

Growth pattern disparities: an inter-state and intra-state analysis

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Abstract

This paper explains the pattern and determinants of economic growth of major Indian states during the period of 1960-2008. Particularly, the study analyses the growth pattern of Tamil Nadu and also intra-state growth pattern. The inter-state and intra-state differentials are analyzed with the comparison of growth of per capita State Domestic Product (SDP) and per capita District Domestic Product (DDP) for the period of 1960-2008. The core objective of this study is to examine the issue of instability and volatility of growth at inter and intra state level and analyze the factors causing such disturbance in growth.

Resumen

El presente artículo explica la pauta y los alicientes del crecimiento económico en los principales estados de la India durante el período 1960-2008, haciendo especial hincapié en el estado Tamil Nadu y en su crecimiento intraestatal. Analizamos el diferencial interestatal e intraestatal junto con la comparativa de crecimiento del Producto Interior Bruto por Provincias per cápita y el Producto Interior Bruto por Distritos per cápita en dicho período. El objetivo principal de este estudio es examinar la inestabilidad y la volatilidad de crecimiento a nivel interno y entre estados, así como analizar los factores que provocan esta discrepancia en el crecimiento económico.

Keywords: growth pattern, income, sectoral contribution, Income level differentials, growth differentials, volatility of growth, intrastate Disparities.

Palabras clave: pauta de crecimiento, renta, contribución sectorial, diferencial de renta, diferencial de crecimiento, volatilidad de crecimiento, disparidades intraestatales.

1.- Introduction

The economy, embedded as it is in politics, culture and institutions is a sufficient complex organism due to which the economy's growth and take off continues to puzzle economists. Further it is very difficult to predict when an economy that has floundered for decades might suddenly take off (Basu and Maertens, 2007). The economists' attention to the phenomenon of growth of an economy has led to vast increase in the literature on this issue. The issue of the determinants of growth has occupied the attention of the economists for the past 20 years.

Abramovitz (1956) and Solow (1957) brought out the significance of total factor productivity (TFP) to output growth since mid fifties. Global Development Network supported Global Research Project 'Explaining Growth' reviewed the sources of growth, Markets and Growth, microeconomics of Growth and political economy of the growth at the regional level (Squire and McMohan,2002) and Williamson (2003) put three thematic papers for the South Asian Region.

The role of Total Factor Productivity growth is the key issue in growth accounting. The estimate of Total factor Productivity depends on the assumptions of the growth accounting framework and the quality of data on output and inputs. The study of Global Research Project underlines the importance of both factor accumulation and total factor productivity growth.

The theoretical foundations of the extended neo-classical Solow–Swan–Ramsey model of growth could be seen from the literature on the major determinants of per capita growth rates. The model explains that if growth rates of the economies are determined only by Total factor productivity, then it converges to a steady state. Baumol (1986) study comes to a conclusion that there is absolute convergence among developed countries. Barro (1991) states the possibility of conditional convergence for the states that differ in their steady states. The states which are farther away from the steady state should grow at a faster rate. Soludo and Kim (2003) conclude that the accumulated evidence does not reveal the most dominant factor influencing growth and how the various factors affect accumulate growth.

The issue which has assumed significance in recent years in regard to growth of an economy are the growth variability and its volatility. Pritchett (2000), instability in growth rates over time for a single country and volatility in growths are the general features of a developing economy. He classifies potential growth correlates according to three features time series persistence, exogeneity and model rationale.

This paper in its first part tries to bring out the facts about the growth pattern of the Indian economy since 1950 and tries to find out its take-off and also to present the facts about the recent

faster growth of the economy. Further it analyses the sectoral quarterly growth rates of the economy in order to bring about the fact of inherent instability in India's growth rate. The second part of the paper studies the inter-state disparities in the growth pattern and the volatility in the growth rates between the states since 1980-81 to 2007-08. The third part of the paper studies the intra state disparities between the districts since 2000-01 to 2006-07 and tries to associate certain socio economic indicators for the high or low growth rates among the districts.

2.- India's Growth since 1950's: Trends and Pattern

India at the time of its independence in 1947 had a literacy rate of 18 percent, an investment of rate of around 9 percent of its GDP; life expectancy at birth of 32 years; an annual population growth of 1.25 percent and an average annual growth rate of GDP of around 3 percent. This vastly improved over the years and in 2006 its literacy rate was around 60 percent, an investment rate of around 30 percent of its GDP; life expectancy at birth of 63 years; an annual population growth of around 1.5 percent and growth rate of GDP of around 8.4 percent (Basu and Maertens, 2007). The GDP growth and per capita growth, since 1950's, is presented in Table 1 and Diagram 1 below.

