

CHAPTER 4

PACE AND PATTERN OF MANUFACTURING GROWTH IN KARNATAKA

4.1 Introduction

Modern economic development theory establishes the fact that the interregional and intraregional disparities are created as well as mitigated by the industry. Manufacturing is regarded as the main “engine of growth”⁹ and “cumulative causation” is the subject matter of industrial development rather than the development of other sectors.¹⁰ Resource transformation /labour from agriculture to manufacturing would immediately lead to productivity growth that would contribute to economic growth.¹¹ Technological development is mainly concentrated by manufacturing sector, and this development would propagate to other sectors such as service sector. Manufacturing industries have opportunities for economies of scale.

Manufacturing is not only connected to other sectors but is also the jewel of a multi-strand necklace where the strands are flows of different kinds to and from other sectors” (Prof Sodhi.S 2012). Manufacturing sector has many forward linkages through supplying of capital goods¹². Manufacturing sector has the power to generate employment opportunities for semi-skilled labourers in highly populated countries.

It is estimated that one job creation in the manufacturing sector would lead to creation of four additional jobs in related sectors through its multiplier effect¹³. Manufacturing employment could increase productivity of labourers, thereby increase the income levels of the people. People would tend to spend more for non agricultural commodities and this necessitates the growth of manufacturing industries.

⁹ Kaldor, Nicholas (1975) *Economic Journal*, 85, December, 891-6.

¹⁰ Myrdal, 1957 *Economic Theory and Underdeveloped Regions*, Harper and Row.

¹¹ Adam Szirmai and Bart Verspagen (2010)

¹² Cornwall, (1977)

¹³ Arun Maira (2012)

Verdoon's law states that output growth of manufacturing leads to high productivity, that results in transfer of labour outside the manufacturing particularly from land based activities which in turn leads to growth in the rest of the sectors of the economy¹⁴.

According to Kaldor (1975) firstly, the growth of industrial output attracts the disguised unemployment and the excess labour from other sectors which will increase the productivity of these sectors (i.e resources in those sectors have little opportunity costs). Consequently, the faster the manufacturing grows, the faster would be the transfer of resources from other sectors which are subject to diminishing returns. Secondly, manufacturing has the power to create cumulative development via its forward and backward linkage effects. Thirdly, manufacturing enhances the growth of the economy which is explained by the balance of payment constraint. Lessening the balance of payment constraint would lead to the growth of manufacturing sector; this would results in the growth of GDP of the other sectors. Kaldor's policy implication is that both the Government and market economy should promote transfer of resources from other sectors to manufacturing sector to enhance higher level of economic development.¹⁵

4.2 Manufacturing Profile of Karnataka

After Independence the state of Karnataka progressed as the manufacturing hub for some of the largest public sector industries of India. The public sector industries are Hindustan Aeronautics Limited, National Aerospace Laboratories, Bharat Heavy Electricals Limited, Indian telephone Industries, Bharat Earth Movers Limited (BEML), Bharat Electronics Limited, Hindustan Machine Tools and Indian

¹⁴ Verdoon, J.P. (1949)

¹⁵ Jesus Felipe (1998)

Subsidiaries of Volvo and Toyota. Hindustan Aeronautics Limited has been highly dedicated to R&D activities for the production of fighter aircraft for the Indian Air Force. This industry employed around 9,500 employees so it has been called as one of the largest public sector employers in Karnataka¹⁶.

National space Agency Indian Space Research Organisation (ISRO) is located in Bangalore and which employs nearly 20,000 people. TVS Motors has a motorcycle manufacturing plant at Mysore and Tata at Dharwad. Companies such as Kiroloskar, ABB, Kavika, Larsen and Tubro etc manufacturing electrical equipment machines and machinery they all headquartered in Karnataka.

4.3 Conceptual Framework

State income, fiscal deficit and public debt are the principal indicators of the performance of the state and involved in comparing the fiscal performance of the states. The estimate of state income is considered as an important measure of economic development of the state, and an important tool for planning.

Theoretically, estimation of state income is prepared by either income originating approach, or income accumulating approach. The income originating approach regards the income of the factors of production which are located within the geographical boundaries of a state and signifies value of goods and services produced within the state during a given period of time usually a year, on the other hand the income accumulating approach relates to the income accumulating to the normal residents of the state.

¹⁶ Karnataka Development Report (2007)

For this data on flows of factor income to/from the boundaries of the state as well as flows to/from abroad is necessary. Though the income accumulating approach of state income is considered as a better measure of welfare, due to inadequacy of data presently the State Statistical Bureaus follow the income originating approach to estimate State Domestic Product (SDP). This study follows the same approach to measure state income.

The study used Net State Domestic Product (NSDP) data for the state economy and this was compared with the NDP at national level. Different methods have been used by different scholars for analysis of estimation of the growth rate. The methods are ranging from average annual growth, and compound growth to exponential fit. This study used the compound growth methodology.

The study categorised a period of 31 years (1980-2011) as the two phases of liberalisation:- Period/Phase 1: 1980-81 to 1989-90 pre-liberalisation period, Period/Phase 2: 1990-91 to 1999-00 post-liberalisation period and Period/Phase 3: 2000-01 to 2010-11.

To analyse the relative growth performance of the Karnataka state with some growing states, the study selected five states on the basis of their manufacturing contribution to the national output, employment and exports.

4.4 Comparative Analysis of Inter -State Growth Performance

Analysis of the growth performance of the state economies shows (see table 4.1) that there is a wide disparity in the growth performance of the states in the three periods and for the entire period.

As can be seen from the Table 4.1 that the growth rate of net state domestic product of Karnataka is 5.2 per cent during pre-liberalisation period, which is more or less similar to the growth rate of net domestic product of India (5.3 per cent). Successive failure of rain from 1983-88 may be the retarding factor for this low growth rate of domestic product during this period. However, the economy of Karnataka achieved the annual average growth rate of 6 per cent per annum during this period, which is a remarkable achievement judged against the background of such failure of rain.¹⁷

Table 4.1
Compound Growth Rate of Net State Domestic Product of Selected States
(1993-94 prices)

STATES	1980-81- 1989-90	1990-91- 1999-00	2000-01- 2010-11	1980-81- 2010-11
ANDHRA PRADESH	5.2	5.2	8.2	6.2
GUJARAT	4.8	8.0	10.3	6.6
KARNATAKA	5.2	7.0	7.4	6.1
MAHARASHTRA	5.6	7.0	10.2	7.0
TAMILNADU	5.0	6.4	8.7	6.2
WEST BENGAL	4.6	6.8	6.6	5.9
INDIA (NDP)	5.3	6.0	11.0	6.6

Source: Central Statistical Organization (CSO)

