Research Paper *IJBARR*
Impact Factor: 4.729 *E- ISSN -2347-856X*
Refereed, Listed & Indexed *ISSN -2348-0653*

GROWTH DIFFERENCES AMONG INDIAN STATES: STRENGTHENING THE DIVERGENCE VIEW

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Abstract
The present study attempts to test convergence hypothesis among Indian states by using cross sectional data of 16 major states, 6 North-East statesand 4 Union Territories (UTs) in three different combinations. Firstly, only 16 major states have been analysed and found a strong divergence tendency during 1980-2011. However, in the second combination of 4 UTs and 16 major states exhibits the similar tendency as in the first case but rate of divergence declines. In third combination, results obtained by including the 6 North-East states and 16 major states, the tendency of convergence has been observed. I have also estimated σ-Convergence in four different combination of States and UTs. The Coefficient of Variation (CV) exhibits the rising trend of variation among different states after mid of 1990s and further widens after 2000s which does not support the convergence hypothesis.The findings of the study conform to the earlier studies of convergence in Indian context.

Keywords: State Domestic Product, β-Convergence, σ-Convergence. JEL Classification: C32, C33, O40

I. Introduction

Indian economy has undergone dramatic changes of being the state controlled to the more liberal economy of recent years. Historically, one of the major objectives of the planning commission has been to achieve the balance growth among different states. In order to envisage those goals, the Centre tries to merge the resource gape among the states through resource transfer by utilizing advice of the Finance commission and the 'Late' Planning Commission. These funds have been transferred on the basis of the criteria of population, fiscal discipline, level of infrastructure, and forest cover etc. The efforts of the policy makers seem to be gone in vain as the economic disparities are still alive and growing up at higher pace after the economic reforms of 1991.

There are historical underpinnings in the pattern of economic growth among Indian states. The Colonial period of British witnessed the seeds of inequalities sown in the then developed eastern regions known as the *Great Bengal*. It comprised all the laggard states like Bihar, Orissa, Madhya Pradesh and newly carved Jharkhand and Chhattisgarh of modern India. This region had developed its indigenous industries, modern agricultural practices, the local financiers and produced the required commodities. The East India Company entrenched firstly into this region and gradually dismantle the indigenous industries and local financiers by exposing them to advanced British industries.

They exported the raw materials to British and imported the readymade commodities out of those raw materials and sold them back to the Indian markets. In this process of development,the provinces located on ports like Mumbai, Madras, Calcutta and other hinterlands managed to save their industries, agriculture and local financiers but the most of the eastern states of the country had been destroyed badly. It is also believed that the bureaucraticinstitutions and other infrastructural establishments developed by the British Company were meant to serve their own exploitative purposes (Bharadwaj, 1982).

Having identified the widespread economic disparities among IndianStates the Indian policymakers took major initiatives in second five-year plan in which some heavy industries were setup in these laggard states considering them as nodal points from which the fruits of the economic development would spread to other places. But consecutive plans ignored these kinds of *required initiatives* in this direction and the already better-off states took a lead and remain ahead since then. The Green Revolution in Indian agriculture helped the states like Punjab, Haryana, and Western Uttar Pradesh in boosting their already higher agricultural productivity. Southern states reaped the fruits of modern education and Spatial advantages in international trade developed during the British colonial period. But the Eastern region that includes majority of the poor states remained languish.

This phenomenon challenges the convergence hypothesis proposed by the neoclassical economists. It is based on the notion of diminishing returns to capital and the empirical research were intensified in this field when the findings of Robert Barro and Sala-i- Martin claimed that the poor regions can grow faster than their rich counterparts. They conducted their research in USA, Europe and Japan and results evidently imply that the poor regions with low initial output would grow faster than that of rich regions owing to diminishing returns to capital. There are various Indian studies focusing on the convergence analysis in Indian states for various time period. Some studies considering all Indian states including Union Territories (UTs) and North-east states toconfirm convergence theorem.

But they seem to fail in reaching a general conclusion that the states have been on divergence path. The current study tries to estimate the convergence equation by employing three different combinations of states and UTs for the period of 1980-2011 and try establishes the facts about convergence hypothesis. Structure of the study is as follows. Section II enumerates the studies on convergence. Data and methodological aspects are discussed in section III. Section IV explains the results of the study and final section provides the conclusions and policy suggestions.

