KERALA'S REVENUE POTENTIAL PROJECTIONS FOR 1990–95

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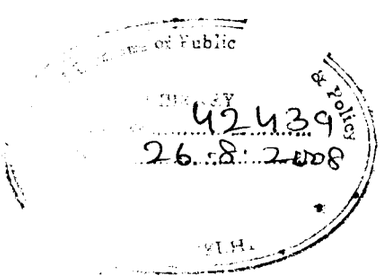

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I. Introduction

As a proportion of per capita State Domestic Product, per capita tax revenue of Kerala is way above the all India average (17.26 per cent against 12.73 per cent. Even if one takes only the revenue from its own taxes, that is, taxes which the State can levy under its own powers, and excluding the share of Central taxes devolving through federal transfers, Kerala's tax/SDP ratio turns out to be the highest (12.18 per cent, vide Table 1). These proportions relate to the year 1986-87, the latest year for which relevant information is available. Measures of tax effort relative to potential based on more sophisticated approaches whereby account is taken of other factors which may have a significant bearing on taxable capacity also seem to indicate that Kerala's tax effort is among the best in the country. This is apparent also from the estimates of tax potential of Kerala and the revenue projected for 1989-90 on the basis of past growth in the First Report of the Ninth Finance Commission.

However, the performance of Kerala in the matter of resource mobilisation during the first half of the present decade which covered the Sixth Plan period fell far below expectations leaving large shortfalls from the estimates made for the Plan. The shortfall in the balance from current revenue (BCR) in the Sixth Plan from the original estimates was as high as 68 per cent (highest among the Southern States). A study carried out by NIPFP to review Plan financing in Kerala during the Sixth Plan

TABLE 1

SDP & Tax Revenue - Per Capita

1986-87

(Rs.)

	PCY	TTR	TTR/PCY	OTR	OTR/PCY
APR	2333	370.02	15.86	260.32	11.14
BHR	1802	207.69	11.53	82.96	4.60
GUJ	3223	361.31	11.21	329.22	10.21
HAR	3925	436.23	11.11	372.28	9.48
KAR	2486	381.45	15.34	285.78	11.49
KER	*2361*	*407.45*	*17.26*	*287.59*	*12.18*
MAH	3793	477.37	12.59	393.77	10.38
MPR	2020	276.34	13.68	163.95	8.12
ORS	1957	255.86	13.07	114.91	5.87
PUN	4719	505.46	10.71	427.22	9.05
RAJ	2150	254.03	11.82	162.74	7.57
TND	2732	438.60	16.05	329.04	12.04
UPR	2146	235.37	10.97	121.70	5.67
WBN	2988	308.99	10.34	198.52	6.64
ALS#	2759	351.16	12.73	252.14	9.14

TTR: Total Tax Revenue; OTR: Own Tax Revenue; PCY: Per Capita SDP

Unweighted average of 14 States.

revealed that the failure to achieve the estimated BCR target in Kerala was attributable to shortfall in revenue receipts rather than excessive spending. The shortfall in revenue again was due more to sluggish growth of own revenue rather than of Central transfers. Among the State's own sources of revenue, the study found, the magnitude of shortfall was the highest in the case of non-tax revenue (26.2 per cent), particularly in interest receipts (65.6 per cent). In absolute terms, the shortfall was grater in own tax revenues, though in percentage terms non-tax revenue registered a bigger gap between the targets and the actuals. The study averred that deceleration in revenue growth was the main factor responsible for the poor contribution of BCR to Plan resources in the State during the Sixth Plan, and thereby bringing down the per capita Plan outlay relative to all States' average to a record low level during the Seventh Plan (NIPFP, 1987).

Whether the State has been able to meet the modest revenue targets set for the Seventh Plan is difficult to say in the absence of full information. Available figures relating to tax and non-tax revenue for recent years seem to indicate that there has been some improvement in recent years. However, the State has to continue and in fact intensify its effort in resource mobilisation to recover the lost ground and regain the growth momentum it had acquired in the earlier decades. Growth rate of own tax revenue in Kerala is still below that of Tamil Nadu and Karnataka though higher than that of Andhra Pradesh (Table 2). During 198Ø-81 to 1986-87 buoyancy of own tax revenue in Kerala with respect to SDP slumped to 1.34 from 1.6Ø in the 197Øs. This turns out to be higher than that of Tamil Nadu but lower than that of Andhra Pradesh and Karnataka (Table 3). It is relevant to note here that the tax structure of Kerala is essentially of the same nature as that of its neighbouring States, the largest source of revenue being sales tax (Table 4).

TABLE 2

Compound Growth Rates

State	Own Tax Revenue			Sales Tax		
	1971-88	1981-85	1985-88	1971-88	1981-85	1985-88
Andhra Pradesh	17.32	18.86	14.46	20.08	21.17	14.78
Assam	15.98	28.68	5.88	13.90	37.82	8.86
Bihar	13.54	13.91	17.55	18.32	13.00	15.52
Gujarat	17.70	16.31	15.36	18.89	13.54	16.91
Haryana	18.77	14.23	17.39	21.06	13.80	18.04
Karnataka	17.03	16.47	17.32	18.39	17.97	18.52
Kerala	18.96	16.07	15.52	19.21	15.51	17.12
Madhya Pradesh	17.20	18.23	17.49	18.07	16.60	17.18
Maharashtra	17.10	14.83	16.89	18.21	13.71	16.65
Orissa	15.79	14.10	19.88	17.43	12.62	19.33
Punjab	15.93	12.75	15.39	16.70	14.29	15.80
Rajasthan	16.45	20.28	16.64	19.86	17.14	17.43
Tamil Nadu	12.64	18.81	16.36*	16.78	15.21	14.24
Uttar Pradesh	17.98	14.15	14.98	21.37	14.67	13.97
West Bengal	15.55	15.28	15.05	17.63	14.32	15.53

* 1984-85 to 1986-87.

TABLE 3

*Buoyancy of Own Tax Revenue and Sales Tax Revenue of States**

		Own Tax Revenue			Sales Tax Revenue		
		I	II	III	I	II	III
1.	Andhra Pradesh	1.1063	1.5727	1.5896	1.5008	1.8010	1.7190
2.	Assam	0.8150	1.3154	1.6157	1.6406	1.1579	1.2110
3.	Bihar	1.0011	1.2232	1.0306	1.5994	1.5767	0.9394
4.	Gujarat	1.5196	1.2989	1.4129	1.7584	1.3757	1.3448
5.	Haryana	-	1.4238	1.2418	-	1.5836	1.2191
6.	Himachal Pradesh	-	2.3766	1.3153	-	2.7487	1.3866
7.	Jammu and Kashair	1.4866	1.4451	1.4977	2.3624	1.4901	1.0976
8.	Karnataka	1.2601	1.4184	1.3590	1.6523	1.5233	1.4772
9.	Kerala	1.1737	1.6024	1.3398	1.2833	1.6344	1.3307
10.	Madhya Pradesh	1.1980	1.5509	1.3092	1.8178	1.6363	1.1421
11.	Maharashtra	1.4494	1.1698	1.2824	1.6314	1.2268	1.2068
12.	Punjab	-	1.1833	1.0535	-	1.2416	1.1388
13.	Orissa	1.1044	1.4817	1.3028	1.4434	1.6243	1.1040
14.	Rajasthan	1.2295	1.3781	1.2376	2.2120	1.6223	1.1255
15.	Tamil Nadu	1.6366	1.2103	1.1770	1.9193	1.5578	1.0602
16.	Uttar Pradesh	0.9845	1.5621	1.1330	1.3225	1.8293	1.1977
17.	West Bengal	1.1012	1.4047	1.1427	1.4174	1.5792	1.0482

Note: I for the period of 1960-61 to 1969-70.
II for the period of 1970-71 to 1979-80.
III for the period of 1980-81 to 1986-87.
* With respect to SDP.

Trends in tax structure of Kerala are brought out in Table 5. The table underlines the emergence of sales tax as the predominant revenue source and the decline in the significance of stamps duties and registration fees and tax on vehicles.

Figures of per capita SDP, total tax revenue, own tax revenue and own non-tax revenue for Kerala from 1974-75 to 1987-88 (RE) are given in Table 6. Table 7 gives the index of these variables with 1974-75 as the base. It will be seen that both total tax revenue and own tax revenue have outstripped SDP growth, the respective indices for 1986-87 being 552, 488 and 262. But non-tax revenue index stands at only 243.

Non-tax revenue growth in Kerala continues to be sluggish - being one of the lowest among the States during the 1980s (Table 8). As a result the contribution of non-tax revenue in the State's own source revenue has declined from about 31 per cent in 1974-75 to only 13 per cent while that of own tax revenue has gone up steadily from 69 per cent to 87 per cent in 1987-88 (Table 9). While this has been the trend in the States as a whole, the all States' average proportion of non-tax to own tax revenue stands at around 19 per cent in recent years as compared to 13 per cent of Kerala.

Reasons underlying the deceleration of growth of revenue in Kerala, tax and non-tax, during the Sixth Plan have been gone into at some length in the NIPFP Study on Sixth Plan financing referred to earlier. These are not gone into again here. The objective of the present study is to make projections of own revenue of the State for the years 1990-95 for purposes of formulating the Eighth Plan. The analysis of the trends in Kerala's revenue growth presented above is intended to draw attention to the fact that although in inter-State comparison of

TABLE 4

Composition of Tax Revenue: Selected States- 1986-87

(Rs. Crore)

S.NO TAXES\STATES	APR	BHR	GUJ	HAR	KAR	KER	MAH	MPR	ORS	PUN	RAJ	TND	UPR	WBN
1 AGRICULTURAL INCOME TAX	0.00	0.01	0.00	0.00	8.71	16.26	0.58	0.00	0.00	0.00	0.00	10.03	0.00	6.09
(% of total own tax revenue)	0.00	0.00	0.00	0.00	0.72	2.00	0.02	0.00	0.00	0.00	0.00	0.57	0.00	0.50
2 LAND REVENUE	13.11	26.57	21.14	2.33	10.66	6.14	29.68	15.52	20.81	3.03	20.02	12.89	29.48	149.65
(% of total own tax revenue)	0.84	4.03	1.67	0.41	0.88	0.75	1.06	1.59	2.94	0.38	3.05	0.73	1.95	12.28
3 STAMPS & REGN FEES	74.13	51.92	52.84	45.68	61.32	54.43	133.49	56.07	20.34	58.33	30.06	121.54	174.10	63.87
(% of total own tax revenue)	4.75	7.88	4.18	8.07	5.06	6.69	4.78	5.76	2.87	7.26	4.58	6.92	11.51	5.24
4 TOTAL SALES TAX	803.20	426.09	864.50	256.24	647.00	516.72	1756.48	480.50	176.14	377.13	376.44	1105.09	856.90	695.75
(% of total own tax revenue)	51.51	64.69	68.38	45.28	53.65	63.49	62.91	49.34	24.88	46.96	57.40	62.89	56.66	57.08
5 TAXES ON VEHICLES	127.72	54.50	107.32	88.88	166.83	53.38	215.20	131.95	32.03	65.63	88.16	145.32	126.72	122.08
(% of total own tax revenue)	8.19	8.27	8.49	15.71	13.83	6.56	7.71	13.55	4.52	8.17	13.44	8.27	8.38	10.02
6 ENTERTAINMENT TAX	45.67	19.50	37.77	9.03	33.25	0.01*	65.03	22.62	5.50	7.76	12.30	62.39	60.78	32.81
(% of total own tax revenue)	2.93	2.96	2.99	1.60	2.76	0.00	2.33	2.32	0.78	0.97	1.88	3.55	4.02	2.69
7 STATE EXCISE	448.06	61.12	6.47	132.74	286.75	117.60	259.94	152.16	22.83	245.18	100.65	286.56	228.11	71.47
(% of total own tax revenue)	28.73	9.28	0.51	23.46	17.14	14.45	9.31	15.62	3.22	30.53	15.35	16.31	15.08	5.86
8 ELECTRICITY DUTY	41.10	17.00	113.92	27.21	47.97	46.77	176.00	104.66	60.19	45.61	25.60	8.29	36.21	31.82
(% of total own tax revenue)	2.64	2.58	9.01	4.81	3.98	5.75	6.30	10.75	8.50	5.68	3.90	0.47	2.39	2.61
9 OTHER TAXES & DUTIES	6.34	2.00	60.25	3.75	23.49	2.58	155.44	10.39	370.15	0.50	2.62	4.95	0.09	45.38
(% of total own tax revenue)	0.41	0.30	4.77	0.66	1.95	0.32	5.57	1.07	52.28	0.06	0.40	0.28	0.01	3.72
10 TOTAL OWN TAX REVENUE	1559.33	658.71	1264.21	565.86	1205.98	813.89	2791.84	973.87	707.99	803.17	655.85	1757.06	1512.39	1218.92
11 SHARE IN CENTRAL TAXES	657.09	990.36	123.21	97.21	403.73	339.20	592.71	667.57	414.39	147.10	367.89	585.07	1427.61	678.26

* This tax is levied by the local bodies in Kerala. The small collection figure presumably relates to arrears.

