

Convergence and Regional Disparities across Major Indian States

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1. Introduction

There is a need to analyse the important factors leading to differences in growth across Indian states and also to identify the vital policy issues that need to be streamline and the slow growing Indian states are to achieve higher growth rates in future. The disparities are not limited to growth rate but also in many socio-economic variables. In view of this, we look into the behaviour of various socio economic indicators have been identified from the existing literature and the data from the different states of the country. The motive is neither to describe a list of factors of growth nor to examine the significance of each determinants, rather to analyze whether socio economic indicators are linked with growth or not. Literature suggests that per capita income is usually accompanied by social indicators of development (Becker (1993) and Schultz (1997), Nagaraj, Varaudakis and Veganzone (1997), Hanushek and Kimko (2000). The important social indicators taken by researchers are private investment/financial intermediation, level and quality of human capital, size of government; industrial relations climate, reform of labour regulations, infrastructure, role of services sector and agriculture climate [see, for example, Dholakia (2003), Ghosh (2006) and Purfield (2006)]. The social indicators has helped the study analyze and convergence among countries in terms of a more comprehensive measure of development than per capita income.

2. Review of Literature

The growth theory (neoclassical) of convergence was experimented by Barro and Sala-i-Martin (1995). They focused on per capita (average) incomes for 90 European Union (EU) regions in the period 1950-51 to 1990-91 by using cross-section regressions analysis; there are

signs associated with conditional convergence that they came across in the EU regions. An important implication in the above was that regions which have been further from the state level per capita income level will certainly grow faster whereas certain regions converge toward different levels of per capita income. The methodology of Barro and Sala-i-Martin shows that Empirical research on neoclassical growth theory of convergence has increased but is limited to developed economies only. The investigation conducted on developed economies like United States do not show any signs of diminishing returns to capital input and provide endogenous growth models in line with Romer (1986) and Lucas (1988). A return related to R&D is not subjected to diminishing returns unlike physical capital is based on an assumption.

The prime human capital comprises of education, Becker (1993) and Schultz (1997) but they have always insisted to include health and nutritional expenditure as an important part of human capital investment. The logic behind the same is that education has always played a pivotal role in improving health and nutritional requirements. There is an interdependence between Education, health, nutrition, water and sanitation, with investments in any one leading to better outcomes in the sector (World Bank, 2001). According to economic growth indicator, school enrolment has been given priority as compared to other social indicators like health while assessing Human capital. The major reason why Health has been left out is because of lack of reliable data related to health sector. As it neither has a good horizon, nor there is sufficient historical data available in the mainstream macro-growth economics (Arora, 2005). The whole idea of human capital revolves around the skills and capabilities of human resources, while on the other hand the focus of human capital formation is on acquiring and developing skilled labour force with good education, health and experience that would facilitate economic growth.

In the 1980's, the impact of human capital on a country's economic growth has been examined in the form of endogenous growth theory. Romer (1986), Lucas (1988) and Barro (1990) are the major contributors in this field of study. According to Romer (1986). Endogenous variables viz. technology laid emphasis on economic growth where he examined "learning by doing" process is more beneficial. Whereas Lucas (1988) and Rebelo (1991) believed that prime factor in production function is human capital just like physical capital. In light of this, more investment on human capital and on education should be undertaken by the government.

3. Objectives of the Study

The key objective of this study is to identify the interstate regional disparities of Indian states with the help of social indicators such as education (measured by gross enrolment, Expenditure on Education, sports, arts and culture). The analysis is completed on the basis of the predictions that economic development is a multidimensional concept and as such no individual indicator (such as NSDP, Net State Domestic Product, or per capita NSDP) is sufficient to explain the level of economic progress. Economic development involves not only increased per capita income but also to develop opportunities with education, health care and work sector. The study started by exhibiting the existence of the problem associated with interstate disparity and discussed the situation of convergence vis-a-vis divergence in development indicators.

4. Methodological Framework and Database

This study considers per capita SDP data of major Indian states for the period 1991-92 to 2011-12 and explores the possibility of convergence in growth across states. The present study takes output, investment in physical capital and human capital as endogenous variables and certain socio economic variables such as education for estimation. To deal with the issue of regional performance, the present study considers 15 major states of India namely Assam, Bihar, Gujarat, Haryana, Andhra Pradesh, Karnataka, Rajasthan, Tamil Nadu, Kerala, Madhya Pradesh, Maharashtra, Odisha, Punjab, , Uttar Pradesh and West Bengal. The states considered in the study include about 93 percent of the population in India and take into account about 85 percent of India's geographical area. The present study endeavours to account for the deviations in the steady state and re-examine the issue of convergence across 15 major states.

5. Major Findings

To examine regional disparities, we analyze the growth of per capita SDP in the states under study. The annual average growth rate in per capita SDP for three time periods are viz., 1990-91 to 1999-2000, 2000-01 to 2009-10, and 1990-91 to 2009-10, for 15 major states along with the all-India average are presented in Table 2.3. It can be seen from the table that during the 1990-91 to 1999-2000, the decadal growth rate ranged from (-) 0.34 per cent per annum for Bihar to 5.36 per cent per annum for Gujarat. As compared to the all- India average 3.98, regional disparity has increased from 4.1 percent in the 2009-10 to 3.4 in the 1990-91.

Maharashtra, Tamil Nadu, West Bengal, Karnataka and Andhra Pradesh improved their per capita SDP by 5 percent per annum in 2010. The performance of Gujarat improved from 5.36 percent in 1990-1991 to 7.78 percent in 2009-2010. Assam has improved per capita income growth, from 0.42 percent in the 1990-91 to 3.89 percent in the 2009-10.