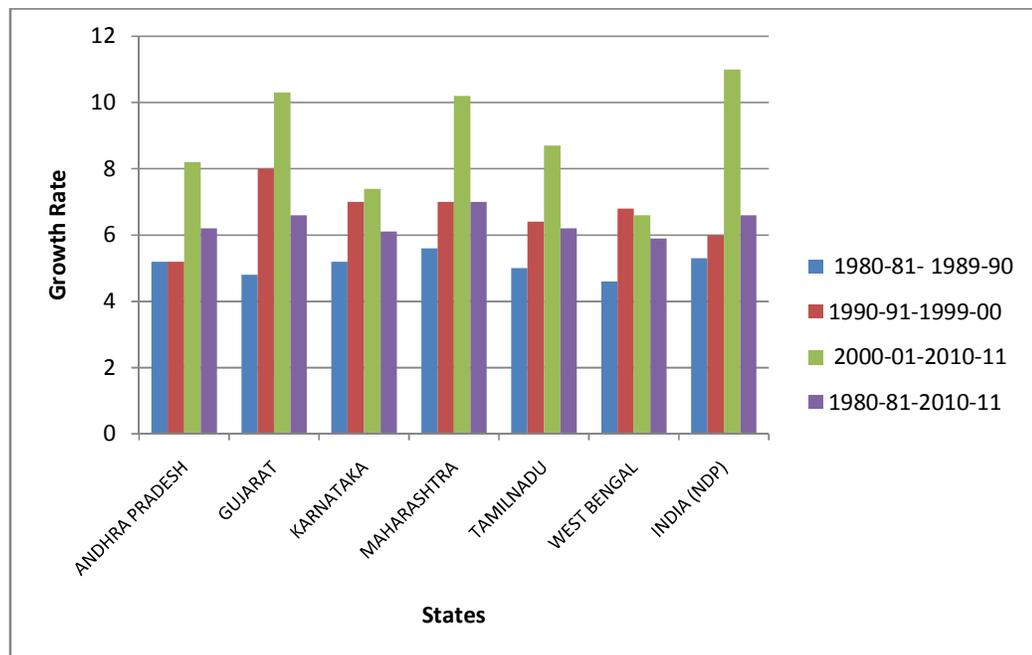
During the I-Phase of liberalisation growth rate of net state domestic product of Karnataka grew by 7.0 per cent and the net domestic product of India grew by 6.0

¹⁷ G. Thimmaiah (2005)

per cent. The software sector growth led by service sector boom since 1990s has boosted the economic growth of Karnataka economy during this period.

The growth of net state domestic product of Karnataka in the II-Phase of liberalisation is 10.3 per cent, which is due to highest contribution of software sector,¹⁸ but comparatively lesser than the domestic product of other states such as Andhra Pradesh, Gujarat, Maharashtra and Tamilnadu. For the entire period the growth rate of net state domestic product of Karnataka economy is 6.1 per cent.

Figure 4.1 Compound Growth Rates of Net State Domestic Product of Selected States



The growth rate of Net State Domestic Product of Karnataka during 2010-11 is 2.8 percent, which has increased to 6.8 per cent during 2011-12 at constant prices

¹⁸ Karnataka Development Report (2007)

(2004-05 prices).¹⁹ Overall the performance in terms of domestic product growth of Karnataka economy is more or less similar to the net domestic product of Indian economy. This growth trajectory of Karnataka economy stimulates one to conduct an analysis to trace the growth performance of different sectors of the economy.

Therefore, the following section investigates the growth rate of the major sectors of the economy namely primary sector, secondary sector and tertiary sector in terms of net state domestic product to identify the core sector of the economy.

4.5 Sector -wise Growth Rate in Net State Domestic Product of Karnataka

The sectoral composition of State income has changed over the years as the primary sector's importance has reduced, giving way to the tertiary sector. While this is a natural phenomenon in economic growth, it needs to be accompanied by a corresponding shift in employment shares to enable higher levels of income across all sections (Karnataka Growth Story 2011). The primary sector, which contributed about 60 per cent to Gross State Domestic Product (GSDP) in 1960- 61 decreased to 16.22 per cent during 2010-11 and 15.2 per cent during 2011-12. On the other hand the secondary sector contributed only 15.2 per cent to GSDP during 1960-61 increased to 28.60 per cent during 2010-11 but decreased to 27.74 per cent during 2011-12. The share of the tertiary sector was 24.8 per cent which has increased to 54.61 per cent in 2010-11 and 56.32 per cent during 2011-12.²⁰

4.5.1 Primary Sector Growth Rate in NSDP of Karnataka

It can be noted from the table 4.2 that the primary sector growth rate of Karnataka has been most stagnant and also the least among the three sectors all the

¹⁹ Economic Survey of Karnataka 2011-12

²⁰ Economic Survey of Karnataka 2011-12

times. During the I-Phase of liberalization the growth shows 2 per cent increase in the growth rate of primary sector of Karnataka economy.

Table 4.2

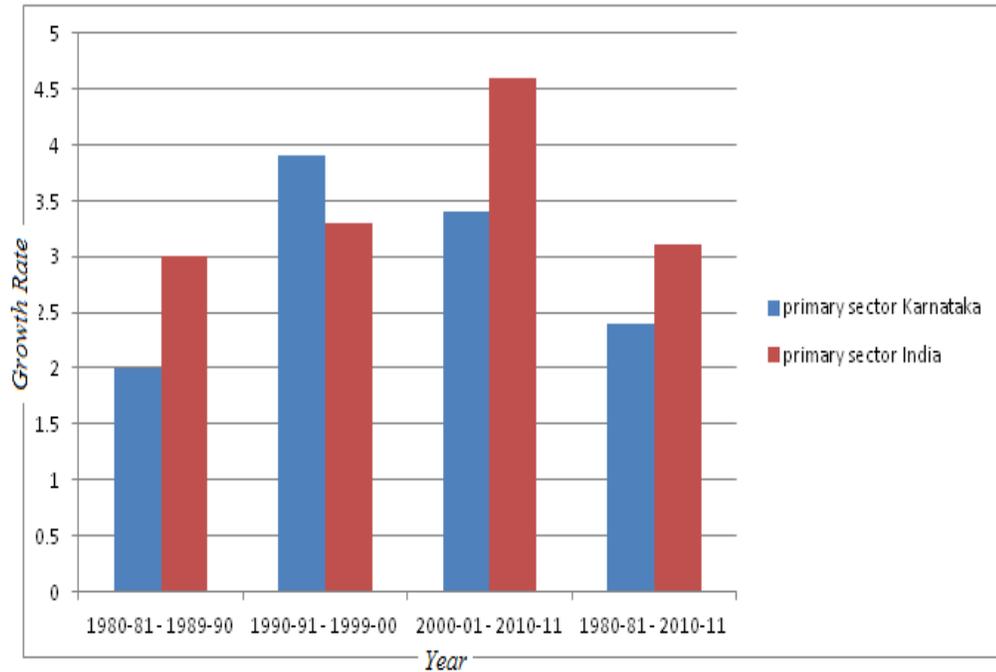
Primary Sector Growth Rate in Net State Domestic Product of Karnataka

PERIOD	KARNATAKA	INDIA
1980-81 – 1989-90	2.0	3.0
1990-91 – 1999-00	3.9	3.3
2000-01 – 2010-11	3.4	4.6
1980-81 – 2010-11	2.4	3.1

Source: Computed

At the national level the growth rate increased by 0.3 per cent which is more or less similar to the growth rate of Karnataka primary sector. Irresponsive policy measures were blamed for dismal growth rate of primary sector of Karnataka during I-Phase of liberalization.. Though the State government launched many programmes like Karnataka Agriculture Mission, Farm Mechanisation scheme, Rashtriya Krishi Vikasa Yojana (RKV) and major irrigation projects to boost the primary sector especially the agriculture sector; the growth rate of primary sector of Karnataka decreased during the II-Phaseof liberalisation. On the other hand the growth rate increased by 1 per cent for the Indian primary sector. For the period as a whole, the growth rate is low of 2.4 per cent suggesting that the primary sector is not a promising sector for the growth of economy.

