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## **IMPACT OF INNOVATIONS ON THE GROWTH AND PERFORMANCE OF MICRO, SMALL AND MEDIUM ENTERPRISES IN INDIA**

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### **Introduction:**

According to Schumpeter effect, the higher level of entrepreneurship reduces unemployment and emphasizes the role of the entrepreneur as prime cause of socio economic development. He also describes the innovating entrepreneur challenges incumbent firms by introducing new inventions that make current technologies and products. He also emphasizes about large firms in innovations and appropriation process through a strong positive feedback loop from innovation to increased research and development activities.

The main vision and role of Micro, Small and Medium Enterprises MSMEs as an engine of growth and has emerged as a highly significant and dynamic sector of the Indian economy over the last five decades. It provides large employment with low capital cost and helping regional backward and rural areas and it contributes enormously to the socio economic development of the country.

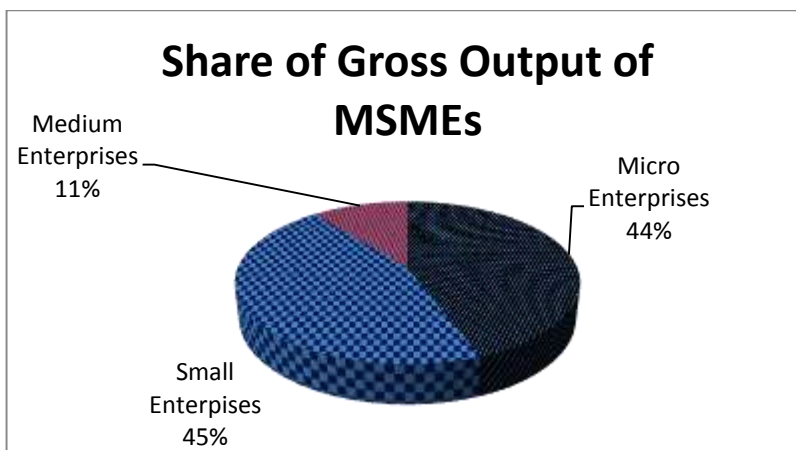
MSMEs are complementary to large industries as ancillary units and contributes enormously to the manufacturing output, employment and exports of the country. In terms of its importance, this sector accounts for about 45 per cent of manufacturing output and 40 per cent of total exports of the country. It is estimated to employ about 60 million persons in over 26 million units throughout the country. There are over 6000 products ranging from traditional to high tech items, which are being manufactured by the MSMEs in India. It is known for the maximum opportunities for both self employment and wage employment outside agriculture sector. It also contributes a higher rate of economic growth but also building an inclusive society in multiple dimensions in creation of non-farm livelihood at low cost, balanced regional development, gender and social justice, environmentally sustainable development. The concept of enterprise and a classification of enterprises on the basis of investment into Micro, Small and Medium were introduced by the enactment of Micro, Small and Medium Enterprises Development Act, 2006.

The growth rate of MSMEs sector as an important segment of industrial sector has been increased from 5.70 per cent in 2002-03 to 10.40 per cent in 2009-



10, but annual growth rate of MSMEs are concerned, it has increased from 8.68 per cent to 13.00 per cent during 2002-2008.

The contribution of MSMEs to industrial production also increased from 39.74 per cent to 44.86 per cent during 1999-00 to 2008-09. The contribution of MSMEs to Gross Domestic Product (GDP) has also increased from 5.86 per cent in 1999-00 to 8.72 per cent in 2008-09. As a result of these indicators it has been demonstrating a vibrant sector of Indian economy. The high growth was witnessed during 2008 on account of re-classification of MSMEs as per MSMED Act 2006. Firstly, the investment limit of small (manufacturing) was raised from Rs.1 crore to Rs. 5 crore and small (services) was added to include enterprises with investment limit between Rs.1 crore to Rs.2 crore. Secondly, the coverage of service enterprises were widened by including small roads and water transport operators, small businesses, professional and self-employed and all other service enterprises as per definition provided under MSMED Act 2006. The share of Gross Output of Rs.7,07,510 crore of which 44.24 percent of Micro Enterprises, about 45.06 per cent from Small Enterprises and 10.71 per cent from Medium enterprises. Moreover, a maximum of 94 per cent of MSMEs are under the organization of proprietary.



Credit and finance facility is promoting growth, but there is wide gap of credit to this sector due to heterogeneous and unorganized nature. This sector has to venture into the level of growth trajectory. A prospective enterprises is emerging in areas such as nano-technology, bio-technology, aero space, defense- applications, homeland security would also needed for alternative sources of finance Studies of the innovation pattern of global MSMEs point to the fact that there is a relationship between innovation and the growth of MSMEs. So, while MSMEs of north-east England pursued radical innovation as a strategy of firm growth (Bala Subrahmanya 2001) Estonian MSMEs improved their performance in terms of market share and a diversified range of goods and services through innovation.



