MODIFIED VALUE ADDED TAX (MODVAT) : STRUCTURE AND RESOURCE MOBILISATION

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Modified Value Added Tax (MODVAT): Structure and Resource Mobilisation

I. Introduction

The Value Added Tax (VAT) is preferred by economists to a system of simple excises or to turnover taxes because the VAT minimises distortions. What are these distortions in production? Typically an excise collected on inputs is fed into the price of the input. The purchaser who uses inputs and produces the output keeps the value of the input tax that he paid, within the pricing of his output. Therefore, when the output is taxed, not only the value added is taxed, but also the input together with the tax on input that had been earlier paid are taxed again (because the input tax as indicated above is incorporated into the output price). This encourages vertical integration[1] as by adopting this strategy the firms can avoid double taxation and reduce their tax burden. On the other hand, VAT is neutral to production processes.

In India, a reform was attempted in 1986 when the principles of VAT were introduced in the Union excise duties (UEDs) through the so-called Modified Value Added Tax (MODVAT) procedures. To begin with, this was applied to a few select commodities but was extended overtime to a large number of commodities. Recently, additional structural changes were introduced in the MODVAT, in particular, its conversion from a production-type to a consumption-type VAT, i.e., the application of input tax credit not only for raw materials but also for capital goods, from 1994-95. Further, from 1995-96, conditions for availing of MODVAT credit have been relaxed and the credit scheme has been extended to some more capital goods.

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[1] Also, turnover type of taxes lack transparency. Cumulative tax burden in the price of a commodity could substantially differ from the nominal tax rate. For a detailed discussion of these aspects and an analysis of variation in the cumulative and nominal tax rates see Aggarwal (1995).

The operation of MODVAT could be said to have had the following effects: (i) an increase in transparency of the tax burden under the UEDs; (ii) a reduction in the cascading effect of input taxation; and (iii) the generation of a mechanism to check tax evasion through self-policing. However, following the 1995-96 changes, there has been a decline in the growth rate of revenue from UEDs. The dampening impact on revenue could reflect: (i) a reduction in the tax base; (ii) an increase in the MODVAT credit for raw materials as well as capital goods; and (iii) a decline in the average tax rate.

The objective of this study is to analyse the trends in growth of revenue from UEDs, suggest measures for raising the growth rate of revenue from UEDs and project revenues for the period from 1996-97 to 2000-01.

Plan of the study is as follows. Structure of MODVAT is briefly described in Section II. Factors affecting revenue from MODVAT are discussed in Section III. Growth of revenue from UEDs is analysed in Section IV. Revenue projections for the period 1996-97 to 2000-01 are obtained and presented in Section V. Measures for raising additional revenue are discussed in Section VI.

II. Structure of MODVAT

a. Coverage

The MODVAT was introduced with effect from March 1, 1986 and it applied to a select number of commodities. The coverage was limited to 37 chapters out of a total of 91. With effect from March 1, 1987 the coverage was extended to all commodities except petroleum products, textiles, tobacco, cinematographic films and matches. These excluded commodities accounted for about 50 per cent of the revenue from UEDs.

Over the years, coverage has been expanded and it now accounts for approximately 85 per cent of the revenue from UEDs. A profile of changes introduced in the MODVAT scheme is given in Table 1.[2] The 1994-95 Union Budget extended the

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[2] Table 1 is reproduced from Shome, Aggarwal and Purohit (1996).

coverage of MODVAT to include petroleum products (excluding high speed diesel oil), yarn component of the textile sector, and capital goods. The 1995-96 Union Budget further extended MODVAT to cut-tobacco used in the manufacture of cigarettes thus leaving out only a few items, e.g. matches, cinematographic films, textiles, tobacco (excluding cut tobacco used in the manufacture of cigarettes) and high speed diesel oil.

The major changes introduced in the 1995-96 Budget were: (i) expansion of the MODVAT credit scheme to include cut tobacco, plastic woven sacks, specified textiles and equipments; (ii) withdrawal of the conditions of matching raw materials/capital goods with output for allowing MODVAT credit; (iii) enlarging the scope of SSI concessions (turnover limit for availing SSI concessions raised from Rs. 2 crores to Rs. 3 crores); [3] and (iv) rationalisation of the rate structure with some reduction in the tax rates.

An important character of the structure of MODVAT is that the revenue from UEDs levied on imports under the title of "Countervailing duties (CVD)" is accounted for in the revenue from customs duties rather than in the revenue from UEDs, whereas credit for the same is allowed under the MODVAT scheme wherever applicable, thereby affecting the revenue from the latter. An implication of this is that a decline in UEDs or customs duty and hence in CVD would tend to reduce the ratio of MODVAT credit to gross revenue. This would tend to increase the growth rate of net revenue from UEDs.

b. MODVAT Rates

During the 90s, the rate categories have been reduced and rates rationalised, many specific rates converted into *ad valorem* rates and, exemption notifications curtailed significantly.

