REVENUE IMPLICATIONS OF GST AND ESTIMATION OF REVENUE NEUTRAL RATE: A STATE WISE ANALYSIS

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JANUARY 2013

NATIONAL INSTITUTE OF PUBLIC FINANCE AND POLICY
NEW DELHI

Preface

This study sponsored by the Empowered Committee of State Finance Ministers was carried out by Dr. R. Kavita Rao and Dr. Pinaki Chakraborty.

The Governing Body of the Institute does not take any responsibility for the contents of this study, it belongs to the authors only.

M. Govinda Rao
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Acknowledgements

The NIPFP has undertaken this important study on "Revenue Implications of GST and Estimation of Revenue Neutral Rate: A State wise Analysis" at the request of the Empowered Committee of the State Finance Ministers. We would like to place on record our deep gratitude to the Chairman of the Empowered Committee Deputy Chief Minister of Bihar, Shree Sushil Kumar Modi for sparing his valuable time to discuss some of the critical issues related to GST implementation. Discussion with him provided some useful inputs for this study. We also had discussions with the Member Secretary of the Empowered Committee, Mr. Satish Chandra which was extremely useful for this study. We would like to record our deep sense of appreciation for him.

Our Director, Dr. M. Govinda Rao has provided critical guidance during the course of this study. We are grateful to him.

Mr. Kaushik Bhadra has provided able research assistance. We also thank our secretary Mrs. Promila Rajvanshi for able secretarial assistance.

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I. INTRODUCTION

After the introduction of Value Added Tax (VAT) in the fiscal year 2005, the introduction of Goods and Services tax (GST) as proposed, would be an important milestone in the reforms in indirect taxes in India.[1] This move will help consolidate and rationalize the tax base for both the Central and the State governments by bringing goods and services together under the VAT net.

The present VAT regime at the state level taxes only goods and not services. Exclusion of services, from the VAT base is a major weakness of the present VAT design. Exclusion of services from the base, even if the states are empowered to tax selected services on a standalone basis, would not eliminate the problem of cascading from the tax system (Rao: 2004). Exclusion of services from the base also discriminates goods against services and has given rise to serious problems in separating out the service component in sale of goods taking place in several instances, e.g., in the case of execution of works contracts, services of food in restaurants and so on (Bagchi: 1997). For the Central government, this would replace complex and separate service tax and central excise duty laws with a single tax. This would bring within the tax base the transactions involving sale of goods beyond the stage of manufacturing.

In order to have an integrated GST, Union Finance Minister made an announcement in the central budget of 2006 that GST would be introduced from April 1, 2010. GST implementation has been delayed. However series of changes have happened in service taxation in India both by bringing in more and more services under service taxation and also by periodic revision of rates of taxation. In the fiscal year 2010-11, Centre was levying service tax on 104 selected services. The budget 2012-13, introduced

[1] Introduction of Value Added Tax at the central and the state level has been considered as a major step towards indirect tax reforms in India.

the concept of negative list in service taxation, which implies except selected services, all other services will be subject to taxation. The Budget 2012-13, has listed the 17 services that will be in negative list. Introduction of the negative list concept in service taxation has the potential to eliminate selectivity and discretion in service taxation and can boost revenue growth in a significant way by broadening the base.

If one looks at the growth of service tax revenues since its introduction, it is characterised by extreme volatility (see figure 1). Although, the service tax revenue collection remained volatile, its relative significance in total central tax revenue has gone up. Service tax revenue as a percentage of central tax collections was 0.44 percent in 1994-95 and increased to 21.56 in 2010-11 and is expected to be 30.53 percent in 2012-13(BE) (see table 1). Primary reason for the volatility in revenue may be attributed to incremental approach towards widening the base and periodic revisions of tax rate. However, it is expected that implementation of negative list would bring in much needed growth of revenues from service sector with reduced volatility.

Figure 1: Growth of Service Tax

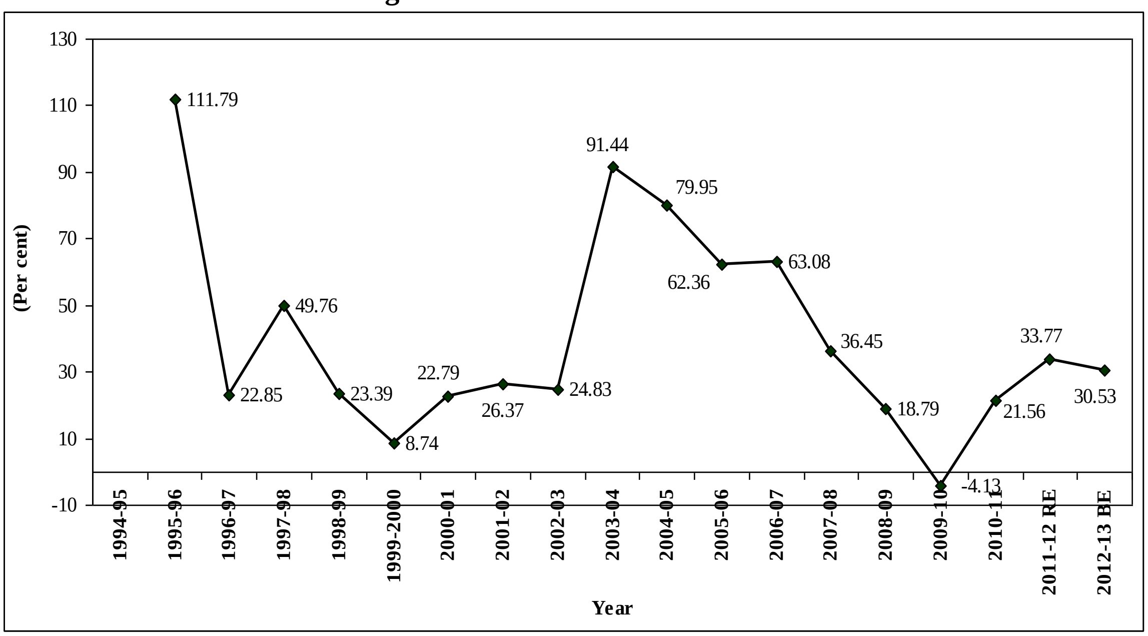

Table 1: Service Tax

Year	Service tax (Rs. crore)	Gross tax revenue (Rs. crore)	Share of service tax of gross tax revenue (%)	Growth of service tax (% per annum)	Statutory rate (%)
1994-95	407	92294	0.44		5.00
1995-96	862	111224	0.78	111.79	5.00
1996-97	1059	128762	0.82	22.85	5.00
1997-98	1586	139221	1.14	49.76	5.00
1998-99	1957	143797	1.36	23.39	5.00
1999-2000	2128	171752	1.24	8.74	5.00
2000-01	2613	188603	1.39	22.79	5.00
2001-02	3302	187060	1.77	26.37	5.00
2002-03	4122	216266	1.91	24.83	5.00
2003-04	7891	254348	3.10	91.44	8.00
2004-05	14200	304958	4.66	79.95	10.00
2005-06	23055	367474	6.27	62.36	10.00
2006-07	37598	473512	7.94	63.08	12.00
2007-08	51301	593147	8.65	36.45	12.00
2008-09	60941	605299	10.07	18.79	12.00
2009-10	58422	624528	9.35	-4.13	10.30
2010-11	71016	793072	8.95	21.56	10.30
2011-12 RE	95000	901664	10.54	33.77	10.30
2012-13 BE	124000	1077612	11.51	30.53	12.36

Source: Union Budget Document (various issues).

Currently, both central and state governments have been working together to prepare a road map for the implementation of GST. However, the design of GST is still not clear. Available indications suggest that it will be a dual GST with both centre and states taxing with overlapping tax jurisdiction on supply of all goods and services. The objective of this study is to arrive at a revenue neutral rate for the states during the proposed GST regime. In other words, this study is an attempt to estimate the tax base for services at the state level.

