ESTIMATION OF TAX BASES UNDER VAT AND REVENUE NEUTRAL RATES

A2.1 Introduction

The revenue implications of various options for reforming the present system of domestic trade taxes of the country towards a system of Value Added Tax can be examined from two angles (i) what would be the yield of the tax at the recommended rates, and (ii) what would be the rates which would make the change revenue neutral, that is, assure the same revenue as yielded by the taxes to be replaced. The exercises carried out for assessing the revenue implications of the reforms proposed in this report were focused more on finding out the likely range of revenue neutral rates than on quantifying the revenue effect of alternative rate regimes, although an attempt was also made to estimate the likely magnitudes of the latter alternative scenarios.

A2.2 Estimation of a VAT Base - Possible Approaches

Once the base is estimated with given rates, the yield can be worked out straightaway by multiplying the base with the rates, while revenue neutral rates for a given amount of revenue can be derived simply by dividing the revenue to be secured by the estimated base. Thus, whichever way one looks at it, any assessment of the revenue implications of alternative VAT regimes requires, first, an idea of the likely size of the base.

For a destination based consumption type VAT, levied comprehensively, the base comprises the value of goods and services consumed in the economy during a year. It is possible to estimate this base by taking the figure of GDP as the starting point. To this one has to add the value of imports and deduct that of exports. The resultant figure represents the total expenditures on private consumption, government consumption, fixed capital formation and change in business inventories. For arriving at the VAT base, deduction should be made for the value of services of exempted sectors, government wages, fixed capital formation and net consumption abroad. To this must be added, purchases of intermediate goods and capital goods of exempt sectors including government and agriculture, not eligible for tax credit. Value of output of goods and services as also imports and exports is given on an annual basis in the National Accounts Statistics. The adjustments for the exclusion and inclusion on account of the exempted sectors, however, require disaggregated data on the value of goods and services to be excluded and, where the tax is leviable on dealers above a prescribed threshold, information regarding their distribution according to size of turnover. While it is possible to estimate the base at the all-India level by this method, application of this method at the State level becomes problematic because of absence of reliable data on *inter alia* inter-State "exports" and "imports".

An alternative way of estimating the consumption base which can be applied in the case of the States too is to take the total consumption expenditure in the economy, or Statewise, as the case may be, and estimate the VAT base from this figure by making the necessary adjustments. Figures of aggregate private consumption expenditure for the economy as a whole are also provided in the NAS. Statewise figures of consumption expenditure are thrown up by the National Sample Surveys (NSS) conducted by the NSSO from time to time. These data do not furnish all the information required for the adjustments but provide a basis from which the consumption at the State levels can be computed by making appropriate assumptions. This method of estimating the base may be designated as the "Consumption Expenditure" approach.

It is possible to estimate the VAT base at the State level in another way. Figures of turnover of goods subjected to sales tax at present are available, at least in some States, from the respective Sales Tax Departments. With suitable adjustments, one may figure out the likely order of a consumption VAT base for a given State from these figures which can then be used to derive estimates of the revenue impact of alternative rate regimes as well as the likely order of revenue neutral rates. This is referred to here as the "Tax Turnover" approach. Since the basic figures required for the Tax Turnover approach are compiled directly from the tax returns filed by dealers for sales tax, estimates made with this method might be regarded as firm and more reliable than those obtained by the aggregative consumption expenditure approach.

Both the methods, however, involve a series of steps and assumptions to provide for the adjustments and/or to make up for deficiencies of data. The steps to be gone through to derive the base under each method and the underlying assumptions are described briefly below. The results of the exercises are also set out in some more detail than given in the text. For further details reference may be made to the Technical Note being brought out by the Institute separately.

A2.2.1 Consumption Expenditure Approach

In working out the base for a VAT by this method, adjustments have to be made to the aggregated consumption expenditure data available from the NAS to allow for: (i) exemption of agricultural products and (ii) exemption of dealers with turnover below the taxable limit. Further allowance has to be made for consumption of services if the services are not included in the base. While the adjustments for exclusion of services from the base can be made with the help of information provided in the NAS, those for the exemptions have to be made on the basis of whatever evidence is available regarding the proportion of unprocessed agricultural products in total consumption and the share of dealers who would be exempt in aggregate consumption expenditure of the State, under alternative assumptions regarding thresholds. The tax base for a countrywide VAT was derived in this way for the present study by relying on indirect evidence and employing plausible assumptions where no information was available to provide a basis.

