



## **A STUDY ON GROWTH PERFORMANCE OF DIFFERENT STRUCTURAL CHARACTERISTICS OF ELECTRICAL EQUIPMENT INDUSTRY IN TAMIL NADU**

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### **ABSTRACT**

*Manufacturing plays an important role in countries economic growth and its weight is 79.3 per cent out of total industrial sector in 2004-05. It employs nearly 1.8 million people in the organized sector and contributes more than 75 per cent India's export (Economic Survey, 2004-05). In Manufacturing Sector the manufacture of Electrical equipment industry had shown a phenomenal growth. Heavy electrical machinery output has grown from \$ 10.8 billion in 2008-09 to \$ 15.28 billion in 2011-12 and registered a CAGR of 12%. Special purpose machinery has registered high growth at a CAGR of 16% and has grown from \$13.19 billion in 2008-09 to \$20.42 billion in 2011-12. General purpose machinery is the largest segment in terms of volumes of output. It has grown from \$15.16 billion in 2008-09 to \$21.66 billion in 2011-12 at a CAGR of 13%. (Tamil Nadu Global Investors Meet 2015). Tamil Nadu possesses the second-largest economy (2011-12) among states in India after Maharashtra. It is the second most industrialized state next to Maharashtra. As of 2010-11, Tamil Nadu had a per capita GDP of \$1,622, the sixth highest in India. Tamil Nadu secures 2nd position in general purpose and special purpose machinery with 18% and 11% contribution to total India's output respectively. The State is also 5th in terms of heavy electrical machinery sector contribution to total India's output of this segment with 6% share. Keeping the in view in this an attempt has been made to analyse the trends in structural characteristics of electrical equipment industry in Tamil Nadu. The study is based on Secondary data collected from Annul Survey of Industries and other published sources.*

**Key Words:** Trend, Electric Equipment Industry, Tamil Nadu

### **INTRODUCTION**

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1P a g e



India's post-independence development plans have emphasized industrialization as a very important instrument for sustained growth. As a result the annual growth rate of industrial production of total industry is higher than country's overall economy growth. Within industrial sector, manufacturing plays an important role in countries economic growth and its weight is 79.3 per cent out of total industrial sector in 2004-05 (Economic Survey, 2004-05). In Manufacturing Sector the manufacture of Electrical equipment industry had shown a phenomenal growth. Heavy electrical machinery output has grown from \$ 10.8 billion in 2008-09 to \$ 15.28 billion in 2011-12 and registered a CAGR of 12%. Special purpose machinery has registered high growth at a CAGR of 16% and has grown from \$13.19 billion in 2008-09 to \$20.42 billion in 2011-12. General purpose machinery is the largest segment in terms of volumes of output. It has grown from \$15.16 billion in 2008-09 to \$21.66 billion in 2011-12 at a CAGR of 13%. (Tamil Nadu Global Investors Meet 2015) The key reasons for increasing growth is investment in public infrastructure, gradual reduction in government controls and higher inflow in private investment in 1990s. Tamil Nadu possesses the second-largest economy (2011–12) among states in India after Maharashtra. It is the second most industrialized state next to Maharashtra. As of 2010–11, Tamil Nadu had a per capita GDP of \$1,622, the sixth highest in India. Tamil Nadu secures 2nd position in general purpose and special purpose machinery with 18% and 11% contribution to total India's output respectively. The State is also 5th in terms of heavy electrical machinery sector contribution to total India's output of this segment with 6% share.

### **Review of Literature**

**Sturgeon and Lee (2001)** in their study contract manufacturing in electronic industry classified three categories of suppliers in accordance with the standardization level of the production and manufacturing process through. The ordinary commodity suppliers which provide standardized products through the regular market relationship, the captive type suppliers which are highly controlled by the buyers and adopt special equipment to produce and provide non-standardized products, and the turnkey suppliers which adopts non-specific equipment to produce and provides turnkey service to the buyers.

**Jeemol Unni et al (2001)** in their study "Economic Reforms and Productivity Trends in Indian Manufacturing" shows that both the organised and unorganised sectors in Gujarat seemed to be doing better than the all-India average in terms of growth of value added. Growth in the manufacturing sector in Gujarat was also more efficient than average all-India growth after the reforms were introduced. Gujarat's strategy of physical infrastructure development, leading to industrialisation, has been the main reason for the growth of the state's manufacturing sector.