Empirical studies like those by Engel et al (2004) and Coad and Rao (2008) have found that there was a positive impact of innovation output on the sales turnover change in the craft-dominated industries of Germany as well as in the high-tech sectors in the US. However, all these findings are related to industrialised countries and therefore their relevance in the context of a developing country is questionable.

### Objectives:

The objectives of the paper entitled 'Impact of Innovation on the growth and performance of Micro, Small and Medium Enterprises in India' are as follows:

1. to study the Growth and Performance of Micro, Small and Medium Enterprises its influence on industrial development .
2. to study the institutional credit for Micro, Small and Medium Enterprises its influence production and exports in India.
3. to study the level of expenditure on R&D on Micro, Small and Medium Enterprises in India .

### Hypotheses:

The hypotheses framed on the above objectives are given below:

1. Credit for Micro, Small and Medium Enterprises are contributing for industrial Development in India.
2. Micro, Small and Medium Enterprises production and exports are influencing to increase industrial development.
3. Expenditure on R&D on Micro, Small and Medium Enterprises is increasing positively.

### Methodology:

The Multiple Linear Regression Model has been used to estimate the production of MSMEs during 1990-91 to 2010-11. The production MSMEs is taken as a dependent variable and the variables such number of MSMEs, fixed investment and credit are considered as independent variables. To estimate the elasticities of independent variables and its functional influence on the production MSMEs is a deterministic feature of the analysis. The time series data has been used for analysis and presented in tabular form. The extent of influence is estimated by using the model.

The Multiple linear regression models is specified below:

$$\text{PMSMEs} = \alpha_0 + \beta_1 (\text{NMSMEs})_{2i} + \beta_2 (\text{Fixed Investment})_{3i} + \beta_3 (\text{Export})_{4i} + \beta_4 (\text{Employment})_{5i} + \beta_5 (\text{Exp on R\&D})_{6i} + u_i - \dots\dots\dots 1)$$

In the above equations  $\alpha$  and  $\beta$  terms equal parameters and  $u$  equals error term.



It is being hypothesized in the models that Production of MSMEs, which is positively related to the increase of the growth of MSMEs, Fixed investment and Credit and finance to MSMEs and innovation in terms of expenditure on research and development . The influence of New Industrial Policy as an instrumental in higher production and entrepreneurship is positive correlation between them, when other things remaining the same.

### Dependent Variable:

PMSMEs = Production of MSMEs in Rs Crore

### Independent Variables:

Number of MSMEs ,Fixed Investment Rs in Crore , Credit for MSMEs Rs in Crore.

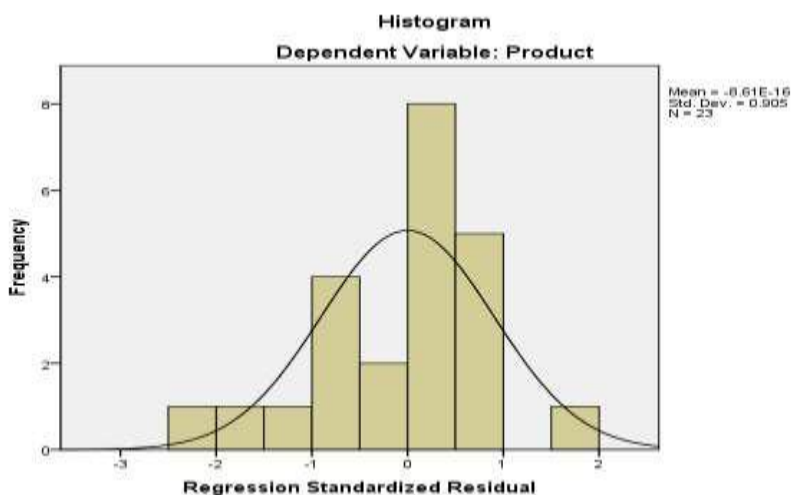
Expenditure on Research and Development (innovation)

### Results:

Table-1:  
Regression on the Production of MSMEs and fixed investment and credit and employment

S.No	Indicators	Coefficients	t-Values	P.Values
1	Number of MSMEs	-838.654	-1.788	.091
2	Fixed Investment on MSMEs	1.200	8.174	.000
3	Exports	1.479	2.518	..022
4.	Exp.on R&D	9.071	2.359	.030
	Constant	-96028.716	-2.231	.039
	R Square	99 per cent		
	F- Statistic	8702.974		
	P-Value	0.000		
	Durbin-Watson	1.804		

All explanatory variables considered together explain about 99 per cent of variation in the production of MSMEs in India. The coefficients associated with different explanatory variables are found to significant at different probability levels. The coefficient associated with the number of MSMEs comprised of negative but low significance level., the fixed investment on MSMEs with positive coefficient of 1.200, which has very high significance level. the export t coefficient for MSMEs estimates at 1.479 and expenditure on R&D at 9.071 coefficient both are revealing at significant. value respectively. The values of t and F are highly significant in estimation of the production of MSMEs in India.



