

# Growth and Productivity Analysis of Small Scale Rubber and Plastic Products Industry in Punjab

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**Abstract:** The growth of Rubber and Plastic Industry in Punjab is an essential pre-requisite for the growth of other industries especially the packaging industry is the largest user of plastics machinery. This study examines the performance of small scale rubber and plastic industry in Punjab. The study period is divided into two parts i.e. pre-liberalization (1980-81 to 1991-92) and post-liberalization (i.e. 1991-92 to 2013-14). This paper finds that after liberalization performance of rubber and plastic SSI in Punjab is not satisfactory.

The rubber and plastic industry is one of the oldest industries in India since then farmers have utilized it and today it is flourishing as its flexibility, hardness and its break resistance make it suitable for application almost anywhere. Mfg. Rubber and Plastic Industry make goods by processing plastics materials and raw rubber.

**Keywords:** essential pre-requisite, pre-liberalization, rubber and plastic industry in Punjab.

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## 1. INTRODUCTION

The growth of Rubber and Plastic Industry is an essential pre-requisite for the growth of other industries. The packaging industry is the largest user of plastics machinery. Plastic bags, plastic bottle, plastic wrap are all made on plastics machinery. Other main users of plastic products are automotive industry, the aerospace sector and medical equipment manufacturers etc.. An economy can grow if it creates the right conditions for development and industrialization is the pre-condition. Industrial growth of the economy depends to the growth of plastic and rubber industry. Small Scale Industries play an important role in Indian and Punjab economy because these industries are considered important measure for bringing about reduction in regional inequalities. One of the important small scale industry in Punjab is Rubber and Plastic Industry. The contribution of small scale rubber and plastic industry is increasing year by year especially in employment.

In this paper an attempt has been made to analyze the growth and productivity of small scale Rubber and Plastic Industry of Punjab, as has been observed for periods during pre-liberalization (1980-81 to 1991-92), post liberalization period (1991-92 to 2013-14) and the overall period of the study (1980-81 to 2013-14). This paper tries to examine the trends in partial productivities in the two periods to see whether there has been improvement in the post-liberalization (1991-92 to 2013-14) period, the period associated with liberalization, privatization and globalization.

## 2. OBJECTIVES, DATABASE AND METHODOLOGY

The present paper has been written keeping the following objectives in mind:-

- To examine the growth of Small Scale Rubber and Plastic Products Industry of Punjab.
- To ascertain the productivity trends of Small scale Rubber and Plastic Products Industry in Punjab.
- To examine the Prospects of Small Scale Rubber and Plastic Products Industry in Punjab.

The present study is based on secondary data only which have been culled from various sources. Such sources include :-

1. The Directorate of Industries Punjab.
2. Five Year and Annual Plans Punjab
3. Economic Survey Punjab (Various Issues).

The study period starts from 1980 .In order to examine the growth of small scale Rubber and Plastic Industry, Compound Annual Growth Rate and the Partial Productivities of labour and capital are calculated. Partial productivities of labour and capital are calculated as:-

$$\text{Labour Productivity} = \frac{\text{Production}}{\text{Employment (In Numbers)}}$$

$$\text{Capital Productivity} = \frac{\text{Production}}{\text{Fixed Investment}}$$

In order to make a comparison, the Compound Annual Growth Rates have been calculated after dividing the study period into sub-parts. The sub-parts are 1980-81 to 1991-92, 1991-92 to 2013-14 and 1980-81 to 2013-14. In order to calculate CAGR's the statistical package (SPSS version 7.5) is used. Small Scale Rubber and Plastic Industry in Punjab is now a fast growing industry both in terms of production and employment.

### 3. RESULTS AND DISCUSSION

The growth pattern of small scale rubber and plastic industry in Punjab is observed by the variables such as production, employment, number of units, fixed investment and partial productivities of labour and capital. The growth and compound annual growth rates (CAGR's) of the above said variables are shown in the table and the results are discussed below.

Table						
Growth of Production, Employment, Number of Units, Fixed Investment, Labour Productivity and Capital Productivity of Small Scale Rubber and Plastic Products Industry in Punjab						
Production, Employment, Number of Units, Fixed Investment, Labour Productivity and Capital Productivity						
Year	Production.	Employment (in Number)	Number of Units	Fixed Investment	Labour <sup>1</sup> Productivity (Rs. Cr. Per worker)	Capital <sup>2</sup> Productivity
	(Rs. Cr)			(Rs. Cr)		
1980-1981	34.36	8437	1509	15.16	0.004	2.2664
1981-1982	37.36	9331	1710	16.82	0.004	2.2211
1982-1983	42.07	10090	1854	18.75	0.0041	2.2437
1983-1984	78.06	10995	2052	21.45	0.007	3.6391
1984-1985	52.89	12002	2233	23.59	0.0044	2.242
1985-1986	67.64	12875	2452	26.13	0.0052	2.5885
1986-1987	77.14	14002	2639	30.92	0.0055	2.4948
1987-1988	83.12	14779	2798	34.41	0.0056	2.4155

