
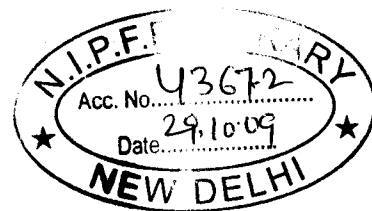


Estimation of Corporate Tax for the
Largest 10% of the Companies in Various
Sectors of the Economy

A.L. Nagar
Sayan Samanta

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National Institute of Public Finance and Policy
New Delhi

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Estimation of Corporate Tax for the Largest 10% of the Companies in Various Sectors of the Economy

A.L. Nagar and Sayan Samanta

Using Prowess database we classified companies in manufacturing, mining, electricity, construction and services sectors according to their size (sales and total assets) and placed them in decile groups. Thus the decile 1 group refers to the largest 10% of companies, and so on. We select only those companies whose financial accounts are not less than 40 months old from the current year and for whom data are available on sales, total assets, CT and GVA consecutively for three years.

In this paper we propose to estimate CT for the decile group 1 for each of the sectors by using the following relationship.

$$\ln \frac{CT_{it}}{CT_{i,t-1}} = \alpha + \beta \ln \frac{\tau_{it}}{\tau_{i,t-1}} + u_{it}$$

where

$CT_{i,t}$ = total corporate tax paid companies in decile group 1 in year t.

$CT_{i,t-1}$ = do. in year t-1

$$\tau_{it} = \frac{CT_{it}}{GVA_{it}} \text{ and}$$

$\tau_{i,t-1}$ = lagged value of τ_{it}

GVA_{it} = gross value added of the i-th decile group in year t.

The following equations have been estimated

Manufacturing: (for decile 1)

$$\ln\left(\frac{CT_{it}}{CT_{i,t-1}}\right) = .14 + 1.05 \ln\left(\frac{\tau_{it}}{\tau_{i,t-1}}\right) : \bar{R}^2 = 0.78$$

(5.9) (6.9)

Mining: (for quartile 1)

$$\ln\left(\frac{CT_{it}}{CT_{i,t-1}}\right) = .13 + .97 \ln\left(\frac{\tau_{it}}{\tau_{i,t-1}}\right) : \bar{R}^2 = 0.96$$

(2.2) (17.5)

Electricity: (for quartile 1)

$$\ln\left(\frac{CT_{it}}{CT_{i,t-1}}\right) = .18 + 1.00 \ln\left(\frac{\tau_{it}}{\tau_{i,t-1}}\right) : \bar{R}^2 = 0.99$$

(2.6) (38.8)

Construction: (for decile 1)

$$\ln\left(\frac{CT_{it}}{CT_{i,t-1}}\right) = .15 + 1.02 \ln\left(\frac{\tau_{it}}{\tau_{i,t-1}}\right) : \bar{R}^2 = 0.98$$

(4.7) (27.9)

Services: (for decile 1)

$$\ln\left(\frac{CT_{it}}{CT_{i,t-1}}\right) = .21 + .92 \ln\left(\frac{\tau_{it}}{\tau_{i,t-1}}\right) : \bar{R}^2 = 0.50$$

(3.9) (3.7)

The quantities within brackets below the coefficient estimates are t-values.

The tables 1,2,3,4, and 5 show the actual and estimated corporate tax for each sector. They represented graphically in Graphs 1,2,3,4 and 5, respectively.

Table 1

Manufacturing

Year	Act CT	Est. CT	Act/Est CT
1990-91	1468.79	1459.35	1.01
1991-92	1973.28	1933.59	1.02
1992-93	2236.49	2001.85	1.12
1993-94	2574.42	2618.97	0.98
1994-95	3508.05	3170.42	1.11
1995-96	5153.94	4490.35	1.15
1996-97	5269.36	5476.19	0.96
1997-98	4771.81	5030.04	0.95
1998-99	5262.19	5645.54	0.93
1999-00	5288.13	5527.94	0.96
2000-01	4914.01	5047.96	0.97
2001-02	6211.88	7367.91	0.84
2002-03	10479.02	10151.63	1.03
2003-04	14573.51	14177.45	1.03