### Industrial Production in India

**Table -2: Industrial Production in India during 1990-91 to 2010-11**

Years	2004-05 base	Annual Growth Rate
1990-91	290416.9	-
1991-92	289568.2	-0.29
1992-93	298982.5	3.25
1993-94	321311.4	7.47
1994-95	354864.4	10.44
1995-96	401563.5	13.16
1996-97	433511.1	7.96
1997-98	442247.2	2.02
1998-99	458015.3	3.57
1999-00	474074.3	3.51
2000-01	504348.9	6.39
2001-02	516215.9	2.35
2002-03	551287.6	6.79
2003-04	584380.3	6.00
2004-05	634093.9	8.51
2005-06	685622.6	8.13
2006-07	759063.4	10.71
2007-08	814908.7	7.36
2008-09	836363.2	2.63
2009-10	906081.0	8.34
2010-11	976634.0	7.79

Source : Annual Survey of Industries, Ministry of Statistics and Programme Implementation, Government of India.

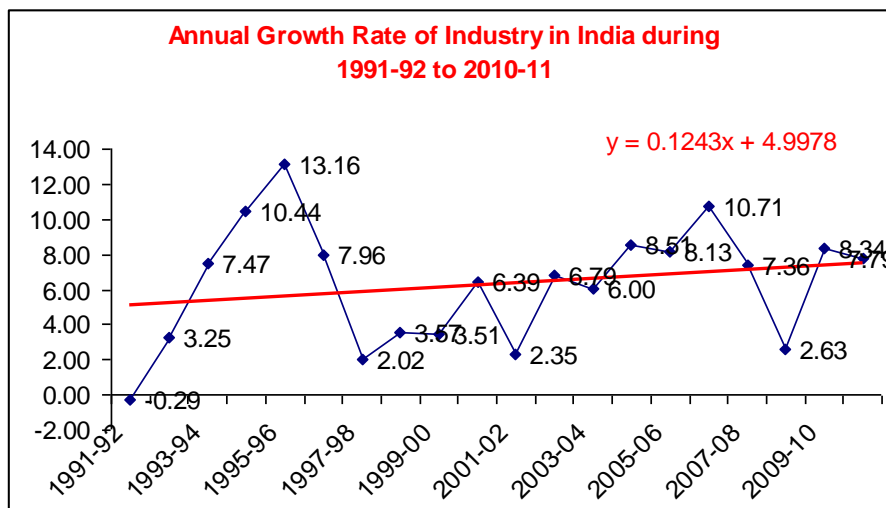


Table -2 represents annual growth rate of production in industry of India during 1990-91 to 2010-11 at constant prices of 2004-05. The first decade of growth between 1993-94 to 1995-96t has increased from 7.47 per cent to 13.16 per cent and later on it has declined to 2.02 per cent in 1997-98 and gradually it has been recovering to the extent of 3.51 per cent during 1999-2000. During the second decade the annual growth rate of production of industry has registered very low at 2.35 percent in 2001-02, subsequently it has increased to 6.79 percent in 2002-03, 8.51 per cent in 2004-05 and a maximum of 10.71 percent in 2006-07 and again it has declined to 2.63 percent in 2008-09 due to economic recession in USA and European countries. During the period of 2009-10 and 2010-11 it has regained to an extent of 8.34 per cent and 7.79 per cent respectively.

**Growth and Performance of MSMEs in terms of number, employment, fixed investment production and exports:**

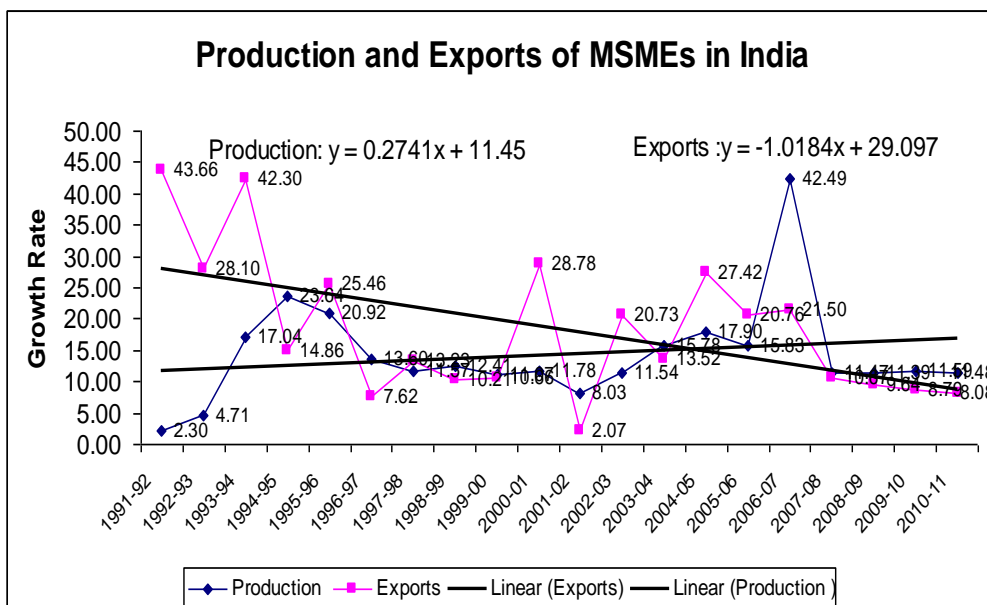
Table -3 encompasses the growth rate of MSMEs during 1990-91 to 2010-11. All they earns in two decades had registered a growth of an around 4.5 per cent except during 2006-07 it went up to 111.57 percent growth due to several policy initiatives like enactment of MSMEs Act in 2006 for the development of this sector. As for as employment of MSMEs is concerned, it has registered the growth of 4.83 per cent to 5.29 per cent with an exception of 2006-07 i.e 101.98 per cent growth of employment. In terms of fixed investment, its growth rate has increased from 7.26 per cent to 11.48 percent with the highest increase in 2006-07 at 166.20 per cent.