Source: NIPFP Database; Original source: Reserve Bank of India Bulletin, various issues.

TABLE 5

Tax Structure of Kerala

(Rs. Crore)

TAXES\YEAR	65-66	70-71	75-76	76-77	77-78	78-79	79-80	80-81	81-82	82-83	83-84	84-85	85-86	86-87
TOTAL TAX REVENUE	*50.16*	*90.21*	*221.41*	*251.45*	*282.42*	*329.40*	*427.45*	*487.95*	*544.99*	*624.29*	*696.25*	*854.93*	*938.99*	*1153.09*
AGRICULTURAL INCOME TAX	2.27	3.28	7.23	6.43	10.03	11.14	10.57	11.30	8.86	10.88	13.13	18.72	20.83	16.26
(% TO TOTAL TAX REVENUE)	4.53	3.34	3.27	2.56	3.55	3.38	2.47	2.32	1.63	1.74	1.89	2.19	2.22	1.41
LAND REVENUE	2.65	1.15	3.50	3.20	2.88	3.77	3.32	3.20	3.13	3.47	4.77	6.30	5.83	6.14
(% TO TOTAL TAX REVENUE)	5.28	1.17	1.58	1.27	1.02	1.14	0.78	0.66	0.57	0.56	0.69	0.74	0.62	0.53
STAMPS & REGISTRATION FEES	4.37	6.63	13.31	15.29	17.25	22.05	22.99	25.62	29.53	32.62	38.00	43.03	46.27	54.43
(% TO TOTAL TAX REVENUE)	8.71	6.75	6.01	6.08	6.11	6.69	5.38	5.29	5.42	5.23	5.46	5.03	4.93	4.72
URBAN IMMOVABLE PROPERTY TAX	0.00	0.25	0.10	0.42	0.38	0.30	0.33	0.11	0.12	0.31	0.48	0.85	1.13	1.81
(% TO TOTAL TAX REVENUE)	0.00	0.25	0.05	0.17	0.13	0.09	0.08	0.02	0.02	0.05	0.07	0.10	0.12	0.16
TOTAL SALES TAX	18.30	37.42	97.92	107.60	118.74	146.89	162.64	203.94	245.49	275.20	306.61	375.19	458.42	516.72
(% TO TOTAL TAX REVENUE)	36.48	38.10	44.23	42.79	42.04	44.59	38.05	41.80	45.04	44.08	44.04	43.89	48.82	44.81
GENERAL SALES TAX	18.04	33.85	89.74	97.18	107.69	132.85	147.62	182.51	224.14	256.09	283.27	348.88	425.54	478.13
(% TO TOTAL TAX REVENUE)	35.96	34.47	40.53	38.65	38.13	40.33	34.54	37.40	41.13	41.02	40.69	40.81	45.32	41.47
CENTRAL SALES TAX	0.00	3.57	8.18	10.42	11.05	14.04	15.02	21.43	21.35	19.11	23.34	26.31	32.90	38.59
(% TO TOTAL TAX REVENUE)	0.00	3.64	3.69	4.14	3.91	4.26	3.51	4.39	3.92	3.06	3.35	3.08	3.50	3.35
SALES TAX ON MOTOR SPIRIT	0.26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
(% TO TOTAL TAX REVENUE)	0.52	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TAXES ON VEHICLES	4.15	6.82	9.25	17.13	18.88	20.84	19.18	20.01	21.65	25.99	31.32	40.48	47.11	53.36
(% TO TOTAL TAX REVENUE)	8.27	6.94	4.18	6.81	6.69	6.33	4.49	4.10	3.97	4.16	4.50	4.73	5.02	4.63
TAXES ON PASSENGERS & GOODS	0.00	0.63	2.50	0.51	0.27	0.11	0.04	0.03	0.02	0.02	0.02	0.02	0.01	0.02
(% TO TOTAL TAX REVENUE)	0.00	0.64	1.13	0.20	0.10	0.03	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00
ENTERTAINMENT TAX*	0.34	0.52	0.86	0.28	0.29	0.29	0.10	0.13	0.16	0.22	0.29	0.37	0.00	0.01
(% TO TOTAL TAX REVENUE)	0.68	0.53	0.39	0.11	0.10	0.09	0.02	0.03	0.03	0.04	0.04	0.04	0.00	0.00
STATE EXCISE	5.01	10.01	21.54	31.03	39.08	42.30	60.99	65.23	53.99	73.37	80.73	100.30	104.07	117.60
(% TO TOTAL TAX REVENUE)	9.99	10.19	9.73	12.34	13.84	12.84	14.27	13.37	9.91	11.75	11.59	11.73	11.08	10.20
ELECTRICITY DUTY	0.01	1.40	3.44	4.57	5.55	6.51	10.23	6.45	11.23	16.27	11.42	36.39	46.27	46.77
(% TO TOTAL TAX REVENUE)	0.02	1.43	1.55	1.82	1.97	1.98	2.39	1.32	2.06	2.61	1.64	4.26	4.93	4.06
OTHER TAXES & DUTIES	1.45	0.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.56	0.77
(% TO TOTAL TAX REVENUE)	2.89	0.51	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.07
SHARE IN CENTRAL TAXES	11.60	30.23	61.71	64.95	69.06	75.16	136.65	151.41	170.81	185.94	209.48	233.28	268.49	339.20
(% TO TOTAL TAX REVENUE)	23.13	30.78	27.87	25.83	24.45	22.82	31.97	31.03	31.34	29.78	30.09	27.29	22.20	29.42

* This tax is levied by the local bodies in Kerala. The small collection figure presumably relates to arrears.

Source: MIPFP Database; Original Source: Reserve Bank of India Bulletin, various issues.

TABLE 6

SDP and Revenue Receipts - Kerala

(Per capita Rs.)

	SDP at Current Prices	TTR	OTR	ONTR	TRR
1974-75	901.26	73.77	58.90	23.84	124.45
1975-76	946.14	94.01	74.35	26.70	149.28
1976-77	1000.63	104.91	86.63	28.28	161.12
1977-78	1033.24	115.77	98.10	33.06	182.40
1978-79	1109.07	132.68	114.48	37.07	210.31
1979-80	1248.85	169.17	128.22	48.29	234.14
1980-81	1363.09	189.74	147.24	38.91	249.02
1981-82	1412.35	208.23	159.99	88.77	324.95
1982-83	1597.12	234.37	183.18	43.69	304.15
1983-84	1872.57	259.79	199.06	44.13	348.60
1984-85	2085.26	312.02	240.42	48.69	410.58
1985-86	2128.60	337.77	262.77	50.98	493.23
1986-87	2360.77	407.45	287.59	57.90	530.93
1987-88(RE)	N.A.	450.00	336.79	50.52	572.39

TTR:Total Tax Revenue OTR:Own Tax Revenue

ONTR:Own Non-tax Revenue TRR:Total Revenue Receipts

TABLE 7

Index of SDP and Revenue Receipts - Kerala

	SDP at Current Prices	TTR	OTR	ONTR	TRR
1974-75	100.00	100.00	100.00	100.00	100.00
1975-76	104.98	127.44	126.23	112.00	119.95
1976-77	111.03	142.21	147.08	118.62	129.47
1977-78	114.64	156.93	166.55	138.67	146.56
1978-79	123.06	179.86	194.36	155.49	168.99
1979-80	138.57	229.32	217.69	202.56	188.14
1980-81	151.24	257.20	249.98	163.21	200.10
1981-82	156.71	282.27	271.63	372.36	261.11
1982-83	177.21	317.70	311.00	183.26	244.40
1983-84	207.77	352.16	337.96	185.11	280.11
1984-85	231.37	422.96	408.18	204.24	329.92
1985-86	236.18	457.87	446.13	213.84	396.33
1986-87	261.94	552.32	488.27	242.87	426.62
1987-88(R.E.)	N.A.	610.00	571.80	211.91	459.94

TTR:Total Tax Revenue OTR:Own Tax Revenue

ONTR:Own Non-tax Revenue TRR:Total Revenue Receipts

TABLE 8

Compound Growth Rates of Own Non-tax Revenue

(Annual percentage)

	1973-81	1981-85	1985-88
APR	13.821	12.576	17.125
ASM	33.597	-18.197	33.592
BIH	11.731	33.825	19.089
GUJ	15.082	17.370	21.364
HAR	14.495	15.445	21.331
KAR	8.575	14.380	8.186
KER	15.900	-0.991	4.136
MAH	20.797	18.087	8.689
MPR	15.205	11.898	17.083
ORS	14.075	0.451	9.425
PUN	13.443	15.829	7.942
RAJ	16.850	11.700	9.053
TND	10.685	1.370	4.442
UPR	7.750	13.168	8.900
WBN	19.011	3.422	3.525

TABLE 9

Significance of Tax Receipts - Kerala

Year	Total Tax Revenue/ Total Revenue Receipts		Total Own Tax Revenue/ Total Tax Revenue		Total Own Tax Revenue/ Total Revenue Receipts		Total Own Tax Revenue/ Total Own Revenue Receipts	
	Kerala	All States	Kerala	All States	Kerala	All States	Kerala	All States
1974-75	Ø.59	Ø.69	Ø.72	Ø.7Ø	Ø.43	Ø.48	Ø.69	Ø.78
1975-76	Ø.63	Ø.69	Ø.72	Ø.69	Ø.45	Ø.48	Ø.72	Ø.78
1976-77	Ø.65	Ø.66	Ø.74	Ø.71	Ø.48	Ø.47	Ø.72	Ø.75
1977-78	Ø.63	Ø.66	Ø.76	Ø.71	Ø.48	Ø.47	Ø.73	Ø.77
1978-79	Ø.63	Ø.63	Ø.77	Ø.72	Ø.49	Ø.45	Ø.73	Ø.77
1979-8Ø	Ø.72	Ø.7Ø	Ø.68	Ø.63	Ø.49	Ø.44	Ø.7Ø	Ø.77
198Ø-81	Ø.76	Ø.7Ø	Ø.69	Ø.64	Ø.53	Ø.44	Ø.77	Ø.78
1981-82	Ø.64	Ø.72	Ø.69	Ø.66	Ø.44	Ø.47	Ø.62	Ø.8Ø
1982-83	Ø.77	Ø.7Ø	Ø.7Ø	Ø.67	Ø.54	Ø.47	Ø.79	Ø.79
1983-84	Ø.75	Ø.69	Ø.7Ø	Ø.68	Ø.52	Ø.47	Ø.81	Ø.79
1984-85	Ø.76	Ø.69	Ø.73	Ø.68	Ø.55	Ø.47	Ø.82	Ø.81
1985-86	Ø.68	Ø.69	Ø.78	Ø.67	Ø.53	Ø.46	Ø.84	Ø.81
1986-87	Ø.77	Ø.7Ø	Ø.71	Ø.67	Ø.54	Ø.46	Ø.83	Ø.81
1987-88 (R.E.)	Ø.79	Ø.69	Ø.75	Ø.67	Ø.59	Ø.46	Ø.87	Ø.81

tax efforts Kerala does not fare badly, judged by its own effort in the earlier decade, Kerala's revenue performance in the 1980s (at least in the first half) has been rather dismal. If it could regain the momentum which its revenue growth had acquired in the pre-Sixth Plan period, the State should be in a position to mobilise substantially larger quantum of revenue in the coming quinquennium and thereby provide a good financial base for the Eighth Plan.