Graph 1

Actual & Est CT Manufacturing

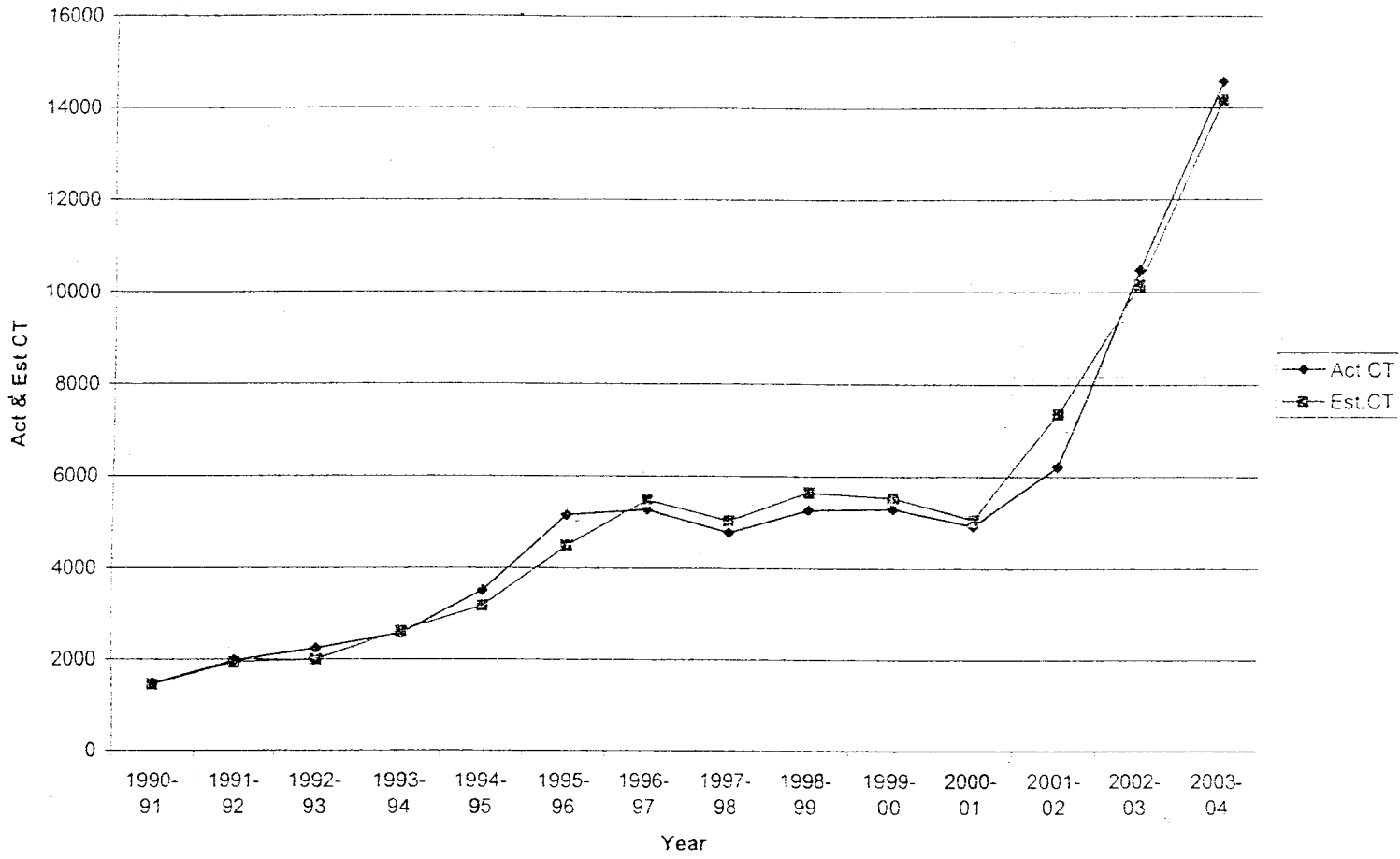


Table 2

Mining

Year	Est CT	Act CT	Act/Est CT
1990-91	53.82	51.41	0.96
1992-93	10.01	10.74	1.07
1993-94	78.01	81.14	1.04
1994-95	72.93	92.52	1.27
1995-96	454.64	499.41	1.10
1996-97	1653.67	1472.55	0.89
1997-98	1714.83	1803.76	1.05
1998-99	2279.25	1976.84	0.87
1999-00	3125.59	3507.01	1.12
2000-01	4778.01	4869.79	1.02
2001-02	6474.45	3777.61	0.58
2002-03	4939.45	6792.44	1.38
2003-04	6180.34	5474.54	0.89