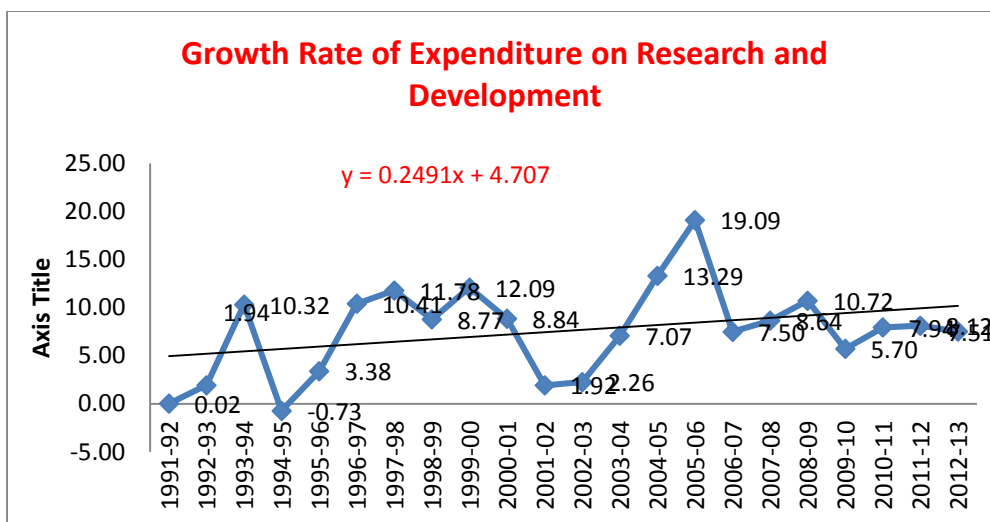


**Table -3 :MSMEs Performance : Units, Employment, Investments, Production, Exports and Expenditure on R&D**

Sl No.	Year	Total Working MSMEs (Lakh Numbers)	AGR	Employment In (Lakh persons)	AGR	Fixed Investment	AGR	Production (Current Prices)	AGR	Exports	AGR	Expenditure on R & D	AGR
1	1990-91	67.87	-	158.34	-	93555	-	78802	-	9664	-	10089.84	-
2	1991-92	70.63	4.07	165.99	4.83	100351	7.26	80615	2.30	13883	43.66	10092.32	0.02
3	1992-93	73.51	4.08	174.84	5.33	109623	9.24	84413	4.71	17784	28.10	10287.86	1.94
4	1993-94	76.49	4.05	182.64	4.46	115795	5.63	98796	17.04	25307	42.30	11350.07	10.32
5	1994-95	79.60	4.07	191.40	4.80	123790	6.90	122154	23.64	29068	14.86	11267.64	-0.73
6	1995-96	82.84	4.07	197.93	3.41	125750	1.58	147712	20.92	36470	25.46	11648.51	3.38
7	1996-97	86.21	4.07	205.86	4.01	130560	3.83	167805	13.60	39248	7.62	12860.73	10.41
8	1997-98	89.71	4.06	213.16	3.55	133242	2.05	187217	11.57	44442	13.23	14375.30	11.78
9	1998-99	93.36	4.07	220.55	3.47	135482	1.68	210454	12.41	48979	10.21	15636.16	8.77
10	1999-00	97.15	4.06	229.10	3.88	139982	3.32	233760	11.07	54200	10.66	17526.19	12.09
11	2000-01	101.10	4.07	238.73	4.20	146845	4.90	261297	11.78	69797	28.78	19075.59	8.84
12	2001-02	105.21	4.07	249.33	4.44	154349	5.11	282270	8.03	71244	2.07	19441.97	1.92
13	2002-03	109.49	4.07	260.21	4.36	162317	5.16	314850	11.54	86013	20.73	19881.93	2.26
14	2003-04	113.95	4.07	271.42	4.31	170219	4.87	364547	15.78	97644	13.52	21287.83	7.07
15	2004-05	118.59	4.07	282.57	4.11	178699	4.98	429796	17.90	124417	27.42	24117.24	13.29
16	2005-06	123.42	4.07	294.91	4.37	188113	5.27	497842	15.83	150242	20.76	28720.73	19.09
17	2006-07	361.76	193.11	805.23	173.04	868544	361.71	1198818	140.80	182538	21.50	30874.04	7.50
18	2007-08	377.36	4.31	842.00	4.57	920460	5.98	1322960	10.36	202017	10.67	33540.43	8.64
19	2008-09	393.70	4.33	880.84	4.61	977145	6.16	1375699	3.99	221496	9.64	37135.00	10.72
20	2009-10	410.80	4.34	921.79	4.65	1038546	6.28	1488390	8.19	240975	8.79	39253.37	5.70
21	2010-11	428.73	4.36	965.15	4.70	1105934	6.49	1655581	11.23	260454	8.08	42369.85	7.94
23	2011-12	447.66	4.42	1011.80	4.83	1183332	7.00	1790805	8.17	279933	7.48	45809.55	8.12
14	2012-13	467.56	4.45	1061.52	4.91	1269338	7.27	1926029	7.55	299412	6.96	49249.25	7.51

