

CHAPTER FOUR

INDUSTRIAL PROFILE OF GUJARAT

CHAPTER IV

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I INTRODUCTION:

In the previous chapter, an overview of industrial policy adopted by central government and the state government was presented. It was seen from this chapter, that industrial policy has undergone a change, both at the centre as well as in the state of Gujarat. It is also pertinent to note that the period from 1991 onwards was the period of liberalization in industrial sector. It is against this background that the present chapter is devoted to the study of growth and structural changes in the industrial sector of the state of Gujarat.

Gujarat came into being on 1st of May 1960, as the result of bifurcation of the former Bombay state. At present, the state of Gujarat has 26 district including 19 existing and 7 newly created districts. These 26 districts are made up of 226 talukas. The state occupies an area of 196024 square km, which is around 6.40% of the total area of the country and a population of 5.07 crores as per 2001 census. As per census 2001 the percentage share of workers to the total population is 42.10%.

After the formation of Gujarat, the state government has adopted various industrial development policies from time to time. The process of industrialization in the state had taken a new turn since the introduction of the economic reforms in 1991. After the Government of India announced the New Industrial Policy (NIP) in 1991, with the objective of implementing of economic reforms in a industrial sector, the Government of Gujarat has also responded favourably and announced it own industrial policies. The state industrial policy 1990-95 was already in operation when NIP 1991 was declared by the Central Government. The Gujarat Government declared the New Industrial and Incentive Policy 1995-2000 in August 1995, there after Gujarat 2000, 2003 and 2009 industrial policies were announced to speed up the industrial development in the state.

Though the policy declarations by the Government of Gujarat are essentially based on the general framework of the NIP-1991, these are more aggressive in terms of promoting and facilitating new industrial investments. The state's approach is "to compete not only with the other Indian states, but also with the newly emerging high growth regions of the South East and East Asian countries" in the industrial sector.²⁷

However, the focus of the policies, have been reactively more on incentives and concessions and on promotional and development works. There is also a clear emphasis on promoting larger units, which are described as "Premier" (units with investment between Rs. 100 crores to 500 crores), and "Prestigious Units" (units with investment of more than Rs. 500 crores) in the policy statement. All these policies, keeping the centre subsidies and incentives, try to attract more industrial units and investment in the state.²⁸

But later on Government had realized that concessions, subsidies and incentives are not adequate to attract industries in the state, if the required infrastructure is not available. Thus, Government of Gujarat started giving a high priority to the promotion of infrastructure in the state. In this respect the Government had setup the Gujarat Infrastructure Development Board (GIDB) in 1995, with the objectives of attracting private sector investment in infrastructure, such as roads, power plants, ports, etc. GIDB was tasked to prepare the guidelines for the involvement of private sector, the banks and financial institutions, including the global financial institutions in funding infrastructural facilities in Gujarat. In addition, the state Government has also provided concessions to new industries in acquisition of power, land, water and other infrastructure support and assured these supplies within a limited time. In short, the state government has been aggressive and determined to attract maximum industrial investment to the state.

As a result, the state had attracted the highest industrial investment in large and medium sectors among all the states of India in post reform period. This has not only led to rapid industrialization, but to a sea change in the structure of the industries. It is this structural change that will be examined in the present chapter. Accordingly the present chapter has dealt with the following aspects-

²⁷ See Hirway 1999.

²⁸ See Hirway, 1999.

- Growth in terms of number of factories, number of employees, capital investment, net value added and volume of output, both in absolute as well as in percentage share will be examined both state wise as well as group wise.
- The instability index of selected variables will also be examined both state wise as well as group wise.

Several studies have been conducted elsewhere to examine the changes in industrial structure and industrial growth. In one such study, Patwardhan (1988), covering a period of 1960 to 1983 examined the issue of industrial development and regional imbalance for Maharashtra state. He had divided the whole state into five regions. As per this study, it was found that an overwhelming number of establishments with one or more hired worker were located in Greater Bombay. The same was true in case of the share of registered SSI and employment in factories. Thus one and half decade policy trust towards industrialization has yielded limited fruits in reducing regional imbalances in industrial development. Sebastian and Leonard (1988), attempted to explain the process of industrialization in Tamil Nadu between 1976-77 and 1981-82, with special reference to regional imbalances. For the purpose of analysis, they considered district as a regional unit. They found that five districts accounted for 60% of registered factories and employment. These five districts continued to dominate even after five years. Similarly, there was no change in low ranking districts. Even in terms of value added the said five districts dominated. Thus, they concluded from the observed data that the industrial policy has made little inroads to reduce the regional disparities.

Nayak (1994), focused on how over a period of time industrial development in Orissa took place. He compared industrialization of Orissa with other states of India between the period 1970-71 to 1980-81. He concluded from his study that the districts which were industrially backward were unable to attract industries due to lack of infrastructure. In another study by Kumnoor (2007), the industrial development in the state of Karnataka was analyzed. He opined that regional disparity existed in Karnataka state. However, he concluded that fiscal and financial incentives had played a role in the development of industrially backward districts in the state. Singh and Singh (2011), compared the state of industrial development in Uttar Pradesh, Gujarat and Maharashtra. Their study covered the period between 1998 and 2005. The comparison was made in

terms of number of factories, number of employees, capital investment, total output, input output ratio and output/ employment per rupee of invested capital. They found that in all these parameters, the state of Gujarat and Maharashtra was far ahead of Uttar Pradesh. They concluded that central policy of reducing imbalances through industrial policy has been successful only partially.

Few scholars have also focused their studies exclusively for the state of Gujarat as well. In one such study, Joshi (1982) attempted to study those talukas of Gujarat, which were declared as backward by the government of Gujarat in 1969. Through his study he brought out the fact that the development strategy of the backward regions should be formulated keeping in view the resource endowment and availability of the industrial infrastructure of the region concerned. He concluded that large scale industries fail to bring development to the backward regions. It is the SSI which show the way for the development of backward region. This is because SSI units exploit local resource and local manpower better than large units.

Dholakia (2000) in his study on the development strategy of Gujarat opined that although the liberalized process had an affirmative impact on the economy of Gujarat, this impact was not uniform across the sectors. However, he argues that since the government of Gujarat took a new initiative only after 1996, it was too early to scrutinize its impact on the economy. Awasthi (2000) observed that liberalization had a positive impact on the industrial growth rates in the state of Gujarat. According to his study, in the pre-reform period (1986-91) industrial sector grew at the rate of 14.52% whereas in the post reform period during 1991-96 the sector grew at the rate of 22.08%. Thus, according to him reforms had an impact on the investment in the industrial sector in Gujarat as it grew by five times in the post-reform period than in the pre-reform period. Nevertheless, the state still lacks behind in infrastructure compared to competing states like Maharastra, Tamil- Nadu, Karnataka and Andhra Pradesh.

Bagchi et al (2005) also examined the impact of reforms on the industrial sector of Gujarat. The industrial sector of Gujarat according to them had undergone a higher degree of concentration than in the rest of India, particularly due to the capital intensive nature of growth in the factory sector. They concluded that industrial development of the

state is characterized by falling employment per unit of capital and rising labour productivity.

It is evident from the above, that most of the studies have examined industrialization and regional development as a whole rather than district wise in the state of Gujarat. Further, the available studies have been undertaken in 1980's or 1990's and for limited duration. The present study is therefore makes an attempt to fill in the lacunae.

Rest of the chapter is sub-divided into the following section. In section II, sources of data, the methodology and concepts are discussed. In section III, the resulted are presented. Finally in section IV, the conclusions are drawn.

II SOURCES OF DATA, METHODOLOGY AND CONCEPTS:

Data source:

The data used for analysis are based on secondary sources. The study is essentially of an empirical in nature and its basic sources of data are secondary. The data required are collected from Annual Survey of Industries, Commissioner of Industries of Gujarat, Chief Inspector of Factories of Gujarat, Industrial Extension Bureau of Gujarat, Socio-Economic Review of Gujarat, District Industrial Centres, and Socio-Economic Review of the District surveyed.