**Jayeeta Deshmukh and Pradyut Kumar Pyne (2013)** examined the Labour productivity and export performance, Firm-level evidence from Indian manufacturing industries since 1991. Two-Stage Least Squares (2SLS) used for the study and the study revealed that the domestic firms are more export-intensive than foreign firms, and that private firms are more export intensive than public firms. Regarding the determinants of labour productivity at firm level, firm size and raw material intensity were found to be two significant determinants in this regard while the ownership status of the firms has no role.

**Abdul Azeez Erumban (2016)** “Productivity and Unit Labour Cost in Indian Manufacturing: A Comparative Perspective” reveals that the labour productivity levels in Indian manufacturing are much lower than those of Germany, the us, South Korea, Hungary and Poland, but higher than those of Indonesia, Brazil and Mexico. The unit labour cost in Indian manufacturing is the lowest among the countries in the sample, indicating strong cost competitiveness of Indian manufacturing vis-à-vis these countries. However, a comparison with China reveals a fast erosion of Indian manufacturing competitiveness in the recent period

**Objective and Methodology of the study**

The main objective of this paper is to analyse the growth performance of different structural characteristics of electrical equipment industry in Tamilnadu during the pre and post reform period.

This paper is based on secondary data collected from Annual Survey of Industries published by Central Statistical Organization, Government of India for the period from 1980-81 to 2007-08. For the sake of comparison the period was classified into two such as pre reform period (1980-81 to 1990-91) and post reform period (1998-99 to 2007-08). Due to the non availability of data, the post reform period is considered from 1998-99 to 2007-08. The analysis of the data was done by using Compound Growth Rate and Coefficient of Variation.

**Results and Discussions**

**Table-1**

**Trends in Different Characteristics of Electrical Equipment Industry During Pre and Post Reform Period in Tamil Nadu**

Year	No. of Indus	Fixed cap	No.of work	No.of empl	Wage to worker	Total emol	Gross capital
1980-81	100	100	100	100	100	100	100
1981-82	109.74	139.06	101.56	105.55	121.6	127.89	128.23
1982-83	104.6	109.53	102.09	100.49	120.83	109.34	40.1

1983-84	106.91	190.96	104.47	101.36	122.27	112.42	266.5
1984-85	113.82	77.21	100.74	100.03	92.08	110.56	54.12
1985-86	83.46	132.78	104.93	105.68	134.1	116.13	263.6
1986-87	108.97	107.59	116.13	95.17	111.99	112.17	96.79
1987-88	106.53	125.8	116.13	117.6	117.57	121.88	120.36
1988-89	112.53	106.72	97.85	96.04	104.3	99.53	77.05
1989-90	88.86	120.54	96.69	98.64	111.81	109.98	135
1990-91	100.53	112.97	94.31	96.79	107.11	109.41	120.59
<b>CGR</b>	<b>0.59</b>	<b>0.49</b>	<b>0.24</b>	<b>0.29</b>	<b>0.29</b>	<b>0.24</b>	<b>-1.92</b>
1998-99	100	100	100	100	100	100	100
1999-00	101.81	99.13	71.11	73.21	59.47	82.95	154.82
2000-01	83.99	176.82	118.24	114.26	196.7	146.55	98.8
2001-02	95.52	99.7	107.06	101.37	86.36	85.77	13.23
2002-03	84.72	128.3	92.79	95.57	125.48	121.13	301.76
2003-04	110.75	44.95	96.78	96.45	94.41	94.09	96.85
2004-05	108.39	119.77	126.2	126.2	125.09	121.22	323.03
2005-06	90.31	95.22	84.21	88.52	95.24	105.46	85
2006-07	116.08	168.58	109.51	132.63	114.38	167.73	264.61
2007-08	81.98	88.14	76.6	60.98	91.59	66.44	97.07
<b>CGR</b>	<b>-0.08</b>	<b>0.61</b>	<b>0.33</b>	<b>0.55</b>	<b>-0.60</b>	<b>-0.24</b>	<b>-7.01</b>
<b>Overall CGR</b>	<b>0.51</b>	<b>0.90</b>	<b>0.51</b>	<b>0.45</b>	<b>0.53</b>	<b>0.41</b>	<b>-1.35</b>
<b>C.V</b>	<b>10.92</b>	<b>28.55</b>	<b>13.04</b>	<b>15.41</b>	<b>23.49</b>	<b>19.43</b>	<b>63.64</b>

Source: Computed from Annual Survey of Industries.