Once the base is estimated, revenue neutral rate for a VAT levied at a uniform rate throughout the country by any one level of government to replace both Central excises and State sales taxes can be worked out straightaway by dividing the revenue to be replaced by the base. However, since this model has been ruled out as the possible option of VAT for India being undesirable and impracticable, an attempt was made to estimate first, the revenue neutral rate of a Central VAT to replace Central excises, assuming that such a Central VAT would be applicable to the total consumption base after making the adjustments mentioned above. Next, estimates were made for a revenue neutral VAT at the State level if it is levied at a uniform rate in all the States on the same base. These estimates, worked out for 1990-91 and 1992-93, along with estimates of the tax bases are presented in table A2.1. The estimates provide an idea of the revenue neutral rates both for the Central and State VATs with alternative thresholds, viz., Rs 5 lakh, Rs 10 lakh and Rs 30 lakh.

The proposals put forward in this Report envisage replacement of Central excises by a Central VAT only upto the manufacturer level and of State sales taxes by a State VAT down to the retail level. Hence, estimates were made of revenue neutral rates for State VATs by the consumption expenditure method for each of 15 major States individually. For individual States, figures of only household consumption expenditure are available from reports of NSS. Further, the data on relevant components of the consumption expenditure required for making necessary adjustments were not available for individual States. An attempt was therefore made to estimate the magnitude of these components from all-India data which could throw light on them relying on certain assumptions. Consumption expenditure bases were estimated by this method for 1990-91 and then projected for 1992-93. Revenue neutral rates were computed on the bases so estimated for the two years with reference to the actual revenue for 1990-91 and revised estimates for 1992-93. The results showing the revenue neutral VAT rates for 15 major States for 1992-93 are given in Table A2.2.

A2.2.2 Tax Turnover Method

The starting point under this method is the total turnover data for a given State. These data include both final consumption products and services as also inputs. Since under a VAT, the tax paid on inputs would be rebated, when used by a VAT registered dealer, it is necessary to estimate, in addition to the value of exempt products and services under the contemplated VAT regime, the total amount of rebate which would have to be allowed for tax on purchases when sales taxes are replaced by VAT. However, only locally (i.e., within the State) produced inputs would be eligible for tax rebate. So an estimate has to be made of the inputs which are locally produced. For this purpose, in the present exercise, use was made of the input-output tables at all-India level, as also data on the sales and purchases of 142 major dealers of Maharashtra provided by the Sales Tax Commissioner, Maharashtra. These data provided information on the proportion of locally made inputs in the total input used, the value of inter-State sales, transfers by consignment and so on. Using these data as also other relevant information and after discussions with senior officials of State sales tax departments, ratios required for estimating the input rebates were set up. Every care was taken to see that the assumptions were realistic and plausible.

From the figures of tax base so computed, the likely revenue yield of selected VAT rate regimes were worked out for five major States for which data could be obtained for the year 1992-93 except for one State. The States are Andhra Pradesh, Gujarat, Maharashtra, Rajasthan and Tamil Nadu. The results are reported in Tables A2.3 to A2.7. A VAT rate regime of low rate (t_1), standard rate (t_2) and high rate (t_3) is represented by (t_1, t_2, t_3). The basic estimates obtained through these tables are put together in Tables A2.8 and A2.9. Table A2.8 gives the estimates of tax yield under the current sales tax systems as well as under two alternative VAT rate regimes for each of the five States while Table A2.9 displays estimates of revenue neutral VAT rate regimes for the said five States.

From Table A2.8 it would be seen that Andhra Pradesh, Maharashtra and Rajasthan may be able to obtain a significant revenue gain by substituting their sales tax systems by VAT even at the lower limits of the rate bands proposed in Chapter 7 (Section 7.1.3), viz., with the VAT rate regime (4,12,20), (see columns 2 to 4). With a high rate VAT regime (5,14,25), Gujarat may still have a small shortfall in revenue but Tamil Nadu will obtain substantial revenue advantage. The shortfalls disappear even for Gujarat if one allows for some increase in collections through improvement in administration. In fact, if one assumes only a 10 per cent increase in the tax base from improvement in administrative efficiency because of introduction of VAT, then the low rate VAT regime (4,12,20) works out to be revenue neutral even for Tamil Nadu (columns 5 and 6).

Table A2.9 suggests that, with no improvement in administrative efficiency, to ensure revenue neutrality, the standard rate for some States such as Andhra Pradesh and Rajasthan would have to be no more than 8 or 9 per cent, and the average rate across the States would vary from 10.3 per cent for Andhra Pradesh to 13.1 per cent for Tamil Nadu (columns 2 and 3). Even a small improvement in tax compliance and administrative efficiency would facilitate lowering of standard rates (columns 2 and 4) and average rates (columns 3 and 5) by about 1 percentage point.