II. Studies on Convergence

(Rao, Shand and Kalirajan 1999) Found divergence across states caused by skewed allocation of private investments owing to inequitable spread of infrastructure in the states. (Jefferey 2001)also examines the process of convergence among 14 most populous states and established week evidences for convergence in GSDP. They identified different factors responsible for uneven regional growth and suggested that urbanisation was likely to be a key factor of economic growth during 1980s and 1990s. According to them already urbanized areas would have been the preferred location for new investments.

(Baddeley, McNay and Cassen 2006) Although, confirmed the fact of divergence, the possibility conditional and club convergence have not been turned down. Their research also proves that the onset of economic policy reforms in 1991 significantly intensified growth differentials between the states. (Nayyar 2008) Employed panel data techniques for 16 Indian states for the period of 1978-79 to 2002-03 and found that the states do not support the convergence theorem.

Negation to absolute convergence in the state domestic product is well established finding of the previous studies. But the studies by Kumar and Subramanian (2012); Swati Raju, 2012 presents the results in favour of convergence across Indian states. Surprisingly, one ends up with a strong question, why the neoclassical theorem of convergence is being supported by some studieswhile others contradict with it. To answer this question this study has taken up three different combination of states and UTs and investigates possible explanations.

III. Data and Methodology

The present study is based on data of EPW Research Foundation. The per capita Gross State Domestic Product (PCGSDP) of different base year have been taken and converted PCGSDP at constant prices of 2004-05 by using GSDP deflator. The research methodology for this study has been derived from the work of Solow (1956). This model essentially, describes a mechanism by which regions reach to steady-state equilibrium. Regions will converge to a common steady state if the growth rate of technology, rate of investment and growth rate of labor force are identical across regions and farther a region from its steady state the faster this region would grow which leads to a more general prediction that poorer regions will grow faster than richer regions. The movements of factors across regions in search of higher returns would make this to happen.

According to Barro and Sala-i-Martin (1995), "convergence is more likely across regions of same country rather than between the countries because the structural differences are likely to be smaller across regions of same country". There are two concepts of convergence distinguished in the literature: (1) absolute β-convergence (2) σ-Convergence. Absolute convergence seems to appear when the poorer states tend to grow faster than the richer ones. It can be estimated by following equation:

$$[(\ln(Y_{i,t}) - \ln(Y_{it-\tau})]/\tau = \alpha + \beta \ln(Y_{it-\tau}) + u_{i,t}$$

Where $Y_{i,\,t}$ is output of i district at current period and $Y_{i,\,t-\tau}$ shows the output at some past year. A negative value of β indicates that the poorer states are growing at faster rate than richer ones and tends to reach same level of per capita income. The concept of absolute convergence depends on the assumption that the states only differ in their levels of capital. But there can be other factors influencing the steady-states which has not been looked at in the present study. It just focuses on unconditional convergence that is sufficient to prove the objective of this study.

Furthermore, σ-convergence shows whether the disparities among the regions have declined or not. The β-convergence is essential to realise the sigma convergence. Generally, it is measured by the Coefficient of Variation (CV). If it has been seen declining over the period, one can infer that the disparities in per capita output across region has declined.

IV. Results and Discussion

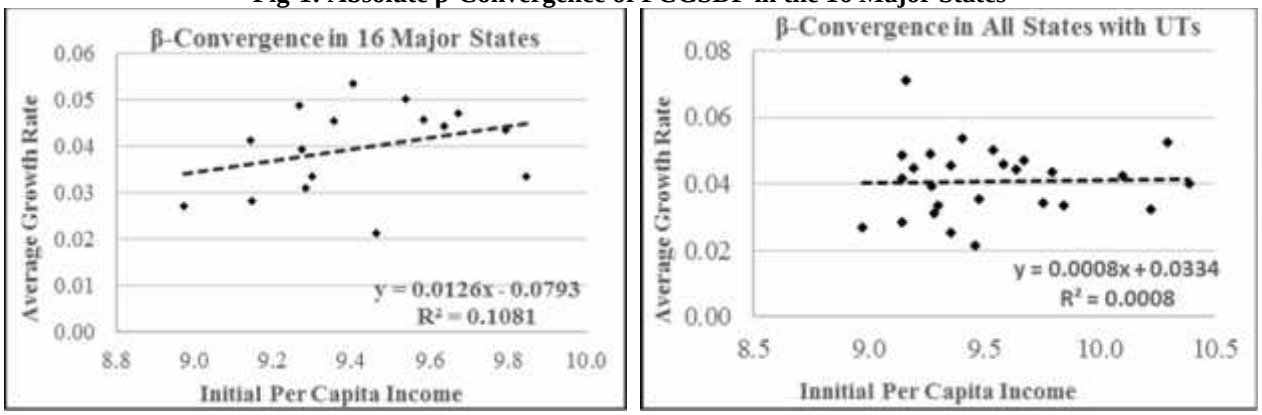
the study takes16 major States, 4 UTs and 6 North-East States (NES) as described in table given below.

