

GROWTH AND DISPARITY OF INDIAN STATES IN THE POST-REFORM ERA

R. Ganesasubramanian*

ABSTRACT

India is a vast country with wide range of heterogeneous entities in several aspects such as population, weather, political scenarios and natural resources etc. Given its political diversity, issues related to regional growth and disparity has been in the center stagesince its Independence for. Despite significant focus, the regional economic disparity persists. Indian economy achieved noteworthy progress in terms of several accounts in the post-reform period. Notably,per capita income growth of the country had increased from 2.8 per cent in 1980-92 to 5.1 per cent 1993-2012. Butgrowth of per capita income across the states continues to be uneven. The present study is an attempt to know whether the reformhad role in increasing/decreasing regional growth and disparity and to find out the main cause of disparity. The study period covers from 1980-2012 and includes data for all States and Union Territories in India. It is found that the dispersion is reduced during post-reform period as compared to that of pre-reform period. To assess the dynamics of inter-state disparity, rank analysis is employed bothfor the pre- and post-reform periods. It was found that the disparity has deteriorated in the post-reform period amongst general category states with faster growth of rich states. However, the disparity across special category states relatively improved. To assess inter-temporal mobility of states, the study appliedKendal's mobility of concordance. The results exhibit that during post-reform period special category states were significantly mobileand reduced income disparity amongst them as compared to general category states.

Key words: Economic Reforms, Regional Growth

JEL Classification: O18, R11

* R. Ganesasubramanian is a Research Scholar [ICSSR Fellow] in the Department of Economics, Pondicherry University, Pondicherry – 605014.

I. Introduction

Regional growth and disparity have gained a significant importance since independence and enhances the economy as the balanced manner. Performance of constituent states played a significant role in achieving robust economic growth, as the growth performance of our country is based on the growth of constituent states. These states are having heterogeneous spatial characteristics based on different entities as such geographically, politically and even resource oriented. However, we aspired to develop as a 'nation' well connected by embarking a policy of balanced regional development. Moreover, balanced regional development is a prerequisite towards securing economic justice. However, the balanced development was not a serious concern until the second five year plan. It's aggravated from third five year plan notably 'crush poverty' and 'food for work program' were concerned to reduce the disparity among the rich and poor. In recent times, new economic policies, programs and schemes strived to achieve robust and balanced growth across the states. However, the growth of Indian economy had been achieved below 3.5 per cent per capita income was 1.3 per cent and the population growth has been 2.2 per cent until 1950-51 and 1979-80. This clearly exhibit that the growth of per capita income is less than the growth rate of population on due that the program and policies were not succeeded. During 1980-1 and 1992-3 some reform measures such as import substitution and license permit raj had been taken out to prevent certain firms from becoming more efficient by providing protection from foreign competition. The GDP growth rate attained 5.3 per cent per capita income achieved higher growth around 3.2 per cent and population growth declined by a margin of 2.1 per cent.

Despite the implementation of many of the noteworthy programs, significant growth was not achieved due to the inefficiency of government measures. The government faced huge financial crisis. Dandekar (1992) explains, "In India, during pre-reform period, the Government had undertaken gamut of policies to reduce disparity and enhance balanced growth, but measures were grossly inadequate". The crisis resulted in employing new economic reforms to restore economy from financial crisis. As a result of these policy measures, a significant growth rate around 6 per cent of GDP was achieved during 1993-94, 4.1 per cent of Per capita income and 1.9 per cent of population growth during same period.

Despite vigorous growth has been achieved as country as a unit level, whereas as a distributional level huge difference among the states at both economic and social aspects. Most of

the studies on inter-state and inter regional differences were in the context of neo classical growth model. These models were under probable assumptions that demonstrate convergence of incomes. These convergence theories do not explain the basic facts on the ground realities. In due, the present study made an attempt to measure the growth performance across all states and UTs in terms of both economic and social development aspects.