A comparison of the revenue neutral average VAT rates with those obtained by using the consumption expenditure approach reveals that these rates are higher than those under the latter for all the five States (column 3 of Table A2.9 and column 11 of Table A2.2) and, for some States, the gap is significant. Possibly, in these States a significant part of the potential consumption base remains outside the fold of taxation. However, with expected improvement in tax administration usually associated with switchover to a VAT, it is unlikely that a State would need to have revenue neutral average rate higher than 11 per cent.

Sensitivity analysis was also carried out under both the conditions: with and without improvement in administrative efficiency, by varying two of the three ratios used for estimating the value of rebatable inputs in taxable turnover. The results under the assumption of no administrative improvement are given in Table A2.10. These results indicate that revenue neutral average VAT rates do not vary much even if one allows for a 10 per cent margin in one or both of the ratios (columns 3,5 and 7). The increase in the average VAT rate for a State following a 10 per cent increase in both the ratios does not exceed 1.1 percentage points, and the increase for Andhra Pradesh and Rajasthan is only of the order of 0.3 or 0.4 percentage point (columns 3 and 7). The results obtained with the assumption of improvement in administrative efficiency also were not very sensitive to variations of 10 per cent in the ratios bearing on input rebate.

It should be noted that these estimates do not allow for the revenue impact of zero-rating of international exports. Roughly, the loss on this account may be of the order of Rs. 1000 crore for the country as a whole. This might have given an upward bias in the estimates of revenue and a corresponding downward bias in the estimates of revenue neutral rates presented here. It may, however, be added that it was not possible to estimate the gain in revenue likely from the disallowance of input rebate which is envisaged in the proposed scheme in Chapter 7 in respect of items bearing high rate of tax, viz., petrol, diesel, aviation fuel, liquor and tobacco whereas the Study envisages that the State VATs on these commodities will not be rebatable. The omission of this gain would correct at least partly, the bias resulting from the omission of revenue loss likely from international exports from the computations. Notwithstanding these shortcomings, the estimates presented here provide a reasonable basis for assessing the revenue impact of the proposed reforms. With the data normally available with the State tax authorities it should be possible to replicate these exercises for all States.

Table A2.1

Revenue Neutral Rates for Uniform Central and State VATs for India: An Illustration for 1990-91 & 1992-93

Type of VAT/ threshold limit	Revenue being replaced by VAT in the year		Estimated tax base in the year 1992-93		Revenue neutral rates (per cent)			
	1990-91	1992-93	goods	goods & services	goods only		goods & services	
	(Rs.cr.)	(Rs.cr.)	(Rs.cr.)	(Rs.cr.)	1990-91	1992-93	1990-91	1992-93
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
A. Central VAT with threshold limit								
i. Rs. 5 lakh	20149	28070	312268	345939	8.3	9.0	7.5	8.1
ii. Rs.10 lakh	20149	28070	308375	342047	8.5	9.1	7.6	8.2
iii. Rs.30 lakh	20149	28070	302153	335825	8.6	9.3	7.8	8.4
B. State VAT with threshold limit								
i. Rs. 5 lakh	19129	26034	312268	345939	7.9	8.3	7.1	7.5
ii. Rs.10 lakh	19129	26034	308375	342047	8.0	8.4	7.2	7.6
iii. Rs.30 lakh	19129	26034	302153	335825	8.2	8.6	7.4	7.8

Notes:
1. VAT threshold limits relate to annual turnover.
2. The Centre is assumed to raise revenue partly through non-rebatable excises and partly through the Central VAT. The revenue raised through non-rebatable excises was Rs.5278 crore in 1990-91 and Rs.9720 crore in 1992-93 which is taken to have been raised also under the proposed scheme of uniform Central VAT. The revenue figures shown in columns 2 and 3 are exclusive of non-rebatable special excise.

Table A2.2

Revenue Neutral VAT Rates for 15 Major States in India: An Illustration for 1992-93 (Threshold for VAT registration is Rs.5 lakh per annum)

