

CHAPTER-7

**FINANCIAL
PERFORMANCE OF
POWER SECTOR
IN INDIA**

7.1. Introduction

In chapter six the technical efficiency of power sectors in India was evaluated on the basis of standardized parameters. Besides technical efficiency, it's the need of the hour, to evaluate the financial performance of power sector in India as it would undermine its feasibility. In this chapter, the technique of growth rate analysis has been adopted to measure the financial performance of the power sectors in India.

7.2. Cost Structure of Indian Power Sector

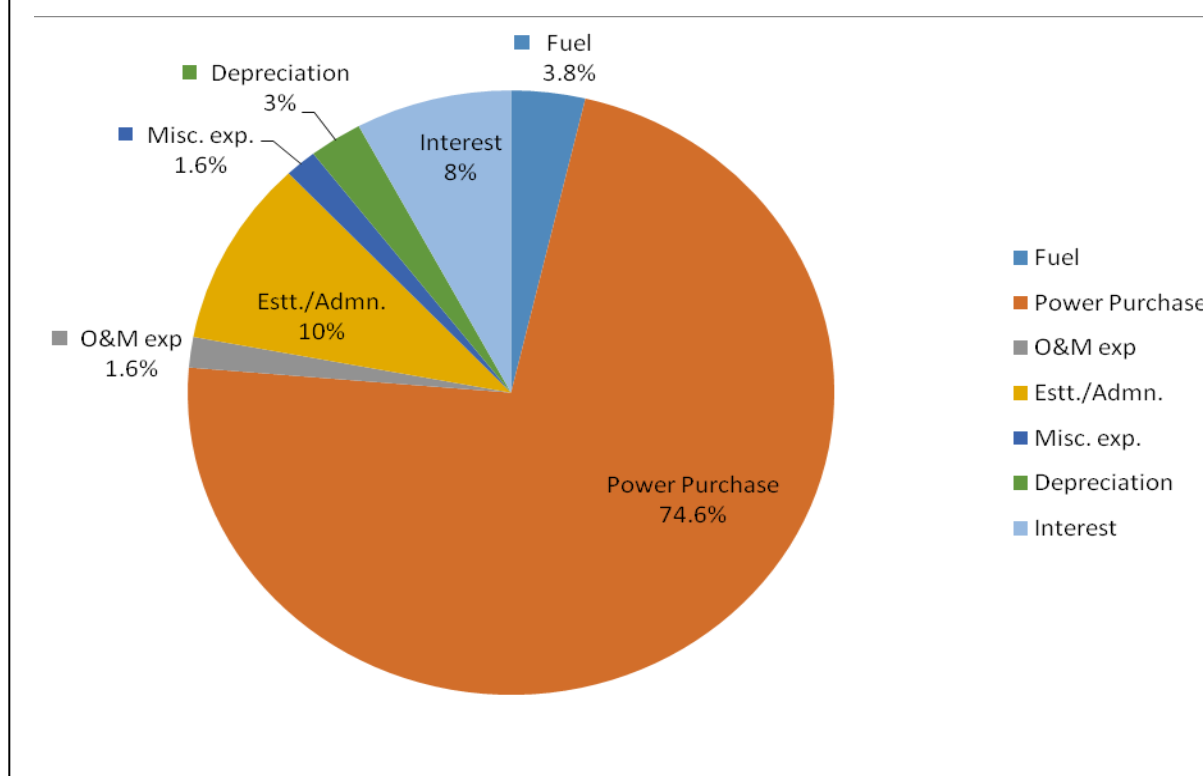
Cost of electricity supply is crucial for power sector. The major components of cost of electricity supply are spending on fuels, power purchase and O & M. Apart from these variable costs, some fixed cost also occurred which significantly affect the supply of electricity. Besides machinery and equipments, the key components of fixed cost are depreciation and interest payable to institutional creditors and to the concerned state governments. Cost structure of SEBs for the year 2013-14 is given in the Table 7.2.1 and Figure 7.2.1.

