INDIAN INDUSTRIAL SCENARIO IN POST REFORMS PERIOD

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Abstract

Present paper is an attempt to understand and analyze the performance of industrial sector of India in post reforms period. The study is organized in five sections – first section is of introductory nature. After proper review we chose relevant data and methodology which is further analyzed for coming at conclusions for policy formation. There have been many changes in policy as well as execution in the sector which plays a crucial role in the growth story of the nation. One of the important reasons of the present downturn in Indian economy is the bad performance of industrial sector over recent years. In our present study we have taken the data of variables related to industries like number of factories, number of employees, invested capital, net value added (NVA) gross capital formation of industries (GCF), gross domestic product (GDP), overall GCF from 1991-2012 and calculated their compound annual growth rate (CAGR) which comes out to be 2.18%, 4.31%, 11.48%, 12.71%, 11.62%, 6.79% and 10.01% respectively. The contribution of industry to total NVA varied between 6.63 and 12.46 whereas the contribution towards total GCF varied from 9.48 to 31.82. The variations in all variables are high questioning the consistent performance of this critical sector. The problems of sector which includes lack of timely availability of finance and project clearance delays have put India at 134th rank in World Bank Doing Business (2013). The difficulties need to be addressed by fiscal and monetary policy as well as by manufacturing policy.

Key Words: Indian Industry, Value Added, Capital Formation, Employment

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97

I Introduction

Many emerging countries in recent decades have relied on a development strategy that focused almost exclusively on promoting the manufacturing sector and the exports of manufactured products. The reason behind the strategy is that manufacturing has both forward and backward linkages with agricultural and services sector. All the three sectors are interdependent. If one sector grows, the other will have to keep pace with it. Among all, the manufacturing sector is crucial for the economy's growth as it employs 12% of the country's labor force (FY12) as well as provides a transitional labor force in agriculture. Also the sector has a multiplier effect for job creation in tertiary sector. According to National Manufacturing Policy 2011, every job created in manufacturing sector creates two-three additional jobs in related activities. Several aspects of industrial behavior have been extensively studied in the Indian context, including employment issues (Goldar, 2000).This sector which is of huge relevance to the economy is not contributing much to the overall GDP in India (was even less than 20% in 2011-12) which indicates towards the problems and the potential of this sector. In the report of World Doing Business, rank of India in all the BRICS countries (countries having potential to grow and India is amongst one of them) shows its relative position in environment conducive to business operation.

Table 1: Ranks of BRICS countries in World Bank Doing Business

Countries	Rank in 2012	Rank in 2013
Brazil	118	116
Russia	111	92
India	131	134
China	99	96
South Africa	41	41

Source: World Bank Doing Business (2013)

The low numerical value of ranking for a country means that regulatory environment in particular country is more conducive to business operation as compared to the countries having high numerical value. Among all the BRICS countries India is on the worst position and even deteriorating. It reached to the 134th rank in 2013 from 131 in 2012 which shows that regulatory environment in India is not conducive to business operation.

The 1991 reforms laid strong emphasis on enabling markets and globalization coupled with lower degrees of direct government involvement in economic activities. The lists of industries

reserved solely for the public sector were reduced to three: defense, aircrafts and warships, atomic energy generation and railway transport. The process of industrial licensing by the central government has been abolished, except for a few hazardous and environmentally-sensitive industries. The requirement that investment by large houses needed a separate clearance under the *Monopolies and Restrictive Trade Practices Act* to discourage the concentration of economic power was replaced by a new competition law that attempts to regulate anti-competitive behavior. In October 1999, the Government of India appointed a High Level Committee on Competition Policy and Competition Law to advise a modern competition law for the country in line with international developments and to suggest a legislative framework, which may entail a new law or appropriate amendments to the MRTP Act. The Committee presented its Competition Policy report to the Government in May 2000. The improved competition law was drafted and presented to the Government in November 2000. After some refinements, following extensive consultations and discussions with all interested parties in December 2002 the Parliament passed the new law, namely, the Competition Act 2002.The net effect of these measures was a sharp rise in industrial growth. From an average of 4% in the 1970s and around 6.5% in the 1980s, industrial growth has averaged around 6% during 1991-2004, perhaps reflecting the effect of liberalization of various controls. Over the entire period beginning 1980 through 2004, industrial growth has been roughly of the order of 6.1% (Kohli, 2006).