The study is schematized in four sections: Section I explains introduction about the study; Section II informs brief literature which support to the study; Section III details methodological framework; Section IV elucidates the result and discussion and section V concludes the study.

II. Brief Review of Literature

Considerably a large number of studies have been conducted, to find out the extent of regional disparities in economic growth and development. It begins with our reach to review all literature in the concerned direction. Hence, an attempt has been made to sieve out the important work in this direction. For instance, François Perroux (1955) in his growth pole theorem made clear the fact, "Growth doesn't appear everywhere at the same time, it spreads by different channels and with variable terminal effects for the economy as a whole".

Bhattacharya and Sakhivel (2004) have analyzed that how SDP growth contributes to regional divergence during pre and post reform decade. The study explained that the overall GDP has increased marginally during post reform decade but the disparity among the states has massively increased during same period compared to pre reform period and industrially sound states are now growing faster than backward states.

Ahluwalia(2000) provided insights to know the economic performance of different states in post-reform period. The study reveals that though the average growth rate of GSDP for all the states in the post-reforms period has been increased but it is not much accelerated as compared with the pre-reform period. Whereas, in GDP there is a greater improvement in post-reforms period as compared to pre-reform period and there was a considerable variation among the states in terms of average growth rate of GSDP.

Nagesh Kumar(2000) conducted a study to review the performance of Indian economy in terms of broad macro economic indicators over the past 7-8 years of 1990s. Study revealed that the average growth rate is increased by at least 1.1 percentage growth points, which is higher than the rate achieved during the pre-reforms period. This depicts the robust growth performance of Indian economy achieved during first five years of reforms phase, which has considerably

declined in latter phase due to East Asian crisis. The overall growth and sustainability of service and industrial sector are relatively higher in post reform period, whereas Primary sector relatively lags behind. Primary sector was largely governed by the external sector.

Dasgupta et.al (2000) examined the economic growth performance of Indian states for the period 1960-61 to 1995-96. In both pre and post reform period, per capita GSDP was varied across the states. The shares of different sectors contribution to the GSDP were converged. The study period confined only five years of the post reforms to examine the effect of new economic reforms on growth performance of the Indian states.

Shand and Bhide (2000) studied about disparities among the states of India in terms of size, income and structural behavior. The study results states that the sectoral growth rate analysis significantly correlated with overall growth of the economy. Notably agriculture sector growth had contributed much during agriculture reform. The states with high growth rate consistently performed above average over the three decades. The magnitude and individual performance may differ but relative position is same in the overall study period. The disparities were occurred due to the decentralization of government and the growing responsibilities of states in the reform process.

Dholakia (2009) attempts to find the growth accelerating states in India and to check what matters and, sources this acceleration. The study period covered from 1980-2003 across 20 major states. The study result found that Gujarat, West Bengal, Karnataka, Maharashtra, Kerala and Tamil Nadu were the major contributions to the growth acceleration since post reform period. As per the Gini-coefficient result, the regional disparities increased during the post reform period but the causality test showing that there is a possibility to long term spread effects. To strengthen the spread effects, the domestic economy should be more integrated and interlinked with free flow of goods, services and factors of production. Moreover, the states need significant administrative reform to implement the policy suggestion given by the planning commission. There are enough reasons to focus much on both national and distributional aspects, as we are in a federal form of government to give a power to center and state. States makes the states pre-eminent in many areas and co-equal with the center in others.

Despite analysis of many studies based on different methodologies as convergence analysis, rank analysis and gini coefficient, but it is not concluded that what and why the state backward/forward instead they arrive at normative conclusions to attain balanced growth. In

addition to it, none of the study has covered all states and UTs for their analysis but inturn instead used major states. As we have already come across 20 years of reforms, a detailed study must be carried out to assess the effect of economic reforms on the growth performances of Indian states. For that, it is important to study the differences in growth performance among the states in order to observe what the state government had done and not done for its own growth process as compared to national growth during the past 30 years of both pre and post economic reform period.

