REVENUE IMPLICATIONS OF ALTERNATIVE VAT RATES AND DERIVATION OF REVENUE NEUTRAL RATES

Technical Note

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FOREWORD

This technical note on "Revenue Implications of Alternative VAT Rates and Derivation of Revenue Neutral Rates" seeks to assess the likely revenue impact of the Value Added Tax (VAT) regime recommended in the NIPFP (1994) study on "The Reform of Domestic Trade Taxes in India: Issues and Options". It also tries to estimate what could be the range of revenue neutral rates under the recommended regime.

The NIPFP (1994) study was sponsored by the Ministry of Finance, Government of India. The objective of the study was to prepare the design of a possible system of VAT for India on which there could be broad agreement among the Centre and the States.

The note was prepared mainly by Pawan K. Aggarwal and A.V.L. Narayana in consultation with State government officials, under the supervision of A. Bagchi who also took active part in designing the study. They also had the benefit of interacting with Satya N. Poddar who was a Consultant for the NIPFP (1994) study. It is hoped that this technical note would serve a useful purpose by providing details of the methodologies used and the data relied upon in deriving the results reported in the NIPFP study.

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February 23, 1995
New Delhi

A. BAGCHI
Director

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REVENUE IMPLICATIONS OF ALTERNATIVE VAT RATES AND DERIVATION OF REVENUE NEUTRAL RATES

1. Introduction

This technical note seeks to examine the revenue implications of options proposed in the NIPFP (1994) study[1] for reforming the present system of domestic trade taxes in India towards a system of value added tax. These can be examined from two angles: (i) what would be the tax yield at the proposed rates, and (ii) what would be the revenue neutral rates i.e., which assure the same revenue as yielded by the taxes to be replaced. The focus of the exercises carried out here was mainly to identify the revenue neutral VAT rate or rates for the Centre and the States within the broad frame of the recommended rate structure(s) though, an attempt was also made to estimate the yield of selected VAT rate scenarios.

An assessment of the revenue implications of alternative VAT scenarios requires an idea of the likely size of the tax base. 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.

The estimates obtained in these exercises are based on certain plausible assumptions as not all the information required for obtaining such estimates was available. Care has been taken to see that the assumptions are plausible and estimates fall on the conservative side. Sensitivity analysis also has been carried out by varying important assumptions.

Section 2 describes briefly the possible approaches for estimating VAT base. Alternative tax regimes considered in this note are given in Section 3. The basic assumptions and data relied upon for estimating tax bases are discussed and estimates of tax bases, tax yield and tax rates are reported in Section 4.

2. Estimation of VAT Base - Possible Approaches

For a destination based consumption type VAT, levied comprehensively with no exemptions, the base is simply the final consumption of goods and services. But in

1. NIPFP (1994), *Reform of Domestic Trade Taxes in India: Issues and Options*, National Institute of Public Finance and Policy, New Delhi. (Team Leader: A. Bagchi)

the real world, the VAT systems always provide for some exemptions due to social or administrative compulsions. Consequently, the tax bases for the real world VAT systems exclude some components of final consumption and, at the same time, include some components of intermediate consumption. Three alternative methods of estimating base of a VAT system are discussed below. The choice of a method would depend largely on the availability and reliability of the data.

It is possible to estimate VAT 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 expenditure 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, 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* "exports" and "imports" by individual States.

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 for computing VAT bases of individual States 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 bases of individual States 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.

Between the consumption expenditure approach and the tax turnover approach, the former is likely to give a higher estimate of the VAT base as it employs potential tax base while the latter uses the actual tax base that has been realised subject to administrative limitations of the prevailing sales tax systems.

Both the consumption expenditure and tax turnover 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 below.

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 services are not included in the base. While the adjustments for exclusion of services and exempt agricultural products from the base can be made with the help of information provided in the NAS, that for the exemption of dealers with turnover below the taxable limit have to be made on the basis of the share of exempt dealers in aggregate consumption expenditure of a given State, under alternative assumptions regarding thresholds. Specifically, exclusions from the final consumption comprise (i) consumption of "home-grown" or exempted goods and services, and (ii) sales to final consumers by the specified exempted sectors such as small dealers/manufacturers with turnover below a given threshold. Intermediate consumption of taxable goods/services in production of exempted goods/services or specified exempted sectors or dealers needs to be added to the final consumption as no tax rebate is allowed on such intermediate consumption. In effect, such intermediate consumption is treated as final consumption. The tax base for a countrywide VAT can be derived in this way. The consumption expenditure approach for estimating VAT base is described briefly in Chart 1.

Chart 1

Steps in the Consumption Expenditure Approach for Estimating VAT Base

Total final consumption expenditure* as per National Income Accounts/Consumer Surveys

minus

Final consumption expenditure on exempted services

minus

Consumption of home-grown or exempted agricultural goods

minus

Taxable sales for final consumption by manufacturers and traders with turnover below the prescribed threshold limit

plus

Purchase of taxable raw material used in production of exempted goods and services including construction

plus

Purchase of taxable raw material used by units with gross turnover below the threshold limit

plus

Gross fixed capital formation by producers (including contractors) of exempted goods and services

plus

Gross fixed capital formation of units with gross turnover below the threshold limit

↓

Gross tax base for VAT

minus

Taxes which are included in the gross tax base and are to be replaced by VAT

↓

Net tax base for VAT

Note: * obviously, it is exclusive of expenditure on construction and gross fixed capital formation.

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, this model, being undesirable and impracticable, has been ruled out as a possible option of VAT for India). Similarly, the revenue neutral rate of a Central VAT to replace Central excises and the revenue neutral rate of a State VAT to replace States sales taxes, levied at a uniform rate across the States, on the same base, can be worked out with alternative thresholds.

The proposals put forward in the Report envisage replacement of Central excises by a Central VAT only upto the manufacturer level and of State sales taxes by State VATs down to the retail level. It may be noted that the revenue neutral rate of a State VAT, uniform across the States, is unlikely to be revenue neutral for individual States. Estimation of revenue neutral VAT rates for individual States requires computation of VAT base for each State separately. 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 are not available for individual States. It however is possible to estimate the magnitude of these components from all-India data relying on certain assumptions. Consumption expenditure bases so estimated can be used to obtain revenue neutral VAT rates for individual States.

2.2 Tax Turnover Method

The starting point under this method is the taxable turnover data for a given State. These data include both final consumption products and services as also inputs (including plant and machinery). 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.

At the same time, taxable turnover excludes (i) trade margins of wholesalers and retailers as most of the commodities are subject to the first point tax in all the States and Union Territories, and (ii) turnover relating to sugar, textiles and tobacco - as these commodities are not subjected to sales tax under a tax rental arrangement with the Centre. Accordingly, these components need to be estimated and added to the taxable turnover to obtain the VAT base.

It may be noted that taxable turnover excludes all turnover of exempted goods/services and turnover of dealers below the threshold limit under the current sales tax system in a State. However, in computing the VAT base a further deduction from the turnover figure is required to the extent of turnover of dealers above the threshold limit under the current system but below the threshold that would be fixed under the VAT in a given State.

Estimation of intermediate consumption included in the taxable turnover, for which tax rebate would be allowed under VAT, requires estimation of value of locally produced taxable goods used as input in the production of taxable goods in the State. Assuming that there is no change in stocks, taxable goods produced within a State are accounted for by (i) local sales (ii) inter-State sales/consignments, and (iii) international exports. Under the current systems of sales taxes, taxable turn-over comprise only local sale of taxable goods because inter-State sales and international exports are not subjected to general sales tax (GST)[2]. Since inter-State sales are subjected to Central Sales Tax (CST), it is possible to estimate the value of inter-State sales based on the yield and rate(s) of CST. Estimation of value of consignment transfers and international exports from a State has to be based on primary data.

Estimates of tax revenue with a VAT rate regime can be obtained by applying the VAT rates to the relevant components of the tax base, or by applying an average VAT rate to the global VAT base. The tax turnover approach is described briefly in Chart 2. Computation of tax relief on input use of goods and services is explained separately in Chart 3.

3. VAT Rate Regimes

Under the VAT rate structure recommended in the Study, all commodities except certain unprocessed food items which would be exempt, are classified into three broad categories - those subjected to low, standard and high rate as shown in Chart 4. A VAT rate regime of low rate (t_1), standard rate (t_2) and high rate (t_3) is represented as

2. It may however be noted that inter-State sales are subjected to Central Sales Tax (CST) whereas inter-State consignment transfers and international exports are allowed to cross the State borders free of tax.