II Review of Literature

Goldar(2000) analyzed the pattern of growth of employment in organized manufacturing in the 1990s.The results of their econometric analysis suggests that the growth rates of output and real wages had a significant effect on employment growth. They found negative relationship between growth rates of real wages and employment which indicates that the decline in the growth rate of real wages in the 1990s was one of principal causes of the acceleration in employment growth. As regards man days per employee, no significant relationship is found between this variable and employment growth. While employment in organized manufacturing sector remained virtually stagnant in the 1980s, there has been a marked acceleration in the growth of employment in the 1990s. This acceleration is found both at the aggregate level and for most industries.

Kathuria et al(2011) examined whether tariff reforms, industrial de-licensing and the withdrawal of reservation of products for small firms implemented since the mid-1980s have had any effects

on efficiency differentials between informal and formal firms in Indian manufacturing sector. Applying regression to the unit level data for the formal and informal manufacturing sector for four years 1989-90,1994-95,2000-2001 and 2004-05 .They found that economic reforms have had an unambiguous positive effect on absolute levels of technical efficiency in the entire manufacturing sector. They found strong evidence that economic reforms have exacerbated dualism by increasing the productivity differentials between the more efficient formal firms and the less efficient informal firms, and widening within industry efficiency differentials in both formal and informal firms.

Aghion et al.(2005) Using data on 3-digit manufacturing industries for 16 major Indian states covering the time period1980-97, addressed the issue as to how technological capability of industries affects their response to the entry threat imposed by India's trade liberalization in 1991. Although this threat was common across firms in the same industry; however, firms in different states in the same 3-digit industry varied in terms of their level of pre-reform productivity, which were taken as a proxy of their technological capability. The results indicated that state industries with higher pre reform technological capability exhibited greater increases in output, employment, labor productivity and total factor productivity (TFP), following reform.

Chand and Sen(2002) presented a paper to study the effects of trade liberalization on the total factor productivity growth in Indian manufacturing sector. They found affirmative results. Using panel data on 30 manufacturing industries over 1973-88. They also found that on an average a 1% point increase in price wedge leads to 0.1% point decline in TFP growth. This effect for the intermediate goods sector is double than final goods sector.

III Data Sources and Research Methodology

The present study is based on secondary data. It combines two sets of data. First, it employs data on industries. Second, it utilizes information on macro variables as culled out from the *Handbook of Statistics on Indian Economy*, an annual publication of the Reserve Bank of India containing time-series information on macro and monetary variables.

The *Annual Survey of Industries* (ASI) data provides information on industry up to 5-digit level. The data covers all factories registered under the Factories Act 1948 (defined as units employing 20 or more workers). The frame of ASI can be classified into two sectors: the census sector and the sample sector. Units in the ☐census☐ sector (allfactories with more than 100 workers) are

covered with a sampling probability of one, whereas units in the □ sample□ sector (employing between 20 and 99 persons) are covered with probabilities one-half or one-third. The census sector covers 80% of the formal sector of industry and is considered more reliable than the sample sector. For each industry, data on a wide range of variables is available, including number of factories, capital employed, number of workers, gross value added and capital formation. We have analyzed the data for the period 1990-91 to 2011-12, which is an especially interesting period because of the liberalization of the economy, which began somewhat hesitantly in the 1980s and was rapidly pushed forward in 1991 post initiation of a wider process of economic reforms, as also the growing importance of price-based indicators of monetary policy. In order to examine the growth and performance of industrial sector the available data have been processed and presented in suitable tables and graphs. Besides the growth of industrial sector is judged by Compound Annual Growth Rate (CAGR) and CAGR is computed by making use of Ordinary Least Square technique by fitting the exponential function to the available data and exponential trend equation is defined as

$$Y = \alpha\beta^t \qquad \ldots\ldots\ldots (1)$$

Where β is 1+g and g is the compound growth rate.

