-19
IGST	Payable (A)	272,490	293,022	333,959	326,748	1,043,650
	Paid in ITC (B)	193,142	223,549	256,580	252,338	970,398
	Paid in Cash (C)	79,317	69,464	77,444	74,410	73,252
	Payable-Paid (A-B-C)	31.43	9.02	-63.99	0.00	0.00
CGST	Payable (A)	235,827	501,757	304,874	279,316	289,176
	Paid in ITC (B)	188,669	458,406	254,007	233,846	244,800
	Paid in Cash (C)	47,093	43,279	50,923	45,470	44,376
	Payable-Paid (A-B-C)	65.31	71.73	-56.22	-0.21	0.01
SGST	Payable (A)	232,871	264,796	304,166	278,427	288,743
	Paid in ITC (B)	162,257	201,859	233,654	214,871	226,773
	Paid in Cash (C)	70,550	62,899	70,568	63,557	61,970
	Payable-Paid (A-B-C)	63.66	37.42	-56.18	-0.21	0.01
Cess	Payable (A)	40,886	44,815	49,904	47,625	48,281
	Paid in ITC (B)	19,940	24,033	27,932	26,296	27,214
	Paid in Cash (C)	20,942	20,781	21,983	21,329	21,067
	Payable-Paid (A-B-C)	3.53	1.03	-12.04	0.00	0.00

In the GST system, utilisation of ITC is another area which plays an important role in collection of GST as well as identification of fraudulent claim of ITC. Though, it is not possible to identify any possibility of fraudulent claims of ITC from aggregate data, reconciliation of ITC data is carried out here (Table 7). Table 7 shows that during Q2 to Q4 of 2017-18, aggregate statement of tax paid in ITC does not match with sum of utilization of ITC in payment of a particular tax. The reason for such discrepancy in GSTN database reduces usability of the dataset for our analysis.

Table 7: Mismatch between Tax Paid in ITC and Component-wise ITC Claims in GSTN Database (GSTR-3B)

		Q2:2017-18	Q3:2017-18	Q4:2017-18	Q1:2018-19	Q2:2018-19
IGST	Payable (A)	272,490	293,022	333,959	326,748	1,043,650
	Paid in ITC (B)	193,142	223,549	256,580	252,338	970,398
	IGST liability paid using ITC of IGST (C)	132,179	162,445	187,845	187,711	901,446
	IGST liability paid using ITC of CGST (D)	42,673	39,888	41,977	37,713	39,823
	IGST liability paid using ITC of SGST (E)	18,352	21,224	26,872	26,914	29,130
	B-C-D-E	-62.7	-8.0	-114.2	0.0	0.0
CGST	Payable (A)	235,827	501,757	304,874	279,316	289,176
	Paid in ITC (B)	188,669	458,406	254,007	233,846	244,800
	CGST liability paid using ITC of CGST (C)	132,570	392,729	174,944	153,648	161,014
	CGST liability paid using ITC of IGST (D)	56,108	65,689	79,176	80,199	83,786
	B-C-D	-9.0	-12.7	-113.0	0.0	0.0
SGST	Payable (A)	232,871	264,796	304,166	278,427	288,743
	Paid in ITC (B)	162,257	201,859	233,654	214,871	226,773
	SGST liability paid using ITC of SGST (C)	113,332	142,242	166,723	149,389	159,340
	SGST liability paid using ITC of IGST (D)	48,933	59,630	67,036	65,481	67,434
	B-C-D	-7.2	-12.3	-105.4	0.0	0.0
Cess	Payable (A)	40,886	44,815	49,904	47,625	48,281
	Paid in ITC (B)	19,940	24,033	27,932	26,296	27,214
	Cess liability paid using ITC of cess (C)	19,943	24,037	27,956	26,296	27,214
	B-C	-3.2	-3.1	-23.3	0.0	0.0

Data available to us from various sources is pertaining to different time periods (Figure 1). We have tried to validate the data from multiple sources to understand the reasons for discrepancy (if any).

Figure 1: Source-wise Temporal Variability of GST Data

Financial Year	2017-18			2018-19				2019-20
Quarter	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1
Calender Year	2017			2018				2019
Month	Jul Aug Sep	Oct Nov Dec	Jan Feb Mar	Apr May June	Jul Aug Sep	Oct Nov Dec	Jan Feb Mar	Apr May June
Rajya Sabha (SGST & IGST Settlement)	▓▓▓	▓▓▓	▓▓▓	▓▓▓	▓▓▓	▓▓▓	▓	
DoR (GST Compensation Released to States)	▓▓▓	▓▓▓	▓▓▓	▓▓▓	▓▓▓	▓▓▓	▓▓▓	
DoR (IGST Settlement - Regular to States/ UTs)	▓▓▓	▓▓▓	▓▓▓	▓▓▓	▓▓▓	▓▓▓	▓▓▓	▓▓
DoR (IGST Settlement - Ad Hoc to States/ UTs)	▓▓▓	▓▓▓	▓▓▓	▓▓▓	▓▓▓	▓▓▓	▓▓▓	▓
DoR (IGST Settlement to Union Government)				▓▓▓	▓▓▓	▓▓▓	▓▓▓	▓
GSTN Data - GSTR-3B	▓▓▓	▓▓▓	▓▓▓	▓▓▓	▓▓▓	▓▓		
GSTN Data - GSTR-1	▓▓▓	▓▓▓	▓▓▓	▓▓▓	▓▓▓			
GSTN Data - GSTR-4	▓▓▓	▓▓▓	▓▓▓	▓▓▓				

Department of Revenue has provided state-wise revenue collection from taxes subsumed under GST for 2015-16. There are some missing states in the dataset and those are Arunachal Pradesh, Gujarat, Haryana, Kerala, Punjab and UTs. Keeping aside the missing states, we have estimated the Expected Revenue Under Protection (ERUP) for 2017-18 and 2018-19 by using the following formula:

$$ERUP^t = Revenue\ Subsumed\ under\ GST\ for\ 2015 - 16 * [1 + \left(\frac{14}{100}\right)]^t$$

Where, t=2 for 2017-18, t=3 for 2018-19

From annual ERUP, we have estimated the monthly ERUP by dividing the annual revenue into twelve equal parts. Ideally the following equality holds, if the datasets are free from flaws:

DoR Expected Revenue Under Protection (ERUP) = **Total GST** *= Rajya Sabha SGST+IGST Settlement + DoR GST Compensation Released to States*

However, Table 8 shows that except Mizoram, all states have positive number in 2017-18. In 2018-19, majority of states have negative number. This implies that reconciliation of the data sets is an issues which hinders our projection of GST revenue.

Table 8: Reconciliation of GST Data across Sources – Part A

Sl. No.	State	ERUP-Total GST	
		2017-18	2018-19
		July-2017 to March-2018	April-2018 to Nov-2018
1	Andhra Pradesh	2,317	120
2	Arunachal Pradesh	N.A.	N.A.
3	Assam	434	(119)
4	Bihar	2,415	484
5	Chhattisgarh	1,226	260
6	Delhi	1,707	(219)
7	Goa	503	272
8	Gujarat	N.A.	N.A.
9	Haryana	N.A.	N.A.
10	Himachal Pradesh	303	(265)
11	J & K	187	(526)
12	Jharkhand	1,210	658
13	Karnataka	3,390	(33)
14	Kerala	N.A.	N.A.
15	Madhya Pradesh	2,635	425
16	Maharashtra	4,845	(2,262)
17	Manipur	128	27
18	Meghalaya	7	(44)
19	Mizoram	(42)	(153)
20	Nagaland	62	(42)
21	Odisha	2,587	1,104
22	Puducherry	159	36
23	Punjab	N.A.	N.A.
24	Rajasthan	1,614	107
25	Sikkim	24	(49)
26	Tamil Nadu	1,287	(2,909)
27	Telangana	5,183	2,968
28	Tripura	139	33
29	Uttar Pradesh	5,278	2,988
30	Uttarakhand	1,104	464
31	West Bengal	3,723	1,500

We have also tried to reconcile the data sets obtained from GSTN with other datasets. The following equalities are expected to hold, if datasets are consistent:

Rajya Sabha – State-wise SGST (including IGST Settlement) = [GSTN – State-wise SGST (including interest and late fee)] + [State-wise SGST Collection from Composition Scheme Holders (GSTR4)] +[DoR – State-wise IGST Settlement]

Expected Revenue Under Protection (ERUP) = [GSTN – State-wise SGST (including interest and late fee)] + [State-wise SGST Collection from Composition Scheme Holders (GSTR4)] +[DoR – State-wise IGST Settlement]+ [DoR – State-wise GST Compensation Disbursement]

Table 9 shows that the datasets are not converging. Dynamic aspect of GST revenue, as discussed earlier, may be an issue which is influencing convergence of datasets. In the absence of all the required GST data from a single source, we are relying on multiple sources and in the absence of data convergence across sources, it becomes difficult to project GST revenue.

Table 9: Reconciliation of GST Data across Sources – Part B

Sl. No.	State	Rajya Sabha – [GSTN (SGST+GSTR4) +DoR_IGSTS)		ERUP-[GSTN (SGST+GSTR4) +DoR IGSTS + DoR GSTCC)	
		2017-18	2018-19	2017-18	2018-19
		July-2017 to March-2018	April-2018 to Nov-2018	July-2017 to March-2018	April-2018 to Nov-2018
1	Andhra Pradesh	-1119	319	1198	438
2	Arunachal Pradesh	-49	26		
3	Assam	-471	105	-37	-14
4	Bihar	-650	161	1765	646
5	Chhatisgarh	-612	73	613	333
6	Delhi	-1663	713	44	494
7	Goa	-183	31	319	302
8	Gujarat	-2934	691		
9	Haryana	-1380	302		
10	Himachal Pradesh	-178	31	125	-234
11	J & K	-274	97	-87	-429
12	Jharkhand	-699	146	510	804
13	Karnataka	-2908	717	482	684
14	Kerala	-1026	126		
15	Madhya Pradesh	-1010	235	1625	660
16	Maharashtra	-7448	2115	-2603	-146
17	Manipur	-45	24	83	51
18	Meghalaya	-55	27	-49	-17
19	Mizoram	-26	5	-68	-148
20	Nagaland	-19	9	43	-33
21	Odisha	-927	247	1660	1351
22	Puducherry	-35	10	124	47
23	Punjab	-586	111		
24	Rajasthan	-1300	237	314	345

25	Sikkim	-12	15	12	-34
26	Tamil Nadu	-2884	504	-1597	-2405
27	Telengana	-1379	354	3804	3322
28	Tripura	-53	26	87	59
29	Uttar Pradesh	-2356	970	2922	3958
30	Uttarakhand	-415	110	689	574
31	West Bengal	-1750	427	1973	1927

3. Methodology for Forecasting GST Revenue

There are two alternative methodologies to estimate/project GST revenue. Goods and Services Tax is a destination based tax. This, it has been argued, brings the tax base close to taxation of final consumption expenditure. So the first approach is based on consumption expenditure data to arrive at an estimate. The second approach is based on relation between revenue collections and Gross Value Added (GVA). Since there are a number of exemptions in the tax regime both in terms of commodities and in terms of the threshold for registration, a broader based of GVA was taken. These approaches and the problems in utilizing the same are discussed below.

Method 1: Based on Consumption Expenditure

In this method, first the base corresponding to the revenue being generated is estimated/ computed. This information can be extracted as the difference between the turnover being reported as supply less the turnover being reported for purchases. The level and trends in this reported base are expected to be related to the level and trends of final consumption expenditure. In the absence of a long time series of data, since it is not possible to estimate and ascertain long term and short term relations between these two variables, a simplification would be to use the ratio of tax base (TB) to consumption expenditure (C+G) ratio is obtained, i.e., TB/ (C+G). Based on projection of consumption expenditure, tax base can then be estimated based on the assumption that TB and (C+G) ratio will remain constant at say the average observed for the period for which data is available. Using the effective tax rate derived from rate wise turnover reported for supplies, the corresponding tax revenue can be estimated.