Figure 4.2 Primary Sector Growth Rate in NSDP of Karnataka



4.5.2 Secondary Sector Growth Rate in NSDP of Karnataka

The secondary sector of Karnataka recorded a growth rate of 8.1 per cent during pre-liberalisation period (see table 4.3). However, during the I-Phase of liberalisation secondary sector growth rate decreased to 4.6 per cent for Karnataka and 5.8 percent for India. This sector of Karnataka seems to have lost more because of lack of thrust than as a process of economic development during this period.²¹This trend is same at all-India level where the service sector gained share at the cost of manufacturing sector which has not been the case if we take countries like China, Thailand, and Korea (Karnataka Development Report 2007).

²¹ Karnataka Development Report (2007)

Table4.3

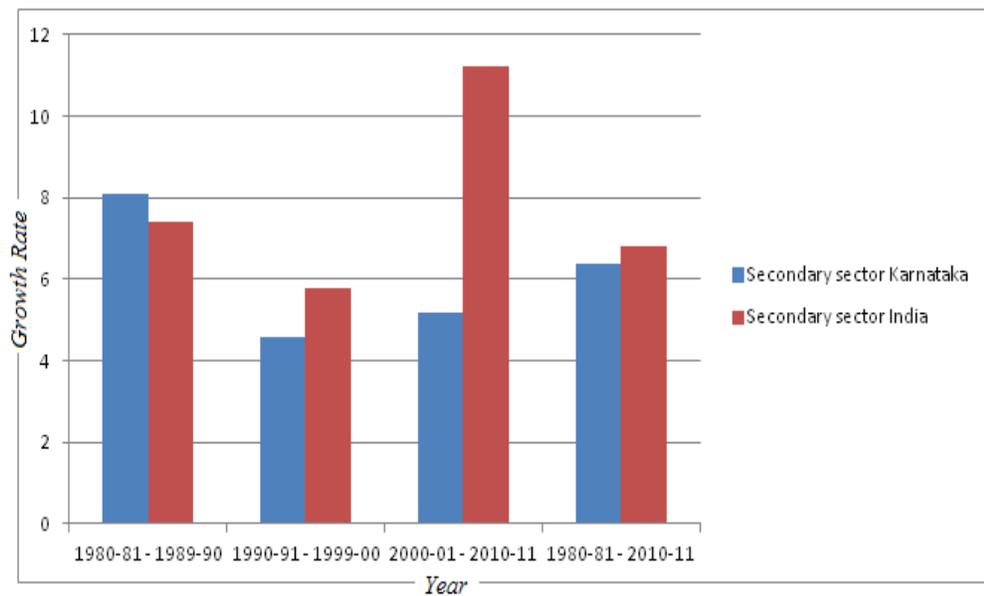
Secondary Sector Growth Rate in Net State Domestic Product of Karnataka

PERIOD	KARNATAKA	INDIA
1980-81 – 1989-90	8.1	7.4
1990-91 – 1999-00	4.6	5.8
2000-01 – 2010-11	5.2	11.2
1980-81 – 2010-11	6.4	6.8

Source: Computed

Sustained by strong fundamentals, industry friendly policies in the State and infrastructure support, the secondary sector of Karnataka economy has grown at 5.2 per cent in the II-Phase of liberalisation. Nevertheless this growth rate is lesser than the all-India growth rate. On an average the sector registered a growth rate of 6.4 per cent for the entire period and demonstrating that this sector of the state is moving on the growth trajectory.

Figure 4 .3 Secondary Sector Growth Rate in NSDP of Karnataka



4.5.3 Tertiary Sector Growth Rate in NSDP of Karnataka

The long term growth rate of tertiary sector of both Karnataka and India depicts encouraging trend and followed the pattern of industrialisation. As against the two sectors (primary and secondary) the tertiary sector had grown progressively during the nineties, in the last decade and for the period as a whole both for Karnataka and India.

Table 4.4

Tertiary Sector Growth Rate in Net State Domestic Product of Karnataka

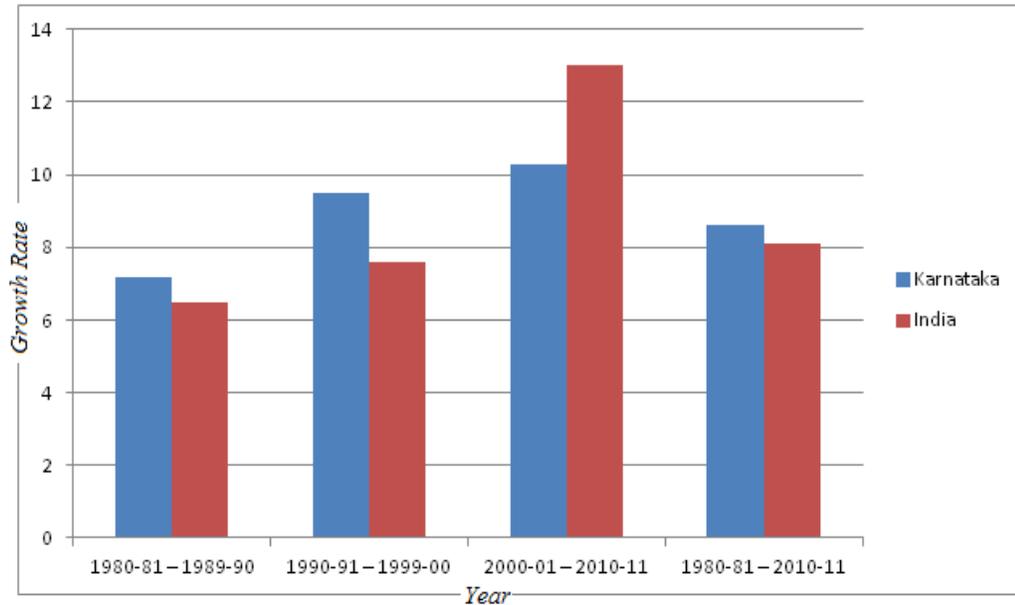
PERIOD	KARNATAKA	INDIA
1980-81 – 1989-90	7.2	6.5
1990-91 – 1999-00	9.5	7.6
2000-01 – 2010-11	10.3	13.0
1980-81 – 2010-11	8.6	8.1

Source: Computed

The growth rate steadily increased from 7.2 per cent during the pre-reform period to 9.5 per cent during the I-Phase of liberalisation and to 10.3 per cent during the II-Phase of liberalisation 8.6 per cent for the period as a whole, recording the highest growth among the three sectors. Karnataka emerged as the hub of information technology during the last decade which has tendered impetus to the growth of overall services in the State. Besides, Karnataka is the leading exporter of software in India. The state exported IT products equal to the amount of Rs.70, 375 crore, during 2009-10, the highest in the country. The tertiary sector grew by more than 9 per cent over the last eight years in the State. If continuing with the same pace of growth for the next ten years, Karnataka is set to become the global services hub of India by 2020.²²

²² Karnataka Growth Story (2010)

Figure 4.4 Tertiary Sector Growth Rate in NSDP of Karnataka



Therefore, it is the service sector which is the propelling sector for both Karnataka and India since eighties. The sectoral composition of 'state domestic product shows that the relative shares of three sectors during the period 1980-81 to 2010-11 (See table 4.5) that for the entire period tertiary sector has been the major contributor 55.83 per cent followed closely by the primary sector with 26.55 per cent. However, the decadal trends demonstrate interesting patterns. In the eighties, it was the primary sector that dominated 42.47 per cent followed by the tertiary sector with 40.58 per cent. The picture changed since then. In the 1990's it was the tertiary sector with 47.34 per cent that became dominant followed by the primary sector 33.55 per cent. That pattern gained strength in the last decade when the tertiary sector share grew to a high of 63.47 per cent while that of the primary sector declined to 19.39 per cent.