Methodology:

The industrial development within the state of Gujarat has been examined on the basis of the growth trend and instability for a period between 1980-81 and 2009-10. This period is further sub divided in to two periods-1980-81 to 1990-91 and 1991-92 to 2009-10. This period roughly corresponds to pre and post reform period. Accordingly, two separate regressions are to estimate – one for the pre-reform period and the other for the post – reform period, respectively:

$$\text{Log } Y_t = a + b.t \quad (1)$$

$$\text{Log } Y_t = a' + b'.t \quad (2)$$

Since the above two regression equations can be combined into a multiple regression by adding intercept and slope dummies to equation (i), we get the equation :

$$\text{Log } Y_t = a + b.t + (a' - a) Dt + (b' - b) Dt + u_t \text{ ----- (3)}$$

Or

$$\text{Log } Y_t = b_0 + b_1t + b_2D + b_3D.t + u_t \text{ ----- (3)}$$

Where Y_t is the time series under study or determinant, t is the time variable and D is the intercept dummy which assumes the value one for the post-reform period and zero for the pre - reform period. $D.t$ is the slope dummy, which is nothing but the time variable during the post - reform period and zero otherwise. The coefficient b_1 will be the growth rate of variables in the pre reforms and $(b_1+ b_3)$ will give the growth rate of variable in the post reform period. The slope coefficients b_1 and $(b_1+ b_3)$ give the instantaneous (at a point in time) rate of growth. The compound growth can be computed by taking the anti log as explained above. If the coefficient of, say, slope dummy (b_3) , is statistically significant and positive , it can be concluded that the regression equation for the post-reform period is different from that of the pre - reform period and that the rate of growth in the series is higher during the post-reform period (as $b_3 > b_1$).

Instability is defined simply as the year-to-year fluctuation in the variables under consideration. Mathematically it can be defined as the difference between the actual and estimated value of any variable, expressing the difference as percentage of average value of variable. In fact, instability should mean a fluctuation around the trend. This means there is a need to estimate the trend first. Otherwise, a state, whose industrial sector are raising fast even at a constant rate, will score high on the instability scale. In the study therefore, the Instability index suggested by Coppock (1962) has been used. This index is used to capture year-to-year fluctuation in growth trends, and will take care of the trend component in the time series data. The index is expressed as:

$$I.I = [(\text{Anti log.}), (V \log.)^{1/2} - 100]. 100$$

$$\text{Where, } V \log = 1/ t-1 \sum (\log X_{t+1} - \log X_t - M)^2$$

$$\text{and } M = 1/ t-1 \sum (\log X_{t+1} - \log X_t)$$

The concept of employees, capital investment and value added:

The growth of industries in the state has been studied in terms of number workers, capital investment and value added or net output. The definitions of these terms are the same as given by the Annual Survey of Industries. The Annual Survey of Industries has adopted the definition of the terms employees which has been defined as, all workers receiving wages and holding supervisory or managerial position engaged in administrative office,

store keeping section and welfare section, sales department as also those engaged in purchase of raw materials etc, or purchase of fixed assets for the factory and watch and ward staff.²⁹

Productive capital consists of both fixed capital and working capital. Fixed capital represents the depreciated book value of fixed assets of the factory as on the closing day of the accounting year. Fixed capital covers all goods, new or used that have a normal economic life of one year or more. Working capital comprise stocks of materials, stores, fuels, finished at bank, net balance of amounts payable as at the end of the year. It excludes fixed deposits and long term loan and investment.

According to the ASI, output comprises of total ex factory value of products and by products manufactured as well as other receipts from non industrial services rendered to others, work done for other on material supplied by them, value of electricity produced and sold, sale value of goods sold in the same condition as purchased, addition in stock of semi finished goods and own construction. Rent received and interest received is not included. Value added by manufacture, is calculated by deducting total input and depreciation from total output.

III THE FINDINGS:

Economic development of the country may be measured in terms of different indicators. In the present study, industrialization is used to measure the level of development. Before examining the trends in growth and instability in industrial development in Gujarat, a comparison between Gujarat and rest of the country will provide a proper perspective of all- India ranking of Gujarat state.

The factory sector in India has experienced considerable growth over the time period. The number of factories has increased from 105037 in 1981-82 to 110179 in 1990-91 to 158877 in 2009-10, with total capital investment at Rs. 5399127 lakhs in 1981-82 to Rs. 19491285 lakhs in 1990-91 to 173992820 lakhs in the year 2009-10 and employment of 7777868 persons in the year 1981-82 to 8162504 persons in 1990-91 to 11792055 persons in 2009-10. The value of output have increased from Rs. 7363046 lakhs to 1981-82 to Rs. 27056353 lakh in 1990-91 to Rs. 373303593 lakhs in 2009-10

²⁹ See Annual Survey of Industries (2000-2001).

with the increase in the net value added from Rs. 1451257 lakh in 1981-82 to Rs. 5151459 lakhs in 1990-91 to Rs. 59211387 lakhs in the year 2009-10.

The factory sector in Gujarat state has also experienced considerable high growth. The number of factories, which was 2030 in the year 1981-82, have increased to 10943 in the year 1990-91 to 15576 in the year 2009-10, with the capital investment of Rs. 407942 lakhs in 1981-82 to Rs. 1438329 lakhs in 1990-91 to Rs. 29933701 lakhs in 2009-10 and employment of 511625 persons in 1981-82 to 675447 persons in 1990-91 to 1159239 persons in the year 2009-10. The value of output has increased from Rs. 684207 lakhs to Rs. 2759271 lakhs in 1990-91 to Rs. 64265756 in the year 2009-10, with the tremendous increase in value added from Rs. 109775 lakhs in 1981-82 to Rs. 446824 lakhs in 1990-91 to Rs 9002801 lakhs in the year 2009-10.

In terms of Small Scale Industries (SSI) also, Gujarat has continued to witness impressive development. There were only 2169 small scale industries units in 1961. The number of SSI increased to 15849 in 1970, 43412 in 1980, 115384 in 1990, crossed the figure of 310000 in September 2006³⁰. The trend of SSI registration in the state shows more towards textiles industries followed by machinery and parts, metal products, rubber and plastic products and chemical and chemical products.

On 2nd October 2006 the Small Scale Industries Act was amended and new act called Micro, Small and Medium (MSME) Act 2006 was promulgated. Accordingly, from October 2006 separate data for small scale units are not available; the trend is available in terms of MSMEs only. By March 2007, 4130 MSMEs units were registered in Gujarat having an investment of more than Rs 3000 crore and had provided direct employment to 76000 persons. By 2009-10, the number of registered units increased to more than 19000 with an investment of more than Rs 9000 crore and employment provision of more than 240000.³¹

With this as background, in the forgoing section the results of analysis are presented.

³⁰ Small scale industries act has been revised as Micro, Small and Medium Enterprises (MSMED) Act, 2006 from 2nd October 2006.

³¹ According to this Act, Micro Enterprises means investment in plant and machinery does not exceed Rs. Twenty-five lakhs, Small enterprise means investment between twenty-five lakhs and five crores and Medium enterprise means investment between five crores and ten crores.

In the year 1980-81, Gujarat accounted for 2.2% of the total factory in India. In terms of number of employees in the factory, the share of Gujarat was 7.2% of the total number of employees in India. As far as capital investment, net value added was concerned; the share was 7.69% and 6.88% respectively. By 2009-10 the share of Gujarat in all the above parameters had increased. For instance, percentage share of the total factory increased to 10%, in case of net value added, it increased to 16%. As a result of the increase in percentage share in terms of factory, investment, number of employees etc, the ranking of Gujarat in all India bases improved during the study period. For e.g. in terms of investment the ranking has improved from 3rd to 2nd, in case of value added and number of employees from 4th and 5th to 2nd and 3rd respectively.

The position of Gujarat becomes clearer, if we look at the compound growth rate of all industries for selected variables, during the study period under consideration. This is presented in table 4.1(absolute terms). In this table the compound growth rate of the number of factories, Number of employees, Capital Investment, Net Value added of value of output in absolute term is depicted. This table reveals that the fact that during the study period from 1980-81 and 2009-10, in case of number of factories- the highest growth rate has been recorded in Rajasthan(7.69) followed by Tamil Nadu(6.53). The state of Gujarat (4.77) is at the 6th position in terms of the growth rate in the number of factories.