Table 7.2.1. Cost Structure of SEBs (2013-14) (Paise/Unit)

States	Fuel	Power Purchase	O&M Exp	Estt. / Admn.	Misc. Exp.	Depreciation	Interest	Total
Andhra Pradesh	0.0	502.84	3.54	26.79	2.65	15.86	11.47	563.15
Bihar	57.0	569.05	13.55	62.8	9.94	29.81	42.45	784.59
Gujarat	0.0	452.88	3.3	27.05	0.0	12.06	0.25	495.54
Haryana	0.0	501.56	4.61	40.54	10.1	8.53	80.72	646.06
Karnataka	0.0	418.28	2.96	44.98	5.53	10.43	22.61	504.79
Kerala	22.3	362.12	16.53	151.7	-11.47	23.65	31.93	596.71
Madhya Pardesh	0.0	388.94	3.71	76.85	3.21	26.7	39.20	538.61
Maharashtra	0.0	477.79	6.94	76.85	27.87	11.91	13.19	584.19
Odisha	0.0	525.28	10.17	76.85	52.53	17.02	31.98	539.89
Punjab	122.9	239.82	10.17	112.50	2.37	20.41	67.83	578.47
Rajsasthan	0.0	484.92	13.4	38.03	3.9	17.41	147.8	697.58
Tamil Nadu	120.3	362.09	16.63	63.39	0	13.33	81.35	645.72
Uttar Pardesh	0.0	560.24	16.63	32.79	12.55	12.17	70.89	706.23
West Bengal	0.0	490.23	19.86	38.45	20.02	14.1	39.47	612.91
Average	23.03	452.57	10.14	62.11	9.94	16.67	48.65	606.74
Percentage Share	3.79	74.59	1.67	10.23	1.63	2.74	8.01	100

Source: Power & Energy Division, Planning Commission, GOI

Figure 7.2.1. Share of Constituents in Cost Structure of SEBs in India (2013-14)



7.2.1. Fuel Cost

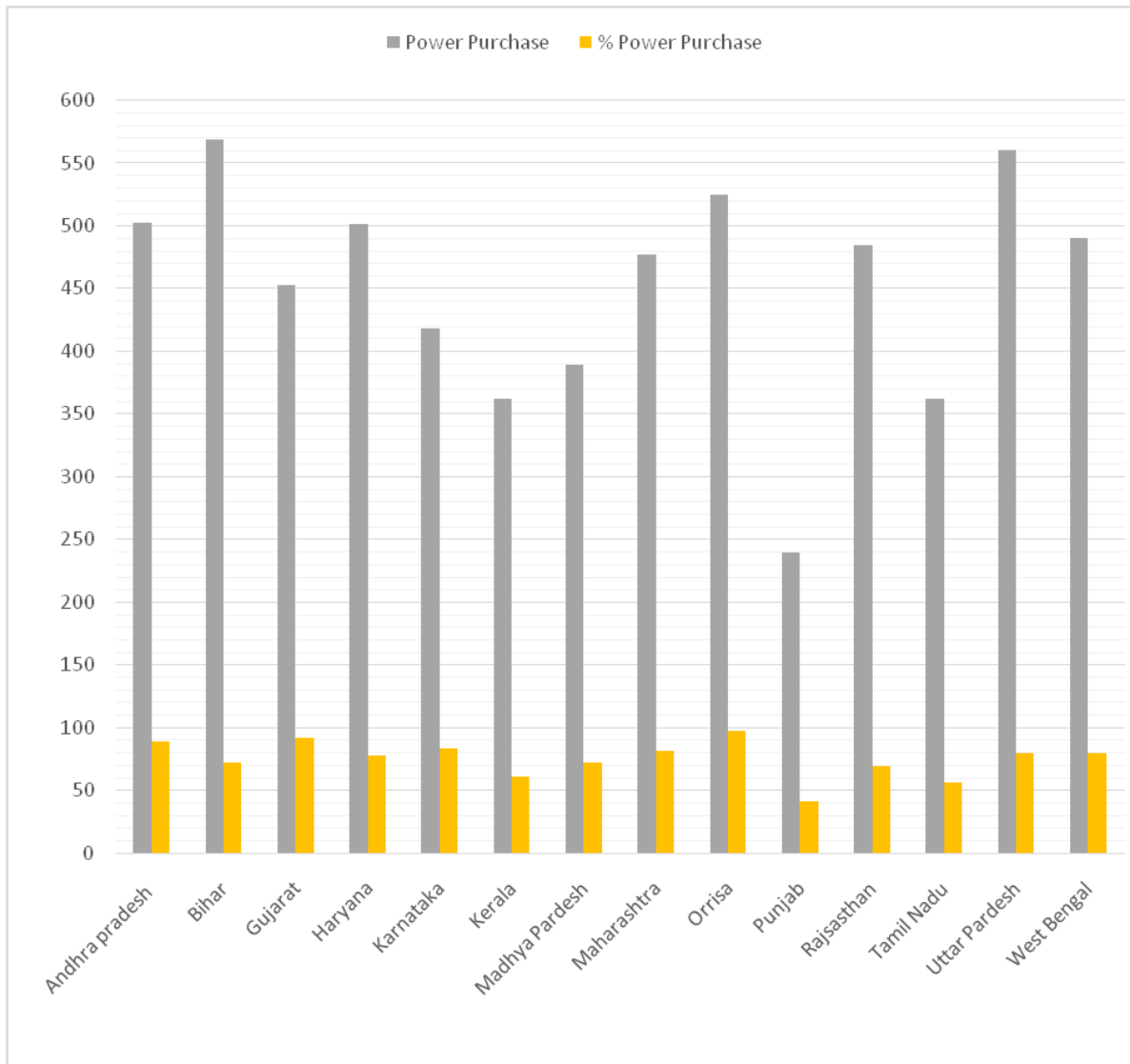
Fuel cost is one of the components of variable costs. It depends, besides other factors, on the specific consumption of coal and oil and the transportation costs of these fuels. It has accounted for only 3.8 per cent of total supply cost in 2013-14. Punjab, Tamil Nadu, Kerala and Bihar are the states wherein the share of fuel cost is relatively higher in comparison with other states. Punjab is the state which has higher fuel cost than the all India average fuel cost (See Table 7.2.1).