Chart 2

Steps in Tax Turnover Approach for Estimating Likely Revenue Yield Under a VAT Regime with Specified Rates

Taxable local turnover

minus

Input tax in taxable local turnover

equals

Taxable local turnover net of input tax

plus

Base broadening due to withdrawal of exemptions and tax concessions

plus

Broadening of tax base due to better administration

equals

Total taxable local turnover net of input tax

↓ **Average tax rate**

Gross revenue from total taxable local turnover

minus

Tax rebate on inputs*

minus

Tax rebate on plant and machinery

plus

VAT on sugar, textiles and tobacco

plus

Revenue gain from capturing value added by the wholesalers and retailers

minus

Loss in revenue due to fixation of higher threshold for registration under VAT

equals

Tax revenue under the VAT

Note: * **Computation of tax relief is shown in Chart 3.**

Chart 3

Steps In Estimating Tax Rebate on Inputs

Total taxable local turnover net of input tax*

plus

Inter-State sales, consignment transfers and international exports net of input tax

equals

Total turnover of taxable goods

minus

Turnover of importers relating to taxable goods

↓

Adjusted total turnover of taxable goods

↓ **Ratio of inputs used in taxable goods to output**

Inputs qualifying for VAT rebate

↓ **Average tax rate**

Tax rebate on inputs

Note: * **As described in Chart 2.**

(t_1,t_2,t_3). Tax rate for a specific category of goods is allowed to vary across States within a narrow range. A State can choose only one rate within a narrow rate band for all goods in a specific category, i.e., 4 or 5 per cent for low rated goods, 12 or 13 or 14 per cent for standard rated goods, and not less than 20 per cent for high rated goods. The tax regime with lower limits of the rate bands can be represented as (4,12,20) and that with upper limits of the rate bands for low and standard rated goods can be given as (5,14,t) where t is not less than 20 per cent.

4. Estimates of Tax Bases and Revenue Neutral Rates

4.1 Estimates by Consumption Expenditure Approach

The consumption expenditure approach is used to obtain revenue neutral rates for a uniform Central VAT as well as a uniform State VAT. Revenue neutral VAT rates for individual States are also obtained on the basis of some plausible assumptions about the distribution of tax bases among the States. The revenue neutral VAT rates have been obtained for the years 1990-91 and 1992-93.

The Central VAT is taken to replace Union excise duties (UED) and counter vailing duties (CVD), while a part of the revenue will be raised also through excises. The Centre would also stop levying additional duties of excise in lieu of sales tax (ADEILST) on sugar, textiles and tobacco. State VATs will replace general sales tax (including purchase tax on sugarcane and sales taxes on motor spirit etc.) and Central sales tax (CST). The commodities now taxed under ADEILST will also be subjected to the State VATs. For working out revenue neutral uniform rates, the Central VAT as well as the State VAT is assumed to be applicable upto the last sale point subject to a threshold limit specified in terms of gross turnover.

It is further assumed that both the Central and State VATs will allow certain exemptions either because these exemptions are desirable (as for example for unprocessed agricultural products) or because of administrative reasons. The exempted goods are taken to be the same as listed in Chart 4. In addition, home-grown consumption of agricultural products is treated as exempt because of practical difficulties in bringing such consumption under the tax net. It is also assumed that certain services like education, health and medical care, rent from housing, water charges, banking and life insurance will not be taxed. (hereafter referred to as Category 1 services). Further, the revenue neutral rates are obtained with inclusion as well as with exclusion of other services. The group of other services comprises (i) renting of furniture, (ii) transport

Chart 4

Proposed Commodity Grouping for State VAT Rates

Exemptions

1. Unprocessed cereals including rice and wheat.
2. Rice flour, atta, maida and suji
3. Pulses
4. Fresh vegetables and fruits
5. Fresh meat, fish and livestock excluding race horses.
6. Unprocessed salt
7. Fresh milk
8. All types of eggs
9. Plain water not including mineral water, aerated water, tonic water, distilled water, scented water or water sold in sealed containers/sockets, etc.

Rate of Tax (4 to 5%)

1. Oilseeds, edible oils and oil cake
2. Processed salt
3. Dried fish, vegetables and meat
4. Pasteurised milk
5. Chillies, turmeric, tamarind, cumin seed, dried ginger, etc.
6. Kerosene
7. Sugar

High Rate of Tax (Minimum 20%)

1. Diesel, petrol and aviation fuel
2. Opium, ganja, bhang, narcotics, etc.
3. Liquor
4. Tobacco and tobacco products.

All Other Commodities: Standard Rate (12 to 14%)

and communication, (iii) recreation and cultural services, (iv) hotels and restaurants and (v) other miscellaneous services (excluding LIC premia, banking and legal and business services). This group is referred to as Category 2 services. It may be noted that public services such as defence and public administration are already outside the consumption expenditure base. As discussed earlier, exemptions imply certain exclusions from and inclusions in the consumption expenditure in order to arrive at the base under a VAT as outlined in Chart 1.

For convenience, we first describe the computation of VAT base and revenue neutral rates for the uniform Central and State VATs, and take up later the computation of Statewise VAT bases and revenue neutral rates.

a. Revenue Neutral Rates of Uniform Central and State VATs

Tax base for the Central or the State VAT by using the consumption approach, is derived by following the scheme described in Chart 1. Not all the information required for estimating the tax bases was readily available. The computations had, therefore to be based on certain assumptions. The computations based on the basic set of assumptions are set out in Table 1. The estimates and the basic assumptions are discussed below.

The latest year for which the data on total final consumption expenditure on goods and services were available is 1990-91. These data, for all-India, were compiled from the National Accounts Statistics, 1993, and are reported in lines A and B in Table 1. Regarding the final consumption of services of both the categories 1 and 2, the data relating to only private final consumption could be obtained and the same has been reported in line B. Further, among category 2 services, for hotels and restaurants, the value added instead of final consumption has been used.

The data on private final consumption expenditure (PFCE) on exempted goods, excluded from the tax base, has also been compiled from the National Accounts Statistics, 1993. It is of the order of Rs. 90108 crore for the year 1990-91[3] and is reported in line C. This accounts for about 26.83 per cent of total PFCE, and constitutes about 48.19 per cent of the agricultural output.

3. This is taken to include Rs 70111 crore of imputed value of home-grown consumption estimated at 37.5 per cent of the agricultural output including forestry, logging and fishing. (See Government of India, CSO, *Sources and Methods*, 1989.)

Values of sales to final consumers by units with gross turnover below the threshold limits were estimated separately for three categories of manufacturers/traders, i.e., for registered manufacturing establishments, small scale non-factory units and trade establishments. In the first two cases, sales to final consumers have been taken as 15 per cent of the value of gross output of the units with gross turnover below the threshold limit. This assumption seems to be reasonable because most of the tiny manufacturing units prefer to operate as ancillaries and concentrate on products like raw material and spare parts used by large and medium scale units. For the third category, i.e., traders, 50 per cent of the output of traders operating below Rs.5 lakh is taken as sale to final consumers, while 100 per cent of the output of other traders having turnover between Rs 5-30 lakh is treated as final consumption. This requires estimating the value of output of the manufacturers/traders separately for a given threshold limit such as Rs.5 lakh, Rs.10 lakh and Rs. 30 lakh.

At the all-India level, the data on value of gross output of services, construction and exempted goods were compiled for the year 1990-91 from the National Accounts Statistics, CSO, 1993 and are reported in line D in Table 1. The figures of value of gross output at the all-India level for the above discussed three categories of manufacturers/traders were also obtained for 1990-91 from the same source.

Estimation of value of gross output of registered manufacturers with gross turnover less than a given threshold limit requires information on the distribution of output by size class of turnover. The latest year for which such information is available was 1988-89, from the Annual Survey of Industries (ASI), 1988-89 (Summary Results for Factory Sector). The lowest class interval for which the data were available is Rs 0-25 lakh per annum. The value of output for size classes Rs 0-5 lakh, Rs 5-10 lakh and Rs 10-25 lakh has been assumed to be respectively 50,30 and 20 per cent of the value of output of the size class Rs 0-25 lakh. The value of output of the size class Rs 25-30 lakh was estimated through linear interpolation of the output of the next size class Rs 25-50 lakh. With these details, the shares of different size classes in total gross output were obtained for the year 1988-89. These are 1.31, 0.79 and 0.17 per cent respectively for size classes Rs 0-5 lakh, Rs. 5-10 lakh and Rs. 10-30 lakh. Accordingly, the cumulated shares of manufacturers operating below the threshold limits of Rs 5 lakh, Rs 10 lakh and Rs 30 lakh work out to 1.31, 2.10 and 2.27 per cent respectively. The value of output of these manufacturers in 1990-91 was obtained by applying the same shares to the total output of 1990-91 and is reported in line E(i). The sales to final consumers by these units are taken at 15 per cent of their output and shown in line F(i).

Value of gross output of small scale non-factory units (SSNFU) operating below a threshold level has been estimated on the basis of investment data available in the Report on the Second All-India Census of Small Scale Industrial Units, 1987-88 (SSI Census). The SSI Census data include both factory and non-factory units. The distribution of investment separately for factory and non-factory units by investment slabs is not available. Therefore, we have used the combined distribution of investment for all SSI units to obtain the distribution of output for 1987-88 simply by multiplying the values of investment and the slab limits by output-investment ratios. From this, the distribution of output at 1990-91 prices was obtained by using an inflation index based on the wholesale price indices. From this distribution of output, shares of the units operating below the threshold levels of Rs.5 lakh, Rs. 10 lakh and Rs.30 lakh were derived.[4] The shares thus obtained were applied to the estimated value of total output of the non-factory units for 1990-91 to deduce the corresponding values of output of units below the threshold limits for that year. These estimates are shown in line E(ii). Sales to final consumers by these units were taken to be 15 per cent of their output and are reported in line F(ii).