Source: 1. Annual Report 2011-12, MSME, Government of India, Ministry of Micro, Small and Medium Enterprises.  
 2. Economic Survey 2011-12.





The production of MSMEs in the first decade has increased from 2.3 per cent in 1991-92, 4.71 per cent in 1992-93, 17.04 per cent in 1993-94 and it has reached a maximum rate of growth at 23.64 per cent in 1994-95, and later on it has declined to 11.07 per cent during 1999-2000. During the second decade, the year 2006-07 has reached a peak growth rate at 42.49 percent. This period growth of production in industry is better than that of first decade. The graphic representation like line chart shows a continuous increase in two decades of production.

The exports of MSMEs have been continuously demonstrating a declining trend during 20 years. The maximum rate of growth of exports of MSMEs has registered during 1991-92 and 1993-94 with 43.66 per cent and 42.30 per cent respectively. Subsequently, a continuous deceleration of growth in exports is shown in the table that as low as 2.07 per cent in 2001-02 latter it went up to 27.42 per cent in 2004-05 and further it has declined to 8.08 per cent during 2010-11. This indicates that there is a need of special attention to promote the exports of MSMEs to the world market.

### **The Credit Guarantee Scheme for Micro and Small Enterprises**

The limit for collateral free loans to micro and small enterprises (MSEs) sector has increased from Rs.5 lakh to Rs.10 lakh to encourage the branch level functionaries to avail of the Credit Guarantee Scheme cover and making performance in the evaluation of all banks.

A circular was issued to all scheduled commercial banks mandating them not to accept collateral security in the case of loans upto Rs 10 lakh extended to units in the MSE sector and advising them to strongly encourage their branch level





functionaries to avail of the CGS coverage. The result in enhanced usage of the Guarantee Scheme and facilitate increase in quality and quantity of credit to the presently included, as well as excluded, MSEs, leading eventually, to sustainable inclusive growth.

### **Cluster financing**

Cluster based approach to lending is intended to provide a full-service approach to cater to the diverse needs of the MSE sector which may be achieved through extending banking services to recognized MSE clusters. A cluster based approach may be more beneficial

- (a) in dealing with well-defined and recognized groups
- (b) availability of appropriate information for risk assessment
- (c) monitoring by the lending institutions and
- (d) reduction in costs.

United Nations Industrial Development Organization (UNIDO) has identified 388 clusters spread over 21 states in various parts of the country. The Ministry of Micro, Small and Medium Enterprises has also approved a list of clusters under the Scheme of Fund for Regeneration of Traditional Industries (SFURTI) and Micro and Small Enterprises Cluster Development Programme (MSE-CDP) located in 121 Minority Concentration Districts. Accordingly, banks have been advised to take appropriate measures to improve the credit flow to the identified clusters of micro and small entrepreneurs from the Minorities Communities residing in the minority concentrated districts of the country. Banks have also been advised that they should open more MSE focused branch offices at different MSE clusters which can also act as counseling centers for MSEs. Each lead bank of the district may adopt at least one cluster.

### **Credit Guarantee Fund Trust Scheme for MSEs**

Government of India and SIDBI set up the Credit Guarantee Fund Trust for Micro and Small Enterprises (CGTMSE) with a view to facilitate flow of credit to the MSE sector without the need for collaterals or third party guarantees. The main objective of the scheme is that the lender should give importance to project viability and secure the credit facility purely on the primary security of the assets financed. The Credit Guarantee scheme (CGS) seeks to reassure the lender that, in the event of a MSE unit, which availed collateral-free credit facilities, fails to discharge its liabilities to the lender, the Guarantee Trust would make good the loss incurred by the lender up to 85 per cent of the outstanding amount in default.