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[3] Clearances upto first Rs. 30 lakh in a financial year are exempt from excise duty, further clearances upto Rs. 20 lakh are charged duty at a rate 10 per cent lower than the normal rate subject to a minimum of 5 per cent, and subsequent clearances upto Rs. 25 lakh are charged at 5 per cent lower than the normal rate subject to a minimum of 5 per cent. Clearances beyond Rs. 75 lakh are subjected to normal duty.

At present the rates of MODVAT have nine categories (*viz.*, 5, 10, 15, 20, 25, 30, 35, 40, and 50), contrasted with a very large number of rates a few years back. There are exceptions of higher or lower rates. The higher rate of 225 per cent is levied on certain specified luxury goods. The lower rates in the range of 1 to 8 per cent are levied on a few specified necessities. While the number of rates has been reduced over the years, the number still remains high by international standards. About half the countries having a VAT have a single rate; others tend to confine the number of rates to no more than three.

In addition, the rate categories are governed by the exemption notifications that change the effective rate of most of the items. In the last five years attempts have been made to curtail these notifications. Also, efforts are afoot to levy as much as possible *ad valorem* rates, although at present, specific rate categories exist for a few commodities having price variation due to transportation or owing to problems related to valuation. More important commodities in this group include tobacco and cement.

An important feature of the rate structure of MODVAT relates to its link with the HSN, at present in vogue in more than 130 countries for providing help in international trade. Following HSN, the overall scheme of the structure of MODVAT (UEDs) has 96 chapters and 20 sections.

III. Factors Affecting Revenue from MODVAT

Growth rate of net revenue would depend on the growth rates of both gross revenue and MODVAT credit. [4] A faster growth rate of MODVAT credit as compared to that of gross revenue would have a dampening effect on the growth rate of net revenue. Net revenue will grow at a rate lower than that of gross revenue if the ratio of MODVAT credit to gross revenue rises. For the purpose of identifying factors affecting growth rate of net revenue, it will be useful to analyse the changes in both gross revenue and in MODVAT credit. As the factors affecting growth of gross revenue may differ from the factors affecting

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[4] Actual revenue collection from UEDs is referred to as net revenue, and net revenue plus MODVAT credit is referred to as gross revenue from UEDs.

MODVAT credit, an analysis of these two aspects can be expected to give rise to varied policy perspectives for resource mobilisation.[5]

Factors affecting gross revenue include changes in (i) the rate structure, (ii) tax base, (iii) exports, and (iv) under reporting of clearances. During the 90s, the reduction in the tax rates of many commodities as well as raising the ceiling of turnover of SSIs from Rs. 2 crore to Rs. 3 crore for eligibility for availing SSI concessions would have tended to lower the growth rate of gross revenue. A faster rise in exports as compared to output can also be expected to lower the growth rate of gross revenue as exports are exempt from excise duty.

Factors affecting MODVAT credit, as mentioned earlier, include (i) changes in the scheme of MODVAT credit; (ii) changes in the rate structure of UEDs; (iii) changes in the rate structure of customs duties; and (iv) misuse of the provisions of MODVAT credit. An extension of the scheme or relaxations in availing the MODVAT credit would tend to increase the credit while a reduction in rates of UEDs or customs duty would tend to decrease the credit. During the recent tax reforms, (i) the extension of MODVAT credit to raw materials as well as capital goods and (ii) elimination of the requirement to match inputs with particular outputs for availing MODVAT credit would have tended to increase MODVAT credit and, the reductions in the rates of UEDs and customs duty, and the restriction (with effect from 1.1.1996) on availing MODVAT credit on capital goods only after the good has been put to use would have tended to reduce MODVAT credit.

IV. An Analysis of Growth of Revenue from UEDs

The figures of net revenue collection from UEDs, MODVAT credit, gross revenue (net revenue plus MODVAT credit), GDP at current prices (from manufacturing sector and total) for the period from 1986-87 to 1995-96 are given in Table 2. The revenue and MODVAT credit figures have been obtained from the Department of Excise and Customs. For the year 1995-96, net revenue is a provisional figure and MODVAT credit is estimated

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[5] For a brief discussion of these aspects see Shome, Aggarwal and Purohit (1996).