Values of gross turnover of trade establishments operating below the threshold levels were obtained on the basis of the total number of non-agricultural establishments for the year 1990, as available from the Economic Census of Non-agricultural Establishments (Summary Results for 1990). These establishments were divided into two classes - directory (which employ more than 5 hired workers) and non-directory (which employ 1 to 5 hired workers) trade establishments (DTEs and NDTEs) by using their proportions for the year 1980 derived on the basis of information available from the Economic Census of Non-Agricultural Establishments, 1980. The size distribution of DTEs and NDTEs in 1989-90 was estimated on the basis of their frequency distribution by different classes of annual gross turnover for the year 1985-86. The relevant data were abstracted from the publications of CSO, namely, the Survey of Directory Trade Establishments, 1985-86 (October-September), and the Survey of Non-Directory Trade Establishments, 1985-86 (July-June). The value of gross turnover for a size class was computed by multiplying the mid-point of the class interval by the frequency of that class. To adjust for inflation between 1985-86 and 1989-90, class limits and the values of gross turnover were inflated by the wholesale price index. The contribution to gross turnover of the units falling in classes Rs.0-5 lakh, Rs.5-10 lakh and Rs.10-30 lakh was estimated through linear interpolation separately for DTEs and NDTEs and then merged.

4. For this purpose, the distribution of output relating to size class Rs.0-10 lakh was broken up in the ratio 3:1 to generate output for size classes Rs.0-5 lakh and Rs.5-10 lakh. The output for the size class Rs. 10-30 lakh was estimated by linear interpolation.

Based on the merged distribution of gross turnover, shares of these three size classes in the total gross turnover were computed. These shares were applied to the estimated total gross turnover for the year 1990-91 to obtain gross turnover of these classes for that year. For this purpose, gross turnover for the year 1990-91 was estimated by inflating the gross turnover per establishment in the year 1985-86 at 1989-90 prices and multiplying the same by the number of non-agricultural establishments in the year 1989-90 as available from the Economic Census, 1990. Finally, the figures of turnover relating to the units below the threshold limits of Rs.5 lakh, Rs.10 lakh and Rs.30 lakh were obtained and are shown in line E(iii). Sales to final consumers by traders operating below the threshold of Rs.5 lakh were taken to be 50 per cent of their total sales, while 100 per cent of sales turnover of the traders with turnover above Rs.5 lakh was taken as sales to final consumers. Sales turnovers of the traders operating below the threshold limits of Rs.5 lakh, Rs.10 lakh and Rs.30 lakh, so obtained, are show in line F(iii).

As discussed earlier, raw materials used in the production of exempted goods and services or used by the exempted sectors have to be added to the final consumption expenditure to obtain the base under a VAT as no tax rebate would be allowable on such inputs. The values of taxable raw materials used in the production of category 1 services, category 2 services and construction were estimated by multiplying their output values by the input-output ratios of these sectors viz., 0.121, 0.251 and 0.472 respectively, and are reported in lines G(i) to G(iii). The input-output ratios were computed on the basis of input-output tables relating to the year 1989-90. Value of output of exempted goods accounts for 64.46 per cent of the value of total output of agricultural sector including forestry and fishing, that is Rs 186956 crore. Accordingly, taxable raw materials[5] used in the production of exempted or home-grown goods were taken at 64.46 per cent of the taxable raw materials used in the production of all agricultural products including logging and fishing, and is reported in line G(iv). These are taken to be the same for all categories of dealers irrespective of their turnover thresholds.

In the case of taxable goods sold by units operating below the threshold limits, only the total value of raw materials rather than taxable raw materials could be estimated. For registered manufacturing establishments, the distribution of gross value added was also estimated for 1987-88 following the same analogy as used in obtaining the size class distribution of gross output. Value of raw materials used by a size class was computed as value of gross output minus gross value added. By using this

5. Taxable raw materials used in the production of exempted agricultural goods include chemical fertilisers, electricity and irrigation charges, pesticides and insecticides, and diesel oil. Value of these raw materials for the year 1990-91 was compiled from the National Accounts Statistics, 1993.

distribution, the shares of units operating below the threshold limits in the total value of raw materials used were obtained. These shares were then applied to the total value of raw material used by the registered manufacturing units in the year 1990-91 to obtain the values of raw material used by the units operating below the threshold limits. The resulting figures are shown in line H(i).

For small scale non-factory units, the distribution of raw materials for the year 1987-88 was obtained by using the same method as used in estimating the size class distribution of gross output. The shares of units operating below the threshold limits in the total value of raw material were computed, and applied to the value of total raw material used by the small scale non-factory units in the year 1990-91 to obtain the corresponding values of raw material used by the units operating below the threshold limits. These are reported in line H(ii). In the same manner, the respective values of raw material used by traders operating below the threshold limits were obtained and are presented in line H(iii).

Gross fixed capital formation (GFCF) by the producers of exempted goods and services or by the exempted sectors had also to be added to the final consumption expenditure to obtain the VAT base as no tax rebate is allowable on such GFCF. The data on GFCF by the producers of services and exempted goods, contractors, the registered manufacturers, small scale non-factory units and traders were taken from National Accounts Statistics, CSO, 1993 for the year 1990-91. GFCF by the producers of exempted goods and services and by the contractors is reported in line I.

The values of GFCF by registered manufacturers operating in the turnover ranges of Rs. 0-5 lakh, Rs. 5-10 lakh and Rs. 10-30 lakh were taken respectively as 1.5 per cent, 1 per cent and 2.75 per cent of the total GFCF by all the registered manufacturers. Accordingly, the values of GFCF by registered manufacturers operating below the threshold limits of Rs 5 lakh, Rs 10 lakh and Rs 30 lakh were taken respectively as 1.5 per cent, 2.5 per cent and 5.25 per cent of the total GFCF and are reported in line J(i). GFCF by small scale non-factory units operating below a threshold limit was obtained by applying their share in gross output to the total GFCF by all the small scale non-factory units in the year 1990-91. These figures were computed for all the three threshold levels and are reported in line J(ii). The same procedure was followed for estimating the values of GFCF by traders operating below the threshold limits of Rs. 5 lakh, Rs. 10 lakh and Rs. 30 lakh and the ratios used respectively are 16.21 per cent, 27.66 per cent and 45.06 per cent. The estimates of GFCF relating to the traders are given in line J(iii).

Another adjustment which had to be made in the final consumption expenditure relates to taxes embedded in the consumption base. Under a VAT system, the rate may be specified with reference to the base exclusive of the tax raised through the VAT. In the Study, a Central VAT is proposed to replace Union excise duties and CVD. Revenue raised through these taxes was Rs. 25427 crore in 1990-91, of which Rs. 5278 crore is to be raised through non-rebatable excises. So, the net revenue to be raised through Central VAT worked out to Rs. 20149 crore for 1990-91 and is shown in line K. State VAT, will replace revenue from GST, CST and ADEILST. Revenue raised through these taxes was Rs. 19129 crore in 1990-91 (vide line L).

In computing the tax base under the Central VAT for taxation of goods only, the following items had to be excluded from the final consumption: (1) private final consumption of services vide line B(iii), (2) private final consumption of home-grown or exempted agricultural goods (line C), (3) sales to the final consumers by the units operating below the threshold limits (line F), (4) revenue to be replaced by the Central VAT (line K), and (5) revenue to be replaced by the State VAT (line L). Estimate of value of these items is given in line M. At the same time additions had to be made to the final consumption for (1) taxable raw materials used in production of services and exempted or home-grown goods (line G), (2) taxable raw materials used by units operating below the threshold limits (line H), (3) gross fixed capital formation by producers of services and exempted or home-grown goods (line I), and (4) gross fixed capital formation by units operating below the threshold limits (line J). Estimated value of these additions is given in line N. Tax base under the Central VAT for taxation of goods only was obtained by taking into account these adjustments as (A-M+N). This is reported in line O. This works out to Rs. 2,41,405 crore, Rs. 2,38,378 crore and Rs. 2,33,540 crore respectively for the threshold levels of Rs. 5 lakh, Rs. 10 lakh and Rs. 30 lakh. Incidentally, this implies that the tax base under VAT does not vary substantially with the variation in the threshold limit.

The base of the Central VAT for taxation of goods and services was obtained by adding to the tax base estimated above for taxation of goods only, the consumption of category 2 services B(ii) and expenditure on new residential construction D(iii), and by subtracting from it the value of raw materials used [G(ii) & G(iii)] and gross fixed capital formation [I(ii) & I(iii)] relating to these services and construction. The estimate of tax base for Central VAT for taxation of goods and services is shown in line P.

Given the revenue to be raised through the Central VAT and the tax bases, revenue neutral rates of uniform Central VAT for the year 1990-91 were obtained and are reported in lines Q(i) and Q(ii) respectively for taxation of goods only, and for taxation of goods and services.