II. Tax Revenue Projections for Eighth Plan : Methodology

The first step in the exercise required for the purpose of projecting revenue growth which could provide a realistic base for estimating the resources for the Eighth Plan is to assess the tax potential of the State on scientific lines instead of going merely by past growth rates. The standard method of assessing the tax potential of a State (or for that matter of a country) is to assess the taxable capacity based on certain parameters or norms. These parameters are derived not by using any absolute standard but by relating the tax actually raised by a cross section or sample of States (or countries) with similar characteristics to factors which could be expected to determine their taxable capacity. The simplest way to apply this methodology is to take the average of the tax-GDP ratio of a cross section of a few States and work out the tax potential of a given State by multiplying the GDP of that State (that is SDP) with the average so derived. For a given tax, the potential can be derived by applying the average effective rate to the respective bases. This is called the representative tax system approach. However, SDP is not the only determinant of the tax potential. Some of the other possible factors are degree of inequality in the distribution of income, degree of urbanisation, and the share of non-primary sectors in the SDP. The contribution of factors supposed to influence the tax potential is usually quantified by fitting a regression equation whereby the tax revenue

actually raised by the sample States is regressed on the variables identified or hypothesised as the determinants of taxable capacity. This is known as the regression method. A comparison of the relative tax effort of the States is then made by taking the proportion of the tax actually raised by a given State to its capacity derived in this way.

As mentioned earlier, exercises based on the average tax ratios (tax to base ratios) or parameters derived through regression equations fitted on the basis of tax collections and data on tax potential determinants of the States in India usually show that Kerala is among the high-tax-effort States. This was broadly the position even when the revenue growth in the State slumped as during the Sixth Plan. Hence, for purposes of identifying the scope for raising additional resources through tax measures a comparison with the performance of other States is not going to be very useful in the case of Kerala.

A more fruitful approach would be to assess Kerala's tax potential on the basis of Kerala's own performance in the past, that is, the standards set by the State itself. These standards or norms can be derived by following either the representative tax system approach or the regression method as described above but using the data on tax collections and the tax determinants over a number of years (that is, 'time series' data) for Kerala itself. One can follow this approach for tax revenue in the aggregate or for individual taxes. This is the method adopted in the present exercise.

It should be added however that tax potential derived on this basis is a little mechanistic and takes no account of the impact of taxes on the economy. An assessment of what could be raised by the State through taxes additionally without impairing the growth of economic activity of the State would require setting up a model of

the State's economy. Such an exercise is beyond the scope of the present study. Projections of revenue presented here should therefore be viewed with some caution and, as argued elsewhere in this report, an analysis of the trends in tax and non-tax revenue of the State over the last 15 years would show that efforts should be directed also towards non-tax sources for raising additional revenue rather than raising the level of taxation alone. For, although on the face of it there might be some scope for improving the collections from certain taxes individually (like stamp duties and registration fees, the tax on vehicles, profession tax and the entertainment tax), non-tax revenue sources appear to provide good scope for resource mobilisation on an equitable basis.

In the paragraphs to follow an attempt is made to explore the tax potential of Kerala and make projections of tax revenue for 1990-95 based on the regression method outlined above. It was not possible to adopt the RTS approach because of severe data problem. An attempt is made also to project non-tax revenue. Of course, one may view some of the non-tax revenue sources like surpluses of public enterprises as a form of taxation. Hence, in principle, one has to look at tax and non-tax revenue in their totality rather than in isolation. For operational purposes, however, it may be useful to go into the two major channels of revenue separately while looking for avenues for resource mobilisation.

III. Regression Method for Estimating Potential

The exact method adopted in the present study to estimate Kerala's tax potential for the years 1990-91 to 1994-95 is as follows. First, for each (group of) tax a function is postulated between the tax revenue and the immediate tax base or proxies of the tax base. This function is then tested through regression equations estimated by using relevant data on tax collections and their

proximate bases or proxies. In the light of statistical indicators as well as *a priori* considerations, the equation is then modified or alternative formulations tried until a regression equation which turns out to be the best in rigorous statistical testing is derived. The coefficients of the preferred regression equation are then used to obtain the tax potential for the years 199Ø-95 putting in the forecasts of the tax base or their proxies as those of the independent variables. This set of results is given under Variant A in Section V below.

A variant of the above method is also used in this study to provide an alternative set of tax potentials (Variant B). The method used for this variant consists of identifying the maximum tax effort observed within the reference period, the ratio of actual to estimated values of each tax variable at the maximum effort level and making the projections on the assumption that the same degree of tax effort will be forthcoming during the years 199Ø-95. The first set of tax potential estimates are scaled up by the maximum tax effort factor for each tax to yield the second set. A simple interpretation of the second set of estimated potentials is that they represent the tax revenues that Kerala can raise if its exploitation of the tax bases were as intensive as in the year when it was at a peak since 197Ø-71 (or 1974-75, as the case may be). Thus, in a sense, Variant B gives the upper limit of potential tax revenue. All the data used are in current prices unless stated otherwise.

The present study covers all the major taxes levied by the Government of Kerala. Additionally, it covers two taxes levied by the local bodies in the State in view of their revenue significance, viz., the entertainment tax and the profession tax.

IV. Specifications

Given below are the revenue to base functions postulated and tested in this study for individual taxes. The choice of the equations finally adopted was guided mainly by their statistical properties.

Land and Agricultural Taxes

Since both land revenue and agricultural income tax depend, or at least may be presumed to depend, on the productivity of land, we adopted SDP in the primary sector as the suitable proxy base for this tax. This was taken as an indicator of productivity because, given the relative constancy of area under cultivation, SDP from primary sector can be taken to reflect productivity. As the relationship appears to be pretty direct, no other variable was considered necessary for inclusion as determinant of the tax or as a proxy for the tax base. Thus, the function tested is

$$LAGTAX = f(SDPP),$$

where LAGTAX = revenue from land and agricultural taxes and SDPP = SDP from the primary sector.

Stamp Duties and Registration Fees

The proximate bases for these taxes are the number and value of various documents or instruments of transfer which attract these levies. However, the extent of evasion with respect to these taxes is generally believed to be very high. The recent provisions in several States regarding independent valuation of properties being sold or transferred, generally by the District Magistrate/Collector, reflects a recognition of the widespread practice of evasion. It was not possible to make even an approximate quantification of the

true tax base in this case. Hence there was no alternative but to look for proxies.

Generally, the value of properties as well as transactions can be expected to have some relationship with the average income level of the households. Further, the trend towards urbanisation has been a major factor underlying the spiraling of property values in urban areas. Considering these, the following function was postulated:

$$SDRF = f(PCSDP, URB),$$

where SDRF = revenue from stamp duties and registration fees, PCSDP = per capita SDP and URB = urbanisation in percentage terms.

State Excise Duties

This is a tax the base of which is quite obviously the consumption of different kinds of liquor, particularly in a State like Kerala where not much alcohol is produced. However, the available data on consumption of different kinds of liquor did not seem to be very dependable. As a result we had to look for more indirect proxies. The function hypothesised is:

$$EXCD = f(PCSDP, POPN),$$

where EXCD = revenue from excise duties and POPN = population.

Sales Tax

Being the most important tax for the State in terms of revenue, the specification of the sales tax function requires a little extra care. This tax has a fairly wide base, comprising consumption as well as production. However, the plethora of exemptions and

concessions makes it extremely difficult to approximate the tax base in a satisfactory way. Also, practically the only source of data on consumption is the National Sample Survey data published from time to time. These are not enough to construct a time series. Such a series can be built up only by making estimates from the available data. In this situation, the estimates can at best only *approximate* the actual base. For converting available data into an usable form which can be regarded as the base for sales tax one has to make several approximations. Thus the cumulative degree of errors can reach high proportions. On these considerations, use of tax base proxies rather than the approximate actual tax base was preferred in the present study.

In general, sales tax revenue from agricultural products forms an insignificant part of the total sales tax revenue. However, in Kerala the situation ought to be somewhat different. Given that the proportion of SDP from industrial sector is considerably lower than that from the agricultural sector, and a large fraction of the agricultural output consists of cash crops, sales tax revenue from agricultural sector cannot be expected to be insignificant (though because of certain limitations in the definition of dealers in CST Act, it is not possible to levy tax on goods sold by producers of agricultural products directly to buyers across the State's boundary).

For reasons stated above, the following function was hypothesised for sales tax:

$$GST = f(SDPAFF, SDPMFG, URB, BANKS),$$

where GST = revenue from general sales tax, SDPAFF = SDP from agriculture, fishing, and forestry, SDPMFG = SDP from manufacturing, and BANKS = number of branches of commercial banks in the State. While the two relevant parts of the SDP were separately specified to

allow for differential effects expected due to large scale exports of agricultural and fishery products, urbanisation and number of bank branches were expected to represent the spread of marketing and monetisation respectively.

Motor Vehicles Tax

The specification for motor vehicles tax was fairly straightforward. The revenue from this tax was specified as a function of the number of different types of motor vehicles on road. Thus, the postulated function was

$$MVT = (GOODS, BUS, TAXI, 2WH, AUTO, OTHER),$$

where MVT = revenue from motor vehicle tax, GOODS = goods vehicles, BUS = stage carriages, TAXI = taxis, 2WH = two-wheelers, AUTO = autorickshaws and OTHER = other motor vehicles.

Electricity Duty

In this case also, the specification was relatively simple as the tax revenue can be taken to be a function of consumption of electricity by different types of consumers. The function hypothesised was

$$ED = (DOM, COMM, INDL, IRR, PUBSER, BULK),$$

where ED = revenue from electricity duty, DOM = domestic consumption, COMM = commercial consumption, INDL = industrial consumption, IRR = consumption for irrigation, PUBSER = consumption for public services like street lighting and water works, and BULK = bulk supply of electricity.

Entertainment Tax

In Kerala entertainment tax is not levied by the State government as the power to levy the tax has been delegated to local authorities. Even so the tax has been included in the study of the State's tax potential as it is a tax which fetches significant amount of revenue in other States.

The obvious base for this tax is the number of cinema halls and/or their seating capacity. Information in this regard was not available in a time series, and therefore it was necessary to fall back on proxy bases. The specified function was the same as that for excise duties:

$$ENTTAX = f(PCSDP, POPN),$$

where ENTTAX denotes total revenue from entertainment tax.

Profession Tax

Since this tax is a direct tax, the tax base may be taken to depend on the SDP arising mainly in the non-primary sector. The specification, therefore, is

$$PROTAX = f(NPSDP),$$

where PROTAX denotes the total revenue from this tax and NPSDP denotes the SDP from non-primary sector.

The data on 'other taxes' showed the collection to be minimal and also erratic. Hence, no regression could be tried in this case. It was thought that the maximum value of the ratio of 'other taxes' to per capita SDP, the most general base, over the sample period could be used as the norm for tax potential calculations.

One important local tax which this study does not go into is property tax, though other major local taxes are dealt with. The reason is the paucity of data on the base. While *a priori* reasoning indicates that the tax base must have grown tremendously in the last fifteen years, there are no data to substantiate or quantify the extent of appreciation. Also, no other variable for which data are available can be a good proxy for the base of this tax.

V. *Forecasts for 1990-91 to 1994-95*

Details of the final equations chosen for the projections are given in the Annexure 1. The sample period for this study is 1970-71 to 1986-87, except for the two local taxes; the sample period for entertainment tax and profession tax is 1974-75 to 1986-87. Several of the equations finally adopted are different from our initial specification. The steps that led to the selection of the final equation in such cases are indicated in the appendix. Once the equations were chosen, the forecasts could be made by putting in the values of the independent variables on the determinants of the revenue from each tax. This is what has been attempted here.

