Original Resear	Volume-7 Issue-11 November-2017 ISSN - 2249-555X IF : 4.894 IC Value : 79.96 Economics GROWTH OF PRODUCTION IN THE MANUFACTURING INDUSTRIES OF PUNJAB
Dr. Sangeeta Nagaich	Assistant Professor, Punjabi University, Patiala (Punjab)
Rajdeep Kaur	Research Scholar, Punjabi University, Patiala (Punjab)
ABSTRACT In Punja manufacturing sector the manufacturing sector of Pur Punjab. The production level ha	ab, the shrinking of agricultural sector generates the problem of declining production and GDP. Here, the cturing sector has dualistic pattern involving organised and unorganised sector. Due to more importance of the , it is imperative to investigate its production growth. The present study analyzes the changes in the production in ijab during 1980-81 to 2013-14 based on the secondary data taken from various issues of Statistical Abstract of s shown many sharp ups and downs during the entire time period. The production level of all the industries has

Punjab. The production level has shown many sharp ups and downs during the entire time period. The production level of all the industries has declined and the major decline has been shown by transport equipment and parts industry and the least has been visible in the Rubber, Plastic, Petroleum and Coal Products Industry. As Punjab is an agriculturally developed state, the need here is to enhance the agro-based industries which can in turn assist in developing the manufacturing sector here.

KEYWORDS:

Introduction:

In the preliminary phase of development, the massive volume of GDP is occupied by the agricultural sector. After that, the industrialisation of an economy brings about a big change through increasing the share of industrial sector in GDP of the nation. In the post-industrialisation phase, the tertiary sector boosts up contributing its major share in the livelihood of the natives.

The common conception of manufacturing is of an old industry, with large factories having a significant and probably negative environmental impact, employing largely unskilled labour doing repetitive work on production lines. An extended definition of manufacturing has been developed by the Institute for Manufacturing which equates manufacturing to the full cycle of activities from research and development, through design, production, logistics and services, to end of life management, within an economic and social context (Livesey, 2006). The major components of manufacturing sector involve long term sustainability in productivity, value addition and innovations, efficient utilisation of the energy resources and the awareness regarding future.

The main characteristic of manufacturing sector in India is its dualistic pattern involving formal or organised sector accompanied by a large informal or unorganised sector. The formal sector is statistically defined by the Factories Act which covers all factories employing 10 or more workers using power, or 20 or more workers without using power. The unorganized sector is divided into three sub-categories-Own-account manufacturing enterprises (OAME) which are household enterprises making use only of family labor; Non-directory manufacturing establishments (NDME) and Directory manufacturing establishments (DME) (Kapoor, 2014). In India, the unorganised sector accounts for low share of value added as compared to the organised sector. Therefore, the Indian economy must formulate its policies in the direction of enhancing production in the organised manufacturing sector.

In view of this, there is a dire need to make the manufacturing sector globally competitive through technological advancement and increased skilled productivity. Recent economic growth has benefited industries which rely more on skilled workers and capital as opposed to unskilled/low skilled workers due to increased capital intensity in the labour as well as capital intensive industries (Kapoor, 2014). This has resulted in the deconstruction of manufacturing sector through decrease in the semi-skilled and less productive jobs. Thus, it is imperative to investigate the importance of the organized manufacturing sector in the production growth.

Objectives and Methodology:

The main objective of the study is to analyze the changes in the production in the manufacturing sector of Punjab during the period1980-81 to 2013-14. The secondary data has been taken from various issues of Statistical Abstract of Punjab. The study has taken

176 INDIAN JOURNAL OF APPLIED RESEARCH

into account the production in the manufacturing sector of Punjab during the period 1980-81 to 2013-14. It has been evaluated in the selected industries of Punjab namely cotton textile industry; transport equipments & parts; rubber, plastic, petroleum & coal products; food products industry; wood & wood products and chemical and chemical products industries. The compound growth rates have been evaluated regarding the production in the whole manufacturing sector of Punjab and the selected industries. The compound growth rates have been calculated by dividing the whole time period into three sub-periods: from 1980-81 to 1989-90, 1990-91 to 1999-2000 and 2001-02 to 2013-14. The growth rate of production are computed by running regression to following equation:

 $y = ab^{t}$

where y is the variable of which the rate of growth is estimated, t is the time period and a and b are intercept and regression co-efficients to be estimated.