Given the revenue to be raised through the State VAT and the same tax bases as for the Central VAT, revenue neutral rates of uniform State VAT with alternative threshold limits were computed for the year 1990-91 and are presented in line R.

Revenue neutral rates for both the Central and the State VATs were also estimated for 1992-93 based on the projections of tax bases and budget estimates of yield of these taxes in the year 1992-93. The information relating to the tax bases for the year in question was available from the cross quick estimates of final consumption[6] expenditure available at the all-India level only. Therefore, for projecting the tax base for 1992-93 the ratio of the tax base to the final consumption for the year 1990-91 was applied to the total final consumption expenditure for the year 1992-93. Using the projected tax bases and the revenue to be replaced by the Central and the State VATs, revenue neutral rates for the year 1992-93 were obtained and are given in Table 2. For purposes of comparison, revenue neutral rates relating to the year 1990-91 are also presented in Table 2.

From Table 2, it will be seen that with a uniform Central VAT (for taxation of goods only) extending to the retail level, a tax rate of about 8.5 per cent could be revenue neutral in 1990-91 (Column 6) and about 9.1 per cent could be revenue neutral in 1992-93 (column 7). Bringing the Category 2 services in the ambit of Central VAT could help to reduce the revenue neutral rate by about 0.9 percentage point in both the years 1990-91 (columns 6 and 8) and 1992-93 (columns 7 and 9). These findings are supported also by the pattern of revenue neutral rates for a uniform State VAT (columns 6 to 9). The revenue neutral rate for a uniform State VAT (with taxation of goods only) works out to about 8.0 and 8.4 per cent respectively for the years 1990-91 and 1992-93. Inclusion of services in the tax base reduces the revenue neutral rate of uniform State VAT by about 0.8 percentage point in both the years.

6. Conceptually, in deriving this ratio, final consumption should be taken to be net of Central and State taxes being replaced by VATs. However, this can not be done at the State level as the distribution of Union excise duties by States is not known. Therefore, final consumption gross of Central and State taxes has been used both at the all-India and State levels in deriving the ratio under consideration, and this has been used appropriately.

Table 1

Estimates of Tax Bases and Revenue Neutral Rates Under the Uniform Central and State VATs with Threshold of Rs 5 lakh, Rs 10 lakh and Rs 30 lakh: An Illustration for 1990-91 (By Consumption Expenditure Method)

(Rs crore)

	Particulars	VAT Threshold (Rs lakh)		
		5	10	30
	(1)	(2)	(3)	(4)
A.	Total final consumption expenditure@	354343	354343	354343
i.	Private	335837	335837	335837
ii.	Government	18506	18506	18506
B.	Private final consumption of			
i.	Services - Category 1	38685	38685	38685
ii.	Services - Category 2	43763	43763	43763
iii.	Sum of i and ii	82448	82448	82448
C.	Private final consumption of homegrown or exempted agricultural goods	90108	90108	90108
D.	Value of gross output of			
i.	Services - Category 1	123502	123502	123502
ii.	Services - Category 2	55576	55576	55576
iii.	Construction (New residential)	12928	12928	12928
iv.	Exempted or home-grown goods	120511	120511	120511
v.	Sum of i to iv	312517	312517	312517
E.	Value of gross output of units with gross turnover less than the threshold limit	77489	129393	178453
i.	Registered manufacturing establishments(RME)	3370	5403	7963
ii.	Small scale non-factory units (SSNFU)	6658	8877	16438
iii.	Trade establishments (TE)	67461	115113	154052
F.	Sale to the final consumers by units with gross turnover less than the threshold limit	35236	83524	160358
i.	Registered manufacturing establishments(RME)	506	810	1194
ii.	Small scale non-factory units (SSNFU)	999	1332	5112
iii.	Trade establishments (TE)	33731	81382	154052
G.	Taxable raw materials used in the production of			
i.	Services - Category 1	14944	14944	14944
ii.	Services - Category 2	13942	13942	13942
iii.	Construction	6102	6102	6102
iv.	Exempted or home-grown goods	7314	7314	7314
v.	Sum of i to iv	42302	42302	42302
H.	Taxable raw materials used by units with gross turnover less than the threshold limit	65879	110300	180234
i.	Registered manufacturing establishments(RME)	2599	4170	6217
ii.	Small scale non-factory units (SSNFU)	4959	6613	11675
iii.	Trade establishments (TE)	58321	99517	162342

Table 1 (Contd.)

(Rs crore)

	(1)	(2)	(3)	(4)
I.	Gross fixed capital formation by producers of			
	i. Services - Category 1	5583	5583	5583
	ii. Services - Category 2	7335	7335	7335
	iii. Construction	3129	3129	3129
	iv. Exempted goods	8033	8033	8033
	v. Sum of i to iv	24080	24080	24080
J.	Gross fixed capital formation by units with gross turnover less than the threshold limit	1871	2711	4773
	i. Registered manufacturing establishments(RME)	234	390	429
	ii. Small scale non-factory units (SSNFU)	1245	1660	3267
	iii. Trade establishments (TE)	392	661	1077
K.	Tax revenue to be replaced by the central VAT (excluding non-rebatable cess or special excise)	20149	20149	20149
L.	Tax revenue to be replaced by the state VAT (GST+CST+ADEILST)	19129	19129	19129
M.	Value to be excluded from final consumption (B(iii)+C+F+K+L)	247070	295358	372192
N.	Value to be included in final consumption (G+H+I+J)	134132	179393	251389
O.	Tax base under the VAT for taxation of goods only (A-M+N)	241405	238378	233540
P.	Tax base under the VAT for taxation of goods, services of category 2 and construction (O+B(ii)+D(iii)-G(ii)-G(iii)-I(ii)-I(iii))	267588	264561	259723
Q.	Revenue neutral rate of uniform central VAT			
	i. For taxation of goods only(100*K/O)	8.3	8.4	8.6
	ii. For taxation of goods and services(100*K/P)	7.5	7.6	7.8
R.	Revenue neutral rate of uniform state VAT			
	i. For taxation of goods only (100*L/(O)	7.9	8.0	8.2
	ii. For taxation of goods and services[100*L/(P)]	7.1	7.2	7.4

Notes:
1. The figures in columns (2) to (4), when they do not depend on the VAT threshold, are the same.
2. @ It does not include expenditure on construction and gross capital formation because the same is treated as investment.

Table 2

Revenue Neutral Rates for Uniform Central and State VATs for India: An Illustration for 1990-91 & 1992-93 (By Consumption Expenditure Method)

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)			
						goods only		goods & services	
		1990-91 (Rs.cr.)	1992-93 (Rs.cr.)	goods (Rs.cr.)	goods and services (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.

3. In columns (2) and (3), the figures in first three rows as well as in last three rows are the same as revenue to be replaced by VAT does not depend on the VAT threshold.

b. Revenue Neutral VAT Rates for Individual States

At the State level, the methodology used to derive the revenue neutral VAT rates is broadly the same as that followed for estimating revenue neutral rates at the national level. A few modifications were made which pertain to the tax base, consumption of exempted or home-grown goods, consumption of services and tax revenue to be replaced by the State VATs. Also, for State VATs threshold level of only Rs. 5 lakh was considered. For individual States, the tax base is taken to be inclusive of Central VAT.

The data on statewise consumption expenditure were however not readily available. These were obtained by distributing among the States, the all-India private and government final consumption expenditures for 1990-91 for which the data as given in the National Accounts Statistics (NAS), CSO, 1993 were used. The figures of statewise private final consumption expenditure were computed by multiplying the all-India figure by the shares of different states in total household consumption expenditure for the year 1987-88. The requisite data on statewise household consumption expenditure were taken from the survey results reported by National Sample Survey Organisation (vide Sarvekshana, July-September 1991). Shares of states in total household consumption expenditure in the year 1987-88 are given in column 2 while the statewise private final consumption expenditure is given in column 3 of Table 3.

Government consumption expenditure consists of two components viz. purchases made by the State governments and those by the Central government. For the former, statewise unpublished data obtained from CSO were used (for a period of 10 years, from 1980-81 to 1989-90). Based on these, expenditures of state governments were projected for the year 1990-91. Regarding the consumption expenditure of the Central government, the data on statewise purchases of the Centre in the year 1990-91 were obtained from the Directorate General of Supplies and Disposal (DGS&D)[7]. Total government consumption expenditure of a given State was obtained by adding these two components. Using these data, the shares of different States in the total government consumption expenditure were arrived at. Finally, the Statewise figures of government final consumption expenditure were obtained by multiplying the shares of States so computed by the all-India government final consumption expenditure given in NAS.

7. The DGS&D data when added up over all States and UTs, do not conform to the respective all-India figure as given in the National Accounts Statistics because of incomplete coverage of the former. So the DGS&D data for different States were revised upwards on a pro-rata basis so as to make the aggregate of all States and UTs consistent with the all-India figure.