Table 4.5**Sectoral Composition of State Domestic Product of Karnataka**

(Per cent)

Year	Primary	Secondary	Tertiary
1980-81 to 1989-90	42.47	16.94	40.58
1990-91 to 1999-00	33.55	19.10	47.34
2000-01 to 2010-11	19.39	17.12	63.47
1980-81 to 2010-11	26.55	17.61	55.83

Source: Computed

It is disturbing to note that in all the three decades the share of secondary sector is the lowest and has marginally increased from 16 to 19 per cent. Thus the increase in the share of the tertiary sector has been at the expense of the primary sector. Alternatively one could say that the decline in the share of the primary sector has been offset both by the increase in the share of the tertiary sector and to a smaller extent increase in the share of the secondary sector.

4.6 Growth Rate of Manufacturing in NSDP of Karnataka

As is evident from Table 4.6 during the pre-liberalisation period the manufacturing sector registered a growth rate of 8.7 per cent and it is marginally higher than all-India rate. Inefficient infrastructural facilities, high price of power and uncertainty of power supply hampered the Indian industrial growth. Equally, India's transportation network has not been developed well, 57 per cent of goods were transported through road transport which was most inefficient, expensive and emissions-intensive mode of transport, while the figure in China is 22 per cent (Munjal.K.S 2012). Phase-I portrays different picture. To generalise further the growth performance of Karnataka manufacturing was better during the pre-reform

period as compared to the I-Phase of liberalisation. May be there are some shortcomings in the policy measures of the state. During this period the economy of Karnataka was not able to parallel the success which had in the software industry to manufacturing industries. Karnataka's software sector pursued active policy initiatives, while it was not the case with manufacturing sector. The industrial policy of the central government made only tentative changes in the Karnataka's industrial sector through New Industrial Policy Resolution, 1993-98. The state was not in a position to attract the investments, and there was no clear-cut plan to attract Foreign Direct Investment (FDI). During the initial stages of liberalisation the state seems to have lost the critical time. It was the service sector gained the share at the cost of manufacturing sector.²³

Table4.6

Compound Growth Rate of Manufacturing by NSDP (percent)

Period	Karnataka	India
1980-81 – 1989-90	8.7	7.5
1990-91 – 1999-00	4.3	6.7
2000-01 – 2010-11	5.5	12.6
1980-81 – 2010-11	6.4	6.8

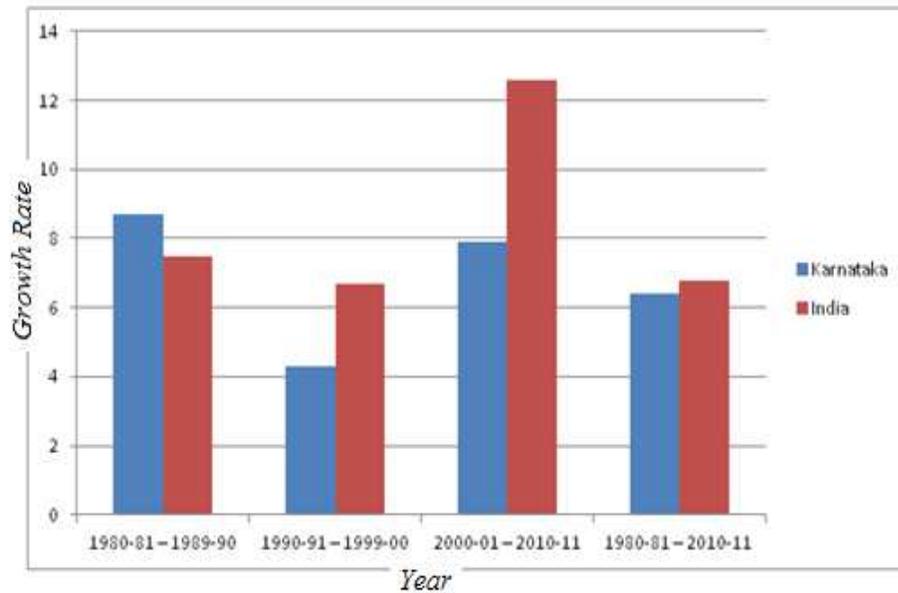
Source: Computed

Empirical evidence from the above analysis clearly depicts much improvement in the growth performance of Karnataka manufacturing during the last decade as compared to the nineties the state-led planning period, by implementing

²³ Karnataka Development Report (2007)

many attractive policies and acts in line with the central government initiatives for the growth of industries.

Figure 4.5 Manufacturing Sector Growth in NSDP of Karnataka



The growth rate increased to 5.5 per cent and pushed the job creation in the state during this period. On an average for the entire period the growth rate is 6.4 per cent suggesting that the manufacturing sector of the state has many avenues to become a promising sector of the economy.

This impressive growth of Karnataka manufacturing sector instill one to know whether it is the registered or unregistered segment of the manufacturing sector that has been moulding the overall growth of manufacturing sector of Karnataka. Therefore, in the following section the study analyses growth rate of registered and unregistered segments of Karnataka manufacturing sector.

4.6.1 Growth Trends in Manufacturing: Registered vs. Unregistered

Manufacturing sector in India consists of registered and unregistered sectors. The registered sector consists of large units and use power. On the other hand the

units in the unregistered sector are small in size but large in number. Table 4.7 provides a synoptic view of the growth rate of manufacturing components in domestic product of Karnataka and India. The table shows that there is huge disparity in growth rate of registered and unregistered sectors of Karnataka manufacturing during pre-reform period.

Table 4.7
Growth Rates of Registered and Unregistered Sectors of Karnataka
Manufacturing

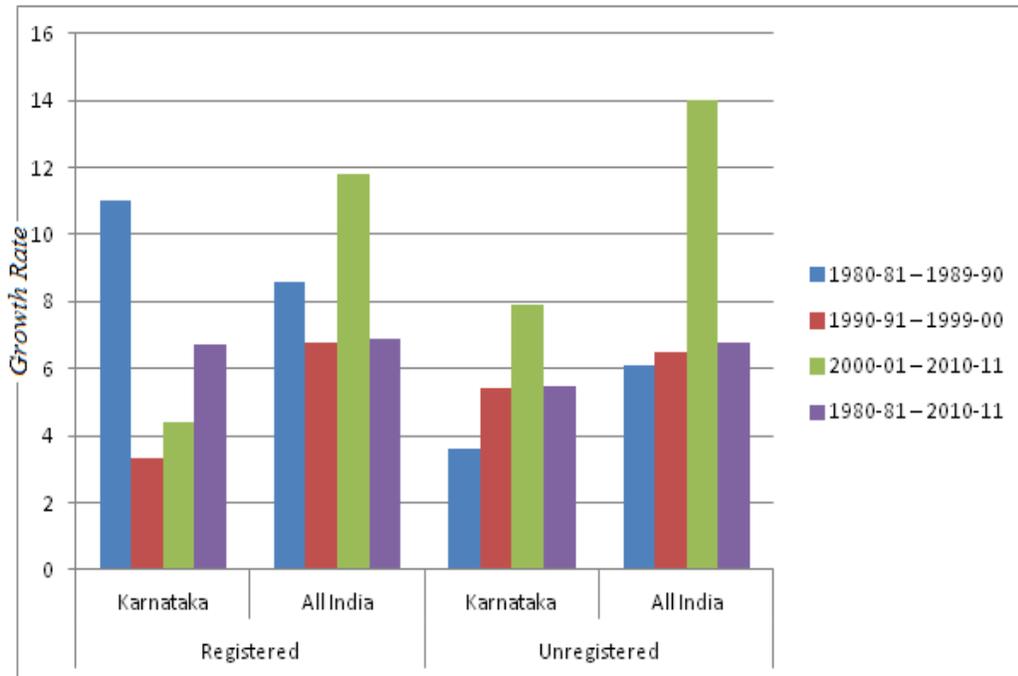
Period	Registered		Unregistered	
	Karnataka	All India	Karnataka	All India
1980-81 – 1989-90	11.0	8.6	3.6	6.1
1990-91 – 1999-00	3.3	6.8	5.4	6.5
2000-01 – 2010-11	4.4	11.8	7.9	14.0
1980-81 – 2010-11	6.7	6.9	5.5	6.8