The logarithmic transformation of this function gives:

Log Y = Log α +t log β

Or

$$Y^* = \hat{b}_0 + \hat{b}_1 t \qquad \ldots\ldots (2)$$

Where y* =Log Y, $\hat{b}_0$ = Log α and $\hat{b}_1$ = log β

The values of parameters, $\hat{b}_0$ and $\hat{b}_1$ in above equation are estimated by using Ordinary Least Square method. The Compound Annual Growth rate is computed by using following formula:

CAGR (g %) = [Antilog $(\hat{b}_1)$ -1] * 100

IV Analysis of Indian Industry

The importance and contribution of a particular sector can be judged by its number, how much employment it is providing to the economy, what is its contribution towards value addition, how much capital it is able to attract as actual investments so on and so forth. To analyze the Indian industrial sector its basic information can be obtained from the following tables which will help us understanding the scenario.

Table 2: Basic Information of Industrial Sector

Year	No. of Factories	No. of Employees	Invested Capital (Rs Lakh)	Net Value Added of industries (Rs Lakh)	GCF of industries (Rs Lakh)	GDP at Factor Cost(Rs billion)	Overall GCF(Rs Billion)
1990-91	110179	8162504	19491285	5151459	3255902	13478.89	3630.28
1991-92	112286	8193590	22123418	5482702	3844455	13671.71	3268.03
1992-93	119494	8704947	2772858	7124819	5644734	14405.03	3764.93
1993-94	121594	8707909	32054715	8843399	3274064	15223.43	3510.32
1994-95	123010	9102407	38753459	10851699	7716898	16196.94	4099.39
1995-96	134571	10044697	40996925	13939719	9062426	17377.4	4858.71
1996-97	132814	9448643	52215413	15735887	9370268	18763.19	4428
1997-98	136012	9997573	57682603	16644124	8203739	19570.31	5236.35
1998-99	131706	8588581	53706813	14546105	7217800	20878.27	5506.91
1999-2000	131558	_	56663430	15497442	6466535	22549.42	6716.71
2000-01	131260	7917810	57179940	14362141	6141480	23484.81	6262.07
2001-02	128549	7686654	60591285	14430212	7387299	24749.62	6950.12
2002-03	127957	7870529	63747308	17234004	6397638	25709.35	7148.9
2003-04	129074	7803395	67959786	20295377	7418762	27757.49	7987.15
2004-05	136353	8383278	75941770	25990686	11007290	29714.64	10522.32
2005-06	140160	9038523	90157861	31186419	17156701	32530.73	12237.77
2006-07	144710	10252148	107150382	39512526	19932958	35643.64	14107.54
2007-08	146385	10378495	128012553	48159268	26229942	38966.36	16534.38
2008-09	155321	11252793	153517773	52776558	26158544	41586.76	16262.2
2009-10	158877	11722631	193305395	59211387	36184458	45161	18320.51
2010-11	211660	12617691	239358002	70457581	44590400	49370	21282.84
2011-12	217554	13345716	284009510	83670291	40703148	52435.82	21594.17
	CAGR=2.18%	CAGR=4.31%	CAGR=11.48%	CAGR=12.71%	CAGR=11.62%	CAGR=6.79%	CAGR=10.01%

Sources: Annual Survey of Industries (2011-12), RBI Handbook of Statistics on Indian Economy (2012-13) and Authors' calculations

The above table highlights the growth performance of industrial sector during 1990-91 to 2011-2012. It is clear that total no. of factories have increased from 110179 lakh in 1990-91 to 217554 lakh in 2011-12 at the compound annual growth rate of 2.18%. Growth rate of employment in this sector has been increased at the CAGR of 4.31%. The invested capital in this sector had also

risen in a considerable manner from Rs 19491285 lakh in 1990-91 to Rs 284009510 lakh in 2011-12 at the CAGR of 11.48%. NVA of this sector shows a marked increase from Rs 5151459 lakh to Rs 83670291 in 2011-12 at a CAGR of 12.71%. Gross Capital Formation shows an increase from Rs 3255902 lakh in 1990-91 to Rs 40703148 lakh in 2011-12 at a CAGR of 11.62%. Gross Domestic Product increased at a CAGR of 6.79% and overall Gross Capital Formation (including all the sectors of Economy shows an increase of Rs 3268.03 billion in 1990-91 to Rs 21594.17 billion in 2011-12 at a Compound Annual Growth Rate of 10.01%.

