# Impact of VAT in Central and State Finances An Assessment

#### R. Kavita Rao

#### Fellow, National Institute of Public Finance and Policy, New Delhi

#### 1. Introduction

After the 1994 report on the Reform of Domestic Trade Taxes in India, not much activity took place in planning for a change in regime from a predominantly first point sales tax to a Value Added Tax (VAT) as proposed in the report. In 1998, Madhya Pradesh proposed to unilaterally introduce a VAT and initiated the process of preparing for the introduction. While the preparations were still on, some landmark decisions were made at the national level. On November 19, 1999, in a meeting with the Union Finance Minister, the state Chief Ministers came to a decision to adhere to some floor rates of an agreed set of commodities, withdraw the various schemes for tax based incentives to industry for new investments and jointly introduce VAT. The first two measures were to take effect from January 1,2000, while VAT was to be introduced from April 1, 2000. The deadline for the first two measures was met but the third measure has faced a number of rescheduled deadlines, and now stands postponed without a deadline.

The move to introduce floor rates was aimed at stemming tax competition among states, which, it was felt, resulted in erosion of the tax base for all the states. Tax competition included competition in rates as well as providing tax based industrial incentives, where the basis for providing the incentives was getting progressively watered down while the extent of incentive provided tended to get more liberal. While no individual state had an incentive to unilaterally change this regime, there were perceptible benefits from joint withdrawal of these incentives, in the form of higher revenue realisations. This became the basis for the agreement on a joint withdrawal from a regime of tax competition, by all the states. The scenario changes somewhat, in the context of introduction of VAT. From the state government's point of view, the benefits of introducing a VAT, in place of the present sales tax, result from extending the tax base to cover transactions hitherto not subject to a levy. The costs associated with a transition are associated with providing set-off for input taxes and zero-rating inter-state trade and exports. While the former tend to be unknown quantities, the latter become the visible losses to the exchequer. Further, since the content of economic activity varies across states and along with it the composition of tax collected too varies, the net benefit from introducing a VAT can vary significantly across states. Apprehensions on the dimensionality of gain/loss possibly created some discomfort among the states, while uncertainty in the nature of changes in forms of administration stirred the resistance from the dealers. In order to address at least part of the problem, this paper addresses itself to the first issue.

The following section attempts to provide some dimensions to the impact on state finances for major states in the country(Section 2). Given the sensitivity of the states to potential loss of revenue from the change over, the Union Finance Minister has provided an assurance of compensation for loss of revenue, if any. This section therefore presents an analysis of the likely impact on central finances of such an assurance as well.

The proposed shift in regime is also being articulated as the right time to ensure convergence in the tax structures and tax rates. While the Empowered Committee of State Finance Ministers decided on the desirability of uniform rates of tax on well-defined set of commodities, as an integral part of the VAT design, the Union government put forward the need for greater convergence in the entire structure of the law and rules as well. The implications of this emphasis on greater convergence, if not complete homogeneity for the central and state finances are taken up in the Section 3. Section 4 provides some concluding observations.

#### 2. Impact of VAT: Some Estimates:

This exercise seeks to assess the change in tax revenue that could result from an introduction of VAT by all the states, following a uniform design. Key features of that design would be tax credit for inputs and zero-rating of inter-state trade. The tax rates

proposed are 4 per cent and 12.5 per cent, with the former rate being applicable mainly on inputs and some basic necessities.

In order to assess the impact of VAT on central and state revenues the following methodology was adopted. Since it is generally recognised that the major part of tax base in any state within sales tax is manufacturing sector output<sup>1</sup>, with organised manufacturing contributing a giant's share, this exercise limits itself to exploring the impact taking the registered manufacturing sector as the base.