Source: Computed

The registered sector recorded a growth rate of 11.0 per cent, while the unregistered sector registered a growth rate of 3.6 per cent resulting in the average contribution of the unregistered sector shrinking to almost above half of that of the registered sector. The growth rate is little higher for unregistered sector (5.4 per cent) as compared to registered sector (3.3 per cent) during the I-Phase of liberalisation. In this period India's real domestic product of manufacturing sector was more or less equally distributed between its registered and unregistered sectors. Relatively low growth performance of manufacturing sector during this period may be due to low growth performance of registered sector of Karnataka.

It is not possible to draw any conclusion from the above analysis because the data for unregistered sector cannot be sourced from the secondary sources and hence no detailed analysis can be made.

Figure 4.6 Growth Rates of Registered & Unregistered Sectors of Karnataka Manufacturing



On the other hand a detailed analysis is possible for the registered sector by using certain key variables like output, fixed capital, employment, no. of. factories reported in the Annual Survey of Industries (ASI). Therefore, further analysis is confined to registered sector.

4.7 Growth Rates of Basic Parameters of Manufacturing Sector

Data dissemination of ASI provides comprehensive database for the industrial units, which covers all factories registered under Sections 2m(i) and 2m(ii) of the Factories Act, 1948 i.e. those factories employing 10 or more workers using power; and those employing 20 or more workers without using power.

Certain servicing units and activities like electricity, gas, water supply, cold storage, repairing of motor vehicles and other consumer durables like watches etc. were covered under the survey till 1997-98. From 1998-99 these units were excluded from the survey. To make comparable series and to increase the consistency of the data the study reconstructed the dataset by excluding such activities from 1980-81 to 1997-98. The values at constant prices are computed using the all-India WPI series, as this is not available at the state level. To construct fixed capital stock the study relied on the standard perpetual inventory method. Real capital stock was computed by deflating the capital series by the wholesale price index of machinery and machine tools (at 1993-94 prices).

4.7.1 Growth of Output

It can be seen from the table 4.8 that average growth rate of output of Karnataka manufacturing sector during the various decades spanning from 1980-90, 1990-00 and 2000-11 ranges from 8.2, 9.2 and 15.3 per cent. The growth performance had been rather impressive since the eighties for both Karnataka and Indian manufacturing sectors due to pro-business policies of the eighties (Rodrik and Subramanian 2005). The output growth in Indian manufacturing sector during this period was contributed by 70.23 per cent of domestic demand expansion, 13.8 per cent export expansion, 12.3 per cent import substitution and 3.2 per cent intermediate demand.

During the I-Phase of liberalisation, domestic demand expansion contributed 95.7 per cent to output growth, followed by export expansion 23.6 per cent to output growth. The contribution of import substitution to output growth however turned

negative during this period is -17.7 percent, as compared to positive contribution of 12.3 per cent during pre-reform period.

Table4.8
Growth rate of Key Variables in Aggregate Manufacturing Sector (Per cent)

Period	Karnataka	All India
Output		
1980-81 to 1989-90	8.2	7.6
1990-91 to 1999-00	9.2	8.7
2000-01 to 2010-11	15.3	13.2
1980-81 to 2010-11	10.3	8.8
Employment		
1980-81 to 1989-90	0.4	-0.1
1990-91 to 1999-00	6.0	1.8
2000-01 to 2010-11	6.8	5.6
1980-81 to 2010-11	3.2	1.7
Capital		
1980-81 to 1989-90	9.3	9.3
1990-91 to 1999-00	16.6	11.3
2000-01 to 2010-11	11.1	9.9
1980-81 to 2010-11	11.1	9.4
No. of Factories		
1980-81 to 1989-90	0.7	0.9
1990-91 to 1999-00	2.7	2.6
2000-01 to 2010-11	3.6	3.8
1980-81 to 2010-11	1.8	2.1

Source: Computed from ASI Various Issues

The contribution of intermediate demand to output growth also turned negative, -1.5 per cent, as against positive contribution of 3.2 per cent during pre-reform period (Dr. Kumari. A 2002).Historically, a substantial part of growth in output in developing economies has been due to rapid increase in input use and little is attributed to improvements in factor productivity. In fact, the average contribution of inputs to output growth in developing nations was estimated to be close to 70 per cent (Chenery, Robinson and Syrquin, 1986). The post-Structural Adjustment Programme (SAP) period of high growth witnessed a substantial drop in factor productivity, with a Total Factor Productivity Growth (TFPG) of -2.9 per cent at the Karnataka level and 0.3 per cent at the national level. The growth in output is therefore mainly due to input growth (Mukherjee.D and Rajarshi Majumder 2007).During the I-Phase of liberalisation the real growth rate of output of Karnataka manufacturing sector was due to the high contribution of non agricultural industries, though the reforms in the 90s did accelerate the output growth of Karnataka manufacturing in the 1990s (Trivedi et.al 2011)

During the II-Phase of liberalisation the growth rate of output has tremendously increased both for Karnataka and Indian manufacturing sectors. On a whole the average growth rate for the entire period is 10.3 per cent. Thus the performance of aggregate manufacturing sector of Karnataka in terms of output is better than the performance of Indian manufacturing sector.

4.7.2 Growth of Employment

The manufacturing sector of Karnataka recorded low growth rate of employment (0.4 per cent) during the pre-reform period. During this period many industries became power intensive due to the availability of power at cheaper rate

from the Sharavathi Hydel Project, consequently reduced the employment opportunities.²⁴ Labour intensive industries were not encouraged in India until 1980s. Many large Indian and foreign firms were restrained to capital-intensive sectors.

A look at India's manufacturing performance during eighties (-0.1 per cent) suggests that it was a period of growth without employment creation, which has also been referred to as 'jobless growth'. This shows that the performance of Indian manufacturing sector in creating employment has been unsatisfactory, especially when compared to other Asian economies. High growth in output itself may not be an assurance to create sufficient employment. This is best demonstrated from the table 4.8 that when 7.6 per cent growth in output of manufacturing not generated employment growth. This was great surprise to economists because during 1970 a 5 per cent growth in manufacturing output generated 3.8 per cent increase in employment [Goldar (2000)]. Structural firmness connected with transformation of labour from agriculture to manufacturing could be partly blamed for this.