There are many constraints to adopt this methodology and those are as follows:

a) *Obtaining reliable estimate of tax base of GST*: The turnover corresponding to supplies is reported in two of the returns GSTR 1 and GSTR 3B in addition to GSTR-4 in the case of dealers opting for composition scheme. The turnover for purchases is reported in GSTR 3B for the regular GST dealers. The turnover of supplies and the amount of tax paid as reported in GSTR-1 and GSTR-3B do not match. The turnover is significantly smaller in the former as compared to the latter. The compliance in filing GSTR-1 has

been somewhat lower than that for GSTR-3B partly as a result of the fact that there is a penalty for late compliance for the latter but not for the former (Figure 2 for monthly data and Figure 3 for quarterly data). It would appear that since GSTR-3B provides information on both supplies and purchases, it should provide adequate information for the purposes of this exercise. However, the information on turnover reported in GSTR-3B raises some questions of reliability. Figure 4 shows that the turnover reported in GSTR-1 is considerably lower than that reported in GSTR-3B. The effective tax rate from information in GSTR-3B is much lower than that reported in GSTR-1 (Figure 5).

Figure 2: Filers of Tax Returns as Percentage of Eligible to File
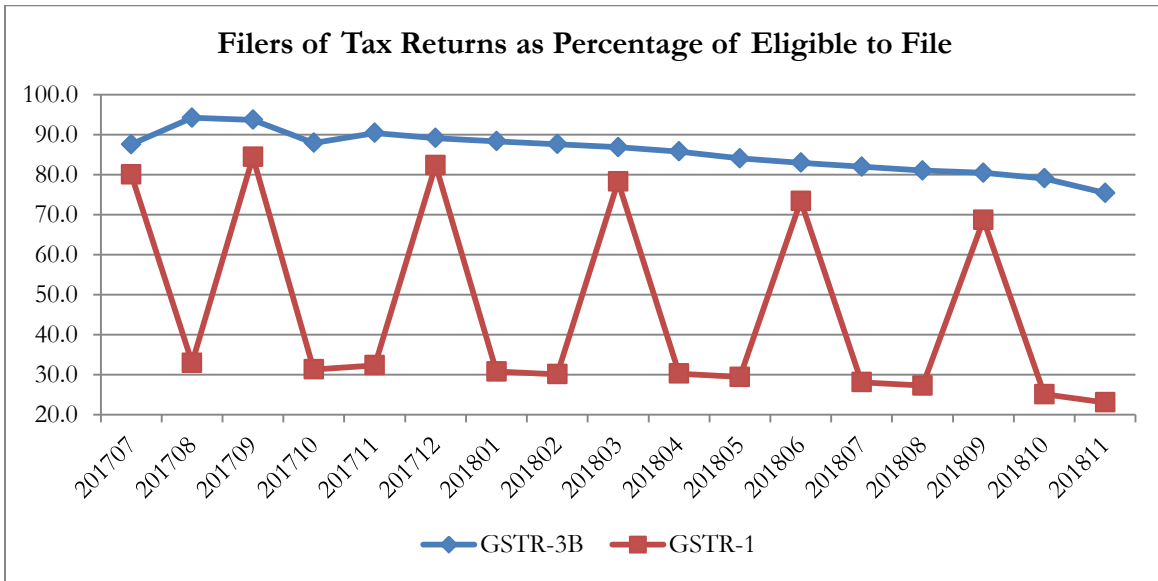
Figure 3: Comparative Compliance in GSTR-3B and GSTR-1 Filing
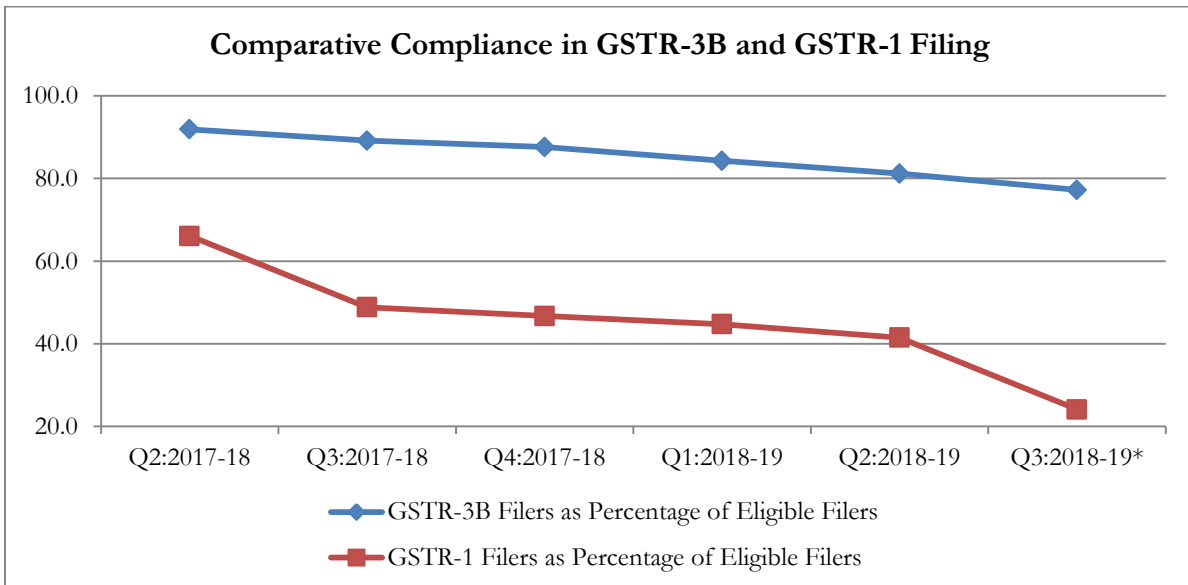
In GSTR-1, taxpayers provide invoice-wise details of their sales and from these information taxable value (or tax base) and tax liabilities are auto populated. However, in case of GSTR-3B the figures corresponding to taxable value are mostly unverified. Therefore, it seems that taxable value obtained from GSTR-1 is more reliable than GSTR-3B. However, tax payable reported in GSTR-3B is higher than GSTR-1. Unless the information from different sources (GSTR-1 and GSTR-3B) converges, any projection made from them may be erroneous.

Figure 4: Comparison of Taxable Value in GSTR-1 & GSTR-3B
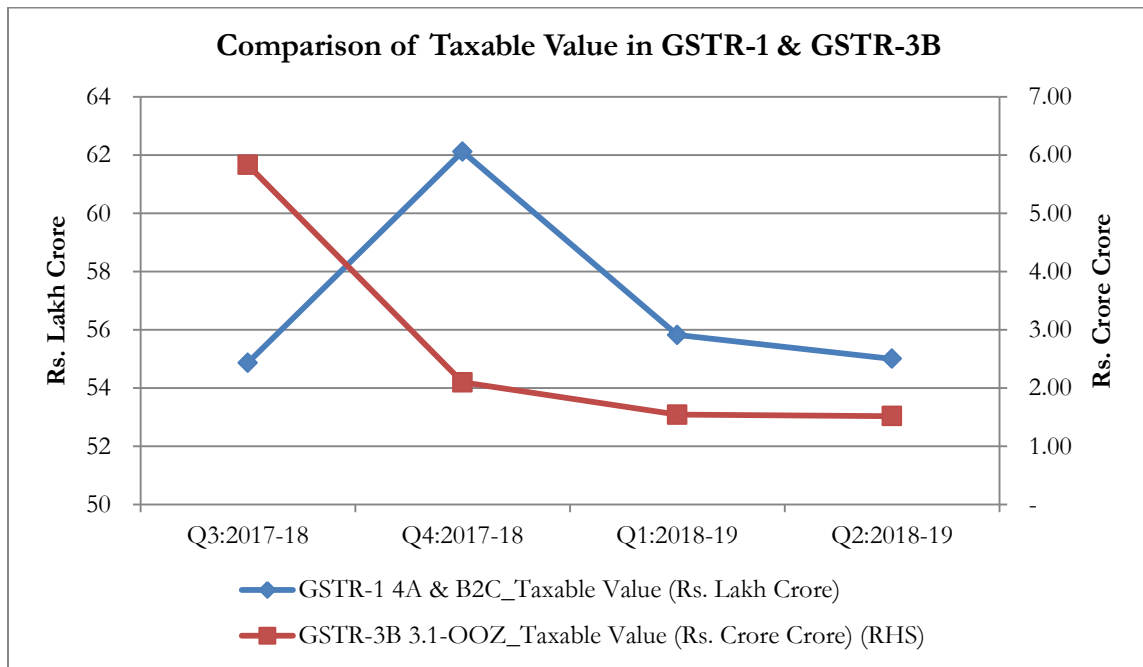
Figure 5: Comparison of Effective Tax Rate (ETR) in GSTR-1 and GSTR-3B (%)
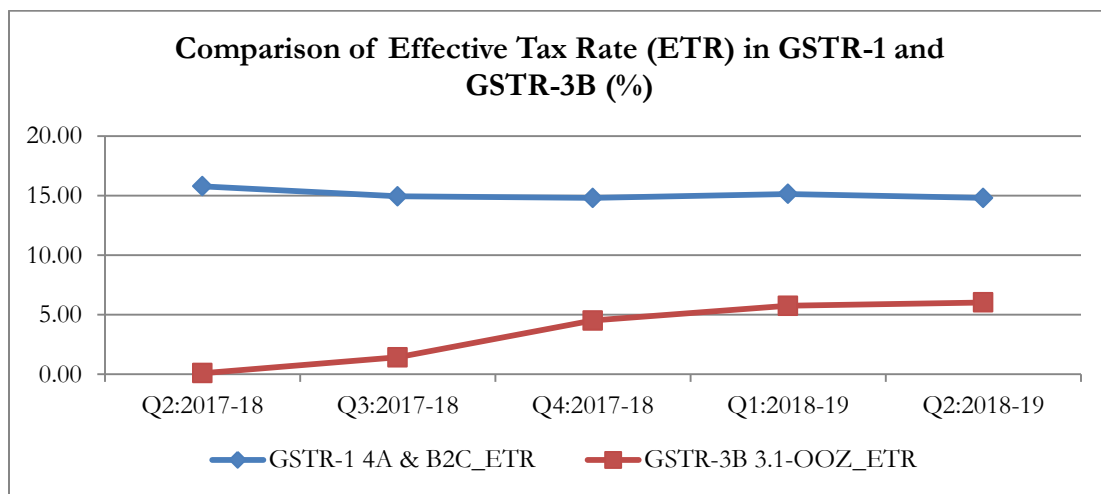
a. *Forecast of consumption expenditures*: Unlike projection of GDP by various national and multilateral institutions (e.g., Reserve Bank of India, International Monetary Fund, the World Bank), forecast of consumption expenditure is not available.

b. **Making adjustment for ITC Corrections**: Taxes are paid in either cash or credit (through adjustment of input tax credit). In a stable tax system, it is expected that respective shares of cash and credit will be constant over time. However, in the GST system tax payment in credit goes up with tax liability (Figure 6) and therefore it is difficult to make adjustment for credit unless the GST system stabilizes.