by applying the ratio of MODVAT credit to net revenue for the first six months of 1995-96 (i.e. 0.7245)[6] to the net revenue for the full year 1995-96. Figures of gross revenue were obtained by adding MODVAT revenue to net revenue. From Table 2, it would be noted that net revenue as a percentage of GDP from manufacturing sector as also as a percentage of total GDP has declined during the period from 1986-87 to 1995-96 (columns 8 and 9). The ratio of net revenue to manufacturing GDP has declined from about 30 per cent in 1986-87 to about 23 per cent in 1995-96. Also the ratio of net revenue to total GDP has declined from about 5 per cent in 1986-87 to about 4 per cent in 1995-96. The decline in these ratios is a matter of concern though it may largely be attributable to the recent tax reforms which focused on rationalisation and simplification of the structure of Union excise duties. As noted earlier, during the study period, the top rates have been cut substantially, the scope of MODVAT scheme has been enlarged not only to cover more commodities but also to cover capital goods. The conditions for availing MODVAT credit have also been relaxed in 1995-96. The extension of the MODVAT scheme to capital goods in 1994-95 is reflected in the growth of MODVAT credit that increased by about 82 per cent. Also, in 1995-96, it increased by about 36 per cent following extension of MODVAT scheme to some more capital goods and relaxation in the conditions for availing MODVAT credit. Naturally, this has tended to reduce the growth rate of net revenue. During the years 1994-95 and 1995-96 respectively, net revenue grew by about 18 and 9 per cent whereas gross revenue increased by about 36 and 19 per cent (Table 3).

During the period from 1986-87 to 1995-96, the ratio of MODVAT credit to gross revenue has increased from about 12 per cent in 1986-87 to about 42 per cent in 1995-96 (column 5 in Table 2). The MODVAT credit has grown at the rate of about 33 per cent that had an adverse effect on the growth of net revenue. Net revenue was found to grow at the rate of only 12 per cent while gross revenue grew at the rate of about 17 per cent. This is what one would have expected with the extension of the scheme of MODVAT credit.

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[6] This is based on the information contained in Table 3 in Shome, Aggarwal and Purohit (1996).

Making projections of revenue from UEDs requires a judgement regarding continuation of the observed trends of growth of revenue and MODVAT credit. Given that, by now, the MODVAT scheme has become applicable to most of the commodities including capital goods and accumulated carried forward MODVAT credit would have been availed of during the year 1995-96 because of relaxation in the conditions for availing MODVAT credit, it would be pertinent to assume that the ratio of MODVAT credit to gross revenue is not likely to increase further. In fact, it can be argued that this ratio should decline from the level of 1995-96 for the reason that in the subsequent years no or lower credit would be availed of in respect of carried forward credit that would have been availed of largely in the year 1995-96 raising the credit ratio in that year.[7] Further, reductions in Customs duties as well as Union excise duties would tend to lower MODVAT credit attributable to Countervailing duties and hence the credit ratio. Even an estimate of 40 per cent could be a conservative estimate of this ratio. Therefore, projections of revenue, in the next section, are obtained with two sets of assumptions regarding this ratio.

V. Revenue Projections

Revenue projections of Union excise duties can be obtained directly on the basis of net revenue from UEDs or indirectly by projecting gross revenue and MODVAT credit. Choice between the two techniques depends upon the value judgement regarding applicability of the observed trends in MODVAT credit to the future. If it is expected that the observed growth of gross revenue as well as MODVAT credit is likely to continue in the projection period then the projections can be based on net revenue. However, if it is expected that this trend is unlikely to continue in future, then it would be advisable to project separately gross revenue and MODVAT credit and obtain net revenue by subtracting the latter from the former. In fact, as discussed earlier, it is the latter case that is applicable to the current situation. Therefore, three step procedure is followed in obtaining projections of net revenue. First, gross revenue is projected for the period 1997-98 to 2001-02, on the basis of buoyancy of gross revenue with respect to manufacturing GDP and assumptions about the real growth

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[7] In fact, the credit ratio for the purposes of projections should be obtained by adjusting the credit ratio of 1995-96 for the credit availed of on account of carried forward MODVAT credit. This could not be done because of lack of the necessary data.

in manufacturing GDP and inflation during the projection period. Second, projections of MODVAT credit are obtained based on plausible assumptions about the credit ratio. Third, based on alternative sets of assumptions in the first two steps, net revenue is obtained by subtracting MODVAT credit from gross revenue.

The buoyancy coefficient is estimated for the period from 1986-87 to 1995-96. It is found to be 1.0868.[8] Manufacturing GDP is assumed to grow at a real rate of 9 or 11 per cent and inflation rate is taken to be 7 or 8 per cent. With these sets of assumptions, three alternative sets of real growth and inflation, i.e. (11,7), (11,8) and (9,7) per cent have been used. These parameter sets imply that manufacturing GDP would grow at a nominal rate of about 18.77 per cent, 19.88 per cent and 16.63 per cent[9] respectively and accordingly, gross revenue from UEDs would grow at a nominal rate of 20.40 per cent, 21.60 per cent and 18.07 per cent[10] respectively. Therefore, three sets of projections (set a, set b and set c) of gross revenue are obtained by applying these growth rates to the gross revenue in the base year 1995-96 or 1996-97. For each set of gross revenue, two sets of projections of MODVAT credit are obtained. Set 1 is obtained by assuming a MODVAT credit ratio of 42.01 per cent that is the same as in the year 1995-96 and set 2 is obtained by assuming a lower MODVAT credit ratio of 40 per cent which again, perhaps, is a conservative estimate as discussed earlier. Finally, based on two sets of MODVAT credit, two sets of net revenue are obtained for each set of gross revenue by subtracting MODVAT credit from gross revenue.