III. Methodology and Data Issues

The study makes an attempt to analyze the recent trends in growth performance among the states of India during pre and post reform period from 1980-81 to 2011-12. For logistic reasons, data disaggregated into two sub periods which are 1980-81 to 1992-93 and 1993-94 to 2011-12. The study entirely based on secondary data. The required data for analysis were collected from Census of India and RBI. For analyzing the recent trends in economic growth performance across the states in India by using Net State Domestic Product (NSDP), growth of population, per capita NSDP. The study attempts to analyze the growth performance through simple statistical techniques as growth rate, variation, co-efficient of variation and Rank analysis. Study covered all states and UTs. For the purpose of analysis states are disaggregated into two category General category states and Special category states, with in the General category states newly created states are included.

IV. Empirical Results and Discussion

Before analysing the state as a unit, must understand country as unit because aggregate of all the constitutional states and UTs share of contribution as a unit level national Growth. As a necessary to analyse nation as a whole.

Table:1

Period	NNP	Per capita NNP
1950-1 – 1979-80	3.5	1.3
1980-1 – 1992-93	5.0	2.8
1993-4 – 2012-13	6.8	5.1
1980- 1 – 2012-13	6.1	4.2

1950-1 – 2012-13

4.9

2.8

Note: NNP figures are at factor cost and at constant prices at 2004-05.

Growth rates are Average annual growth rates.

Source: Hand book on statistics on Indian Economy, RBI.Table No.224.

Since independence until 80s, the 30 years of planning achieved only just less than 3.5 per cent per annum. The growth rate had surged to 6.1 per cent per annum during post 80s. Post 80s can be disaggregated into two bench mark periods: 1980–1992 and 1993-2012 ie., Pre and Post economic reform period respectively. It is obvious during pre reform period that the economy has been grown up with 5.0 per cent whereas during post reform period the economy achieved robust economic growth around 6.8 per cent. The NNP growth rate has been at its best in the post economic reform period compared to all other sub periods based on (Table:1). Moreover, the Per capita NNP has also drastically surged during post reform period compared to all other sub periods. This achievements happened due to mainly because of drastic fall in population growth compared to rest of the periods. And this over all picture will critically measure the distributional level state as a unit measure.

Table No 2 explains that the performance of Growthrate of NSDP and PC NSDP across states of country during pre and post economic reform period. The growth rate of PC NSDP of all states combined together increases from 2.6 per cent of pre reform period to 5.0 per cent during post reform period. The speed of acceleration had not been similar among the General Category States (GCS), Special Category States (SCS) and Union Territories (UTs). The SCS states were 2.6 per cent and UTs 2.2 per cent of PC growth were less than the GCS states 3.0 per cent during pre reform period whereas NSDP growth was 5.5 per cent in both SCS and UTs and 5.1 per cent in GCS. It shows that during pre reform period growth rate of population was high in SCS and UTs as compared to GCS. During post reform period the trend in growth performance were changed. The SCS and UTs PC NSDP were significantly improved when compared to GCS. It is mainly due to the deterioration of population growth on SCS and UTs.

Table: 2

Annual Average growth rate of NSDP and Per capita NSDP during Pre and Post economic Reform period (1981-92) and (1993-11)

(1) States	NSDP (Per cent Per Annum)		PC NSDP (Per cent Per Annum)	
	(2) 1981-92	(3) 1993-12	(4) 1981-92	(5) 1993-12
Andhra Pradesh	5.7	7.2	3.5	6.0