Figure 6: ITC as Percentage of Tax Payable is Increasing with Rising Tax Payment
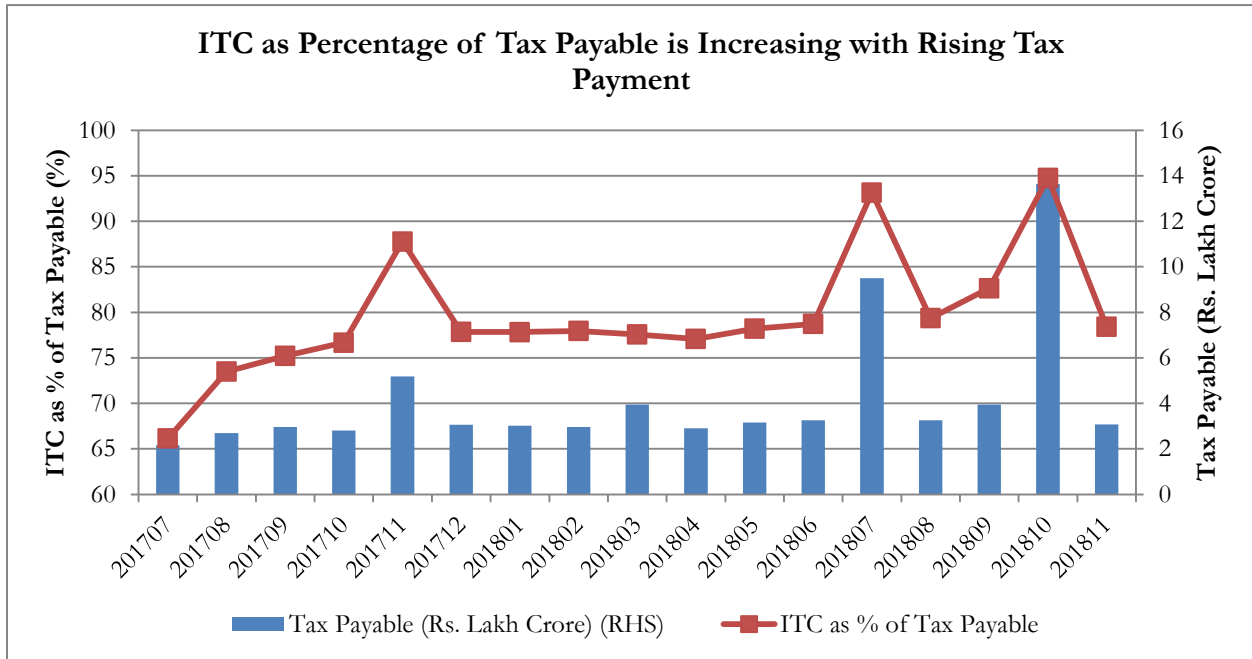
Method 2: Tax Collection and GVA Relationship

An alternative approach is to work with information on tax collection alone without bringing in information on tax base. This is a simple application of using buoyancy and growth in GDP/GVA to estimate the potential revenue from GST.

As compared to method 1, method 2 is simple and information requirement is also minimal. Given the constraints associated with execution of method 1, we have adopted method 2 for our study.

4. GST Revenue Projection

4.1 Inflation and Growth Dynamics during 2012-13 to 2018-19

By looking at Figure 7, India's inflation and growth dynamics can be divided into three phases – Phase I (Q1:2012-13 to Q1:2014-15), Phase II (Q2:2014-15 to Q3:2016-17) and Phase III (Q4:2016-17 to Q4:2018-19). In Phase I, average quarterly growth rate in real Gross Value Added (GVA, at basic prices, 2011-12 constant price series) was 6 percent and average quarterly inflation was 7.3 percent. This resulted in average quarterly growth rate in nominal GVA (at basic prices, current price series) of 13.3 percent during this phase. In Phase II, average quarterly growth rate in real GVA was 7.8 percent and average quarterly inflation was 2 percent and average quarterly growth rate in nominal GVA was 9.8 percent. This shows that as compared to Phase I, in Phase II real GVA grew more than 1.8 percent per quarter whereas quarterly inflation rate gone down by 5.3 percent. The fall in nominal GVA growth rate in Phase II is the result of containing inflation which may have reduced tax revenue mobilization. In Phase III, average quarterly real GVA growth rate was 6.7 percent, inflation was 4.6 percent and nominal GVA growth rate was 11.3. As compared to Phase II, in Phase III real GVA growth rate slowed down by 1.1 percent per quarter, inflation went up by 2.6 percent and nominal GVA growth rate increased by 1.5 percent. The analysis shows that a marginal increase in real GVA (by 0.7%) is observed in Phase III as compared to Phase I, fall in inflation by 2.7 percent resulted in fall in nominal GVA by 2 percent per quarter. Since tax mobilization depends on nominal GVA growth, containing inflation may impact tax mobilization. Extrapolating the trends observed over a short period of eight years does not provide a reliable basis for forecasting, especially if there have been major shocks to the economy both in terms of internal policy shocks, including to establish 4 percent as the benchmark for inflation targeting by the Reserve Bank of India. The alternative is to use forecasts provided by other agencies like the World Bank and International Monetary Fund.

Figure 7: Inflation and growth Dynamics in India during 2012-13 to 2018-19
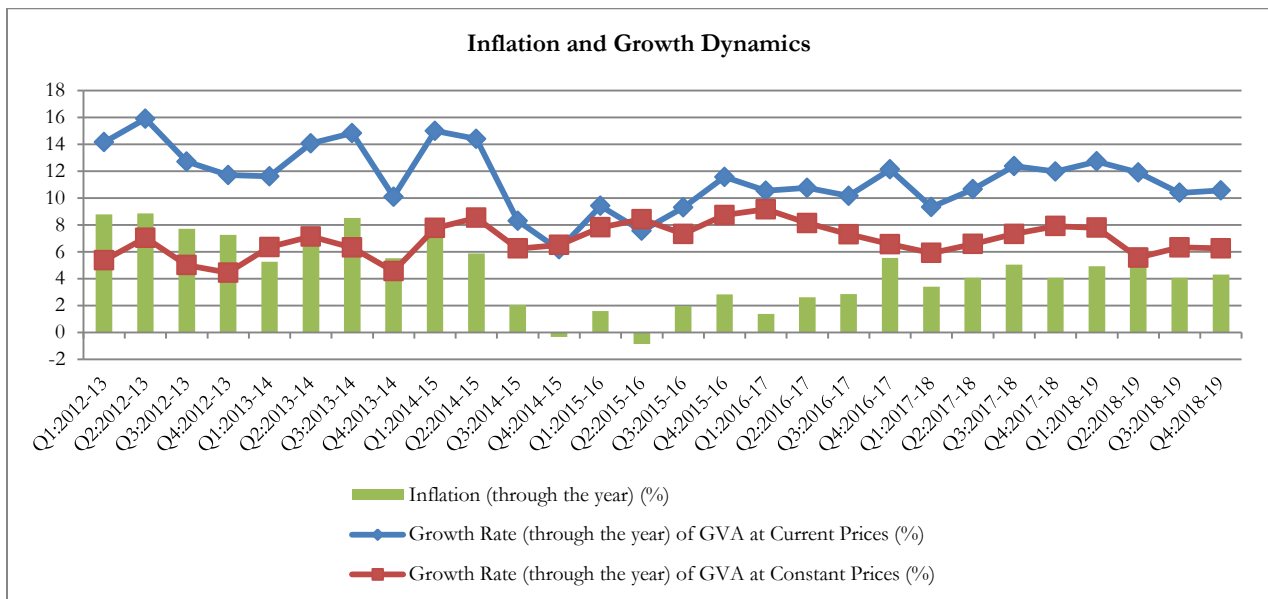
4.2 Growth Projections

International Monetary Fund (IMF) projects India's real GDP growth for the period of our study (i.e., 2019-20 to 20024-25) in the World Economic Outlook – April 2019.[1] In the same publication, IMF also projects inflation, based on Consumer Price Index (CPI), for India. We have relied on this estimates to projects nominal GDP growth rate for the period of our study. However, depending on alternative sources of GDP projection, alternative scenarios can be created.

Table 10: India's Growth Projection 2019-20 to 2024-25

	Growth Projection						
	GVA at Basic Prices (at Current Prices, 2011-12 Series)		**GVA at Basic Prices (at Constant Prices, 2011-12 Series)**		Inflation (%) (E= B-D)	Growth Projections (Real, %) (WEO, IMF, Apr-2019)	CPI Inflation Projection (%)(WEO, IMF, Apr-2019)
Year	Rs. Crore (A)	Growth Rate (%) (B)	Rs. Crore (C)	Growth Rate (%) (D)			
2011-12	8,106,946		8,106,947				
2012-13	9,202,692	13.5	8,546,277	5.42	8.10		
2013-14	10,363,153	12.6	9,063,647	6.05	6.56		
2014-15	11,481,795	10.8	9,719,024	7.23	3.56		
2015-16	12,566,646	9.4	10,503,348	8.07	1.38		
2016-17	13,935,917	10.9	11,318,972	7.77	3.13		
2017-18	15,482,715	11.1	12,104,165	6.94	4.16		
2018-19	17,241,154	11.4	12,887,661	6.47	4.88		
2019-20	19,068,716	10.6				7.1	3.5
2020-21	21,204,413	11.2				7.3	3.9
2021-22	23,685,329	11.7				7.5	4.2
2022-23	26,503,883	11.9				7.7	4.2
2023-24	29,657,845	11.9				7.7	4.2
2024-25	33,157,471	11.8				7.7	4.1

Source: EPWRF India Time Series Database and IMF's World Economic Outlook – April 2019

4.3 GST Collection

The GSTN database is not merged with Customs data base, as a result IGST collection in GSTN database does not capture the IGST collection from Import. Similarly, the GSTN database also does not capture GST Compensation Cess (GSTCC) collection from imports. To weed out this data problem, we have relied on data shared with us by the Department of Revenue (DoR),

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[1] https://www.imf.org/external/pubs/ft/weo/2019/01/weodata/index.aspx

Ministry of Finance for the period Q1 to Q4 of 2018-19. In Table 11, we have estimated average share of IGST collection from import as percentage of IGST collection from domestic trade (i.e., IGST collection available with GSTN). Similarly, we have estimated average share GSTCC collection from import in GSTCC collection from internal transactions. These shares are used in Table 12 to estimate IGST and GSTCC collection from imports.

Table 11: GST Collection from Imports

	Total IGST (Rs. Crore) (A)	IGST from Import (Rs. Crore) (B)	IGST Collection without IGST from Import (Rs. Crore) (C=A-B)	B as % of C	Total GSTC Cess (Rs. Crore) (D)	GSTC Cess from Import (Rs. Crore) (E)	GSTC Cess without GSTC Cess from Import (Rs. Crore) (F=D-E)	E as % of F
Q1:2018-19	149,166	70,186	78,980	88.9	24,015	2,329	21,686	10.7
Q2:2018-19	149,897	76,672	73,225	104.7	23,983	2,412	21,571	11.2
Q3:2018-19	151,081	74,676	76,405	97.7	23,919	2,635	21,284	12.4
Q4: 2018-19	148,596	68,970	79,626	86.6	25,452	2,703	22,749	11.9
Average	**149,685**	**72,626**	**77,059**	**94.5**	**24,342**	**2,520**	**21,823**	**11.5**

In the second step, we have estimated GST Revenue as percentage of GVA for the period Q3:2017-18 to Q2:2018-19 in Table 12. We have left out Q2:2017-18 as it was transitional period of GST and GST- GVA ratio stands high as compared to other quarters. We have also left out Q3:2018-19 as only data upto November 2018 was available for analysis. Therefore effective period for which GST data is available with us is Q3:2017-18 to Q2:2018-19. The ratio of GST collection as percentage of GVA was on average 6.87 percent with a range of 6.64 to 7.43 percent. We have used these alternative ratios to generate alternative scenarios in our analysis. This analysis is including the revenue collected from GST Compensation Cess.