However, for estimating the tax potential for the Eighth Plan period (1990-95) by following the regression method explained in the preceding paragraphs, it is necessary to have an idea of the values the independent variables are likely to take in the projection period. Except for the population figures, no forecast was available for the other variables. In this situation, it was felt that the trend values of the variables in question could be used. For each independent variable, the trend function that fits the data best was adopted. Values of the independent variables so derived are given below along with their implicit growth rates (Table 10).

TABLE 10

Forecast of Independent Variables (Fitted Trend Value)

YEAR	SMCON ('0000 kwh)	OTHER ('0000 kwh)	SDPP (Rs. crore)	SDPAFF (Rs. crore)	SDPMFG (Rs. crore)	NPSDP (Rs. crore)	PCSDP (Rs.)	BANKS (No.)	ALLVEH (No.)	POPN (Lakh)
1990-91	146373	269801	3604	3584	1681	6513	3361	3493	416532	301
1991-92	153809	275598	3936	3913	1892	7297	3683	3623	435342	305
1992-93	161244	281395	4299	4273	2128	8174	4036	3754	454152	309
1993-94	168680	287192	4695	4666	2395	9154	4411	3884	472962	314
1994-95	176116	292989	5128	5095	2694	10250	4836	4014	491772	318
Projected Growth(%)	4.7	2.5	9.2	9.2	12.6	12.0	9.5	3.8	13.3	1.5#
Observed Growth(85-88)	13.6	0.0	6.5	6.6	10.9	12.7	8.3	1.9	14.1	1.5#

Note: (a) Population estimates are from the Department of Economics and Statistics, Government of Kerala.

(b) The growth rates for all variables except population are averages of annual growth rates.

\# Annual compound growth rate.

Using the values of independent variables and putting them in the preferred regression equations with the respective coefficients (the chosen effective rate in the case of `other taxes', which was the rate for the latest year of the sample, viz., 1986-87), projections for the years 1990-95 were made for each major tax for both the variants mentioned above. These are set out in Tables 11.a and 11.b. The total tax revenue projected for the Eighth Plan period in Table 11.a implies a growth of 15.8 per cent per annum. This compares with a growth rate of 16.0 per cent observed during the years 1985-88. Thus the projections ultimately turn out to be in

TABLE 11.a

Tax Potential (Variant A):1990-95

(Rs. Crore)

YEAR	LAGTAX	SDRF	EXCD	SALES TAX GST	SALES TAX CST*	MVT	ED	OTHTX @	ENTTAX	PROTAX	TOTTAX
1990-91	38.65	78.62	168.09	915.26	73.24	88.24	79.74	13.67	26.87	5.40	1487.78
1991-92	42.76	87.12	184.15	1072.65	85.06	100.51	97.56	14.98	31.19	5.68	1721.66
1992-93	47.31	96.45	201.59	1256.75	98.78	114.41	119.37	16.42	36.17	5.95	1993.20
1993-94	52.34	106.33	220.43	1471.87	114.72	130.16	146.05	17.94	42.64	6.22	2308.70
1994-95	57.91	117.56	240.98	1723.30	133.23	148.01	178.70	19.67	49.36	6.49	2675.21
Total	*238.97*	*486.08*	*1015.24*	*6439.83*	*505.03*	*581.33*	*621.42*	*82.68*	*186.23*	*29.74*	*10186.55*
Implicit Growth(%)	*10.6*	*10.6*	*9.4*	*17.1*	*13.9*	*13.8*	*22.35*	*9.5*	*16.4*	*4.7*	*15.8*
ALS(85-88)	10.7	17.8	12.4	14.2	20.2	17.9	22.2	36.7	5.8	18.2	14.1
EER(85-88)	3.7	13.6	19.0	14.0	32.3	12.2	10.6	41.8	9.4#	5.1#	16.0$

* Extrapolated value @ On the basis of 1986-87 ration to PCSDP

Growth rates are averages of annual growth rates. # For 1984-87. $ Without local taxes.

TABLE 11.b

Tax Potential(Variant B):1990-95

(Rs. Crore)

YEAR	LAGTAX	SDRF	EXCD	TSTAX*	MVT	ED	OTHTX@	ENTTAX	PROTAX	TOTTAX
1990-91	52.10	102.05	202.38	1180.70	123.45	145.66	13.67	30.47	8.05	1858.53
1991-92	57.64	113.08	221.72	1382.97	140.61	178.21	14.98	35.37	8.46	2153.04
1992-93	63.77	125.19	242.71	1619.45	160.06	218.05	16.42	41.02	8.87	2495.54
1993-94	70.55	138.02	265.40	1895.68	182.09	266.79	17.94	48.35	9.27	2894.09
1994-95	78.06	152.59	290.14	2218.42	207.07	326.43	19.67	55.97	9.67	3358.02
TOTAL	*322.12*	*630.93*	*1222.35*	*8297.22*	*813.28*	*1136.97*	*82.68*	*212.32*	*44.31*	*12762.18*

* Central Sales Tax potential as in Table 11.a @ As in Table 11.a

Note: Implicit growth rates are the same as in Table 11.a since all values have been scaled up by the same factor.

line with the observed actual growth of tax revenue in the last three years. Given the effort mounted by the State in recent years, growth of 15.8 per cent should be achievable.

As for individual taxes, Table 11.a indicates the implicit growth rate of each along with the growth observed in them during the three year 1985-88. It will be noticed that while the growth implied in the projections in the Table is more or less in alignment in their recent growth, e.g., for the motor vehicles tax, for some the divergence between the implicit growth rate of the projections and that registered in 1985-88 is quite considerable. In the case of some the growth rate implicit in the projections is way below or above the rate observed in the three years ended 1985-88. This divergence is particularly sharp in the case of State excise duties, CST, electricity duty and entertainment tax. For State excise and CST the implicit growth rate falls below the growth noticed in the three years 1985-88, while for electricity duty, the implicit growth is more than double the recently observed growth (22.4 per cent as against 10.6 per cent). This is due primarily to the variation in the growth of the explanatory variable used in the relevant regression equation especially the growth in non-domestic, non-commercial consumption of electricity. In the case of stamp duties and registration fees, as also CST and State excises, the average growth rate recorded during the years 1985-88 appears to have shot up largely as a result of the high figures of revenue reflected in the revised estimates for 1987-88. These are way out of alignment with the past trends and may not be sustainable. Hence it was felt advisable to go by the trend rate of growth underlying the projections derived through the equation ignoring the spurt observed in 1987-88.

It may not be out of place to mention here that the growth rates of the explanatory variables used in making the projection are broadly in alignment with the growth observed in the recent past

(1987-88) except in the case of consumption of electricity for domestic and commercial purposes for which the growth assumed for the projection is 4.7 per cent per annum while the observed growth has been at the rate of 13.6 per cent. With a growth of 4.7 per cent in domestic and commercial consumption of electricity, the growth in electricity duty works for 1990-95 as per our projection works out to 22.3 per cent as against the observed growth of 10.6 per cent. The average growth of electricity duty for all States taken together works out to 22.2 per cent and so it was thought that this average could perhaps be taken as the norm for Kerala too.

The projections given in Variant 11.b may be taken as the "best case" targets. They are however obviously arbitrary and perhaps need not be used for estimating the resources for the Eighth Plan.

TABLE 11.c

Tax Potential of Kerala using Average Annual Growth in Tax Revenue of All States During 1985-88 on 1986-87 Actuals

(Rs. Crore)

YEAR	LAGTAX	SDRF	XXCD	GST	CST	MVT	ED	ENTTAX	PROTAX	OTHTAX	TOTAL	VAR A TOTAL
1990-91	33.64	104.81	187.70	813.21	80.56	103.15	104.29	16.00	8.31	9.02	1460.69	1487.78
1991-92	37.24	123.47	210.97	928.69	96.83	121.61	127.44	16.93	9.82	12.33	1685.33	1721.66
1992-93	41.22	145.45	237.13	1060.56	116.39	143.38	155.73	17.91	11.61	16.86	1946.24	1993.20
1993-94	45.63	171.34	266.53	1211.16	139.90	169.05	190.30	18.95	13.72	23.05	2249.63	2308.70
1994-95	50.51	201.84	299.58	1383.14	168.16	199.31	232.55	20.04	16.22	31.51	2602.86	2675.21
Total	*208.24*	*746.91*	*1201.91*	*5396.76*	*601.84*	*736.50*	*810.31*	*89.83*	*59.68*	*92.77*	*9944.75*	*10186.55*

Table 11.c presents projections (or estimates of potential) of tax revenue for Kerala for 1990-95 by applying the average annual growth of tax revenues for the individual taxes derived from all India averages. It is striking that the projections of total tax

revenue derived by using the all India average growth come fairly close to the figures worked out through the regression approach although there are some differences in the case of individual taxes. The closeness of the projections of aggregate tax revenue in Table 11.a with those presented in Table 11.c would lend strength to the results of the exercises carried out through the regression method.

No attempt is made here to go into the measures which would be required to step up the growth rate of some of the taxes which have not been doing too well judged by their potential. That calls for a more detailed exercise going beyond the focus of this study. However, a few observations are made below indicating possible lines on which measures could be taken to improve the yield of some of the taxes.

V.a Sales Tax

Sales tax, the most important source of own tax revenue of the State, recorded a growth rate of 15.5 per cent in the Sixth Plan as compared to 21.17 per cent in Andhra Pradesh, 17.9 per cent in Karanataka, and 15.21 per cent in Tamil Nadu. The growth rate of sales tax had decelerated by about 30 per cent in Kerala during the Sixth Plan. In 1985-86, the revenue from sales tax had registered a better growth (21.4 per cent) but again slumped to 13.3 per cent in 1986-87. There has been a pick up in the growth thereafter but action is needed to identify the factors which weakened the growth earlier if the improvement is to be sustained.

Taking 174 commodities which account for 90 per cent of the sales tax collection in the mid 1970s, whereas their prices went up by 95 per cent between 1980-81 and 1985-86, revenue from sales tax increased by only 47 per cent. The improvement in the collection of sales tax in 1985-86 would appear to be attributable to a great extent to the growth in collections from tax on petroleum products.

A commodity-wise analysis of tax revenue growth would help to locate the source of weakness in the growth of sales tax revenue. Unfortunately, comparable commodity-wise statistics of tax revenue are not available prior to 1985-86. It is suggested that such analysis be undertaken on a regular basis by the Sales Tax Department. Meanwhile a few measures may be taken towards improvement of the tax structure and revenue yield.

i) Structure of the tax

At present sales tax is levied in the State in the form of

a) general sales tax;
b) Additional Sales Tax at the rate of 2Ø per cent of the CST;
c) Surcharge @ 5 per cent on turnover between Rs 1 lakh and Rs 5 lakh and 8 per cent on turnover exceeding Rs 5 lakh; and
d) a turnover tax @ Ø.5 per cent on turnover which does not suffer sales tax in the case of dealers having turnover of more than Rs 5Ø lakh.

This is a complex structure and calls for simplification. A first step towards simplification would be to merge the additional sales tax in general sales tax with suitable adjustments upward or downward to fit the rates under a few broad categories of rates.

At present the 1 per cent rate applies only to foodgrains. With additional sales tax the effective rates come to 1.2 per cent. In the adjustment recommended here to keep additional sales tax in GST this rate may be fixed at 2 per cent. However, foodgrains sold through the public

distribution system should continue to be exempted from sales tax.

The rates of surcharge may be revised on the following lines:

For turnover upto Rs 1 lakh	Exempt.
For turnover below Rs 2 lakh and Rs 1Ø lakh	5 per cent
For turnover exceeding Rs 1Ø lakh	1Ø per cent

This change should lead to some revenue gain despite a rise in the exemption limit.

ii) Tax rates

The rates of sales tax in Kerala in general are relatively high as compared to the rates prevailing in neighbouring States. In fact an important factor which seems to have affected the sales tax revenue of Kerala is the undercutting of rates by neighbouring States and Union Territories. The rate war has forced Kerala to bring down the rate of tax on motor vehicles to 4 per cent. So long as the rates in the neighbouring areas continue to be relatively low, there seems to be no alternative but to bring the rates at par with that in the contiguous States. A clear example is the tax on tea. Because of lower rates at Coimbatore, tea which was earlier auctioned at Cochin was reported to be going to auction centres outside the State as a result of which revenue from tea came down in 1986-87 as compared to 1985-86. It is suggested that the rate of tax on tea sold in auction be brought down to 4 per cent. Similarly, the rate particularly in neighbouring areas for commodities in which trade diversion is taking place on a large scale may be examined and suitable revision made in

these rates of sales tax in Kerala to prevent revenue leakage.