States	Consumption expenditure on goods and services	Consumption expenditure net of exemptions and inclusions under scenario:[2]			Taxes to be excluded from consumption[3] expenditure (ST+ADEILST)	Tax base[4] under the VAT with scenario:			Revenue being replace by VAT[5]	Revenue neutral VAT rates under scenario		
		S1 (10,60)	S2 (20,60)	S3 (10,50)		S1 (10,60) 90% of Col.(3-6)	S2 (20,60) 90% of Col.(4-6)	S3 (10,50) 90% of Col.(5-6)		S1 (10,60)	S2 (20,60)	S3 (10,50)
	(Rs.cr.)	(Rs.cr.)	(Rs.cr.)	(Rs.cr.)	(Rs.cr.)	(Rs.cr.)	(Rs.cr.)	(Rs.cr.)	(Rs.cr.)	(%)	(%)	(%)
1	2	3	4	5	6	7	8	9	10	11	12	13
Andhra Pradesh	41233	31756	31532	31705	1898	29858	29634	29807	2184	8.1	8.2	8.1
Gujarat[1]	20270	20394	19616	20220	1462	18932	18154	18758	1876	11.0	11.5	11.1
Maharashtra	53501	58611	55855	57993	4428	54183	51427	53565	5182	10.6	11.2	10.7
Rajasthan	29437	19488	19844	19568	989	18499	18855	18579	1055	6.3	6.2	6.3
Tamil Nadu	36574	33353	32045	33060	2672	30681	29373	30388	3035	11.0	11.5	11.1
Assam	9936	5119	5735	5257	290	4829	5445	4967	370	8.5	7.5	8.3
Bihar	41054	22283	24527	22786	913	21370	23614	21873	1217	6.3	5.7	6.2
Haryana	12664	11416	11471	11428	520	10895	10951	10908	767	7.8	7.8	7.8
Karnataka	24003	20800	20244	20675	1827	18973	18418	18849	2162	12.7	13.0	12.7
Kerala	19207	21076	21013	21061	1166	19909	19846	19895	1276	7.1	7.1	7.1
Madhya Pradesh	34409	23331	23698	23414	1028	22303	22669	22385	1248	6.2	6.1	6.2
Orissa	16045	8842	9702	9034	469	8373	9233	8566	587	7.8	7.1	7.6
Punjab	18184	16326	16019	16257	600	15726	15419	15657	817	5.8	5.9	5.8
Uttar Pradesh	74861	48695	50587	49119	2208	46487	48379	46912	2349	5.6	5.4	5.6
West Bengal	41521	32703	32396	32634	1664	31039	30732	30970	2079	7.4	7.5	7.5
15 States	472899	374696	374696	374696	22133	352562	352562	352562	26203	8.3	8.3	8.3
All States	506321	401068	401068	401068	26034	375034	375034	375034	26325	7.7	7.7	7.7

Notes:
1. Figures for Gujarat relate to 1991-92.
2. Scenarios:Under scenario S1,we assume that home-grown or exempted products together account for 10% of private final consumption expenditure in the most urbanised state-Maharastra and 60% in the least urbanised state-Assam.Briefly we write it as [10,60]. Thus scenario S2 refers to [20,60] and S3 to [10,50]. Among the other States, this ratio has been varied according to the degree of urbanisation.
3. Includes devolution of Addl.Excise Duties in lieu of Sales tax (ADEILST) and Sales tax other than CST.
4. Taxbase is reduced by 10% i.e. 90% of columns 7,8 & 9, in order to obtain revenue neutral rates on the conservative side.
5. Includes sales taxes (including CST) and ADEILST. The revenue figures relate to bugdet estimates except for Andhra Pradesh, Gujarat, Maharashtra, Rajasthan and Tamil Nadu for which revised estimates were used.

Table A2.3

Revenue Implications of the Proposed State VAT for Andhra Pradesh: 1992-93

(Rs.crore)

Description/Scenario	S1 (5,14,25)	S2 (4,12,20)	S3 (4,10,20)	S4 (4,9,20)	S5 (5,8,20)
A. Total revenue for the year	2184	2184	2184	2184	2184
i. General Sales Tax (GST)	1670	1670	1670	1670	1670
ii. Central Sales Tax (CST)	286	286	286	286	286
iii. Share in ADEILST	142	142	142	142	142
iv. Tax on diesel, petrol etc.	*	*	*	*	*
v. Purchase tax on sugarcane	86	86	86	86	86
B. Taxable local turnover (LT)	20616	20616	20616	20616	20616
C. Inputs in B (51/100 of B)	10514	10514	10514	10514	10514
D. Input tax in B(4% of C)	421	421	421	421	421
E. Taxable local turnover net of input tax (B-D)	20195	20195	20195	20195	20195
F. Base broadening due to withdrawal of exemptions, etc. (10% of E)	2020	2020	2020	2020	2020
G. Total taxable local turnover (E+F)	22215	22215	22215	22215	22215
H. Inter-state sales turnover (CST/0.04)	7150	7150	7150	7150	7150
I. Consignment transfers (same as H)**	7150	7150	7150	7150	7150
J. Input tax in H&I(4% of 51/100 times H&I)	292	292	292	292	292
K. Total turnover (G+H+I-J)	36223	36223	36223	36223	36223
L. Inputs qualifying for VAT rebate (21/100 times (K-25% of E))	6547	6547	6547	6547	6547
M. Plant & Machinery for VAT rebate.(100%)	497	497	497	497	497
N. Average rate of VAT (%): Turnover based	15.12	12.75	11.11	10.30	9.53
O. Tax on local turnover liable to VAT (GxN/100)	3358	2831	2469	2288	2116
P. Tax rebate on L&M,((L+M)*N)/100	1065	898	783	725	671
Q. Net revenue (O-P)	2293	1934	1686	1562	1445
R. VAT on sugar, textiles and tobacco***	750	628	558	523	494
S. Gain from capturing value added in multistage taxation (N times 15% of (1-51/100) of G)	247	208	181	168	156
T. Revenue loss due to raising of the threshold limit to Rs 3 lakh p.a.(1% of Q)	23	19	17	16	14
U. Total revenue under VAT (Q+R+S-T)	3267	2750	2409	2238	2081
V. Gain in revenue under the proposed State VAT (U-A)	1083	566	225	54	-103