Table 12: GST Collection (including GSTCC) as Percentage of GVA

Quarter: FY	GST Paid in Cash (Rs. Crore, GSTR3B T6.1)[1]	Total Interest + Late Fee Paid (Rs. Crore, GSTR3B T6.1)[2]	Tax Collection from Composition Scheme Holders (Rs. Crore)(GSTR4)[3]	IGST Collection from Import (Rs. Crore)[4]	GST Compensation Cess Collection in Cash (Rs. Crore, GSTR3B T6.1)[5]	GST Compensation Cess Collection from Import (Rs. Crore)[6]	Total GST Collection (Rs. Crore)	Total GST as % of GVA (at BP, Cr. Pr.)
Q2:2017-18	196,961	328	463	74,955	21,145	2,408	296,261	7.8
Q3:2017-18	175,642	692	666	65,644	21,307	2,390	266,341	6.7
Q4:2017-18	198,936	856	750	73,184	22,553	2,528	298,808	7.4
Q1:2018-19	183,437	1,088	663	70,186	21,493	2,329	279,195	6.7

Q2:2018-19	179,598	673	636*	76,672	21,322	2,412	281,312	6.6
Q3:2018-19 (till Nov-2018)	123,403	352	424*	51,041	14,403	1,797	191,419	4.4
Average (Q3:2017-18 to Q2:2018-19)	184,403	827	679	71,422	21,669	2,415	281,414	**6.87**
Maximum (Q3:2017-18 to Q2:2018-19)	198,936	1,088	750	76,672	22,553	2,528	298,808	**7.43**
Minimum (Q3:2017-18 to Q2:2018-19)	175,642	673	636	65,644	21,307	2,329	266,341	**6.64**

Note:

1-includes Tax paid in Cash for IGST, CGST and SGST

2-Includes Interest paid against IGST, CGST and SGST and late fee paid against CGST and SGST

3-Includes IGST, CGST and SGST

4- Figures are estimated for Q2:2017-18 to Q4:2017-18 based on average share in Total IGST Collection without IGST Collection from Import (see Table 11)

5-Includes GST Compensation Cess paid in cash, interest paid against GSTC cess and GSTC cess collection from composition scheme holders

6- Figures are estimated for Q2:2017-18 to Q4:2017-18 based on average share in Total GST Compensation (GSTC) Cess Collection without GSTC Collection from Import (see Table 11)

*-Estimates based on average monthly collection during Q2:2017-18 to Q1:2018-19

In the third step, we have estimated expected GST revenue for the period 2019-20 to 2024-25 based on projected GVA and average GST collection as percentage of GVA during Q3:2017-18 to Q2: 2018-19 (Table 13). Here our assumption is that tax buoyancy is one. In other words, growth rate in tax collection will be same as growth rate in GVA for the period 2019-20 to 2024-25. However, this is a baseline scenario; several alternative scenarios with different assumptions for tax buoyancy are considered in the present study.

Table 13: Projection of GST Revenue (including GSTCC)

GST Paid as % of GVA at Basic Prices (at Current Prices, 2011-12 Series)			
Average (Q3:2017-18 to Q2:2018-19)			**6.87**
Max (Q3:2017-18 to Q2:2018-19)			**7.43**
Min (Q3:2017-18 to Q2:2018-19)			**6.64**
Projected Annual GST Revenue (including GST Compensation Cess) (Rs. Crore)			
Scenarios=>	**Average** (Q3:2017-18 to Q2:2018-19)	**Max** (Q3:2017-18 to Q2:2018-19)	**Min** (Q3:2017-18 to Q2:2018-19)
2019-20	1,309,259	1,417,239	1,265,959
2020-21	1,455,896	1,575,970	1,407,746
2021-22	1,626,236	1,760,358	1,572,452
2022-23	1,819,758	1,969,841	1,759,574
2023-24	2,036,309	2,204,252	1,968,963
2024-25	2,276,593	2,464,354	2,201,301

4.4 Treatment of GST Compensation Cess in GST Revenue Projection

GST Compensation Cess (GSTCC) was introduced to provide revenue compensation to states and UTs with legislature in case their revenue collection fall short of 14 percent projected growth rate of tax collection with reference to tax collection from taxes subsumed under GST in 2015-16. Therefore, revenue collection under GSTCC is not available as GST revenue neither to states nor to the union government. We have treated GSTCC revenue as separate revenue under GST and tested whether the revenue so collected from GSTCC is adequate to provide compensation to states.

In Table 14, we estimate GST revenue collection without GSTCC as percentage of GVA. Based on average, maximum and minimum values of GST (as percentage of GVA), there alternative estimates are generated for the period 2019-25.

Table 14: GST Collection (excluding GSTCC) as Percentage of GVA

Quarter: FY	GST Paid in Cash (Rs. Crore, GSTR3B T6.1)[1]	Total Interest + Late Fee Paid (Rs. Crore, GSTR3B T6.1)[2]	Tax Collection from Composition Scheme Holders (Rs. Crore)(GSTR4)[3]	IGST Collection from Import (Rs. Crore)[4]	Total GST (Rs. Crore)	as % of GVA (at BP, Cr. Pr.)
Q2:2017-18	196,961	328	463	74,955	272,708	7.20
Q3:2017-18	175,642	692	666	65,644	242,644	6.12
Q4:2017-18	198,936	856	750	73,184	273,727	6.81
Q1:2018-19	183,437	1,088	663	70,186	255,373	6.11
Q2:2018-19	179,598	673	636*	76,672	257,579	6.08
Q3:2018-19 (till Nov-2018)	123,403	352	424*	51,041	175,219	4.00
Average (Q3:2017-18 to Q2:2018-19)	184,403	827	679	71,422	257,331	**6.28**
Maximum (Q3:2017-18 to Q2:2018-19)	198,936	1,088	750	76,672	273,727	**6.81**
Minimum (Q3:2017-18 to Q2:2018-19)	175,642	673	636	65,644	242,644	**6.08**

Note:
1-includes Tax paid in Cash for IGST, CGST and SGST

2-Includes Interest paid against IGST, CGST and SGST and late fee paid against CGST and SGST
3-Includes IGST, CGST and SGST
4- Figures are estimated for Q2:2017-18 to Q4:2017-18 based on average share in Total IGST Collection without IGST Collection from Import (see table)
*-Estimates based on average monthly collection during Q2:2017-18 to Q1:2018-19

4.5 GST Baseline Scenario

Based on the assumption that tax buoyancy is one and excluding the GSTCC revenue we have estimated the expected GST revenue in Table 15 based on data mostly obtained from GSTN.

Table 15: Projection of GST Revenue (excluding GSTCC)

Net GST Paid as % of GVA at Basic Prices (at Current Prices, 2011-12 Series)			
Average (Q3:2017-18 to Q2:2018-19)			**6.28**
Max (Q3:2017-18 to Q2:2018-19)			**6.81**
Min (Q3:2017-18 to Q2:2018-19)			**6.08**
Projected Annual GST Revenue (Excluding GST Compensation Cess) (Rs. Crore)			
Scenarios=>	**Average** (Q3:2017-18 to Q2:2018-19)	**Max** (Q3:2017-18 to Q2:2018-19)	**Min** (Q3:2017-18 to Q2:2018-19)
2019-20	1,197,174	1,298,282	1,159,153
2020-21	1,331,257	1,443,689	1,288,978
2021-22	1,487,015	1,612,601	1,439,789
2022-23	1,663,969	1,804,500	1,611,124
2023-24	1,861,982	2,019,236	1,802,848
2024-25	2,081,696	2,257,506	2,015,584

To validate the estimates based on GSTN database and under the variations in estimates across alternative databases, we have estimated the expected revenue for the period 2019-25 based on the data obtained from the Department of Revenue in Table 16 and 17.

Table 16: Estimation of GST Revenue based on Department of Revenue Data (including GSTCC Revenue)

Quarter: FY	DoR GST Collection (Including GST Compensation Cess) (Rs. Crore) (A)	Gross Value Added at Basic Prices (Current Prices, Rs. Crore) (GVA) (B)	GST as % of GVA (C)	FY	Projected GVA at Basic Prices (Current Prices, Rs. Crore) (GVA)	GST Revenue Projection (Rs. Crore)		
						Average	Max	Min
Q1:2018-19	292,892	4,182,804	7.00	2019-20	19,068,716	1,302,978	1,335,247	1,280,082
Q2:2018-19	284,523	4,237,311	6.71	2020-21	21,204,413	1,448,911	1,484,794	1,423,451
Q3:2018-19	293,764	4,376,051	6.71	2021-22	23,685,329	1,618,434	1,658,515	1,589,994
Q4:2018-19	306,805	4,444,988	6.90	2022-23	26,503,883	1,811,027	1,855,878	1,779,204
Average	*294,496*	*4,310,289*	*6.83*	2023-24	29,657,845	2,026,540	2,076,728	1,990,929
Max	*306,805*	*4,444,988*	*7.00*	2024-25	33,157,471	2,265,671	2,321,782	2,225,859
Min	*284,523*	*4,182,804*	*6.71*					

Table 17: Estimation of GST Revenue based on Department of Revenue Data (excluding GSTCC Revenue)

Quarter: FY	DoR GST Collection (without GST Compensation Cess) (Rs. Crore) (A)	Gross Value Added at Basic Prices (Current Prices, Rs. Crore) (GVA) (B)	GST as % of GVA (C)	FY	Projected GVA at Basic Prices (Current Prices, Rs. Crore) (GVA)	GST Revenue Projection (Rs. Crore)		
						Average	Max	Min
Q1:2018-19	269,069	4,182,804	6.43	2019-20	19,068,716	1,166,911	1,226,641	1,119,253
Q2:2018-19	262,286	4,237,311	6.19	2020-21	21,204,413	1,297,605	1,364,025	1,244,609
Q3:2018-19	261,941	4,376,051	5.99	2021-22	23,685,329	1,449,425	1,523,616	1,390,229
Q4:2018-19	260,902	4,444,988	5.87	2022-23	26,503,883	1,621,906	1,704,926	1,555,666
Average	*263,550*	*4,310,289*	*6.12*	2023-24	29,657,845	1,814,913	1,907,813	1,740,790
Max	*269,069*	*4,444,988*	*6.43*	2024-25	33,157,471	2,029,073	2,132,935	1,946,203
Min	*260,902*	*4,182,804*	*5.87*					

A comparison between estimates (based on alternative data sources) show that estimates based on DoR data is lower and it is 2.53 percent lower than GSTN data based estimates.

4.6 Allocation of GST Revenue between Union and State Governments

In Table 18, we present the monthly collection of CGST, SGST and IGST after settlement of IGST. After IGST settlement, share of CGST has increased from 44 percent in April 2018 to about 48 percent during May-2019 while that of SGST has reduced from 55 percent to 52 percent. In addition there is unallocated IGST and it is assumed that it will be distributed between States and the union government over the periods and that will not hamper the relative shares of the governments. Given that the ratios appear to be stabilizing, we allocate the estimated GST revenue between States and Union government in 52 percent and 48 percent respectively.

Table 18: Tax Collection after IGST Settlement (Regular and ad hoc) (Rs. Crore)

Month	CGST (A)	SGST (B)	IGST (C)	Total (D = A+B+C)	CGST Share (%) [E=A/(A+B)*100]	SGST Share (%) [F=B/(A+B)*100]
April-2018	32,493	40,257	22,154	94,904	44.66	55.34
May-2018	28,797	34,020	23,860	86,677	45.84	54.16
June-2018	56,645	51,345	-30,840	77,150	52.45	47.55
July-2018	33,796	38,042	16,283	88,121	47.04	52.96
Aug-2018	36,963	41,136	8,233	86,332	47.33	52.67
Sept-2018	30,574	35,015	20,860	29,642	46.61	53.39
Oct-2018	48,954	52,933	-9,177	92,710	48.05	51.95
Nov-2018	35,074	38,774	15,759	89,607	47.49	52.51
Dec-2018	43,851	46,252	-3,265	86,838	48.67	51.33
Jan-2019	36,107	39,502	18,204	93,813	47.75	52.25
Feb-2019	37,096	39,939	11,736	88,771	48.15	51.85
March-2019	47,614	51,209	-532	98,291	48.18	51.82
April-2019	47,533	50,776	6,388	104,697	48.35	51.65
May-2019	35,909	38,900	17,355	92,164	48.00	52.00

Source: Department of Revenue, MoF, GoI.