7.2.2. Power Purchase Cost

Purchase cost of power is the prime factor for the power sector; and it depends on various factors. There is disparity in the cost of power sector from one region to another (See Table 7.2.1). The wide variation of cost for power supply is caused by mainly two factors - first is sources of power generation i.e. thermal and hydro; and the second is coverage of electricity in villages and households. The states having availability of such sources are able to produce

electricity easily but those who are comparatively less rich in such sources are fulfilling their electricity requirements by purchasing power from other states. This makes the cost of power purchase is one of the largest constituents of the total electricity supply cost.

Figure 7.2.2.1. Cost of Power Purchase of SEBs in India (2013-14)



In Table 7.2.1 and Figure 7.2.2.1, cost of power purchase is shown for the year 2013-14. The cost of power purchase is averaged to 452.57 Paise per unit in India in 2013-14. It accounts for highest share in the total cost. Here, it can be seen that it is contributing 74.6 per cent in

the year 2013-14 (Table 7.2.1 and Figure 7.2.1). It can easily be seen that the states making larger expenditure on power purchase are Bihar, Uttar Pradesh, Odisha, Andhra Pradesh and Haryana. These states accruing cost more than the national average expenditure on power purchase. The reasons behind this are-1) they are populated states with high energy requirement, and 2) these states are highly dependent on other states for power. Punjab is the states which has recorded the lowest expenditure of power purchase. It is so because Punjab is almost self-reliant for power as it is possess five big thermal power plants and five functional hydro power plants.

7.2.3. Establishment and Administration Cost

Establishment and administration cost include largely wages and salaries of staff and pension payments. The share of establishment and administrative expenses account second largest share that is 10 per cent in the cost of supply for the year 2013-14. It also varies state to state as number of employees and their rewards varies state to state (See Table 7.2.1 and Figure 7.2.1).

7.2.4. Operation and Maintenance (O &M) Cost

O & M cost is the expenditure which occurs due to day-to-day working and maintenance of the power units. In the year 2013-14, O & M expenditure averaged to at 10.84 Paise per unit that shares 1.6 percent in supply cost of in India. West Bengal, Uttar Pradesh, Tamil Nadu, Kerala, Bihar, Rajasthan, Odisha and Punjab are those states which have more expenditure on O & M. while Andhra Pradesh, Gujrat, Haryana, Madhya Pradesh and Maharashtra come in the group of those states which have lesser expenditure on O & M for power supply (See Table 7.2.1 and Figure 7.2.1).