Table 1 displays the data on trends in different characteristics of electric equipment industries during pre and post reforms period in Tamil Nadu. A look at the table reveals that the index of no industries had shown a positive growth in pre reform period and over all period but negative growth in post reform. The compound growth rate of index of no. of factories in overall period was 0.51. The highest indexed value in no. of industries during pre reform period was for the year 1984-85 (113.85) and the lowest indexed value was for the year 1985-86 (83.46). In Post reform period the highest indexed value was for the 2006-07(116) and the lowest was for the year 2007-08(81.98). The coefficient of variation of no industries was 10.92.

The index of the amount of fixed capital has shown a negative growth during the pre reform period and overall period but it has shown a positive growth in post reform period. The compound growth rate of the index of fixed capital in over all period was (-0.74). The highest indexed value in fixed capital during pre reform period was for the year 1983-84(190.96) and



the lowest indexed value was for the year 1984-85(77.21).In the post reform period the highest indexed value was for the year (2000-01)176.82 and the lowest was for the year (2003-04) 44.95.The coefficient of variation of fixed capital was 28.55.

The index of the number of workers has shown positive growth during the pre and post reform period and overall period also it is positive. The compound growth rate of the index of number of workers in over all period was (0.51). The highest indexed value in number of workers during pre reform period was for the years 1986-87, 1987-88(116.13) and the lowest indexed value was for the year 1990-91(94.31).In the post reform period the highest indexed value was for the year (2004-05)126.2 and the lowest was for the year (2007-08)76.6.The coefficient of variation of number of workers was 13.04.

The index of the amount of number of employees has shown positive growth the pre and post reform period and overall period also it is positive. The compound growth rate of the index of number of employees in over all period was (0.45). The highest indexed value in number of employees during pre reform period was for the years 1987-88(117.6) and the lowest indexed value was for the year 1986-87(95.17).In the post reform period the highest indexed value was for the year (2006-07)132.63 and the lowest was for the year (2007-08)60.98.The coefficient of variation of number of employees was 15.41.

The index of the wage to workers has shown positive growth during the pre and overall reform period but it has shown negative growth in post reform period. The compound growth rate of the index of number of employees in over all period was (0.53). The highest indexed value in number of employees during pre reform period was for the years 1983-84(122.27) and the lowest indexed value was for the year 1984-85(92.08).In the post reform period the highest indexed value was for the year (2000-01)196.7 and the lowest was for the year (1999-00)59.47.The coefficient of variation of wage to workers was 23.49.

The index of the total emoluments has shown positive growth during the pre and overall reform period but it has shown negative growth in post reform period. The compound growth rate of the index of number of employees in over all period was (0.41). The highest indexed value in number of employees during pre reform period was for the years 1981-82(127.89) and the lowest indexed value was for the year 1988-89(99.53).In the post reform period the highest indexed value was for the year (2006-07)167.73 and the lowest was for the year (2007-08)66.44.The coefficient of variation of wage to workers was 19.43.

The index of the amount of gross capital has shown a negative growth during the pre, post and overall reform period. The compound growth rate of the index of gross capital in over all period was (-1.35). The highest indexed value in gross capital during pre reform period was for the year 1985-86(263.6) and the lowest indexed value was for the year 1982-83(40.1).In the post reform period the highest indexed value was for the year (2004-05)323.03 and the

lowest was for the year (2001-02) 13.23. The coefficient of variation of fixed capital was 63.64.

## CONCLUSION

The manufacturing of electric equipment is an important material base for guaranteeing the economic development. In Tamilnadu the structural characteristics of manufacturing of electrical equipment industry had shown a zig zag mode of growth. In pre reform period all the structural characteristics had shown positive growth except gross capital formation. While in post reform period, more than half of the structural characteristics show negative growth viz., number of industries, wages to workers, total emoluments and gross capital formation. In the overall period only gross capital formation had shown negative growth rate. Among all characteristics number of fixed capital was growing in fastest manner and gross capital formation was growing in a negative manner.

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