Estimation of tax base for services is not easy because of various reasons. Apart from the issue of exempted services; we also need to have a clear understanding of how much of the total service component is being taxed under the present VAT regime as part of the services that go into the goods and as a part of the goods that go into services. For example, cost of services consumed in the manufacturing activity is already being taxed both under CENVAT and VAT. Similarly, cost of services consumed in the trade is included in the sale price of goods sold to consumers and is taxed under VAT. So the study needs to adjust the base of services for these kinds of inter-sectoral flow of goods and services already being taxed under VAT from the tax base. This study has used the all India Input-Output table for the year 2006-07 to find out the flow of goods into services sector and the flow services to the goods sector and excluded them from the tax base. [2]

In this context, we need to mention that we had done similar estimates in an earlier study at the request of Empowered Committee of State Finance Ministers in 2009-10. The 2009-10 study was based on 2007-08 data and the current study is based on data for 2009-10. In a sense this is an updated version of the earlier study. In the earlier study, no attempt was made to incorporate the effect of informal sector on the tax base. Given that some parts of the informal sector would in fact be a part of the tax base, especially since the exemption threshold for services at present is quite low at Rs 10 lakh, our earlier estimates can be considered quite conservative. In this study we have made a correction of the base to include a part of the informal sector in the tax base. The method of correction has been explained in the subsequent section. Also, in this exercise, the revenue target for each state is estimated using three alternative assumptions on extent of compensation for CST revenue: one, assuming compensation at 4 percent, two, at 2 percent and the third with no compensation. The results reported in the draft report relate to the first case alone. It should be mentioned here that while compensation for possible loss of CST revenue can be built into the computation of RNR, there is no ground to provide compensation for ITC against CST, since that is a part of the design of the VAT. All ITC based "losses" would have been adjusted when the VAT regime was put in place and the corresponding revenues worked out. Comparison of these scenarios will help us understand the impact of CST on RNR. As suggested by the Empowered Committee, we have assumed that instead of 4 percent, the lower rate category will be taxed at 6 percent. In light of the comments received from few states about the data on tax revenues used in the estimation of RNR, we would like to emphasis that data used in this exercise is

[2] The 2006-07 input-output table is the latest one available. As we do not have state level input-output tables, the use of All India input-output table means implicit an assumption that structure of the economy is same across states.

provided by the Empowered Committee secretariat. Needless to say, with the change in tax revenue figures, corresponding RNR will also change.

Apart from the introduction, this report has four sections. Section II analyses the proposed design of GST. In Section III, the data base and the methodology for the estimation of revenue neutral rate is discussed. This section also reports the estimated revenue neutral rate. Section IV summarises the findings and draws conclusions.

II. DESIGN OF GST

Arriving at an appropriate design of GST is an important pre-condition for the desired outcome of an efficient consumption based tax. Also it needs to be kept in mind that it is not easy to arrive at a consensus on a design of GST in a vast federal country like India with multiple tax authorities both across the levels of governments and also among the states. The Empowered Committee of State Finance Ministers is trying to arrive at a consensus on the design of the new tax system. A number of decisions have been made and it appears that an agreement has emerged on the more important structural aspects of the GST. As per the consensus arrived at, the central government and states are contemplating a dual GST with following features:

- ♦ Two tax rates on goods, with services taxed at a different rate.
- ♦ All transaction of goods and services will be subject to central and state GST
- ♦ Taxes paid against central and state GST and ITC thereon could be utilised only against the payment of central and state GST respectively
    - Cross utilization of ITC is not allowed
- ♦ The compounding scheme/composition for the purpose of GST should be designed keeping in view of the present threshold limit

As per the design, the central and state taxes to be subsumed in GST are:

- ♦ Central excise duty

- Additional excise duty
- Service tax
- Additional customs duty (CVD)
- Special additional duty of customs (SAD)
- Surcharge, cess
- VAT/sales tax,
- Entertainment tax,
- Luxury tax,
- Taxes on lottery betting and gambling,
- Entry tax not in lieu of octroi
- State cesses and surcharges.

As far as taxing of items outside the VAT net but within the existing sales tax system is concerned, following norms have been proposed:

- States continue the existing practice to levy tax on alcoholic beverages.
- Tax on tobacco products should be subject to GST with ITC for the states; centre will continue to levy specific non-rebatable excises on tobacco products.
- In case of petroleum products, the existing practice continues, i.e., crude oil as well as petrol, diesel and ATF would be kept outside the purview of GST.
- Exports would be zero rated.

Inter-state transactions of goods:

- The seller in the exporting state collects GST for both the central and state government and through the GST portal a clearing house type of mechanism would ensure transfer of these revenues to the importing state.

- The purchasing dealer can claim ITC from the importing state itself.

Apart from this, the design talks about uniform procedures for collection of both central and the state GST. In the proposed model, manufacturers for goods with a gross turnover exceeding 1.5 crores will belong to both the centre and the state and the other tax payers for goods will be assigned exclusively to the states for other procedures like registration etc. for both central and state GST. The present threshold limits prevalent in states (which differ) may be adopted for GST and the same thresholds applicable to goods should be applicable to Services also in the respective states. The other procedural aspects like returns, TIN, assessment, enforcement, audit, are being worked out. Taxes or levies to be subsumed should be in the nature of indirect taxes either on the supply of goods or on the supply of services and such taxes or levies should be part of the transaction chain from the point of import/manufacture/production of goods or services to the point of their consumption. This subsumation should result in free flow of ITC both at the intra and interstate levels.

For the GST framework to be completed, there is need for a system of taxation of transactions of an inter-state nature. It is agreed that taxation of inter-state transactions should ensure destination based taxation. One of the models proposed to achieve this goal is termed the Integrated Goods and Services Tax Model (IGST).[3] While it is not yet clear whether this or some other form of taxation will be put in place of CST, there was a broad agreement that cascading levies such as CST need to be removed when GST is introduced.

III. ESTIMATION OF REVENUE NEUTRAL RATES: METHODOLOGY

An exercise of this nature requires an estimation of correct base for GST which in any form of taxation is the key for the measurement of tax potential. Theoretically, the applicable base of GST depends on a number of factors related to its design, e.g., whether it is origin or destination based, of the income or consumption type, implemented with a credit invoice or subtraction method and contains many or few exemptions. As discussed, the proposed GST will be destination based, consumption type system implemented with a credit invoice method, like the present VAT.

[3] The IGST model is proposed to work as follows: the Centre would levy IGST, which would be Central GST + State GST on all inter-state transactions of taxable goods and services. Appropriate provision will be made for consignment or stock transfer of goods. The inter-state seller will pay IGST on value addition after adjusting available credit of IGST, CGST and SGST on his purchases. The Exporting state will transfer to the Centre the credit of SGST used in the payment of IGST. The importing dealer can claim credit of IGST while discharging his output tax liability in his own state. The Centre will transfer to the importing state the credit of IGST used in the payment of SGST. This model would ensure that the SGST amount will be transferred to the destination state.

The starting point for the estimation of base is the gross domestic product of an economy, in the case of states, the gross state domestic product, since it represents the sum total of the value added in the production of goods and services within a state economy. However, for a destination based consumption type GST, the legitimate question that arises is whether final consumption expenditure, which represents the sum total of value added of domestic consumption is not a more direct starting point in estimating the base. Though at the outset it appears to be correct, in practice, it depends to a large extent on the scope and the nature of exemptions under consideration. For a destination based consumption type of GST levied comprehensively with no exemptions, the base is simply the final consumption on goods and services, which may not be possible in the real life situation. Like in the case of goods, even in the proposed GST regime, there are many services that would be exempted from the service taxation.

Generally, there are three alternative methods of estimating base of GST, viz., GDP adjusted for exports and imports, the consumption expenditure and the taxable turnover of goods and services. GDP adjusted for external sector transactions would represent the total expenditure on private consumption, government consumption, fixed capital formation and changes in business inventories. The estimated GDP adjusted for the value of services of exempted sector, government wages, fixed capital formation and net consumption abroad would precisely define the GST base. Although GDP data is available from the national account statistics, it is very difficult to get disaggregated data on exempted sectors and on value of goods and services to be excluded from GST base. Use of GDP, thus as GST base becomes problematic even at the national level GST calculation. It becomes even more difficult in the case of states as there is no reliable data available on exports and imports from and to the states apart from the items to be excluded from the estimation of GST base within the exempted sector from the state GSDP. In many states it has been argued that a substantial portion of the IT services are exported out of the state and this is not available for taxation. However, we do not have reliable data on state level IT export.

Another alternative, which can be used as the base of GST, is consumption expenditure on goods and services. The consumption expenditure data is available at the state level as well as at all India level. The state specific consumption expenditure data can be used as a proxy for GST base. The aggregate private consumption expenditure data for the country as a whole is provided by the National Accounts Statistics (NAS). State wise consumption expenditure data is also available from national sample survey on 5 yearly bases. This method of estimating GST base is called consumption expenditure approach. However, the consumption expenditure method is not free from limitations, primarily due to the non-availability of data on exempted commodity consumption and exemption of dealers with turnover below the taxable limit. Given these limitations, it is difficult to estimate the GST revenues of individual states through consumption expenditure approach.

Another limitation of the National Sample Survey consumption expenditure data is that it suffers from the problem of underestimation of consumption expenditure for both goods and services when compared with the private final consumption expenditure provided in the national accounts statistics. In fact, as per the 61st round (2004-05) consumption expenditure survey, the total private final consumption expenditure was Rs. 931415 crore, and as per the National Accounts Statistics, the same was Rs. 1873729 crore. In other words, NSS estimates of private final consumption expenditure was 49.7 percent lower than the NAS estimates. Given this gross underestimation of base by the NSS consumption expenditure survey, we have not used it. Also the listing of goods and services in the NSS schedule is quite different from the actual taxable base of goods and services. Also as the consumption expenditure data reflects household consumption, relying on it for the purpose of tax base would be erroneous. There exist issues of concordance between the two estimates of consumption based on their methodologies. While NSS is a household survey and their estimates of private consumptions are based on only household information and does not include consumptions of the private non-profit organisations serving the households, NAS on the other hand is derived from a commodity flow approach.