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[8] Estimate of buoyancy is obtained by estimating a double log linear equation between gross revenue and manufacturing GDP by OLS method. The estimated equation is

$$\text{Log GR} = \underset{(0.03)}{-1.9958} + \underset{(0.029)}{1.0868}\ \text{Log (Mfg GDP)}$$

where GR represents gross revenue and explanatory power of the equation is 0.99. Figures in brackets give standard error of the estimates.

[9] These are computed as [(1.11) (1.07)-1] (100) = 18.77 per cent, [(1.11)(1.08)-1] (100) = 19.88 per cent and [(1.09)(1.07)-1] (100) = 16.63 per cent.

[10] These are obtained as a product of growth rate of manufacturing GDP and buoyancy of gross revenue (1.0868).

Corresponding to the sets of real growth of manufacturing GDP and inflation, two alternative rates of real growth of total GDP (6 or 7 per cent) have been used. Thereby, the three sets of parameters (manufacturing growth, inflation and total GDP growth) are (11,7,6), (11,8,7) and (9,7,6) per cent. The first set of parameters is close to the parameters observed during 1995-96, and the other two sets are given by the planning commission which indicate the expected range of variation in the parameters. Accordingly, the projections based on the latter two sets of parameters would give the range of variation in tax revenue, and the projections based on the first set would lie within this range.

The basic data on net revenue, MODVAT credit, and manufacturing and total GDP for the period from 1986-87 to 1995-96 are presented in Table 2. Projections of revenue from UEDs and manufacturing and total GDP with the parameter set (11,7,6), with 1995-96 as the base year, are also presented in Table 2. Projections of revenue with all the three sets of parameters are reported in Table 4. It may be noted that, for the year 1996-97, projected revenue differs from the budget estimate. The former is higher to the latter by about 4.4 per cent to 7.5 per cent. Another set of projections of revenue is obtained by treating 1996-97, with the budget estimate of revenue, as the base year, and presented in Table 5. With a view to have an idea about the influence of revenue growth on the tax to GDP ratio, tax to manufacturing GDP as well as tax to total GDP ratios have also been computed for alternative sets of projections and reported in these tables. For the alternative sets of parameters (11,7,6), (11,8,7) and (9,7,6), projections of manufacturing GDP were obtained by applying nominal growth rates of 18.77 per cent, 19.88 per cent and 16.63 per cent respectively and those of total GDP were obtained by applying nominal growth rates of 13.42 per cent, 15.56 per cent and 13.42 per cent respectively.

From Table 2, it may be noted that a substantial growth in net revenue is anticipated during the projection period that is attributable to stabilisation of MODVAT credit ratio, buoyancy of gross revenue, and the change in composition of GDP (manufacturing sector *vis.a vis.* other sectors) (column 2). Based on set 2 of projections, net revenue from UEDs is expected to rise from Rs. 40784 crore in 1995-96 to Rs. 49104 crore in 1996-97 and to Rs. 124236 crore in 2001-02 (column 2). This implies a growth rate of 20.40 per cent during the projection period. Similar observations can be made about the other sets of

projections based on parameter sets (11,8,7) and (9,7,6) which imply growth rate of 21.60 per cent and 18.07 per cent respectively (Table 4). A comparison of Tables 4 and 5 reveals that use of budget estimate instead of our estimate for 1996-97 (based on 1995-96 as the base year) results in substantially lower revenue yield. The estimates for the whole projection period are lower by about 4.2 per cent to 7.0 per cent.

It may be noted that it should be feasible to collect projected revenues even if there are mild or moderate cuts in the rates of UEDs during the reference period as the period covering the buoyancy estimate experienced sharp cuts in the duty rates.

The projected growth in net revenue from UEDs is expected to raise the tax to GDP ratio. The ratio of net revenue to manufacturing GDP as also the ratio of net revenue to total GDP is found to rise during the projection period. The former increases by about 1.52 to 1.77 percentage points while the latter increases by about 0.88 to 1.44 percentage points with our projections for 1996-97 (Table 4). With budget estimates for 1996-97, the former increases by about 1.41 to 2.40 percentage points while the latter increases by about 0.83 to 1.48 percentage points (Table 5). The ratios are found to be higher with our estimates for 1996-97 as compared to those with budget estimates for 1996-97 (Tables 4 and 5). With our preferred set of parameters (11,7,6) and credit ratio of 40 per cent, the ratio of tax to manufacturing GDP is found to rise from about 24.01 per cent in 1996-97 to about 25.71 per cent in 2001-02, and the ratio of tax to total GDP is found to rise from 4.13 per cent to 5.75 per cent during the same period (Table 4).