The growth rates (r) are computed as under: r = [(Anti (log b) - 1]*100where a= constant

where a = constant

b= slope of semi logarithmic trend r= compound growth rate

Production in manufacturing sector of Punjab:

No doubt, in Punjab, the manufacturing sector has lagged behind in attracting the adequate attention of policy makers but, still this sector has shown some positive signs. The variations in the growth in the production of manufacturing sector of Punjab have been presented in table 1. The production in the manufacturing sector of Punjab during the period 1980-81 to 2013-14. The total production has shown increasing trend till 1988-89, but in 1989-90, it rose up to a huge extent from Rs. 180670.3 lakhs to Rs. 531568.7 lakhs. Then, it reduced sharply during 2001-02 to Rs. 3286.9 lakhs from a huge amount of Rs. 3168778 in 2000-2001. It again boosted up sharply to Rs. 3499599 lakhs in 2002-03.

Table 1: Production in the Manufacturing sector of Punjab

Year	Total production (in lakh Rs.)
1980-81	8528.79
1981-82	104652.1
1982-83	107657.5
1983-84	112033.1
1984-85	139013
1985-86	128547.4
1986-87	154239.4
1987-88	168029.7
1988-89	180670.3
1989-90	531568.7
1990-91	613430.7
1991-92	597186.9

1992-93	650726
1993-94	720140.7
1994-95	1995151
1995-96	2163257
1996-97	2612048
1997-98	3004962
1998-99	2980545
1999-00	2939577
2000-01	3168778
2001-02	3286.9
2002-03	3499599
2003-04	3639328
2004-05	3754441
2005-06	678724.8
2006-07	1053728
2007-08	624255.7
2008-09	968495.8
2009-10	982783.5
2010-11	39172.18
2011-12	40275.27
2012-13	5979696
2013-14	43023.53

Source: Statistical Abstract of Punjab, various issues

After increasing for some time, it again declined in 2007-08 showing further increase till 2009-10. It sharply decreased to Rs. 43023.53 lakhs in 2013-14 from Rs. 5979696 lakhs in 2012-13. Thus, the production in the manufacturing sector in Punjab has shown sharp ups and downs during the entire time period.

Table 2 throws a light on the production level of various industries of the manufacturing sector of Punjab during 1980-81 to 2013-14. In all the industries i.e. food products industry, cotton textile industry, Rubber, Plastic, Petroleum & Coal Products Industry, Chemical & Chemical Products Industry, Transport Equipments & parts Industry except wood and wood products industry, the level of production shown the same trend.

Table 2: Production in various industries of manufacturing ector in Puniah (in lakh Rs.)

sector in runjab (in takit Ks.)						
Year	Food Products Industry	Cotton Textile Industry	Wood and wood products Industry	Rubber, Plastic, Petroleum & Coal Products Industry	Chemical & Chemical Products Industry	Transport Equipmen ts & parts Industry
1980-81	16552.41	11437.29	498.62	1443.79	7943.62	8746.15
1981-82	23240.94	13089.09	549	1802.83	1234.91	8416.18
1982-83	22862.92	14197.02	566.3	2047.19	13024.87	8489.53
1983-84	23401.96	13704.58	876.34	2083.1	14078.35	9589.26
1984-85	28458.48	12735.26	1451.97	2973.22	15986.84	18769.43
1985-86	26892.4	8774.27	1552.19	2006.51	15906.01	10536.17
1986-87	32431.52	14700.04	1631.74	3263.75	18422.12	15307.3
1987-88	36033.19	14154.95	1799.23	4605.06	23035.59	14654.4
1988-89	39069.88	13892.06	1903.05	6111.32	26312.64	13458.82
1989-90	105962.5	46948.97	5410.03	20153.74	76095.86	41590.48
1990-91	118089.2	56122.18	5420.45	23338.88	881291.6	63254.76
1991-92	120090.7	54497.06	5390.01	25045.97	80244.71	52311.43
1992-93	136389.3	73649.28	5201.72	27418.51	84885.59	70243.1
1993-94	124298	84545.26	5547.36	28926.39	99979.14	92316.36
1994-95	306822.4	228962.9	13996.88	75535.72	259159.5	249929.2
1995-96	366073.2	236744.9	14340.84	84216.68	245771.2	266403.2
1996-97	376000	247528	16025.24	95167.65	273225.5	392766.5
1997-98	445217.2	334127.3	17263.28	111010.2	350632	300406.3
1998-99	515816.6	277157.9	19176.65	124664.7	364848.8	328011.2
1999-00	544680	223260.2	22123.18	133734.7	324269	369471.6
2000-01	598666.9	228571.6	23392.38	132910.4	353736.1	397282.3
2001-02	608939.7	205830.2	25213.44	142246	372061	414260.6
2002-03	675124.9	658217.4	14966.24	130056	448151.3	420786.6
2003-04	683354.6	693643.5	15749.52	141725.9	372546.3	469826.2
2004-05	669458.8	714644	16002.4	162243.5	367699.9	457898.4