Table1: Growth Rate of Per-Capita SDP in 2004-05 Prices

States	1990-91 to 2000-01	2000-01 to 2009-10	1990-91 to 2009-10
Andhra Pradesh	3.76	7.45	5.61
Assam	0.42	3.89	2.16
Bihar	-0.34	6.37	3.02
Gujarat	5.36	7.78	6.57
Haryana	2.08	7.23	4.66
Karnataka	5.75	5.64	5.70
Kerala	4.75	6.99	5.87
Madhya Pradesh	3.05	3.37	3.21
Maharashtra	4.73	6.80	5.77
Odisha	3.21	5.60	4.41
Punjab	2.59	3.97	3.28
Rajasthan	3.03	5.52	4.28
Tamil Nadu	4.99	7.85	6.42
Uttar Pradesh	1.15	3.70	2.43
West Bengal	5.04	5.36	5.20
Coefficient of Variation	0.53	0.26	0.32

Source: Reserve Bank of India, State Finances- A Study of State Budgets

It shows per capita NSDP for the states under study for the period 1990-91 to 1999-2000, 2000-01 to 2009-10 and 1990-91 to 2009-10 at 2004-05 prices with an objective of examining the inter-state disparities in per capita NSDP. Table reports a wide variation across states. Per capita NSDP ranges from Rs.14, 363 in Bihar to Rs. 64,218 in Maharashtra in the year 2012-13. For the period 2005-06 Haryana's per capita NSDP was the highest followed by Maharashtra, Kerala, Gujarat and Tamil-Nadu. Bihar and Uttar Pradesh remained at the bottom throughout the period. Karnataka consistently achieved higher per capita NSDP and remained greater than average per capita NSDP for the whole period followed by Andhra-Pradesh and West-Bengal.

States such as Assam, Madhya Pradesh, Odisha, Bihar, Rajasthan and Uttar-Pradesh can be said to form the poorer category of states. Thus, the level of per capita NSDP shows the inter-state disparity which can be depicted by the increasing coefficient of variation which increases from 34.5 percent in 1990-91 to 47.9 percent in 2009-10.

Table 2: Per-capita Net State Domestic Product

States	1990-91	1995-96	2000-01	2005-06	2010-11	2012-13
Andhra Pradesh	14180	16721	21022	27486	40054	44526
Assam	14241	14716	14978	17050	21611	23448
Bihar	7350	5620	7659	7588	12090	14362
Gujarat	17098	22665	23628	36102	53813	61220
Haryana	23995	24926	30218	40627	57797	64136
Karnataka	14411	18185	23510	29295	40699	42976
Kerala	16309	20992	25131	34837	48504	56115
Madhya Pradesh	12268	13084	14310	15927	21706	25463
Maharashtra	20778	27041	29688	40671	59587	64218
Odisha	10764	12765	13536	18194	23968	25415
Punjab	24177	26708	30827	34096	44769	47834
Rajasthan	13401	14305	15990	19445	27502	29244
Tamil Nadu	16455	21205	26587	34126	53507	58360
Uttar Pradesh	10988	11220	12080	13445	17388	18595
West Bengal	11943	14936	18997	23808	31314	33889
CV	0.35	0.39	0.39	0.45	0.48	0.48

Source: Reserve Bank of India, State Finances- A Study of State Budgets

To examine the inter-state regional disparities, per capita income played an important role. In terms of growth rate of per capita NSDP Karnataka maintained the highest position in the post-reforms period followed by Gujarat and West Bengal. While the other Indian states such as Assam, Bihar and UP remained at the bottom. Most of these states are generally poorer due to the fact that per capita plan outlays in addition to the level of investment will always be much below to those of the better-off states. These states also have problems with high population growth rates and low economic development rates. On the other side many states achieved high per capita NSDP such as Gujarat, Andhra Pradesh, Haryana and Tamil Nadu which are closer to the national average. Thus, the levels of per capita NSDP show inter-state regional disparity as shown by coefficient of variation. The coefficient of variation has increased from 35 percent in 1990-91 to 48 percent in 2000-01 to 2009-10. These results are there in the analysis of growth rate of per capita NSDP at 2004-05 base years. Like literacy rate, interstate regional disparity

also reduced in terms of other social indicators such as gross enrolment of class I-IV that can be seen with the help of the reduced coefficient of variation at all the level of education.

Table 3: Literacy Rate in Major States of India (As per 1991 to 2011 Census) in percent

States	1990-01	2000-01	2010-11
Andhra Pradesh	44.09	60.47	67.02
Assam	52.89	63.25	72.19
Bihar	38.48	47	61.8
Gujarat	61.29	69.14	78.03
Haryana	55.85	67.91	75.55
Karnataka	56.04	66.64	75.36
Kerala	89.81	90.86	94
Madhya Pradesh	44.2	63.74	69.32
Maharashtra	64.94	76.88	82.34
Odisha	49.09	63.08	72.87
Punjab	58.51	69.65	75.84
Rajasthan	38.55	60.41	66.11
Tamil Nadu	62.66	73.45	80.09
Uttar Pradesh	41.6	56.27	67.68
West Bengal	57.7	68.64	76.26
India	52.22	64.84	72.99
Standard Deviation	13.15	9.8	7.8
Coefficient of Variation	24.19	14.8	10.5

Source: District Information System for Education (DISE).

6. Conclusions

Conclusion of the study embarks regional disparity that existed in Indian states during the study period. The disparities expanded that can be explained in terms of per capita NSDP and its growth rate as reflected by the coefficient of variation figures of the selected states. However, mixed nature of regional disparity was investigated in variable of social indicators.

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