VI. Resource Mobilisation

In the context of raising additional resources from UEDs it may be noted that the process of rationalisation of the tax structure along with reduction in the top tax rates, perhaps, has to continue. Therefore, additional resources can be generated largely through removal of exemptions/concessions and efficient administration of the tax system. To some extent, conversion of specific duties into *ad valorem* duties can also be helpful.

Exemptions under the MODVAT system leave scope for the taxpayers to indulge in misuse of the provisions of the scheme. For example, some of the dealers sell invoices to medium or large units against the goods sold to the exempted sector, thereby enabling the former to avail of MODVAT credit on the basis of such invoices.[11] Removal of exemptions in respect of commodities and/or Small Scale Industry (SSI) can help in checking evasion and hence in raising more revenue from UEDs.[12]

In the recent tax reforms following recommendations of the Tax Reforms Committee,[13] most of the specific duties have already been converted into *ad valorem* duties, however, some of the commodities such as cement and cigarette continue to be subject to specific duties. Conversion of specific duties into *ad valorem* duties on these commodities can also generate some additional revenue.

Extension of MODVAT scheme to services can also yield some revenue besides rationalising the tax system. Service sector is growing faster as compared to other sectors and consumption of services form a higher percentage of the consumption of the richer families.

The countries adopting VAT generally levy sumptuary excise on some of the commodities which is generally justified on the basis of discouraging consumption of such commodities for reasons of health and/or environment. Such an excise on products like cigarettes, motor cars, petroleum products and alcoholic drinks can result in substantial revenue.

The revenue raised from Additional duties of excise in lieu of sales tax on tobacco, sugar and textiles is passed on, in full, to the States. States have been wanting the Centre to withdraw from this role to facilitate a levy of sales tax on these commodities on the pretext that they can raise more revenue from these commodities than that generated through

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[11] See Shome, Mukhopadhyay and Saleem (1996).

[12] A brief description of some of the exemptions is given in the Appendix.

[13] See Government of India (1991).

additional duties levied by the Centre.[14] Therefore, vacating this area by the Centre may help the States in raising more revenue than their shares in additional duties.

Improvement in administration can play a vital role in raising more resources from the existing or a modified system of UEDs. This would require simplification in forms and procedures, effective cross verification of invoices, and an effective audit system. It is feasible to bring in substantial improvement in administration of UEDs by identifying and focusing on a small percentage of the dealers who have greater probability of being big defaulters. The latest techniques aided by computerisation can help in achieving these objectives.

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[14] See NIPFP (1994) and Purohit (1990).

Table 1
Time Profile of Coverage of Raw Materials and Capital Goods under MODVAT

Year	Coverage
(1)	(2)
1986-87	MODVAT introduced for selected raw materials when used in production of specified goods
1987-88	Most of the raw materials covered under MODVAT
1988-89	Minor expansion in coverage of MODVAT
1989-90	- do -
1990-91	- do -
1991-92	- do -
1992-93	- do -
1993-94	- do -
1994-95	1. Capital goods, petroleum products and specified spun yarns covered under MODVAT 2. Small scale industrial (SSI) enterprises given the option to pay normal excise duty in place of concessional duty[1]
1995-96	1. The scheme has been extended to cut tobacco, plastic woven sacks, specified textiles and equipments 2. Scope of SSI concessions enlarged. Turnover limit for availing SSI concessions raised from Rs. 2 crore to Rs. 3 crore[2]. 3. Conditions of matching raw materials/Capital goods[3] with output for allowing MODVAT credit withdrawn

