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Regional Inequality in India:
An Interstate Analysis

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Abstract

The present study is a modest attempt to find out whether regional inequality is widening or narrowing over the years across the states of India. The results are based on the Per-Capita Net State Domestic Product (PCNSDP) at Factor Cost (2011-12 base pries) published by the Central Statistical Office, New Delhi. It is found that regional inequality not only exists across the states in India but also perpetuating over time. This trend needs to be reversed by policy intervention for balanced regional development so as to reduce socio-economic disharmony and ensure successful working of democracy.

Keywords: Regional Inequality, Per Caita Net State Domestic Product, Growth

1. Introduction

Regional inequality and the problems associated with it have become a widely debated topic in the literature of development economics in recent times. Regional inequality has not only distorted allocation of resources but also denied distributive justice leading to disproportionate growth of regions as well as people living within these regions. Countries all over the world and states within it, though in different proportions, have the same kind of experience of having both economically developed as well as less developed regions. The problem is confounded particularly in the developing countries where there are clearly visible inequalities in the rate of economic development among its jurisdictions. Since poverty anywhere is a potential threat to prosperity everywhere, it is in the centre stage of the policy agenda of the countries to minimize regional inequality so as to reduce social disharmony and ensure balanced growth for achieving maximum welfare.

Regional inequality may arise due to Natural and Man-made factors. Natural regional inequality is attributed to unequal distribution of natural resources such as land, water, power, mine, coal, transport, forest and so on. The states which are surrounded by hills, rivers and forests have transport problems that lead to high cost of developmental projects. So the states stay backward than other states which have smooth transportation. The states which are rich in mineral and other natural resources attracts Governments to take decision of locating industries and projects which create employment and other advantages for the residents there . On the other hand the states which are poor in mineral and other natural resources remain backward. Adverse climate, flood, cyclone also play a role for low rate of economic development of different regions and inequality between the regions. Man also has hand for regional inequality of the country. Man creates differences between the region on the basis of social, economic, religious, political and cultural beliefs. Man-made regional inequality means the man or Government put more efforts on the development of some regions by giving adequate subsides, loans, grants and investments while other regions remain neglected. The present study is an exercise to identify and group the Indian states on the basis of the level of their development. The history of economic development provides ample evidence in support of the development and disparity dichotomy. Two forces have been recognized – the forces of convergence and the forces of divergence. The former causes economic activities to disperse among regions, while the latter leads to accumulate economic activities in certain regions and hence to greater disparities between the regions (Myrdal, 1958; Hirschman, 1961; Williamson, 1969). There are, however, a lot of differences of opinions with respect to the relative strength of these two sets of forces.

2. Literature Review

2.1. Theories of development and regional inequality

Self-perpetuation Hypothesis advocated by Hughes in 1961 and empirically verified by Booth in 1964 found that regional inequalities diverge in the process of economic development. With contrast to it Accordion Effect Hypothesis developed by Hanna in1959 and found empirically valid by Hanna in 1959 and Perloff in 1960 suggest that regional inequalities converge as economic development takes off. However, the most widely accepted hypothesis is the Concentration Cycle Hypothesis developed by Myrdal in 1958 supported by Hirschman in 1961, Williamson in 1965 and Alonso in 1968. The hypothesis states that regional disparities diverge initially during earlier stages of development only to converge during later stages.

The empirical validity of the hypothesis is tested by Williamson (1965), Korpeckyz (1972) and Alonso (1980). Williamson confirmed with the help of a cross section study of twenty-four countries that inter-regional disparities tend to diminish in the later stages of development. Korpeckyz and Alonso went a little forward to suggest that the characteristics of economic development describe a bell shaped curve and therefore corroborate the findings of Williamson.

The political economic perspectives on regional development were actually pioneered by of Myrdal (1957) and Hirschman (1958). Myrdal explained the trend of regional inequality in terms of his famous theory of 'Circular and Cumulative Causation'. Myrdal believed that development, for diverse socio-economic and politico-demographic reasons, does not appear in all the regions simultaneously. Rather, it has a tendency to get itself concentrated in certain regions. The growing regions, once the development has started, will attract labour, capital and commodities from the lagging regions by offering higher wages and interest, which will support further growth of these regions. Myrdal has called this as 'backwash effect'. The other facet of Myrdal's model is that ultimately there will be 'spread effect' which will be diffusing the economic momentum from the growing areas to lagging regions in the neighboring areas, thereby stimulating a new cumulative causation process. But the spread effect works, once a country has reached a high average level of economic development. Therefore, in a developing country like India, backwash effect is stronger and outweighs the spread effect. Thus, there is an inherent tendency in the free play of market forces not only to create but also to increase the inequality among the regions. Myrdal's prescription is strong Government intervention in the distribution of economic activity to induce stronger spread effect in order to correct regional disparities.