As far as the numbers of employees are concerned, the table reveals that the highest growth rate is recorded by the state of Haryana (3.16) followed by Andhra Pradesh (2.51). The state of Gujarat (1.54) is enjoying 5th. In terms of capital investment, the highest growth rate is recorded in the state of Gujarat (15.99) followed by Karnataka (15.45). In terms of the net value added, also the highest growth has been recorded by the state of Gujarat (16.74) followed by Haryana (15.81). In case of volume of output, Rajasthan (17.19) is again on the top position followed by Karnataka (17.11). The state of Gujarat (16.88) is enjoying 4th position. Thus, it is pertinent to note from this table that, the state of Gujarat ranks very high in terms of growth rate of selected variables. Bihar is the only state where negative growth rate is recorded for all the variables for the entire study period.

As mentioned earlier to find out the impact of liberal industrial policy on the development of industries, the study period has been sub divided into two periods viz 1980-81 to 1990-91 and 1991-92 to 2009-10. On the basis of the two sub periods, the compound growth rates of the selected variables are presented in table 4.2(absolute value). It is evident from this table that, in terms of number of factories, the compound growth rate has slackened in all selected states in the post reform period. Same is the case in terms of capital investment. However, in terms of number of employees, net value added and output the compound growth rate has improved in Gujarat, whereas in all other states it has worsened in the post reform period. Further it is evident from the table that Gujarat enjoys one of the highest growth rates in almost all selected variables. From this table it may be concluded that Gujarat has benefited the most from reforms. On the contrary Bihar state has shown negative growth rate in all variables in the post reform period. This shows that the state of Bihar has benefited the least from reforms.

The relative position of the different states in industrial development can also be judged from the trends in the percentage share. The percentage share in the selected variables state wise is presented in table 4.3. This table indicates that the position of Gujarat has improved in case of variables like capital investment, net value added and output in the study period in the country.

If we look at the trends in pre and post reform period in (table 4.4), it is evident that, in terms of capital investment, net value added and output, the state of Gujarat has shown affirmative change in the post reform period.

The foregoing analysis, leads one to conclude that,

1. In the period under consideration, Gujarat state has upper hand in almost all parameters.
2. Although reforms have benefited other states also, it is the Gujarat state which has benefited the most.
3. In terms of percentage growth rate again Gujarat a glowing picture emerges.

Thus, we can say that industrial policy pursued in Gujarat has had a favourable impact in accelerating industrial development. Other states which have benefited are

Haryana, Karnataka, Kerala and Andhra Pradesh. The states that have benefited the least are Bihar, Madhya Pradesh, West Bengal and Uttar Pradesh.

TABLE 4.1

Selected State Wise Compound Growth Rate (Absolute) Of All Industries for Selected Variables for Overall Period in the Pre and Post Reform period

Sr No	States	CGR of No. Of Working Factories	CGR of No. Of Employees	CGR of Capital Investment (Rs In Lakhs)	CGR of Net Value Added(Rs In Lakhs)	CGR of Value Of Output (Rs In Lakhs)
		1980-81 TO 2009-10	1980-81 TO 2009-10	1980-81 TO 2009-10	1980-81 TO 2009-10	1980-81 TO 2009-10
1	Andhra Pradesh	5.36	2.51	13.21	14.33	15.69
2	Bihar	-1.19	-7.93	-1.43	-3.30	3.72
3	Delhi	4.20	0.38	9.85	11.89	12.44
4	Gujarat	4.77	1.54	15.99	16.74	16.68
5	Haryana	5.63	3.16	13.27	15.81	16.81
6	Karnataka	5.09	2.42	15.45	15.38	17.11
7	Kerala	5.83	1.56	9.94	10.20	13.73
8	Madhya Pradesh	2.53	-1.68	7.86	10.03	12.66
9	Maharashtra	4.41	0.35	12.67	13.27	14.09
10	Orissa	4.85	0.16	12.12	14.24	13.61
11	Punjab	5.42	2.30	10.24	13.03	14.07
12	Rajasthan	7.69	1.52	10.95	13.77	17.19
13	Tamil Nadu	6.53	0.77	13.55	13.08	14.67
14	Uttar Pradesh	3.50	-0.81	10.51	11.97	13.94
15	West Bengal	3.15	-2.12	9.34	8.47	10.91

Source: Compiled from Various Issues of Annual Survey Of Industries, New Delhi.

TABLE 4.2

**Selected State Wise Compound Growth Rate (Absolute) Of All Industries
for Selected Variables in the Pre and Post Reform Period**

Sr No	States	CGR of No of Working Factories		CGR of No. of Employees		CGR of Capital Investment (Rs In Lakhs)		CGR Of Net Value Added(Rs In Lakhs)		CGR Of Value Of Output(Rs In Lakhs)	
		1980-81 to 1990-91	1991-92 to 2009-10	1980-81 to 1990-91	1991-92 to 2009-10	1980-81 to 1990-91	1991-92 to 2009-10	1980-81 to 1990-91	1991-92 to 2009-10	1980-81 to 1990-91	1991-92 to 2009-10
1	Andhra Pradesh	29.11	-0.57	6.07	3.11	19.93	7.29	15.74	13.27	20.41	13.57
2	Bihar	17.23	-7.11	1.14	11.72	8.14	-8.21	15.29	-17.58	13.74	-2.23
3	Delhi	22.63	-1.08	4.13	-1.63	9.30	7.79	19.74	5.72	19.35	7.82
4	Gujarat	19.46	1.38	2.16	3.70	16.36	15.36	15.49	16.88	15.95	16.49
5	Haryana	20.38	2.29	5.21	5.07	16.91	11.87	15.09	21.80	19.74	15.79
6	Karnataka	21.24	1.78	3.26	2.76	15.10	14.44	16.46	15.05	18.73	16.96
7	Kerala	18.15	2.75	1.47	0.65	11.54	8.17	14.67	6.60	13.73	13.01
8	Madhya Pradesh	19.18	-2.72	3.83	-5.74	14.59	2.65	15.49	4.87	20.39	7.53
9	Maharashtra	19.19	0.42	1.44	-0.19	15.79	9.82	15.77	11.61	16.51	12.82
10	Orissa	22.04	1.03	3.28	-1.91	20.30	8.09	21.60	11.92	19.71	10.54
11	Punjab	22.95	2.20	9.76	0.13	17.91	5.68	21.39	8.41	22.72	10.55
12	Rajasthan	25.66	3.04	4.86	0.78	15.07	8.81	16.49	11.61	32.09	12.35
13	Tamil Nadu	23.64	1.68	5.04	-2.85	17.78	10.25	17.29	10.15	17.34	12.76
14	Uttar Pradesh	16.87	-0.25	1.40	-1.85	16.14	5.19	18.08	8.40	21.05	10.16
15	West Bengal	14.40	0.17	-1.83	-3.19	11.21	5.31	8.28	6.04	11.44	11.11

Source: Compiled from Various Issues of Annual Survey of Industries, New Delhi

TABLE 4.3
Selected State Wise Compound Growth Rate (Percentage share) Of All Industries for Selected Variables Overall Period in the Pre and Post Reform period

Sr No	States	CGR Of No Of Working Factories	CGR Of No. Of Employees	CGR Of Capital Investment (Rs In Lakhs)	CGR Of Net Value Added(Rs In Lakhs)	CGR Of Value Of Output (Rs In Lakhs)
		1980-81 TO 2009-10	1980-81 TO 2009-10	1980-81 TO 2009-10	1980-81 TO 2009-10	1980-81 TO 2009-10
1	Andhra Pradesh	3.98	17.88	4.35	4.55	5.97
2	Bihar	-2.65	-17.19	-33.18	-25.27	-21.53
3	Delhi	2.84	-0.43	-2.10	-1.32	-2.53
4	Gujarat	3.32	6.70	47.63	122.37	27.12
5	Haryana	4.20	7.71	2.45	6.93	7.93
6	Karnataka	3.61	9.56	15.35	10.31	11.43
7	Kerala	4.33	3.18	-4.42	-5.15	-1.45
8	Madhya Pradesh	1.13	-7.35	-18.69	-10.67	-5.22
9	Maharashtra	2.99	-4.29	3.70	-4.18	-7.03
10	Orissa	3.37	-0.85	-1.32	1.01	-1.30
11	Punjab	3.89	5.77	-6.58	-0.63	-1.38
12	Rajasthan	6.28	2.24	-4.04	0.95	3.36
13	Tamil Nadu	5.12	13.81	8.75	-2.62	1.41
14	Uttar Pradesh	2.00	-11.48	-13.17	-8.79	-3.56
15	West Bengal	1.68	-20.43	-15.45	-22.45	-17.14

Source: Compiled from Various Issues of Annual Survey Of Industries, New Delhi.