4.7 State-wise Shares of GST Revenue

To understand the revenue profiles of states under GST, we have relied on both GSTN database as well Department of Revenue data on state-wise IGST settlement (regular and ad hoc). Total GST collection of States includes SGST Collection in Cash, Interest and late fee collection from taxpayers filing GSTR-3B after due date, SGST Collection from Composition Dealers and IGST Settlement (regular and ad hoc) received from the Centre.

Table 19 shows that on average major states hold 90.54 percent share (averaged over last three quarters) of total states' (including UTs) GST collection. Except Bihar and Madhya Pradesh, coefficient of variation (a measure of volatility) in shares is less than 10 percent. Maharashtra holds the largest share (16.4%) among major states. The trends in shares are presented in the Appendix Figures. It shows that for many states the trends are not stable and for states like Gujarat and Maharashtra it is falling. Based on the trend analysis we found that the shares are relatively stable for last three quarters (Q1 to Q3 of 2018-19) and therefore we have considered average share of the states during the three quarters to allocate GST revenue.

Table 20 shows that on average minor states hold 5.04 percent share in total states' GST collection. The volatility in shares of minor states is relatively higher than major states, except

Himachal Pradesh and Uttarakhand. Like major states, we have also taken last three quarters' average share to allocate GST revenue among minor states.

Table 21 shows that on average UTs hold 4.42 percent share in total states' GST collection. Among the UTs, Delhi holds the largest share 3.73 percent. However, we have not presented the allocation of GST revenue among UTs, except Delhi and Puducherry, as the Central Finance Commission is not dealing with allocation of resources for UTs.

Table 19: Major State-wise Quarterly Shares in total States' GST Collection (%)

	Q2:2017-18 Jul'17-Sep'17	Q3:2017-18 Oct'17-Dec'17	Q4:2017-18 Jan'18-Mar'18	Q1:2018-19 Apr'18-Jun'18	Q2:2018-19 Jul'18-Sep'18	Q3:2018-19* Oct'18-Nov'18	C.V.	Average Share**
Andhra Pradesh	3.39	3.71	3.82	3.90	4.13	3.95	0.07	3.99
Bihar	1.78	2.34	2.55	2.93	2.97	3.00	0.18	2.97
Chhattisgarh	1.40	1.50	1.66	1.57	1.57	1.68	0.07	1.61
Goa	0.47	0.51	0.53	0.48	0.45	0.50	0.06	0.48
Gujarat	7.66	7.35	7.57	7.29	7.11	6.94	0.04	7.11
Haryana	3.91	3.63	3.75	3.83	3.72	3.52	0.04	3.69
Jharkhand	1.39	1.43	1.58	1.49	1.63	1.56	0.06	1.56
Karnataka	8.63	8.12	8.35	8.27	8.26	8.36	0.02	8.30
Kerala	4.09	4.18	4.01	4.16	3.89	4.49	0.05	4.18
Madhya Pradesh	2.88	3.63	3.38	3.67	3.71	3.84	0.10	3.74
Maharashtra	19.47	17.66	17.02	16.47	16.30	16.40	0.07	16.39
Odisha	2.19	2.21	2.50	2.36	2.42	2.33	0.05	2.37
Punjab	2.57	2.58	2.65	2.71	2.62	2.68	0.02	2.67
Rajasthan	3.90	4.30	4.17	4.39	4.43	4.73	0.06	4.52
Tamil Nadu	9.47	8.50	7.91	8.11	8.54	7.83	0.07	8.16
Telangana	4.19	4.55	4.51	4.46	4.77	4.64	0.04	4.62
Uttar Pradesh	8.24	8.50	8.76	9.08	8.77	8.87	0.03	8.90
West Bengal	5.03	5.27	5.25	5.29	5.46	5.10	0.03	5.28
Total	**90.64**	**89.97**	**89.96**	**90.45**	**90.73**	**90.44**		**90.54**

Note: *-Upto November 2018.
**-Average share during Jul'18-Sep'18 to Oct'18-Nov'18

Table 20: Minor State-wise Quarterly Shares in total States' GST Collection (%)

	Q2:2017-18	Q3:2017-18	Q4:2017-18	Q1:2018-19	Q2:2018-19	Q3:2018-19*	C.V.	Average Share**
	Jul'17-Sep'17	Oct'17-Dec'17	Jan'18-Mar'18	Apr'18-Jun'18	Jul'18-Sep'18	Oct'18-Nov'18		
Arunachal Pradesh	0.04	0.08	0.11	0.11	0.11	0.10	0.28	0.10
Assam	1.22	1.40	1.52	1.66	1.61	1.58	0.11	1.61
Himachal Pradesh	0.60	0.62	0.63	0.69	0.64	0.70	0.06	0.68
Jammu and Kashmir	0.70	0.95	0.95	0.97	0.99	1.03	0.12	1.00
Manipur	0.07	0.10	0.14	0.12	0.14	0.12	0.24	0.12
Meghalaya	0.10	0.13	0.15	0.15	0.16	0.16	0.15	0.15
Mizoram	0.04	0.06	0.08	0.08	0.09	0.08	0.30	0.08
Nagaland	0.04	0.06	0.08	0.08	0.09	0.08	0.25	0.09
Sikkim	0.05	0.06	0.07	0.08	0.08	0.08	0.18	0.08
Tripura	0.12	0.17	0.19	0.18	0.18	0.18	0.14	0.18
Uttarakhand	0.91	0.85	1.00	0.95	0.88	0.98	0.06	0.94
Total	**3.90**	**4.47**	**4.93**	**5.06**	**4.97**	**5.08**		**5.04**

Note: *-Upto November 2018

**-Average share during Jul'18-Sep'18 to Oct'18-Nov'18

Table 21: UT-wise Quarterly Shares in total States' GST Collection (%)

	Q2:2017-18	Q3:2017-18	Q4:2017-18	Q1:2018-19	Q2:2018-19	Q3:2018-19*	C.V.	Average Share**
	Jul'17-Sep'17	Oct'17-Dec'17	Jan'18-Mar'18	Apr'18-Jun'18	Jul'18-Sep'18	Oct'18-Nov'18		
Andaman and Nicobar Islands	0.05	0.06	0.08	0.06	0.06	0.07	0.17	0.06
Chandigarh	0.26	0.29	0.28	0.30	0.30	0.30	0.06	0.30
Dadra and Nagar Haveli	0.09	0.09	0.11	0.10	0.08	0.10	0.12	0.09
Daman and Diu	0.05	0.04	0.07	0.06	0.05	0.05	0.18	0.05
Delhi	4.85	4.91	4.41	3.78	3.63	3.77	0.14	3.73
Lakshadweep	0.00	0.00	0.00	0.00	0.00	0.01	0.37	0.00
Puducherry	0.16	0.17	0.18	0.19	0.18	0.17	0.06	0.18
Total	**5.46**	**5.55**	**5.11**	**4.49**	**4.29**	**4.47**	**1.10**	4.42

Note: **-Average share during Jul'18-Sep'18 to Oct'18-Nov'18

4.8 State-wise Allocation of GST Revenue

Based on two alternative estimates, we have allocated GST revenue among states in Table 22 to 25.

Table 22: Major State-wise Projection of SGST Revenue (including IGST Settlement and excluding GSTCC) as per GSTN Database (Rs. Crore)

State	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25
Andhra Pradesh	24,853	27,636	30,870	34,543	38,654	43,215
Bihar	18,473	20,542	22,945	25,676	28,731	32,122
Chhattisgarh	10,005	11,126	12,427	13,906	15,561	17,397
Goa	2,961	3,293	3,678	4,116	4,606	5,149
Gujarat	44,275	49,234	54,994	61,538	68,861	76,987
Haryana	22,975	25,548	28,537	31,933	35,733	39,950
Jharkhand	9,722	10,810	12,075	13,512	15,120	16,904
Karnataka	51,653	57,438	64,159	71,794	80,337	89,817
Kerala	26,018	28,932	32,318	36,163	40,467	45,242
Madhya Pradesh	23,289	25,898	28,928	32,370	36,222	40,497
Maharashtra	102,039	113,468	126,744	141,826	158,703	177,430
Odisha	14,754	16,407	18,326	20,507	22,947	25,655
Punjab	16,633	18,495	20,659	23,118	25,869	28,921
Rajasthan	28,120	31,269	34,928	39,084	43,735	48,896
Tamil Nadu	50,789	56,477	63,085	70,592	78,992	88,313
Telangana	28,783	32,007	35,751	40,006	44,767	50,049
Uttar Pradesh	55,433	61,642	68,854	77,048	86,216	96,390
West Bengal	32,887	36,570	40,849	45,710	51,149	57,185
Total	**563,662**	**626,792**	**700,127**	**783,442**	**876,672**	**980,119**

Table 23: Minor State-wise Projection of SGST Revenue (including IGST Settlement and excluding GSTCC) as per GSTN Database (Rs. Crore)

State	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25
Arunachal Pradesh	649	722	807	903	1,010	1,129
Assam	10,041	11,166	12,473	13,957	15,618	17,461
Himachal Pradesh	4,212	4,684	5,232	5,854	6,551	7,324
Jammu and Kashmir	6,203	6,898	7,705	8,622	9,648	10,787
Manipur	765	850	950	1,063	1,189	1,330
Meghalaya	961	1,069	1,194	1,336	1,495	1,672
Mizoram	522	580	648	725	811	907
Nagaland	536	596	665	744	833	931
Sikkim	487	542	605	677	758	847
Tripura	1,136	1,264	1,411	1,579	1,767	1,976
Uttarakhand	5,849	6,504	7,265	8,130	9,097	10,171
Total	**31,362**	**34,875**	**38,955**	**43,591**	**48,778**	**54,534**
Delhi	23,199	25,798	28,816	32,245	36,082	40,340
Puducherry	1,129	1,255	1,402	1,569	1,756	1,963
Total	**24,328**	**27,053**	**30,218**	**33,814**	**37,838**	**42,303**

Table 24: Major State-wise Projection of SGST Revenue (including IGST Settlement and excluding GSTCC) as per DoR Database (Rs. Crore)

State	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25
Andhra Pradesh	24,225	26,938	30,090	33,670	37,677	42,123
Bihar	18,006	20,023	22,365	25,027	28,005	31,310
Chhattisgarh	9,752	10,844	12,113	13,555	15,168	16,957
Goa	2,886	3,210	3,585	4,012	4,489	5,019
Gujarat	43,156	47,989	53,604	59,982	67,120	75,041
Haryana	22,394	24,902	27,816	31,126	34,830	38,940
Jharkhand	9,476	10,537	11,770	13,171	14,738	16,477
Karnataka	50,347	55,986	62,537	69,979	78,306	87,546
Kerala	25,361	28,201	31,501	35,249	39,444	44,098
Madhya Pradesh	22,701	25,243	28,197	31,552	35,307	39,473
Maharashtra	99,460	110,600	123,540	138,241	154,692	172,945
Odisha	14,381	15,992	17,863	19,989	22,367	25,007
Punjab	16,212	18,028	20,137	22,533	25,215	28,190
Rajasthan	27,409	30,479	34,045	38,096	42,630	47,660
Tamil Nadu	49,505	55,049	61,490	68,807	76,995	86,081
Telangana	28,055	31,198	34,848	38,995	43,635	48,784
Uttar Pradesh	54,032	60,084	67,113	75,100	84,037	93,953
West Bengal	32,056	35,646	39,816	44,555	49,856	55,740
Total	**549,414**	**610,948**	**682,429**	**763,638**	**854,511**	**955,343**

Table 25: Minor State-wise Projection of SGST Revenue (including IGST Settlement and excluding GSTCC) as per DoR Database (Rs. Crore)