Similarly, Hirschman explained the process of regional growth through 'Polarisation' and 'Trickle down' effects. He argued that once growth is kick-started, it tends to concentrate around the starting point. Development of growth points produces favourable forces as 'trickling down effects' and unfavorable forces as 'Polarisation effects'. In the early stages of economic development, the polarization effects are stronger than the trickle down effects. As a result, inequality increases. But in the long run, as growth proceeds, the inequality tends to decline and a process of convergence starts. Thus the regional inequality curve is likely to be an inverted 'U' with respect to the level of economic development (Kuznet-1958; Williamson-1965).

The Williamson model of divergence followed by convergence, however, was in direct contradiction to the implications of the Solow growth model where, due to diminishing returns in the leading regions, convergence is

the expected outcome. In other words, a region with low initial per capita income can be expected to grow at a faster rate compared to a region with higher initial average income (Barro and Sala-I-Martin -1995). The idea was initially proposed in an international context, where low-income nations were expected to grow faster than high-income nations . The reverse finding against the Solovian convergence hypothesis with regard to India is found in the empirical study by Ghose, Marjit and Neogi (1998) .

Rosenstein Rodan (1963) in his analysis of rural urban inequalities observed that the path towards greater equality is brought about through growing regional inequality. He was of the view that urban centres and industrialized regions grow much faster compared to the rural and agriculture dominated areas. But the absorption and diffusion effects of growth of the former regions do not crystallize for a long time in the places of development.

Friedman's Centre-Periphery Model (1960) provides a view of the space economy, consisting of rapidly growing central or core region and a slowly growing or stagnant periphery. In his model, core is typically a large metropolitan centre and the periphery is everything outside the core. Core is the warehouse of new ideas, technology, and capital to generate economic and cultural dynamism, The core regions have concentration of economies with high potentials for growth whereas the peripheral regions are characterized by stagnant or declining rural economies. In between core and periphery regions lie growth regions with a considerable growth rate. He was of the view that in the initial stages of economic development. regional disparities increase because growth is concentrated at few centres that act as suction pumps and pull the dynamic elements from other more static regions. He was therefore in support of state intervention to reduce regional inequality and improve distribution of welfare.

Richardson (1973) also attempted to explain the persistence of regional disparities through the working of economic forces. According to him, there are three potential convergence forces.

• The possibility of equilibrating factor flows as predicted by the Neo-Classical model

• The reallocation of resources within regions from low wage sectors to high productive high wage sectors

• High-income natured regions may slowdown future increases in per capita income

However, he says that, there is nothing inevitable about these convergent forces. According to him, the homogeneous characteristics of economic structure, variation in activity structure and uneven distribution of property owners over the regions are the factors, which lead to persistence of regional per capita income differences.

It seems, from the foregoing discussion, that there are three distinct long-term outcomes. One school of thought argues, following only economic principles, that convergence is the most likely outcome. Leftist economists, on the other hand, argue that economic principles are far less important than political conditions under which the economic actions are taken. Given the dependency of third world on first world and periphery on centre, divergence is the only logical outcome. In the middle lies a mix of beliefs and ideologies where, to begin with, divergence is to be expected, followed perhaps by some convergence depending on policy response and state action. Thus, the consensus opinion is that regional disparity is latent at least in the early stages of growth. But there is no time limit for the reversal of this trend. Now the question is whether we should allow this inequality to continue till the natural reversal takes place. This may be possible in the long run, when we are all dead. However, inequality and its perpetuation stand as obstacles to economic development. Hence, there is an urgent need for reversing this trend through well-conceived policies and programmes adopted by the state for speeding up development. The present study is a modest attempt to find out whether regional inequality is widening or narrowing over the years across the states of India.

3. Methodology and data

The present study is based on secondary data, on Per-Capita Net State Domestic Product (PCNSDP) at Factor Cost, collected from the publications of Central Statistical Office, New Delhi. The per-capita income is expressed in 2011-12 base prices for analysing the inequality among the states for the period from 2012-13 to 2017-18. Simple statistical tools like tables, ratios, annual growth rate and rank correlation have been used to analyse the data and elicit the results.