Graph 2

Act & Est CT Mining

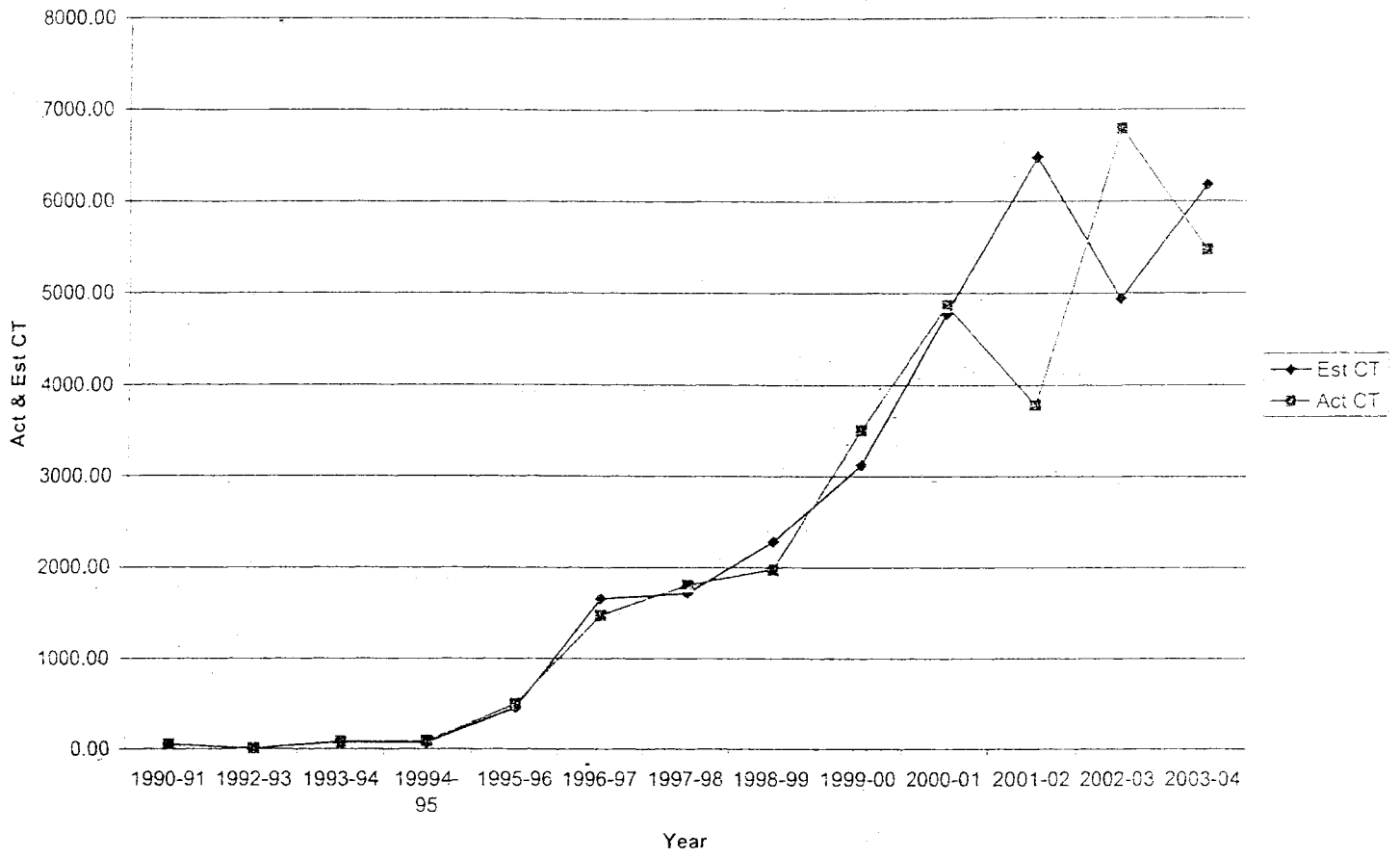


Table 3

Electricity

Year	Est CT	Act CT	Act/Est CT
1990-91	0.09	0.09	0.98
1992-93	0.17	0.29	1.74
1993-94	0.03	0.03	0.96
1994-95	0.08	0.08	1.05
1995-96	0.01	0.01	1.16
1996-97	62.66	59.75	0.95
1997-98	1142.83	1240.95	1.09
1998-99	1618.00	1708.61	1.06
1999-00	1410.23	1315.28	0.93
2000-01	1840.78	1952.38	1.06
2001-02	2452.17	1458.10	0.59
2002-03	1883.68	1680.79	0.89
2003-04	643.37	559.11	0.87