Table 1: Average annual growth rate of GDP at Factor and per capita growth rate

Year	Average annual growth rate of GDP at Factor	Average annual growth rate of per capita
1950-55	3.6	2.6
1956-60	3.6	1.2
1961-65	5.0	2.7
1966-70	3.0	0.5
1971-75	2.5	-0.3
1976-80	3.6	1.2
1981-85	5.6	3.1
1986-90	5.7	3.3
1991-95	4.8	2.6
1996-2000	6.5	4.5
2001-05	6.0	4.0
2006-08	9.4	7.9

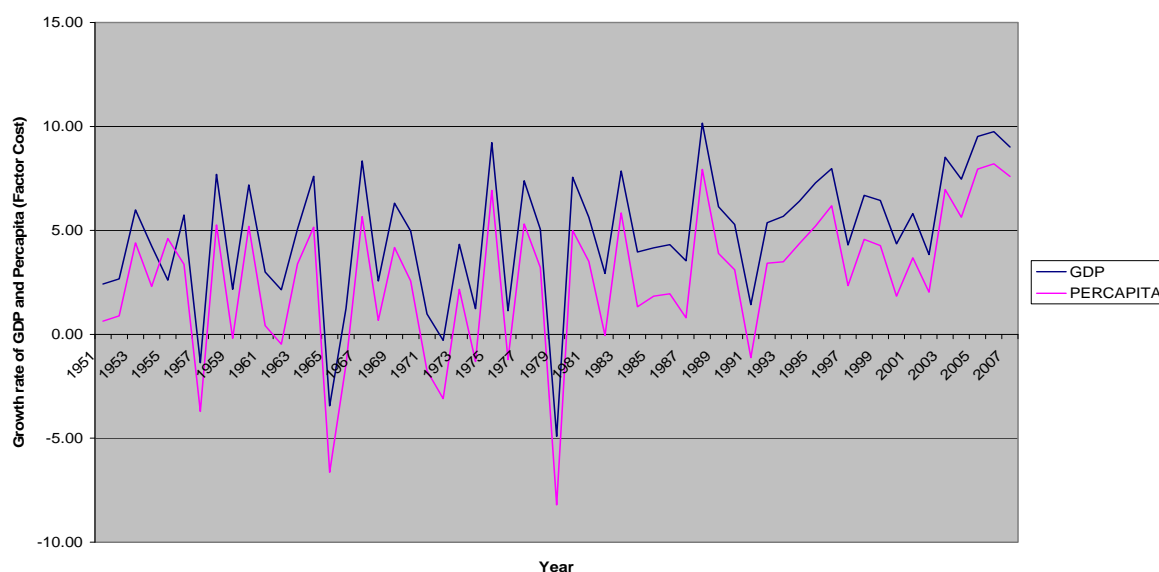
Source: Computed data from "Handbook of Statistics on Indian Economy 2009-10".

Table 1 presents Five year average growth rates of GDP and per capita income of India from 1950 -1955 to 2006-08. The GDP growth reveals the status of the economy. It can be found in the table that the GDP growth rate in the 1950s, 1960s and 1970s has been fluctuating around 3.5 percent per annum which has been termed as the 'Hindu Rate of Growth'. With an average annual rate of population growth of 1.9 percent, this results in an average annual growth in per capita GDP of around

1.6 percent. From the 1980s the economy has shifted to a higher growth rate of around 5 percent per annum. The higher India's GDP growth rate has led to higher per capita growth rate since the population growth has also started declining. Williamson and Zaghera (2002), De Long (2003), Rodrik and Subramaniam (2004a,b), Panagariya (2004), and Viramani (2004a) have concurred that the economy has shifted to a higher growth path around 1980s and therefore cannot be attributed entirely to the new economic policies of early 1990s and this could also be seen from the above result.

The GDP and per capita growth rate since 1950 have been presented in the Figure 1 below. The GDP growth rates were negative only for three years in the entire period of study whereas the per capita growth rates were negative for ten years during the same period.