Exempted or home-grown consumption of agro-products is likely to vary from state to state depending on the extent of urbanisation and the development of marketing channels in a particular State. But information about exempted or home-grown consumption for individual states was not available. To derive the same, we assumed an inverse relationship between ***urbanisation*** and ***exempted or home-grown consumption of agro-products***, and constructed an urbanisation index as the ratio of urban population to the total population of a State (column 9 in Table 3). It was further assumed that exempted or home-grown consumption in the most urbanised state (Maharashtra) according to 1991 Census is 10 per cent of the total PFCE, while for the least urbanised State (Assam) it is 60 per cent. For other states, the share of exempted or home-grown consumption was estimated by using the following linear relation.

$$hg_i = hg_1 + \{(hg_1 - hg_{15})/(u_1 - u_{15})\} * (u_i - u_1), \; i=2,3,..14$$

where hg_i = consumption of exempted or home-grown goods as percentage of total PFCE in the ith State.

hg_1 = consumption of exempted or home-grown goods as percentage of total PFCE in the most urbanised State (i.e.Maharashtra).

hg_{15} = consumption of exempted or home-grown goods as percentage of total PFCE in the least urbanised State (i.e.Assam).

u_i = urbanisation index for the ith State.

u_1 = urbanisation index for the most urbanised State.

u_{15} = urbanisation index for the least urbanised State.

Sensitivity analysis was carried out by varying the range of percentages of consumption of exempted goods in total PFCE in the least and the most urbanised States, i.e. (hg_1-hg_{15}). As mentioned earlier, at the all-India level, consumption of exempted goods constitutes 26.83 per cent of total PFCE. Alternative ranges of proportion of exempted goods in total PFCE were therefore, chosen around 26.83 per cent such as S1:(10,60), S2:(20,60), and S3:(10,50). Details of calculations with scenario S1 are given in columns 9 to 13 in Table 3. Regarding purchase of exempted services, their share in private final consumption expenditure was about 24.55 per cent for India as a whole in 1990-91. To obtain the PFCE on exempted services in different States, the above percentages were applied uniformly to total PFCE of each of the States in 1990-91. These estimates are shown in column 14.

As for the value of taxable inputs used in exempted or home-grown products, fertilisers being the most important item, the all-India figure of such inputs as worked out in the case of Central VAT was apportioned among the States on the basis of their shares in total fertiliser consumption for which information could be obtained from CMIE. These are reported in column 15 of Table 3. The State-wise values of tax-paid inputs used in exempted services were estimated on a pro-rata basis using the all-India input-output ratios relating to services and are shown in column 16.

For units which would fall below the VAT threshold of Rs.5 lakh per annum, use was made of distribution of output and inputs available from ASI for 1988-89 and Trade Survey of Directory Establishments for 1985-86. At the all-India level, however, similar data were available for 1990-91. Using these details, Statewise results for 1990-91 were derived in the same way as adopted for the estimation of the Central VAT base. The outcome of these calculations relating to registered manufacturing and small scale non-factory sector is presented in columns 17 to 20 of Table 3.

In the case of trade sector, the value of gross output sold to final consumers and inputs (including GFCF), at all-India level, as derived earlier, were apportioned among the States by using their shares in gross value added for which data could be obtained from NAS. The State-wise estimates are given in columns 23 and 24. Total final consumption expenditure net of all exemptions and inclusions relating to taxable inputs used in production of exempted goods and services and gross fixed capital formation by their producers is given in column 25.

Finally, the VAT base for a State was obtained by subtracting from the net final consumption expenditure computed above, the amount of revenue raised by the State from GST and tax devolution of ADEILST, and is reported in column 30. Tax on inter-State sales (CST) paid by residents of a given state was not deducted, though logically it should be, because the incidence of CST on final consumption by States is unknown. The revenue neutral rates were worked out by dividing the total amount of revenue raised from GST, CST and tax devolution from ADEILST by the tax base of that State. The results for scenario S1(10,60) are presented in column 31. The revenue neutral rates for the scenarios S2(20,60) and S3(10,50) were also worked out. These do not differ appreciably from those for the scenario S1(10,60).

From Table 3, it may be noted that there is a substantial variation in the revenue neutral VAT rate across the States. The rates for Gujarat, Karnataka and Tamil Nadu are above 10 per cent while those for Bihar, Haryana, Kerala, Madhya Pradesh, Punjab, Rajasthan, Uttar Pradesh and West Bengal are below 7 per cent.

Computations of revenue neutral VAT rates for 1992-93 are given in Table 4. For 1992-93, the only available information relating to the tax base was the CSO's quick estimate of total final consumption expenditure, at the all-India level (CSO, February 1994). Consumption expenditure of a State for 1992-93 was computed from all-India consumption expenditure by multiplying it by the share of the State in all-India consumption expenditure in 1990-91. Statewise consumption expenditure figures thus obtained are given in column 2 of Table 4. Consumption expenditure net of exemptions and inclusions was then obtained for 1992-93 by multiplying the ratio of the former to the latter for the year 1990-91 by the value of final consumption in 1992-93. These estimates have been obtained separately for the three scenarios, S1(10,60), S2(20,60) and S3(10,50) and are reported in columns 3 to 5. The corresponding tax bases were obtained by subtracting sales tax and ADEILST from the net consumption expenditure so computed, and are given in columns 7 to 9. Finally, revenue from taxes to be replaced by VAT in 1992-93 is shown in column 10. Revenue neutral VAT rates are given in columns 11 to 13.

From Table 4, it would be noted that there is little variation in the revenue neutral VAT rate for a State across the three scenarios considered.

4.2 Estimates by Tax Turnover Approach

This sub-section describes step-by-step computation of VAT base, yield of a VAT regime and revenue neutral rate for a given State by using the tax turnover approach. Revenue implications of the selected tax regimes including the regimes (4,12,20) and (5,14,25) are explored. This exercise is done for five major States for which some of the requisite data could be obtained within the time available. These States are: Andhra Pradesh, Gujarat, Maharashtra, Rajasthan and Tamil Nadu. The computations relating to revenue estimates based on the basic set of assumptions are explained in Tables 5 to 9 respectively for Andhra Pradesh, Gujarat, Maharashtra, Rajasthan and Tamil Nadu. The basic assumptions and other related statistics are set out below.

Table 3

Statewise VAT Bases and Revenue Neutral Rates for 15 Major States in India: An Illustration for 1990-91 (By Consumption Expenditure Method)*

States	Share in all-India house-hold Con. exp. 1987-88 (%)	Private final con. exp[1] (PFCE) 1990-91 (Rs cr)	State govt. exp. govt. (Rs cr)	State's share in Central purchases[2] (%)	Central govt. exp. (4+6) (Rs cr)	Govt. con. exp. exp. (Rs cr)	Total final con. (3+7) (Rs cr)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Andhra Pradesh	8.35	28042	490	2.55	325	815	28857
Gujarat	4.59	15415	342	0.62	79	421	15836
Maharashtra	9.88	33181	485	29.67	3777	4261	37442
Rajasthan	6.03	20251	310	0.31	40	350	20601
Tamil Nadu	7.19	24147	369	8.48	1080	1449	25596
Assam	1.98	6650	213	0.72	91	304	6954
Bihar	8.40	28210	474	0.37	47	521	28731
Haryana	2.55	8564	146	1.20	153	299	8863
Karnataka	4.92	16523	147	1.00	128	275	16798
Kerala	3.90	13098	242	0.80	102	344	13442
Madhya Pradesh	6.95	23341	362	2.97	378	740	24081
Orissa	3.28	11015	154	0.46	59	213	11229
Punjab	3.68	12359	229	1.08	138	367	12726
Uttar Pradesh	15.26	51249	624	4.07	518	1142	52391
West Bengal	7.80	26195	430	19.11	2432	2863	29058
15 states	94.76	318239	5019	73.41	9346	14364	332603
All India	100.00	335837	5776	100.00	12730	18506	354343

Notes:

* (Threshold for VAT registration is Rs.5 lakh per annum; consumption of exempted products as percentage of total PFCE is taken to vary across the States from 10 to 60 percent).

1. Private final consumption expenditure(PFCE) of states has been worked out by apportioning the total PFCE of all-India for 1987-88 and 1990-91 using the ratios in col.2.It includes direct purchases abroad by non-resident households and extra territorial bodies. Within the country it excludes exports to other States and includes imports from other states.
2. Central Government expenditure in different states has been worked out by using the data on central government purchases of goods in 1990-91, as available from Directorate General of Supplies and Disposal,Govt.of India,New Delhi.

Table 3 (contd.)