Taking the data published by Annual Survey of Industries (ASI) at the two-digit level as the basic data, an attempt is made to first segregate the taxed inputs and allow for tax credit for the same.<sup>2</sup> To identify the taxed inputs, the 1993-94 input-output table is used.<sup>3</sup> Since the taxed inputs are mainly from the manufacturing sector, a summary of the relevant rows and columns was obtained in the form of a 19x19 input-use matrix for the manufacturing sector. Using this information with the information on total value of inputs (excluding service sector inputs as well as electricity, gas and water supply<sup>4</sup>), one can compute a ratio for each industry group, of the proportion of taxed industry group, and using 4 per cent as the rate of tax on all inputs yields the amount of loss in revenue on account of tax rebate. The value of output correspondingly is adjusted downwards.<sup>5</sup>. On the other hand, since the tax base is expected to include second and subsequent sales as well, an increase in tax collections is anticipated on this account. Here as well, three alternative assumptions on increments to value added are considered - 10, 15 and 20 per

<sup>&</sup>lt;sup>1</sup> Within a first point tax system, the first sale includes goods manufactured in the state and goods imported into the state from other states. since most agricultural goods are kept outside the purview of taxation and services are beyond the scope of taxation for the states at present, the tax base in any state would relate to the sale of manufactured goods.

<sup>&</sup>lt;sup>2</sup> While ASI data for 1999-2000 is the latest available data, this study uses data for 1997-98. The reporting format for data in the subsequent years is less user-friendly, since the summary tables are not readily available in printed form.

<sup>&</sup>lt;sup>3</sup> The entries relating to the manufacturing sector were grouped into groups so as to achieve a classification closely matching the 2-digit classification of the ASI.

<sup>&</sup>lt;sup>4</sup> Since petroleum products are proposed to be kept out of the framework of VAT as per the consensus, this exercise excludes rebate on petroleum products as well.

<sup>&</sup>lt;sup>5</sup> This follows from the assumption that the entire cost of tax was being passed on to through higher prices. Corresponding to a lower value of output, the tax on output too would be lower. The reduction of tax collection on this count is computed at 4 per cent.

cent, over the value of output from manufacturing.<sup>6</sup> Since the consensus so far has been on 12.5 per cent being the VAT rate, the exceptions largely being inputs which are to be taxed at 4 per cent, this exercise assumes that the increments to value added do get taxed at 12.5 per cent.

Zero-rating of inter-state trade too would result in a decline in revenues to the state. A part of the present CST revenue results from taxes paid on inputs, while the balance would be from taxes paid on other goods. In order to separate these two components, it is assumed that fifty percent of the inputs used for manufacture in any state are locally purchased and the balance comes from inter-state trade. This provides an estimate of the loss of revenue from zero-rating of inter-state trade of goods other than inputs. An aggregation of these three components of the impact of introduction of VAT at the national level is presented in Table 1. From this table, it appears that aggregating over all states, VAT would yield net additional revenue provided there is more than 15 per cent value addition in goods beyond manufacturing stage.

net impact =  $0.125 * \alpha * (\text{VO} - \text{VI} * \beta * .04) - \text{VI} * \beta * .04 * (1 + 0.04) - (\text{CST} - \text{VI} * \beta * .04 * 0.5)$ =  $0.125 * \alpha * \text{VO} - \text{CST} - \text{VI} * \beta * .04 * (0.125 * \alpha + 0.54)$ 

where, VO is value of output, VI is value of inputs,  $\alpha$  is the proportion by which value increased in second and subsequent sales and  $\beta$  is the ratio of taxed inputs to total inputs.

The results are reported in Table 1 and include three scenarios,

- Case 1: Full VAT on goods including sugar, textiles and tobacco, with full credit for capital goods
- Case 2: VAT on goods excluding sugar, textiles and tobacco
- Case 3: VAT on all goods without credit for capital goods.

<sup>&</sup>lt;sup>6</sup> Compared to the drawback rates that the central excise adopts for the MRP products these rates appear reasonable. MRP regime drawback rates range between 30 and 50 per cent, a large segment of the commodities being offered 35 per cent or 40 per cent rates. The latter would translate into 54 and 67 per cent value added over the assigned cost of manufacture.