There are a few items on which the State does not levy any sales tax as they are liable to additional excise duty in lieu of sales tax. However, in some cases (e.g., chewing tobacco) no additional excise duty is levied. This can be brought under sales tax. Similarly, handloom fabrics are not subject to either additional excise duty or sales tax. There is no reason why high value handloom fabrics (especially silk) should be exempt totally from tax. Handloom silk fabrics may be brought under the first point sales tax.

In some agricultural commodities especially rubber and rubber products, there seems to be considerable leakage of revenue. Taxation of rubber and rubber products runs into difficulty because of the practice of consignment transfers and non-inclusion of growers of agricultural commodities in the definition of "dealer" in the Central Sales Tax Act. As recommended by the Gulati Committee, in the absence of a suitable modification of the CST Act, to enable taxation of consignment sales and transfer on growers' accounts, the entire rubber produced in the State should be canalised through a State agency modelled on the Coffee Board by an appropriate legislation.

One item on which the rate of sales tax can be raised without any difficulty is Titanium dioxide (Anabase). The rate of tax on this may be raised from 1Ø to 15 per cent. While liquor is subjected to tax, no sales tax is levied on toddy. It is argued that a tax on toddy would discourage bidders from coming forward to bid for toddy shops if sales

tax is levied. This argument is not very convincing. A low rate of 6 per cent may be levied on toddy.

iii) Taxation of Inputs

Inputs used by registered manufacturers are taxed at present at 2 per cent (effectively 2.4 per cent). There is a case for raising the input tax to 4 per cent. In any case, concessional taxation of inputs is liable to misuse, as there is a temptation to buy inputs at a low rate and sell a part or whole of the quantity so purchased without using them in production. To guard against misuse of this concession, it would be helpful to require the registered manufacturers to pay tax at the normal rates on inputs and claim set off for the tax paid in excess of the concessional rates (of 2 per cent or 4 per cent, if the rate is raised) against the tax payable on the final product so that no relief is available if the produce does not bear any tax in the State.

iv) Exemptions and Concessions

Small scale industries enjoy tax exemption for five years or upto 90 per cent of the capital investment whichever is earlier. It appears that this benefit is being misused on a large scale as SSI units are set up spuriously and closed down in 5 years to take advantage of the exemption.

To encourage industrialisation, it is suggested that a 50 per cent concession for the rate of tax normally applicable may be given to all *new* industrial units set up in the State for five years. For SSI units the concession may be 100 per cent but in all cases of such concession, the

new unit should not be set up with plant or machinery already used in any other unit in the State. In other words, the concession on exemption should be extended only to genuine *new* units and not the ones which are formed by splitting up existing units.

Exemption is allowed for sales tax in the case of several communities and also for specified groups of purchasers. These should be reviewed. As an immediate measure, the total exemption given in respect of sales made to cooperative societies, charitable institutions and defence establishments for their staff (e.g., naval personnel) may be withdrawn.

For a lasting improvement of sales tax revenue, it is necessary to revamp the administration and enforcement thoroughly. In the last ten years or so, two panels examined the system and admiistration of sales tax in the State and made a number of recommendations most of which seem to remain unimplemented. A review of the action taken on them and reasons for not accepting the recommendations may be undertaken.

Meanwhile, to guard against evasion by giving false declaration by intermediate dealers in the case of commodities subject to single point taxation, it is suggested that the declaration form should be security printed. Secondly, registered dealers may be supplied with a limited number of declaration forms at a time against adequate security. In the absence of relevant data, it is difficult to estimate the likely revenue impact of the measures suggested here.

However, it may not be unrealistic to expect a net revenue gain of Rs 15 to 2Ø crore as a result of the various measures proposed above.

v) Entry Tax

Three important consumer items on which no sales tax can be levied even if the State Government wanted to are textiles, tobacco and sugar. This is because of the tax rental arrangement arrived at between the States and the Centre whereby these three groups of commodities are subjected to additional excise duty. There is a widespread feeling that in Kerala the consumption of these commodities has increased enormously in recent years because of the inflow of Gulf money. However, there can be no objection to levying an entry tax on these commodities. On a rough estimate, such a tax should yield Rs 1Ø crore a year. the implementation of the tax need not require setting up of checkposts around cities and towns although it will call for notifying all municipal towns as areas into which entry of the specified commodities will entail liability to tax. The assessment and collection will be entirely account based. Such a tax or its other version, viz., octroi is in operation in several States, e.g., as Karnataka, Madhya Pradesh, West Bengal, Maharashtra and Gujarat. A part or whole of the tax may be passed on to the municipalities. Ultimately even that would be beneficial for the resource position of the State Government.

V.b Entertainment Tax

Available information suggests that the total revenue from this tax in Kerala at present is in the region of Rs 12 crore. In Andhra Pradesh the tax yields Rs 45 crore, in

Karnataka Rs 40.3 crore and in Tamil Nadu Rs 55 crore (as of 1985-86). It appears that on an average Rs 250 is being collected per cinema/theatre hall per day (or Rs 80 per show) in Kerala. This is clearly on the low side. Evidently, the potential of this tax in Kerala is not being tapped properly.

The collection of this tax may be taken over by the State Government and enforced through the District Collectors.

V.c Profession Tax

Article 276 of the Constitution empowers the States to levy a tax on professions, trades, callings and employments, usually referred to as "Profession Tax". There is a ceiling upto which the tax can be imposed. This ceiling was Rs 250 so long but has now been raised to Rs 2500. The tax is imposed in several States including Kerala but the collections are significant only in Maharashtra, West Bengal, Gujarat, Karnataka and Madhya Pradesh.

In Kerala the tax is collected by Panchayats and municipalities. While in the Panchayats the collection, as reported by the Panchayat Finance Commission, were of the order of Rs 3 crore in 1983-84, in the municipalities, the revenue from the tax was no more than Rs 74 lakh in 1986-87. It is recommended that the responsibility for collecting the tax in the municipalities be taken over by the State Government and the tax be administered by the Sales Tax department (as in West Bengal and Maharashtra). In Maharashtra, the collection from Profession Tax went up from less than a crore in 1974-75, when it was administered by local bodies, to over Rs 80 crore in 1986-87. In 1975 the

administration of the tax was taken over by the State Government.

In Kerala, from the Economic Census of 1980 it would appear that there are about 8.6 lakh persons usually employed in urban enterprises. This number at present may be put at 10 lakh. Assuming that 50 per cent of this number would be liable to pay profession tax of Rs 100 on average, the collection for the urban areas should be at least Rs 5 crore. In the rural areas too, the collection should be at least Rs 5 crore (with over 6.5 lakh enterprises and nearly 20 lakh persons employed). However, the responsibility for collection in rural areas may continue with the Panchayats.

The structure of the tax in Kerala at present as given in the Report of the Panchayat Finance Commission seems to be a little complex with a large number of slabs. It is suggested that the tax be levied on all whose aggregate income exceeds Rs 600 per month and at the following rate:

For those with aggregate income less than Rs 600 p.m.	-	Nil
Income between Rs 600 and Rs 1000	-	Rs 10 p.m.
Income between Rs 1000 and Rs 2000	-	Rs 15 p.m.
Income between Rs 2000 per month	-	Rs 20 p.m.

The tax should be payable by salaried persons as also all self-employeds. It should also apply to all professional consultants, estate agents, brokers, building constructors, occupiers of factory or business premises or establishments, holders of permits for transport vehicles, cooperative societies, partnership firms, beauty parlours and video parlours and any owner or occupier of shop premises. Information regarding these may be obtained from the licensing authorities and professional bodies. Issue of

permits for any trade or import etc. may be made conditional on production of a no objection certificate from the Profession Tax collecting authority. Persons and establishments not paying any tax may be made to contribute something to the exchequer in this way. While in the projections made in Table 11.a the revenue expected from the profession tax has been put at about Rs 30 crore or Rs 6 crore per annum on an average with a little effort it should be possible to double the yield in the coming years.

VI. Non-tax Revenue

Although as indicated above there might be scope for raising additional resources through taxation, it has to be recognised that the level of taxation in Kerala is already quite high and so the scope for raising more resources through taxation may not be large enough to meet the requirements of the Plan. Attention should therefore be paid also to non-tax revenue sources which offer considerable scope for resource mobilisation.

As noted at the outset, growth of non-tax revenues in Kerala has been extremely tardy and their share in its own tax revenue of the State has come down from 31 per cent in 1974-75 to a mere 13 per cent at present. During the years 1981-85, non-tax revenue of the State (excluding Central grants) recorded a negative growth. There has been some positive growth thereafter but the growth rate of revenue from non-tax source still remains among the lowest (vide Table 8).

If Kerala could achieve a growth rate in its non-tax revenue equal to the all States' average the non-tax revenue

should help to augment the State's resources significantly. Projections based on all States' average growth are given in Table 12.

TABLE 12
Potential Own Non-tax Revenue of Kerala
(Rs. Crore)

YEAR	Method 1	Method 2
1990-91	257.64	67.53
1991-92	288.50	70.20
1992-93	323.06	72.98
1993-94	361.76	75.87
1994-95	405.09	78.87
Growth(%)	11.98#	3.96#

Method 1: On the basis of All-States growth (1985-88). Method 2: On the basis of the State's own growth rate observed during 1985-88.
Average of annual growth rates(1985-88).

The main components of non-tax revenue are: interest receipts, dividends and profits, and receipts from various services provided by the State like health, education and economic services. The most important components of non-tax revenue in Kerala are interest receipts, economic services and general services (Table 13).

Growth of revenue from non-tax sources has suffered because of several factors. An important factor is the fall in revenue from forests, consequent on the policy of conservation. However, there has been no growth of revenue from irrigation and civil works also for no good reason. Contribution of these as also dividends and profits from

TABLE 13

Composition of Non-tax Revenue - 1986-87

(Rs Crore)