The CGTMSE would provide cover for credit facility up to Rs. 100 lakh which have been extended by lending institutions without any collateral security or third party guarantees. A guarantee and annual service fee is charged by the CGTMSE to avail of the guarantee cover. Presently the guarantee fee and annual service charges are to be borne by the borrower.

The main objective of making available credit to small scale industrial units, particularly tiny units, for loans up to Rs. 10 lakh without collateral or third party guarantees. The scheme is being operated by the Credit Guarantee Fund Trust for Small Industries (CGTSE) set up jointly by the government of India and SIDBI.

The loan limit under the scheme has been enhanced to Rs.25 lakh per borrower in terms of the comprehensive policy package on SSI, The scheme covers collateral free credit facility extended by eligible lending institutions to new and existing micro and small enterprises up to Rs. 25 lakh per borrowing unit. The credit guarantee scheme was initially approved for one year with a corpus of Rs. 125 crore contributed by government of India and SIDBI in the ratio of 4:1. Latter government has decided to continue the corpus fund and rained to Rs. 2500 crore by 2010-11. The corpus fund of CGTSE has been enhanced to Rs. 1,336.55 core with the contribution of Rs. 1,069.25 crore, from the government of India and Rs.267.30 crore from SIDBI.

### **Credit Linked Capital Subsidy Scheme (CLCSS)**

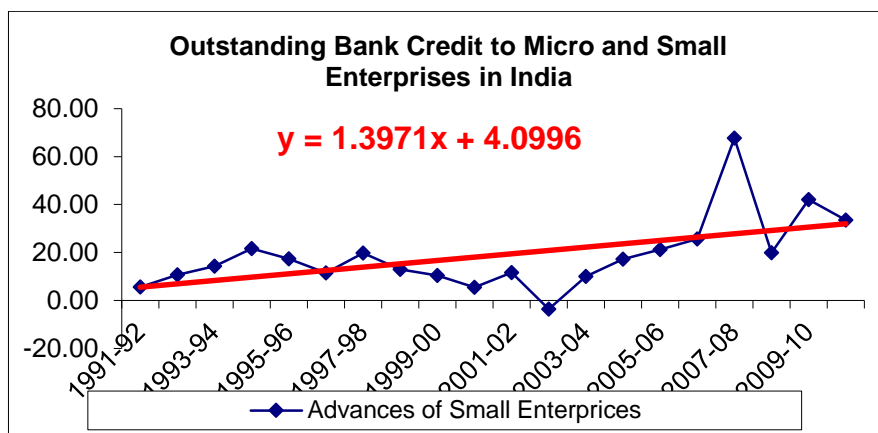
A scheme for technology up gradation of Small Scale Industries called the Credit Linked Capital Subsidy Scheme. The main aim is to facilitate technology up gradation by providing upfront capital subsidy to SSI units, including tiny, khadi and village and coir industrial units, on institutional finance (credit) for modernization of their production equipment (plant and machinery) and techniques. The scheme provided for 12 per cent capital subsidy to SSI units, including tiny units, on institutional financial for induction of well-established and improved technology in selected sub sectors/products approved under the scheme. The eligible amount of subsidy is based on the actual loan amount not exceeding Rs. 40 lakh and it has increased by 1.0 crore in the 2004-05 budget. The rate of subsidy has also increased from 12 per cent to 15 per cent. This represents that the amendments made in the existing guidelines have increasingly encouraged tiny and small scale industrial units to undertake modernization through availing of capital subsidy. The maximum limit of eligible loan for an estimation of subsidy under this scheme is Rs.100 lakhs. Presently 884 technologies under 48 products or sub sectors have been approved under the scheme. Since inception of the scheme, 15613 units have availed subsidy of Rs.813 crore as on 30-11.2011 on an average each unit got Rs. 5.2 lakh of capital subsidy.



**Table 4**  
**Outstanding Bank Credit to Micro and Small Enterprises in India**

Year (end-March)	Outstanding Credit	
	Rs.in Crore	Annual Growth Rate
1989-90	15969	-
1990-91	17938	12.33
1991-92	18939	5.58
1992-93	20975	10.75
1993-94	23978	14.32
1994-95	29175	21.67
1995-96	34246	17.38
1996-97	38196	11.53
1997-98	45771	19.83
1998-99	51679	12.91
1999-00	57035	10.36
2000-01	60141	5.45
2001-02	67107	11.58
2002-03	64707	-3.58
2003-04	71209	10.05
2004-05	83498	17.26
2005-06	101285	21.30
2006-07	127323	25.71
2007-08	213539	67.71
2008-09	256128	19.94
2009-10	364001	42.12
2010-11	485943	33.50

Source: Small Industries Development Bank of India.