Notes: 1. ADEILST: Additional duties of excise in lieu of sales tax.

* Included in A(i).

** Assuming a ratio of 50:50 between inter-State sales and consignment transfers.

*** Consumption of sweeteners between sugar and khandsari and gur is taken as 65:35. This is computed on the basis of per capita consumption of sugar, khandsari and gur. Total consumption of tobacco products between those subjected to ADEILST and those subjected to sales tax is taken as 90:10. Total consumption of textiles between these bases is taken as 85:15. Further, the tax base under ADEILST is reduced by 5 per cent due to VAT threshold of Rs.3 lakh.

2. Turnover figures are inclusive of turnover relating to plant and machinery.

Table A2.4

Revenue Implications of the Proposed State VAT for Gujarat: 1991-92

(Rs crore)

Description/Scenario	S1 (5,14,25)	S2 (4,12,20)	S3 (5,14,30)	S4 (5,14,32)	S5 (4,15,20)
A. Total revenue for the year	1876	1876	1876	1876	1876
i. General Sales Tax (GST)	1354	1354	1354	1354	1354
ii. Central Sales Tax (CST)	414	414	414	414	414
iii. Share in ADEILST	108	108	108	108	108
iv. Tax on diesel, petrol etc.	*	*	*	*	*
v. Purchase tax on sugarcane	*	*	*	*	*
B. Taxable local turnover (LT)	15666	15666	15666	15666	15666
C. Inputs in B (51/100 of B)	7990	7990	7990	7990	7990
D. Input tax in B(4% of C)	320	320	320	320	320
E. Taxable local turnover net of input tax (B-D)	15346	15346	15346	15346	15346
F. Base broadening due to withdrawal of exemptions, etc. (10% of E)	1535	1535	1535	1535	1535
G. Total taxable local turnover (E+F)	16881	16881	16881	16881	16881
H. Inter-state sales turnover (CST/0.04)	10350	10350	10350	10350	10350
I. Consignment transfers (same as H)**	10350	10350	10350	10350	10350
J. Input tax in H&I(4% of 51/100 times H&I)	422	422	422	422	422
K. Total turnover (G+H+I-J)	37159	37159	37159	37159	37159
L. Inputs qualifying for VAT rebate (21/100 times (K-25% of E))	6998	6998	6998	6998	6998
M. Plant & Machinery for VAT rebate(100%)	417	417	417	417	417
N. Average rate of VAT (%): Turnover based	12.67	10.75	12.88	12.96	13.04
O. Tax on local turnover liable to VAT (GxN/100)	2140	1815	2174	2187	2201
P. Tax rebate on L&M((L+M))*N/100	940	797	955	961	967
Q. Net revenue (O-P)	1200	1018	1219	1226	1234
R. VAT on sugar, textiles and tobacco***	465	389	490	499.57	453
S. Gain from capturing value added in multistage taxation (N times 15% of (1-51/100) of G)	157	133	160	161	162
T. Revenue loss due to raising of the threshold limit to Rs 3 lakh p.a. (1% of Q)	12	10	12	12	12
U. Total revenue under VAT (Q+R+S-T)	1810	1530	1856	1875	1837
V. Gain in revenue under the proposed State VAT (U-A)	-66	-346	-20	-1	-39

Notes:

1. ADEILST: Additional duties of excise in lieu of sales tax.
   * Included in A(i).
   ** Assuming a ratio of 50:50 between inter-State sales and consignment transfers.
   *** Consumption of sweeteners between sugar and khandsari and gur is taken as 65:35. This is computed on the basis of per capita consumption of sugar, khandsari and gur. Total consumption of tobacco products between those subjected to ADEILST and those subjected to sales tax is taken as 90:10. Total consumption of textiles between these bases is taken as 85:15. Further, the tax base under ADEILST is reduced by 5 per cent due to VAT threshold of Rs.3 lakh.
2. Turnover figures are inclusive of turnover relating to plant & machinery.
3. Revenue from works contract in the year 1991-92 did not exceed Rs 3 crores.