Figure 1. Growth rate of GDP and Percapita 1950-2008



3.- Sectoral contribution to GDP

The sectoral share in the GDP since 1950 to 2007-08 is presented in the Table 2 below. It could be seen from the table that the share of agriculture in the 1950's was 55 percent, which has gradually declined over the decades to 23.5 percent in the period 2001-08. The industrial sector's contribution to GDP had shown an increasing trend. The share of industry increased from 14.85 percent in the 1950's to 23.8 percent in 2001-08. The share of trade, hotel, transport and communication, finance, insurance, real estate and business services have almost doubled during this period. The contribution of public administration and defence and other services reflect the expenses incurred by the government and the contribution to GDP is constant with little variations. Overall, the table imparts that the primary sector contribution declined and the secondary sector's contribution lagged behind the service sector.

Table 2: Sectoral Share in GDP

Year	Agriculture, Forestry, Fishing, Mining and quarrying	Manufacturing, construction and electricity, gas and water supply	Trade, hotel, transport, and communication	Finance, insurance, real estate and business services	Public administration and defence and other services
1951-60	55.31	14.85	11.88	7.5	10.45
1961-70	47.5	19.6	14.3	7.03	11.43
1971-80	42.76	21.33	16.03	7.29	12.58
1981-90	37.34	22.33	18.04	8.9	13.37
1991-2000	30.92	23.33	19.88	11.99	13.86
2001-2008	23.5	23.8	24.77	13.58	14.34

Source: Computed data from “Handbook of Statistics on Indian Economy 2009-10”.

4.- India and Tamil Nadu: A Comparison

Table 3 below presents a comparative picture of growth of state economy with national economy. Tamil Nadu NSDP as percentage of India's GDP increased from 5.78 percent 1990-91 to 6.55 percent in 1999-2000. In the year 2000-01, the NSDP growth was 6.7 percent and maintained the same up to 2006-07.

The all India mean per capita GDP (PCGDP) for the period 1990-91 to 1999-2000 was Rs. 11254, while the state's mean per capita NSDP was Rs.11372 for the same period. The state's mean per capita was above the national average except for the first two years. The co-efficient of variation of GDP and per capita NSDP of the state was below that of India's. The share of Tamil Nadu in national economy has increased by 13.5 percent over the decade of 1990-2000, whereas it has decelerated 8.2 percent during the year 2001-2008. This could be seen in the Tamil Nadu's Per capita growth rate. The growth rate which was 16.09 percent in the year 1990-2000, has decreased to 9.51 percent during 2001-08.

Table 3: India and Tamil Nadu: A Comparison

India and Tamil Nadu: A Comparison							
Year	India's GDP	TN's NDSP	Percentage share	India's PCGDP	TN's PCNSDP	Annual growth rate of PCGDP	Annual growth rate of PCNSDP
1990-91	477814	27645	5.79	5739	4978		
1991-92	552768	32563	5.89	6490	5794	13.09	16.39
1992-93	630772	37864	6.00	7269	6670	12.00	15.12
1993-94	781345	51648	6.61	8840	8953	21.61	34.23
1994-95	914194	61495	6.73	10159	10528	14.92	17.59
1995-96	1067220	70343	6.59	11651	11894	14.69	12.97
1996-97	1237290	79780	6.45	13276	13335	13.95	12.12
1997-98	1384446	93308	6.74	14604	15437	10.00	15.76
1998-99	1612383	105861	6.57	16607	17348	13.72	12.38
1999-00	1766600	115642	6.55	17906	18786	7.82	8.29
MEAN	1042483.2	67614.9		11254.1	11372.3		
SD	449377.4398	30891.69935		4273.820473	4853.407395		
CV	43.10644428	45.68770988		37.97567529	42.67744779		

2000-01	1925017	130410	6.77	16688	20927	-6.80	11.40
2001-02	2097726	131385	6.26	17782	20941	6.56	0.07
2002-03	2261415	138242	6.11	18885	21828	6.20	4.24
2003-04	2538170	153859	6.06	20871	24084	10.52	10.34
2004-05	2877701	177201	6.16	23198	27509	11.15	14.22
2005-06	3282385	200302	6.10	26003	30847	12.09	12.13
2006-07	3779385	229896	6.08	29524	35134	13.54	13.90
2007-08	4320892	254268	5.88	33283	38573	12.73	9.79
MEAN	2885336.375	176945.375		23279.25	27480.375		
SD	851066.1033	47208.31516		5919.348028	6783.953166		
CV	29.49625252	26.67959825		25.42757188	24.68653781		

Source: "Handbook of Statistics on Indian economy, RBI, 2010"; "Tamil Nadu Economic Appraisal, DEAR, Government of Tamil Nadu"

Footnote:

1. Standard Deviation (SD) is calculated based on the formula

$$\sigma = \frac{\sqrt{\sum X - (X)^2}}{N}$$

2. Co-efficient of Variation is calculated based on the formula

$$CV = \frac{\sigma}{X} \times 100$$

5.- Growth pattern among Indian states

There is vast amount of literature available on growth pattern among Indian states. Nair's (1982) analysis for the years 1950-51, 1955-56, 1960-61 to 1975-76 showed that inter-state disparities in per capita NSDP had declined over the period 1950-51 to 1964-65 and increased thereafter upto 1975-76. Roychoudry (1993-94) analysis concluded that co-efficient of variation of per capita NSDP in constant prices increased during the study period 1967-68 to 1985-86. Das and Barua (1995) concluded that the inter-state inequality widened during the study period 1970-1992. Mathur (2001) study since 1950 with specific focus on their periods 1980's and 1990's revealed that there is a steep acceleration in the coefficient of variation of per capita income after the reform period upto 1996. Kurian (2000) was of the view that the increase in the role of private sector after 1980's aggravated the inter-state disparities. Krishna (2004) was of the view that the inter-state disparities revealed through the coefficient of variation widened steadily over time and the relative position of the states have not undergone major changes.

Further the growth patterns among the 14 major states are quite diverse and characterized by instability. In addition to instability, volatility appears to be a dominant characteristic of the economic growth of Indian states. In this study an attempt is made to see the growth pattern of 19 major states from 1980-81 to 2007-08 at 1980-81 constant prices.

6.- Income Level Differentials

The NSDP per capita of 19 major states is expressed as percentage of all India GDP per capita from 1980-81 to 2007-08 (1980-81 Constant Prices) is used to analyse the income differentials. The index of per capita SDP at constant prices is with three year average centred on the year mentioned is presented in Table 4.

Table 4

INDEX OF PERCAPITA SDP AT CONSTANT PRICES (1980-81 PRICES) FOR 19 MAJOR STATES

(All India = 100): Selected Years

(Three years average centred on)

State	1981-82	1991-92	2001-02	2006-07
Andhra Pradesh	81 (11)	85 (10)	87 (9)	93 (10)
Assam	74 (13)	64 (15)	65 (12)	58 (15)
Bihar	50 (17)	45 (17)	33 (16)	31 (18)
Goa	166 (2)	204 (2)	203 (1)	219 (1)
Gujarat	108 (6)	110 (6)	94 (7)	112 (7)
Haryana	130 (5)	142 (5)	131 (3)	142 (3)
Himachal Pradesh	92 (9)	91 (8)	116 (4)	112 (7)
Jammu&Kashmir	96 (7)	73 (13)	72 (10)	66 (13)
Karnataka	84 (10)	90 (9)	90 (8)	94 (9)
Kerala	80 (12)	76 (12)	107 (5)	119 (5)
Madhya Pradesh	74 (13)	66 (14)	58 (13)	50 (16)
Maharashtra	132 (4)	146 (4)	116 (4)	121 (4)
Orissa	68 (15)	60 (16)	54 (14)	61 (14)
Punjab	152 (3)	156 (3)	133 (2)	117 (6)
Rajasthan	68 (16)	77 (11)	66 (11)	67 (12)
Tamil Nadu	84 (9)	93 (7)	102 (6)	108 (8)
Uttar Pradesh	70 (14)	66 (14)	50 (15)	44 (17)
West Bengal	93 (8)	91 (8)	87 (9)	85 (11)
Delhi	228 (1)	238 (1)	203 (1)	213 (2)
CV	42.47	49.86	47.03	50.31

Source: Computed data from "Handbook of Statistics on Indian Economy 2009-10".

Correlation Matrix for the Index Series in Table 4

Year	1981	1991	2001	2006
1981	1.00	0.98	0.92	0.88
1991	-	1.00	0.95	0.93
2001	-	-	1.00	0.98

The six high income states in the beginning of the study period 1981-82 were Delhi, Goa, Punjab Maharashtra, Haryana and Gujarat in that order respectively, whereas the low income states were Bihar, Rajasthan, Orissa, Uttar Pradesh and Assam. At the beginning of the post reform period 1991-92 the status of six high income states almost remained the same whereas among the last five low income states only Rajasthan moved up to 11th position from the earlier 16th position. The status

of Kerala in the year 2001-02 moved up from 12th position to 5th position along with the other high income states whereas the status of Bihar, Orissa, Uttar Pradesh and Assam remained as the low income states. The status of Madhya Pradesh worsened in the year 2006-07 to the 16th position while the status of other states both among high income and low income remained almost the same.