Table 1: Gain/loss from a switch over to VAT (Rs crore)						
	Value Added	10 per cent	15 per cent	20 per cent		
Case 1		-5480	-1122	3235		
Case 2		-5126	-1441	2244		
Case 3		-4052	319	4691		

The above presents an aggregate picture - aggregated over all states. The impact however would vary considerably across states depending on the relation between local production and consumption. For instance, a state with very little manufacturing activity would find very little loss of revenue from input tax credit for manufacturing sector. On the other hand, states with large manufacturing base are likely to face higher costs on this count. Aggregating over all the states tends to gloss over these differences, which would acquire a lot of importance in the context of central government decision to financially support the shift to a VAT regime.

In what follows, an attempt is made to identify the main state wise effects. The exercise is limited to exploring the effects within Case 1 above, and can be replicated for the other cases as well. As in the aggregate analysis, the effects are classified into four parts: loss from providing input tax credit, loss from reduced value of output, loss from removal of CST and gains from taxing second and subsequent sales within the state.

- 1. Loss from providing input-tax credit: Taking the industry group based figures for loss from tax credit, and the share of the individual states in the particular industry, one can derive the total cost from providing tax credit. However, given the assumption that only 50 per cent of the inputs used in a state are locally purchased, the loss to the state exchequer would be half of the total cost estimated above.
- 2. Loss from reduced value of output: Assuming that the lower costs in the form of tax credit is passed on to the buyers through lower prices, the value of output would be lower by the full amount of tax on inputs. The loss to the exchequer therefore would be 4 per cent of this amount.<sup>7</sup>

7

For locally sold goods of final consumption, the loss would be higher, since a higher rate would apply. However, further segregation of this impact is not attempted in this exercise.

- 3. Loss from removal of CST: The loss on this count is straight-forward. The entire revenue from CST as on the date of withdrawal of CST.
- 4. Gain from Taxation of second and subsequent sales in the state: Three scenarios are considered 10 per cent, 15 per cent and 20 per cent increase in value added. Allocating this value added across states however is not straight forward, since goods manufactured in a state are not necessarily consumed in that state. Destination based numbers for inter-state trade are not available. Therefore, the only other alternative is to look at consumption numbers as reflected in NSS data. Taking NSS data for non-agricultural consumption, shares in consumption for all the states were worked out. These figures were compared with the shares in production. A difference between the shares in consumption and the shares in production was used as a basis to re-allocate the incremental value added (all India figures) to the states. The shares in consumption were used as a basis to allocate the incremental value added.

Table 2 summarises these numbers. Comparing the figures in Tables 1 and 2, while 20 per cent value addition in case 1 in Table 1 suggests increases in tax collections, table 2 indicates that the increase may not be manifest in all the states. Gujarat, Haryana, Maharashtra and Tamil Nadu emerge as states likely to experience some decline in revenue collections. With only 10 per cent increase in value added, Andhra Pradesh, Bihar, Karnataka, Madhya Pradesh and West Bengal join the states with decline in tax collections. Table 3 below presents the corresponding costs of compensation for 1997-98. Assuming that the proportion of loss to total sales tax revenue of the states remains unchanged over time, the loss is projected for subsequent years and compared with central tax revenue receipts, net of states' share. Depending on the assumptions regarding the increments to value added, the compensation to the provided to the states varies between 1.53 per cent and 5.15 per cent.

