KALEIDOSCOPE OF EXPORT PERFORMANCE OF INDIAN SMEs

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This paper aims at analysis of export performance of Indian Small and Medium Enterprises (SMEs) and also at development of econometric models of the impact of production, employment and the number of units of SMEs on their export performance using data for thirty-five years from 1973-74 to 2007-08. For achieving the objectives, researchers have developed two econometric models, viz; Linear Trend Model and Multiple Log Linear Regression Model. The findings of study indicate that the export performance of Indian SMEs is on the pattern of growth. Further, the volume of production, number of employees, and the number of SME units in India have played relatively important role in growing pattern of SMEs exports.

Key Words: Indian SMEs, Exports, Linear trend, Log linear regression

INTRODUCTION

The Small and Medium Enterprises (SMEs), earlier known as Small Scale Industries (SSIs) have gathered momentum with industrialization and economic growth in India. In all the Industrial Policy Resolutions of the Government of India from 1948 to 1991, recognition was given to the micro and small enterprises. In 1999, Ministry of Micro, Small and Medium Enterprises came into being to provide development and promotional opportunities to this sector. In 2006, Micro, Small and Medium Enterprises Development (MSMED) Act was enacted. It seeks to facilitate the development of these enterprises and also to enhance their competitiveness.

The SME sector has played a vital role in the growth of the country. The small scale sector has grown rapidly over the years. The growth rates during various plan periods had been very impressive. When the performance of this sector is viewed against the growth in the manufacturing and the industry sector as a whole, it instills confidence in the resilience of the small-scale sector. Table 1 gives a broader view of the importance of SMEs in India.

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Table 1: SMEs Sector at a Glance	
Number of MSMEs	26.1 Million
Number of Manufacturing Enterprises	7.3 Million
Number of Service Enterprises	18.8 Million
Number of Women Enterprises	2.1 Million (8%)
Number of Rural Enterprises	14.2 Million (54.4%)
Employment	59.7 Million
Per unit Employment	6.24
Per unit Fixed Investment	₹ 33.78 Lakh
Per unit Original Value of Plant & Machinery	₹ 9.66 Lakh
Per unit Gross Output	₹ 46.13 Lakh
Source: "Micro, Small and Medium Enterprises: An Overview", Government of India, 2009 (www.msme.gov.in)	

SMEs sector has played a major role in India's export performance. About 45-50 percent of the Indian exports is contributed by SSI Sector. Direct exports from SSI Sector account for nearly 35 percent of total exports. Besides direct exports, it is estimated that small-scale industrial units contribute around 15 percent to total India's exports indirectly. This takes place through merchant exporters, trading houses and export houses. Indirect exports may also be in the form of export orders from large units or the production of parts and components for the use for finished exportable goods.

Table 2: Contribution of SMEs in India's Exports					
Years	India's Total Exports (Crore ₹)	SMEs' Contribution (Crore ₹)	Years	India's Total Exports (Crore ₹)	SMEs' Contribution (Crore ₹)
1971-72	1608	155 (9.63)	1998-99	141603	48979 (34.58)
1976-77	5142	766 (14.89)	1999-00	159561	54200 (33.96)
1981-82	7809	2071 (26.24)	2000-01	202509	69797 (34.46)
1986-87	12567	3644 (28.99)	2001-02	207745	71244 (34.29)
1991-92	44040	13883 (31.52)	2002-03	252789	86013(34.02)
1992-93	53688	17785 (33.12)	2003-04	293366	97644 (33.28)
1993-94	69547	25307 (36.38)	2004-05	375339	97644 (33.28)
1994-95	82674	29068 (35.15)	2005-06	456417	150242 (32.91
1995-96	106353	36470 (34.29)	2006-07	571779	176121 (30.80)
1996-97	118817	39249 (33.03)	2007-08	655863	202000 (30.79)
1997-98	126286	44442 (35.19)			
Source: Ministry of Micro, Small and Medium Enterprises (www.msme.gov.in) Note: Figures in brackets are percent contribution of SMEs in India's Total Exports.					