4. Discussion and results

The developed and under-developed states can be identified on the basis of their performance. In this study Per-Capita Net State Domestic Product has been taken as the variable to estimate the regional inequality among the states. Two time periods i.e. 2012-13 and 2017-18 have been taken to check with passing period of times whether the high performing states and low performing state have fared equally well or the former category states have fared better compared to the latter ones.

Table-1 shows 28 states of India, their PCNSDP in 2012-13 and 2017-18 and their average annual growth rate.

It is observed that Goa has the highest PCNSDP followed by Sikkim whereas Bihar has the lowest PCNSDP preceded by Uttar Pradesh. The states having above the average PCNSDP include Gujarat, Haryana, Himachal Pradesh, Karnataka, Kerala, Maharashtra, Punjab, Tamil Nadu, Telangana and Uttarakhand. The rest of the states have this figure below the average PCNSDP both at the beginning and end of the study period.

Table 1: Per-capita Net State Domestic product at factor cost (Base Year-2011-12)

States	2012-13	2017-18	Average Annual Growth rate (in%)	States	2012-13	2017-18	Average Annual Growth rate (in%)
Andhra Pradesh	68,865	1,06,864	11.04	Manipur	38,954	48,113	4.70
Arunachal Pradesh	72,820	89,217	4.50	Meghalaya	59,703	61,789	0.70
Assam	41,609	57,099	7.45	Mizoram	60,261	1,05,617	15.05
Bihar	22,201	28,101	5.32	Nagaland	55,482	66,305	3.90
Chhattisgarh	56,777	68,543	4.15	Odisha	50,714	69,864	7.55
Goa	2,20,019	3,37,734	10.70	Punjab	88,915	1,10,834	4.93
Gujarat	96,683	1,44,090	9.81	Rajasthan	58,441	74,453	5.48
Haryana	1,11,780	1,57,649	8.21	Sikkim	1,60,553	2,19,792	7.38
Himachal Pradesh	92,672	1,28,840	7.81	Tamil Nadu	96,890	1,29,328	6.70
Jharkhand	44,176	54,246	4.56	Telangana	92,732	1,32,380	8.55
Karnataka	94,382	1,42,943	10.29	Tripura	50,366	74,637	9.64
Kerala	1,03,551	1,36,364	6.33	Uttar Pradesh	32,908	41,082	4.97
Madhya Pradesh	41,287	55,677	6.97	Uttarakhand	1,06,318	1,47,204	7.69
Maharashtra	1,03,904	1,41,152	7.17	West Bengal	53,157	65,497	4.64
Average					77,719	1,06,979	7.53
Standard Deviation (SD)					41494.06	63573.50	10.64
Co-efficient of variation					53.39	59.42	2.26

Source: Central statistical Office, New Delhi

It is heartening to note that there is a positive growth of PCNSDPG in all the states and the average growth of all the states taken together is estimated to be 7.53 per cent. While some states have grown faster than this average growth rate others are below this rate. The average annual growth rates of the states ranges from 0.7

per cent to 15.05 per cent. Sikkim has the highest growth rate (15.05 per cent) followed by Goa (10.7 per cent). The lowest growth rate is witnessed in the case of Meghalaya (0.7 per cent) preceded by Nagaland (3.9 per cent). While Andhra Pradesh, Gujarat, Haryana, Himachal Pradesh, Karnataka, Punjab, Tamil Nadu, Tripura and Uttarakhand have this growth rate above the average growth rate, other states have lagged behind. It may be pointed out that two states such as Kerala and Maharashtra those have PCNSDP above the all India average are trailing behind the national average growth rate whereas the reverse is found in the case of Tripura.

The Coefficient of Variation (CV) is calculated to be 53.39 per cent and 59.42 per cent in the year 2012-13 and 2017-18 respectively. The value of CV indicates that the inequality among the states is not only significant but also it is widening over the years.

An attempt is made here to categorise states on the basis of their PCNSDP and their growth performance.