7.2.5. Fixed Cost

Interest payments and depreciation comes under the basket of fixed cost in the supply cost of power sector. Interest payment has larger control than depreciation over the share of cost for

power supply. The national average for cost of interest payments and depreciation are 48.65 Paise per unit and 16.67 Paise per unit respectively for the year 2013-14. These two components accounts for 8 percent and 3 percent share respectively in the total supply cost of power. When the state wise payment for interest has been analysed, it is found that there are few states which are bearing higher interest payment. The states which bear the interest payment towards the higher end are Rajasthan, Tamil Nadu Haryana, and Uttar Pradesh whereas Bihar, Karnataka, Kerala, Andhra Pradesh, Madhya Pradesh, Maharashtra, Gujarat Odisha, Punjab and West Bengal are spending lesser cost on interest payment in the year 2013-14. (See Table 7.2.1 and Figure 7.2.1)

7.3. Tariff and Revenue Realisation

The average tariff signifies the tariff charged for sale of electricity per unit of electricity sold by the utilities to the final consumers. This represents the source of revenue for SEBs. Tariff is catagorised into four categories. They are domestic, commercial, agriculture and industrial. Tariff also varies state to state in India. The analysis of tariff reveals the picture of variation in tariff both category wise and state wise across India. For the year of 2013-14, state wise average tariff for all four categories is given below in Table 7.3.1.

Table 7.3.1. Customer Category wise Average Tariff, 2013-14 (Paise/Unit)					
States	Domestic	Commercial	Agriculture	Industrial	Average Revenue
Andhra Pradesh	473.86	1128.49	44.25	535.88	547.21
Bihar	328.90	799.25	410.55	671.72	515.66
Gujarat	462.05	595.58	217.56	607.90	462.78
Haryana	437.13	554.42	46.48	573.01	401.49
Karnataka	422.84	784.31	306.73	610.18	476.92
Kerala	281.09	777.12	172.94	567.86	441.99
Madhya Pradesh	474.70	716.51	350.70	580.61	423.52
Maharashtra	524.21	1110.65	258.33	771.81	582.30
Orissa	453.68	820.93	296.96	674.50	470.66
Punjab	424.23	616.84	0.00	586.68	367.03
Rajasthan	549.60	729.44	180.57	582.25	429.65
Tamil Nadu	255.53	856.29	0.00	735.76	493.26
Uttar Pradesh	435.06	463.59	224.18	736.35	508.83
West Bengal	540.25	716.02	415.22	650.45	580.85
Average	433.08	762.10	208.89	634.64	478.73