States	Index of urbanisation (urban population to total population (%)	Con.of exempted products as %age of PFCE[3] (%)	PFCE on exempted products [(3)*(10)/100] products (Rs cr)	State's share in total con. of exempted (%)	Adjusted PFCE on exempted products[4] (Rs cr)	PFCE on exm. services[5] exempted (3)* .2455 (Rs cr)	Taxable farm inputs in exempted goods[6] (Rs cr)	Taxable inputs in exm. services[7] (14)*.62 (Rs cr)
(1)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
Andhra Pradesh	26.9	31.4	8797	8.22	7016	6884	1908	4268
Gujarat	34.5	17.6	2716	2.54	2166	3784	884	2346
Maharashtra	38.7	10.0	3318	3.10	2646	8146	1524	5050
Rajasthan	22.9	38.6	7827	7.31	6242	4972	532	3082
Tamil Nadu	34.2	18.2	4400	4.11	3509	5928	1012	3675
Assam	11.1	60.0	3990	3.73	3182	1632	43	1012
Bihar	13.1	56.3	15877	14.83	12663	6926	728	4294
Haryana	24.6	35.5	3038	2.84	2423	2102	884	1304
Karnataka	30.9	24.1	3978	3.72	3173	4056	1092	2515
Kerala	26.4	32.3	4228	3.95	3372	3215	270	1994
Madhya Pradesh	23.2	38.1	8894	8.31	7094	5730	977	3553
Orissa	13.4	55.9	6153	5.75	4908	2704	236	1677
Punjab	29.5	26.6	3283	3.07	2618	3034	1501	1881
Uttar Pradesh	19.8	44.1	22622	21.13	18043	12582	2712	7801
West Bengal	27.5	30.3	7940	7.42	6333	6431	910	3987
15 states	N.A.	N.A.	107060	100.00	85387	78128	15213	48439
All India	N.A.	N.A.	N.A.	N.A.	90108	82448	15347	51035

Notes:

3. Figures in column 10 have been worked out using the following formula:
   hgi = hg1 + {(hg1 - hg15)/(u1 - u15)} * (ui - u1) ; i=2,3.......14
   where,
   hg1 = consumption of exempted products as percentage of PFCE in the most urbanised state i.e. Maharastra.
   hg2 = consumption of exempted products as percentage of PFCE in the least urbanised state i.e. Assam.
   hgi = consumption of exempted products as percentage of PFCE in the ith state.
   u1 = urbanisation index for the most urbanised State.
   u15 = urbanisation index for the least urbanised State.
   ui = urbanisation index for the ith State.
   We have assumed hg1 to be 10% and hg15 to be 60% in Maharashtra and Assam respectively. Sensitivity analysis under alternative assumptions is also carried out.
4. It has been noted that PFCE on exempted products accounted for 26.83% of total PFCE in 1990-91 for all India. We have estimated the corresponding PFCE for 15 States and have apportioned it by using the ratios shown in column 12.
5. In 1990-91, PFCE on exempted services was 24.55% of total PFCE. This ratio has been applied to PFCE for each state.
6. 64.64 % ofthe value of farm inputs(including capital goods) used in agriculture at all-India level is taken as farm inputs used in exempted agro-products. This is apportioned among the States on the basis of their shares in total fertiliser consumption for which the data have been obtained from CMIE.
7. The value of taxable inputs used in services was about 62% of PFCE of all-India. The same ratio has been used to obtain taxable inputs used in production of services in a state from PFCE of that state.

Table 3 (contd.)

States	Registered manufacturing below threshold limit.		Small-scale non-factory sector below threshold limit		Trade below threshold limit				Total final con.exp. net of exempt-ions[8]
	Gross output sold to final consumers (Rs cr)	Inputs and GFCF (Rs cr)	Gross output sold for final cons. (Rs cr)	Inputs and GFCF (Rs cr)	Gross Value Added (GVA) (Rs cr)	State's share in GVA (Rs cr)	Gross output sold to final consumers (Rs cr)	Inputs and GFCF (Rs cr)	(Rs cr)
(1)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)
Andhra Pradesh	31	181	86	418	213	2.44	823	1433	22224
Gujarat	55	312	83	592	718	8.21	2769	4820	15933
Maharashtra	106	579	175	841	2330	26.64	8985	15640	41019
Rajasthan	15	89	34	243	124	1.42	478	833	13638
Tamil Nadu	53	301	105	725	570	6.52	2199	3827	23342
Assam	6	33	7	63	107	1.22	412	717	3582
Bihar	27	133	20	222	393	4.49	1514	2636	15594
Haryana	38	102	91	238	439	5.02	1693	2946	7989
Karnataka	22	119	59	441	315	3.60	1215	2116	14557
Kerala	13	72	26	259	1870	21.37	7210	12549	14749
Madhya Pradesh	24	131	46	174	108	1.23	415	722	16328
Orissa	12	69	15	104	179	2.05	690	1201	6188
Punjab	23	140	65	379	189	2.16	727	1265	11426
Uttar Pradesh	46	264	87	655	355	4.06	1369	2382	34079
West Bengal	34	191	59	286	459	5.24	1768	3078	22887
15 states	504	2717	957	5639	8368	95.66	32268	56166	263534
All India	506	2833	999	6204	8748	100.00	33731	58713	280683

Note: 8. Col.25= Col(8 + 15 + 16 + 18 + 20+24) - col(13 + 14 + 17 + 19 + 23).

Table 3 (contd.)

States	Revenue being replaced by State VAT (Rs crore)				Tax base under the VAT	Revenue neutral VAT
	Total Sales tax except CST (Rs cr.)	Central Sales tax (CST) (Rs cr.)	ADEILST[9] (Rs cr.)	Total (26+27 +28) (Rs cr.)	(25-26 -28) (Rs cr.)	rate 100*(29)/ (30) (%)
(1)	(26)	(27)	(28)	(29)	(30)	(31)
Andhra Pradesh	1199	227	114	1540	20911	7.36
Gujarat	1430	310	88	1828	14414	12.68
Maharashtra	2553	622	177	3352	38289	8.75
Rajasthan	617	37	70	724	12952	5.59
Tamil Nadu	1788	278	105	2171	21449	10.12
Assam	174	69	41	284	3367	8.44
Bihar	585	215	124	924	14885	6.21
Haryana	317	178	35	529	7637	6.93
Karnataka	1088	229	87	1404	13381	10.50
Kerala	801	97	55	953	13893	6.86
Madhya Pradesh	600	198	107	905	15621	5.80
Orissa	337	18	52	407	5799	7.01
Punjab	417	153	53	622	10956	5.68
Uttar Pradesh	1462	120	218	1800	32399	5.56
West Bengal	980	247	122	1348	21785	6.19
15 states	14347	2997	1448	18792	247739	7.59
All India	14549	3019	1561	19129	261554[10]	7.31

Notes : 9. Receipts of the states in the devolution of additional duties of excise in lieu of sales tax.

10. At the all-India level, CST has also been excluded from the tax base. For individual States, it could not be done because the incidence of CST by individual States is unknown.

Sources:
1. NSSO: Sarvekshana, vol.XV no.48; July-September,1991
2. Directorate General of Supplies and Disposal,Govt.of India, New Delhi.
3. Economic-cum-Purposewise classification of State govt. expenditure,unpublished tables,CSO,1989-90.
4. CSO: Directory Trade Establishment Survey; 1985-86
5. CSO: Annual Survey of Industries; 1988-89 :summary results of factory sector.
6. CMIE: Basic Statistics Relating to Indian Economy,States; September,1993.
7. CSO: National Accounts Statistics;1993
8. RBI:RBI Bulletin,March;1993

Table 4

Revenue Neutral VAT Rates for 15 Major States in India: An Illustration for 1992-93 (By Consumption Expenditure Method)*

States	Consumption expenditure on goods and services	consumption expenditure net of exemptions and inclusions under scenario:[2]			Taxes to be excluded from consumption expenditure[3] (ST+ADEILST)	Tax base[4] under the VAT with scenario:			Revenue being replace by VAT[5]	Revenue neutral VAT rates under scenario		
	(Rs.cr.)	S1 (10,60) (Rs.cr.)	S2 (20,60) (Rs.cr.)	S3 (10,50) (Rs.cr.)	(Rs.cr.)	S1 (10,60) 90% of Col.(3-6) (Rs.cr.)	S2 (20,60) 90% of Col.(4-6) (Rs.cr.)	S3 (10,50) 90% of Col.(5-6) (Rs.cr.)	(Rs.cr.)	S1 (10,60) (%)	S2 (20,60) (%)	S3 (10,50) (%)
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: *Threshold for VAT registration is Rs.5 lakh per annum.

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.

The taxes that the proposed VAT system would replace in a State comprise, general sales tax including tax on diesel, petrol etc. and purchase tax on sugarcane (GST), Central Sales Tax (CST) and additional duties of excise in lieu of sales tax (ADEILST). The relevant revenue figures are reported in line A in Tables 5 to 9.

Taxable turnover relating to the local sale of goods subjected to GST in a State was obtained by using commodity-wise data on yield and tax rate. The taxable local turnover so obtained is reported in line B of Tables 5 to 9.

Taxable local turnover figures include taxes on inputs. To obtain the tax exclusive base relevant for a VAT system, input tax has to be taken out from the taxable local turnover. Value of inputs embedded in taxable local turnover in a State was estimated by using the all-India input-output ratio for taxable commodities which is 51 per cent as per the latest input-output matrix available for the year 1989-90. In the absence of State specific ratios, the all-India ratio was used to estimate the input content of the taxable turnover. Estimates of input tax were then obtained by multiplying the value of inputs so derived by the tax rate applicable to inputs. Taxable local turnover net of input tax was obtained by subtracting input tax from taxable local turnover. The estimated values of inputs, input tax and taxable local turnover net of input tax are reported in lines C,D and E respectively.