It is possible to estimate GST revenues through "tax turnover" method. Advantage of tax turnover method is that it is based on the data of taxable turnover of goods available with the respective sales tax department of states on goods. As under GST, like in VAT, tax paid on input by a VAT registered dealer would have to be rebated, one has to estimate the inputs eligible for input tax rebate from the tax turnover data. It is also to be noted that inputs eligible for credit will be the taxable inputs alone. Thus, one has to determine not only the input component from the taxable turnover, but also the structure of input used, viz., taxable input and non-taxable/exempted inputs. Another issue that requires attention is the quantification of locally produced inputs and the use of imported inputs within the taxable inputs as they are treated differently in current VAT regime.

In case of goods, as it is well known, taxable goods produced within a state is sold via (i) local sales, (ii) taxable inter-state sales, (iii) consignment/branch transfers and (iv) international exports. We have not been able to obtain the VAT data available with individual sales tax department on turnover in a short span of time and also there are major data issues on taxation of goods specific turnover in many states. Thus, we have used the alternative approach to arrive at turnover of goods. We have used weighted average tax rates for the estimation of taxable turnover from the data on tax collected under VAT excluding those which would not form part of the GST, viz., liquor, diesel, petrol and ATF. Before we go into the methodology and the details of the estimation procedure, it is important to list out the existing taxes that would form the base of GST.

Present Tax Base

All goods produced and consumed under VAT which excludes:

- Interstate sales
- Consignment and branch transfers
- Exports to other countries
- Specified goods which are exempt from tax
- Some of the goods brought into the local areas subjected to entry tax.

Services

- ♦ In most states, three services are available for taxation: entertainment, electricity and transport of goods and passengers.

Other taxes in the nature of services:

- ♦ Works Contract Tax
- ♦ Leasing
- ♦ Luxury tax on Hotels, Health Clubs, marriage Halls
- ♦ Entertainment
- ♦ Betting
- ♦ Goods and Passenger tax

The data obtained from the Empowered Committee of State Finance Minister's office gave us the state specific data on the taxes to be subsumed under GST for the year 2009-10 (see table 2). The same table is reproduced below in two parts. One is the absolute number which shows the revenue target each state would have under GST to maintain revenue neutrality. The second part of the table shows the structure of the revenue. As evident from the table, the taxes to be subsumed under GST would be:

a. VAT/sales tax excluding tax on petroleum products and liquor.
b. Entertainment tax
c. Central sales tax (CST)
d. Luxury tax
e. Taxes on lottery, betting and gambling
f. State cesses and surcharges in so far as they relate to supply of goods and services
g. Entry tax not in lieu of octroi
h. Purchase tax.

Table 2: Revenue Target for the Year 2009-10 under GST
(As obtained from the Empowered Committee of State Finance Ministers)

States / UTs	VAT/sales tax[a]	Entertain -ment tax[b]	CST[c]	Luxury tax	Taxes on lottery, betting and gamb-ling	State cesses and surcharges in so far as they relate to supply of goods and services	Entry tax not in lieu of octroi	Purchase tax	Total
Andhra Pradesh	11630.69	0.00	2638.24	51.21	44.47	551.45	9.08	0.00	14925.14
Arunachal Pradesh	111.80	0.00	0.00	0.00	15.00	0.00	0.00	0.00	126.80
Assam	2081.17	3.50	309.31	5.18	0.00	0.00	526.26	0.00	2925.42
Bihar	2155.53	13.61	38.38	3.97	0.00	0.00	1607.71	0.00	3819.20
Chandigarh	537.78	6.11	113.10	0.00	0.00	0.00	0.00	0.00	656.99
Chhattisgarh	2114.54	6.85	734.86	1.15	0.00	0.00	0.00	0.00	2857.40
Dadra & Ng. Haveli	134.50	0.00	64.92	0.00	0.00	0.00	0.00	0.00	199.42
Daman & Diu	108.91	0.00	47.10	0.00	0.00	0.00	0.00	0.00	156.01
Delhi	6903.45	57.72	1612.71	250.23	7.01	0.00	0.00	0.00	8831.12
Goa	629.79	33.34	102.05	65.30	0.00	0.00	150.36	0.00	980.84
Gujarat	11164.95	47.28	2511.47	33.08	0.00	0.00	1054.19	0.00	14810.97
Haryana	6260.09	35.55	1128.91	34.93	0.00	0.00	16.71	0.00	7476.19
Himachal Pradesh	980.17	0.15	330.43	26.10	0.00	0.00	0.00	0.55	1337.40
J & K	1688.16	0.00	9.54	0.00	0.00	62.33	78.56	0.00	1838.59
Jharkhand	2054.26	2.48	647.41	5.41	0.00	0.00	0.00	0.00	2709.56
Karnataka	11529.08	116.14	2163.54	133.30	51.19	12.98	0.00	99.62	14105.85
Kerala	6755.65	0.00	290.81	102.45	106.04	124.52	0.00	0.00	7379.47
Madhya Pradesh	4580.44	0.00	738.33	12.06	0.00	0.00	1333.19	0.00	6664.02
Maharashtra	21412.47	315.00	2842.90	208.97	110.40	305.29	0.00	0.00	25195.03
Manipur	139.92	0.07	23.28	0.03	0.00	0.00	0.00	0.00	163.30
Meghalaya	188.78	1.25	22.18	0.84	0.00	0.00	0.00	0.01	213.06
Mizoram	55.98	0.39	0.00	0.00	0.00	0.00	0.00	0.00	56.37
Nagaland	98.70	0.00	5.36	0.00	0.00	1.23	0.00	0.00	105.29
Orissa	3488.91	2.82	612.49	0.05	0.00	0.00	815.30	0.00	4919.57
Pondicherry	251.18	0.00	186.01	0.00	0.00	0.00	0.00	1.65	438.84
Punjab	3700.66	0.46	756.50	9.49	141.70	0.00	549.95	1216.06	6374.82
Rajasthan	6424.21	14.03	740.08	44.49	0.00	237.51	176.10	0.00	7636.42
Sikkim	77.35	0.61	7.65	0.00	38.15	11.18	0.00	0.00	134.94
Tripura	306.89	0.39	2.45	0.38	0.00	0.00	0.00	0.00	310.11
Tamil Nadu	10142.78	13.18	1772.65	168.47	6.87	0.00	1162.5	100.07	13366.50
Uttar Pradesh	12856.54	193.5	1517.43	20.87	0.00	0.00	893.28	92.39	15574.01
Uttarakhand	1968.76	6.25	350.82	7.13	0.00	0.00	8.26	7.39	2348.61
West Bengal	6902.33	39.30	1159.11	22.36	9.76	664.06	0.00	0.00	8796.92
All States	**139436.42**	**909.98**	**23480.02**	**1207.45**	**530.59**	**1970.55**	**8381.43**	**1517.74**	**177434.18**

Notes: a) excluding tax on petroleum products & liquor,
b) unless it is levied by the local bodies; and
c) including ITC adjustment.

Table 2 (contd…)