The above table shows the total CAGR of Indian industrial sector which is single compound growth rate . While looking into the industrial scenario it seems to indispensable to see the yearly changes in all the variables associated with industrial sector. So we have also calculated the growth rates of the variable given in table 2 in the following table.

Table 3: Growth Rates of The Variables of table 2

Year	No. of Factories	No of Employees	Invested Capital	Net Value Added	Gross Capital Formation	GDP at Factor Cost	Overall GCF
1991-92	1.91	0.38	13.50	6.43	18.08	1.43	-9.98
1992-93	6.42	6.24	25.54	29.95	46.83	5.36	15.20
1993-94	1.76	0.03	15.42	24.12	-42.00	5.68	-6.76
1994-95	1.16	4.53	20.90	22.71	135.70	6.39	16.78
1995-96	9.40	10.35	5.79	28.46	17.44	7.29	18.52
1996-97	-1.31	-5.93	27.36	12.89	3.40	7.97	-8.86
1997-98	2.41	5.81	10.47	5.77	-12.45	4.30	18.26
1998-99	-3.17	-14.09	-6.89	-12.61	-12.02	6.68	5.17
1999-2000	-0.11	-	5.51	6.54	-10.41	8.00	21.97
2000-01	-0.23	-	0.91	-7.33	-5.03	4.15	-6.77
2001-02	-2.07	-2.92	5.97	0.47	20.29	5.39	10.99
2002-03	-0.46	2.39	5.21	19.43	-13.40	3.88	2.86
2003-04	0.87	-0.85	6.61	17.76	15.96	7.97	11.73
2004-05	5.64	7.43	11.75	28.06	48.37	7.05	31.74
2005-06	2.79	7.82	18.72	19.99	55.87	9.48	16.30
2006-07	3.25	13.43	18.85	26.70	16.18	9.57	15.28
2007-08	1.16	1.23	19.47	21.88	31.59	9.32	17.20
2008-09	6.10	8.42	19.92	9.59	-0.27	6.72	-1.65
2009-10	2.29	4.18	25.92	12.19	38.33	8.59	12.66
2010-11	33.22	7.64	23.82	18.99	23.23	9.32	16.17
2011-12	2.78	5.77	18.65	18.75	-8.72	6.21	1.46
Standard Deviation	7.44	6.10	9.20	11.68	36.53	2.14	11.38

Source: Authors' calculations

The values of above table are depicted in the following Chart.

Chart-1
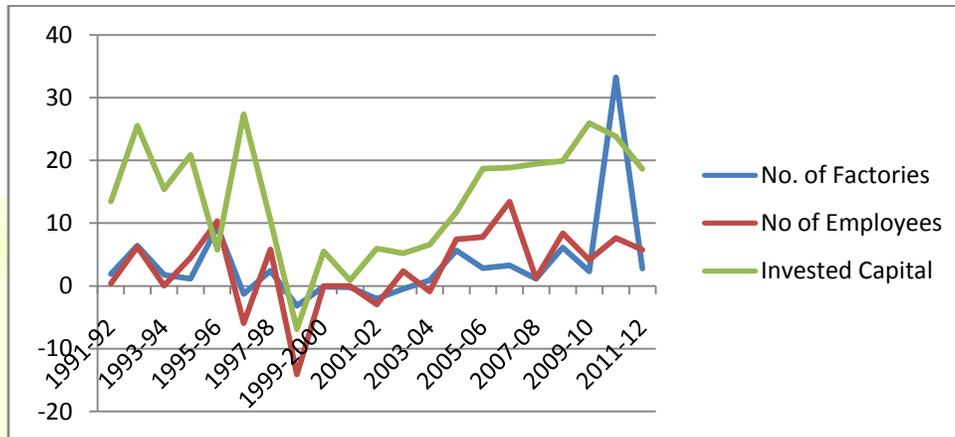
The graphical representation of the values shows a disturbing trend of the no. of factories, no. of employees and invested capital. It shows wide fluctuations in the growth rates of the concerned variables as is clear from respective standard deviations calculated in table 3.

To see the contribution of industrial sector in GDP and overall GCF, we have calculated the Percentage Contribution of NVA and GCF of Industry in GDP and Overall GCF.