Table-1: Details of States and UTs Included in the Study

Four Union Territories	6 North-East States	16 Major States
Andaman and Nicobar Islands, Delhi, Goa and Puducherry	Arunachal Pradesh, Manipur, Meghalaya, Nagaland, Sikkim and Tripura	Andhra Pradesh, Assam, Bihar, Gujarat, Haryana, Himachal Pradesh, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Orissa, Punjab, Rajasthan, Tamil Nadu, Uttar Pradesh and West Bengal

The results obtained taking 16 major states show highest rate of divergence as compare to other combinations of states and UTs which clearly suggests that mainstream states of India do not support the convergence hypothesis. The poor states like Bihar, Orissa, and Madhya Pradesh have not grown much faster to catch-up the pace of growth of other states like Punjab, Haryana, Maharashtra, Gujarat and West Bengal. The Fig-1 presents the relationship between Average Growth Rate (AGR) of PCGSDP during 1980-2011 and initial value of PCGSDP of 1980-81. This clearly suggests the evidence in favour of divergence i.e., per capita income disparities have not declined. It confirms the fact that the tendency of convergence appears as high income small states are included in our study. The second segment of this figure shows that the intensity of divergence declines as one includes union territories.

Fig-1: Absolute β-Convergence of PCGSDP in the 16 Major States



Source: Author's Calculation based on Data of EPW Research Foundation.

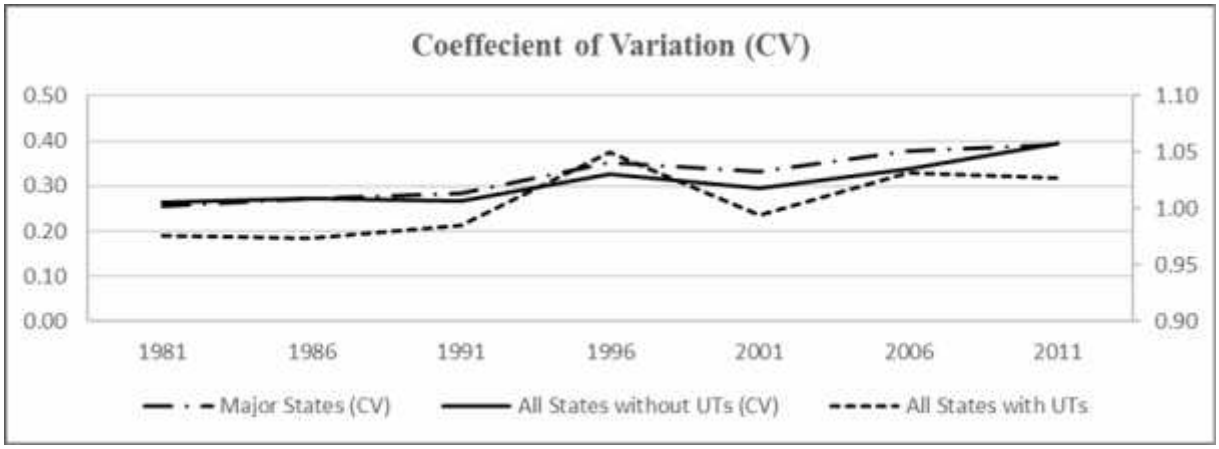
There are four different groups of states and Union Territories I have mentioned in Tab-2. Those all results are not statistically significant, but it clarifies the fact that one could perceive movement towards convergence if small states with higher per capita income are incorporated into the analysis of convergence.The formal regression results presented in Tab-2 substantiate these findings. The coefficients of Absolute β-Convergence of four different categories explain that the rateof convergence is higher in the group which excludes the UTs but interestingly none of the results of these two Combinations appear to be statistically significant.