The correlation between the index series for different years is given in Table 4. All the correlations are quite high. Most of them are equal to or greater than 0.88. The implication of high positive correlations is that relative positions of the states did not undergo too many changes.

7.- Growth Differentials

The inter-state growth differentials for the periods 1980s, 1990s and 2001 to 2008 are presented in Table 5. Further the growth rate for the entire period i.e. from 1980-81 to 2007-08 is presented in the last column of the table below. The all India per capita GDP growth rate for the 1980s was 3.02 percent per annum. The coefficient of variation was 42 per cent and almost all high income states maintained their high growth rates in this period. Low income state like Rajasthan registered a higher growth rate of 4.77 percent above the all India average. Jammu Kashmir had a negative growth of 0.12 per cent. The states of Andhra Pradesh, Haryana and Gujarat achieved impressive growth rates and the states of Goa, Punjab and Tamil Nadu had growth rates above the national average. During 1990s the all India growth rate has improved by 0.68 per cent. Karnataka, Kerala, Tamil Nadu and Gujarat achieved impressive growth rates during this period. Andhra Pradesh, Goa, Himachal Pradesh, Madhya Pradesh and Rajasthan had higher growth rates than the national average. The state of Bihar had a negative growth rate of 1.51 per cent during this period. Among the high income states Haryana and Punjab had growth rates below the national average. The coefficient of variation during this period increased to 59 percent compared to 42 percent in the earlier period.

The all India per capita growth rate during the period 2000-2001 to 2007-08 has increased phenomenally to 5.48 per cent. Among the states, the highest rate of growth of 9.2 per cent was achieved by Gujarat. Orissa, Kerala, Haryana, Andhra Pradesh, Goa and Karnataka had higher growth rates than the national average. TamilNadu was just above the national average. The coefficient of variation declined to 39 per cent in this period and this is due to good performance of several low income states including Bihar.

The all India growth rate for the entire period of 1980-81 to 2007-08 was 3.98 per cent. Kerala is one state which had the highest growth rate above the national average. Andhra Pradesh, Goa, Gujarat, Himachal Pradesh, Karnataka, Tamil Nadu and Delhi had higher growth rates than the national average. Rajasthan is the only low income state which had a higher growth rate than the national average during the entire period of study. The coefficient of variation for the entire period has

been 26 percent which shows that the disparities between the states have declined. This has been mainly because of lower growth rates registered by many high income states during the 2000-01 to 2007-08.

Table 5
Annual Growth rates of GDP for 19 major Indian states

STATE / ALL INDIA	1980-81 to 1989-90	1990-91 to 1999-2000	2000-2001 to 2007-2008	1980-81 to 2007-2008
Andhra Pradesh	4.52	3.84	6.83	5.0
Assam	1.95	1.47	3.22	3.31
Bihar	2.36	-1.51	4.84	2.72
Goa	3.96	4.76	6.49	5.19
Gujarat	4.38	5.47	9.20	4.96
Haryana	4.00	1.61	7.11	4.55
Himachal Pradesh	3.34	4.62	4.92	4.78
Jammu&Kashmir	-0.12	2.57	3.48	2.47
Karnataka	3.48	5.58	6.29	4.60
Kerala	1.47	6.55	7.76	5.62
Madhya Pradesh	1.43	4.57	2.66	2.53
Maharashtra	3.92	3.44	6.20	3.75
Orissa	3.33	2.77	8.01	3.83
Punjab	3.80	2.10	2.89	3.07
Rajasthan	4.77	3.73	6.28	4.72
Tamil Nadu	3.94	5.82	5.58	5.11
Uttar Pradesh	2.53	0.51	3.00	2.19
West Bengal	1.88	3.25	5.41	3.55
Delhi	3.49	3.42	6.48	4.04
CV	42	59	34	26
All India	3.02	3.70	5.48	3.98

Source: Computed data from "Handbook of Statistics on Indian Economy 2009-10".

Correlation Matrix for Annual Growth rates of SDP of Table 5

Year	1980-81 to 1989-90	1990-91 to 1999-2000	2000-01 to 2007 – 08
1980-81 to 1989-90	1.00	0.18	0.51
1990-91 to 1999-2000	-	1.00	0.45

8.- Volatility of Growth

The volatility in growth rates is a dominant characteristic of the economic growth among the Indian states. The coefficient of variation of year to year growth rates for a state is taken as the measure of volatility. Dasgupta et al (2000) computed this measure for the period 1970-71 to 1995-96. Krishna (2004) computed this measure for the major 14 states for 1980s, 1990s and for two sub periods of 1990s. In this paper the period of study is 1980s, 1990s and 200-01 to 2007-08 for 19 major states. The figures are presented in Table 6.