Volume-7 | Issue-11 | November-2017 | ISSN - 2249-555X | IF : 4.894 | IC Value : 79.96

2005-06 85848.98 137511.4 10649.56 20573.76 22679.88 62566.1 2006-07 130769.4 222075.9 16499.07 34242.59 33520.37 98180.5 2007-08 76963.85 136380.1 9546.52 20693.77 20279.11 59515.1 2008-09 122599.8 214724.7 14955.07 31453.41 31757.9 92501.6							
2006-07 130769.4 222075.9 16499.07 34242.59 33520.37 98180.5 2007-08 76963.85 136380.1 9546.52 20693.77 20279.11 59515.1 2008-09 122599.8 214724.7 14955.07 31453.41 31757.9 92501.6	2005-06	06 85848.98	137511.4	10649.56	20573.76	22679.88	62566.18
2007-08 76963.85 136380.1 9546.52 20693.77 20279.11 59515.1 2008-09 122599.8 214724.7 14955.07 31453.41 31757.9 92501.6	2006-07	07 130769.4	222075.9	16499.07	34242.59	33520.37	98180.56
2008-09 122599.8 214724.7 14955.07 31453.41 31757.9 92501.6	2007-08	08 76963.85	136380.1	9546.52	20693.77	20279.11	59515.15
	2008-09	09 122599.8	214724.7	14955.07	31453.41	31757.9	92501.66
2009-10 127125.8 212844.8 14802.29 29705.88 18154.41 92728.7	2009-10	10 127125.8	212844.8	14802.29	29705.88	18154.41	92728.76
2010-11 6262.11 7199.08 267.49 1240.2 1023.83 6324.37	2010-11	11 6262.11	7199.08	267.49	1240.2	1023.83	6324.37
2011-12 6236.56 7421.51 265.23 1130.47 1058.78 6606.45	2011-12	12 6236.56	7421.51	265.23	1130.47	1058.78	6606.45
2012-13 1369878 908770.9 290.96 124378 1582068 937602.	2012-13	13 1369878	908770.9	290.96	124378	1582068	937602.3
2013-14 10033.85 8469.84 303.17 1282.56 1184.12 1469.78	2013-14	14 10033.85	8469.84	303.17	1282.56	1184.12	1469.78

Source: Statistical Abstract of Punjab, various issues

With many ups and downs, in all these industries, the production level has shown a sharp increase during the years 1989-90, 1994-95 and 2012-13 and the sharp decline has been visible during 2010-11 and 2013-14. In industry wood and wood products, the sharp increase was visible during 1994-95 and 2008-09 whereas the decline was sharp during 2002-03, 2007-08 and 2010-11. During this time period, the food product industry had the highest production and wood and wood products industry had the lowest production. From 1980-81 to 2013-14, the production level of all the industries had declined and the major declined had been shown by transport equipment and parts industry and the least had been visible in the Rubber, Plastic, Petroleum and Coal Products Industry.

Table 3 throws a light on the compound growth rate in the production of manufacturing sector of Punjab as a whole and in various industries in three time periods i.e. 1980-81 to1989-90, 1990-91 to 1999-2000 and 2000-01 to 2013-14. During 1980-81 the compound growth rate of production in total manufacturing sector has been 30.65. It has been the highest (31.67) in chemical and chemical product industry and it has been the lowest (18.16) in cotton textile industry. In the second time period during 1990-91 to 1999-2000 i.e. after the period of economic reforms, the growth rate of production in manufacturing sector has reduced to 25.16. it has been highest (27.75) in transport equipment and parts industry and it has been just 7.32 in chemical and chemical product industry. It has decreased in wood and wood products industry and sharp decrease in chemical and chemical product industry. Major increase has been shown by cotton textile industry. The textile and garments sector has a unique position as a self-reliant industry, from the production of raw materials to the delivery of finished products, with substantial value-addition at each stage of processing (National Productivity Council, 2010). During the third sub-period i.e. 2000-01 to 2013-14, there has been decrease in growth rate of production in the manufacturing sector and in all the industries. The production in all the industries has shown negative compound growth rate on account of a number of adverse factors such as rupee appreciation against dollar, increase in inflation rates, rising fuel prices, infrastructure constraints, restrictive labour laws, global economic slowdown etc. during 2007-08 (National Productivity Council, 2010). It has been -10.68 in total manufacturing sector.