It would surprise many to know that non-traditional products account for more than 95

percent of the SSIs' exports. The exports from SSI sector have been clocking excellent growth rates in last decade. It has been mostly fuelled by the performance of garments, leather and gems and jewellery units from this sector. The product groups where the SSI sector dominates in exports are sports goods, readymade garments, woolen garments and knitwear, plastic products, processed food and leather products. The major export markets identified having potential to enhance SSIs' exports are US, EU and Japan. (M/S AC Nielson, 2006)

Export from Indian SMEs has enjoyed a significant share percentage in total exports of India since 1970s. In 1971-72 their export share was 9.63 percent, which grew to 14.89 percent in 1976-77. In 1981-82, SMEs registered 26.24 percent share in total Indian export which grew to 28.9 percent in 1986-87 followed by 31.52 percent in 1991-92. From 1991-92 to 2007-08, SMEs contribution to India's total exports was recorded on an average of 30 to 35 percent. However, it was highest (36.38 percent) in 1993-94. (Table 2)

The paper consists of five sections. First section is concerned with basic introduction about the Indian SMEs, and also trends and patterns of their exports. Review of existing literature is given in the section two. Section three deals with the description of research objectives, hypotheses, aspects concerned with model, data and the research methodology. The empirical results and analysis of model are explained in section four. Fifth section presents major findings of study followed by the conclusion.

LITERATURE REVIEW

The empirical studies that have begun to appear on the subject access the role, strengths, weaknesses, hurdles and obstacles, opportunities, and challenges of SMEs in global setting. FISME (2000) tried to identify the products where Indian SMEs have opportunities in the Chinese market. He compared leading small scale export segments from India with those export segments where India currently enjoys high market shares in China. Hall et al. (2002) compared the role and performance of SMEs in Korea and Taiwan during the 1990s and early 2000s. They observed that both Taiwan and Korea have built much of their economic success on SMEs.

Wanjohi (2004) in his paper observed challenges faced by SMEs in Kenya. Some of them are lack of managerial training and experience, inadequate education and skills, lack of credit, rigid national policy and regulatory environment, technological change, poor infrastructure and scanty markets information. He also suggested some measures to meet these challanges. Pasanen (2005) focused on determinants of growth and performance of small and medium enterprises in Finland. The aim of his study was to

identify strategic factors differentiating growth of young and long-lived SMEs on the basis of empirical data consisting 32 young (8 years or less) and 33 long-lived (20 years or more) SMEs in Finland.

Morris and Basant (2006) stated that small firms in India have a crucial and seminal role to play. They observed that small firms have a comparative advantage in labor-intensive manufacturing, and this is amplified by the schism in the labor market. Therefore voluminous exports that exploit the country's labor cost advantage are not possible without the small firms' dominant and productive role. Vidya Suresh and P Shashidhar (2006) highlighted the importance of small industries, their role in the economy and the impact of economic reforms on growth pattern and productivity performance of small-scale industries. He stated that this is not to say that there are no shortcomings within the industry, or in public policy relating to it. Small industries are faced with numerous problems major and minor, which make them either uncompetitive or sick and made an attempt to address some solutions that can improve their productivity by focusing on a sustainable vision.

MV Kumbhar (2007) observed that Indian small and medium enterprises are facing many problems in globalized market. He mentioned that there are so many hurdles and internal obstacles in Indian SMEs. If country wants to succeed for the better economic development and reduce economical disparities in the economy, the government should help SMEs; encourage them to invest more; and build competitiveness. A study of IIFT (2008) mentioned that in India effective implementation of policies and delivery of results to the satisfaction of SMEs remains much below the desired level, though there are a large number of institutional mechanisms, support measures available, and concerns shown by the government. The study suggested that there is a need to critically review the existing policies and mechanisms, to assess the constraints and gaps in delivering the desired output.

Ibrahim (2008) identified the factors, problems, constraints, difficulties and challenges facing the small and medium industries (SMIs) in the state of Nigeria by administering close-ended questionnaire on 30 SMIs to solicit their responses. He stated that high performance goals for SMI in term of products, exports, employment generation and contribution to GDP can only be achieved when SMI are provided with friendly policies and incentives, conducive operating environment; improvements in infrastructure, and enhanced peace and security. Thakkar et al. (2009) described some of the key areas that influence managing the supply chain in the small and medium sized enterprise (SME) sector in India.

RESEARCH OBJECTIVES AND METHODOLOGY

This paper intends to comprehensively analyze the export performance of Indian SMEs for the period of thirty five years from 1973-74 to 2007-08. Accordingly, the perceived objectives of the study are as follows.