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1988-1989	96.18	15903	3051	42.14	0.006	2.2823
1989-1990	112.12	17519	3268	50.57	0.0063	2.2171
1990-1991	133.04	18476	3438	57.75	0.0072	2.3037
1991-1992	151.42	19594	3603	65.25	0.0077	2.3206
1992-1993	256.79	20146	3703	71.19	0.0127	3.6071
1993-1994	322.47	21152	3842	82.89	0.0152	3.8903
1994-1995	412.9	22219	3945	98.78	0.0185	4.1799
1995-1996	461.48	23665	4141	116.86	0.0195	3.9489
1996-1997	540.06	24608	4247	132.63	0.0219	4.0719
1997-1998	633.2	25613	4355	156.08	0.0247	4.0562
1998-1999	694.87	26656	4461	187.23	0.026	3.7113
1999-2000	904.79	27322	4548	193.54	0.0331	4.6749
2000-2001	989.56	27963	4621	208.28	0.0353	4.7511
2001-2002	1063.28	28683	4686	221.47	0.037	4.801
2002-2003	974.42	21029	3609	203.84	0.0463	4.7803
2003-2004	971.29	20260	3475	191.78	0.0479	5.0646
2004-2005	1035.95	20504	3508	196.15	0.0505	5.2812
2005-2006	1072.24	20850	3538	204.4	0.0514	5.2457
2006-2007	1120.27	20407	3340	206.43	0.0548	5.4269
2007-2008	1189.56	20868	2981	220.85	0.057	5.3863
2008-2009	1298.6	21278	2930	234.36	0.04	5.541
2009-2010	1372.8	21922	2950	246.44	0.0626	5.5705
2010-2011	1392.45	23029	2845	295.03	0.0604	4.7197
2011-2012	1433.88	24231	2897	363.34	0.0592	3.9464
2012-2013	1615.91	25480	2995	428.2	0.0634	3.7737
2013-2014	1769.65	26679	3078	478.25	0.0663	3.7002
CAGR's :-	CAGR's :-	CAGR's :-	CAGR's :-	CAGR's :-	CAGR's :-	CAGR's :-
Pre Reform Era	13.16	7.27	7.52	12.93	5.946	0.18
Reform Era	9.17	1.28	-0.84	9.04	7.8	0.12
Total Period	12.29	3.44	2.12	10.68	8.61	1.45

Source: Directorate of Industries, Punjab

Note: Productivities are calculated on the basis of data supplied by Directorate of Industries, Punjab.

1. Partial Productivity of labour (O/L): It is the total Production per employee.
2. Partial Productivity of Capital (O/K): It is the ratio of total production to fixed capital.

**Production:**

The production in small scale rubber and plastic industry of Punjab as shown in column 2 of the table suggest a growth trend. Commencing with Rs. 34.36 Cr.in 1980-81, the production touched highest peak of Rs.1063.28 Cr. in 2001-02. Thereafter, it started increasing, till the end of study period. The CAGR's for the pre-liberalization period was 13.16 percent, which declined to 9.17 per cent in the liberalization period and overall CAGR's was 12.29 percent.

**Employment:**

Analysis of column 3 of the table reveals that employment in small scale rubber and plastic industry of Punjab followed an upward trend during the study period and it touched the highest peak of 28683 in 2001-2002. Then the employment started declining almost till the end of the study period. The CAGR's for the pre-liberalization period was 7.27 per cent, which declined to 1.28 per cent in the liberalized period, during the overall study period CAGR was 3.44 per cent.

**Number of Units:**

The column 4 of the table shows that no. of units of the small scale rubber and plastic industry of Punjab increased continuously till 2001-02. During 2001-02, it was 4686. Thereafter, the growth rate started declining. The CAGR of the variable achieved a growth rate of 7.52 per cent during pre-liberalization and during post-liberalization CAGR was -0.84 per cent.

**Fixed Investment:**

The column 5 of the table reveals that fixed investment in small scale rubber and plastic industry of Punjab was maximum during 2001-02, but it continued to fall till 2009-10. Thereafter, the fixed investment showed acceleration till the end of the study period. The CAGR during pre-reform era was 12.93 per cent. During reform era it was 9.44 per cent.

**4. LABOUR PRODUCTIVITY AND CAPITAL PRODUCTIVITY**

The CAGR of labour productivity as shown in the column 6 of the table accelerate during reform era. During reform era it was 7.8 per cent and pre reform era it was 5.946 per cent. Analysis of the column 7 of the table depicts that CAGR of capital productivity was 0.18 per cent during pre-reform and during reform era it was 0.12 per cent.

From the above discussion it is quite evident that in absolute terms, only labour productivity and capital productivity exhibited significant CAGR 's and accelerated during the overall study period and after post -liberalization era whereas other variables ( i.e. Production, fixed investment and employment) CAGR's decelerated during post-liberalization period.

**Weaknesses:**

These are the main weakness of small scale rubber and plastic products industry in Punjab :-

- Lack of professional Management.
- Lack of market intelligence.
- Adverse effects of liberalization.
- Lack of proper government policy.
- Lack of commercial intelligence.
- Inadequate government incentives.
- Erratic and irregular power supply.
- Lack of quality control.
- Lack of new research.
- Small enterprises have yet to learn the necessary skills of management.

**OPPORTUNITIES:**

Although the growth performance of the small scale rubber and plastic industry is not satisfactory yet these are opportunities for the growth of rubber and plastic SSI in Punjab:-

- Growth of packing industry.
- Growth of transportation and new machinery.

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- Growing fashion consciousness globally.
- Rising potential in domestic market.
- Expanding old markets.
- Flexibility, hardness and break resistance of rubber and plastic products.

In short, the performance of small scale rubber and plastic industry in Punjab in post-reform era had been extensively commented upon. But small scale rubber and plastic industry in Punjab has the enormous potential for future growth. Demand for industry is also increasing, only a conscious government policy is required.

Sr. No.	Abbreviations	Full Meaning
1	N/U	Number of Units
2	Emp.	Employment (In No.)
3	F/I	Fixed Investment (In Rs. Cr.)
4	Prod	Production (In Rs. Cr.)
5	SSI	Small Scale Industry
6	CAGR'S	Compound Annual Growth Rates
7	O/K	Partial Productivity of Capital
8	O/L	Partial Productivity of Labour (Rs. Cr. Per worker)
9	Govt.	Government
10	SPSS	Statistical Package of Social Sciences
11	No.	Number

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