Percentage Share

States / UTs	VAT/ sales tax[a]	Entertain ment tax[b]	CST[c]	Luxury Tax	Taxes on lottery, betting and gambling	State cesses and surcharges in so far as they relate to supply of goods and services	Entry tax not in lieu of octroi	Purchase tax
Andhra Pradesh	77.93	0.00	17.68	0.34	0.30	3.69	0.06	0.00
Arunachal Pradesh	88.17	0.00	0.00	0.00	11.83	0.00	0.00	0.00
Assam	71.14	0.12	10.57	0.18	0.00	0.00	17.99	0.00
Bihar	56.44	0.36	1.00	0.10	0.00	0.00	42.10	0.00
Chandigarh	81.86	0.93	17.21	0.00	0.00	0.00	0.00	0.00
Chhattisgarh	74.00	0.24	25.72	0.04	0.00	0.00	0.00	0.00
Dadra & Ng. Haveli	67.45	0.00	32.55	0.00	0.00	0.00	0.00	0.00
Daman & Diu	69.81	0.00	30.19	0.00	0.00	0.00	0.00	0.00
Delhi	78.17	0.65	18.26	2.83	0.08	0.00	0.00	0.00
Goa	64.21	3.40	10.40	6.66	0.00	0.00	15.33	0.00
Gujarat	75.38	0.32	16.96	0.22	0.00	0.00	7.12	0.00
Haryana	83.73	0.48	15.10	0.47	0.00	0.00	0.22	0.00
Himachal Pradesh	73.29	0.01	24.71	1.95	0.00	0.00	0.00	0.04
J & K	91.82	0.00	0.52	0.00	0.00	3.39	4.27	0.00
Jharkhand	75.82	0.09	23.89	0.20	0.00	0.00	0.00	0.00
Karnataka	81.73	0.82	15.34	0.94	0.36	0.09	0.00	0.71
Kerala	91.55	0.00	3.94	1.39	1.44	1.69	0.00	0.00
Madhya Pradesh	68.73	0.00	11.08	0.18	0.00	0.00	20.01	0.00
Maharashtra	84.99	1.25	11.28	0.83	0.44	1.21	0.00	0.00
Manipur	85.68	0.04	14.26	0.02	0.00	0.00	0.00	0.00
Meghalaya	88.60	0.59	10.41	0.39	0.00	0.00	0.00	0.00
Mizoram	99.31	0.69	0.00	0.00	0.00	0.00	0.00	0.00
Nagaland	93.74	0.00	5.09	0.00	0.00	1.17	0.00	0.00
Orissa	70.92	0.06	12.45	0.00	0.00	0.00	16.57	0.00
Pondicherry	57.24	0.00	42.39	0.00	0.00	0.00	0.00	0.38
Punjab	58.05	0.01	11.87	0.15	2.22	0.00	8.63	19.08
Rajasthan	84.13	0.18	9.69	0.58	0.00	3.11	2.31	0.00
Sikkim	57.32	0.45	5.67	0.00	28.27	8.29	0.00	0.00
Tripura	98.96	0.13	0.79	0.12	0.00	0.00	0.00	0.00
Tamil Nadu	75.88	0.10	13.26	1.26	0.05	0.00	8.70	0.75
Uttar Pradesh	82.55	1.24	9.74	0.13	0.00	0.00	5.74	0.59
Uttarakhand	83.83	0.27	14.94	0.30	0.00	0.00	0.35	0.31
West Bengal	78.46	0.45	13.18	0.25	0.11	7.55	0.00	0.00
All States	78.58	0.51	13.23	0.68	0.30	1.11	4.72	0.86

Notes: a) excluding tax on petroleum products & liquor,
b) unless it is levied by the local bodies; and
c) including ITC adjustment.

Estimation of Service Sector Tax Base

Apart from the taxable turnover of goods estimated according to the method discussed above, we need to estimate the base for the service sector. As mentioned earlier, our estimate is probably the most conservative estimate of base. Our objective is to quantify the available base of GST for the states with a comprehensive list of services available with the formal sector of the economy. To estimate the comprehensive base, we have started with the National Industries Classification code (NIC) of 2008 to identify what constitutes service sector at the national level (see Box 1). This is done to obtain the exhaustive list of services available for the purpose of taxation and those services to be exempted from taxation. This comprehensive listing as per the NIC code eliminates the subjectivity in the estimation of base. Unlike in other estimates, we start with the base not with the taxes to arrive at the base. In our previous estimate (for the year 2007-08), we have used the 2004 NIC Code. The 2008 NIC code is much more comprehensive and disaggregated. The 2008 NIC code is reported in Box 1.

Having obtained the NIC classification, we have used the Prowess data base to find out what could be the available value of sales for services for the purpose of taxation at the national level. This is done by mapping NIC code with the Prowess data set. Prowess data set provides data as per the NIC code and we have obtained the sales turnover of services sector at the national level as per the NIC classification from the Prowess data set. It is also to be noted that use of Prowess data base would give the most conservative estimate of the tax base, because it does not include services provided by entities not registered in the stock exchange and also the services that are consumed by the household to a considerable extent. Before we go into the estimation of revenue neutral rate, we need to discuss the Prowess data base in greater detail.

Box 1: Service Sector as per NIC-2008 Classification

NIC-2008	Activity
19	Bottling of LPG/CNG
35	Power transmission line infrastructure
46	Trade
47	Commission agent services & retail outlets
491	Rail transport
492	Road transport
493	Transport via pipeline
50	Water transport
51	Air transport
521	Storage and warehousing
522	Other transport service activities
55	Hotel and restaurant
61	Post and telecommunication
62 & 63	Computer related activities
64, 65 & 66	Banking and other financial services
42, 68, 77	Real Estate
72 & 85	Research and development and education
70, 73, 74, 78, 79, 80 & 82	Business services
84	Public administration
86	Health
93, 94	O.com, social and personal services
	Others / undifferentiated services

What is available from the Prowess Data Set?

Prowess is a database of financial statements large and medium Indian firms. It contains detailed information on over 20,000 firms. These comprise:

- All companies traded on India's major stock exchanges
- Several others including the central public sector enterprises.
- The database covers most of the organised industrial activities
- Banking
- Organised financial and other services sectors in India.

The companies covered in Prowess account for 75 percent of all corporate taxes and over 95 percent of excise duty collected by the Government of India. Prowess provides detailed information on each company. This includes a database of the financials covering 1,500 data items and ratios per company. Besides, it provides quantitative information on production, sales, consumption of raw material and energy use. The data extracted on the service sector sale at all India level is reported in table 4. As evident, for the year 2007-08 it worked out to be Rs. 335189 crores. All India services sector sales as a percentage of service sector's GDP worked out to be around 7 percent of GDP and 18.3 percent of service sector GDP. We have done a similar extraction of data for the year 2009-10 from the prowess data set to arrive at the tax base for the same year. The service sector sale for all India as per the prowess 2009-10 was Rs. 525310 crores.

For a more realistic estimate of service sector base we have mapped service wise tax collection data against the data on sales obtained as per the NIC code and adjusted the turnover/sales based on the tax collected from each category of services within the service tax regime. Having done this adjustment, we have obtained revised sales of service sector at Rs. 1291983 crore for the year 2009-10. This is further adjusted for some of the important currently exempt services which would be part of GST base, viz., railway passenger fares and railway freights on exempted commodities and air fares. For all the services, two kinds of adjustments have been made, viz., deduction for taxable inputs used for service provision and deduction of services provided when used as inputs into taxable activities. For these corrections, the input-output table for 2006-07 has been used to derive service specific input-output ratios (see table 5). At this point we have also made a partial correction for the informal sector, which is explained below.

It is true that there is no clear idea about the size of the informal sector services that will be available for taxation under GST. Review of the literature on estimates and the size of the informal sector shows that unorganized sector can be categorized into two components: (i) informal and (ii) others.[4] For the purpose of estimation of GST base, we have considered the category called "others" which comprises of enterprises:

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[4] Kannan, K.P., N.S. Sastry, S.K. Nath, P.K. Ray, G. Raveendra and S.V. Ramana Murthy, 2008. Contribution of the Unorganised Sector to GDP Report of the Sub Committee of a NCEUS Task Force, Working Paper No. 2, National Commission for Enterprises in the Unorganised Sector.

a) registered under the Companies Act;

b) employing processes requiring high degree of technical knowhow;

c) franchises of formal sector units;

d) not covered under the production boundary; and

e) non- profit institutions

As evident from table 3, share of `others' in total net domestic product (NDP) was around 10.7 percent and if you take only the service sector, it works out to be 7.3 percent of GDP. This 7.3 percent as a percentage of service sector GDP works out to be around 10 percent. This ratio has been applied to estimate the base of informal sector service available for GST. This is also a partial correction for the informal sector, given the large informal sector, actual base would be much more than what is estimated in this study.

After all these corrections, the base available for taxation works out to be Rs. 335737 crore. This works out to be 25.98 percent of the revised sales. As per our estimates, this is also an estimate of the value added in the service sector available for taxation.

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Table 3: Share of Informal Sector in NDP: 2001-02

(Percent)

Industry group	**Informal**	**Others**	**Unorganised**	**Organised**	**Total**
Agriculture, forestry and fishing	25.5		25.5	0.9	26.4
Mining and quarrying	0.2		0.2	1.8	2.0
Manufacturing	1.6	3.4	5.0	8.4	13.4
Electricity, gas and water supply	0.1		0.1	1.0	1.0
Construction	3.9		3.9	2.5	6.4
Trade, hotels, restaurants	9.3	2.5	11.9	3.8	15.6
Transport and communication	3.3	0.6	3.9	2.8	6.7
Real estate, financial services and ownership of dwellings	2.6	2.9	5.4	7.6	13.0
Community, social and personal services	1.3	1.3	2.6	12.8	15.4
Total	**47.7**	**10.7**	**58.5**	**41.5**	**100.0**

Source: Kannan, K.P., et.al., 2008.