In the above computations, to be on the conservative side, tax on all inputs is assumed to be 4 per cent. For most States this overestimates the input tax and accordingly underestimates the corresponding tax base because in most cases, 4 per cent is the ceiling rate on inputs - in general, many inputs are taxed at a lower rate.

Most of the States exempt many commodities or sectors (such as small scale units), and give tax concessions in various forms such as tax holidays and deferral of payment of sales tax. It is presumed that the proposed withdrawal of such exemptions and concessions will result in substantial increase in the tax base. In some States e.g., Maharashtra, exemptions were said to be responsible for eroding this base by as much as 20 per cent. However, to be on the safe side, the base broadening due to withdrawal of exemptions and tax concessions is taken to be only 10 per cent of 'taxable local turnover net of input tax'. The increases so resulting are reported in line F. The likely total local sales turnover for VAT, i.e., sum of base broadening and taxable local turnover net of input tax is given in line G. This gives the tax base available under a VAT system.

Under a VAT system, while revenue would be collected from only local sale of taxable goods, tax rebate has to be allowed for all local purchase of taxable inputs used up in production of taxable commodities, whether or not the output is sold locally. Therefore, input rebate had to be estimated in respect of total turnover comprising local sales, inter-State sales, consignment transfers and international exports. Information on the last three components was not readily available. An attempt was therefore made to estimate inter-State sales and consignment transfers from a State indirectly.

The value of inter-State sales from a State was estimated by dividing revenue from CST by CST rate of 4 per cent (which is the ceiling rate) on such sales. The estimate is given in line H.

No reliable information was available on consignment transfers from a State as these are not subjected to taxation by the exporting State under the current systems of sales taxes. For estimating consignment transfers, use was made of the data on sales and purchases of 142 major dealers of Maharashtra provided by the Sales Tax Commissioner, Maharashtra. Using these data and after discussions with Senior officials of sales tax departments, the ratio of consignment transfers to inter-State sales was set up at 100 per cent[8]. Thus, the value of consignment transfers from a State was taken to be the same as the value of its inter-State sales and is reported in line I. Input tax in these transactions was then computed following the same method as in the case of taxable local turnover. The estimate of this input tax is shown in line J. Total turnover was obtained by adding to the figures of total local turnover, inter-State sales and consignment transfers, and subtracting input tax borne by the latter. Line K shows the total turnover figures.

In estimating the value of inputs qualifying for VAT rebate, it should be noted that there is no input rebate for (i) inputs relating to turnover of importers (international or inter-State), (ii) inputs procured from outside the State, and (iii) input use of exempted goods. Consequently, rebate would be available only for purchase of locally produced taxable inputs used in manufacturing taxable products. Data on turnover of importers and locally purchased inputs were not available. In the present exercises, as a rough guess, 25 per cent of the 'taxable local turnover net of input tax' was assumed to be the turnover of importers.

8. The data indicated this ratio to be 190 per cent for Maharashtra, but these relate to both taxable and exempted goods.

For estimating the local purchase of inputs, one needs again the ratio of such inputs to output. Such a ratio can be viewed as a multiple of three ratios, viz. (i) input-output ratio for taxable goods, (ii) ratio of taxable inputs to total inputs in the taxed sectors, and (iii) the ratio of local purchase of inputs to total inputs. The first two ratios were derived from the all-India input-output matrix for the year 1989-90, which are 51 per cent and 68 per cent respectively. For the ratio of local purchase of inputs to total inputs, the data relating to 142 large dealers of Maharashtra, discussed above, were used. This data set, indicates that the ratio of local purchase of inputs to total inputs is about 60 per cent. Thus, the ratio of local purchase of taxable inputs to output of taxable commodities works out to 21 per cent (.51x.68x.60). The ratio so computed has been adopted for estimating rebatable inputs in all the States under consideration. The estimate of inputs qualifying for VAT rebate was obtained by applying this ratio to the total turnover net of turnover of importers. This is reported in line L. Figures of purchase of plant and machinery were also compiled and are reported in line M.

Now, gross revenue under a VAT system can be obtained by applying the average VAT rate to the local taxable turnover. Similarly, tax rebate can be obtained by applying the average VAT rate to the inputs and plant and machinery qualifying for VAT rebate. For estimating gross revenue and tax rebate on inputs based on aggregate data on total turnover and inputs, average VAT rates for the three rate VAT regimes were computed as the weighted averages of the three rates using the proportions of turnover of goods falling under the respective rate categories as weights. The average rates for the specified VAT rate regimes are given in line N. Estimates of gross revenue were obtained by multiplying the local taxable turnover by average VAT rates and are reported in line O. Tax rebate was also estimated by applying the average VAT rates to inputs including plant and machinery qualifying for VAT rebate. The estimates are shown in line P. Net revenue figures were derived by subtracting tax rebate from the gross revenue. This is given in line Q.

The above estimates do not take into account the revenue likely to accrue from textiles, tobacco and sugar, on reversion of these commodities to the States from the present tax rental arrangement with the Centre. The revenue likely to be derived from these commodities was estimated on the basis of their consumption. For rate purposes, sugar, textiles and tobacco are taken to fall in the low rated, standard rated and high rated categories respectively. However, these broad commodity groups include some components of consumption which are currently subjected to sales tax. For example, sugar category includes sugar, khandsari and gur. While 'sugar' is subjected to ADEILST, khandsari and gur are taxable under the State sales taxes. Therefore, broad tax bases had to be adjusted to obtain the tax bases under ADEILST and hence under the VAT systems. Between sugar, and khandsari and gur, the consumption was taken as 65:35. This ratio was arrived at on the basis of the ratio between values of these products released for distribution, for which data could be obtained from Basic Statistics on Sugar Industry for the year 1990-91[9]. Among the tobacco products, the consumption of those subjected to ADEILST and those subjected to sales tax was assumed to be in the ratio of 90:10. For textiles, the ratio was taken as 85:15. The tax bases so obtained were further reduced by 5 per cent on account of VAT threshold of Rs 3 lakh. The estimated tax bases under ADEILST under VAT systems of the five States are shown in Box 1.

Box 1

Estimated Consumption Base Under ADEILST

(Rs crore)

State	Sugar 1990-91	Textiles 1990-91	Tobacco 1990-91	Total 1990-91	Total 1992-93
Andhra Pradesh	443	2817	768	4028	4963
Gujarat	574	947	224	1745	2150
Maharashtra	1000	2632	576	4208	5185
Rajasthan	800	1921	441	3162	3896
Tamil Nadu	374	1711	441	2526	3112

Statewise figures of consumption expenditure on sugar, textiles and tobacco for the year 1990-91 were obtained by multiplying the relevant all-India figures (given *in National Accounts Statistics*, 1993) by shares of different States in all-India household consumption expenditure on these products for an earlier year, 1988-89 (given in Sarvekshana, 1991). The figures for 1992-93 were however projected on the basis of figures for the year 1990-91 by assuming a growth rate of 11 per cent per annum.

Estimates of revenue from sugar, textiles and tobacco under selected regimes of State VAT were obtained by applying the VAT rates to the corresponding tax bases estimated above, and are reported in Tables 5 to 9 in line R.

9. Indian Sugar Mills Association (1993), Hand Book of Sugar Statistics, New Delhi.

The gain from value added in the process of distribution of goods, i.e., from trade margins of wholesalers and retailers, was taken to be 15 per cent of the first point sale value of the commodities. This assumption is also on the conservative side. In most industries, the wholesale and retail margins would exceed this percentage. A notable exception is petroleum. On the basis of available data on receipts on trade account of the directory trade establishments[10], it can be shown that, under certain plausible assumptions, at the all-India level, value added in distribution of goods works out to about 16 per cent (See Appendix 1). The estimates of revenue gain from value added in the process of distribution of goods (or due to multistage taxation) are given in line S. These estimates indicate that the States would have substantial revenue gain if the power to tax sugar, textiles and tobacco is transferred to them as contemplated under the State VAT system proposed in the Study. All States will get substantially higher revenue from these items under a VAT regime than they have been getting from ADEILST or through purchase tax on sugarcane. This finding corroborates the findings of an earlier study of the NIPFP[11]. Revenue under this head is not less than 10 per cent of total sales tax revenue in any of the five States and it could account for as high a share as 40 per cent in States like Rajasthan.

Under the current sales tax systems, the threshold limit for registration of dealers in any State is less than Rs 3 lakh. Raising this limit to the proposed threshold level of Rs 3 lakh under the VAT regimes would obviously result in some revenue loss due to exclusion of value added by those dealers whose gross turnover falls in the range of present threshold level and the proposed level. From available data it would appear however that the loss on this account is likely to be insignificant, around 1 per cent of the current revenue of the States. Estimates of revenue loss on this account are given in line T.

Total revenue likely to be obtained under VAT by a given State was finally obtained by adding to the net revenue from total taxable local turnover, the revenue from (i) sugar, textiles and tobacco, and (ii) value added in multistage taxation, and subtracting from this total, the revenue loss likely to be entailed from the proposed increase in the threshold limit for registration under VAT. This is reported in line U. Gain or loss in revenue from the change to a VAT regime is shown in line V.