TABLE 4.4

Selected State Wise Compound Growth Rate (Percentage share) Of All Industries for Selected Variables in the Pre and Post Reform Period

Sr No	States	CGR Of No Of Working Factories		CGR Of No. Of Employees		CGR Of Capital Investment (Rs In Lakhs)		CGR Of Net Value Added(Rs In Lakhs)		CGR Of Value Of Output(Rs In Lakhs)	
		1980-81 to 1990-91	1991-92 to 2009-10	1980-81 to 1990-91	1991-92 to 2009-10	1980-81 to 1990-91	1991-92 to 2009-10	1980-81 to 1990-91	1991-92 to 2009-10	1980-81 to 1990-91	1991-92 to 2009-10
1	Andhra Pradesh	27.49	-1.75	5.62	3.50	5.31	-1.23	2.04	2.70	5.18	0.95
2	Bihar	15.95	-8.69	0.71	-12.53	-5.05	-16.37	1.65	-25.62	-0.64	-14.34
3	Delhi	21.08	-2.12	3.68	-1.67	-4.02	-0.49	5.56	-4.05	4.26	-4.14
4	Gujarat	17.96	0.43	1.73	3.94	2.18	6.75	1.82	6.84	1.28	3.74
5	Haryana	18.87	1.44	4.76	5.36	2.66	3.40	1.46	11.46	4.60	3.17
6	Karnataka	19.72	0.77	2.81	2.70	1.07	6.05	2.68	4.29	3.71	3.94
7	Kerala	16.66	1.79	1.03	0.68	-2.06	-0.16	1.09	-2.95	-0.66	0.59
8	Madhya Pradesh	17.68	-3.88	3.39	-6.04	0.62	-5.68	1.82	-5.28	5.16	-4.46
9	Maharashtra	17.69	-0.56	1.00	-0.23	1.67	1.34	2.07	0.91	1.77	0.25
10	Orissa	20.51	-0.08	2.84	-2.17	5.63	-0.81	7.21	1.01	4.57	-2.11
11	Punjab	21.40	1.04	9.29	-0.13	3.53	-2.95	7.02	-1.76	7.20	-1.78
12	Rajasthan	24.07	2.08	4.41	0.69	1.04	0.48	2.70	1.09	15.38	-0.13
13	Tamil Nadu	22.08	1.04	4.59	-0.13	3.42	-2.95	3.41	-1.76	2.50	-1.78
14	Uttar Pradesh	15.4	-1.43	0.96	-2.12	1.98	-3.07	4.11	0-1.87	5.74	-2.25
15	West Bengal	12.96	-0.81	-2.25	-3.21	-2.35	-3.06	-4.54	-3.89	-2.65	-1.42

Source: Compiled from Various Issues of Annual Survey Of Industries, New Delhi.

Having comparatively analyzed the position of Gujarat on all India bases, it needs to be known whether these states of affair will be sustainable or not. With this purpose in mind, in the next section an attempt is made to estimate the stability in growth in terms of

instability index. This will be done as per the methodology discussed in the earlier section.

As mentioned earlier, the instability index shows not only the volatility in growth trends, but also the sustainability of growth. The table 4.5 shows the state wise instability index for selected variables in absolute terms. It is clear from this table that states like Bihar, Andhra Pradesh and Tamil Nadu are having high instability index with regard to number of factories, while Gujarat enjoys better position. However, in case of number of employees, capital investment and net value added, Gujarat's position is unfavorable. It is in case of output that instability index is of the lowest for Gujarat. From this table it can be concluded that, during the study period under consideration, out of five parameters, Gujarat has relative advantage with lower index value then other states in two parameters i.e. number of factories and output.

In order to study the impact of policy reforms on the stability in the states, in selected variables, table 4.6 is divided into pre reforms periods and post reforms. For the number of factories, all the states had shown declining index value in the post reform as compared to pre reform periods. Whereas, in case of other variables, mixed picture is observed. For some states the index has improved, while other states have deterioration on the index. ³²In Gujarat although in terms of number of factories, the indexes has improved in post reform period. But still, as compared to other states the index value is still very high. Further in case of all the variables the position of Gujarat has deteriorated in the post reform period. Similar results are evident in terms of percentage share also (table 4.7 & 4.8). Thus, from this finding, we can arrive at the conclusion that reforms have not really benefited the state of Gujarat.

After comparing the trends in industrial growth and other statistics of Gujarat with other states, in the next section an attempt is being made to analyze these trends as per industrial group wise.

In the year 1960, (Table 4.9) food and beverages industry had maximum share of 33.57% of total industries followed by textile with 23.15% of total industries. These two

³² In case of number of factories, number of employees, net value added and output Uttar Pradesh, West Bengal and in terms of investment, Kerala and Maharashtra have shown lower index value in the post reform period. While states like Bihar, Gujarat, Tamil Nadu and Madhya Pradesh have shown higher index value in some of the parameters

groups together contributed to 56.72% of total working factories, rest all groups contributed 43.28% only. Whereas in the year 1980, though little fall in the share of these two groups was observed, but still it occupied prime importance. Textile and food and beverages together contributed to 30.96% of total industries. Whereas, in the post liberalization period, the shift has been observed in the group wise contribution. For instance, in the year 2006, chemical and chemical products (except products of petroleum and coal) group was leading group accounting for about 16.55% of the working factories, followed by textiles 11.39%,

TABLE 4.5

Selected State Wise Instability Index Value (Absolute) Of All Industries for Selected Variables- Overall Period in the Pre and Post Reform Period

Sr No	States	CGR Of No Of Working Factories	CGR Of No. Of Employees	CGR Of Capital Investment (Rs In Lakhs)	CGR Of Net Value Added(Rs In Lakhs)	CGR Of Value Of Output (Rs In Lakhs)
		1980-81 TO 2009-10	1980-81 TO 2009-10	1980-81 TO 2009-10	1980-81 TO 2009-10	1980-81 TO 2009-10
1	Andhra Pradesh	47.45	42.82	14.14	18.31	11.72
2	Bihar	42.39	58.33	50.19	72.34	49.90
3	Delhi	41.04	12.78	20.43	22.35	15.47
4	Gujarat	33.13	40.01	20.25	83.24	7.73
5	Haryana	32.10	40.85	12.54	88.25	9.15
6	Karnataka	36.08	8.37	17.45	17.95	12.50
7	Kerala	30.73	7.98	7.70	18.51	9.67
8	Madhya Pradesh	31.25	13.54	16.62	19.24	13.82
9	Maharashtra	34.00	5.97	8.57	14.94	10.17
10	Orissa	40.09	8.48	15.46	23.27	11.01
11	Punjab	38.73	11.81	12.83	21.65	11.94
12	Rajasthan	40.97	6.97	16.39	19.88	89.58
13	Tamil Nadu	37.91	47.57	10.19	11.51	7.28
14	Uttar Pradesh	21.89	6.76	13.02	20.31	10.48
15	West Bengal	28.05	4.80	14.60	12.39	6.38

Source: Compiled from Various Issues of Annual Survey Of Industries, New Delhi

TABLE 4.6

**Selected State Wise Instability Index Value (Absolute) Of All Industries for
Selected Variables – Pre and Post Reform Period**