As evident from the table 4, service sector sale as a percentage of service sector GDP excluding the exempt sector worked out to be 63.35 percent for the year 2009-10. However, this is a gross base and been corrected for input tax credit and all India net taxable base for services is reported in table 5, which is Rs. 335737 crore. As mentioned, the net base is only 25 percent of gross sales. This is happening because corrections have not only been made for input component but also where the final use would also be used as an input. As evident from the table 4, even in 2007-08, the share of service sector sale in total service sector GDP accounted for 18.3 percent and as a percentage of service sector GDP accounted for 33.8 and if we exclude the exempt sector, it accounted for 68.6 percent of service sector GDP. In the year 2007-08, the net base was 25.81 percent of the gross sale. We have also made another correction as evident from figure 2, the service sector revenue declined in absolute volume in 2009-10 due to the reduction in rate - we have made a correction for this by applying the previous year's growth rate of revenue.

Table 4: The Estimate of Taxable Service Sector Base from Prowess Data Set

(Rs. crore)

Sales Data: As per NIC Code	**2007-08**	**2009-10**
Service sector sales (all India as per Prowess data)	335189	525310
Revised sales figure	789711	1151066
GDP at factor cost	4320892	6091485
Service sector GDP	2339468	3332976
Service sector sale as % of GDP	18.3	18.89
Service sector sale as % of service sector GDP	33.8	34.54
Service sector excluding exempt sectors	1151404	32.23
SS sales as % of services excl. exempt. services	68.6	63.35

Source: Economic Survey, National Accounts Statistics and CMIE Prowess Data Base.

Table 5: Input Coefficients and the Adjusted Base

NIC-2008	Activity	Taxable inputs/ output ratio	Share of sales used as inputs	Net additional base available for taxation
19	Bottling of LPG/CNG		1	0
35	Power transmission line infrastructure		1	0
46	Trade		1	0
47	Commission agent services and retail outlets		1	0
491	Rail transport	0.3238304	0.70435955	434.29
492	Road transport	0.4749180	0.23200024	17484.30
493	Transport via pipeline	0.3439812	0.45357142	1591.69
50	Water transport	0.3425360	0.61055392	8126.91
51	Air transport	0.3509301	0.42827596	11567.87
521	Storage and warehousing	0.1257710	0.98942314	378.07
522	Other transport service activities	0.1229493	0.54663508	6776.80
55	Hotel and restaurant	0.2165347	0.18861081	353.05
61	Post and telecommunication	0.1283293	0.75490842	34092.02
62 & 63	Computer related activities	0.0722083	0.12536708	26549.13
64, 65 & 66	Banking and other financial services	0.0591273	0.80791425	34159.75
42, 68, 77	Real estate	0.4171917	0.15912372	52249.29
72 & 85	Research & development and education	0.0290931	0.01123913	34192.07
70,73,74, 78,79,80 & 82	Business services	0.1226215	0.99409182	774.49
84	Public administration	0.0000000	0	411.50
86	Health	0.3473602	0.23695135	557.68
93, 94	O.com, social & personal services	0.1278496	0.41699739	13702.04
	Others / Undifferentiated services	0.0962577	0.62327579	61815.21
Total				**335737.75**

Source: Input-output table (2006-07) published by CSO and Prowess Data Base, CEIE.

Having obtained the base, the real challenge is to arrive at the sale of services within state for the purpose of taxation. The challenge is on two counts: (a) non-availability of reliable data on service sector consumption across states; (b) treatment of export and import of services from and to the states. The only source of consumption expenditure data has been the NSS consumption expenditure survey. We have obtained the NSS consumption expenditure of services across states. Given the fact that NSS consumption expenditure survey is underestimation of the base, the distribution of service sector consumption across state gave unreliable estimates. The only alternative left was to obtain the value added of service sector in each state. The value added of service sector for each state is available from the state wise GSDP estimates provided by CSO. We have taken the state specific service sector value added and the share of value added in each state. Figures 2 and 3 shows the share of value added in each state and it appears that there has not been any major change in the distribution of service sector value added in states. One major problem with this approach is the assumption that production of service is equal to consumption in a state. However, this is not a very strong assumption as most of the service consumption is local in nature. This approach also implicitly assumes that export is equal to import. Figure 3 gives the state specific share of value added in service sector for the year 2009-10.

Figure 2: Share of Service Sector GSDP out of Total Service Sector Value Added: 2007-08

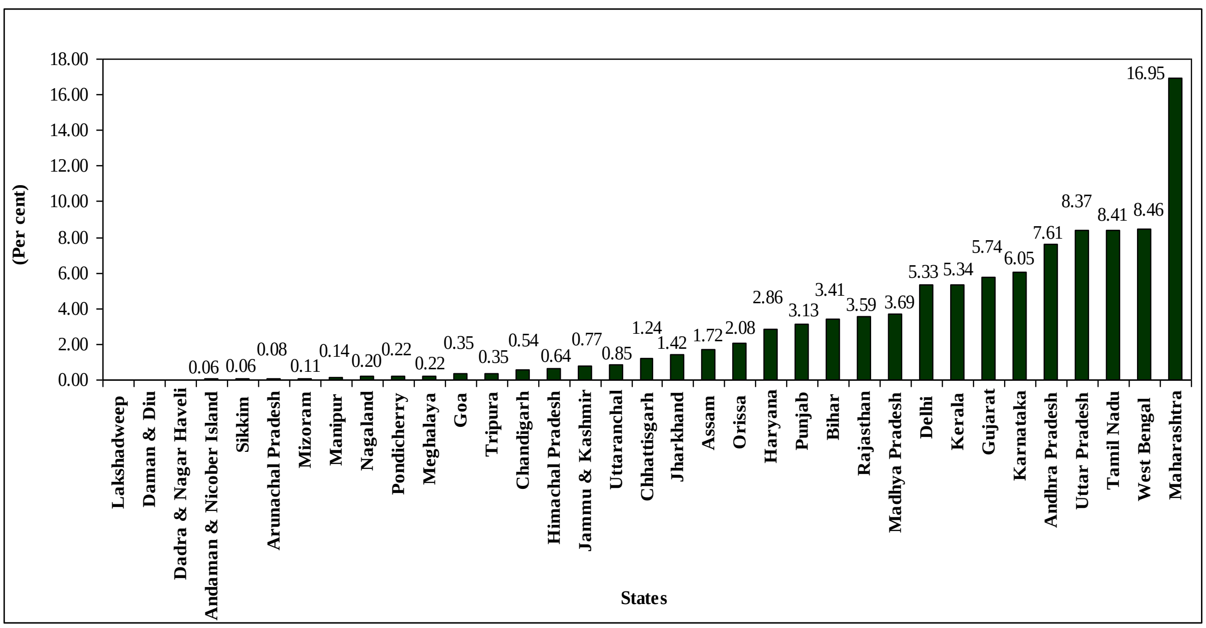
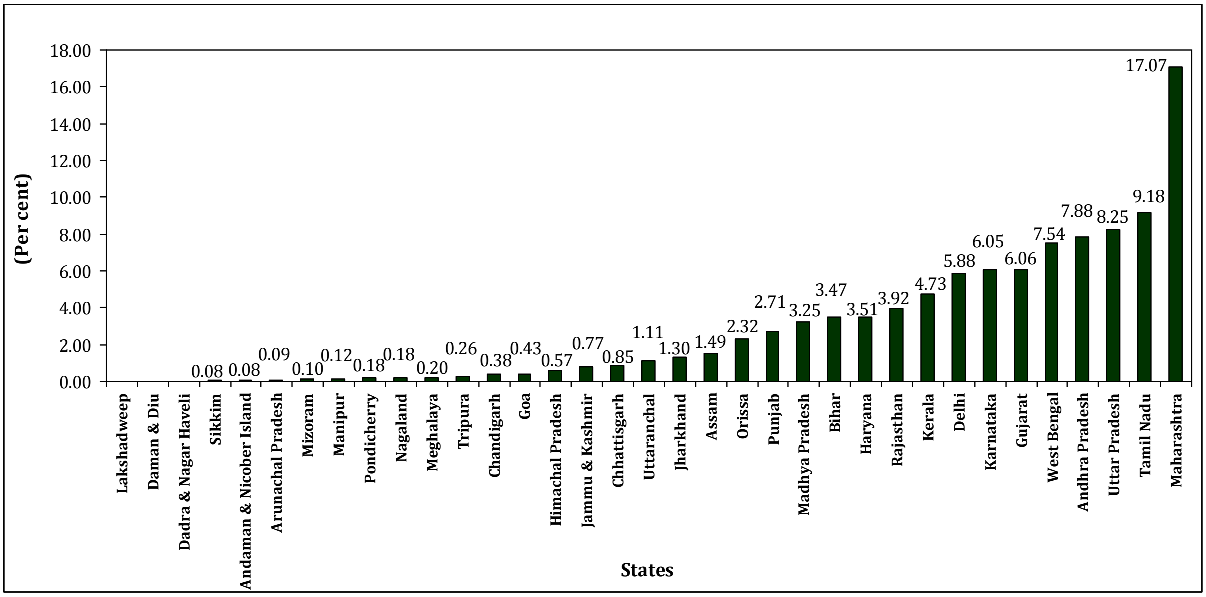


Figure 3: Share of Service Sector GSDP out of Total Service Sector Value Added: 2009-10



Given the nature of the service sector, a major part of the service export would also be IT export. In order to have a very conservative estimate of base we have excluded the entire computer and related activities from the base. Also we have excluded real estate activities from the base because of the problems of estimation[5]. We have limited the tax base for research and development, education and health services in the base depending on the level of tax collection in these sectors.[6]

Having adjusted the base for all these services, we have estimated the share of each state by applying its share in total value added in the service sector in the country (see figure 3). Having applied this state specific ratio on the all India sale adjusted for all the exemption and services that are excluded for the purpose of taxation, we have arrived at the taxable base of service sector for each state.