S.NO TAXES/STATES	APR	BHR	GUJ	HAR	KAR	KER	MAH	MPR	ORS	PUN	RAJ	TND	UPR	WBN
A. Non-Tax Revenue	839.63	973.64	772.30	467.11	674.41	349.44	1593.68	925.98	475.99	342.23	782.80	537.18	1215.43	612.99
B. Own Non-Tax Revenue*	496.43	534.42	557.03	296.62	415.36	163.86	1117.77	525.11	158.30	201.64	297.51	252.96	502.11	165.84
(% to A)	48.41	54.89	72.13	63.50	61.59	46.89	70.14	56.71	33.26	58.92	38.01	47.09	41.31	27.05
a) Interest Receipts	191.36	5.12	241.25	80.71	172.37	35.49	340.75	80.36	12.48	60.72	84.92	74.44	213.86	47.97
(% to A)	22.79	0.53	31.24	17.28	25.56	10.16	21.38	8.68	2.62	17.74	10.85	13.86	17.60	7.83
b) Dividends and Profits	1.26	0.04	9.18	0.33	0.91	0.86	0.66	0.64	0.21	0.99	0.92	2.26	3.64	0.55
(% to A)	0.15	0.00	1.19	0.07	0.13	0.25	0.04	0.07	0.04	0.29	0.12	0.42	0.30	0.09
c) General Services	28.96	12.66	31.64	47.99	56.14	27.97	115.60	20.30	33.79	45.18	79.15	39.79	77.93	22.81
(% to A)	3.45	1.30	4.10	10.27	8.32	8.00	7.25	2.19	7.10	13.20	10.11	7.41	6.41	3.72
d) Social Services	32.20	19.93	63.73	15.04	25.65	27.08	66.07	26.57	20.30	15.76	43.37	41.91	31.73	29.93
(% to A)	3.84	2.05	8.25	3.22	3.80	7.75	4.15	2.87	4.26	4.61	5.54	7.80	2.61	4.88
e) Economic Services	152.65	496.67	211.23	152.55	160.29	72.46	594.69	397.24	91.52	78.99	89.15	94.58	174.93	64.58
(% to A)	18.18	51.01	27.35	32.66	23.77	20.74	37.32	42.90	19.23	23.08	11.39	17.60	14.39	10.54
i.Forestry and Wild Life	55.72	45.97	16.42	14.83	53.14	48.25	153.30	276.95	49.94	4.75	7.95	30.04	79.89	20.43
(% to A)	6.64	4.72	2.13	3.17	7.88	13.81	9.62	29.91	10.49	1.39	1.02	5.59	6.57	3.33
ii.Irrigation Projects	3.42	10.15	14.70	13.65	8.09	1.41	16.47	12.42	4.43	12.54	14.35	1.49	44.88	1.00
(% to A)	0.41	1.04	1.90	2.92	1.20	0.40	1.03	1.34	0.93	3.66	1.83	0.28	3.69	0.16
iii.Minor Irrigation	3.78	1.95	2.99	0.00	-0.15	0.58	4.38	3.46	2.76	0.32	6.27	2.49	6.10	3.29
(% to A)	0.45	0.20	0.39	0.00	-0.02	0.17	0.27	0.37	0.58	0.09	0.80	0.46	0.50	0.54
iv.Road Transport	0.00	0.00	0.09	107.95	0.00	0.00	0.01	0.00	0.07	51.36	0.00	0.01	0.00	0.06
(% to A)	0.00	0.00	0.01	23.11	0.00	0.00	0.00	0.00	0.01	15.01	0.00	0.00	0.00	0.01

* Total non-tax revenue minus grants received.

Source: NIPFP Database; Original Source: Reserve Bank of India Bulletin, various issues.

public enterprises is almost negligible. The fees and rates prescribed and the collections from irrigation works, civil works and roads and water transport seem to have remained unchanged for many years. These rates may be increased gradually to recover at least a part of the lost ground.

A major item of non-tax revenue should be dividend from commercial and other undertakings. Despite large investments made over the years, dividend from these undertakings was only Rs 86 lakh in 1986-87. Steps are needed on a wide front to improve the return on investment in State enterprises. However, this is a matter which calls for a study in much greater depth than could be undertaken in this review.

A comparison of the structure of non-tax revenue in Kerala with that of its neighbouring States reveals that perhaps the most important single factor dampening the yield of non-tax revenue in Kerala is the gap between interest paid on government's borrowings and interest receipts. In 1986-87, proportion of receipts to interest paid is as low as 11 per cent in Kerala as compared to 74 per cent in Karnataka, 65 per cent in Andhra Pradesh and 42 per cent in Tamil Nadu (vide Appendix Tables A.2.5.a to A.2.5.d). Even allowing for the possibility of variation in the coverage of the items in question as between different States, it is evident that there is considerable scope for resource mobilisation simply by reducing the spread between interest receipts and interest payments. Attention was drawn to this scope in the NIPFP study of 1987. It is not known whether any action towards that end was taken. Two other areas where some action could be taken to raise resources through non-tax revenue sources are health and education.

Both in health and in education, the State Government is providing very useful services and expenditure under these heads account for a large proportion of the total revenue expenditure of the Government. Fees charged for these services are in most cases either nil or nominal. It is not as if these services are restricted only to the poor and the indigent. There does not seem to be good justification for providing these services practically for those who can afford to pay for them.

As per budget estimates for 1987-88, expenditure under the head "Medical, Public Health and Family Welfare", comes to Rs 173 crores whereas the receipts are put at Rs 7 crores constituting less than 4 per cent. Fees provided for medical services at public hospitals and health laboratories are nominal. For instance, for dental care like tooth extraction the charge is 50 paise per tooth. For filling the rate is Rs 2 for one surface and Rs 4 for more than one surface. The rates for these services in private institutions are many times higher (vide Table 14). An upward revision of the rates is long overdue. The total number of patients treated in OPDs is around 2.7 crore. No fee is payable by OPD patients. A fee of Rs 2 per patient would fetch Rs 3 crore, even if the fee is charged only for initial registration.

The patients are required to pay some charges depending on the income level of the patients. It is believed that the income test is not enforced properly. It is suggested that the test should be applied in all cases with stringent penalties for false declaration. A little toning up with slight upward revision of the fees in public hospitals and health laboratories should bring in an additional revenue of

TABLE 14

Some Medical Services - Fees in Kerala
Comparison of Rates in Dental College/Hospital and Private Institutions

	Item	Rate in Dental College	Private Institutions
1.	Full denture	Rs 50	Rs 600 to Rs 800
2.	Mexillo facial (Prosthetics)	Rs 5	Rs 50
3.	Root Canal Treatment	Rs 5	Rs 300
4.	Jacket Crown	Rs 6	Rs 100 and above
5.	Peridontial treatment (Gum treatment) Full mouth	Rs 20	Rs 1000

Rs 10 crore. Consideration may be given to setting up clinics where patients will have to pay for the services fully ("Paying Clinics") and a part of the surplus may be given to the doctors.

Similarly, in education, the State Government is spending over Rs 500 crore annually (as per 1987-88 B.E.) whereas the receipts come to only Rs 20 crore. As of 1985-86 the student strength in schools (primary and secondary) was 57 lakh. Students in upper primary and high schools numbered about 30 lakh. School education in Kerala is now completely free. The State Government is bearing the burden of paying for teachers' salary and maintenance grants even in private (aided) schools. There is no reason why some

contribution from students should not be taken whose parents do not come within the category of "poor" (i.e., income of less than Rs 7000 per annum). Leaving aside children in lower primary schools, a contribution of Rs 3 per month from students in upper primary and high schools would augment the revenue of the State by Rs 9 to 10 crore. Even if some allowance is made for students from poor families, it should be possible to raise about Rs 5 to 6 crore with such contribution.

Fees prescribed for colleges and universities are also very low. In colleges the fees are Rs 15 or so per month. Many of these rates were fixed 25-30 years ago. These can be raised to at least Rs 25 in the first instance. Fees for engineering colleges and universities also can be raised. About Rs 1 to 2 crore of additional revenue can be raised in this way.

In sum, Kerala should be able to raise substantial resources for the Eighth Plan through tax and non-tax measures. On the tax side, the projections made should materialise if only the existing overall level of taxation is maintained. That is to say, no *additional* mobilisation effort would be needed; only the current trend has to be maintained. On the non-tax side, however, additional resources can be mobilised to the tune of Rs 320 crore if measures are taken to bridge the gaps between the costs of public services and the fees charged from the beneficiaries. The study shows that there is considerable scope for such measures.

APPENDIX

It may be recalled that no functional form was specified above for the postulated functions for the tax potential estimates. These were determined entirely on the basis of statistical tests. For each function, four standard functional forms - linear, log-linear, and two semilog - were tried.

In the case of stamp duties and registration fees, urbanisation proved to be a superfluous variable in the statistical sense and hence the final equation does not contain this variable.

In the case of sales tax too urbanisation proved to be redundant, though due to a different reason. It was highly correlated with other explanatory variables and hence its effect was captured by the other variables. Hence it was dropped in the final equation.

The case of motor vehicle tax was a somewhat peculiar one as all the explanatory variables were found to be highly correlated to each other and hence there was a severe multicollinearity problem. An attempt was made to aggregate the different types of vehicles to some extent in order to have fewer categories and get over the problem in this fashion, but the difficulty persisted. Finally, the aggregate number of vehicles on road was used as the explanatory variable and that eased the problem. There was not much loss of information, as the data show an almost parallel rise in the number of all types of vehicles. However, the problem of autocorrelation was confirmed by statistical tests and hence a correction for it was called

for. This was achieved by reestimating the equation using the inverse interpolation method.

TABLE A.I

Tax Effort of Kerala: 1984-87

(Rs. Crore)

Taxes	Estimated (Variant A)	Estimated (Variant B)	Actual	Effort(%) (Var A)	Effort(%) (Var B)
LAGTAX	71.80	96.84	74.08	103.17	76.50
SDRF	143.12	185.82	143.73	100.43	77.35
EXCD	316.86	381.57#	321.97	101.61	84.38
TST	1297.57	1549.37	1350.33	104.07	87.15
MVT	158.39	221.65	141.00	89.02	63.61
ED	120.97	221.00	129.43	106.99	58.57
ENTTAX	36.60	41.49	35.69	97.52	86.01
PROTAX	12.20	18.17	12.00	98.35	66.03
OTHTAX	7.22	7.22	5.50	76.23	76.23
TOTTAX	2164.73	2723.12	2213.73	102.26	81.29

A similar problem arose in the case of electricity duty. The detailed specification did not pass the statistical tests, and some of the coefficients turned out to be insignificant or with the 'wrong' mathematical sign. In this case too, an increasing degree of aggregation was tried to get around the problem until a statistically satisfactory set of results were obtained.

The specifications for the other taxes went through to the final results without any change. Estimated tax potential (both variants) and the percentage utilisation of

the same in the years 1984-85 to 1986-87 - the last three years for which data were available - is set out in the Table A.1.

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ANNEXURE 1

Land and Agricultural Taxation - Regression Results
Ordinary Least Squares Estimation

Dependent variable is LLAGTAX
17 observations used for estimation from 1970-71 to 1986-87

Regressor	Coefficient	Standard Error	T-Ratio
C	-5.7300	0.7302	-7.8470
LSDPP	1.1459	0.1022	11.2119

R-Squared	0.8934	F-statistic F(1, 15)	125.7072
R-Bar-Squared	0.8863	S.E. of Regression	0.1854
Residual Sum of Squares	0.5158	Mean of Dependent Variable	2.4416
S.D. of Dependent Variable	0.5499	Maximum of Log-likelihood	5.5880
DW-statistic	1.4020		

The prefix L to a variable name indicates log values of the variable

Diagnostic Tests

Test Statistics	LM Version	F Version
A:Serial Correlation	CHI-SQ(1) = 1.2393	F(1, 14) = 1.0722
B:Functional Form	CHI-SQ(1) = 0.2272	F(1, 14) = 0.1897
C:Normality	CHI-SQ(2) = 0.6444	Not applicable
D:Heteroscedasticity	CHI-SQ(1) = 0.7062	F(1, 15) = 0.6502

A:Lagrange multiplier test of residual serial correlation
B:Ramsey's RESET test using the square of the fitted values
C:Based on a test of skewness and kurtosis of residuals
D:Based on the regression of squared residuals on squared fitted values

Stamp Duties and Registration Fees - Regression Results
Ordinary Least Squares Estimation

Dependent variable is SDRF
17 observations used for estimation from 1970-71 to 1986-87

Regressor	Coefficient	Standard Error	T-Ratio
C	-10.1097	0.9715	-10.4063
PCSDP	0.0264	0.0006979	37.8656

R-Squared	0.9896	F-statistic F(1, 15)	1433.8
R-Bar-Squared	0.9890	S.E. of Regression	1.5565
Residual Sum of Squares	36.3402	Mean of Dependent Variable	23.7859
S.D. of Dependent Variable	14.8113	Maximum of Log-likelihood	-30.5795
DW-statistic	1.1807		

Diagnostic Tests

Test Statistics	LM Version	F Version
A:Serial Correlation	CHI-SQ(1) = 2.1339	F(1, 14) = 2.0095
B:Functional Form	CHI-SQ(1) = 1.3834	F(1, 14) = 1.2460
C:Normality	CHI-SQ(2) = 1.1687	Not applicable
D:Heteroscedasticity	CHI-SQ(1) = 0.3439	F(1, 15) = 0.3098

A:Lagrange multiplier test of residual serial correlation
B:Ramsey's RESET test using the square of the fitted values
C:Based on a test of skewness and kurtosis of residuals
D:Based on the regression of squared residuals on squared fitted values