1. General Exemption No.1, Central Excise Tariff of India, 1994-95.

2. General Exemption No.1, Central Excise Tariff of India, 1995-96.

3. Notification No.4/94-CE(NT), Central Excise Tariff of India, 1994-95.

Table 2

Revenue from Union Excise Duties and Projections

Year	Net revenue	MODVAT credit	Gross revenue	Credit as %age of gross revenue	GDP at current prices		Net revenue as %age of	
					Mfg. sector	Total	Mfg. GDP	Total GDP
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1986-87	14407	1914	16321	11.73	47687	292949	30.21	4.92
1987-88	16553	2820	19373	14.56	52865	333201	31.31	4.97
1988-89	18739	3809	22548	16.89	62863	395782	29.81	4.73
1989-90	22196	5279	27475	19.21	77076	456821	28.80	4.86
1990-91	24336	6496	30832	21.07	89160	535534	27.29	4.54
1991-92	28020	7965	35985	22.13	96881	616799	28.92	4.54
1992-93	30555	10840	41395	26.19	111309	705328	27.45	4.33
1993-94	31711	11896	43607	27.28	122262	801032	25.94	3.96
1994-95	37416	21687	59103	36.69	147457	945615	25.37	3.96
1995-96	40784	29549	70333	42.01	178138	1084620	22.89	3.76
Projections with parameters(11,7,6)								
Set 1: with credit ratio 42.01								
1996-97	49104	35577	84681	42.01	211575	1230176	23.21	3.99
1997-98	59121	42835	101956	42.01	251287	1395266	23.53	4.24
1998-99	71182	51573	122755	42.01	298454	1582510	23.85	4.50
1999-00	85703	62094	147797	42.01	354473	1794883	24.18	4.77
2000-01	103186	74761	177947	42.01	421008	2035756	24.51	5.07
2001-02	124236	90012	214249	42.01	500031	2308955	24.85	5.38
Set 2: with credit ratio 40.00								
1996-97	50809	33872	84681	40.00	211575	1230176	24.01	4.13
1997-98	61174	40782	101956	40.00	251287	1395266	24.34	4.38
1998-99	73653	49102	122755	40.00	298454	1582510	24.68	4.65
1999-00	88678	59119	147797	40.00	354473	1794883	25.02	4.94
2000-01	106768	71179	177947	40.00	421008	2035756	25.36	5.24
2001-02	128549	85699	214249	40.00	500031	2308955	25.71	5.57

Notes:

1. Total GDP at current prices is assumed to grow at the rate of 13.42 % It assumes real growth of 6 % and inflation at 7 %.
2. For the year 1995-96, net revenue is provisional figure obtained from the Department of Customs and Excise, and MODVAT credit is estimated by applying the ratio of credit to net revenue for first six months to net revenue of 1995-96. Gross revenue is obtained by adding MODVAT credit to net revenue.
3. Buoyancy of gross revenue with respect to manufacturing GDP is found to be 1.0868. Manufacturing GDP is assumed to grow at the real rate of 11 % implying a nominal growth rate of 18.77 per cent. Therefore, gross revenue is taken to grow at a nominal rate of 20.4 % during 1996-97 to 2001-02.
4. Two sets of projections are based on varied assumptions about the ratio of credit to gross revenue. In Set 1, the ratio is taken to be 42.01 % i.e. the same as in 1995-96. In Set 2, it is taken to be 40%.
5. Total and manufacturing GDP figures are taken respectively from Economic Survey 1995-96 and National Accounts Statistics 1995.
6. Parameter set (x, y, z) indicates real growth rate of manufacturing GDP, inflation and real growth of total GDP respectively.

Table 3

Yearly Growth Rate of Revenue from Union Excise Duties

(Per cent)

Year	Net revenue	MODVAT credit	Gross revenue	GDP at current prices	
				Mfg. sector	Total
(1)	(2)	(3)	(4)	(5)	(6)
1987-88	14.90	47.34	18.70	10.86	13.74
1988-89	13.21	35.07	16.39	18.91	18.78
1989-90	18.45	38.59	21.85	22.61	15.42
1990-91	9.64	23.05	12.22	15.68	17.23
1991-92	15.14	22.61	16.71	8.66	15.17
1992-93	9.05	36.10	15.03	14.89	14.35
1993-94	3.78	9.74	5.34	9.84	13.57
1994-95	17.99	82.30	35.54	20.61	18.05
1995-96	9.00	36.25	19.00	20.81	14.70

Table 4
Projections of Revenue from Union Excise Duties

Year	Net revenue (Rs.Crore)			Net revenue as %age of manufacturing GDP			Net revenue as %age of total GDP		
	Set a (11,7, 6)	Set b (11,8, 7)	Set c (9,7, 6)	Set a (11,7, 6)	Set b (11,8, 7)	Set c (9,7, 6)	Set a (11,7, 6)	Set b (11,8, 7)	Set c (9,7, 6)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Projections(Set 1: with credit ratio 42.01)									
1996-97	49104	49593	48154	23.21	23.22	23.18	3.99	3.96	3.91
1997-98	59121	60306	56855	23.53	23.56	23.46	4.24	4.16	4.07
1998-99	71182	73331	67129	23.85	23.89	23.75	4.50	4.38	4.24
1999-00	85703	89171	79259	24.18	24.24	24.05	4.77	4.61	4.42
2000-01	103186	108432	93581	24.51	24.58	24.34	5.07	4.85	4.60
2001-02	124236	131853	110491	24.85	24.94	24.64	5.38	5.10	4.79
1997-02	443429	463094	407315						
Projections(Set 2: with credit ratio 40.00)									
1996-97	50809	51315	49825	24.01	24.03	23.98	4.13	4.09	4.05
1997-98	61174	62399	58829	24.34	24.37	24.28	4.38	4.31	4.22
1998-99	73653	75877	69459	24.68	24.72	24.58	4.65	4.53	4.39
1999-00	88678	92267	82010	25.02	25.08	24.88	4.94	4.77	4.57
2000-01	106768	112196	96830	25.36	25.44	25.19	5.24	5.02	4.76
2001-02	128549	136431	114327	25.71	25.80	25.50	5.57	5.28	4.95
1997-02	458822	479170	421455						