[5] Real estate sector has always been dogged by issues of valuation. Further, clearly, all real estate sales cannot be subject to GST, since there would be stamp duty paid on these transactions already. If sales in old property too is sought to be brought under GST, the valuation issues will remain. Without addressing these concerns, it is not clear whether a slippery base such as real estate should be brought into the tax net for estimating the base and the resultant rates.

[6] For example even when the health sector is exempted from service tax, health clubs are not. So such adjustments have been made in the base within the exempted sectors.

Having obtained the state specific share in the total service sector base of the country, we have added the base of goods arrived through the weighted average taxation method to arrive at the comprehensive base of goods and services tax. Here we have assumed that 2 percent of the revenue comes from 1 percent tax rate, 28 percent of the revenue comes from 4 percent tax rate and rest from 12.5 percent tax rate. The estimated revenue neutral rate is given in table 6. The revenue neutral rate estimation assumes that lower rate will be 6 percent under GST, and services will be taxed at 8 percent. However, we have provided four alternative estimates of revenue neutral rate using finance accounts data and the data provided by the Empowered Committee of State Finance Ministers. This is to compare the rates between the Finance Accounts data and the Empowered Committee data as both the sources have wide differences in number. This also becomes evident when we estimate the revenue neutral rates using two different sets of data. Each data set has two estimates of rate, viz. Scenario I and Scenario II. In Scenario I we exclude the base of computer and related activities and financial services. As per the finance accounts data, the revenue neutral rate works out to be lower than the Empowered Committee data in all the scenarios. When we use the finance accounts data, in Scenario I the single rate for all states works out to be 9.7 percent. In the three rate structure in scenario I, the general rate works out to be 16.11 percent (See table 6).[7]

Scenario II has a higher base than Scenario I. The Scenario II estimates the taxable base by assuming that 50 percent of the computer and related activities would be a part of the taxable base adjusted for input tax credit. (This fraction is based on NASSCOM's estimates of exports as a percentage of total supply of IT related services). This scenario also includes financial services obtained from the prowess database. This incremental base has been adjusted for input tax credit. Depending on the nature of the financial services to be brought under GST would also alter the base. However, it needs to be emphasized that with negative list coming in, most of the services considered in this estimates should be subject to taxation. In case of Scenario II which has a higher base

[7] It may be noted that the figures in the present exercise for Finance Accounts data may be at variance with those in the draft report for some states. In these states, revenue from State Sales Tax is reported under three broad heads: State Sales Tax, CST and Trade Taxes. The figures for the last category had inadvertently been left out. This has been corrected in the present exercise.

than Scenario I, we get lower revenue neutral rate in both single and three rates structure. As per the Empowered Committee data, the RNR in a three rate structure in Scenario I and II works out to be 17.10 percent and 15.44 percent respectively. It is also to be noted that there has been wide variations in rates across states and there are many states whose RNR falls below the average rate and in many states the RNR lies above the average rate. In case of Bihar there is a serious data issue that needs to be sorted out. As per the Finance Accounts data of Bihar, Bihar's CST in 2009-10 was 1227.80 crore. However, as per the Empowered Committee data the CST was 38 crore. Because of the high CST in Finance Accounts, we are getting abnormally high revenue neutral rate for Bihar when we use the Finance Accounts data.

Table 6: Revenue Neutral Rate Calculation: With Three Rate Structure (CST Revenue at 4 percent)

(Percent)

	Finance Accounts Data				Empowered Committee e Data			
	Scenario I		Scenario II		Scenario I		Scenario II	
	Single rate	Two rates	Single rate	Two rates	Single rate	Two rates	Single rate	Two rates
Andhra Pradesh	9.13	14.05	8.67	12.93	10.92	19.14	10.23	17.64
Arunachal Pradesh	8.06	11.19	7.36	8.92	8.15	11.45	7.62	9.89
Assam	9.72	15.55	9.32	14.65	10.86	19.26	10.05	17.40
Bihar	17.45	46.20	14.92	41.15	10.22	18.84	8.87	14.55
Chhattisgarh	12.51	22.95	11.95	21.97	12.90	24.01	12.33	23.03
Delhi	9.66	16.05	8.77	13.60	10.60	18.47	9.82	16.66
Goa	11.09	19.57	10.41	18.13	12.02	22.43	11.19	20.73
Gujarat	11.51	20.76	10.79	19.28	11.32	20.17	10.65	18.77
Haryana	10.14	16.99	9.48	15.45	10.05	16.67	9.47	15.30
Himachal Pradesh	10.59	18.26	9.90	16.71	12.39	23.15	11.64	21.72
Jharkhand	11.37	20.51	10.61	18.89	11.65	21.32	10.85	19.67
Jammu & Kashmir	8.35	11.96	7.98	10.95	8.45	12.20	8.13	11.37
Kerala	8.17	11.48	7.72	10.20	8.10	11.30	7.55	9.66
Karnataka	8.97	13.66	8.50	12.45	10.52	17.77	10.02	16.69
Madhya Pradesh	10.84	18.91	10.16	17.42	11.55	21.03	10.78	19.41
Maharashtra	8.99	13.86	8.34	12.08	9.21	14.46	8.55	12.71
Manipur	9.84	16.59	8.96	14.19	9.48	15.22	8.83	13.54
Meghalaya	8.60	12.61	8.19	11.54	8.65	12.90	7.99	10.99
Mizoram	6.20	5.15	5.50	1.83	6.51	6.40	5.87	3.68
Nagaland	5.66	-3.07	4.40	-16.83	7.46	9.39	6.79	6.98
Orissa	10.80	18.98	10.05	17.27	11.26	20.26	10.48	18.57
Pondicherry								
Punjab	9.27	14.49	8.74	13.17	11.21	20.24	10.39	18.41
Rajasthan	8.88	13.46	8.35	12.06	9.48	15.11	8.90	13.67
Sikkim	11.47	20.07	11.02	19.23	13.36	25.88	12.54	24.43

Tamil Nadu	9.60	15.44	9.01	14.00	10.15	17.35	9.33	15.26
Tripura	7.02	8.15	6.46	6.11	7.20	8.74	6.69	7.00
Uttar Pradesh	9.45	15.01	8.90	13.64	9.61	15.46	9.04	14.06
Uttarakhand	9.62	15.75	8.86	13.75	9.97	16.45	9.37	15.05
West Bengal	8.84	13.61	7.97	10.90	9.39	15.31	8.48	12.66
Average Rate	**9.66**	**15.68**	**9.04**	**14.12**	**10.15**	**17.10**	**9.46**	**15.44**

Table 7 gives estimates of alternative RNR by assuming that services will also be taxed at the general rate. In other words, if there is no differential rate of service taxation, what will be the RNR with lower rate on goods taxed at 6 percent. As evident from the table, the general rate with the Finance Accounts data works out to be 13.45 and 11.82 percent respectively for Scenarios I and II. The RNR based on Empowered Committee data works out to be 14.33 and 12.53 percent respectively.