- To examine the trends of exports from Indian SMEs for the period 1973-74 to 2007-08
- How, and to what extent, production & employment of SMEs has influenced their export performance.
- To understand how far the growing number of SMEs units is responsible for variation in their exports.

To make the study more accurate and scientific the researchers have framed following hypotheses.

$H_0 1$: Indian SMEs' exports are not affected by the increased size of their production.

$H_0 2$: Increment in the number of persons employed by SMEs is not likely to increase the export performance of Indian SMEs.

$H_0 3$: Number of units of Indian SMEs and their exports are not directly related.

MODEL, DATA AND METHODOLOGY

Present study is based on secondary data only. The time series data on India's total exports, exports from Indian SMEs, annual production of SMEs, employment provided by SMEs, and the number of SMEs units in India have been collected from the websites of Reserve Bank of India (www.rbi.org), and Ministry of Micro, Small and Medium Enterprises (www.msme.gov.in). Time period under study is from 1973-74 to 2007-08.

To examine the trends of exports from Indian SMEs, and the growth rate during selected period is computed by following Linear Trend Model.

$$\ln Y_t = \alpha + \beta t + U_t$$

For measuring the impact of SMEs' production, employment and the number of units on their exports, researchers have applied multiple log-linear regression models. In this model each partial slope coefficient measures the partial elasticity of the dependent variable with respect to the explanatory variable in question, considering all other variables constant (Gujarati, 2004). The econometric model for our estimation is as follows.

$$\ln SMEEXP = constant + \beta_1 \ln PROD + \beta_2 \ln EMPL + \beta_3 \ln UNITS + \beta_4 Time + u$$

Where: ln is the natural logarithm of the number; SMEEXP is exports from Indian SMEs

(in Crore Rupees); PROD is the annual production of SMEs (in Crore Rupees); EMPL is yearly employment provided by Indian SMEs (in Million persons) taken as the indicator of human resource of SMEs; UNITS is the number of SMEs units in India (in Millions); and TIME is the series of thirty five years from 1973-74 to 2007-08. Time is included in the regression model with the objective to achieve stationarity of time series data by assuming that the trend is deterministic. (Guha P and Adhikary ML, 2009)

EMPIRICAL RESULTS

DESCRIPTIVES: Basic descriptive information about the selected independent and dependent variables is summarized in table 3. Results of descriptive statistics show that over the period from 1973-74 to 2007-08, exports, production, and employment from Indian SMEs varied between Rs. 400 to 2,02, 000 Crore, Rs. 7,200 to 6,95, 000 Crore, and 3.97 to 32.23 million people respectively. Similarly, the number of SME units varied between 0.42 to 13.37 million during the same period. It indicates a higher rate of fluctuation in production, exports, and employment of SMEs as compared to the rate of fluctuation in number of SME units.

Table 3: Results of Descriptives

	Exports (Crore ₹)	Production (Crore ₹)	Employment (Million)	No. of SMEs Units (Millions)
Observations	35	35	35	35
Minimum	400	7200	3.97	42
Maximum	202000	695000	32.23	13.37
Mean	38175	159470	15.68	5.50
Median	19716	87300	15.83	6.79
Standard Deviation	53734	174106	8.91	4.65
Skewness (SE)	1.73 (0.398)	1.59 (0.398)	0.328 (0.398)	0.230 (0.398)
Kurtosis (SE)	2.37 (0.778)	2.10 (0.778)	-1.23 (0.778)	-1.65 (0.778)
Kolmogorov-Smirnov (Sig.)	0.241 (0.0)	0.191 (0.002)	0.148 (0.051)	0.271 (0.0)

Table 3 shows positive skewness are for all the distributions, indicating that the large tail of the distribution lies towards the higher values of the variable. Kurtosis which is the degree of peakedness in a curve of the frequency distribution is largest for exports and smallest for employment. The Kolmogorov-Smirnov statistic of normality of distribution indicates that the distribution is normal as the significance value of all the distributions except employment provided by the SMEs is less than 0.05.

LINEAR TREND ANALYSIS

The researchers developed linear trend models for SMEs exports, production, employment and the number of units. The dependent variables (exports, production, employment and the number of units) are regressed on time (independent variable). Results of linear trend model (Table 4) shows that growth for SMEs exports, production, employment and the number of units is positive and their coefficient are 0.189, 0.122, 0.063 and 0.115 respectively. Values of R square calculated to find out how well the explanatory variable is able to predict the dependent variable, also provided accurate information about the fitness of the model. The results compiled in the table show that time can predict 99%, 96%, 97% and 92% variation in the exports, production, employment and number of SMEs units.