The most volatile state during the entire period of study has been Bihar. Rajasthan, Madhya Pradesh, Gujarat, Orissa and Assam are some of the other states which had a high volatility in growth rates.

The volatility in growth rates in 1990s was higher than the 1980s, whereas the volatility in 2000s was comparatively lower than the 1990s. The important aspect has been the decline in volatility among the Indian states since the volatility in growth rates of all states over the period have declined.

Table 6
Volatility measure of GDP growth for major Indian states

STATE / ALL INDIA	1980-81 to 1989-90	1990-91 to 1999-2000	2000-2001 to 2007-2008	1980-81 to 2007-2008
Andhra Pradesh	164	138	51	111
Assam	213	231	45	210
Bihar	248	732	231	374
Goa	229	217	70	157
Gujarat	344	234	43	249
Haryana	246	220	31	146
Himachal Pradesh	206	80	34	123
Karnataka	118	70	80	96
Kerala	316	107	31	109
Madhya Pradesh	405	134	187	264
Maharashtra	123	214	36	156
Orissa	306	237	72	232
Punjab	68	121	82	91
Rajasthan	325	281	212	265
Tamil Nadu	146	89	103	101
Uttar Pradesh	137	749	69	154
West Bengal	194	172	38	119
Delhi	141	176	65	125
All India	87	90	36	69

Source: Computed data from "Handbook of Statistics on Indian Economy 2009-10".

9.- Intra-State Disparities in growth Rates among the Districts of Tamil Nadu

The GDDP growth rates, NDDP growth rates and Per Capita growth rates are analysed for the period 2000-01 to 2006-07 to study the Intra state disparities in the state of Tamil Nadu. The districts have been classified as low income and high income districts. The methodology adopted by Srinivasan and Naidu (2009) has been adopted to classify the districts as low income and high income districts. In order to focus the attention on the determinants of growth rates, socio economic indicators like sex ratio, per cent of urban population SC and ST population, literacy rate, HDI and GDI are studied to bring out the relationship between income and socio economic indicators.

Gross District Domestic Product (GDDP), Net District Domestic Product (NDDP) and per capita growth of intra-state of Tamil Nadu are presented in table 7.

Table 7: Growth rates for GDDP, NDDP and per capita income of Intra-State

S.N	Districts	GDDP			NDDP			Per capita		
Low Income Districts										
		Mean	SD	CV	Mean	SD	CV	Mean	SD	CV
1	Perambalur	-0.45	5.75	-1272	-0.47	6.23	-1320	-1.10	6.25	-570
2	Villupuram	4.04	6.13	152	4.01	6.61	165	3.50	6.63	189
3	Tiruvannamalai	5.58	5.87	105	5.52	6.42	116	5.08	6.44	127
4	Krishanagiri	7.78	4.86	62	7.47	4.97	66	6.05	4.94	82
5	Tiruvarur	2.04	7.51	367	1.89	7.84	414	1.54	7.83	510
6	Sivaganga	5.48	3.94	72	5.46	4.20	77	5.01	4.22	84
7	Pudukottai	4.84	3.77	78	4.56	4.51	99	3.84	4.52	118
8	Dharmapuri	6.19	6.22	101	5.90	6.57	111	4.48	6.53	146
9	Thanjavur	4.91	4.16	85	4.72	4.33	92	4.20	4.34	103
10	Nagapattinam	2.48	5.92	238	2.28	6.13	269	1.75	6.13	349
11	Theni	2.65	5.53	209	2.59	5.79	224	2.43	5.82	240
12	Cuddalore	5.57	2.82	51	5.46	2.71	50	5.00	2.71	54
13	Ramanathapuram	4.14	3.34	81	3.90	3.65	94	3.78	3.65	95
14	The Nilgris	6.45	6.09	94	5.85	5.80	99	5.38	5.80	108
15	Vellore	5.42	3.57	66	5.36	3.94	74	4.19	3.96	94
16	Dindugal	4.70	4.96	106	4.40	5.39	122	3.75	5.40	144
17	Tirunelveli	5.62	4.35	77	5.46	4.43	81	4.84	4.44	92
18	Salem	4.94	5.11	103	4.78	5.20	109	3.75	5.20	139
	Tamil Nadu	5.43	4.12	76	5.22	4.47	86	4.27	4.64	109
High Income Districts										
19	Karur	6.38	6.46	101	6.17	6.39	104	5.48	6.37	116
20	Madurai	5.69	4.27	75	5.54	4.57	83	5.06	4.60	91
21	Tiruchirapalli	6.84	4.11	60	6.65	4.34	65	5.91	4.36	116
22	Erode	5.54	6.84	123	5.26	7.34	139	4.42	7.32	166
23	Kanniyakumari	6.85	4.21	61	6.72	4.52	67	6.51	4.56	70
24	Kancheepuram	6.34	3.99	63	6.10	4.34	71	4.65	4.33	93
25	Tiruvallur	7.77	4.80	62	7.35	4.90	67	5.31	4.83	91
26	Thoothukudi	6.38	5.65	89	6.14	5.75	94	5.61	5.75	103
27	Namakkal	4.31	8.14	189	4.26	8.48	199	2.57	8.38	326
28	Coimbatore	6.80	4.33	64	6.43	4.58	71	4.64	4.53	98
29	Chennai	3.47	4.76	137	3.35	4.60	137	2.36	4.60	195
30	Virudhunagar	6.48	7.09	109	6.08	7.01	115	5.17	6.97	135