During the I-Phase of liberalisation the employment growth rate of Karnataka manufacturing sector is 6 per cent which is due to the growth of non agricultural industries. The positive growth of employment in the Indian manufacturing during this period is due to the investment boom in that decade (Nagraj 2001). The high growth rate (6.8 per cent) of employment in the Karnataka manufacturing during last decade is due to good performance of non agricultural industries.²⁵ Employment in the Indian manufacturing sector marginally increased (5.6 per cent) during the II-Phase of liberalisation despite a relatively high growth in output during the whole period.

²⁴ Karnataka Development Report (2007)

²⁵ L. G. Burange (2002)

4.7.3 Growth of Capital

Growth rate of capital in Karnataka manufacturing sector is 9.3 per cent, which is similar to all-India growth rate during the pre-reform period. One could see rapid improvement in the growth rate of capital during the I-Phase of liberalisation due to the availability of relatively cheaper capital, made the firms to get an opportunity to move toward capital-intensive technology and reduce the use of labour. Empirical evidence (Fallon and Lucas, 1993 cited in Goldar, 2000) shows that rise in capital intensity is associated with a substantial decline in capital productivity led to substitution of capital for labour. Larger use of capital did increase the productivity of labour, thereby helped growth in output. Job security regulations in the late 1970s made difficult of labour retrenchment, and this forced employers to adopt capital-intensive techniques. According to another view the capital-intensive techniques were adopted because of the increase in real wages in the 1980s (Ahluwalia, 1991; Ghose, 1994). During this period Karnataka recorded relatively high growth rate of capital (16.6 per cent).

However, the growth rate of capital decreased in the II-Phase of liberalisation both for Karnataka and India. The growth rate of Karnataka manufacturing in terms of capital is 11.1 per cent for the entire period (1980-2011) which is higher than the all – India growth rate. Thus the overall performance in terms of capital growth is better for Karnataka manufacturing sector as compared to Indian manufacturing sector.

4.7.4 Growth of Number of Factories

The number of factories in Karnataka manufacturing sector shows marginal growth which is hardly encouraging. The growth rate is 0.7 per cent during pre-reform period which increased to 2.7 per cent in the I-Phase of liberalisation and

further increased in the II-Phase of liberalisation. That is the growth rate is 3 per cent in the last decade. For the entire period the growth rate is 1.8 per cent which is lesser than the Indian growth rate of 2.1 per cent by showing that the performance of manufacturing sector in terms of growth of factories is better for India as compared to Karnataka.

It is not possible to draw any comprehensive conclusion from the above analysis; there could be variations in the growth stimuli, so the analysis seeks to trace the growth performance of the manufacturing sector at disaggregate level for ten industrial groups.

4.8 Performance of Manufacturing Sector at Disaggregate Level

For analysis at disaggregate level the study selected 10 major industries on the basis of their contribution to Gross Value Added (GVA) in the organised manufacturing, in terms of job creation and their contribution to export earnings.

To increase the consistency of the dataset appropriate mapping of the National Industrial Classification (NIC) between NIC 1987 and NIC 1998 was made by using the concordance table published by the CSO (Balakrishnan.P (2003)).The following section shows the growth performance of two digit industries.

4.8.1 Growth of Output

The analysis of the growth rate of output of industries in order to gain more understanding of the individual industrial performance depicted in Table 4.9. The analysis shows that the output growth of Leather industry is highest among all the industries during the pre-reform period. This industry had used the labour, capital and other inputs efficiently among the selected industries (Kalirajan.K and

M.H.Balasubramania 2009). Only Textiles industry and Basic metal and alloy industry recorded less than 5 per cent growth rate during this period. Inputs growth mainly contributed to output growth of the industries during the pre-reform period. The Non metallic mineral industry utilised the available resources efficiently in the eighties. So the growth rate of this industry was high in this period.

During the I-Phase the Beverages and tobacco industry, Wearing Apparel industry and Basic metal and alloy industry registered comparatively high growth rates. Karnataka is one of the major tobacco producing states in India. Flue-cured Virginia tobacco, used in the manufacture of cigarettes, is primarily cultivated in AP and Karnataka. Karnataka is blessed with rich mineral resources distributed more or less evenly in the whole territory. The state is endowed with rich deposits of asbestos, bauxite, chromite, gold, iron ore, kaolin, limestone, manganese, ochre, and quartz and silica sand. The state is also the sole producer of felsites, moulding sand (63 per cent) and fuchsite quartzite (53 per cent). There is deceleration in the growth rate of output in the rest of the industries in this period. The less growth rate in the food products industry during this period is that agricultural growth rate of the state was not significantly higher in the 1990s over the 1980s. This is not surprising, as it was generally agreed that this sector received no direct benefits from reforms in the 1990s, though it could have benefited indirectly from liberalisation of industry. This hampered the growth rates of agro based industries (Shand. R and S. Bhide 2004). The less growth of Textile industry during this period is poor recovery of the finished product from the raw materials (Trivedi et al 2011). The negative growth rate of wood products industry in this period is due to the implementation of forest protection and afforestation policy. The reason for the deceleration of paper products industry in this

period is, in the seventies and eighties, wood and bamboo constituted the chief raw material for the paper industry. With the implementation of central and state government policy towards forest protection and afforestation, pulp and paper mills had to take responsibility for the reduction of forest material consumption and afforestation efforts. The government encouraged the industry to create plantations on degraded forest and waste land (dedicated forest program). The overall constraint of raw materials forced the paper industry to rely more and more on imports of pulp or final paper products. Leather industry though registered a high growth rate during the first period, the growth rate declined during the second period due to shortage of skilled manpower (mainly in leather cutting) and raw materials (Report of Working Group on Leather & Leather Products Twelfth Five Year Plan 2012-17, Department of Policy and Promotion Government of India, Ministry of Commerce and Industry).

During the II-Phase of liberalisation only Beverages and Tobacco industry and Wearing Apparel industry registered less growth. The rest of the industries recorded increased growth rates of output. During nineties the consumption of beedi declined to a larger extent than that of other tobacco products. This reduced the growth rate of output of the Beverages and Tobacco industry in this period.

Table 4.9
Industry-wise Growth Rates of Output in Manufacturing Sector of Karnataka
(1980-81 to 2010-11)

Industry Group	1980-1990		1990-2000		2000-2011		1980-2011	
	Kar	Ind	Kar	Ind	Kar	Ind	Kar	Ind
Food Products (20-21)	9.3	8.6	7.9	7.3	13.4	10.1	8.3	7.3
Beverages & Tobacco (22)	7.1	5.6	10.7	6.2	6.9	8.5	8.4	5.5
Textiles (23+24+25)	3.8	6.2	1.6	4.5	3.2	8.8	3.4	4.9
Wearing Apparel (26)	19.2	9.0	23.0	14.1	9.6	11.9	18.6	11.6
Wood & Wood Products (27)	6.7	4.5	-2.6	-1.6	19.2	11.3	2.1	5.5
Paper & Paper Products (28)	8.5	4.9	1.5	5.3	13.8	9.6	5.0	5.8
Leather Products (29)	40.2	9.3	3.3	7.3	5.2	10.4	9.5	8.7
Chemical Products (30)	6.7	9.2	6.6	9.0	8.8	7.6	8.4	7.8
Non-Metallic Minerals (32)	10.8	10.4	7.3	6.8	10.3	11.8	7.3	8.2
Basic Metals & Alloys (33)	2.2	5.3	7.5	6.4	17.1	14.2	9.5	7.7