Graph 3

Act & Est CT Electricity

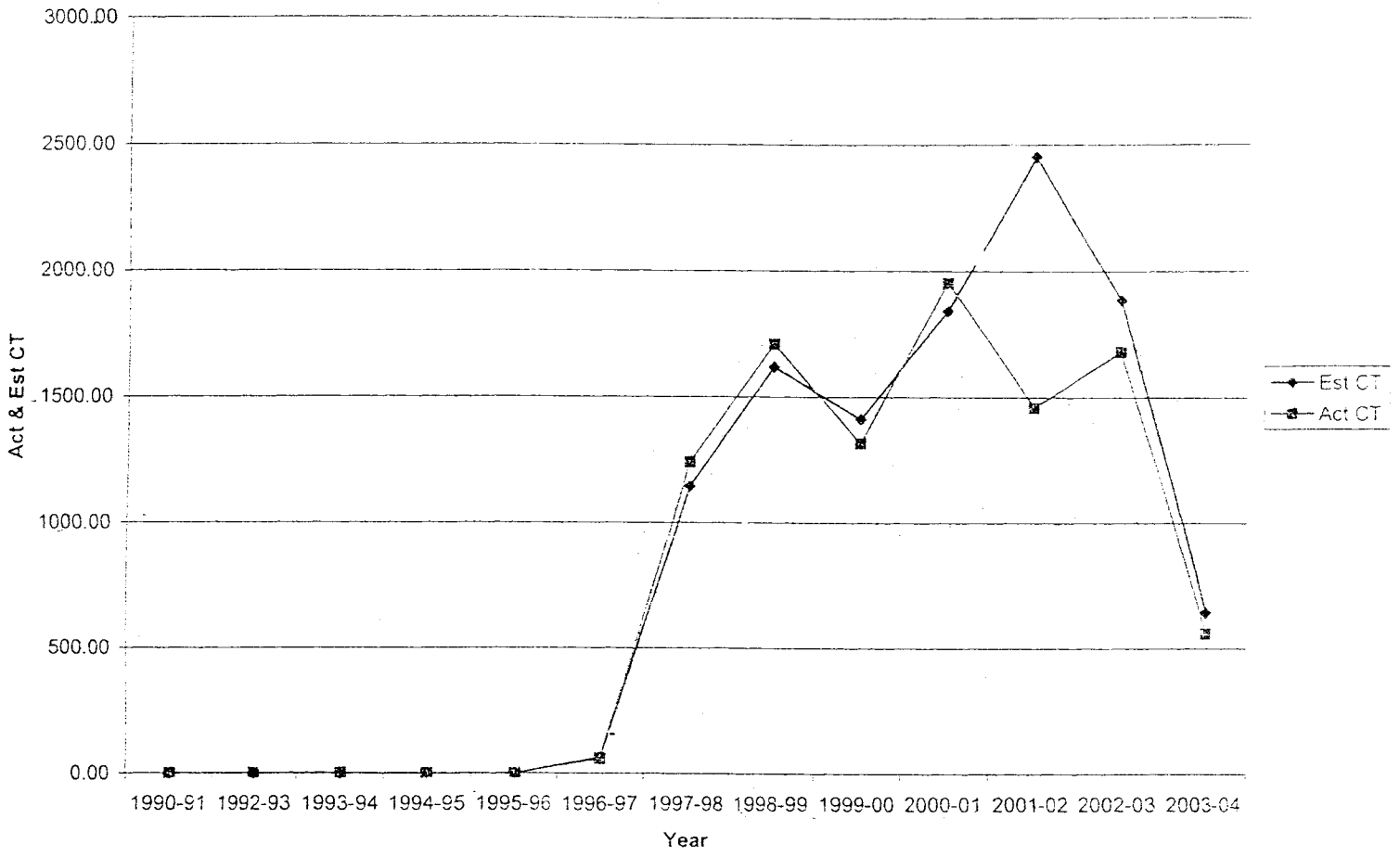


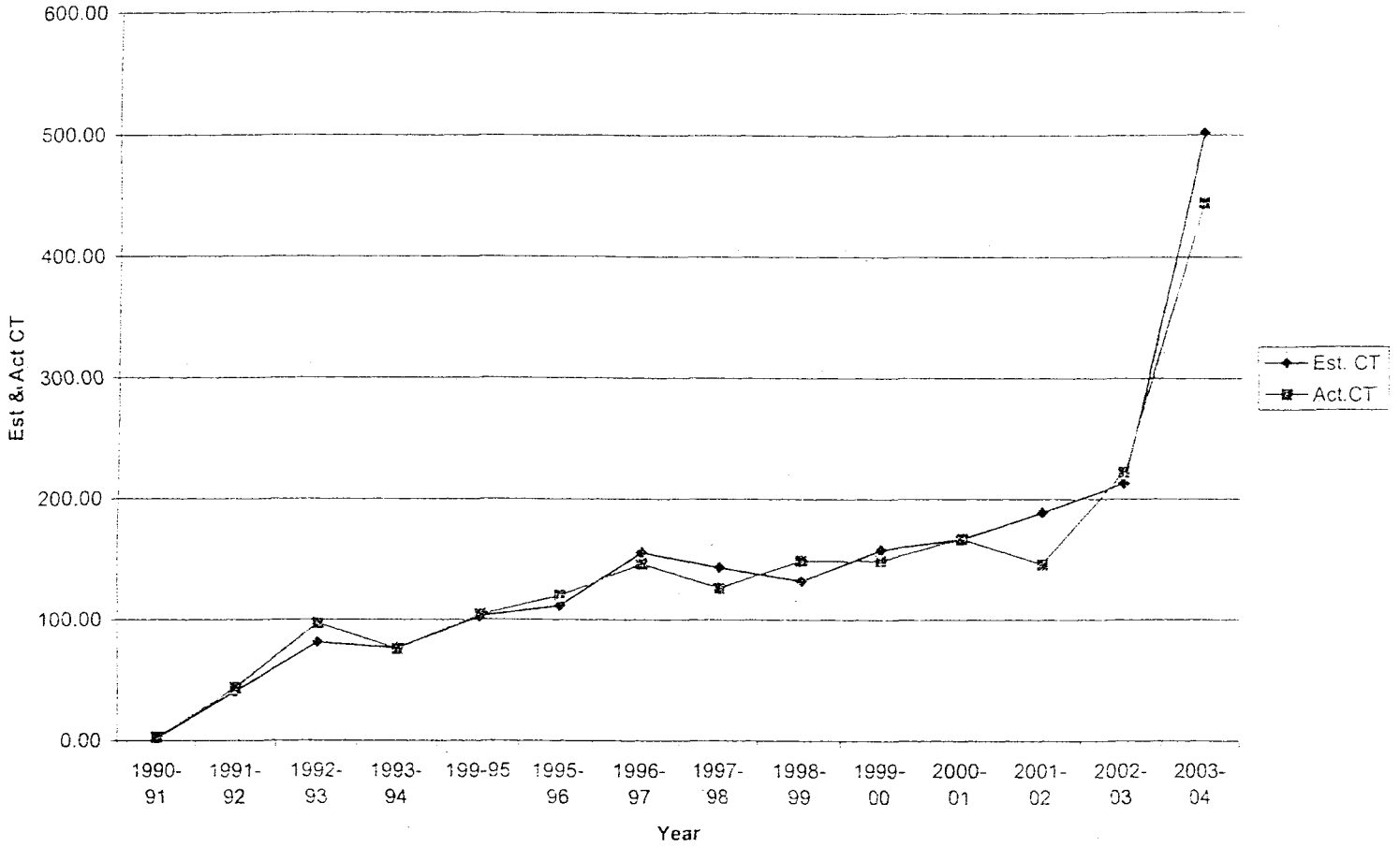
Table 4

Construction

Year	Est CT	Act CT	Act/Est CT
1990-91	2.24	2.50	1.11
1991-92	40.17	43.50	1.08
1992-93	81.03	96.81	1.19
1993-94	76.20	75.60	0.99
1994-95	102.70	104.00	1.01
1995-96	111.49	119.93	1.08
1996-97	155.75	146.67	0.94
1997-98	143.27	126.17	0.88
1998-99	132.25	149.10	1.13
1999-00	158.06	149.09	0.94
2000-01	166.92	166.90	1.00
2001-02	188.85	146.25	0.77
2002-03	212.68	221.94	1.04
2003-04	501.82	444.18	0.89

Graph 4

Est & Act CT Construction



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Table 5

Services

Year	Est CT	Act CT	Act/Est CT
1990-91	274.60	261.43	0.95
1991-92	415.07	462.98	1.12
1992-93	547.37	856.08	1.56
1993-94	1273.26	1087.68	0.85
1994-95	1298.35	1303.69	1.00
1995-96	1997.25	2655.4	1.33
1996-97	5094.16	5260.68	1.03
1997-98	6698.53	6184.56	0.92
1998-99	5379.93	5042.2	0.94
1999-00	6819.63	6321.08	0.93
2000-01	8120.44	7317.81	0.90
2001-02	11618.45	10630.3	0.91
2002-03	14017.37	12175.14	0.87
2003-04	18652.31	16464.06	0.88

Graph 5

Act & Est CT Services