Sr No	States	CGR Of No Of Working Factories		CGR Of No. Of Employees		CGR Of Capital Investment (Rs In Lakhs)		CGR Of Net Value Added(Rs In Lakhs)		CGR Of Value Of Output(Rs In Lakhs)	
		1980- 81 to 1990- 91	1991- 92 to 2009- 10	1980- 81 to 1990- 91	1991- 92 to 2009- 10	1980- 81 to 1990- 91	1991- 92 to 2009- 10	1980-81 to 1990-91	1991-92 to 2009-10	1980-81 to 1990-91	1991-92 to 2009-10
1	Andhra Pradesh	80.45	9.06	13.02	38.85	17.35	8.55	20.06	17.39	10.59	12.29
2	Bihar	60.09	25.6	5.38	70.38	6.13	68.87	27.62	92.21	9.37	68.44
3	Delhi	68.84	8.18	19.02	6.45	26.94	15.62	25.88	18.21	18.5	11.71
4	Gujarat	54.54	8.50	11.07	35.41	9.37	25.87	17.23	119.21	7.40	8.04
5	Haryana	53.22	6.61	8.10	36.67	6.85	15.37	19.11	69.61	6.69	10.23
6	Karnataka	60.85	5.56	8.85	8.32	7.29	22.60	14.57	20.41	7.56	15.29
7	Kerala	51.28	5.73	9.07	7.46	3.53	9.10	16.33	18.66	6.99	10.55
8	Madhya Pradesh	49.04	8.94	13.08	13.14	19.19	13.38	17.24	19.58	8.44	15.53
9	Maharashtra	56.84	6.61	5.95	6.04	6.59	9.37	10.83	16.23	5.91	11.38
10	Orissa	68.60	5.14	5.92	9.57	14.79	15.07	25.92	21.87	12.96	7.90
11	Punjab	66.08	5.93	11.98	10.81	7.42	14.11	24.37	19.78	13.42	9.59
12	Rajasthan	69.79	6.55	9.67	4.24	5.95	20.86	23.66	17.57	178.13	10.28
13	Tamil Nadu	64.06	5.88	9.19	64.37	6.64	11.87	8.49	12.90	3.70	9.00
14	Uttar Pradesh	33.97	3.72	4.45	7.93	7.07	14.64	28.73	11.36	11.27	7.90
15	West Bengal	46.73	4.44	5.45	4.20	7.89	17.44	12.81	12.33	3.07	8.07

Source: Compiled from Various Issues of Annual Survey Of Industries, New Delhi.

manufacturing of food products 9.18%, manufacturing of fabricated metal products and equipment 8.44%, manufacturing of machinery and equipments N.E.C. 8.22%, manufacturing of basic metal products 7.20%, manufacturing of rubber and plastic

products 5.10%, manufacturing of wood products and cork 3.87% and agriculture, hunting and related services activities 2.99%.

Thus, in the post liberalization period, traditionally dominating group of industries have lost their importance in the total working industries. In its place, chemicals, non-metallic mineral products, basic metal industries, metal products, machinery except electrical are now growing at a faster rate, these five groups together contributed at present to 50% of total working factories, and are dominating industrial scenario of the state.

As far as employment in group wise industries were concerned (Table 4.10) in the year 1960, textile group of industries dominated the scene, alone contributed to 70.69% of total industrial employment, which shows labour intensive nature of textile industry. Whereas in the year 1980, though relative share of textiles in the total industrial employment had declined. but still its share was 45.64% of total industrial employment followed by food and beverages industry (10.19%) and chemical and chemical products (9.21%). In the post reform periods, though the relative share of other group of industries in total industrial employment has been rising. Nevertheless still textile is the highest contributor group to total employment. In the year 2006, textile industries contributed 17.13% followed by manufacturing of chemical and chemical products 16.13%, manufacturing of food products and beverages 8.72%, manufacturing of other non-metallic mineral products 7.47%, manufacturing of machinery and equipment NEC 6.57%, manufacturing of basic metal products 6%, manufacturing of fabricated metal products and equipment 5.63%, manufacturing of rubber and plastic products 4.54%, agriculture hunting and related services activities 3.02% and manufacturing of electrical machinery and apparatus NEC 2.83%.

Thus, the industrial mix can be credited for outstanding growth and performance in the industrial development in the state of Gujarat. Following from this, in this section trend and pattern of the industrial mix is analysed in terms of number of factories and employment in factories.³³

In terms of working factories as well as number of workers employed, over a period of time the share of textile has declined and in 2008-09 chemical and chemical

³³ Absence of data on other indicators does not permit the estimation of growth trends for these indicators.

product has the largest share in terms of working factories in Gujarat, Still in terms of employment textile

TABLE 4.7
Selected State Wise Instability Index Value (Percentage share) Of All Industries for Selected Variables –Overall Period in Pre and Post Reform Period

Sr No	States	CGR Of No Of Working Factories	CGR Of No. Of Employees	CGR Of Capital Investment (Rs In Lakhs)	CGR Of Net Value Added(Rs In Lakhs)	CGR Of Value Of Output (Rs In Lakhs)
		1980-81 TO 2009-10	1980-81 TO 2009-10	1980-81 TO 2009-10	1980-81 TO 2009-10	1980-81 TO 2009-10
1	Andhra Pradesh	47.04	13.68	37.72	20.67	14.55
2	Bihar	41.97	6.78	63.76	65.70	44.54
3	Delhi	41.45	19.28	7.57	22.99	17.49
4	Gujarat	33.38	11.79	34.45	85.11	10.40
5	Haryana	33.49	8.59	36.49	84.40	12.90
6	Karnataka	36.38	10.04	11.45	21.21	° 16.65
7	Kerala	30.63	9.04	9.22	25.02	13.25
8	Madhya Pradesh	31.07	11.82	8.34	18.77	13.81
9	Maharashtra	33.69	7.17	7.42	14.26	9.70
10	Orissa	39.71	6.97	5.82	20.74	13.02
11	Punjab	38.77	12.16	6.90	23.24	13.39
12	Rajasthan	40.73	9.37	5.14	20.07	88.10
13	Tamil Nadu	37.46	10.26	69.65	13.83	7.38
14	Uttar Pradesh	21.63	2.45	4.65	24.44	11.27
15	West Bengal	27.85	5.79	5.63	14.91	9.67

Source: Compiled from Various Issues of Annual Survey of Industries, New Delhi

TABLE 4.8
Selected State Wise Instability Index Value (Percentage share) Of All Industries for Selected Variables in the Pre and Post Reform Period

Sr No	States	CGR Of No Of Working Factories		CGR Of No. Of Employees		CGR Of Capital Investment (Rs In Lakhs)		CGR Of Net Value Added(Rs In Lakhs)		CGR Of Value Of Output(Rs In Lakhs)	
		1980-81 to 1990-91	1991-92 to 2009-10	1980-81 to 1990-91	1991-92 to 2009-10	1980-81 to 1990-91	1991-92 to 2009-10	1980-81 to 1990-91	1991-92 to 2009-10	1980-81 to 1990-91	1991-92 to 2009-10
1	Andhra Pradesh	80.18	7.34	13.68	37.72	14.00	13.00	16.79	23.49	11.34	16.33
2	Bihar	60.55	24.10	6.78	63.76	7.95	63.03	28.94	80.52	11.39	59.85
3	Delhi	69.38	8.97	19.28	7.57	24.04	20.47	24.22	20.64	18.56	15.47
4	Gujarat	55.23	7.98	11.79	34.45	7.37	31.22	14.33	123.00	8.83	11.66
5	Haryana	56.10	6.22	8.59	36.49	5.71	21.39	15.93	66.83	8.07	15.48
6	Karnataka	61.44	5.58	10.04	11.45	5.63	27.21	10.44	26.79	8.46	20.95
7	Kerala	50.92	6.33	9.04	9.22	4.14	15.37	18.01	27.83	8.60	15.09
8	Madhya Pradesh	49.48	6.95	11.82	8.34	19.39	11.79	18.42	18.48	9.31	15.11
9	Maharashtra	56.75	4.76	7.17	7.42	6.11	13.00	9.72	16.37	7.20	10.47
10	Orissa	68.11	3.84	6.97	5.82	16.34	16.71	23.01	19.54	14.98	9.75
11	Punjab	66.41	4.87	12.16	6.90	7.75	14.46	23.52	23.19	14.47	11.59
12	Rajasthan	69.64	5.29	9.37	5.14	7.04	23.46	19.24	21.15	172.48	15.11
13	Tamil Nadu	63.43	4.70	10.26	69.65	8.25	12.91	8.73	16.51	6.10	8.15
14	Uttar Pradesh	33.56	3.33	2.45	4.65	7.93	17.51	32.57	16.42	12.68	8.34
15	West Bengal	46.54	3.53	5.79	5.63	8.01	16.07	15.16	14.68	5.03	12.10