Source: Author's Computation

After recording less growth in Phase-I textiles made progress in Phase-II following the fiscal policy reforms in the 2004–05 Budget, which created a level playing field between the small-scale and other industries.²⁶

To overcome the raw material shortage of the Paper industry the Government has liberalised the import of raw materials and given excise concessions for the use of non conventional raw materials.²⁷ This reform enhanced the growth rate of Paper industry in the I-Phase of liberalization. The robust paper demand contributed to the

²⁶ Eleventh Five Year Plan

²⁷ IPMA , <http://www.ipma.co.in/index.asp>, accessed on 11 May 2012.

high output growth in the last decade. According to Indian Paper Manufacturers Association (IPMA), the economic growth; increasing literacy rate; changing demographics with higher urbanisation; increasing living standards, aspirations for changing lifestyles and media growth, demand for high quality paper and paper products (e.g., magazines, multi-colour printings, advertising and direct mailers for promotional materials) are among the major growth drivers of paper market. As for the Chemical industry, chemical products were lifted by the accelerated growth in the export of pharmaceutical products.²⁸ This increased the growth rate during II-Phase of liberalisation. There is high growth rate of Basic Metal industry in this period is, this industry seems to have benefitted due to the backward linkages it has with other industries/sectors. Booming automobile industry in India and Karnataka provided the metal industry the demand linkage and growing interest of global players in automobile industry is also related to the better performance of metal industry. Besides, the growth of infrastructure and construction sector in India in the recent years seemed to have provided the metal industry the much needed impetus for its growth. Privatisation and globalisation of metal industry also seems to be related to its better performance in the post-reform era. The overall performance in terms of output growth is better for Karnataka manufacturing industries as compared to Indian manufacturing industries.

4.8.2 Growth of Employment

The employment growth of Wearing Apparel industry, Leather industry and Non metallic mineral industry registered positive, particularly Leather and leather products industry shows remarkable growth in the pre-reform period. This could be

²⁸ State Economy and Socio Economic Profile Karnataka November 2010

because of increased growth performance of capital and no. of factories of Leather industry, Non metallic mineral industry and capital growth of the Wearing Apparel industry. And the location of Leather industry around Bangalore also one of the factor that increased the growth rate of employment of this industry. This apart, employment growth has been meager in most other industries. The industries for which the Government has decided to give greater thrust, like Food processing industry and Textile industry have fared rather dismally in augmenting employment is quite unfortunate. The growth rate of capital and of no. of factories of the other industries did not contribute to employment growth in any significant measure during the pre-reform period.

During I-Phase of liberalisation two industries: Textiles and Wood products registered negative growth rate of employment. The growth rate of Leather products industry declined sharply during this period. Rigid labour laws, inadequate training facilities in textile sector, low product quality and unreliable assured power supply etc are the major obstacles for the growth of Textile industry of Karnataka and India (Trivedi et al 2011).

Table 4.10**Industry-wise Growth Rate of Employment in Manufacturing Sector of Karnataka (1980-81 to 2010-11)**

Industry Group	1980-1990		1990-2000		2000-2011		1980-2011	
	Kar	Ind	Kar	Ind	Kar	Ind	Kar	Ind
Food Products (20-21)	-3.5	-2.8	0.7	1.6	4.1	2.4	1.5	0.8
Beverages & Tobacco (22)	-0.9	1.9	1.7	1.1	1.2	-0.4	1.3	1.5
Textiles (23+24+25)	-3.6	-2.3	-1.8	-0.6	-3.1	1.2	-3.8	-1.5
Wearing Apparel (26)	8.8	4.8	18.6	11.3	8.6	8.2	14.8	9.5
Wood & Wood Products (27)	-2.3	-1.4	-7.2	1.1	2.4	3.8	-1.1	0.8
Paper & Paper Products (28)	0.4	-0.7	0.4	0.5	3.4	3.7	1.2	0.5
Leather Products (29)	22.6	5.8	2.6	1.9	0.6	8.1	4.8	4.6
Chemical Products (30)	0.2	1.8	7.3	4.5	0.2	1.0	2.6	2.1
Non-Metallic Minerals (32)	2.2	1.9	1.0	-0.1	2.3	7.2	0.1	2.1
Basic Metals & Alloys (33)	-2.5	0.2	0.6	0.4	8.5	7.1	0.6	0.8

Source: Author's Computation

A glance at the Table 4.11 reveals that the growth rate of employment has witnessed a decline in a few industries; Textiles, Leather and Chemical products during the last decade. The declining growth rate of Leather products industry during Phase-I is due to the fact that there was less than full coverage of the enterprises engaged in manufacturing in this sector in the collection of production data by the Department of Industrial Policy and Promotion (DIPP). Large pool of skilled graduates and technicians produced in the colleges and institutes of Karnataka dedicated to agricultural and food technology, the state provided comprehensive support to the food processing industry during the II-Phase of liberalisation. The overall performance in terms of labour growth is not good for Karnataka manufacturing industries as well as for Indian manufacturing industries.

4.8.3 Growth of Fixed Capital

Fixed capital growth is less in only one industry; the Basic metal and alloy industry during pre-reform period. During I-Phase of liberalisation the growth rate of fixed capital decreased in five industries; Beverages and Tobacco, Textiles, Wood Products, Leather products and Non metallic minerals. This has largely contributed by a drastic decline in the growth rate of no.of factories of these industries during this period. And inadequate capacity of the domestic textile machinery manufacturing sector retarded the growth rate of capital of the Textile industry.

Table 4.11
Industry-wise Growth Rate of Fixed Capital in Manufacturing Sector of
Karnataka (1980-81 to 2010-11)

Industry Group	1980-1990		1990-2000		2000-2011		1980-2011	
	Kar	Ind	Kar	Ind	Kar	Ind	Kar	Ind
Food Products (20-21)	7.8	9.6	14.6	10.6	13.4	9.0	10.1	9.2
Beverages& Tobacco (22)	18.1	15.1	13.6	14.6	5.9	8.4	13.1	12.5
Textiles (23+24+25)	12.7	9.5	11.0	12.3	5.7	6.4	7.8	8.5
Wearing Apparel (26)	21.5	14.9	29.1	21.5	12.3	12.3	22.8	16.5
Wood & Wood Products(27)	8.8	8.6	7.2	11.4	4.3	9.6	6.6	9.5
Paper & Paper Products (28)	1.0	8.4	4.1	10.3	9.8	8.0	3.6	7.7
Leather Products (29)	31.4	10.0	12.2	11.0	1.8	9.0	13.6	10.4
Chemical Products (30)	6.0	8.2	8.0	11.5	9.2	3.5	8.2	8.1
Non-Metallic Minerals (32)	15.0	17.9	13.7	12.9	9.5	8.8	8.1	10.4
Basic Metals & Alloys (33)	3.7	6.3	25.1	8.1	14.8	11.8	14.5	8.1

Source: Computed

During the II-Phase of liberalisation the capital growth has increased only in two industries; Paper and paper products and Chemical products. This is the fact again the meager growth rate of no. of factories in these industries impacted on their fixed capital growth rate during same period.

The overall analysis depict that the performance in terms of capital growth is little better for Karnataka manufacturing industries as compared to Indian manufacturing industries.

4.8.4 Growth of Number of Factories

A glance at the table 4.12 reveals that during the pre-reform period the number of factories have witnessed negative growth rate in three industries; Textiles, Wearing Apparel and Wood products. However, of these, only textiles show hardly any growth in output. This implies that there is a growing concentration in the other industries (especially in the Wearing Apparel and Wood products groups where their output is 19.2 per cent and 6.7 per cent respectively).