Table 4: Percentage Contribution of NVA and GCF of Industry in GDP and Overall GCF

Year	NVA as % of GDP	Capital formation in industry as % of GCF
1990-91	9.68	22.29
1991-92	8.93	24.40
1992-93	10.12	30.06
1993-94	10.81	17.25
1994-95	11.36	31.82
1995-96	12.46	28.35
1996-97	12.08	29.93
1997-98	11.49	21.28
1998-99	8.71	17.02
1999-2000	8.34	11.92
2000-01	7.17	11.70
2001-02	6.63	12.26
2002-03	7.35	10.10
2003-04	7.72	9.98
2004-05	8.74	10.46
2005-06	9.19	13.55

2006-07	9.99	12.93
2007-08	10.51	13.82
2008-09	9.95	13.07
2009-10	9.69	15.38
2010-11	9.69	15.46
2011-12	10.01	12.79
Standard Deviation	1.56	7.15

Source: Authors' calculations

The values in above table are depicted in Chart 2 and Chart 3 which shows the growth trend of concerned variables.

Chart 2
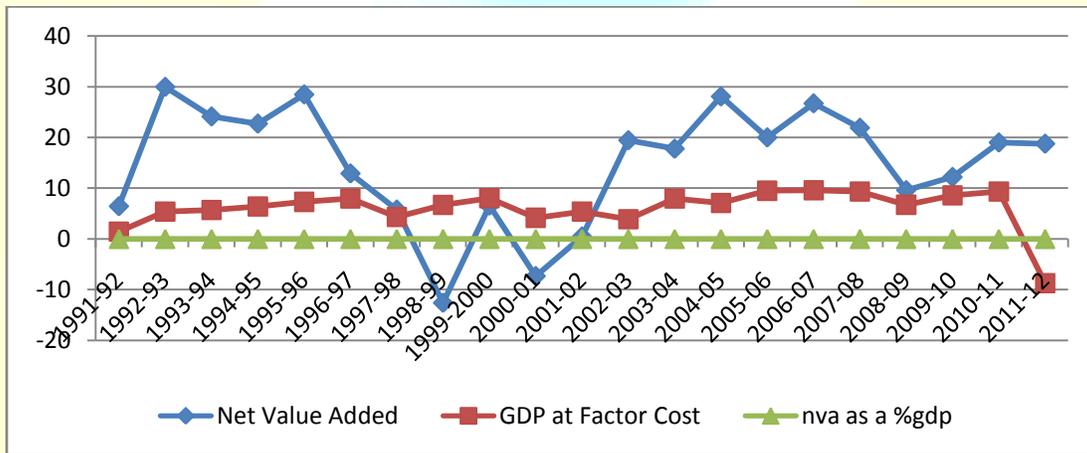
Chart 3
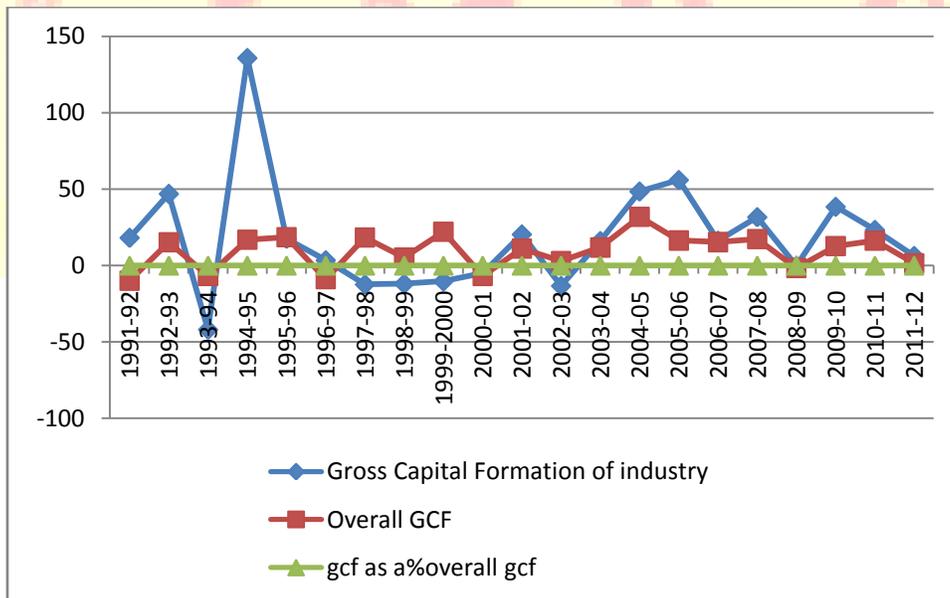
It can be seen from the above table and chart that contribution of industrial sector in GDP ranges between 6 to 12%.It was 9.68 % in 1990-91 and 10.01 %in 2011-12.It was 12% in 1995-97 where after it started falling with wide fluctuations .The gross capital formation of industries as ratio of total GCF was 22.29% in 1990-91 and 12.79 % in 2011-12.The table shows that just after reforms share of industrial sector in GCF was high but simultaneously was fluctuating. It was 31.82% in 1995-96. Since 1996-97 it started falling and reached at the level of 12.79% in 2012-13. This fluctuating trend in the contribution of industrial GCF in overall GCF shows that there is wide scope for the industrial sector to grow and flourish to enhance its contribution in economic growth and development.