Table 4: Results of Linear Trend Model

Dependent Variable / Explanatory Variable	Exports (Crore ₹) Time (yrs)	Production (Crore ₹) Time (yrs)	Employment (Million) Time (yrs)	No. of SMEs Units (Millions) Time (yrs)
R	0.99	0.98	0.99	0.96
R square	0.99	0.97	0.97	0.92
Adjusted R square	0.99	0.96	0.97	0.92
Standard Error	0.18	0.22	0.09	0.34
Constant	9.189	11.33	2.566	1.128
Coefficient	0.189	0.122	0.063	0.115
t-statistics	61.22*	32.61*	39.65*	20.15*
F-statistics	3.74*	1.06*	1.57*	406.19*
Durbin Watson statistics	0.38	0.34	0.24	0.40
Note: (*) Significant at 1% level of significance.				

Ordinary Least Square (OLS) equations for measuring trend of SMEs performance are as follows:

$\ln SMEWXP = 9.189 + (0.189)t + \mu$ (OLS for SMEs export trend)

$\ln PROD = 11.33 + (0.122)t + \mu$ (OLS for SMEs production trend)

$\ln EMPL = 2.566 + (0.063)t + \mu$ (OLS for SMEs employment trend)

$\ln UNITS = 1.128 + (0.115)t + \mu$ (OLS for trend of SMEs units)

MULTIPLE LOG-LINEAR REGRESSION MODEL

As discussed earlier, in Multiple Log Linear Regression Model each partial slope coefficient measures the partial elasticity of the dependent variable with respect to the explanatory variable in question. The results of the model are presented in table 5.

Table 5: Results of Multiple Log Linear Regression Model				
Dependent Variable	InSMEEXP			
Observations	35			
R Square	0.996			
Adjusted R Square	0.996			
SE of Regression	0.124			
F Statistics (Sign.)	2.05 (0.0)			
	Coefficient	Standard Error	t-statistics	Probability
Constant	10.27	1.635	7.530	0.000
InPROD	-0.198	0.188	-1.053	0.301
InEMPL	0.332	0.627	0.529	0.600
InUNITS	0.266	0.203	1.309	0.200
TIME	0.162	0.020	8.173	0.000

On the basis of results obtained OLS equation is as follows:

$$InSMEEXP = 10.27 + (-0.198)InPROD + (0.332)InEMPL + (0.266)InUNITS + (0.162)TIME + \mu$$

In the above regression model partial slope coefficient which measures the elasticity of SMEs exports with respect to their production is - 0.198. Holding other variable constant, it implies that if the production of SMEs increases by 1 percent, their exports on the average go down by about 0.20 percent approximately. The regression coefficient (which indicates sensitivity of SMEs' exports) of employment and number of units is 0.332 and 0.266 respectively. It means 1 percent change (increase or decrease) in SMEs' employment and the number of SME units will affect (increase or decrease) SMEs' exports by 0.33 percent and 0.26 percent respectively keeping the other variables constant. The adjusted R square value for the model is 0.996, which indicates that above model is more than 99% good to fit. The estimated F- value (2.05) in multiple log regression models is highly significant, as the p-value associated with it is about zero. Further, p value of t-statistics for SMEs' production (-1.053), employment (0.529), and the number of units (1.309) is more than 0.05, hence the researchers can accept the null hypothesis. It means there is no significant impact of independent variables (production, employment, and the number of units) on the variation in the SMEs' exports

CONCLUSION

Exports of Indian SMEs have increased considerably in last three and half decades. The SMEs' share in India's total exports is also substantial. However, the researchers observed that after liberalization, the growth in exports from Indian SMEs is much less

as compared to growth in total exports of the country. Further, increase in exports from Indian SMEs can be attributable to increase in number of units established, and also the number of persons employed, the production of SMEs and their exports have shown a mismatch. It is therefore suggested that the Government should provide some more facilities and incentives to SMEs in exporting their products. The products of SMEs should be displayed in international exhibitions and the expenses incurred should be reimbursed by the exchequer. SMEs should be encouraged to focus on innovation and technology development; training program on packaging for SMEs exporters should be organized in various parts of the country to acquaint them with latest packaging standards, techniques, etc. Further, the ministry of SSI should also come forward to provide more comprehensive international marketing support.