State	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25
Arunachal Pradesh	633	704	786	880	985	1,101
Assam	9,788	10,884	12,157	13,604	15,223	17,019
Himachal Pradesh	4,105	4,565	5,099	5,706	6,385	7,139
Jammu and Kashmir	6,047	6,724	7,511	8,404	9,404	10,514
Manipur	745	829	926	1,036	1,159	1,296
Meghalaya	937	1,042	1,164	1,303	1,458	1,629
Mizoram	508	565	632	707	791	884
Nagaland	522	580	648	726	812	908
Sikkim	475	528	590	660	739	826
Tripura	1,108	1,232	1,376	1,539	1,723	1,926
Uttarakhand	5,701	6,340	7,082	7,924	8,867	9,914
Total	**30,569**	**33,993**	**37,970**	**42,489**	**47,545**	**53,155**
Delhi	22,613	25,146	28,088	31,430	35,170	39,320
Puducherry	1,100	1,224	1,367	1,529	1,711	1,913
Total	**23,713**	**26,369**	**29,454**	**32,959**	**36,882**	**41,234**

5. States' Revenue under Protection

It is pertinent to ask whether the expected GST revenue of states would be in line with revenue protection assured by the Union government. Department of Revenue provides state-wise revenue collection from taxes subsumed under GST for 2015-16. The data does not have information for 5 states , viz., Gujarat, Haryana, Kerala, Punjab and Arunachal Pradesh. We have estimated expected revenue from GST for states where data is available using methodology as described below:

$$ERUP^t = Revenue\ Subsumed\ under\ GST\ for\ 2015-16 * [1 + \left(\frac{14}{100}\right)]^t$$

Where, t=2 for 2017-18, t=3 for 2018-19

Table 26: State-wise Estimated Revenue under Protection (Rs. Crore)

Major States	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25
Andhra Pradesh	23,436	26,718	30,458	34,722	39,583	45,125
Bihar	21,316	24,300	27,702	31,580	36,001	41,041
Chhattisgarh	12,477	14,224	16,215	18,485	21,073	24,024
Goa	3,895	4,440	5,062	5,770	6,578	7,499
Gujarat						
Haryana						
Jharkhand	11,613	13,239	15,092	17,205	19,614	22,360
Karnataka	61,046	69,592	79,335	90,442	103,104	117,539
Kerala						
Madhya Pradesh	26,201	29,869	34,051	38,818	44,253	50,448
Maharashtra	101,886	116,150	132,411	150,948	172,081	196,172
Odisha	19,891	22,676	25,851	29,470	33,596	38,299
Punjab						
Rajasthan	28,942	32,994	37,613	42,879	48,882	55,726
Tamil Nadu	46,485	52,993	60,412	68,869	78,511	89,503
Telangana	31,927	36,397	41,493	47,302	53,924	61,473
Uttar Pradesh	57,468	65,514	74,686	85,141	97,061	110,650
West Bengal	35,531	40,505	46,175	52,640	60,010	68,411
Minor States	**2019-20**	**2020-21**	**2021-22**	**2022-23**	**2023-24**	**2024-25**
Arunachal Pradesh						
Assam	9,514	10,846	12,365	14,096	16,069	18,319
Himachal Pradesh	5,536	6,311	7,194	8,201	9,349	10,658
J & K	6,858	7,818	8,913	10,161	11,583	13,205
Manipur	788	898	1,023	1,167	1,330	1,516
Meghalaya	906	1,032	1,177	1,342	1,529	1,743
Mizoram	221	252	288	328	374	426
Nagaland	433	493	562	641	731	833
Sikkim	387	441	503	573	654	745
Tripura	1,331	1,518	1,730	1,973	2,249	2,564
Uttarakhand	8,919	10,168	11,591	13,214	15,064	17,173
UTs with Legislative Assembly	**2019-20**	**2020-21**	**2021-22**	**2022-23**	**2023-24**	**2024-25**
Delhi	27,132	30,930	35,261	40,197	45,825	52,240
Puducherry	1,842	2,100	2,394	2,729	3,111	3,547

5.1 Estimation of Required GST Compensation Cess Collection

We have estimated state-wise shortfall in GST revenue collection with reference to revenue protected under the *Goods and Services Tax (Compensation to States) Act of 2017*. Table 27 shows that, excluding the states for which data is not available from Department of Revenue, revenue requirement to compensate states will increase over time.

Table 27: State-wise Required Revenue to Provide GST Compensation to States (Database: GSTN-without GSTCC) (Table 26 – Table 22 & 23) (Rs. Crore)

State	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25
Andhra Pradesh				-179	-929	-1910
Bihar	-2843	-3758	-4756	-5904	-7270	-8920
Chhattisgarh	-2472	-3098	-3788	-4579	-5512	-6627
Goa	-934	-1147	-1383	-1654	-1972	-2350
Gujarat						
Haryana						
Jharkhand	-1892	-2429	-3017	-3693	-4494	-5456
Karnataka	-9393	-12154	-15177	-18649	-22767	-27722
Kerala						
Madhya Pradesh	-2912	-3971	-5123	-6448	-8030	-9951
Maharashtra		-2682	-5667	-9122	-13378	-18742
Odisha	-5137	-6270	-7525	-8963	-10648	-12644
Punjab						
Rajasthan	-822	-1725	-2686	-3795	-5147	-6830
Tamil Nadu						-1190
Telangana	-3144	-4390	-5741	-7296	-9157	-11424
Uttar Pradesh	-2035	-3872	-5831	-8094	-10845	-14260
West Bengal	-2644	-3935	-5327	-6930	-8860	-11226
Sub-Total	**-34226**	**-49430**	**-66021**	**-85306**	**-109011**	**-139251**
Arunachal Pradesh						
Assam				-139	-451	-858
Himachal Pradesh	-1324	-1627	-1962	-2347	-2799	-3335
Jammu and Kashmir	-655	-920	-1208	-1538	-1935	-2418
Manipur	-23	-47	-74	-104	-141	-187
Meghalaya				-5	-34	-72
Mizoram						
Nagaland						
Sikkim						
Tripura	-195	-254	-319	-393	-481	-588
Uttarakhand	-3070	-3664	-4326	-5085	-5967	-7003
Sub-Total	**-5267**	**-6513**	**-7889**	**-9611**	**-11808**	**-14460**

Delhi	-3933	-5133	-6445	-7952	-9742	-11900
Puducherry	-713	-844	-992	-1160	-1355	-1584
Sub-Total	**-4646**	**-5977**	**-7436**	**-9112**	**-11098**	**-13484**
Grand Total	**-44139**	**-61920**	**-81346**	**-104029**	**-131917**	**-167194**

5.2 Estimation of GST Compensation Cess Collection

Given the compensation requirement to protect the revenue of the states, it is important to know whether the expected revenue from GSTCC would be sufficient during 2019-25 to give compensation to states in case revenue collection falls short of expected revenue. Given the GSTCC collection during Q3:2017-18 to Q2:2018-19 as percentage of GVA and expected GVA growth, we have estimated the revenue from GSTCC in Table 28. It shows that expected revenue from GSTCC would be enough to meet the revenue requirement to provide compensation to states. However, the estimated compensation requirement during 2019-25 does not include Haryana, Gujarat, Kerala, Punjab and Arunachal Pradesh. Given the compensation paid out to missing states during July-2017 to March-2018 and April – 2018 to Jan-2019 (Table 29), revenue collection from GSTCC is expected to be sufficient to pay compensation to all states, in case there is any shortfall in revenue collection.

The GST Compensation period ends on 30 June 2022. At present, it is not clear what will be the future of GST compensation cess after GST compensation period ends. It is also not clear what will be the mechanism to compensate states, in case there is any revenue short fall after the end of GST compensation period. In this study we have assumed that GST compensation cess will continue after GST compensation period and therefore states will continue receiving GST compensation at least till 31 March 2025. Depending on the fate of GST compensation cess and policy of compensation payment, alternative scenarios may be generated.

Table 28: Projection of GSTCC Collection during 2019-20 to 2024-25

GSTCC Collection as % of GVA at Basic Prices (at Current Prices, 2011-12 Series)			
Average (Q3:2017-18 to Q2:2018-19)			**0.59**
Max (Q3:2017-18 to Q2:2018-19)			**0.62**
Min (Q3:2017-18 to Q2:2018-19)			**0.56**
Projected GST Compensation Cess Collection (Rs. Crore)			
	Average (Q3:2017-18 to Q2:2018-19)	Max (Q3:2017-18 to Q2:2018-19)	Min (Q3:2017-18 to Q2:2018-19)
2019-20	112,085	118,958	106,805
2020-21	124,638	132,281	118,768
2021-22	139,221	147,758	132,663
2022-23	155,788	165,341	148,450
2023-24	174,327	185,016	166,116
2024-25	194,898	206,848	185,718

Table 29: GST Compensation Received by Missing States (Rs. Crore)

State	July'17-Mar'18		Apr'18-Jan'19	
	Average Monthly	Total	Average Monthly	Total
Gujarat	855	4,277	927	5,559
Haryana	292	1,461	426	2,558
Kerala	420	2,102	426	2,554
Punjab	924	4,618	1,091	6,548
Arunachal Pradesh	3	15	-	-
Total		**12,473**		**17,219**

Source: Department of Revenue

In Table 30 we present expected GST compensation requirements and GSTCC collection for the period 2019-25. Table 3 shows that expected requirement of GST compensation for 2019-20 is lower than what was actually paid out during 2017-18 (July-2017 to March-2018) and 2018-19 (till January 2019). One reason for lower estimate in GST compensation requirement for 2019-20 is that it does not include compensation requirement for Haryana, Gujarat, Kerala, Punjab and Arunachal Pradesh (named missing states here). Since, our estimates are based on assumption on tax buoyancy and expected GDP growth, there is possibility that the numbers may not exactly coincide with actual numbers. Table 30 also shows that there are increasing trends in both expected GST compensation requirement as well as expected GSTCC collection. This is to be mentioned here that the expected GST compensation requirement does not include missing states. It is difficult to predict the expected GST compensation requirement for the missing states. Therefore, it would be difficult to make comments on whether the balance available in the GST compensation account (after paying out the compensation to states for which data is available) would be sufficient to provide compensation to missing states. The entire analysis is carried out here based on assumptions that tax buoyancy will remain constant at one and expected GDP growth rate will coincide with actual growth in GDP in the coming years.

Table 30: GSTCC Collection vis-à-vis GST Compensation Requirement (Rs. Crore)

Tax Buoyancy=>	1.00					
Alternative Database=>	GSTN-without GSTCC			DoR-without GSTCC		
FY	Total GST Compensation Required (A)*	GST Compensation Cess Collection (B)	Balance (B-A)	Total GST Compensation Required (C)*	GST Compensation Cess Collection (D)	Balance (D-C)
July'17 to Mar'18	48,178#	62,614@	14,436			
Apr'18 to Jan'19	62,243#	80,607@	18,364			
2019-20	44,139	112,085	67,946	54,618	112,085	57,467
2020-21	61,920	124,638	62,718	73,743	124,638	50,895
2021-22	81,346	139,221	57,874	95,142	139,221	44,079
2022-23	104,029	155,788	51,759	120,130	155,788	35,658
2023-24	131,917	174,327	42,410	151,380	174,327	22,947
2024-25	167,194	194,898	27,704	189,491	194,898	5,407

Note: *-estimated based on methodology described above.
Source: #- Department of Revenue and @- https://tutorial.gst.gov.in/downloads/statisticalreport.pdf

6. Building up Alternative Scenarios

So far in our analysis we have assumed that tax buoyancy is one. This implies that growth rate in tax collection will be same as growth rate in GDP. Based on monthly releases of GST revenue by Press Information Bureau (PIB), we have compiled month-wise overall GST collection till May 2019 (Table 32) and estimated tax buoyancy in Table 31. Table 31 shows that except in Q2 of 2018-19 over Q2 of 2017-18, tax buoyancy is higher than 1. Therefore, we have considered average tax buoyancy of Q3 and Q4 of 2018-19, i.e., 1.3, in generating one alternative scenario. If we consider, average of Q2 to Q4 of 2018-19, average tax buoyancy is 0.88 (table 31). So, we have built a second alternative scenario assuming tax buoyancy as 0.90. A third alternative scenario is provided with an assumption of tax buoyancy as 1.1.