Table 2: Impact of Introduction of VAT: An Illustration										
								(I	Rs crore)	
	Loss due to			Gain due to Tax on VA			Net Iı	Net Impact (1997-98)		
	Tax	Reduction in	CST	20%	15%	10%	20%	15%	10%	
	credit	value of output	withdrawal							
Andhra Pradesh	384.14	15.37	623.24	1628	1221	814	605	198	-209	
Assam	47.13	1.89	0	277	208	139	228	159	89	
Bihar	248.15	9.93	353.66	881	661	440	269	49	-171	
Gujarat	851.91	34.08	677.93	954	716	477	-610	-848	-1087	
Haryana	261.11	10.44	491.65	426	320	213	-65	-172	-279	
Himachal Pradesh	30.81	1.23	21.85	99	74	50	77	53	28	
J&K	7.63	0.31	0	143	107	71	135	99	63	
Karnataka	312.45	12.50	213.17	854	641	427	316	102	-111	
Kerala	174.55	6.98	163.13	820	615	410	475	270	65	
Madhya Pradesh	320.20	12.81	432.42	1128	846	564	362	80	-202	
Maharashtra	1395.90	55.84	1278.28	2235	1676	1118	-495	-1054	-1612	
Orissa	93.01	3.72	0	295	221	148	199	125	51	
Punjab	228.71	9.15	276.31	588	441	294	311	164	17	
Rajasthan	204.87	8.19	115.17	788	591	394	460	263	66	
Tamil Nadu	611.81	24.47	1034.58	1543	1157	772	-128	-514	-899	
Uttar Pradesh	532.94	21.32	237.06	2298	1724	1149	1507	932	358	
West Bengal	274.27	10.97	332.09	1170	878	585	553	260	-32	
Delhi	116.97	4.68	0	718	539	359	718	539	359	

Note: 1. The figures for CST collections are taken from RBI. For the particular year, 1997-98, a few states have reported zero collections. If this is a result of incorrect accounting, the loss from introduction of VAT in these states would be higher.

2. Delhi, Haryana, Himachal Pradesh and Punjab have modified versions of last point taxation, which eliminates input taxation in the existing regime. Therefore these costs would not exist for these states. However, the gain to revenue is assumed to accrue since the present structure of taxes are recognised to result in tax leakage.

	1997-98	1998-99	1999-2000	2000-01	2001-02	2002-03
					(R.E.)	(B.E.)
Sales tax Collections	48842	53116	62301	73364	79805	90496
Central tax Collections (net)	95672	104652	128271	136659	142348	172964
Loss(20%)	1424	1549	1816	2139	2327	2638
Loss/Central taxes(%)	1.49	1.48	1.42	1.57	1.63	1.53
Loss (15%)	2715	2953	3463	4078	4436	5030
Loss/Central Taxes (%)	2.84	2.82	2.70	2.98	3.12	2.91
Loss (10%)	4808	5229	6133	7222	7856	8908
Loss/Central Taxes (%)	5.03	5.00	4.78	5.28	5.52	5.15

**Table 3: Projected Impact** 

This exercise does not take certain features of the economy into account

- Zero-rating of exports: incorporating the impact of this feature would increase the losses.
- Some states have turnover taxes on second and subsequent sales. The increments to revenue from taxation of second and subsequent sales in such states would be smaller. The data on tax collections against such provisions are however not readily available and hence the corrections could not be attempted.
- Introduction of VAT as well as withdrawal of CST can alter the structure and more importantly the locational choice of business/industry. This exercise however assumes that the structure remains stable.

### Section 3: Federalism and homogeneity: Problems and benefits:

In keeping with the federal nature of the country: the states have been assigned the power to levy and collect sales tax. Each state has its own tax structure, spelt out in a state specific law and rules. The assignment of these powers to the states is meant to provide autonomy to the states in determining the desirable/suitable structure of taxes along with a package of services tailored to local needs and demands. The need for autonomy is well understood and extensively written about. The differences in

(Rs crore)

composition of economic activity, differences in the climatic patterns as well as the income levels of states could pose differing demands on the government for provision of public or merit goods. Smaller size of market - either in terms of dispersed populations or low levels of income, would require roads as a public good, with high concentration of population and enhanced economic activity, the same can be sustained through private provision. The prioritisation of publicly provided services by the local population can therefore vary across states.