Table A2.5

Revenue Implications of the Proposed State VAT for Maharashtra: 1992-93

(Rs crore)

Description/Scenario	S1 (5,14,25)	S2 (4,12,20)	S3 (4,11,20)	S4 (5,11,20)	S5 (4,11,23)
A. Total revenue for the year	5182	5182	5182	5182	5182
i. General Sales Tax (GST)	3564	3564	3564	3564	3564
ii. Central Sales Tax (CST)	754	754	754	754	754
iii. Share in ADEILST	218	218	218	218	218
iv. Tax on diesel, petrol etc.	598	598	598	598	598
v. Purchase tax on sugarcane	48	48	48	48	48
B. Taxable local turnover (LT)	48910	48910	48910	48910	48910
C. Inputs in B (51/100 of B)	24944	24944	24944	24944	24944
D. Input tax in B(4% of C)	998	998	998	998	998
E. Taxable local turnover net of input tax (B-D)	47912	47912	47912	47912	47912
F. Base broadening due to withdrawal of exemptions, etc. (10% of E)	4791	4791	4791	4791	4791
G. Total taxable local turnover (E+F)	52703	52703	52703	52703	52703
H. Inter-state sales turnover (CST/0.04)	18850	18850	18850	18850	18850
I. Consignment transfers (same as H)**	18850	18850	18850	18850	18850
J. Input tax in H & I(4% of 51/100 times H & I)	769	769	769	769	769
K. Total turnover (G+H+I-J)	89634	89634	89634	89634	89634
L. Inputs qualifying for VAT rebate (21/100 times (K-25% of E))	16308	16308	16308	16308	16308
M. Plant and Machinery for VAT rebate.(100%)	479	479	479	479	479
N. Average rate of VAT (%): Turnover based	14.55	12.36	11.46	11.49	11.69
O. Tax on local turnover liable to VAT (GxN/100)	7669	6512	6041	6057	6160
P. Tax rebate on L&M,((L+M)*N)/100	2443	2074	1924	1929	1962
Q. Net revenue (O-P)	5226	4438	4117	4128	4198
R. VAT on sugar, textiles and tobacco***	693	580	548	560	569
S. Gain from capturing value added in multistage taxation (N times 15% of (1-51/100) of G)	564	479	444	445	453
T. Revenue loss due to raising of the threshold limit to Rs 3 lakh p.a. (1% of Q)	52	44	41	41	42
U. Total revenue under VAT (Q+R+S-T)	6431	5453	5068	5092	5178
V. Gain in revenue under the proposed State VAT (U-A)	1249	271	-114	-90	-4

Notes:

1. ADEILST: Additional duties of excise in lieu of sales tax.
   - * Included in A(i).
   - ** Assuming a ratio of 50:50 between inter-State sales and consignment transfers.
   - *** Consumption of sweeteners between sugar and khandsari and gur is taken as 65:35. This is computed on the basis of per capita consumption of sugar, khandsari and gur. Total consumption of tobacco products between those subjected to ADEILST and those subjected to sales tax is taken as 90:10. Total consumption of textiles between these bases is taken as 85:15. Further, the tax base under ADEILST is reduced by 5 per cent due to VAT threshold of Rs.3 lakh.
2. Turnover figures are inclusive of turnover relating to plant & machinery.
3. Taxable turnover relating to plant & machinery is assumed to be 1% of taxable turnover.

Table A2.6

Revenue Implications of the Proposed State VAT for Rajasthan: 1992-93

(Rs.crore)