Table-2: Regression Results of Absolute β-Convergence

Variables	β-coefficient	p-Value	
constant	0.033	0.543	All States and UTs
Per Capita GSDP_1980-81	0.001	0.893	
constant	0.047	0.640	16 Major States with 6 North-East States
Per Capita GSDP_1980-81	-0.001	0.950	
constant	-0.013	0.795	16 Major States with 4 UTs
Per Capita GSDP_1980-81	0.006	0.291	
constant	-0.079	0.400	16 Major States
Per Capita GSDP_1980-81	0.013	0.214	

Source: Author's Calculation based on Data of EPW Research Foundation

Fig-4: σ-Convergence in Three Groups of States and UTs



Source: Author's Calculation based on Data of EPW Research Foundation

The above mentioned figure suggests that the variation among different group of states has grown at higher rate after the year of 2000. It has also been observed that the variation seems to be higher among 16 major states as compare to other groups and if they are combined with NES the overall variation starts declining. Whereas the disparities across states strengthen once UTs are mixed with other states.It indicates that the rate of divergence declines when small states with high per capita income are included in the analysis.

V. Conclusion and Suggestions

Using cross-section data of 22 states and 4 UTs, the study concludes that the convergence hypothesis has failed to replicate the results in its favour in case of Indian states. The disparities in per capita GSDP has not declined over the period of 1980-2011 because the growth rates of the poor states could not be reached to the level that of the rich states. Whereas it shoots up after the year of 2000 as supported by the CV of different states and UTs.

The regression results show a tendency of convergence in the group which includes 16 mainstream states and 6 North- East states, while other three groups have shown divergence tendency. Furthermore, the divergence tendency starts declining when small states with high per capita income and UTs are included in dataset.

These results clearly support and strengthen the divergence view in case of India. The states located in Eastern part of India are more or less stagnant whereas states with better reforms and infrastructure are able perform better. On the basis of these findings the study can suggest to the state governments of the laggard states required to seek financial and policy helps from the Central government so that more equitable development could be acquired in coming years.

References

1. Alexiadis, Stilianos. 2010. "Convergence in Agriculture: Evidence from the European Regions ." *Agricultural Rconomics Review* .
2. Baddeley, Michelle, Kristy McNay, and Robert Cassen. 2006. "Divergence in India: Income Differentials at State Level, 1970-97." *Journal of Development Studies* .
3. Balaji, Pal, Suresh. 2014. "Agricultural Productivty Growth: Is There Regional Convergence ." *Economic and Political Weekly.*
4. Bhalla, G.S., Singh, Gurmail. 2009. "Economi Liberalisation and Indian Agriculture: A Statewise Analysis ." *Economic and Political Weekly.*
5. Bharadwaj, Krishna. 1982. "Regional Differentiation in India: A Note." *Economic and Political Weekly.*
6. Jefferey, Sach. D. 2001. "Understanding Regional Economic Growth in India ." *Prepared for the Asian Economic Panel Meeting.*
7. Kumar, Shiv, Ankush, Kamble Lala, and Ram , Khyali Chaudhary. 2014. "Agricultural Growth and Economic Convergence in Indian Agriculture." *Indian Journal of Agricultural Economics* .
8. Kumar, Utsav et al. 2012. "Growth in India's States in the First Decade of the 21st Century : Four Facts." *Economic and Political Weekly.*

9. Mukherjee, N. Anit, and Yoshimi Kuroda. 2003. "Productivity Growth in Indian Agriculture: Is there evidence of Convergence across Statae?" *Agricultural Economics* .
10. Nayyar, Gaurav. 2008. "Economic Growth and Regional Ineqaulity in India ." *Economic and Political Weekly.*
11. Poudel, N. Biswo, P. Krishna Poudel, and David Zilberman. 2011. "Agricultural Productivity Convergence: Myth or Reality." *Journal of Agricultural and Applied Economics* .
12. Raju, Swati. 2012. "Growth across States in the 2000s: Evidence of Convergence." *Economic and Political Weekly.*
13. Rao, Govinda, R.T. Shand, and K.P Kalirajan. 1999. "Convergence of Incomes Across Indian States: A Divergent View ." *Economic and Political Weekly.*
14. Ravallion, Martin, and Gaurav Datt. 2001. "Why has Economic Growth been More Pro-Poor in some States of India than others ." *Journal of Development Economics* .