Source: Computed data from “Tamil Nadu Economic Appraisal 2007-08”.

The table above reveals that among the 18 low income districts, nearly 7 districts had GDDP growth rates higher than the states average growth rate during the study period whereas, among the high income districts except Chennai and Namakkal all other districts had higher growth rates than the states average. The coefficient of variation which measures the volatility in district growth rate shows that all most all districts highly volatile but the average coefficient of variation of low income districts is almost double that of the high income districts implying that the volatility of low income districts is almost double that of the high income districts which is a cause of worry to the state.

Socio economic indicators like sex ratio, percentage of urban population, SC and ST population, Literacy Rate, HDI and GDI are given along with 2005-06 Per Capita GDDP and Average growth rate of GDDP during the period 2000-01 to 2005-06 to bring about the relationship between high income and the socio economic indicators.

Table 8: Socio-Economic Indicators of Tamil Nadu

S. N	Districts	Average GDDP growth rate (2000-06)	PCGDD P 2005-06	Sex Ratio 2001	% Urban Population 2001	SC & ST % 2001	Literacy Rate 2001	HDI 2006	GDI 2006
Low Income Districts									
1	Perambalur	-0.45	12093	1006	16.05	1.2	66.07	0.697	0.680
2	Villupuram	4.04	15961	984	14.42	7.0	63.80	0.667	0.651
3	Tiruvannamalai	5.58	18132	995	18.33	4.3	67.39	0.678	0.662
4	Krishnagiri	7.78	22347	944	16.42	2.6		0.665	0.654
5	Thiruvarur	2.04	17112	1014	20.29	3.0	76.58	0.719	0.704
6	Sivaganga	5.48	21527	1038	28.22	1.5	72.18	0.701	0.686
7	Pudukottai	4.84	21052	1015	17.02	2.0	71.12	0.705	0.688
8	Dharmapuri	6.19	23443	923	15.02	1.9	52.32	0.656	0.640
9	Thanjavur	4.91	22506	1021	33.78	3.2	75.45	0.714	0.698
10	Nagapattinam	2.48	20783	1014	22.18	3.6	76.34	0.738	0.723
11	Theni	2.65	21261	978	54.10	1.7	71.58	0.726	0.711
12	Cuddalore	5.57	23746	986	33.01	5.2	71.01	0.709	0.693
13	Ramanathapuram	4.14	23447	1036	25.46	1.7	72.96	0.703	0.686
14	The Nilgris	6.45	27774	1014	59.65	2.1	80.01	0.745	0.731
15	Vellore	5.42	26144	997	37.62	6.2	72.36	0.71	0.697
16	Dindugal	4.70	26296	986	35.01	3.1	69.35	0.705	0.691