Notes:

1. Sets 1 and 2 are based on varied assumptions about the ratio of credit to gross revenue. In Set 1, the ratio is taken to be 42.01%, i.e. the same as in 1995-96. In Set 2, it is taken to be 40%.
2. Sets a, b and c are based on varied assumptions about growth rates of total GDP, manufacturing GDP and inflation. These parameters are taken to be respectively 6%, 11% and 7% in set a; 7%, 11% and 8% in set b; and 6%, 9% and 7% in set c.
3. Parameter set (x, y, z) indicates real growth rate of manufacturing GDP, inflation and real growth of total GDP respectively.

Table 5

Projections of Revenue from Union Excise Duties

Year	Net revenue (Rs.Crore)			Net revenue as %age of manufacturing GDP			Net revenue as %age of total GDP		
	Set a (11,7, 6)	Set b (11,8, 7)	Set c (9,7, 6)	Set a (11,7, 6)	Set b (11,8, 7)	Set c (9,7, 6)	Set a (11,7, 6)	Set b (11,8, 7)	Set c (9,7, 6)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Projections(Set 1: with credit ratio 42.01)									
1996-97	46124	46124	46124	21.80	21.60	22.20	3.75	3.68	3.75
1997-98	55533	56087	54459	22.10	21.91	22.47	3.98	3.87	3.90
1998-99	66862	68202	64299	22.40	22.22	22.75	4.23	4.07	4.06
1999-00	80502	82933	75918	22.71	22.54	23.03	4.49	4.29	4.23
2000-01	96924	100847	89637	23.02	22.86	23.32	4.76	4.51	4.40
2001-02	116697	122629	105834	23.34	23.19	23.61	5.05	4.75	4.58
1997-02	416519	430697	390147						
Projections(Set 2: with credit ratio 40.00)									
1996-97	46124	46124	46124	21.80	21.60	22.20	3.75	3.68	3.75
1997-98	57461	58034	56349	22.87	22.67	23.25	4.12	4.01	4.04
1998-99	69183	70569	66531	23.18	22.99	23.54	4.37	4.22	4.20
1999-00	83297	85812	78554	23.50	23.32	23.83	4.64	4.44	4.38
2000-01	100289	104347	92748	23.82	23.66	24.13	4.93	4.67	4.56
2001-02	120748	126886	109508	24.15	24.00	24.42	5.23	4.91	4.74
1997-02	430978	445649	403690						

Notes:

1. Sets 1 and 2 are based on varied assumptions about the ratio of credit to gross revenue. In Set 1, the ratio is taken to be 42.01%, i.e. the same as in 1995-96. In Set 2, it is taken to be 40%.
2. Sets a, b and c are based on varied assumptions about growth rates of total GDP, manufacturing GDP and inflation. These parameters are taken to be respectively 6%, 11% and 7% in set a; 7%, 11% and 8% in set b; and 6%, 9% and 7% in set c.
3. For the year 1996-97, budget estimate has been taken, and the credit ratio has been taken to be 40.00 per cent only for the period of projection, i.e. for the years 1997-98 to 2001-02.
4. Parameter set (x, y, z) indicates real growth rate of manufacturing GDP, inflation and real growth of total GDP respectively.

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Appendix

Exemptions Under Union Excise Duty

The exemptions under Union excise duty can be classified into two broad groups: general and specific. A brief description of these exemptions is given below:

A. General exemptions

1. In the case of a Small Scale Industrial Unit, first clearances of specified goods upto the value of Rs. 30 lakhs are exempt and concessional duty is charged on subsequent clearances to the extent of 170 lakh
2. Goods produced for captive consumption within the factory
3. Specified goods produced without the aid of power
4. Specified products of village industry or those manufactured in rural areas by co-operative societies
5. Goods meant for repairing, reconditioning and re-engineering
6. Goods cleared for display in any fair or exhibition
7. Goods produced in a technical, educational and research institution
8. Cost of durable packing supplied by buyers of specified goods
9. Goods manufactured by Central Government factories
10. Goods manufactured by specified units/institutions for use by government department for defence purposes
11. Goods supplied for defence and other specified purposes
12. Specified goods manufactured in a State Government factory and intended to be used in any of its departments
13. Goods for supply to the Gas Authority of India Limited
14. Specified goods for supply to Oil and Natural Gas Corporation Limited or to Oil India Limited
15. Specified goods connected with solar and other natural energy
16. Improved chullas capable of burning wood, aggrowaste, cowdung, briquettes and coal
17. Goods required for nuclear fuel complex
18. Pollution control equipment
19. Goods donated or purchased out of cash donations for the victims of specified calamities
20. Goods manufactured by institutions for handicap persons
21. Goods produced in a free trade zone or by a hundred per cent export oriented undertaking
22. Capital goods meant for use in production of exportable items
23. Salt and fuel briquettes manufactured from agricultural wastes
24. Substitutes of ozone depleting substances