Source: Power & Energy Division, Planning Commission, GOI

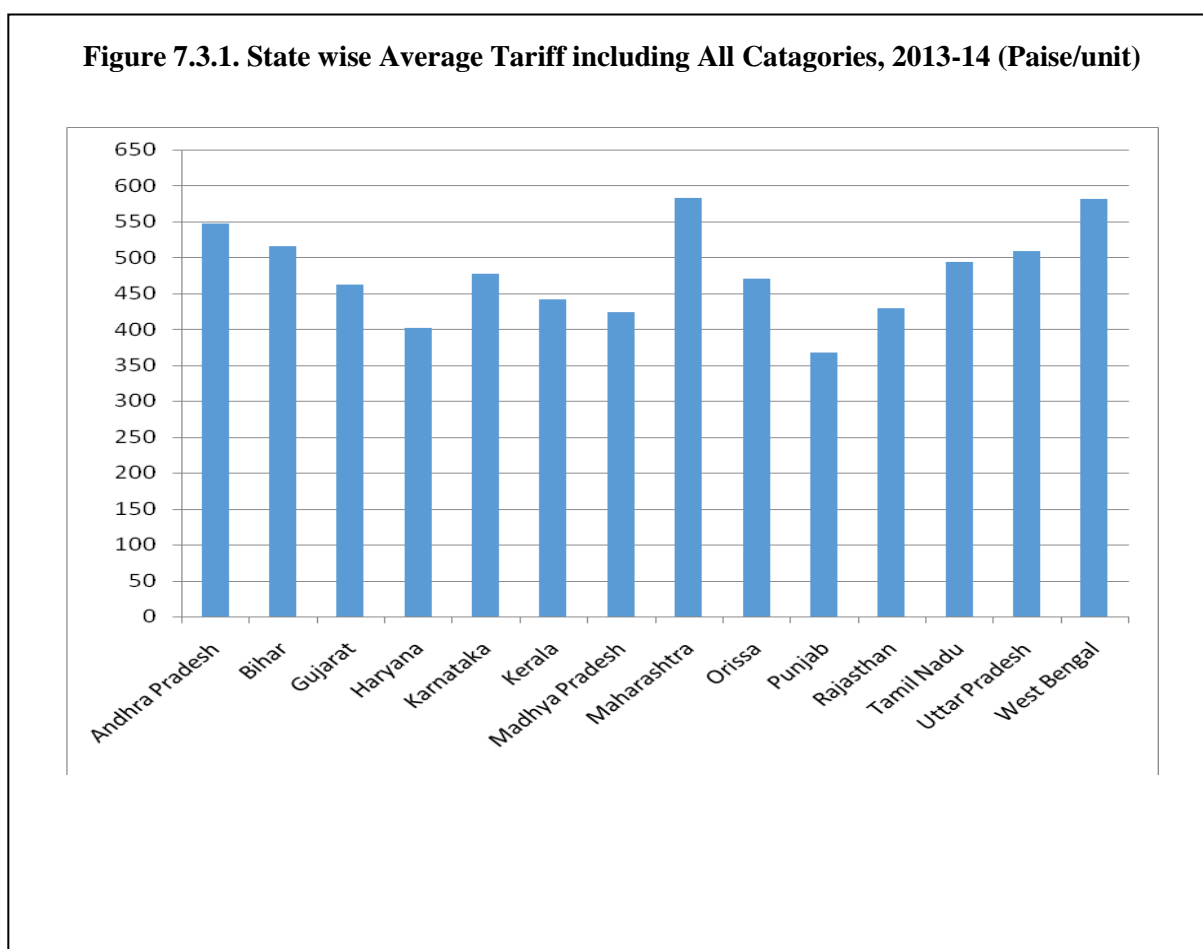
In the category of domestic tariff, it's clear from the above table that there are only two states Haryana and Uttar Pradesh have the tariff close to the national average that is 433.08 Paise per unit. Maharashtra, Rajasthan and West Bengal are the states that have highest tariff. Apart from these states, there are some states which are performing poorer in the terms of tariff in the domestic category. These states are Bihar, Kerala and Tamil Nadu. In the category, Bihar has 328.9 Paise per unit, Kerala has 281.09 Paise per unit and Tamil Nadu has 255.53 paise per unit. Thus, in domestic category, Tamil Nadu is charging lowest tariff.

In commercial category of tariff, national average tariff of the states is 762.10 paise per unit. The states who have more tariff than the national average tariff are Andhra Pradesh, Maharashtra, Tamil Nadu, Odisha, Bihar, Karnataka, and Kerala. In these states Andhra Pradesh, Maharashtra and Tamil Nadu are showing the tariffs which are 1128.49 paise per unit, 1110.65 paise per unit and 856.29 paise per unit respectively. While Rajasthan, Madhya Pradesh, West Bengal, Punjab, Gujarat, Haryana and Uttar Pradesh are generating lower revenue than the national average from commercial segment of tariff. Uttar Pradesh gets the lowest that is 463.59 Paise per unit in the category.

SEBs are charging very low tariff in the agriculture sector. This is the sector in which average tariff is 208.89 Paise per unit. In the year 2013-14, the states who have charging more than the average tariff in the agriculture sector are West Bengal, Bihar, Madhya Pradesh, Karnataka, Odisha, Maharashtra, Uttar Pradesh and Gujarat. Among these states the West Bengal is at the top with tariff 415.22 Paise per unit while Gujarat is at the lowest position with 217.56 Paise per unit. Apart from these states, Rajasthan, Kerala, Haryana and Andhra Pradesh are getting lower than the national average of the agriculture tariff. Punjab and Tamil Nadu are the two states where tariff in agriculture is almost negligible due high subsidy offered by the SEBs.