**Outstanding Bank Credit to Micro and Small Enterprises:**

Table -4 represents the all banks outstanding credit to Micro and Small Enterprises in India during 1991-92 to 2010-11. The credit growth has been continuously increasing for MSMEs which envisages that 21.67 per cent growth has registered in 1995-96 in the first decade which is the maximum hike of the credit. During the second decade a maximum growth of credit at 67.71 per cent during 2007-08 due to MSMED act, which is followed by 42.12 per cent in 2009-10 and 33.50 per



cent in 2010-11 respectively. The credit of all the scheduled commercial banks which include Public sector banks, Private sector banks and foreign banks.

The table -5 represents the credit of all scheduled commercial banks extended to MSMEs which comprised of public sector banks, private sector banks and foreign banks. The credit for these enterprises has increased enormously since 2006 Act of MSMED, which contributed credit to an extent of 28.82 percent per year by public sector banks, a maximum of 42.66 per cent per year by private sector banks and at least 16.85 per cent by foreign banks. However, in terms of percentage share of public sector banks was 81.39 per cent of the total in 2006 and it has declined slightly to a level of 77.5 per cent in 2011. The percentage share of private sector banks has increased from 8.32 per cent to 18.08 per cent between 2006 and 2011

**Table -5**  
**Credit of All Scheduled Commercial Banks to MSMEs in India**

All SCBs	2006	per cent	2011	per cent	CGR
Public Sector Banks	82434	81.39	376625	77.50	28.82
Private Sector Banks	10421	10.29	87857	18.08	42.66
Foreign Banks	8430	8.32	21461	4.42	16.85
Total	101285	100.00	485943	100.00	29.87

#### **Micro Finance Programme:**

Government of India has approved the funds for Micro Finance Programme for SIDBI under a Portfolio Risk Fund (PRF), which is used for security deposit requirement of the loan amount from the MFIs or NGOs. At present SIDBI takes fixed deposit equal to 10 per cent of the loan amount. Under the Portfolio Risk Fund, the share of MFIs or NGOs is only 2.5 per cent of the loan amount (i.e. 25 per cent of security deposit) and balance 7.5 per cent (i.e. 75 per cent of the security deposit) is adjusted from the funds provided by the government. As on December, 2006 cumulative loan amount of Rs. 101.87 crore has been provided to MFIs/NGOs under the scheme which benefited to 3.21 lakh persons.

**Table -6**  
**Plan Allocation for 12<sup>th</sup> Five Year Plan**

Sl.No.	Vertical	Projected for 12th Plan Rs.in Crore	Percent
1	Credit & Finance	19450	30.02
2	Technology Up gradation	9500	14.66
3	Infrastructure Development	11360	17.53
4	Market & Procurement	2110	3.26
5	Skill Development & training	3600	5.56
6	Institutional Structure	3100	4.78
7	Khadi & Village Industries Sector	14800	22.84
8	Coir Sector	870	1.34
Total		64790	100.00
Source: Report on MSMEs Growth for 12 <sup>th</sup> Five Year Plan, New Delhi.			



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### **Projection of 12<sup>th</sup> Five Year Plan:**

The highest priority has been given to credit and finance to MSME during 12<sup>th</sup> Five Year Plan projection which accounts for 30.02 percent which is followed by 22.84 per cent of the Khadi and Village Industries Sector, about 17.53 per cent of infrastructure development and at least 14.66 per cent of technology up gradation and about 5.56 per cent for skill development and training etc.

### **Fostering Innovation**

Innovation is broadly defined to include ‘new to the world’ knowledge creation and commercialization as well as ‘new to the market’ knowledge diffusion and absorption. Although both types of innovation activities are essential, India stands to gain more from catching up to the global frontier of knowledge through increased absorption than from trying to push out the frontier through creation. An enormous amount of global knowledge is not fully utilized in India. Given the overriding need to better address the needs of the poor in India, innovation could be ‘inclusive’ by addressing knowledge creation and absorption efforts most relevant to the poor.

For diffusing and absorbing knowledge, technology support programmes could be taken at cluster level for the MSMEs and world-class demand responsive metrology, standards, testing, and quality infrastructure closely linked to innovation created for fostering inclusive innovation. Financial support for grass root innovators could be increased and Intellectual Property Rights for traditional knowledge strengthened. Innovation whether in goods and services or processes can be instrumental in increasing profitability by increasing competitiveness and market share.

### **The national investment on R&D**

The national investment on R&D activities during 2002–03 as per the Ministry of Science and Technology was Rs 18000.16 crore, of which only about one-fourth could be attributed to the private sector (20.3 per cent) and public sector (4.5 per cent ) enterprises. The ratio of R&D expenditure to the gross national product was only 0.80 per cent in 2002–03 compared to 5.11 per cent in Israel, 4.27 per cent in Sweden, 3.11 per cent in Japan, and 1.23 per cent in China. Obviously, there is scope for considerable improvement on the R&D front in India for fostering innovation.