Table 5: Index Numbers of Industrial Production (Base 1993-94=100)

Year	IIP Numbers
1990-91	93.0
1991-92	92.3
1992-93	94.3
1993-94	100.0
1994-95	109.1
1995-96	124.5
1996-97	133.6
1997-98	142.5
1998-99	148.8
1999-2000	159.4
2000-01	167.9
2001-02	172.7
2002-03	183.1
2003-04	196.6
2004-05	222.5
2005-06	245.4
2006-07	282.1
2007-08	334.0
2008-09	342.2
2009-10	358.9
2010-11	390.9
2011-12	402.7

Source: RBI Handbook of Statistics on Indian Economy (2012-13)

V Conclusion And Policy Implications

Manufacturing needs attention because of its linkages to agriculture and services as well as its ramifications to employment. After analyzing the data on the variables no. of factories, no. of employees, invested capital, net value added (NVA) gross capital formation of industries (GCF), gross domestic product (GDP), overall GCF from 1991-2012 we have found compound annual growth rate (CAGR) to be 2.18%, 4.31%, 11.48%, 12.71%, 11.62%, 6.79% and 10.01% and standard deviations of growth rates to be 7.44, 6.10, 9.20, 11.68, 36.53, 2.14, 11.38 respectively. The contribution of industry to total NVA varied between 6.63 and 12.46 whereas the contribution towards total GCF varied from 9.48 to 31.82 with standard deviation of 1.56 and 7.15 respectively. In this era of globalization where the centers of manufacturing are in transition India has the scope of becoming manufacturing hub. The analysis above indicates that the performance of the sector has not been up to the potentials. A sector which after the liberalization policy of 1990s improved initially has now stagnated and pulling back the growth levels. Both domestic as well as international factors may be responsible for this state. Efforts on all fronts are needed to be geared towards the progress of manufacturing. Even in case global scenario does not improve India has huge untapped demand in domestic markets.

Some rules based on empirical research should be adopted for incentives, subsidies and concessions in fiscal, monetary and exim policies for transparency, good governance and reduction of lags. This requires urgent attention because policy paralysis has become major hindrance for manufacturing growth. Incentives in fiscal policy should be given more to R&D suited to local technology. For the import of latest technology tariff rates should be reduced and timely adequate capital should be available. Concessional loans should be granted for capital formation with checks and balances so as solving problem on front may not lead to other problem (of NPAs e.g.). RBI should further work towards increasing financial widening and deepening so that sufficient funds can be made available in time. Simultaneously SEBI should work for restoring faith of small investors in primary market so that savings can be channelized for growth of manufacturing instead of non productive investments in gold and property. The growth of services leads to more purchasing power chasing lesser number of goods because of lower growth of manufacturing. Once the growth of manufacturing is on track the problem of inflation will also be under control. So finally we can say that Manufacturing Policy 2011 is a good effort to start with but its implementation in true spirit and support of all other policies and

institutions in the need of the hour for manufacturing to become the growth engine of Indian economy.

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