Description/Scenario	S1 (5,14,25)	S2 (4,12,20)	S3 (4,10,20)	S4 (4,8,20)
A.Total revenue for the year	1055	1055	1055	1055
i. General Sales Tax (GST)	860	860	860	860
ii. Central Sales Tax (CST)	66	66	66	66
iii. Share in ADEILST	129	129	129	129
iv. Tax on diesel, petrol etc.	*	*	*	*
v. Purchase tax on sugarcane	*	*	*	*
B. Taxable local turnover (LT)	7905	7905	7905	7905
C. Inputs in B (51/100 of B)	4032	4032	4032	4032
D. Input tax in B(4% of C)	161	161	161	161
E. Taxable local turnover net of input tax (B-D)	7744	7744	7744	7744
F. Base broadening due to withdrawal of exemptions, etc. (10% of E)	774	774	774	774
G. Total taxable local turnover (E+F)	8518	8518	8518	8518
H. Inter-state sales turnover (CST/0.04)	1650	1650	1650	1650
I. Consignment transfers (same as H)**	1650	1650	1650	1650
J. Input tax in H&I(4% of 51/100 times H&I)	67	67	67	67
K. Total turnover (G+H+I-J)	11751	11751	11751	11751
L. Inputs qualifying for VAT rebate (21/100 times (K-25% of E))	2061	2061	2061	2061
M. Plant & Machinery for VAT rebate(100%)	256	256	256	256
N. Average rate of VAT (%): Turnover based	16.20	13.52	12.12	10.72
O. Tax on local turnover liable to VAT (GxN/100)	1380	1152	1032	913
P. Tax rebate on L&M,((L+M)*N)/100	375	313	281	248
Q. Net revenue (O-P)	1005	838	752	665
R. VAT on sugar, textiles and tobacco***	516	432	385	337
S. Gain from capturing value added in multistage taxation (N times 15% of (1-51/100) of G)	101	85	76	67
T. Revenue loss due to raising of the threshold limit to Rs 3 lakh p.a. (1% of Q)	10	8	8	7
U. Total revenue under VAT (Q+R+S-T)	1612	1347	1205	1063
V. Gain in revenue under the proposed State VAT (U-A)	557	291	149	7

Notes: 1. ADEILST: Additional duties of excise in lieu of sales tax.

* Included in A(i).

** Assuming a ratio of 50:50 between inter-State sales and consignment transfers.

*** Consumption of sweeteners between sugar and khandsari and gur is taken as 65:35. This is computed on the basis of per capita consumption of sugar, khandsari and gur. Total consumption of tobacco products between those subjected to ADEILST and those subjected to sales tax is taken as 90:10. Total consumption of textiles between these bases is taken as 85:15. Further, the tax base under ADEILST is reduced by 5 per cent due to VAT threshold of Rs.3 lakh.

2. Turnover figures are inclusive of turnover relating to taxable plant and machinery. In case of many industries,purchases of plant and machinery are exempt.

Table A2.7

Revenue Implications of the Proposed State VAT for Tamil Nadu: 1992-93

(Rs crore)

Description/Scenario	S1 (5,14,25)	S2 (4,12,20)	S3 (4,13,20)	S4 (4,13,25)	S5 (4,14,20)
A. Total revenue for the year	3035	3035	3035	3035	3035
i. General Sales Tax (GST)	2507	2507	2507	2507	2507
ii. Central Sales Tax (CST)	363	363	363	363	363
iii. Share in ADEILST	165	165	165	165	165
iv. Tax on diesel, petrol etc.	*	*	*	*	*
v. Purchase tax on sugarcane	*	*	*	*	*
B. Taxable local turnover (LT)	24409	24409	24409	24409	24409
C. Inputs in B (51/100 of B)	12449	12449	12449	12449	12449
D. Input tax in B(4% of C)	498	498	498	498	498
E. Taxable local turnover net of input tax (B-D)	23911	23911	23911	23911	23911
F. Base broadening due to withdrawal of exemptions, etc. (10% of E)	2391	2391	2391	2391	2391
G. Total taxable local turnover (E+F)	26302	26302	26302	26302	26302
H. Inter-state sales turnover (CST/0.04)	9075	9075	9075	9075	9075
I. Consignment transfers (same as H)**	9075	9075	9075	9075	9075
J. input tax in H&I(4% of 51/100 times H&I)	370	370	370	370	370
K. Total turnover (G+H+I-J)	44082	44082	44082	44082	44082
L. Inputs qualifying for VAT rebate (21/100 times (K-25% of E))	8002	8002	8002	8002	8002
M. Plant and machinery for VAT rebate(100%)	239	239	239	239	239
N. Average rate of VAT (%): Turnover based	14.19	11.87	12.50	13.18	13.14
O. Tax on local turnover liable to VAT (GxN/100)	3733	3121	3289	3466	3457
P. Tax rebate on L&M,((L+M)*N)/100	1170	978	1030	1086	1083
Q. Net revenue (O-P)	2563	2143	2258	2380	2374
R. VAT on sugar, textiles and tobacco***	454	380	401	428	422
S. Gain from capturing value added in multistage taxation (N times 15% of (1-51/100) of G)	274	229	242	255	254
T. Revenue loss due to raising of the threshold limit to Rs 3 lakh p.a. (1% of Q)	26	21	23	24	24
U. Total revenue under VAT (Q+R+S-T)	3266	2731	2879	3039	3026
V. Gain in revenue under the proposed State VAT (U-A)	231	-304	-156	4	-9

Notes:

1. ADEILST: Additional duties of excise in lieu of sales tax.
   - * Included in A(i).
   - ** Assuming a ratio of 50:50 between inter-State sales and consignment transfers.
   - *** Consumption of sweeteners between sugar and khandsari and gur is taken as 65:35. This is computed on the basis of per capita consumption of sugar, khandsari and gur. Total consumption of tobacco products between those subjected to ADEILST and those subjected to sales tax is taken as 90:10. Total consumption of textiles between these bases is taken as 85:15. Further, the tax base under ADEILST is reduced by 5 per cent due to VAT threshold of Rs.3 lakh.
2. Turnover figures relating to Tamil Nadu are inclusive of turnover relating to plant and machinery.
3. Taxable Turnover relating to plant and machinery is assumed to be 1% of taxable turnover.
4. Average rates based on turnover are taken to be 15% higher than those based on consumption.

Table A2.8

Estimate of Revenue under the Current Systems and with Alternative VAT Rate Regimes Based on Tax Turnover Data

State	Revenue under the current system of sales tax	VAT rate regime			
		Revenue with no administrative improvement and with VAT rate regime		Revenue with administrative improvement and with VAT rate regime	
		(5,14,25)	(4,12,20)	(5,14,25)	(4,12,20)
(1)	(2)	(3)	(4)	(5)	(6)
Andhra Pradesh	2184	3267	2750	3529	2971
Gujarat	1876	1810	1530	1977	1671
Maharashtra	5182	6431	5453	7027	5959
Rajasthan	1055	1612	1347	1720	1436
Tamil Nadu	3055	3266	2731	3556	2973

Notes:
1. A VAT rate regime (t_1, t_2, t_3) represents VAT rates applicable to low rated, standard rated and high rated goods respectively.
2. The figures relate to the year 1992-93 excepting Gujarat for which the reference year is 1991-92.

Table A2.9

Estimate of Revenue Neutral VAT Rates for Selected States (Based on Tax Turnover Data)

State	With no administrative improvement		With no administrative improvement	
	Tax rate regime	Average rate	Tax rate regime	Average rate
(1)	(2)	(3)	(4)	(5)
Andhra Pradesh	(4,9,20)	10.3	(4,8,20) (4,7,24)	9.5 9.2
Gujarat	(5,14,32)	13.0	(5,13,26) (4,14,20) (4,10,22)	12.0 12.3 10.7
Maharashtra	(4,11,23) (4,12,20)	11.7 12.4		
Rajasthan	(4,8,20)	10.7	(4,7,20)	10.0
Tamil Nadu	(4,14,20) (4,13,25)	13.1 13.2	(4,12,22)	12.1

Notes:
1. Figures in brackets give VAT rates for low rated, standard rated and high rated goods respectively.
2. Ratios used are input-output ratio of taxable sectors (51%) purchase of inputs from taxable sectors to total inputs (68%) and local purchase of inputs to total inputs (60%).
3. Revenue neutral VAT rates are obtained with reference to the year 1992-93 except for Gujarat for which the reference year is 1991-92.

Table A2.10

Sensitivity Analysis of Revenue Neutral VAT Rates for Selected States (Based on Tax Turnover Data)

(Per cent)

State	With estimated ratios (Rebate factor:21/100)		With one of the two ratios higher by 10% (Rebate factor: 23/100)		With both the ratios higher by 10% (Rebate factor:25/100)	
	Tax rate regime	Average rate	Tax rate regime	Average rate	Tx rate regime	Average rate
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Andhra Pradesh	(4,9,20)	10.3	(4,9,20)	10.3	(4,9,23) (5,9,22)	10.7 10.6
Gujarat	(5,14,32)	13.0	(5,14,40) (5,15,30)	13.3 13.6	(5,14,52) (5,15,42)	13.8 14.1
Maharashtra	(4,11,23) (4,12,20)	11.7 12.4	(4,11,28) (4,12,20)	12.1 12.4	(4,12,23) (4,11,34)	12.6 12.5
Rajasthan	(4,8,20)	10.7	(4,8,20)	10.7	(4,8,22) (5,8,21)	11.2 11.0
Tamil Nadu	(4,14,20) (4,13,25)	13.1 13.2	(5,14,20) (5,13,25)	13.5 13.6	(5,14,25)	14.2

Notes:
1. Figures in brackets give VAT rates for low rated, standard rated and high rated goods respectively.
2. Various ratios used are input-output ratio of taxable sectors (51%), purchase of inputs from taxable sectors to total inputs (68%), and local purchase of inputs to total inputs (60%). Sensitivity analysis is carried out by varying the last two ratios.
3. Factor x/100 gives proportion of rebatable inputs in taxable turnover.
4. Revenue neutral VAT rates are obtained with reference to the year 1992-93 except for Gujarat for which the reference year is 1991-92.