State Excise Duties - Regression Results
Ordinary Least Squares Estimation

Dependent variable is EXCD
17 observations used for estimation from 1970-71 to 1986-87

Regressor	Coefficient	Standard Error	T-Ratio
C	-132.6397	75.0998	-1.7662
PCSDP	0.0435	0.0151	2.8760
POPN	0.5134	0.3813	1.3465

R-Squared	0.9738	F-statistic F(2, 14)	259.7560
R-Bar-Squared	0.9700	S.E. of Regression	6.2284
Residual Sum of Squares	543.0933	Mean of Dependent Variable	49.8441
S.D. of Dependent Variable	35.9654	Maximum of Log-likelihood	-53.5665
DW-statistic	1.2351		

Diagnostic Tests

Test Statistics	LM Version	F Version
A:Serial Correlation	CHI-SQ(1) = 1.8706	F(1, 13) = 1.6074
B:Functional Form	CHI-SQ(1) = 2.9419	F(1, 13) = 2.7205
C:Normality	CHI-SQ(2) = 0.6435	Not applicable
D:Heteroscedasticity	CHI-SQ(1) = 2.0730	F(1, 15) = 2.0831

A:Lagrange multiplier test of residual serial correlation
B:Ramsey's RESET test using the square of the fitted values
C:Based on a test of skewness and kurtosis of residuals
D:Based on the regression of squared residuals on squared fitted values

Sales Tax - Regression Results

Ordinary Least Squares Estimation

Dependent variable is LGST
17 observations used for estimation from 1970-71 to 1986-87

Regressor	Coefficient	Standard Error	T-Ratio
C	-4.9848	.9415	-5.2944
LSDPAFF	.0935	.2263	.4131
LSDPMFG	1.1934	.2140	5.5765
LBANKS	.2666	.1756	1.5181

R-Squared	0.9932	F-statistic F(3, 13)	632.4681
R-Bar-Squared	0.9916	S.E. of Regression	0.0786
Residual Sum of Squares	0.0802	Mean of Dependent Variable	4.8555
S.D. of Dependent Variable	0.8584	Maximum of Log-likelihood	21.4058
DW-statistic	1.3069		

The prefix L to a variable name indicates log values of the variable

Diagnostic Tests

Test Statistics	LM Version	F Version
A:Serial Correlation	CHI-SQ(1) = 1.6116	F(1, 12) = 1.2567
B:Functional Form	CHI-SQ(1) = 2.0909	F(1, 12) = 1.6829
C:Normality	CHI-SQ(2) = 1.0581	Not applicable
D:Heteroscedasticity	CHI-SQ(1) = 1.3234	F(1, 15) = 1.2663

A:Lagrange multiplier test of residual serial correlation
B:Ramsey's RESET test using the square of the fitted values
C:Based on a test of skewness and kurtosis of residuals
D:Based on the regression of squared residuals on squared fitted values

Motor Vehicle Tax - Regression Results
Ordinary Least Squares Estimation

Dependent variable is MVT
17 observations used for estimation from 1970-71 to 1986-87

Regressor	Coefficient	Standard Error	T-Ratio
C	-3.5758	1.4992	-2.3851
ALLVEH	0.0001341	0.00000070	19.1849

R-Squared	0.9608	F-statistic F(1, 15)	368.0611
R-Bar-Squared	0.9582	S.E. of Regression	2.8208
Residual Sum of Squares	119.3537	Mean of Dependent Variable	22.0176
S.D. of Dependent Variable	13.8021	Maximum of Log-likelihood	-40.6874
DW-statistic	0.6919		

ALLVEH: Total number of motor vehicles on road

Diagnostic Tests

Test Statistics	LM Version	F Version
A:Serial Correlation	CHI-SQ(1) = 7.2326	F(1, 14) = 10.3668
B:Functional Form	CHI-SQ(1) = 1.8713	F(1, 14) = 1.7317
C:Normality	CHI-SQ(2) = 0.7039	Not applicable
D:Heteroscedasticity	CHI-SQ(1) = 0.3480	F(1, 15) = 0.3135

A:Lagrange multiplier test of residual serial correlation
B:Ramsey's RESET test using the square of the fitted values
C:Based on a test of skewness and kurtosis of residuals
D:Based on the regression of squared residuals on squared fitted values

Motor Vehicle Tax - Regression Results (Contd.)

Exact AR(1) Inverse Interpolation Method (Converged after 6 iterations)

Dependent variable is MVT
17 observations used for estimation from 1970-71 to 1986-87

Regressor	Coefficient	Standard Error	T-Ratio
C	-3.8984	2.4910	-1.5650
ALLVEH	.0001361	.00000106	12.8507

R-Squared	0.9774	F-statistic F(2, 14)	303.3267
R-Bar-Squared	0.9742	S.E. of Regression	2.2161
Residual Sum of Squares	68.7530	Mean of Dependent Variable	22.0176
S.D. of Dependent Variable	13.8021	Maximum of Log-likelihood	-36.2442
DW-statistic	1.1085		

ALLVEH: Total number of motor vehicles on road

Parameters of the Autoregressive Error Specification

U= 0.6226*U(- 1)+V
(3.2801)

T-ratio(s) based on asymptotic standard errors in brackets
Log-likelihood ratio test of AR(1) relative to OLS CHI-SQ(1): 8.8864

Electricity Duty - Regression Results

Ordinary Least Squares Estimation

Dependent variable is LED

17 observations used for estimation from 1970-71 to 1986-87

Regressor	Coefficient	Standard Error	T-Ratio
C	-Ø.7391	Ø.8729	-Ø.8467
SMCON	.ØØØØ214	.ØØØØØ43	4.9738
OTHER	.ØØØØØ74	.ØØØØØ54	1.3615

R-Squared	Ø.9335	F-statistic F(2, 14)	98.3393
R-Bar-Squared	Ø.9241	S.E. of Regression	Ø.3Ø21
Residual Sum of Squares	1.2781	Mean of Dependent Variable	1.9579
S.D. of Dependent Variable	1.Ø964	Maximum of Log-likelihood	-2.1253
DW-statistic	1.62Ø8		

The prefix L to a variable name indicates log values of the variable
SMCON: Domestic plus commercial consumption of electricity
OTHER: All other types of consumption of electricity

Diagnostic Tests

Test Statistics	LM Version	F Version
A:Serial Correlation	CHI-SQ(1) = Ø.2445	F(1, 13) = Ø.1897
B:Functional Form	CHI-SQ(1) = 2.3393	F(1, 13) = 2.Ø743
C:Normality	CHI-SQ(2) = Ø.25Ø8	Not applicable
D:Heteroscedasticity	CHI-SQ(1) = Ø.Ø154	F(1, 15) = Ø.Ø136

A:Lagrange multiplier test of residual serial correlation
B:Ramsey's RESET test using the square of the fitted values
C:Based on a test of skewness and kurtosis of residuals
D:Based on the regression of squared residuals on squared fitted values

Entertainment Taxes - Regression Results
Ordinary Least Squares Estimation

Dependent variable is LENTTAX
13 observations used for estimation from 1974-75 to 1986-87

Regressor	Coefficient	Standard Error	T-Ratio
C	-33.1381	10.4200	-3.1802
LPCSDP	0.7465	0.5452	1.3691
LPOPN	6.1279	2.5860	2.3697

R-Squared	0.9886	F-statistic F(2, 10)	432.3599
R-Bar-Squared	0.9863	S.E. of Regression	0.0787
Residual Sum of Squares	0.0619	Mean of Dependent Variable	6.2193
S.D. of Dependent Variable	0.6717	Maximum of Log-likelihood	16.3117
DW-statistic	1.5869		

The prefix L to a variable name indicates log values of the variable

Diagnostic Tests

Test Statistics	LM Version	F Version
A:Serial Correlation	CHI-SQ(1) = 0.1113	F(1, 9) = 0.0777
B:Functional Form	CHI-SQ(1) = 2.4944	F(1, 9) = 2.1369
C:Normality	CHI-SQ(2) = 0.5612	Not applicable
D:Heteroscedasticity	CHI-SQ(1) = 0.0256	F(1, 11) = 0.0217

A:Lagrange multiplier test of residual serial correlation
B:Ramsey's RESET test using the square of the fitted values
C:Based on a test of skewness and kurtosis of residuals
D:Based on the regression of squared residuals on squared fitted values

Profession Tax - Regression Results
Ordinary Least Squares Estimation

Dependent variable is PROTAX
13 observations used for estimation from 1974-75 to 1986-87

Regressor	Coefficient	Standard Error	T-Ratio
C	-1554.2	82.2908	-18.8861
LNPSIP	238.5288	10.7662	22.1553

R-Squared	0.9781	F-statistic F(1, 11)	490.8570
R-Bar-Squared	0.9761	S.E. of Regression	16.6356
Residual Sum of Squares	3044.2	Mean of Dependent Variable	266.1546
S.D. of Dependent Variable	107.5819	Maximum of Log-likelihood	-53.9105
DW-statistic	2.2090		

The prefix L to a variable name indicates log values of the variable

Diagnostic Tests

Test Statistics	LM Version	F Version
A:Serial Correlation	CHI-SQ(1) = 0.3682	F(1, 10) = 0.2915
B:Functional Form	CHI-SQ(1) = 0.5390	F(1, 10) = 0.4325
C:Normality	CHI-SQ(2) = 1.4444	Not applicable
D:Heteroscedasticity	CHI-SQ(1) = 2.9279	F(1, 11) = 3.1976

A:Lagrange multiplier test of residual serial correlation
B:Ramsey's RESET test using the square of the fitted values
C:Based on a test of skewness and kurtosis of residuals
D:Based on the regression of squared residuals on squared fitted values

ANNEXURE 2

TABLE A.2.1

Revenue from Major Taxes Levied by Local Bodies in Kerala

(Rs. Lakh)

Year	Property Tax				Profession Tax				Entertainment Tax			
	Municipal	Corpn.	Panchayat	Total	Municipal	Corpn.	Panchayat	Total	Municipal	Corpn.	Panchayat	Total
1974-75	138.21	95.23	168.41	401.85	22.69	9.04	61.34(est)	93.07	65.57	34.48	78.20	178.25
1975-76	169.62	103.63	182.16	455.41	36.34	9.54	118.43	164.31	82.36	39.02	81.14	202.52
1976-77	251.90	114.69	176.89	543.48	36.58	10.32	109.72(est)	156.62	119.72	43.78	125.24	288.74
1977-78	155.96	121.26	182.54	459.76	33.50	10.19	119.24	162.93	105.97	52.81	141.50	300.28
1978-79	185.40	130.64	293.92	609.96	49.35	11.18	158.11(est)	218.64	131.57	66.60	150.55	348.72
1979-80	208.02	118.20	311.77	637.99	50.90	9.53	155.21	215.64	171.00	71.78	177.89	420.67
1980-81	241.00	199.30	317.29	757.59	57.22	12.33	182.22	251.77	173.95	83.00	212.85	469.80
1981-82	313.60	200.09	356.21	869.90	50.07	16.23	226.56	292.86	208.43	99.60	229.27	537.30
1982-83	353.48	363.87	401.33	1118.68	50.81	17.34	269.18	337.33	261.65	156.25	266.38	684.28
1983-84	709.40	421.65	608.91	1739.96	48.90	16.17	302.03	367.10	477.91	191.69	306.91	976.51
1984-85	1332.77	446.44	527.19(est)	2306.40	55.70	17.08	303.26(est)	376.04	530.77	289.98	356.36	1097.11
1985-86	898.26	556.50	568.51(est)	2023.27	52.39	18.08	327.45(est)	397.92	581.43	217.61	396.21	1195.25
1986-87	977.82	582.90	609.82(est)	2170.54	56.35	17.79	351.64(est)	425.78	606.25	245.73	425.14	1277.12

The values estimated are linear extrapolations.

Source: Government of Kerala.