The average tariff in industrial sector is 634.64 Paise per unit in year 2013-14. Among the states taken in this study, almost half of the states are getting more tariff than the average. Such states are Maharashtra, Uttar Pradesh, Tamil Nadu, Bihar and West Bengal. Among these states Maharashtra and Uttar Pradesh are at charging highest tariff of 771.81 Paise per unit and 7736.35 Paise per unit respectively.

The state wise average tariff including all categories is given in Figure 7.3.1



7.4. Comparative Analysis of Average Cost and Average Revenue

The revenue generated from sales must be adequate to recover costs of supply is essential for the health of any industry. The comparative analysis of average cost and average tariff reveals the financial performance of the power sector in India. By comparing the average cost and average tariff and calculating growth rate (GR) of tariff cost ratio, this study has tried to present the picture of the financial performance of this sector for 2000-01 to 2013-14; and the results are shown in the Table 7.4.1 and Figure 7.4.1 & Figure 7.4.2.

Table 7.4.1. Average Cost and Average Tariff (Paise/Unit)				
Year	Average Cost	Average Tariff	Tariff Cost Ratio (Tariff/Cost)	Growth Rate of Tariff Cost Ratio
2000-01	327.30	226.30	0.69	~
2001-02	349.90	239.90	0.69	-0.84
2002-03	351.72	263.63	0.75	9.32
2003-04	353.80	275.04	0.78	3.71
2004-05	357.35	275.55	0.77	-0.81
2005-06	367.62	288.63	0.79	1.82
2006-07	392.17	300.51	0.77	-2.40
2007-08	404.66	308.17	0.76	-0.62
2008-09	436.09	328.17	0.75	-1.19
2009-10	478.00	333.00	0.70	-7.43
2010-11	484.00	357.00	0.74	5.88
2011-12	487.00	380.00	0.78	5.79
2012-13	593.00	439.00	0.74	-5.12
2013-14	593.00	480.00	0.81	9.34
MEAN	426.83	321.06	0.75	1.34
<i>Source: Ministry of Power, GOI</i>				