High Income States   : State PCNSDP > Average PCNSDP + SD

Upper Middle Income States   : Average PCNSDP < State PCNSDPS < Average PCNSDP + SD

Lower Middle Income States   : Average PCNSDP - SD < State PCNSDPS < Average PCNSDP

Low Income States   : State PCNSDP < Average PCNSDP - SD

The results are presented in Table-2 below

Table 2: Categories of the Indian States

Category	States	
	2012-13	**2017-18**
High Income Group	Goa, Sikkim	Goa, Sikkim
Upper Middle Income Group	Haryana, Maharastra, Uttarakhand, Kerela, Tamil Nadu, Gujarat, Karnataka, Telengana, Himachal Pradesh, Punjab	Haryana, Uttarakhand, Gujarat, Karnataka, Maharashtra, Kerela, Telengana, Tamil Nadu, Himachal Pradesh, Punjab
Lower Middle Income Group	Arunachal Pradesh, Andra Pradesh, Mizoram, Meghalaya, Rajasthan, Chhatisgarh, Nagaland, West Bengal, Odisha, Tripura, Jharkhand, Assam, Madhya Pradesh, Manipur, Uttar Pradesh	Andra Pradesh, Mizoram, Arunachal Pradesh, Tripura, Rajasthan, Odisha, Chhattisgarh, Nagaland, West Bengal, Meghalaya, Assam, Madhya Pradesh, Jharkhand, Manipur
Low Income Group	Bihar, Uttarpradesh	Bihar, Uttarpradesh

Two States, Goa and Sikkim come under High Income Group and Two States like, Bihar and Uttarpradesh come under Low income group both in year 2012-13 and 2017-18. Ten States, Haryana, Uttarakhand, Gujarat, Karnataka, Maharashtra, Kerela, Telengana, Tamilnadu, Himachal Pradesh, Punjab are in the Middle Income Group(upper) . Rest sixteen states, Arunachal Pradesh, Andra Pradesh, Mizoram, Meghalaya, Rajasthan, Chhatisgarh, Nagaland, West Bengal, Odisha, Tripura, Jharkhand, Assam, Madhya Pradesh, Manipur, Uttar Pradesh comes under Middle Income group (lower). So there is no change in the States in the four Categories during the study period. But the average rate of growth is found to be high among the higher income and Middle Income (Upper) group of states compared to the other states. This has accentuated the regional disparity across the states in India. In order to confirm the above result the ranks of the states on the basis of their PCNSDP and rank correlation coefficient for 2012-13 and 2017-18 is presented in Table-3

Table 3: Rank of the States on the Basis of PCNSDP

States	2012-13	Rank	2017-18	Rank
Andhra Pradesh	68,865	14	1,06,864	13
Arunachal Pradesh	72,820	13	89,217	15
Assam	41,609	24	57,099	23
Bihar	22,201	28	28,101	28
Chhattisgarh	56,777	18	68,543	19
Goa	2,20,019	1	3,37,734	1
Gujarat	96,683	8	1,44,090	5
Haryana	1,11,780	3	1,57,649	3
Himachal Pradesh	92,672	11	1,28,840	11
Jharkhand	44,176	23	54,246	25
Karnataka	94,382	9	1,42,943	6
Kerala	1,03,551	6	1,36,364	8
Madhya Pradesh	41,287	25	55,677	24
Maharashtra	1,03,904	5	1,41,152	7
Manipur	38,954	26	48,113	26
Meghalaya	59,703	16	61,789	22
Mizoram	60,261	15	1,05,617	14
Nagaland	55482	19	66,305	20
Odisha	50,714	21	69,864	18
Punjab	88,915	12	1,10,834	12
Rajasthan	58,441	17	74,453	17
Sikkim	1,60,553	2	2,19,792	2
Tamil Nadu	96,890	7	1,29,328	10

Telangana	92,732	10	1,32,380	9
Tripura	50,366	22	74,637	16
Uttar Pradesh	32,908	27	41,082	27
Uttarakhand	1,06,318	4	1,47,204	4
West Bengal	53,157	20	65,497	21
Rank co-efficient of co-relation			**0.96**	

Though there is no change in the States in the four Categories of the groups but some intra-group changes are noticed in the middle income groups as evident from the change of their ranks. The co-efficient of Rank Correlation of the states is worked out to be 0.96 between 2012-13 and 2017-18 which confirms the fact that the upper income states have grown faster compared to lower income states thereby accentuating regional inequality over the years.

5. Conclusion

It may be construed from the foregoing discussion and results that the regional inequality not only exists across the states in India but also perpetuating over time. This trend needs to be reversed for balanced regional development so as to reduce socio-economic disharmony and ensure successful working of democracy. The low income and lower middle income categories of states need special bailout packages for speeding of their development ethos. Of course flow of funds to these states from the centre is no guarantee to their development activities unless they are provided with a level playing field. They are to be assisted on a sustainable basis till they come up to take-off their own.

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