On the other hand, local perception of the suitability of a state government as the appropriate service provider too may vary. Small dispersed communities may want to assign smaller role for a pan-state government, given the relatively infrequent interactions with the state government – consider tribal population in the Madhya Pradesh/ Chhattisgarh/ Jharkhand or the small habitations of desert Rajasthan. The same at varying levels can be true for different states with varying levels of income, and or different levels of integration/monetisation of the economies. This would get reflected in the state's relatively poorer ability to collect taxes – variations in the tax to GSDP ratio across states. Table 4 presents a comparison of the own tax revenue to GSDP ratios as well as sales tax collections to GSDP for major states. As is evident from the table, there is considerable variation in the ratios across states. This ratio is not directly related to per capita income alone<sup>8</sup>. Kerala and Tamil Nadu record the highest ratios for sales tax, while their rank in terms of per capita income is considerably lower, as also in size of the secondary sector.

<sup>&</sup>lt;sup>8</sup> Share of secondary sector in GSDP plays an important role. The states are also found to have experienced a decline in ratio since the eighties possibly resulting from corrosion of the tax base due to expansive tax-based industrial incentives. (Rao, 2002)

Table 4: Tax-GSDP Ratios: A Comparison							
			-	(per cent)			
			Per Capita	Share of			
	Own Tax Revenue	Sales Tax Revenue	Income (Rs.)	Secondary Sector			
Andhra Pradesh	7.28	4.99	10591	22.86			
Assam	4.33	2.62	6813	19.45			
Bihar	5.05	3.16	5134	21.12			
Gujarat	7.67	4.82	15636	39.22			
Haryana	7.29	4.08	15747	29.86			
Karnataka	8.15	4.93	12291	26.32			
Kerala	8.01	5.95	11286	22.12			
Madhya Pradesh	5.83	2.57	8678	24.85			
Maharashtra	7.15	4.35	17252	31.48			
Orissa	4.70	3.05	6293	18.38			
Punjab	6.30	3.15	16947	23.97			
Rajasthan	6.04	3.23	9334	26.59			
Tamil Nadu	8.57	5.51	13912	32.36			
Uttar Pradesh	5.01	2.72	7149	25.72			
West Bengal	3.83	2.57	10388	19.59			
Note: The above d	ata pertains to 19	99-2000.		1			

The above seems to be a reflection not only of differences in the size of the tax base of states but also in their rates<sup>9</sup> and in their ability to collect taxes. Treating this as a reflection of differences in the demands placed by the constituents of the state for government-financed public services and goods, it can be argued that the states do utilise their autonomy to appropriately customise the package of taxes and services to the local preferences. In other words, the states do value their autonomy. Homogeneity in terms of structure and rates of tax would means a loss of autonomy with direct implications in terms of reduced flexibility.

<sup>&</sup>lt;sup>9</sup> With introduction of floor rates for major traded commodities, some convergence in the rates is argued to have occurred. However, it is still not clear whether the ratios too would have responded in like manner. Since the data presented in this table pertains to 1999-2000, the full impact of the floor rates regime is not captured in the data.

The call for homogeneity stems from two related arguments: one, homogeneity would reduce the scope for tax competition among states, a process which tends to corrode the tax base. The argument here is fairly straight forward: tax competition in terms of rate wars and tax-based industrial incentives, introduce an element of tailspin. Any measure initiated by any given state would be mimicked by other states, resulting not so much in changes in patterns of investment as desired, but rather in the tax collections. Thus, homogeneity would introduce an element of stability into the tax system, allowing the tax departments as well as the manufacturers/traders to focus on the primary activity. While the impact of such an effect is difficult to capture, the differentials in the tax-GSDP ratios across states suggest that tax competition does not succeed in eliminating all the differences in rates and structures across states. Karnataka and Tamil Nadu for instance, levy and collect some turnover taxes beyond the first sale as well, which is not replicated by other states. Delhi, Punjab, Haryana and Himachal Pradesh provide differing degrees of set off for inputs purchased by manufacturers, while other states collect between two and four per cent tax on purchases by manufacturers. These differentials have not vanished over time, suggesting that the states do maintain some elements of differences although convergence in the rates is in evidence in the case of very mobile goods such as motor cars and computers.