Figure 7.4.1. Trend of Average Cost and Average Tariff

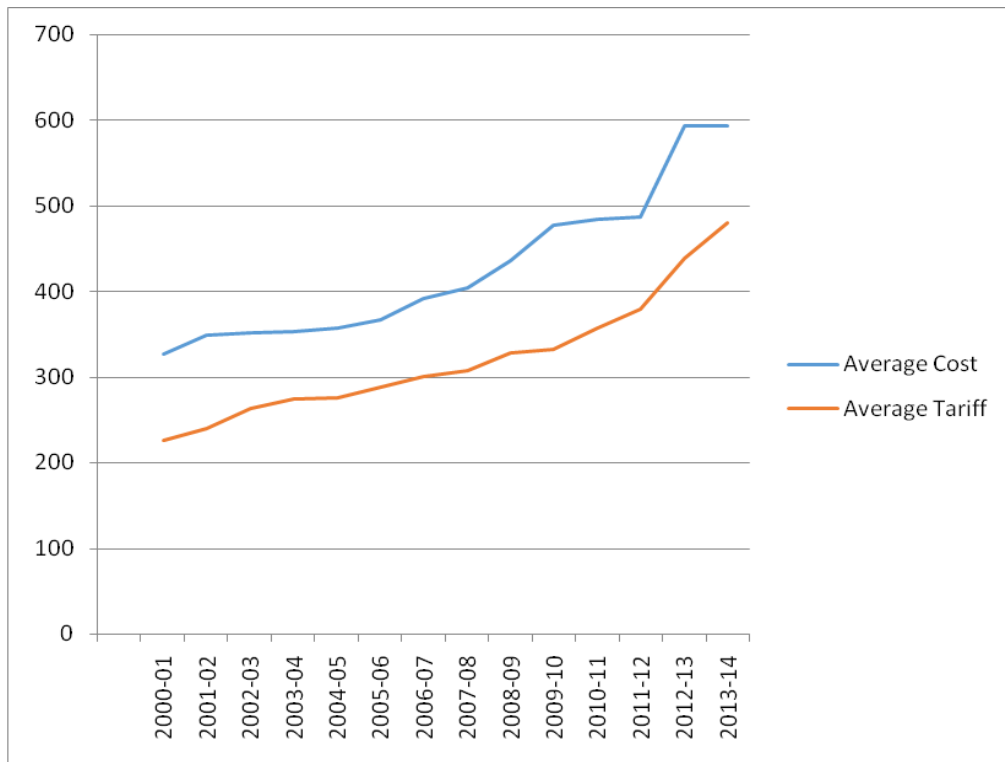
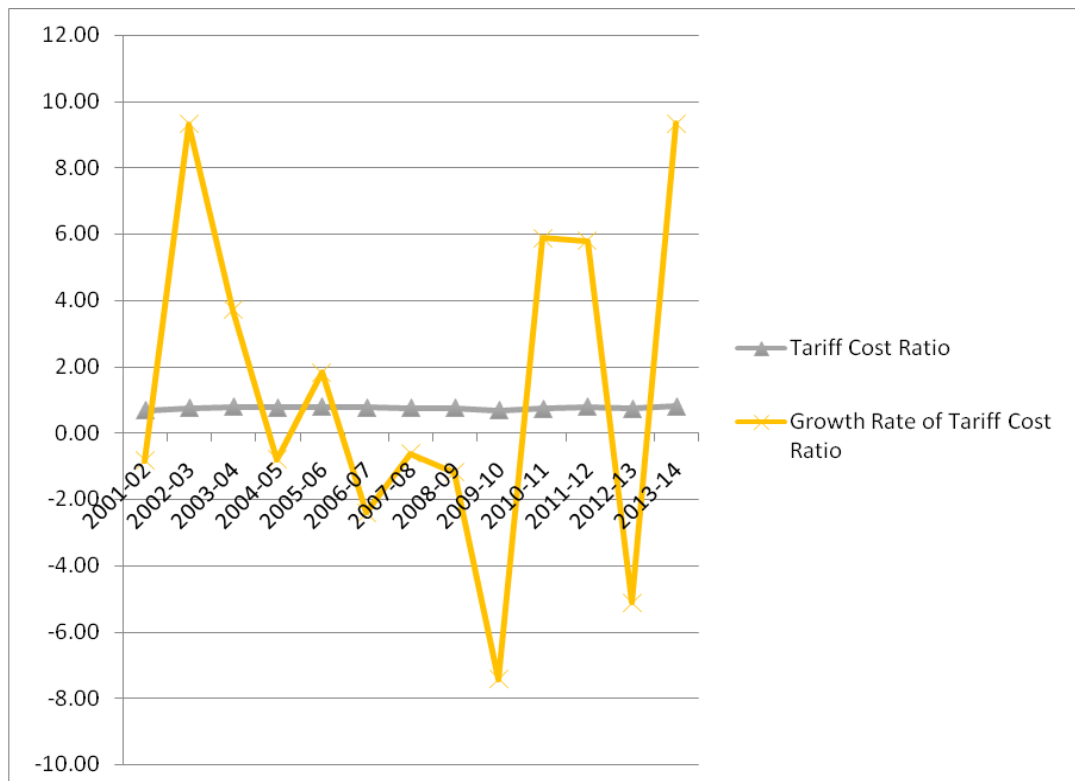


Figure 7.4.2. Trend of Tariff Cost Ratio and its Growth Rate



As shown in the Table 7.4.1 it is revealed that tariff cost ratio is less than one for the entire period of the study. This clearly indicates that power sector in India is far beyond breakeven point, but as it is observed that tariff cost ratio has improved from 0.69 in 2000-01 to 0.81 in 2013-14. Therefore, it presents slight positive improvement in financial performance of power sector. As far as growth rate of tariff cost ratio is concerned, there is high fluctuation recorded as shown in Figure 7.4.2.

Mean values presented in the Table 7.4.1 express that there is big gap between average cost (426.83 Paise per unit) and average revenue (321.06 Paise per unit). Similarly, mean tariff cost ratio of the period is 0.75 which is 0.25 below to breakeven point. But, the mean of growth rate is positive that reveals a minor improvement in the financial performance of the power sector during 2000-01 to 2013-14.