Innovation intensity has increased for large firms and SMEs, with the SMEs registering a greater increase in innovation than large firms. Statistics are already emerging on the increasing importance of innovation and its scale and scope among the country’s firms today. A National Knowledge Commission of India study reveals that 42 per cent of large firms and 17 per cent of MSMEs have introduced ‘new to the world’ innovations during the course of their business. Seventeen per cent of the large companies rank innovation as the top strategic priority and 75 per cent rank it among the top three priorities. Irrespective of the dimensions of



technological innovations, MSMEs intend to achieve cost-effective, improved versions of existing products to gain and maintain technological momentum.

- About 7.3 per cent of the large firms have achieved breakthrough in innovation while 76.4 per cent have introduced incremental innovation.
- Internal processes for innovation such as maintaining a specific innovation department, allocating funds, rewarding innovative employees, maintaining physical locations for innovations, and constituting cross functional teams are all important factors which encourage firms to become more innovative.
- Firms with more patent filings and use of IPR consultants are more innovative.
- Firms partnering with government agencies, collaborating with universities and R&D labs also tend to be innovative.
- However, the most important barrier to innovation is skill shortage and a lack of effective collaboration with the R&D institutions. NDC has recommended that there is a need for systematic reforms of the higher education system, including skill-based marketable vocational education in India which would facilitate the development of the required intellectual capital as well as enable more effective collaboration between industry, educational institutions, and the government. Apart from this, it is necessary to encourage innovation through fiscal incentives on a continuing basis.
- According to a recent World Bank report focused on enhancing the innovation capacities of India's enterprises to unleash its innovation potential, India needs to develop a strategy that does the following:
  - Focuses on increasing competition as part of improving its investment climate, supported by stronger skills, better information infrastructure, and more finance—public and private.
  - Strengthens its efforts to create and commercialise knowledge, as well as better diffuse existing global and local knowledge and increase the capacity of smaller enterprises to absorb it. If all enterprises could achieve national best practices based on knowledge already used in India, the output of the economy could increase more than five-fold.
  - Fosters more inclusive innovation, by promoting formal R&D efforts for poor people and more creative grassroots efforts by them, and by improving the ability of informal enterprises to exploit existing knowledge.

### **Increased productivity, welfare improving the investment climate, especially sharpening competition**

#### **Knowledge creation and commercialisation**

- Increasing private R&D efforts
- Improving the allocation and efficiency of public R&D
- Strengthening the commercialisation of knowledge



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**Inclusive innovation**

- Harnessing formal creation activities for the poor
- Promoting and diffusing indigenous grassroots innovation
- Helping the informal sector better absorb existing knowledge

**Knowledge diffusion and absorption**

- Spurring enhanced global knowledge flows
- Improving the quality, diffusion and absorption of metrology standards, testing and quality services
- Strengthening the absorption capacity of micro, small and medium enterprises (MSMEs)

**Support mechanisms****Skills and education**

- Addressing basic skills (improving primary and secondary education and informal sector skills)
- Building worker and manager skills
- Increasing the number of highly skilled engineers and researchers (improving India's university systems)

**Information infrastructure**

- Expanding ICT infrastructure in rural and urban areas
- Developing ICT infrastructure for high-end research institutions and other applications

**Innovation finance**

- Providing financial support for early-stage technology development
- Deepening early-stage venture capital
- Strengthening finance for technology absorption by MSMEs

Innovation under local conditions is a critical element to help MSMEs, both new and existing, to address India's mega challenges. First and foremost, any innovation must think about the concept of scale in the Indian context, the target customer size, reach, price points, and how to leverage local resources given all attendant cultural and regional insensitivities. To address this, the country should have its own indigenous pervasive models. To emulate established global models, India needs to re-assess the applicability of these models in the Indian context.

India has always seen abundant localised creativity. This literally means working around a lack of resources by making best use of available resources and coming up with a quick-fix solution.

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The problem however, has always been the institutionalisation of this innovation. Many Indian MSMEs innovate and offer new products and services that address a multitude of problems. But this innovation fails to sustain. Few companies go beyond the one innovative product or service. So, even while new technology start-ups can embark on breakthrough innovations for building knowledge-intensive

### **Conclusion:**

There is a strong evidence as for as vibration of MSMEs in the Indian economy in multiple dimensions such as increasing the number of MSMEs , production, employment, fixed investment and credit and finance facilities along with innovations. The value of R square is very high and strong influence of independent variables on the increase of production. Durbin Watson static value also around 2 that is 1.804 envisages the goodness of fit of a model. Fixed capital, expenditure on R&D has been significantly contributing to increase the production of MSMEs in India. The credit gap is enormous for micro enterprises in the unorganized sector. There is need to focus on marketing, skill development, training, infrastructure and technology for progress of MSMEs in India.

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