Source: Commissioner of Industries, Gujarat

TABLE 4.9
Group wise Workers Employed in Factories in the State of Gujarat

Sr No	Industry Group	Years					
		1960	1970	1980	1990	2000	2006
1	Textiles	237853	235782	290111	241984	170642	165005
2	Food Beverages, Tobacco and Tobacco Products	8206	41032	64759	72325	89328	91900
3	Wood & Wood Products Furniture & Fixtures	3952	4559	6847	7659	10946	39268
4	Paper & Paper Products, Printing, Publishing & Allied Industries	5670	9786	15582	21217	23879	24741
5	Leather & Leather Products	435	641	513	811	2289	1580
6	Rubber, Plastic & Petroleum Coal Products	5663	7547	16714	43355	52983	54766
7	Chemical & Chemical Products	11146	24298	58557	100859	153583	154903
8	Non Metallic Mineral Products	19451	29953	40295	54848	63731	67503
9	Basic Metal Industries	2475	9042	18456	33659	51960	53875
10	Metal Products	2659	8775	26135	32866	43488	48912
11	Machinery Except Electrical Machinery	2148	32965	44833	55958	59306	60294
12	Electrical Machinery, Apparatus, Appliances & Supplies	287	7745	13945	26674	27577	28121
13	Transport Equipments and Parts	12338	16157	8815	15138	21074	18398
14	Others	4179	9272	30122	40216	95934	117819
Total Gujarat		336462	437554	635684	747569	866720	927085

Source: Commissioner of Industries, Gujarat

TABLE 4.10
Group wise Working Factories in the State of Gujarat

Sr No	Industry Group	Years					
		1960	1970	1980	1990	2000	2006
1	Textiles	845	1328	1964	2291	2726	2469
2	Food Beverages, Tobacco and Tobacco Products	1225	971	1341	1376	1979	2073
3	Wood & Wood Products Furniture & Fixtures	96	141	624	820	766	1165
4	Paper & Paper Products, Printing, Publishing & Allied Industries	164	220	376	583	741	805
5	Leather & Leather Products	23	31	41	32	50	49
6	Rubber, Plastic & Petroleum Coal Products	30	223	437	867	1141	1191
7	Chemical & Chemical Products	84	199	1108	1767	3502	3594
8	Non Metallic Mineral Products	240	548	1037	1528	1875	1995
9	Basic Metal Industries	106	250	555	1022	1398	1505
10	Metal Products	133	299	922	1159	1640	1735
11	Machinery Except Electrical Machinery	362	681	1099	1427	1869	1875
12	Electrical Machinery, Appratus, Appliances & Supplies	12	94	310	501	544	441
13	Transport Equipments and Parts	137	207	106	187	412	319
14	Others	192	352	754	953	1781	1997
Total Gujarat		3649	5544	10674	14513	20424	21213

Source: Commissioner of Industries, Gujarat

TABLE 4.11
Compound Growth Rate (Absolute) Of Working Factories And Workers
Employed In Working Factories In Gujarat –Overall Period in Pre And Post
Reform Period

Sr No	Items	CGR Of Workers Employed	CGR Of Working Factories
		1980-81 to 2009-10	1980-81 to 2009-10
1	Textiles	-2.20	0.84
2	Food Beverages, Tobacco and Tobacco Products	1.77	2.59
3	Wood & Wood Products Furniture & Fixtures	9.57	2.04
4	Paper & Paper Products, Printing, Publishing & Allied Industries	1.58	2.43
5	Leather & Leather Products	5.93	3.82
6	Rubber, Plastic & Petroleum Coal Products	2.11	2.19
7	Chemical & Chemical Products	3.02	5.20
8	Non Metallic Mineral Products	1.68	1.67
9	Basic Metal Industries	3.42	2.74
10	Metal Products	3.24	2.57
11	Machinery Except Electrical Machinery	1.13	2.00
12	Electrical Machinery,Appratus, Appliances & Supplies	0.60	-0.54
13	Transport Equipments and Parts	2.27	4.06
14	Others	6.78	4.61
Total Gujarat		1.62	2.61

Source: Compiled from Various Issues of Commissioner of Industries, Gujarat

continues to be the largest employer among different industrial group in the state of Gujarat. In recent times the industrial structure has further under gone change with industries such as non metallic mineral products, chemical and chemical products,

machinery have gained importance in terms of number of working factories as well as number of workers employed.

The growth trends in working factories and workers employed is presented in table 4.11(absolute). It is evident from this table that the highest growth rate is accounted by chemical and chemical product (5.2) in terms of working factories during the study period under consideration. This is followed by transport equipments and parts (4.06). Whereas electrical machinery (-0.54) has recorded a negative growth rate. In terms of compound growth rate of workers employed , the highest growth rate is recorded by wood and wood products(9.57), followed by leather and leather products(5.93) and basic metal products(3.42), whereas negative growth rate is recorded in case of textile(-2.2). If we look at the compound growth rate of percentage share of working factories and workers employed then also textile have registered a negative growth rate. The highest growth rate is accounted by chemical and chemical product in terms of working factories and wood and wood products in terms of workers employed (see table 4.12).

If we look at growth trends(in absolute terms) in terms of working factories and workers employed in the pre and post reform period, then the trend is very different from the observation during the entire study period. Certain groups have shown higher growth rate during the post reform period as compared to pre reform period. For instance, food and beverages, wood and wood products, rubber and plastic, leather and metal products have registered a higher growth rate in terms of working factories in the post reform period. Similarly in terms of workers employed food and beverages and chemical and chemical products have registered a higher growth rate. In all other case the growth rates has declined (see table 4.13). A similar trend is observed if we look at compound growth rate of percentage share (table 4.14).³⁴ From these tables it can be concluded that, although few industries have benefited from reforms either in terms of workers employed or in terms of working factories.³⁵

³⁴ Wood and wood products have registered higher growth rates in working factories as well as workers employed .Whereas negative growth rates is accounted by textile and electrical machinery in post reform period.

³⁵ In terms of working factories food and beverages, wood and wood products, leather, and metal products have been benefited by reforms and in terms of workers employed wood, rubber-plastics and chemical and chemical products are benefited from reforms.

Overall the growth rate has declined after the initiation of reforms in case of workers employed and in case of working factories in the post reform period, it has marginally increased. Industries, which are not found in the above group have recorded positive growth rate, the rest have registered a negative growth rate.

TABLE 4.12
Compound Growth Rate (Percentage share) of Working Factories and Workers Employed In Working Factories In Gujarat –Overall Period in Pre And Post Reform Period

Sr No	Items	CGR Of Workers Employed	CGR Of Working Factories
		1980-81 to 2009-10	1980-81 to 2009-10
1	Textiles	-3.75	-1.72
2	Food Beverages, Tobacco and Tobacco Products	0.15	-0.01
3	Wood & Wood Products Furniture & Fixtures	7.83	-0.56
4	Paper & Paper Products, Printing, Publishing & Allied Industries	-0.03	-0.17
5	Leather & Leather Products	4.24	1.18
6	Rubber, Plastic & Petroleum Coal Products	0.49	-0.40
7	Chemical & Chemical Products	1.38	2.53
8	Non Metallic Mineral Products	0.06	-0.91
9	Basic Metal Industries	1.78	0.13
10	Metal Products	1.59	-0.04
11	Machinery Except Electrical Machinery	-0.48	-0.59
12	Electrical Machinery,Appratus, Appliances & Supplies	-1.00	-3.07
13	Transport Equipments and Parts	0.64	1.41
14	Others	5.08	1.95

Source: Compiled from Various Issues of Commissioner of Industries, Gujarat

TABLE 4.13
Compound Growth Rate (Absolute) of Working Factories and Workers
Employed In Working Factories in Gujarat-Pre and Post Reform Period

Sr No	Items	CGR Of Workers Employed		CGR Of Working Factories	
		1980-81 to 2009-10	1991-92 to 2009-10	1980-81 to 2009-10	1991-92 to 2009-10
1	Textiles	0.68	-3.15	1.21	-0.72
2	Food Beverages, Tobacco and Tobacco Products	2.76	1.37	1.11	2.29
3	Wood & Wood Products Furniture & Fixtures	4.20	14.12	0.19	3.23
4	Paper & Paper Products, Printing, Publishing & Allied Industries	3.83	0.62	3.15	2.00
5	Leather & Leather Products	7.71	0.73	3.26	4.26
6	Rubber, Plastic & Petroleum Coal Products	2.83	1.78	1.22	1.70
7	Chemical & Chemical Products	1.89	2.22	4.44	3.79
8	Non Metallic Mineral Products	3.48	0.93	2.42	0.96
9	Basic Metal Industries	4.51	2.00	2.90	2.31
10	Metal Products	6.02	2.15	1.59	2.05
11	Machinery Except Electrical Machinery	3.36	1.26	1.65	1.46
12	Electrical Machinery, Apparatus, Appliances & Supplies	-0.14	-0.65	0.72	-1.50
13	Transport Equipments and Parts	9.77	1.26	3.85	1.46
14	Others	3.92	6.51	0.63	4.65
Total Gujarat		2.38	1.13	1.89	1.96

Source: Compiled from Various Issues of Commissioner of Industries, Gujarat.