Table 3: Growth rate of production in total manufacturing sector and its various industries in Puniah

Year —	1980-81 to	1990-91 to	2000-01 to		
Description	1989-90	1999-2000	2013-14		
Total	30.65	25.16	-10.68		
Manufacturing Sector					
Food Products Industry	15.33	22.41	-24.35		
Cotton Textile Industry	8.16	23.35	-20.43		
Wood and wood products Industry	25.79	20.49	-31.22		
Rubber, Plastic, Petroleum & Coal Products Industry	25.34	25.60	-27.35		
Chemical & Chemical Products Industry	31.67	7.32	-30.93		
Transport Equipments & parts Industry	13.49	27.75	-26.26		

Source: Calculated from data taken from various issues of Statistical Abstract of Punjab.

The major decrease (31.22) has been in wood and wood products industry and the least (20.43) decrease has been in cotton textile industry. The table clearly shows that the manufacturing sector has witnessed a sharp decline in the growth of production in the postliberalization period. Due to period of political turmoil and insurgency during pre-reform period in the Punjab and investors did not show interest in the economy of Punjab. However, new economic reforms provided ample opportunities for investments and capacity expansion, but, the investors did not respond vigorously, might be due to scare still lingering. Moreover, the Punjab government did not come forward with any concrete policy (Kumar, 2012).

Conclusion:

In the nutshell, it can be said that though the growth in production of manufacturing sector has shown a good sign before the globalization, but, after it, its growth has slowed down. Moreover, the production in various industries included in the manufacturing sector of Punjab has shown that in the pre-reform period, these have high growth rate and it started decelerating after globalization and finally, became negative in the forthcoming time period, i.e., during 2000-01 to 2013-14. Thus, the production has shown distressing situation in their growth in the whole time period as well as in three sub-periods. Therefore, the study points to the fact that there is a need to concentrate on the investments in production of manufacturing sector of Punjab.

Policy Implications:

For the growth of any nation, there is need to augment the development of each sector equally. The manufacturing sector can prove to be a milestone for the bright future of industrial progress in the Indian state of Punjab. Many plans have been formulated for the growth of manufacturing sector, but, majority of them rest on the development of agricultural sector alone. Thus, it becomes indispensable to promote this sector in Punjab by providing adequate developing strategies:

- There is the need to restructure the pattern as well as process of the industries focusing on the solution to various structural problems in the existing industrial growth model of the economy.
- Energy is the cornerstone for the industrial progress. But, in India, provision of energy to the industrial sector is lagging behind its need. Power cuts and power shortages have been limiting its progress. Therefore, the power rates should be subsidized in order to reduce the production costs and commence the sector's competitiveness.
- Research and development act as the major module for the upliftment of the manufacturing unit. For this, the related institutions must enhance the ways to engender the educational and technological skills among the youth according to the requirements of the manufacturing sector.
- In India, especially in Punjab, the manufacturing units are facing the major constraint of obsolete technology. It reduces their production and productivity levels and enhances the pessimist behaviour among the entrepreneurs. Therefore, there is need for special consideration towards augmenting the funds for purchasing the advanced technology along with upgrading the indigenous technology in order to make them competitive with the international goods. The quality standards must be established with full identification and verification.
- Many a times, the production in the manufacturing sector is influenced as a result of instability in the exchange rates which has a direct link with the exports and imports. The need here confers to take adequate steps such as control over inflation, reduction in budget deficits, political and economic stability etc. on a regular basis.
- As Punjab is an agriculturally developed state, the need here is to enhance the agro-based industries which can in turn assist in developing the manufacturing sector here.

References:

- Livesey, Finbarr (2006), Defining High Value Manufacturing, Institute for Manufacturing, University of Cambridge, Cambridge.
- Kumar, Dr. Rakesh (2012), Employment Dynamics: A Case of Punjab Manufacturing Sector, Indian Journal of Applied Research, Vol. 2, Issue-3, pp. 30-37.
- National Productivity Council (2010), Productivity and Competitiveness of Indian Manufacturing Sector: Textiles and Garments, Final Report submitted to National Manufacturing Competitiveness Council, Government of India, New Delhi.
- Kapoor, Radhica (2014), Creating Jobs in India's Organised manufacturing Sector, Working Paper 286, Indian Council for Research on International Economic Relations, New Delhi.