During the II-Phase of liberalisation five industries; Food products, Textiles, Wood products, Leather products and Non metallic minerals have registered meager growth rate of factories. The Food industry had the problems²⁹ like poor infrastructure in terms of cold storage, warehousing, inadequate quality control and testing infrastructure, inefficient supply chain and involvement of middlemen, high transportation and inventory carrying cost, affordability, cultural and regional preference of fresh food, high taxation and high packaging cost.

Scarcity of raw material has been the major obstacle for the growth of factories in the Wood product industry since Karnataka's forest reserves account only 20 per cent of the total geographical area of the state.

²⁹ Reported at [http://mospi.nic.in/Content](http://mospi.nic.in/Content%20age.aspx?CategoryId=122) age.aspx?CategoryId=122

During the II-Phase of liberalisation industries; Beverages, Textiles, Wearing Apparel and Leather products registered less growth rate. The dismal output growth rates of Textiles, Leather products have highly reflected on the less growth rate of factories in the last decade. It was in the last decade Karnataka has established Food Karnataka Limited, a Special Purpose Vehicle, as the Nodal Agency for development of infrastructure to establish Food Processing Industries in the State³⁰. The use of tobacco and its various products appears to have declined in Indian rural and urban populations over the period from 1987–88 to 1999–2000.

Table 4.12
Industry-wise Growth Rate of No. of factories in Manufacturing Sector of
Karnataka (1980-81 to 2010-11)

Industry Group	1980-1990		1990-2000		2000-2011		1980-2011	
	Kar	Ind	Kar	Ind	Kar	Ind	Kar	Ind
Food Products (20-21)	1.4	0.9	0.5	1.7	3.3	1.3	1.2	1.4
Beverages & Tobacco (22)	0.2	-1.1	1.6	-7.4	0.8	3.3	0.7	-3.0
Textiles (23+24+25)	-3.1	-2.7	-7.1	-0.1	-1.5	1.7	-6.3	-0.5
Wearing Apparel (26)	-0.6	1.6	12.7	6.9	-0.2	3.2	7.1	4.8
Wood & Wood Products (27)	-2.2	-1.6	-2.3	1.8	0.6	1.0	-1.0	0.4
Paper & Paper Products (28)	0.2	0.8	3.0	2.4	4.4	3.8	1.9	2.0
Leather Products (29)	14.0	3.8	4.8	5.1	-2.6	3.6	4.4	4.7
Chemical Products (30)	0.2	1.9	2.2	4.7	2.4	1.2	1.4	2.8
Non-Metallic Minerals (32)	2.7	3.6	1.9	2.5	3.1	6.3	1.6	3.1
Basic Metals & Alloys (33)	0.4	0.7	0.1	2.2	7.1	4.4	1.1	1.4

Source: Calculated from ASI various issues

³⁰ Karnataka the new destination for Food Processing Industries

According to the National Sample Survey (NSS) data consumption of tobacco in all forms has reduced. Again this trend of decline in consumption is faster among the urban population. This has reflected in the growth rate of factories during the last decade. As regards the bottlenecks to better performance of textiles industry identified³¹ are: structural weaknesses in weaving and processing, fragmented and technologically backward textile processing sector, fragmented garment industry, infrastructural bottlenecks in terms of power, utility and road transport. The Textile industry in the state has been asking for textile parks on the lines of IT parks³². It was during 2009-10 policy incentives and infrastructure in the state favoured investments in the textile sector. Now the state is making significant investments in industrial infrastructure, such as setting up industrial clusters and Special Economic Zones (SEZ) and Public Private Partnership (PPP) projects to provide an impetus to further industrial development³³. It was in the last decade shortage of skilled man power and raw material availability in the state reduced the growth rate of number of factories of leather industry. The performance in terms of number of factories is better for Indian manufacturing industries as compared to Karnataka manufacturing industries in all the periods.

From the third chapter the study observed that industrial policies of Karnataka enhanced the growth of Karnataka manufacturing sector in the following respects.

The study found that the policy measures of 1983 policy has enhanced the growth of manufacturing sector of Karnataka in terms of output, employment, capital

³¹ Government of India (2006), Report of the Working Group on Textiles & Jute Industry, Ministry of Textiles

³² State Economy and Socio Economic Profile Karnataka November 2010

³³ Twelfth five Year Plan Period (2012-17)

at the aggregate level. At the disaggregate level the policy promoted the output growth of Leather Products, Food Products, Wearing Apparel and Non-Metallic Minerals, employment growth of Wearing Apparel and Leather Products capital growth of Beverages & Tobacco Textiles Wearing Apparel Leather Products and Non-Metallic Minerals and no.of factories growth of Leather Products.

The finding of the study is that New Industrial Policy Resolution of 1993-98, did not support the manufacturing growth, during the post-liberalisation period (1990-2000). This is because of the 1991 industrial policy of the central government made only tentative changes in the Karnataka's industrial sector through New Industrial Policy Resolution, 1993-98 (Karnataka Development Report (2007)).

The industrial policies of 2001-2006, 2006-11 and 2009-14 of Karnataka by introducing several incentives, subsidies and concessions promoted the growth of manufacturing sector during the last decade.

The above result confirms that state policies had influenced the structure of industries especially manufacturing industries. Therefore, the state level industrial policies even though National Level Policy prevailing help for the systematic planning of industrial structure at regional level. So it is proved that the hypothesis of industrial policies of Karnataka enhanced the manufacturing growth of Karnataka is positive.

4.9 Sum Up

In this chapter an attempt has been made to study the growth rate of NSDP of different states, sectoral growth rates of Karnataka state and manufacturing growth of Karnataka.

Karnataka experienced significant growth rate of domestic product in all the three sub-periods and for the entire period. Karnataka's primary sector growth rate was not significant in all the periods, especially during the pre-reform period. On the other hand the tertiary sector growth rate was high and significant in all the periods, especially during the I-Phase. The growth rate of secondary sector was higher than the growth rate of primary sector but lower than the growth rate of tertiary sector.

Manufacturing sector growth in domestic product was found to be declined in Phase-I both for Karnataka and India but for Karnataka the decline is sharper. The registered manufacturing sector of the factory sector experienced high growth rate and the unregistered manufacturing sector achieved the steady growth during the study period.

Karnataka's aggregate manufacturing sector experienced relatively high growth rate of output, labour and capital in all the periods than Indian manufacturing sector growth. While number of factories grown at low rate.

At the disaggregate level four out of ten industries experienced high growth rate of output during the I-Phase. The growth rate of output of Wood products had been low and declined to turn negative in 1990s relative to 1980s and thereafter increased in Phase-II.

The employment growth in the many industrial groups is negative during pre-reform period. Five industries maintained positive growth rate of employment in the I-Phase of liberalisation. Only one industry registered negative growth during the last decade.

Five industries registered high growth rate of capital during pre-reform period. In Phase-I high growth rate of capital experienced by three industries. However, growth rate declined for the eight industrial groups during Phase-II.

Four out of the ten industrial groups witnessed growth in the factory in Phase-I relative to pre-reform period. While the growth rate of factory is negative for Textiles and Wood products in all the periods.

High growth rate of value of output employment and capital all reflect the satisfactory performance of the state in the industrial activity.

This good performance instigates one to analyse the productivity growth of the manufacturing sector of the state. So the succeeding chapter would focus on the productivity analysis.