Table 31: Experience of GST Buoyancy till Q4 of 2018-19

Quarter	GST Collection (Rs. Crore)			GVA (at Basic Prices, Current Prices) (Rs. Crore)			Tax Buoyancy (B/A)
	2017-18	2018-19	Growth Rate (%)(A)	2017-18	2018-19	Growth Rate (%) (B)	
Q1				3,710,903	4,182,804	12.72	
Q2	283,030	289,112	2.15	3,786,809	4,237,311	11.90	0.18
Q3	257,919	294,866	14.33	3,964,596	4,376,051	10.38	1.38
Q4	281,588	317,689	12.82	4,020,407	4,444,988	10.56	1.21
Average (Q3 & Q4)	269,754	306,278	13.6	3,992,501.5	4,410,519.5	10.47	1.30
Average (Q2 to Q4)	274,179	300,556	9.62	3,923,937	4,352,783	10.93	0.88

In Table 32, we have estimated the likely GST revenue collection during 2019-25 based on alternative assumptions on tax buoyancy. We have also estimated revenue profile of states in GST collection, assuming states' (including UTs) share will remain constant at 52 percent in GST collection after IGST settlement.

Based on the methodology described above, we have also estimated the likely requirements of revenue compensation and generation of revenue from GSTCC under different scenarios (based on alternative tax buoyancy) for the period 2019-25 in Table 33. In Appendix Tables (Table A.1-A.3) we provide the detail estimates of GST Revenue Projection and GSTCC Collections across scenarios.

Table 32: GST Revenue Projection (Scenarios Based on Tax Buoyancy)

Tax Buoyancy=>	0.9				1.1				1.3			
GST Revenue Projection	GSTN-without GSTCC		DoR-without GSTCC		GSTN-without GSTCC		DoR-without GSTCC		GSTN-without GSTCC		DoR-without GSTCC	
FY	Annual	Average - Monthly	Annual	Average - Monthly	Annual	Average - Monthly	Annual	Average - Monthly	Annual	Average - Monthly	Annual	Average - Monthly
2019-20	1,185,700	98,808	1,155,727	96,311	1,208,648	100,721	1,178,095	98,175	1,231,595	102,633	1,200,462	100,039
2020-21	1,317,849	109,821	1,284,536	107,045	1,344,666	112,055	1,310,675	109,223	1,371,483	114,290	1,336,813	111,401
2021-22	1,471,439	122,620	1,434,243	119,520	1,502,590	125,216	1,464,607	122,051	1,533,742	127,812	1,494,971	124,581
2022-23	1,646,274	137,189	1,604,658	133,722	1,681,665	140,139	1,639,155	136,596	1,717,056	143,088	1,673,651	139,471
2023-24	1,842,180	153,515	1,795,613	149,634	1,881,783	156,815	1,834,214	152,851	1,921,385	160,115	1,872,815	156,068
2024-25	2,059,724	171,644	2,007,657	167,305	2,103,667	175,306	2,050,489	170,874	2,147,610	178,967	2,093,321	174,443
SGST Revenue Projection												
2019-20	616,564	51,380	600,978	50,082	628,497	52,375	612,609	51,051	640,430	53,369	624,240	52,020
2020-21	685,282	57,107	667,959	55,663	699,226	58,269	681,551	56,796	713,171	59,431	695,143	57,929
2021-22	765,148	63,762	745,806	62,151	781,347	65,112	761,596	63,466	797,546	66,462	777,385	64,782
2022-23	856,062	71,339	834,422	69,535	874,466	72,872	852,360	71,030	892,869	74,406	870,298	72,525
2023-24	957,934	79,828	933,719	77,810	978,527	81,544	953,791	79,483	999,120	83,260	973,864	81,155
2024-25	1,071,057	89,255	1,043,982	86,998	1,093,907	91,159	1,066,254	88,855	1,116,757	93,063	1,088,527	90,711

Table 33: GSTCC Collection vis-à-vis GST Compensation Requirement across Tax Buoyancy Based Scenarios (Rs. Crore)

Tax Buoyancy	1					
Alternative Database=>	GSTN-without GSTCC			DoR-without GSTCC		
FY	Total GST Compensation Required*(A)	GST Compensation Cess Collection (B)	Gap (B-A)	Total GST Compensation Required*(C)	GST Compensation Cess Collection (D)	Gap (D-C)
2019-20	44,139	112,085	67,946	54,618	112,085	57,467
2020-21	61,920	124,638	62,718	73,743	124,638	50,895
2021-22	81,346	139,221	57,874	95,142	139,221	44,079
2022-23	104,029	155,788	51,759	120,130	155,788	35,658
2023-24	131,917	174,327	42,410	151,380	174,327	22,947
2024-25	167,194	194,898	27,704	189,491	194,898	5,407
Tax Buoyancy	**0.9**					
2019-20	48,016	111,010	62,994	58,547	111,010	52,464
2020-21	66,631	123,383	56,752	78,459	123,383	44,924
2021-22	86,842	137,763	50,921	100,931	137,763	36,832
2022-23	110,776	154,131	43,355	127,438	154,131	26,693
2023-24	139,826	172,473	32,647	159,558	172,473	12,916
2024-25	176,504	192,840	16,337	198,565	192,840	-5724
Tax Buoyancy	**1.1**					
2019-20	41,085	113,159	72,074	50,688	113,159	62,471
2020-21	57,209	125,894	68,684	69,152	125,894	56,742
2021-22	75,874	140,679	64,805	89,353	140,679	51,326
2022-23	97,489	157,445	59,956	113,491	157,445	43,954
2023-24	124,367	176,181	51,814	143,202	176,181	32,979
2024-25	157,884	196,955	39,070	180,417	196,955	16,538
Tax Buoyancy	**1.3**					
2019-20	34,979	115,307	80,328	43,264	115,307	72,044
2020-21	48,534	128,404	79,870	59,968	128,404	68,436
2021-22	64,929	143,596	78,666	78,551	143,596	65,045
2022-23	85,055	160,758	75,703	100,363	160,758	60,396
2023-24	109,631	179,889	70,257	127,786	179,889	52,102
2024-25	140,872	201,069	60,197	162,268	201,069	38,801

Note: *-estimated based on methodology described above.

7. Compliance in GST Regime

To understand revenue performance of GST, it would be important to assess the present state of tax compliance. Figure 8 shows that on-time monthly filing of GSTR-3B is hovering around 65 percent. This means that 65 percent of tax payers who are eligible to file monthly GSTR-3B return are filing the return on-time. The rest are filing the return over subsequent months with payment of late fee (if applicable) and interest on tax liability (including on GST compensation cess). Therefore, monthly revenue profile of GST is dynamic and it depends on filing pattern of late filers and their tax liability thereof. In other words, if GSTR-3B is filed for the month of July-2017 (say month 't') in the month of November-2017 (t+3 month), the revenue corresponding to the return will be booked for the July-2017 not for November-20017 (t+3 month). Therefore achieving stability in GSTR-3B filing is important to get an idea about monthly revenue collection under GST. Figure 8 shows that GSTR-3B filing is stabilized for initial months of GST introduction whereas for recent months it is yet to be stabilized. The difference between revenue accrued in a month and revenue realized in a month makes the GST revenue projection difficult.

Figure 8: Compliance in Filing GSTR-3B Return
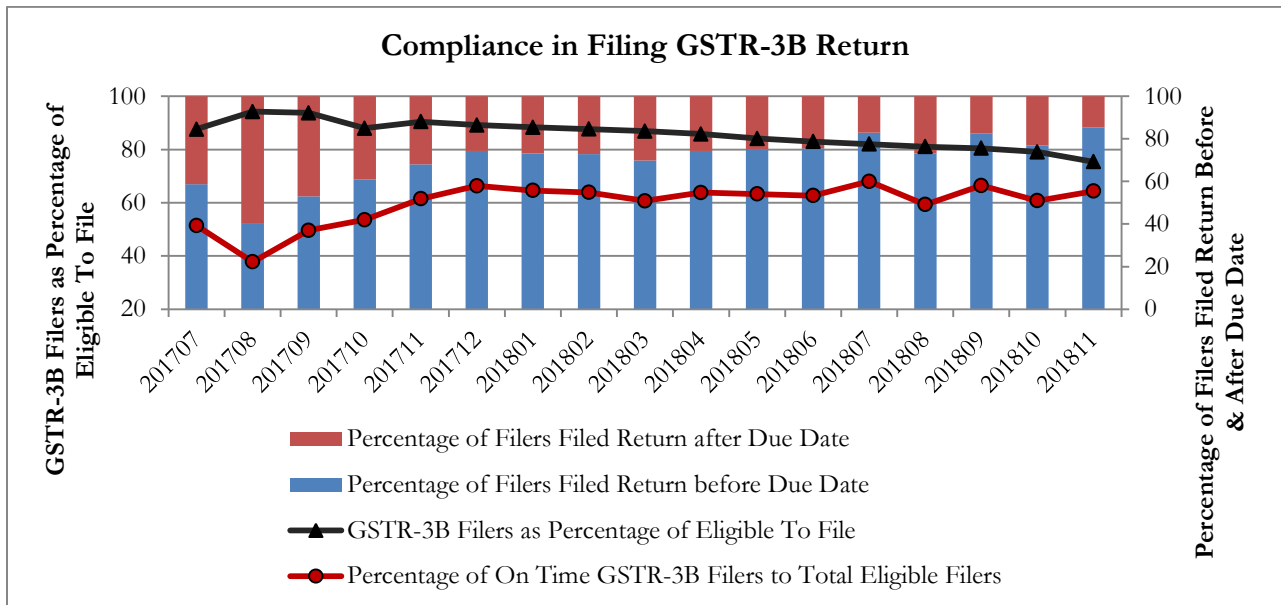
These numbers suggest that there is some scope for improvement in compliance in the GST regime, both in terms of filing of returns and payment of tax. Given that returns and compliance seems to flow in gradually but in time, improvement in timely compliance would front load the revenues from these returns but this cannot be assumed to improve revenue performance over time as well, unless there is improvement in the average tax payment per tax return.