Table 7: Revenue Neutral Rate Calculation: With Two Rate Structure
(With CST Revenue at 4 percent)

(Percent)

	Finance Accounts Data				Empowered Committee data			
	Scenario I		Scenario II		Scenario I		Scenario II	
	Single rate	General rates	Single rate	General rates	Single rate	General rates	Single rate	General rates
Andhra Pradesh	9.13	12.67	8.67	11.43	10.92	15.98	10.23	14.09
Arunachal Pradesh	8.06	10.00	7.36	8.49	8.15	10.45	7.62	9.18
Assam	9.72	14.10	9.32	12.92	10.86	15.56	10.05	13.46
Bihar	17.45	24.38	14.92	19.18	10.22	13.09	8.87	10.46
Chhattisgarh	12.51	19.88	11.95	18.12	12.90	20.71	12.33	18.87
Delhi	9.66	12.89	8.77	10.87	10.60	15.08	9.82	13.08
Goa	11.09	16.38	10.41	14.49	12.02	17.97	11.19	15.67
Gujarat	11.51	17.19	10.79	15.18	11.32	16.90	10.65	14.99
Haryana	10.14	14.39	9.48	12.66	10.05	14.38	9.47	12.78
Himachal Pradesh	10.59	15.28	9.90	13.44	12.39	19.01	11.64	16.83
Jharkhand	11.37	16.76	10.61	14.68	11.65	17.28	10.85	15.11
Jammu & Kashmir	8.35	11.13	7.98	10.12	8.45	11.45	8.13	10.55
Kerala	8.17	10.60	7.72	9.47	8.10	10.30	7.55	9.01
Karnataka	8.97	12.30	8.50	11.04	10.52	15.60	10.02	14.11
Madhya Pradesh	10.84	15.84	10.16	13.98	11.55	17.13	10.78	15.00
Maharashtra	8.99	11.99	8.34	10.41	9.21	12.42	8.55	10.80
Manipur	9.84	13.27	8.96	11.21	9.48	13.01	8.83	11.36
Meghalaya	8.60	11.60	8.19	10.50	8.65	11.26	7.99	9.71
Mizoram	6.20	6.48	5.50	5.31	6.51	7.07	5.87	5.90
Nagaland	5.66	5.61	4.40	4.09	7.46	8.85	6.79	7.47
Orissa	10.80	15.57	10.05	13.56	11.26	16.48	10.48	14.38
Pondicherry								
Punjab	9.27	12.81	8.74	11.41	11.21	16.26	10.39	14.09

Rajasthan	8.88	11.99	8.35	10.63	9.48	13.16	8.90	11.64
Sikkim	11.47	17.88	11.02	16.46	13.36	20.94	12.54	18.51
Tamil Nadu	9.60	13.39	9.01	11.85	10.15	14.03	9.33	12.01
Tripura	7.02	8.10	6.46	6.94	7.20	8.50	6.69	7.40
Uttar Pradesh	9.45	13.15	8.90	11.68	9.61	13.45	9.04	11.92
Uttarakhand	9.62	13.08	8.86	11.24	9.97	14.17	9.37	12.56
West Bengal	8.84	11.27	7.97	9.41	9.39	12.30	8.48	10.29
Average Rate	**9.66**	**13.45**	**9.04**	**11.82**	**10.15**	**14.33**	**9.46**	**12.53**

Tables 8 and 9 provide estimates of RNR with CST revenue at 2 percent in three rate and two rate structures. Even in three rate structure RNR declines significantly both with respect to EC data and the Finance Accounts data. As evident, general rates in this case are 13.04 and 11.49 percent in Scenario I and II based on Finance Account data. As per the EC data, the general rate works out to be 13.70 and 12.05 percent respectively in Scenario I and Scenario II. In the two rate structure, the RNR goes down further to little more than 10 percent.

Table 8: Revenue Neutral Rate Calculation: With Three Rates Structure
(With CST Revenue at 2 percent)

(Percent)

	Finance Accounts Data				Empowered Committee data			
	Scenario I		Scenario II		Scenario I		Scenario II	
	Single rate	Two rates	Single rate	Two rates	Single rate	Two rates	Single rate	Two rates
Andhra Pradesh	8.47	12.24	8.05	11.11	9.28	14.53	8.69	13.02
Arunachal Pradesh	8.06	11.14	7.36	8.88	8.15	11.40	7.62	9.84
Assam	9.17	14.05	8.79	13.14	9.82	16.22	9.09	14.36
Bihar	13.83	32.66	11.82	27.60	10.12	18.43	8.78	14.14
Chhattisgarh	10.07	16.44	9.62	15.46	10.26	16.97	9.81	15.99
Delhi	8.34	12.00	7.58	9.55	8.96	13.73	8.31	11.92
Goa	10.33	17.44	9.70	15.99	10.89	19.17	10.13	17.47
Gujarat	9.76	15.86	9.16	14.39	9.68	15.59	9.10	14.20
Haryana	8.72	12.98	8.16	11.44	8.74	12.99	8.23	11.63
Himachal Pradesh	9.00	13.76	8.41	12.21	9.93	16.31	9.33	14.89
Jharkhand	9.27	14.55	8.65	12.93	9.40	14.92	8.76	13.27
Jammu & Kashmir	8.35	11.91	7.98	10.90	8.41	12.04	8.09	11.21
Kerala	7.92	10.75	7.48	9.48	7.79	10.39	7.26	8.74
Karnataka	8.31	11.80	7.87	10.60	9.12	13.96	8.68	12.87
Madhya Pradesh	10.01	16.57	9.39	15.08	10.40	17.73	9.70	16.11
Maharashtra	8.16	11.43	7.57	9.64	8.27	11.75	7.68	10.00
Manipur	8.26	11.75	7.51	9.36	8.30	11.82	7.73	10.15
Meghalaya	8.09	11.20	7.70	10.13	7.84	10.49	7.24	8.58

Mizoram	6.20	5.10	5.50	1.78	6.51	6.35	5.87	3.63
Nagaland	4.62	-9.36	3.59	-23.12	7.10	8.25	6.46	5.84
Orissa	9.79	16.05	9.10	14.33	10.01	16.68	9.32	14.99
Pondicherry								
Punjab	8.82	13.21	8.31	11.88	9.78	16.07	9.06	14.25
Rajasthan	8.35	11.94	7.85	10.54	8.64	12.75	8.11	11.31
Sikkim	11.02	18.87	10.60	18.03	12.65	23.85	11.87	22.40
Tamil Nadu	8.77	13.10	8.23	11.66	8.96	13.78	8.23	11.70
Tripura	6.96	7.92	6.40	5.87	7.14	8.53	6.64	6.79
Uttar Pradesh	8.68	12.84	8.17	11.47	8.75	13.04	8.23	11.64
Uttarakhand	8.31	11.89	7.66	9.89	8.67	12.82	8.15	11.42
West Bengal	8.01	11.00	7.22	8.28	8.30	11.88	7.49	9.23
Average Rate	**8.74**	**13.04**	**8.17**	**11.49**	**8.97**	**13.70**	**8.35**	**12.05**

Table 9: Revenue Neutral Rate Calculation: With Two Rates Structure (With CST Revenue at 2 percent)

(Percent)

	Finance Accounts Data				**Empowered Committee data**			
	Scenario I		**Scenario II**		**Scenario I**		**Scenario II**	
	Single rate	**Two rates**	**Single rate**	**Two rates**	**Single rate**	**Two rates**	**Single rate**	**Two rates**
Andhra Pradesh	8.47	11.27	8.05	10.16	9.28	12.68	8.69	11.17
Arunachal Pradesh	8.06	9.97	7.36	8.47	8.15	10.41	7.62	9.15
Assam	9.17	12.88	8.79	11.81	9.82	13.52	9.09	11.69
Bihar	13.83	18.57	11.82	14.61	10.12	12.90	8.78	10.30
Chhattisgarh	10.07	14.71	9.62	13.40	10.26	15.12	9.81	13.78
Delhi	8.34	10.43	7.58	8.79	8.96	11.88	8.31	10.30
Goa	10.33	14.84	9.70	13.13	10.89	15.71	10.13	13.70
Gujarat	9.76	13.67	9.16	12.07	9.68	13.55	9.10	12.02
Haryana	8.72	11.54	8.16	10.15	8.74	11.67	8.23	10.37
Himachal Pradesh	9.00	12.09	8.41	10.63	9.93	14.04	9.33	12.43
Jharkhand	9.27	12.59	8.65	11.02	9.40	12.82	8.76	11.21
Jammu & Kashmir	8.35	11.09	7.98	10.09	8.41	11.32	8.09	10.43
Kerala	7.92	10.06	7.48	8.99	7.79	9.66	7.26	8.45
Karnataka	8.31	10.89	7.87	9.77	9.12	12.63	8.68	11.43
Madhya Pradesh	10.01	14.16	9.39	12.49	10.40	14.82	9.70	12.98
Maharashtra	8.16	10.33	7.57	8.97	8.27	10.57	7.68	9.19
Manipur	8.26	10.30	7.51	8.70	8.30	10.65	7.73	9.30
Meghalaya	8.09	10.50	7.70	9.50	7.84	9.66	7.24	8.33
Mizoram	6.20	6.46	5.50	5.29	6.51	7.04	5.87	5.88
Nagaland	4.62	4.25	3.59	3.10	7.10	8.15	6.46	6.89
Orissa	9.79	13.54	9.10	11.80	10.01	14.00	9.32	12.22
Pondicherry								
Punjab	8.82	11.86	8.31	10.56	9.78	13.45	9.06	11.65
Rajasthan	8.35	10.88	7.85	9.65	8.64	11.44	8.11	10.12
Sikkim	11.02	16.89	10.60	15.56	12.65	19.46	11.87	17.21
Tamil Nadu	8.77	11.69	8.23	10.34	8.96	11.73	8.23	10.04

Tripura	6.96	7.94	6.40	6.81	7.14	8.36	6.64	7.28
Uttar Pradesh	8.68	11.55	8.17	10.26	8.75	11.68	8.23	10.36
Uttarakhand	8.31	10.55	7.66	9.06	8.67	11.52	8.15	10.21
West Bengal	8.01	9.75	7.22	8.14	8.30	10.29	7.49	8.61
Average Rate	**8.74**	**11.57**	**8.17**	**10.17**	**8.97**	**11.97**	**8.35**	**10.46**

If we move to Table 10 and 11, which gives RNR without CST, the general rates in all the scenarios hover around 9 to 10 percent in three rate GST structure. In a two rate GST structure without CST, the RNR works out to be 8.45 percent for Scenario II based on EC data.