TABLE A.2.2

State Domestic Product and Population Estimates: Kerala

(SDP in Rs. Crore)

Year	SDP at current prices	SDP (Primary)	SDP (Primary - Mining)	SDP (Mfg.)	Bank Branches	SDP at 1970-71 Prices	Implicit SDP Deflator	Population (lakh)	Urbanisation(%)
1970-71	1254.64	620.30	619.34	156.32	845	1254.64	100.00	213	16.20
1971-72	1276.06	584.82	583.56	178.89	978	1322.78	96.47	217	16.39
1972 73	1457.22	685.73	684.54	199.70	1072	1355.00	107.54	221	16.58
1973-74	1823.00	924.96	923.37	229.20	1163	1348.97	135.14	225	16.78
1974-75	2085.52	1012.54	1010.66	262.04	1296	1363.11	153.00	229	16.97
1975-76	2228.23	1014.89	1012.90	296.46	1473	1423.23	156.56	233	17.17
1976-77	2398.38	1081.38	1077.73	321.09	1705	1406.05	170.58	237	17.37
1977-78	2520.49	1091.29	1087.73	337.88	2011	1425.54	176.81	241	17.58
1978-79	2753.49	1208.82	1204.66	377.63	2098	1456.45	189.05	246	17.78
1979-80	3155.56	1356.81	1350.83	473.87	2191	1520.31	207.56	250	17.99
1980-81	3505.36	1450.43	1445.12	545.24	2340	1571.33	223.08	255	18.20
1981-82	3696.50	1414.19	1407.18	608.22	2428	1599.14	231.16	259	18.41
1982-83	4254.27	1706.52	1697.95	672.38	2501	1611.70	263.96	264	18.63
1983-84	5018.50	2102.52	2094.45	743.36	2574	1621.74	309.45	269	18.85
1984-85	5713.61	2391.41	2382.31	825.17	2694	1696.71	336.75	274	19.07
1985-86	5917.50	2214.24	2203.38	914.13	2724	1784.71	331.57	278	19.29
1986-87	6680.97	2508.83	2499.29	1013.77	2720	1802.03	370.75	283	19.52

Source: MIPFP Database; RBI Report on Currency and Finance, various issues.

TABLE A.2.3

Number of Motor Vehicles on Road in Kerala

Year	Goods Vehicles	Stage Carriages	Taxi Cabs	2-Wheeler	Auto-Rickshaw	Others	Total
1970-71	13162	6563	8848	15117	1062	41482	86234
1971-72	13584	6840	9699	16959	1219	45406	93709
1972-73	14164	7176	10472	17715	1591	48341	99459
1973-74	13921	6795	10737	21492	1958	49562	104465
1974-75	15875	7830	11525	25769	3125	55546	119670
1975-76	15882	8268	11582	26110	3734	52500	118076
1976-77	17492	8711	12256	32080	4533	54180	129252
1977-78	17165	8651	12257	32031	4492	54597	129193
1978-79	18507	8130	15195	43686	5715	63352	154595
1979-80	21101	8705	17780	50943	7397	68758	174704
1980-81	24982	9159	18890	59531	9640	72695	194597
1981-82	27664	11030	21569	70498	12727	77245	220733
1982-83	31685	12330	23763	81838	15045	82272	246923
1983-84	34258	13647	25597	96478	17724	89276	276980
1984-85	40369	15234	28189	111629	24383	98955	319259
1985-86	45325	16449	30201	130992	30537	108113	361617
1986-87	51284	16704	32458	159863	35838	118163	414310
1987-88	57388	18121	33856	185349	44116	134959	473789

Source: Government of Kerala, *Statistics For Planning*, various issues.

TABLE A.2.4

Consumption of Electricity in Kerala (Category-wise)

('0000 kwh)

Year	Domestic	Commer-cial	Industri-al (Low & Medium)	Industri-al (High Voltage)	Irri-gation	Public Lighting	Water Works etc.	Bulk Supply
1970-71	7840	6504	9811	113297	3290	2660	870	33909
1971-72	9810	7324	11614	111409	6690	1280	1160	39961
1972-73	12524	8384	13926	119417	7627	2959	1205	6901
1973-74	14442	8439	15164	121340	9212	2888	1721	38835
1974-75	16846	8999	15807	128438	10189	3119	1706	6228
1975-76	20085	10449	17829	128276	12032	3425	1758	7675
1976-77	22289	12047	18355	138155	10263	3415	2340	8431
1977-78	24995	13049	18392	153761	7848	3631	2578	8939
1978-79	28020	14290	19610	154290	8230	3320	2970	10220
1979-80	33670	14600	20150	154680	10220	4860	3180	10950
1980-81(est.)	28020	19963	22155	160320	10351	5324	3669	8415
1981-82	56628	25326	24160	166961	10482	5789	4158	5880
1982-83	59098	24672	22520	191357	9645	4509	4867	7532
1983-84(est.)	69549	25336	22510	187428	9422	4554	4283	7816
1984-85	80000	26000	22500	183500	9200	4600	3700	8100
1985-86	87700	36000	25800	198600	10100	5800	4700	8900
1986-87	99102	39460	25424	170786	13104	7605	8228	5978

Source: Government of Kerala

TABLE A.2.5.a

Per Capita Revenue Expenditure/Receipts - Andhra Pradesh

(Rs.)

S.NO	Revenue Expenditure\Reciepts	1980-81	1981-82	1982-83	1983-84	1984-85	1985-86	1986-87	1987-88
									(R.E.)
A.	Total Expenditure	214.22	250.50	266.62	360.13	426.09	472.88	541.65	614.13
B.	Social & Community Services	93.37	104.59	120.08	183.55	200.15	196.31	236.98	256.23
	(i) Edu,Sports,Art & Family welfare	42.48	49.99	60.81	75.89	82.37	91.15	94.99	121.42
	(ii) Medical, Public Health, Family Welfare	20.66	23.13	26.79	34.68	38.21	30.53	31.19	37.65
	(iii) Other Social Services	30.23	31.47	32.48	72.97	79.57	74.64	110.80	97.16
B.1	Social & Community Services:Receipts	4.07	4.13	4.44	4.10	4.99	5.11	5.38	6.25
	B.1 as a % of B	4.36	3.95	3.70	2.23	2.49	2.60	2.27	2.44
C.	Economic Services	64.87	81.50	73.82	92.37	121.74	154.77	173.82	212.25
C.1	Economic Services:Receipts	10.73	14.42	15.01	22.18	22.06	24.43	25.48	40.54
	C.1 as a % of C	16.54	17.69	20.33	24.54	18.12	15.78	14.66	19.10
D.	Interest payment and Servicing of Debt	15.06	17.50	19.84	21.70	26.61	32.43	49.36	51.58
D.1	Interest Receipts	22.96	25.17	21.61	26.58	31.17	44.75	31.95	132.77
	D.1 as a % of D	152.46	143.83	108.92	122.49	117.14	137.99	64.73	97.85
E.	Administrative Services	22.30	25.54	29.04	34.69	36.71	49.21	40.09	47.39
F.	Compensation & Assignments to Local Bodies	0.00	0.00	0.00	0.00	20.95	6.95	6.32	7.4

TABLE A.2.5.b

Per Capita Revenue Expenditure/Receipts - Karnataka

(Rs.)

S.NO Revenue Expenditure & Receipts\Year	1980-81	1981-82	1982-83	1983-84	1984-85	1985-86	1986-87	1987-88
								(R.E.)
A. Total Expenditure	237.67	259.97	313.77	356.81	465.07	506.73	522.45	610.01
B. Social & Community Services	86.04	95.91	114.52	124.92	151.84	196.66	219.19	258.99
(i) Edn,Sports,Art & Family welfare	45.69	51.34	62.02	68.78	81.44	91.90	102.86	124.77
(ii) Medical & Public Health & Family Welfare	18.71	22.61	27.69	27.95	35.25	33.09	37.02	44.89
(iii) Other Social Services	21.65	21.95	24.81	28.20	35.14	71.67	79.31	89.33
B.1 Social & Community Services:Receipts	3.26	4.13	5.31	4.73	4.19	7.15	6.08	7.35
B.1 as a % of B	3.79	4.31	4.64	3.79	2.74	3.63	2.77	2.84
C. Economic Services	74.80	82.80	102.19	116.74	149.90	142.53	152.82	159.63
C.1 Economic Services:Receipts	21.46	26.67	24.98	34.50	33.57	35.84	37.98	42.96
C.1 as a % of C	28.69	32.21	24.44	29.55	22.39	25.15	24.85	26.91
D. Interest payment and Servicing of Debt	16.56	18.36	19.75	24.69	33.40	79.84	55.24	57.97
D.1 Interest Receipts	23.33	24.09	27.59	30.66	35.02	40.77	40.85	45.98
D.1 as a % of D	140.88	131.21	139.70	124.18	104.85	43.99	73.95	79.32
E. Administrative Services	15.97	20.28	22.77	22.23	34.52	32.38	36.38	46.41
F. Compensation & Assignments to Local Bodies	9.09	9.88	9.89	11.72	0.00	12.28	14.27	15.26

TABLE A.2.5.c

Per Capita Revenue Expenditure/Receipts - Tamilnadu

(Rs.)

S.NO Revenue Expenditure & Receipts\Year	1980-81	1981-82	1982-83	1983-84	1984-85	1985-86	1986-87	1987-88 (R.E.)
A. Total Expenditure	235.80	273.84	312.30	376.14	427.53	465.73	519.79	599.54
B. Social & Community Services	88.52	107.07	140.85	165.09	170.93	227.44	239.81	246.09
(i) Edu,Sports,Art & Family welfare	48.74	54.11	68.37	75.08	86.36	106.53	113.55	121.39
(ii) Medical & Public Health & Family Welfare	21.45	29.75	36.25	52.17	42.35	50.03	35.11	39.55
(iii) Other Social Services	18.33	23.21	36.23	37.84	42.22	70.89	91.15	85.15
B.1 Social & Community Services:Receipts	4.95	2.97	5.29	5.63	6.99	7.91	7.73	5.65
B.1 as a % of B	5.59	2.77	3.76	3.41	4.09	3.48	3.22	2.31
C. Economic Services	80.87	97.00	95.76	114.66	145.10	110.94	136.24	193.66
C.1 Economic Services:Receipts	9.15	10.33	12.06	15.74	16.30	15.18	13.73	14.19
C.1 as a % of C	11.31	10.65	12.61	13.79	11.23	13.68	10.08	7.33
D. Interest payment and Servicing of Debt	18.63	18.53	20.09	25.05	28.22	34.46	41.03	44.19
D.1 Interest Receipts	24.76	8.91	8.92	9.59	11.07	11.39	17.45	17.13
D.1 as a % of D	132.90	48.06	44.40	38.24	39.23	32.51	41.86	38.76
E. Administrative Services	24.24	27.45	27.91	29.19	36.63	44.18	48.46	47.49
F. Compensation & Assignments to Local Bodies	5.95	4.09	4.26	9.96	14.63	17.14	13.92	7.54

proximate bases or proxies. In the light of statistical indicators as well as *a priori* considerations, the equation is then modified or alternative formulations tried until a regression equation which turns out to be the best in rigorous statistical testing is derived. The coefficients of the preferred regression equation are then used to obtain the tax potential for the years 199Ø-95 putting in the forecasts of the tax base or their proxies as those of the independent variables. This set of results is given under Variant A in Section V below.

A variant of the above method is also used in this study to provide an alternative set of tax potentials (Variant B). The method used for this variant consists of identifying the maximum tax effort observed within the reference period, the ratio of actual to estimated values of each tax variable at the maximum effort level and making the projections on the assumption that the same degree of tax effort will be forthcoming during the years 199Ø-95. The first set of tax potential estimates are scaled up by the maximum tax effort factor for each tax to yield the second set. A simple interpretation of the second set of estimated potentials is that they represent the tax revenues that Kerala can raise if its exploitation of the tax bases were as intensive as in the year when it was at a peak since 197Ø-71 (or 1974-75, as the case may be). Thus, in a sense, Variant B gives the upper limit of potential tax revenue. All the data used are in current prices unless stated otherwise.

The present study covers all the major taxes levied by the Government of Kerala. Additionally, it covers two taxes levied by the local bodies in the State in view of their revenue significance, viz., the entertainment tax and the profession tax.