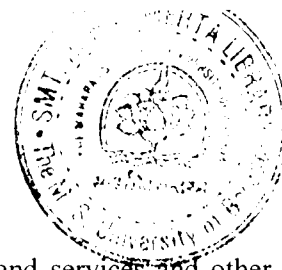


Table 4.10 shows the same result that except wool, silk and services and other industries, all groups of industries have registered negative growth rate. From this it may be concluded that reforms have not helped in improving the growth trends in the state of Gujarat.

In the earlier section the instability was measured to find out the sustainability of growth trends, in the next section also the group wise instability index has been measured. This table 4.15(absolute) illustrates that in terms of workers employed as well as working factories, high instability is accounted by leather and leather products, followed by wood and wood products. In case of working factories lower instability index is found in metal products while in case of workers employed paper and paper products has the lower index value. Index value of percentage share of working factories and workers employed (Table 4.16); also confirm the same result that leather and leather product, along with the wood products have shown higher instability index value. It also reveals that chemicals and chemicals products have recorded low index value.

In table 4.17(absolute), the instability index is measured by considering the two sub periods. In case of workers employed leather and leather products exhibits a high value in both sub periods .In fact other then chemical and chemical product, the instability index has increased in the post reform period. Further overall instability index has declined in the post reform period. If we look at index value of working factories, a similar picture emerges, that is in the post reform period the instability has increased except in case of chemical and chemical product. If we consider instability index in terms of percentage share, than also there has been an increase in the instability index. Thus, we can conclude that group wise also the instability index has not shown any improvement in the state of Gujarat despite the initiation of reform process.

TABLE 4.14
Compound Growth Rate (Percentage share) Of Working Factories and
Workers Employed In working Factories in Gujarat –Pre and Post Reform
Period

Sr No	Items	CGR Of Workers Employed		CGR Of Working Factories	
		1980-81 to 2009-10	1991-92 to 2009-10	1980-81 to 2009-10	1991-92 to 2009-10
1	Textiles	-1.65	-4.22	-0.67	-2.63
2	Food Beverages, Tobacco and Tobacco Products	0.38	0.24	-0.76	0.33
3	Wood & Wood Products Furniture & Fixtures	1.79	12.85	-1.66	1.24
4	Paper & Paper Products, Printing, Publishing & Allied Industries	1.42	-0.50	1.24	0.04
5	Leather & Leather Products	5.21	-0.39	1.35	2.26
6	Rubber, Plastic & Petroleum Coal Products	0.44	0.65	-0.65	-0.25
7	Chemical & Chemical Products	-0.48	1.09	2.51	1.79
8	Non Metallic Mineral Products	1.08	-0.19	0.53	-0.98
9	Basic Metal Industries	2.08	0.87	0.99	0.34
10	Metal Products	3.56	1.01	-0.29	0.09
11	Machinery Except Electrical Machinery	0.96	0.14	-0.23	-0.49
12	Electrical Machinery, Appratus, Appliances & Supplies	-2.46	-1.76	-1.15	-3.39
13	Transport Equipments and Parts	7.23	0.14	1.92	-0.49
14	Others	1.51	5.33	-1.23	2.64

Source: Compiled from Various Issues of Commissioner of Industries, Gujarat.

TABLE 4.15
Instability Index Value (Absolute) Of Working Factories and Workers
Employed In Working Factories in Gujarat- Overall Period in Pre and Post
Reform Period

Sr No	Items	Index Value Of Workers Employed	Index Value Of Working Factories
		1980-81 to 2009-10	1980-81 to 2009-10
1	Textiles	5.95	8.33
2	Food Beverages, Tobacco and Tobacco Products	7.38	6.10
3	Wood & Wood Products Furniture & Fixtures	25.76	10.59
4	Paper & Paper Products, Printing, Publishing & Allied Industries	4.49	4.27
5	Leather & Leather Products	42.73	17.14
6	Rubber, Plastic & Petroleum Coal Products	8.57	5.06
7	Chemical & Chemical Products	5.99	6.51
8	Non Metallic Mineral Products	6.41	4.55
9	Basic Metal Industries	6.95	4.45
10	Metal Products	6.90	4.19
11	Machinery Except Electrical Machinery	7.25	4.46
12	Electrical Machinery, Appratus, Appliances & Supplies	13.09	6.88
13	Transport Equipments and Parts	7.59	11.23
14	Others	13.27	20.18
Total Gujarat		4.30	4.67

Source: Compiled from Various Issues of Commissioner of Industries, Gujarat

TABLE 4.16
Instability Index Value (Percentage share) Of Working Factories and
Workers Employed In Working Factories in Gujarat- Overall Period in Pre
and Post Reform Period

Sr No	Items	Index Value Of	Index Value Of
		Workers Employed	Working Factories
		1980-81 to 2009-10	1980-81 to 2009-10
1	Textiles	5.09	5.86
2	Food Beverages, Tobacco and Tobacco Products	5.98	4.22
3	Wood & Wood Products Furniture & Fixtures	24.43	10.34
4	Paper & Paper Products, Printing, Publishing & Allied Industries	2.57	3.20
5	Leather & Leather Products	40.96	15.84
6	Rubber, Plastic & Petroleum Coal Products	7.73	3.26
7	Chemical & Chemical Products	3.57	3.73
8	Non Metallic Mineral Products	3.86	3.25
9	Basic Metal Industries	4.60	2.32
10	Metal Products	3.81	2.97
11	Machinery Except Electrical Machinery	4.97	2.63
12	Electrical Machinery, Appratus, Appliances & Supplies	10.12	5.34
13	Transport Equipments and Parts	7.85	10.40
14	Others	12.86	17.68

Source: Compiled from Various Issues of Commissioner of Industries, Gujarat

TABLE 4.17
Instability Index Value (Absolute) Of Working Factories and Workers
Employed In Working Factories in Gujarat- Pre and Post Reform Period

Sr No	Items	Index Value Of Workers Employed		Index Value Of Working Factories	
		1980-81 to 1990-91	1991-92 to 2009-10	1980-81 to 1990-91	1991-92 to 2009-10
1	Textiles	2.73	6.61	5.00	9.27
2	Food Beverages, Tobacco and Tobacco Products	5.00	8.10	2.98	6.87
3	Wood & Wood Products Furniture & Fixtures	3.45	30.27	1.81	12.09
4	Paper & Paper Products, Printing, Publishing & Allied Industries	4.11	4.41	2.59	4.67
5	Leather & Leather Products	18.92	49.23	7.72	18.37
6	Rubber, Plastic & Petroleum Coal Products	8.36	8.83	3.03	5.53
7	Chemical & Chemical Products	9.03	4.98	8.37	6.04
8	Non Metallic Mineral Products	5.51	6.74	4.08	4.63
9	Basic Metal Industries	4.99	7.52	3.41	4.81
10	Metal Products	5.94	7.14	3.74	4.28
11	Machinery Except Electrical Machinery	6.15	7.56	3.83	4.74
12	Electrical Machinery, Appratus, Appliances & Supplies	13.04	13.30	3.35	7.55
13	Transport Equipments and Parts	5.35	6.35	3.77	12.98
14	Others	7.77	14.80	6.50	23.34
Total Gujarat		5.03	4.17	4.11	4.94

Source: Compiled from Various Issues of Commissioner of Industries, Gujarat.