Table 10: Revenue Neutral Rate Calculation: With Three Rates Structure (Without CST Revenue)

(Percent)

	Finance Accounts Data				Empowered Committee data			
	Scenario I		Scenario II		Scenario I		Scenario II	
	Single rate	Two rates	Single rate	Two rates	Single rate	Two rates	Single rate	Two rates
Andhra Pradesh	7.81	10.52	7.42	9.39	7.64	10.01	7.15	8.50
Arunachal Pradesh	8.06	11.19	7.36	8.92	8.15	11.45	7.62	9.89
Assam	8.62	12.64	8.26	11.74	8.79	13.28	8.13	11.42
Bihar	10.20	19.21	8.72	14.15	10.02	18.12	8.69	13.83
Chhattisgarh	7.63	10.03	7.29	9.05	7.62	10.02	7.29	9.04
Delhi	7.02	8.05	6.38	5.60	7.33	9.08	6.79	7.27
Goa	9.58	15.40	9.00	13.96	9.76	16.00	9.08	14.30
Gujarat	8.02	11.07	7.52	9.60	8.04	11.12	7.56	9.72
Haryana	7.30	9.07	6.83	7.53	7.42	9.41	6.98	8.05
Himachal Pradesh	7.41	9.36	6.93	7.81	7.48	9.57	7.02	8.15
Jharkhand	7.17	8.68	6.69	7.06	7.15	8.63	6.67	6.98
Jammu & Kashmir	8.35	11.96	7.98	10.95	8.37	11.97	8.05	11.15
Kerala	7.67	10.12	7.25	8.85	7.49	9.57	6.98	7.92
Karnataka	7.64	10.05	7.24	8.85	7.71	10.24	7.34	9.15
Madhya Pradesh	9.19	14.32	8.61	12.84	9.25	14.53	8.63	12.91
Maharashtra	7.32	9.09	6.79	7.30	7.34	9.14	6.82	7.38
Manipur	6.67	7.01	6.07	4.62	7.12	8.52	6.63	6.84
Meghalaya	7.58	9.88	7.21	8.81	7.02	8.18	6.48	6.26
Mizoram	6.20	5.15	5.50	1.82	6.51	6.40	5.87	3.68
Nagaland	3.58	-15.55	2.79	-29.31	6.74	7.21	6.13	4.79
Orissa	8.77	13.21	8.16	11.49	8.77	13.19	8.16	11.50
Pondicherry								
Punjab	8.36	12.01	7.89	10.69	8.34	12.00	7.73	10.18
Rajasthan	7.82	10.52	7.35	9.12	7.80	10.47	7.33	9.04
Sikkim	10.58	17.76	10.17	16.92	11.93	21.91	11.20	20.46
Tamil Nadu	7.94	10.85	7.45	9.41	7.76	10.31	7.13	8.23
Tripura	6.89	7.77	6.34	5.73	7.09	8.42	6.58	6.68

Uttar Pradesh	7.90	10.76	7.44	9.39	7.89	10.72	7.42	9.32
Uttarakhand	7.01	8.12	6.45	6.12	7.37	9.28	6.93	7.88
West Bengal	7.18	8.48	6.47	5.76	7.20	8.56	6.50	5.90
Average Rate	**7.81**	**10.50**	**7.31**	**8.94**	**7.78**	**10.40**	**7.25**	**8.74**

Table 11: Revenue Neutral Rate Calculation: With Two Rates Structure (Without CST Revenue)

(Percent)

	Finance Accounts Data				**Empowered Committee data**			
	Scenario I		**Scenario II**		**Scenario I**		**Scenario II**	
	Single rate	**Two rates**	**Single rate**	**Two rates**	**Single rate**	**Two rates**	**Single rate**	**Two rates**
Andhra Pradesh	7.81	9.94	7.42	8.97	7.64	9.44	7.15	8.32
Arunachal Pradesh	8.06	10.00	7.36	8.49	8.15	10.45	7.62	9.18
Assam	8.62	11.75	8.26	10.77	8.79	11.54	8.13	9.98
Bihar	10.20	12.81	8.72	10.08	10.02	12.75	8.69	10.19
Chhattisgarh	7.63	9.61	7.29	8.76	7.62	9.61	7.29	8.75
Delhi	7.02	8.03	6.38	6.77	7.33	8.73	6.79	7.57
Goa	9.58	13.36	9.00	11.82	9.76	13.53	9.08	11.80
Gujarat	8.02	10.21	7.52	9.02	8.04	10.28	7.56	9.12
Haryana	7.30	8.76	6.83	7.71	7.42	9.04	6.98	8.03
Himachal Pradesh	7.41	8.96	6.93	7.88	7.48	9.14	7.02	8.09
Jharkhand	7.17	8.48	6.69	7.42	7.15	8.44	6.67	7.38
Jammu & Kashmir	8.35	11.13	7.98	10.12	8.37	11.26	8.05	10.38
Kerala	7.67	9.59	7.25	8.57	7.49	9.09	6.98	7.95
Karnataka	7.64	9.56	7.24	8.58	7.71	9.74	7.34	8.81
Madhya Pradesh	9.19	12.55	8.61	11.07	9.25	12.58	8.63	11.02
Maharashtra	7.32	8.74	6.79	7.59	7.34	8.78	6.82	7.63
Manipur	6.67	7.39	6.07	6.25	7.12	8.36	6.63	7.30
Meghalaya	7.58	9.47	7.21	8.57	7.02	8.12	6.48	7.00
Mizoram	6.20	6.48	5.50	5.31	6.51	7.07	5.87	5.90
Nagaland	3.58	2.91	2.79	2.12	6.74	7.51	6.13	6.35
Orissa	8.77	11.59	8.16	10.10	8.77	11.59	8.16	10.11
Pondicherry								
Punjab	8.36	10.97	7.89	9.77	8.34	10.70	7.73	9.27
Rajasthan	7.82	9.84	7.35	8.73	7.80	9.79	7.33	8.67
Sikkim	10.58	15.99	10.17	14.72	11.93	18.06	11.20	15.97
Tamil Nadu	7.94	10.06	7.45	8.90	7.76	9.49	7.13	8.13
Tripura	6.89	7.85	6.34	6.73	7.09	8.28	6.58	7.21
Uttar Pradesh	7.90	10.03	7.44	8.91	7.89	9.99	7.42	8.86
Uttarakhand	7.01	8.08	6.45	6.94	7.37	8.94	6.93	7.92
West Bengal	7.18	8.28	6.47	6.91	7.20	8.33	6.50	6.97
Average Rate	**7.81**	**9.77**	**7.31**	**8.59**	**7.78**	**9.67**	**7.25**	**8.45**

V. CONCLUSIONS

Based on the above analysis, it can be concluded that GST rate in a three rate structure would be higher than the general rate of VAT at 12.5 percent and would be around 12.5 percent in case two rate structure. However, there is a scope of trimming the number of commodities in lower rate category, which can give a higher base for the standard rate and correspondingly lower revenue neutral rate. It also needs to be highlighted that if services are assumed to be taxed at 8 percent, the general rate goes up further. If both goods and services are taxed at the same rate, the RNR will come down, as shown in our estimates.

The base of service sector estimated here is the most conservative one. It does not have the full coverage of the base of services by the households and of those entities providing services but not registered in the stock market, except a correction made for the informal sector. In reality, with these sectors coming into the GST-net and the overall efficiency gain that GST would bring in, the actual taxable base of the service sector would be much higher than what is estimated in this report and accordingly the revenue neutral rate will be lower. Also, the introduction of negative list has become operational - while the revenue performance after this change has not yet stabilized, it is expected that this change would have positive impact on base and would in turn help in reducing the revenue neutral rate.

It should be mentioned here that the present exercise does not attempt to incorporate the effect of state specific features like payment of deferred taxes which might be distorting the revenue profile in any given year. Since information for individual states is not available in the public domain and was not provided either by the empowered committee, these issues and their likely impact on the RNR remain beyond the scope of the present study. However, unless there is reason to believe that these features are creating large distortions in the revenue profile, it might be fair to assume that the impact on RNR might not be large. The present set of estimates therefore could be a fair benchmark for discussion.