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APPENDICES

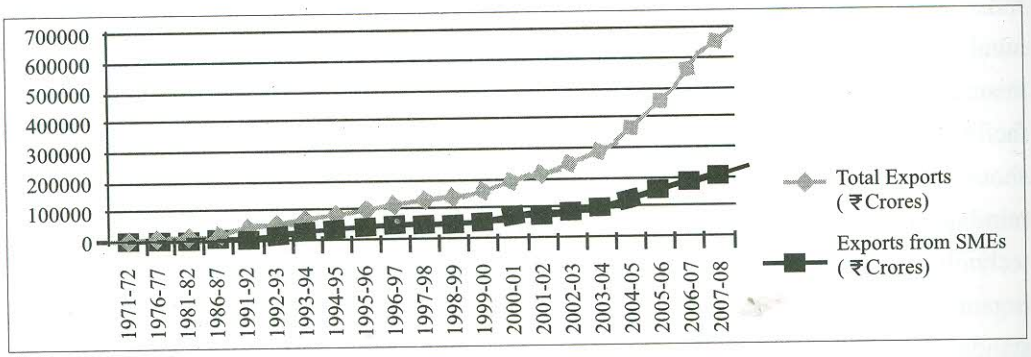

Figure 1: Share of SMEs in India's Total Exports

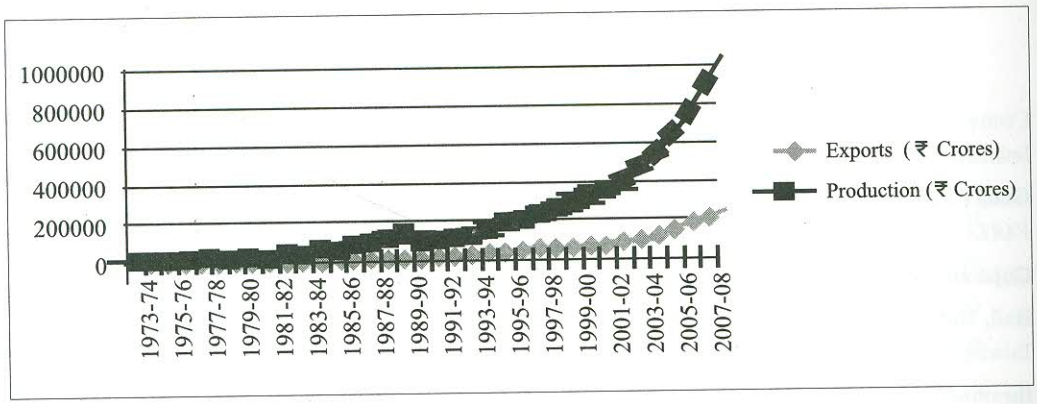

Figure 2: Trend of SMEs' Production and Exports

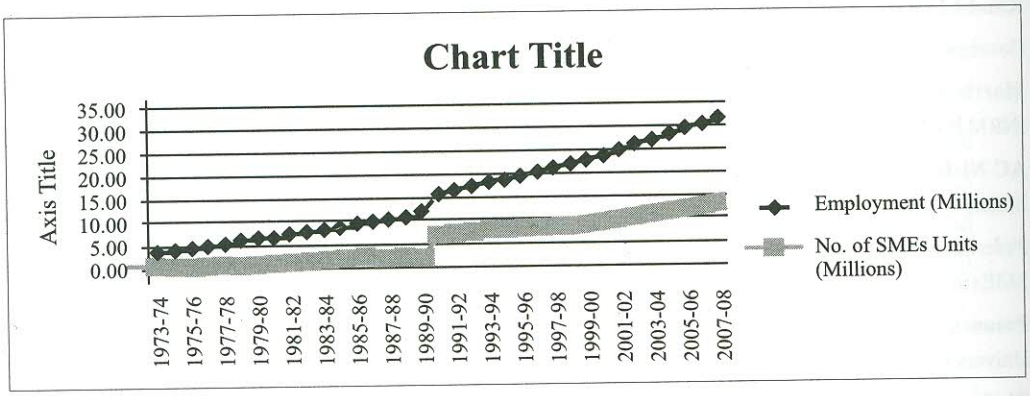

Figure 3: Trend of SMEs' Employment and number of Units