B. Specific exemptions

1. Meat and edible meat offal
2. Fish and crusta-ceans, molluscs and other aquatic invertebrates
3. Dairy produce: edible products of animal origin, N.E.S.
4. Products of animal origin, N.E.S.
5. Edible vegetables and roots and tubers
6. Edible fruit and nuts: peel of citrus fruit or melons
7. Coffee, tea and spices
8. Products of the milling industry: malt; starches; insulin; wheat glutton
9. Lac; gum; resins and other vegetable saps and extracts
10. Vegetable plaiting materials; vegetable products, N.E.S.
11. Fixed vegetable oils
12. Preparations of meat, of fish or of aquatic invertebrates
13. Preparation of vegetables, fruits; nuts, or other parts of plants
14. Residues and wastes from the food industries, prepared animal fodder
15. Tobacco products, N.E.S.
16. Salt
17. Sugar and khandsari
18. Molasses used in the manufacturing of animal feed
19. Cakes and pastry
20. Marble blocks and tiles
21. Coalgas, water gas, producer gas and similar gases, other than petroleum gases and other gaseous hydrocarbons
22. Tar distilled from coal, from lignite or from peat, and other mineral tars, whether or not dehydrated or partially distilled, including reconstituted tars
23. Antisera and other blood fractions; Vaccines, Toxins, Cultures of micro-origanisms (including ferments but excluding yeast(s) and similar products
24. Specified life saving medicaments
25. Specified bulk drugs and its formulations
26. Specified formulations and combinations
27. Bulk drugs insulin
28. 1-Amino-4-methyl piperazine for the manufacture of Rifampicin
29. L-Base required for the manufacture of chloramphenicol
30. Specified intermediates for the manufacture of bulk drugs centchroman
31. Diamino malononitrile for the manufacture of pyrazinamide
32. Leather and silk
33. Cotton and cotton fabrics
34. Fabrics of man-made filament yarn
35. Fabrics of man-made staple fabrics
36. Readymade garments
37. Cotton wool and gauze cloth bandages not bearing brand name
38. Deferriozamine injection and deferipone
39. Henna powder
40. Agarbatti, dhoop and similar preparations
41. Soaps, candles, surfonated caster oil, fish oil and sperm oil

42. Umbrellas, sub-umbrellas, walking sticks, seat sticks, whips, riding corps and parts thereof
43. Artificial flowers, articles of human hair
44. Photographic plates and films, exposed and developed for specific purposes
45. Doors, windows and their frames and threshold for doors
46. Polystyrene beads when produced by Malaria Research Centre
47. Nipples for feeding bottles
48. Rubber tubes for cycles and cycle rikshaws
49. Tyre flaps of rubber used in two-wheeled and three-wheeled motor vehicles
50. Sheath contraceptives
51. Tyres and tubes used on anumal drawn vehicle or hand carts
52. Wooden doors other than flush doors
53. Envelopes and letter cards, etc.
54. Boxes intended for packing of matchsticks
55. Paper or paper board lebels of all kinds, whether or not printed
56. Braille paper
57. Certain varieties of paper used in printing text books and newspapers
58. Kraft paper meant for manufacture of cartons
59. Maps and hydrographic or similar charts of all kinds including atlases, wall maps, topographical plans and globes, printed
60. Wool and animal hair
61. Fabrics woven on handloom through specified processes
62. Floor coverings of coconut fibres (coir) or jute
63. Hand made carpets
64. Cycles, not motorised
65. Invalid carriages
66. Tractors of engine capacity not exceeding 1800 cc and chassis thereof
67. Motor vehicles for the transport of ten or more persons
68. Motor vehicles for the transport of goods, other than those specifically designed for the transport of compressed or liquified gases
69. Cruise ships, excursion boats, ferry-boats, cargo ships, barges and similar vessels for the transport of persons of goods
70. Fishing vessels; factoryships and other vessels for processing or preserving fishery products
71. Tugs and pusher craft
72. Light-vessels, fire-floats, dredgers, floating cranes and other vessels the navigability of which is subsidiary to their main function; floating docks; floating or submersible drilling or production platforms
73. Other vessels, including warships and life-boats other than rowing boats
74. Spectacles, goggles, and the like, corrective, protective or other
75. Specified sight saving equipments
76. Braille watches
77. Military weapons other than revolvers, pistons, swords, cutlaasses, bayonets, lances and similar arms and parts thereof
78. Kerosene pressure lanaterns and parts thereof
79. Hurricane lanterns and gas mantles

80 Toys, article for fun fair, playing cards and sports goods.

81. Grooms and brushes, buttons and buttons blocks, ball point pens, pencils, and combs and hair pins, etc.