Appendix Figures

Major State-wise Quarterly Shares in total States' GST Collection (%)
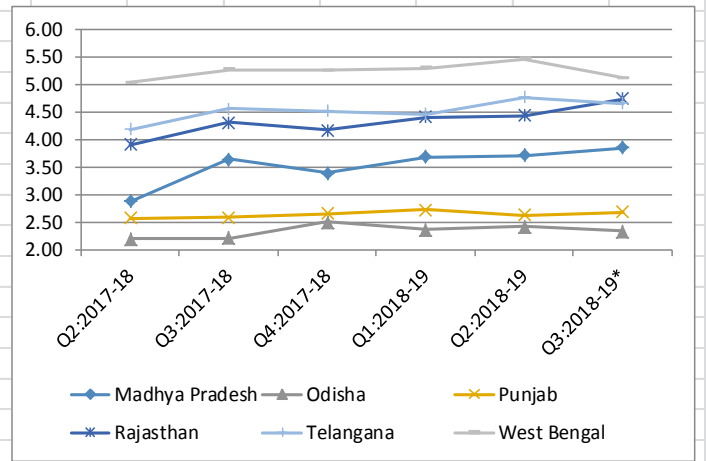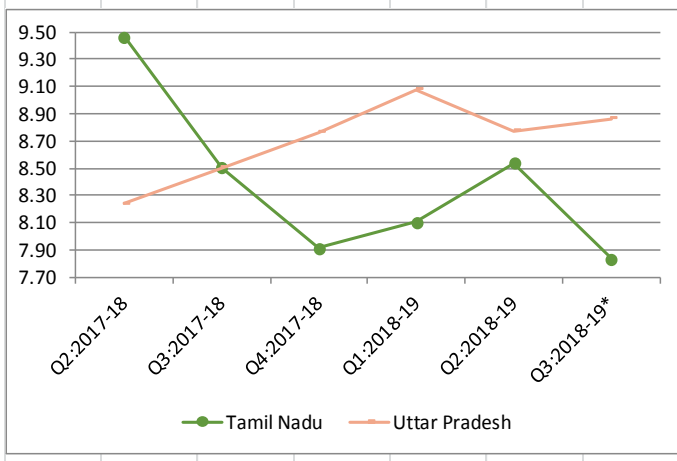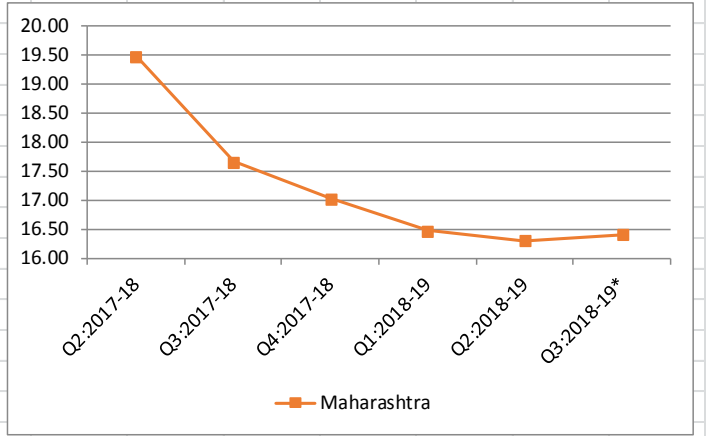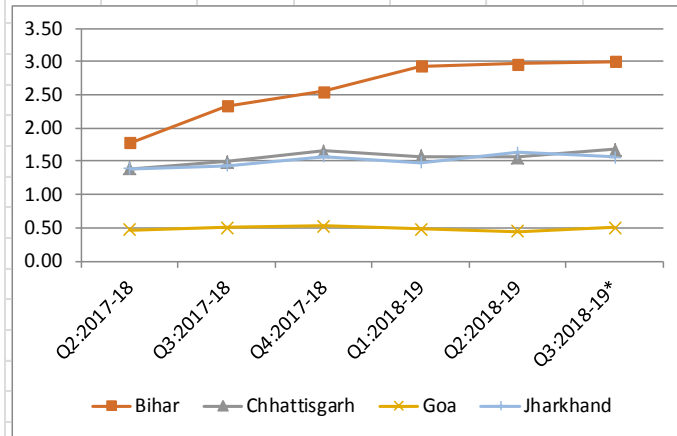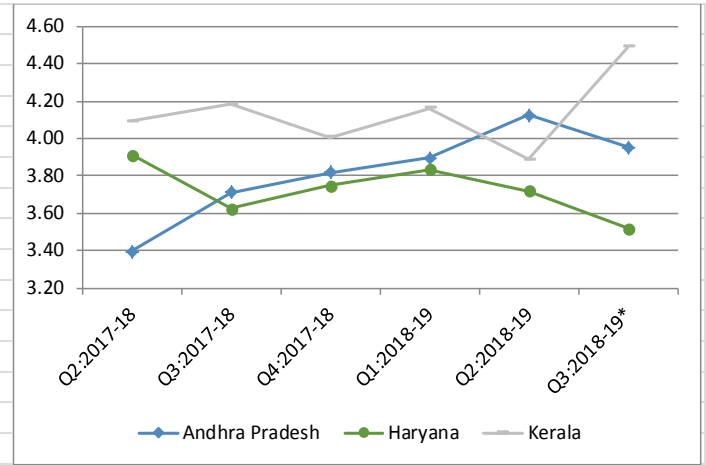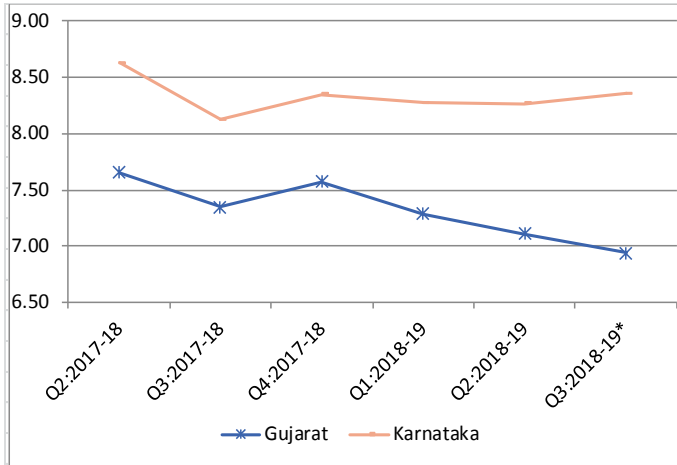
Appendix Tables

Table A1: GST Revenue Projection based on GSTN Data on GST

Tax Buoyancy	0.9		
Net GST Paid as % of GVA at Basic Prices (at Current Prices, 2011-12 Series)			
Average (Q3:2017-18 to Q2:2018-19)			**6.28**
Max (Q3:2017-18 to Q2:2018-19)			**6.81**
Min (Q3:2017-18 to Q2:2018-19)			**6.08**
GST Revenue Projection (without GST Compensation Cess)			
Scenarios	Average (Q3:2017-18 to Q2:2018-19)	Max (Q3:2017-18 to Q2:2018-19)	Min (Q3:2017-18 to Q2:2018-19)
2019-20	1,185,700	1,285,839	1,148,044
2020-21	1,317,849	1,429,148	1,275,996
2021-22	1,471,439	1,595,710	1,424,708
2022-23	1,646,274	1,785,310	1,593,990
2023-24	1,842,180	1,997,762	1,783,675
2024-25	2,059,724	2,233,679	1,994,310

Tax Buoyancy	1.1		
Net GST Paid as % of GVA at Basic Prices (at Current Prices, 2011-12 Series)			
Average (Q3:2017-18 to Q2:2018-19)			**6.28**
Max (Q3:2017-18 to Q2:2018-19)			**6.81**
Min (Q3:2017-18 to Q2:2018-19)			**6.08**
GST Revenue Projection (without GST Compensation Cess)			
Scenarios	Average (Q3:2017-18 to Q2:2018-19)	Max (Q3:2017-18 to Q2:2018-19)	Min (Q3:2017-18 to Q2:2018-19)
2019-20	1,208,648	1,310,724	1,170,263
2020-21	1,344,666	1,458,230	1,301,961
2021-22	1,502,590	1,629,492	1,454,870
2022-23	1,681,665	1,823,690	1,628,257
2023-24	1,881,783	2,040,709	1,822,020
2024-25	2,103,667	2,281,333	2,036,857

Tax Buoyancy	1.3		
Net GST Paid as % of GVA at Basic Prices (at Current Prices, 2011-12 Series)			
Average (Q3:2017-18 to Q2:2018-19)			**6.28**
Max (Q3:2017-18 to Q2:2018-19)			**6.81**
Min (Q3:2017-18 to Q2:2018-19)			**6.08**
GST Revenue Projection (without GST Compensation Cess)			
Scenarios	Average (Q3:2017-18 to Q2:2018-19)	Max (Q3:2017-18 to Q2:2018-19)	Min (Q3:2017-18 to Q2:2018-19)
2019-20	1,231,595	1,335,610	1,192,482
2020-21	1,371,483	1,487,311	1,327,926
2021-22	1,533,742	1,663,274	1,485,032
2022-23	1,717,056	1,862,070	1,662,524
2023-24	1,921,385	2,083,656	1,860,365
2024-25	2,147,610	2,328,986	2,079,404

Table A2: GST Revenue Projection based on Department of Revenue Data on GST

Tax Buoyancy	0.9		
FY	Projected GVA at Basic Prices (Current Prices, Rs. Crore) (GVA)	GST Revenue Projection (Rs. Crore)	
		Average	Max	Min
2019-20	18,885,960	1,155,727	1,214,885	1,108,526
2020-21	20,990,843	1,284,536	1,350,287	1,232,074
2021-22	23,437,237	1,434,243	1,507,657	1,375,667
2022-23	26,222,028	1,604,658	1,686,795	1,539,122
2023-24	29,342,449	1,795,613	1,887,524	1,722,278
2024-25	32,807,508	2,007,657	2,110,422	1,925,662
Tax Buoyancy	1.1		
FY	Projected GVA at Basic Prices (Current Prices, Rs. Crore) (GVA)	GST Revenue Projection (Rs. Crore)	
		Average	Max	Min
2019-20	19,251,473	1,178,095	1,238,398	1,129,980
2020-21	21,417,982	1,310,675	1,377,764	1,257,145
2021-22	23,933,420	1,464,607	1,539,575	1,404,791
2022-23	26,785,738	1,639,155	1,723,058	1,572,210
2023-24	29,973,241	1,834,214	1,928,101	1,759,303
2024-25	33,507,433	2,050,489	2,155,447	1,966,745

Tax Buoyancy	1.3		
FY	Projected GVA at Basic Prices (Current Prices, Rs. Crore) (GVA)	GST Revenue Projection (Rs. Crore)		
		Average	Max	Min
2019-20	19,616,985	1,200,462	1,261,910	1,151,434
2020-21	21,845,121	1,336,813	1,405,240	1,282,216
2021-22	24,429,604	1,494,971	1,571,493	1,433,914
2022-23	27,349,449	1,673,651	1,759,320	1,605,297
2023-24	30,604,034	1,872,815	1,968,679	1,796,327
2024-25	34,207,358	2,093,321	2,200,471	2,007,827

Table A3: GSTCC Revenue Projection based on GSTN and DoR Data

Tax Buoyancy	0.9		
GSTCC Collection as % of GVA at Basic Prices (at Current Prices, 2011-12 Series)			
Average (Q3:2017-18 to Q2:2018-19)			**0.59**
Max (Q3:2017-18 to Q2:2018-19)			**0.62**
Min (Q3:2017-18 to Q2:2018-19)			**0.56**
Projected GST Compensation Cess Collection (Rs. Crore)			
	Average (Q3:2017-18 to Q2:2018-19)	Max (Q3:2017-18 to Q2:2018-19)	Min (Q3:2017-18 to Q2:2018-19)
2019-20	111,010	117,817	105,782
2020-21	123,383	130,949	117,571
2021-22	137,763	146,210	131,274
2022-23	154,131	163,583	146,872
2023-24	172,473	183,049	164,349
2024-25	192,840	204,665	183,757

Tax Buoyancy	1.1		
GSTCC Collection as % of GVA at Basic Prices (at Current Prices, 2011-12 Series)			
Average (Q3:2017-18 to Q2:2018-19)			**0.59**
Max (Q3:2017-18 to Q2:2018-19)			**0.62**
Min (Q3:2017-18 to Q2:2018-19)			**0.56**
Projected GST Compensation Cess Collection (Rs. Crore)			
	Average (Q3:2017-18 to Q2:2018-19)	Max (Q3:2017-18 to Q2:2018-19)	Min (Q3:2017-18 to Q2:2018-19)
2019-20	113,159	120,098	107,829
2020-21	125,894	133,613	119,964
2021-22	140,679	149,305	134,053
2022-23	157,445	167,099	150,029
2023-24	176,181	186,984	167,882
2024-25	196,955	209,032	187,678

Tax Buoyancy	1.3		
GSTCC Collection as % of GVA at Basic Prices (at Current Prices, 2011-12 Series)			
Average (Q3:2017-18 to Q2:2018-19)			**0.59**
Max (Q3:2017-18 to Q2:2018-19)			**0.62**
Min (Q3:2017-18 to Q2:2018-19)			**0.56**
Projected GST Compensation Cess Collection (Rs. Crore)			
	Average (Q3:2017-18 to Q2:2018-19)	Max (Q3:2017-18 to Q2:2018-19)	Min (Q3:2017-18 to Q2:2018-19)
2019-20	115,307	122,378	109,876
2020-21	128,404	136,278	122,356
2021-22	143,596	152,401	136,832
2022-23	160,758	170,616	153,186
2023-24	179,889	190,919	171,416
2024-25	201,069	213,398	191,598