10. CSO (1989), Directory Trade Establishment Survey, 1985-86 (Report on Trade Sector).

11. See Purohit, Mahesh C. (1990), Exemptions Under Additional Duties of Excise in Lieu of Sales Tax: An Empirical Analysis of Loss of Revenue to the States, New Delhi, National Institute of Public Finance and Policy (mimeo).

The basic estimates obtained in Tables 5 to 9 are put together in Tables 10 and 11. Estimates of tax yield under the current sales tax systems as well as under two basic VAT rate regimes for each of the five States are given in Table 10. One of the basic VAT rate regimes (4,12,20) comprises the lower limits of the rate bands and the other (5,14,25) consists of upper limits of the low and standard rated bands. Table 11 displays plausible revenue neutral VAT rate regimes and the corresponding revenue neutral average VAT rates for the said five States.

From Table 10, 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, viz., with the VAT rate regime (4,12,20) (see columns 2 to 4). With a high VAT rate regime (5,14,25), Gujarat may still have a small shortfall in revenue but Tamil Nadu will obtain substantial revenue advantage. The shortfall disappears 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, the low VAT rate regime (4,12,20) works out to be revenue neutral even for Tamil Nadu (columns 5 and 6).

It would thus appear that some States would be able to choose revenue neutral VAT rate regimes within the proposed rate bands, while others will end up with substantial revenue surpluses which can be used for development. Alternatively they might go in for higher standard rates a little slowly.

Table 11 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 both the standard (columns 2 and 4) and average (columns 3 and 5) rates 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 11 and column 11 of Table 4) 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.

Table 5

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 and 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 sweetners 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 6

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 sweetners 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 7

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 sweetners 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 8

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 sweetners 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 9

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 sweetners 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 10

Estimates of Revenue under the Current Sales Tax 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. Figures for all the States relate to the year 1992-93 excepting Gujarat for which the reference year is 1991-92.

Table 11

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

State	With no administrative improvement		With 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)	12.0 12.3
Maharashtra	(4,11,23) (4,12,20)	11.7 12.4	(4,10,22)	10.7
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.

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 VAT 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 12 and those with administrative improvement are reported in Table 13. 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).

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 likely gain in revenue from the disallowance of input rebate which is envisaged in the proposed scheme of State VATs in respect of items bearing high rate of tax, viz., petrol, diesel, aviation fuel, liquor and tobacco. The omission of this gain would correct, at least partly, for the bias resulting from the omission of likely revenue loss from tax credit relating to international exports. 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 12

Sensitivity Analysis of Revenue Neutral VAT Rates for Selected States Based on Tax Turnover Data (With no Administrative Improvement)

(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	Tax 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)	10.7
					(5,9,22)	10.6
Gujarat	(5,14,32)	13.0	(5,14,40)	13.3	(5,14,52)	13.8
			(5,15,30)	13.6	(5,15,42)	14.1
Maharashtra	(4,11,23)	11.7	(4,11,28)	12.1	(4,12,23)	12.6
	(4,12,20)	12.4	(4,12,20)	12.4	(4,11,34)	12.5
Rajasthan	(4,8,20)	10.7	(4,8,20)	10.7	(4,8,22)	11.2
					(5,8,21)	11.0
Tamil Nadu	(4,14,20)	13.1	(5,14,20)	13.5	(5,14,25)	14.2
	(4,13,25)	13.2	(5,13,25)	13.6		

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.

Table 13

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

(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	Tax rate regime	Average rate
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Andhra Pradesh	(4,8,20)	9.5	(4,8,20)	9.5	(4,8,23)	9.9
	(4,7,24)	9.2	(5,7,26)	9.5	(5,8,22)	9.8
Gujarat	(4,14,20)	12.3	(4,14,27)	12.6	(5,14,33)	13.0
	(5,13,26)	12.0	(5,14,25)	12.7	(5,15,22)	13.3
Maharashtra	(4,10,22)	10.7	(5,10,26)	11.0	(5,11,20)	11.5
	(4,11,20)	11.5	(4,11,20)	11.5	(4,11,21)	11.5
Rajasthan	(4,7,20)	10.0	(4,7,21)	10.3	(4,7,22)	10.5
Tamil Nadu	(4,12,22)	12.1	(4,12,25)	12.5	(4,13,23)	12.9
			(4,13,20)	12.5		

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 was 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 were obtained for all the States with reference to the year 1992-93 except for Gujarat for which the reference year is 1991-92.

Trade Margins of Wholesalers and Retailers

Information on trade margins of wholesalers and retailers was not available. The information available on trading activity, was for receipts on trade account (R) and gross value added (GVA). This information relating to the trading activity of both wholesalers and retailers was taken from the survey of 'directory trade establishments' conducted in the year 1985-86. (Directory of Trade Establishment Survey: 1985-86 (Report on Trade Sector), CSO (1989).)

For India as a whole, receipts on trade account (R) amounted to Rs 62370 crore and the gross value added (GVA) is Rs 4517 crore in the reference year. If these data were available separately for wholesalers and retailers then their trade margins could be computed simply as the ratio of GVA to R separately for the two types of dealers. However, these data were not available separately for wholesalers and retailers.

The data on receipts on trade account take into account the receipts relating to each sale of a commodity by the wholesaler or retailer. A commodity may undergo one or more such transactions before it falls in the hands of final consumer. Therefore, the data on receipts on trade account cannot be used, as such, as the base value even for computing the combined trade margin of the wholesalers and retailers. For this purpose, the sale value of manufacturers/producers (S_M) is required. Accordingly, joint trade margin would be given by TM = GVA/S_M.

It is possible to estimate S_M from the available data on the basis of some plausible assumptions. To estimate S_M, let us assume that, on an average, a commodity passes through two sales - one at the wholesale and the other at the retail level before it is finally consumed. Let S_W and S_R denote the sale values of wholesalers and retailers, and G_W and G_R denote the gross value added by wholesalers and retailers respectively. Now, the required relationships can be expressed as:

$$
\begin{aligned}
S_W &= S_M + G_W \\
S_R &= S_W + G_R \\
R &= S_W + S_R \\
GVA &= G_W + G_R
\end{aligned}
$$

Using these relations, it can be shown that

$$S_M = \frac{R\text{-}GVA\text{-}G_W}{2}$$

Accordingly, joint trade margin can be expressed as:

$$TM = \frac{2GVA}{R\text{-}GVA\text{-}G_W}$$

Still there is an unknown term (G_W) in the above relation. Let us further assume a relationship between the gross value added by wholesalers and retailers. Let us assume that gross value added by wholesalers is twice that of retailers, i.e., $G_W = 2G_R$ or $G_R = 0.5\ G_W$. Under this assumption, joint trade margin (TM1) can be expressed as:

$$TM1 = \frac{2}{(R/GVA) - 5/3}$$

This is so, because $G_R = 0.5\ G_W$ implies that $G_W = (2/3)GVA$. Since all the terms in TM1 are known, it can be computed. It works out to be 16.5 per cent.

In order to have an idea about the sensitivity of the assumption regarding the relationship between the value added by wholesalers and retailers, we worked out the trade margin (TM2) under a widely different assumption that the gross value added by wholesalers is half that of retailers, i.e., $G_W = 0.5\ G_R$ or $G_R = 2G_W$. Under this assumption, joint trade margin (TM2) can be expressed as

$$TM2 = \frac{2}{(R/GVA) - 4/3}$$

TM2 works out to be 16.0 per cent. This is not much different from TM1. This indicates that joint trade margin is not very sensitive to changes in assumption about the shares of wholesalers and retailers in gross value added. Thus, the estimate of combined trade margin is found to be robust. Gross value added by wholesalers and retailers over the sale price of manufacturers/producers, i.e., the combined trade margin can be taken to be about 16 per cent.

Appendix 2

DATA SOURCES USED FOR ESTIMATION OF REVENUE NEUTRAL VAT RATES BY CONSUMPTION APPROACH

1. Central Statistical Organisation, Government of India: *National Accounts Statistics,* 1993.

2. Central Statistical Organisation, Government of India: *Directory Trade Establishment Survey*, Detailed Results, 1985-86.

3. Central Statistical Organisation, Government of India: *Annual Survey of Industries,* Summary Results of Factory Sector, 1988-89.

4. Central Statistical Organisation, Government of India: *Economic-cum-Purpose Classification of State Government Expenditure* (unpublished tables), 1989-90.

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9. Directorate General of Supplies and Disposal, Government of India: *Tables showing Statewise Orders placed by the Central Government for the purchases of Goods,* 1993.

10. Government of India: *Receipts Budget,* 1993-94.

11. Ministry of Finance, Government of India: *Finance Accounts,* 1990-92.

12. National Sample Survey Organisation, Government of India: *Survey of Non-directory Trade Establishments and Own-account Enterprises* (the 41st round of National Sample Survey, 1985-86).

13. National Sample Survey Organisation, Government of India: *Sarvekshana;* vol.xv no.48, July-September, 1991.

14. Reserve Bank of India: *Reserve Bank of India Bulletin,* March 1993.