TABLE 4.18

**Instability Index Value (Absolute) Of Working Factories and Workers
Employed In Working Factories in Gujarat- Pre and Post Reform Period**

Sr No	Items	Index Value Of Workers Employed		Index Value Of Working Factories	
		1980-81 to 1990-91	1991-92 to 2009-10	1980-81 to 1990-91	1991-92 to 2009-10
1	Textiles	2.37	5.70	0.98	6.78
2	Food Beverages, Tobacco and Tobacco Products	1.22	6.91	1.24	4.77
3	Wood & Wood Products Furniture & Fixtures	3.91	28.54	2.98	11.79
4	Paper & Paper Products, Printing, Publishing & Allied Industries	2.10	2.47	2.68	3.33
5	Leather & Leather Products	16.49	47.41	5.86	17.07
6	Rubber, Plastic & Petroleum Coal Products	4.26	8.70	1.24	3.63
7	Chemical & Chemical Products	3.86	3.47	4.39	3.61
8	Non Metallic Mineral Products	1.42	4.40	0.69	3.41
9	Basic Metal Industries	1.35	5.21	0.84	2.54
10	Metal Products	1.98	4.14	0.86	3.13
11	Machinery Except Electrical Machinery	3.18	5.37	0.62	3.05
12	Electrical Machinery,Appratus, Appliances & Supplies	8.55	10.58	2.90	5.88
13	Transport Equipments and Parts	8.04	6.27	3.75	11.98
14	Others	4.44	14.67	3.96	20.57

Source: Compiled from Various Issues of Commissioner of Industries, Gujarat

IV CONCLUSION:

This chapter highlights the pattern of industrial development in Indian states in general and Gujarat in particular during the study period. The pattern of industrial development has been evaluated on the basis of growth and instability indexes.

Analyzing **Growth trends** that following are evident:

1. In terms of working factories, comparative analysis of pre and post reform period gives an idea that there has been deterioration in the compound growth rate in the post reform period in Gujarat as compared to the pre reform period.
2. As far as the number of employees in Gujarat is concerned, the compound growth rate has increased from 2.16% in the pre reform period to 3.70% in the post reform period.
3. In terms of Investment, Gujarat has shown marginal fall in the growth rate in post reform period from 16.36% to 15.36%
4. In case of volume net value added, the state of Gujarat has registered marginal increase in the growth rate during the post reform period that is from 15.49% in pre reform period to 16.88% in the post reform period.
5. As far as output is concerned, again the state of Gujarat has shown marginal increase in the post reform period that is from 15.95% in the pre reform period to 16.49% in the post reform period.

Analyzing **Instability index** it can be inferred that:

In the state of Gujarat instability index of number of registered factories has drastically declined from 54.54 in the pre reform period to 8.50 in the post reform period. However, in case of number of employees, the instability index has increased manifold from 11.07 in the pre reform period to 35.41% in the post reform period; same is the case of investment where in index increased from 9.37% in the pre reform period to 25.87 % in the post reform period. On the other hand, in terms of net value added, the state of Gujarat had a very high jump in its index value from 17.23 in the pre reform to 119.21 in the post reform period. For the output, the state has registered marginal increase in its instability index from 7.40 in the pre reform to 8.04 in the post reform period.

From the above it can be surmised that in terms of compound growth rate, out of the five parameters, state has shown rising growth rate in three parameters in the post reform period. But in terms of instability, only one parameter has shown declining index value.

In terms of group-wise trends, it is clear from results that pattern of industries in the state of Gujarat has been changing. It has been observed that the traditional groups of industries are losing their significance while modern and new group of industries are taking a lead. The pattern of industrial development in the state of Gujarat group wise has also been viewed on the basis of Growth and Instability.

Growth Analysis illustrates that:

1. Higher Growth rate is registered by Chemicals and Chemical products (5.20%) for the working factories during the entire study period.
2. For the workers employed, Wood and Wood products with 9.57% have showed higher growth rate during the study period.
3. In case of working factories, Food and Beverages, Wood and Wood products, Leather and Leather products, Rubber –Plastics and Petroleum products, Metal products have registered higher growth rate in the post reform period.
4. Wood and wood products as well as Chemical and chemical products have registered higher growth rates for the category of workers employed in the post reform period. On the whole, the growth rates have marginally increased for working factories, while for workers employed it has declined.

Instability Index gives an idea that:

Leather and Leather products have registered higher index value for working factories as well as workers employed during the period under consideration. Chemical and chemical products for the category of working factories in addition to Paper and Paper products for workers employed have attained low index value in the study period. However, Chemical and chemical products alone has registered lower index value in case of both, Working factories and Workers employed in the post reform period than in the pre reform period. Total instability had marginally increase in case of Working factories in post reform period, while in case of Workers employed it has marginally declined from 5.03 in the pre reform period to 4.17 in the post reform period.

In sum, the results presented above indicate that reform process has benefited the state of Gujarat partially. Further, chemical and chemical products has benefited the most in the post reform period. As a result there has been diversion from traditional industrial group like textile. Having examined the overall growth trend within the state of Gujarat, in the next chapter a similar analysis will be attempted district wise .This is attempted in order to find out whether reform policies has any impact on regional development at the district level in Gujarat or not.

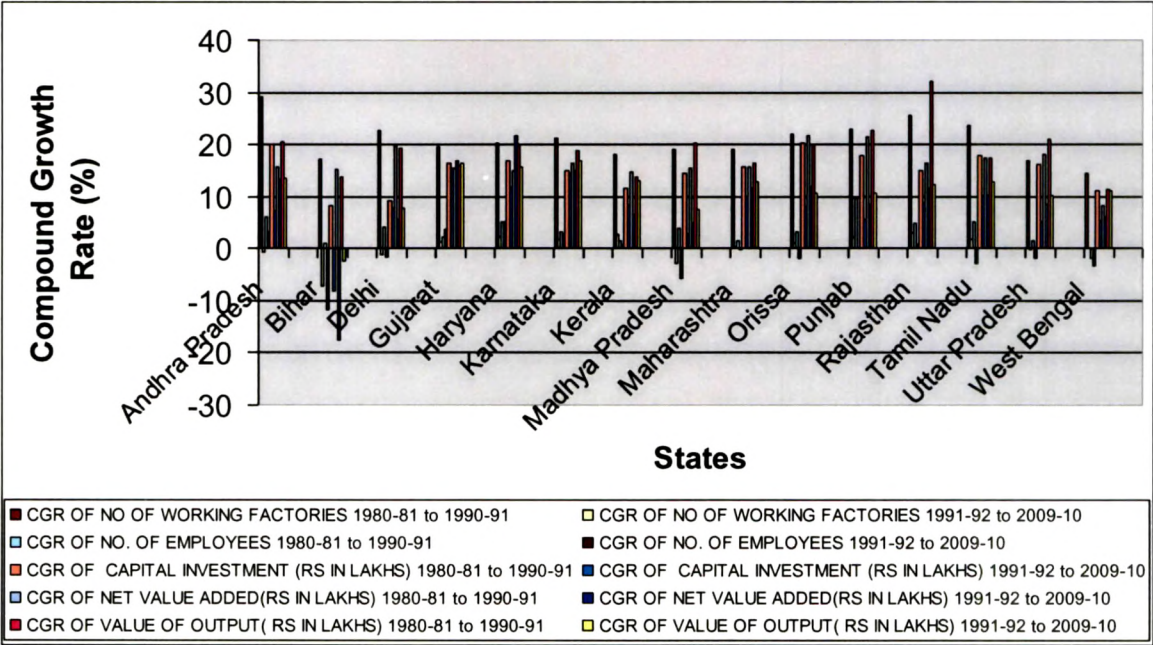
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Figure: 4.1

Selected State Wise Compound Growth Rate of All Industries for Selected Variables in Post Reform Period



**Selected State Wise Instability Index Value of All Industries for Selected Variables –
Post Reform Period**