Second, state specific tax systems with Central Sales Tax (CST) in its present form result in the formation of small "protected" markets for each state. CST in its present form serves as a protective barrier against goods flowing into the state, although it is collected and retained by the exporting state. This sustains input taxation at a corresponding rate within the state. These processes together encourage vertical integration within a state as a means of reducing the incidence of tax. On the other hand, it could also encourage duplication of economic activity across states, given the CST induced costs. In other words tax system would not be neutral to economic activity. For the integration of the domestic market into one integrated market, uniformity in structures and rates as well as elimination of CST in its present form would be desirable. This could offer benefits of economies of scale to the producers, as well as scope for local business to compete with imports or in the export market, in an increasingly more liberalised world.

The case for homogeneity therefore appears divided. What is however, clear from the discussion in the preceding section is that the homogeneity cannot ensure that all states retain their existing levels of revenue. Some states seem to gain while others appear to feel the pinch of the prescribed rates. While choice of state specific rates would have placed the burden and benefit of such a transition on the states, the prescription of homogeneity would place the costs of sustaining it on the union government. If improved compliance is expected to bring in additional revenues in the medium term, this would be equally true for all the states. Hence, the states, which expect to gain less from the transition, are encouraged to report a loss and benefit from central compensation. Once this process is initiated however, there is a problem in defining the exact quantum of losses. As Tables 1 and 2 demonstrate, changes in the assumptions regarding value added subsequent to the first sale can significantly alter the amount of compensation required as well as the number of states likely to suffer a decline in revenue. Further, instituting a assessed loss based mechanism for compensation would induce the states to collect less and seek higher levels of compensation – a classic principal agent problem resulting in increases in the costs of compensation. Lastly, sustaining the homogeneity subsequent to the withdrawal of the compensation mechanism would be difficult since the interests of the individual states could vary widely as reflected in the tax-GSDP ratios at present.

#### **Section 4: Concluding Remarks**

The attempt here has been to provide some dimensions to the extent of gain/loss to the states from introduction of VAT. The estimates provided indicate that the impact varies considerably across states - while some states seem to gain consistently from such a transition, in some other states, the gains could convert to losses depending on the assumptions on increments to value added. The estimates are based on the assumption of all states adopting a uniform VAT design.

One way for the states to avoid incurring losses with introduction of VAT would be through variations in the rates and/or structure of tax. Variations in the tax structure however are being perceived as hindrances to the formation of a common national market. Clearly, the costs of imposing/assuring such a uniformity would then have to be borne by the union government. Union government's assurance for compensation however would trigger off a negative response from the states - where non-collection is rewarded. Any methodology to distinguish between "genuine losses" and "slack in collections" would be heavily contested, especially since the databases for the states are rather poor.

## References

Central Statistical Organisation (1999): Annual Survey of Industries, 1997-98, Provisional results for Factory Sector; Calcutta: CSO.

Central Statistical Organisation (2000): Input-Output transactions Table, 1993-94; Delhi - CSO.

National Sample Survey Organisation (2002): Household Consumer Expenditure and Employment Situation in India, July 2000 to June 2001, New Delhi: NSSO.

National Institute of Public Finance and Policy (1994):*Reform of Domestic Trade Taxes in India: Issues and Options*, Report of a Study Team, NIPFP, New Delhi.

Reserve Bank of India: State Finances: A Study of Budgets, Mumbai: RBI. Various Issues

Rao, R. Kavita (2002): " Determinants of State-wise Tax Rates in India: A Panel Study", mimeo.

C:\My Documents\finance commission\_paper\FC\_seminar\_paper.doc