17	Tirunelveli	5.62	27606	1042	48.03	3.9	86.08	0.74	0.724
18	Salem	4.94	27905	929	46.00	4.6	65.09	0.717	0.706
High Income Districts									
19	Karur	6.38	29099	1010	33.27	1.5	68.08	0.737	0.721
20	Madurai	5.69	29180	978	56.01	1.9	77.82	0.759	0.747
21	Thiruchirapalli	6.84	30624	1001	47.10	3.3	77.90	0.732	0.718
22	Erode	5.54	31198	972	46.25	3.5	65.36	0.721	0.706
23	Kanniyakumari	6.85	34280	1014	65.27	0.6	87.55	0.763	0.749
24	Kancheepuram	6.34	31398	975	53.34	6.0	76.85	0.778	0.765
25	Thiruvallur	7.77	33428	971	54.45	5.1	76.94	0.767	0.755
26	Thoothukudi	6.38	35956	1050	42.28	2.3	81.52	0.791	0.779
27	Namakkal	4.31	31180	966	36.51	2.7	67.41	0.715	0.700
28	Coimbatore	6.80	36354	963	66.02	5.3	76.97	0.775	0.764
29	Chennai	3.47	34715	957	100.00	4.8	85.33	0.842	0.832
30	Virudhunagar	6.48	39879	1012	44.39	2.7	73.70	0.737	0.724
	TamilNadu	5.43	27739	987	44.04	100.0	73.45	0.736	0.722

The table reveals that the sex ratio is of concern mainly in low income western districts of Tamil Nadu especially in Krishnagiri, Dharmapuri, Theni, and Salem. In all other low income districts the sex ratio is far better. This suggests that there is geographical concentration of low sex ratio. The sex ratio is also low in seven high income districts. In regard to urbanisation all high income districts except Karur and Thoothukudi have percentage of urbanisation above the state average. Among the low income districts all except Salem, Tirunelveli, Nilgris and Theni have low urbanisation compared to that of state average of 44 percent. There is no difference in average percentage of SC and ST population living in low income high income districts. The average population of SC and STs is slightly higher in high income district with 3.3 percent whereas it is 3.2 per cent in low income district. Villupuram and Vellore are the low income districts which have very high population of SC and STs. The literacy rate among the low income districts averaged 71.16 per cent which is below the state average of 73.45 per cent whereas the literacy rate for high income districts averaged 76.28 percent which is above the state literacy average.

Among the low income districts of Salem, Dharmapuri, Krishnagiri both low sex ratio and low literacy rate could be seen implying that there is a very high correlation between them. The Human Development Index and Gender Development Index of the low income districts average were 0.705 and 0.69 which is below the state average of 0.736 and 0.722 respectively. The above results conclusively show that there is a very high level of association between income level of the district with literacy rate, HDI and GDI. The sex ratio though is lower in low income districts, it is mainly localised in the western low income districts. The correlation values between GDDP and HDI, GDI and urbanisation are 0.703, 0.713 and 0.731 implying a very high association between income and the socioeconomic indicators.

10.- Conclusion

India's GDP growth rate which has been hovering around 3.5 per cent and is termed as 'Hindu Growth Rate' shifted to above 5 per cent in the 1980's even before the introduction of reforms in the country. The growth rate which has shifted to 8 per cent in recent times has raised several issues. The first issue is about the sustainability of this high rate of growth. The second issue is about the inherent instability in the growth process and to find ways to reduce this instability. The third issue is to reduce the inter-state disparities and also be in the higher growth process. The other issue is to reduce the disparities at the regional level within the state.

India in order to sustain its higher growth rate, the major bottlenecks has to be addressed in a phased manner. These are infrastructure, slowdown of agriculture growth, poverty and inequality, financial regulations and corruption free governance. This paper has brought out that there is high degree of instability and volatility in India's growth rate which is also reflected in the inter-state growth rates. Though numerous factors have been disturbing the growth rates only a few of them has been addressed in this paper. Indeed, it is arguable that growth is valuable due to its trickle-down effect and reduction in poverty. The important question this higher growth rate has raised is the rate of reduction in poverty and inequality compared to its growth rate. This paper has attempted a somewhat preliminary account of the patterns and determinants of growth in Indian states during the period 1980-2008. This paper covered 19 major states which together account for a little over 90 per cent each of the population and the GDP of the country. It has been found growth in the different states 1980-2008 was characterized by instability and volatility. The degree of volatility was very high in inter-state and intra-state. It would be instructive to extend the analysis to sectoral growth rates and identify the sectors contributing to volatility and instability. Inter-state and intra-state disparities in per capita income levels and growth rates as measured by the coefficient of variation increased over time. However, the relative positions of many states remained unchanged. The relative position of the districts also remained same. To conclude it could be said that there is high level of correlation between per capita income and some socio economic indicators like HDI, GDI and urbanization. This fact along with the widening of disparities in recent years has been due to increase in the role of private sector. Hence the role of public sector in various vital areas like education, health and infrastructure has to be increased. Further to reduce disparities at regional level specific programmes to address specific socioeconomic indicators has to be undertaken by the government.

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