Bihar	3.3	6.6	1.1	4.5
Gujarat	7.0	7.8	4.9	5.9
Haryana	5.9	7.6	3.4	5.4
Karnataka	5.5	6.7	3.5	5.3
Kerala	3.5	7.1	2.2	6.2
Madhya Pradesh	4.1	6.1	1.7	4.1
Maharashtra	6.3	7.6	4.0	5.7
Orissa	3.4	5.5	1.5	4.1
Punjab	5.3	5.1	3.3	3.2
Rajasthan	7.6	6.7	4.9	4.4
Tamil Nadu	5.4	7.2	4.0	6.3
Uttar Pradesh	4.3	7.0	2.0	2.9
West Bengal	4.4	6.7	2.2	5.3
Combined all				
GCS	5.1	6.8	3.0	5.0
Arunachal Pradesh	9.0	6.5	5.7	4.4
Assam	3.9	4.1	1.7	2.5
Himachal Pradesh	4.6	6.9	2.6	5.3
Jammu & Kashmir	2.9	5.0	0.3	3.0
Manipur	5.1	5.0	2.4	2.9
Meghalaya	4.5	7.0	1.6	5.1
Nagaland	8.7	6.6	4.4	2.7
Tripura	5.1	8.3	2.2	7.0
Combined all				
SCS	5.5	6.2	2.6	4.1
A&N Islands	5.5	7.4	1.2	4.0
Delhi	7.9	9.1	3.5	5.9
Goa	6.5	7.7	4.9	5.0
Pondicherry	2.0	10.6	-1.0	8.4
Combined all UTs	5.5	8.7	2.2	5.9
Combined All	5.4	7.2	2.6	5.0

Note: NSDP figures are at factor cost and at constant prices. Recently created states were not included in respective Parent's State Growth rates are Average annual growth rate.

Source: Hand book on statistics on Indian Economy, RBI Table No.5 and 9.

Moreover, the magnitude of dispersion of NSDP growth is high during pre-reform period compared to post-reform period. The range of dispersion in the pre reform period among the GCS states was from a low of 3.3 per cent per annum in Bihar to a high of 7.6 of Rajasthan it's more than double of Bihar growth. In the post reform period the dispersion was fairly less, which is from a low of 5.1 per cent in Punjab to a high of 7.8 per cent in Gujarat it's less than the factor of 2. As concerned about the SCS states was low of 2.9 per cent of Jammu and Kashmir to high of 9.0 per cent of Arunachal Pradesh it's factor of more than 3. In the case of UTs, it is less than 2.0 per cent in Pondicherry to high of 7.9 per cent in Delhi. And its dispersion were closed to

factor of 4 during pre reform period. Whereas in the post reform period dispersion was less, from a low of 4.1 per cent in Assam to high of 8.3 per cent of Tripura it's factor of more than 2 by the SCS states. In concerned with UTs the dispersion was significantly less compared to other GCS and SCS states, it was from a low of 7.4 per cent in A&N Islands to 10.6 per cent in Pondicherry. It's factor of less than 2. Whereas during pre-reform in terms of PC NSDP growth 1.1 per cent in Bihar to 4.9 of Gujarat and Rajasthan its factor of more than 4. In post reform period 2.9 in Uttar Pradesh to Tamil Nadu 6.3 per cent its factor of less than 3.

The conclusion is that in both the aspects growth of (NSDP and PC NSDP) the dispersion was significantly decreased during post reform period in UTs compared to rest of GCS and SCS states compared to pre reform period and followed by SCS and GCS respectively. In the group of BIMARU states Bihar and Madhya Pradesh had a significant improvement whereas Uttar Pradesh has received less attention in during post reform period compared to pre reform period. In case of Rajasthan the growth performance had deteriorating during post reform period compared to pre reform period. The overall observation is that poor states had less attention compared to richer states during post reform period as compared to pre reform period. In some states the NSDP growth and PC NSDP different with different states. In due that we could not measure the growth and it's really outcome of reform measures.

Rank analysis

Rank analysis helps to know the relative performance of states as based on their per capita NSDP overtime. Per capita income (PCI) is a crude indicator of measuring inequality among the states. How the PCI differential has evolved over time and it will gives growth has become equalized among the states. In this we have ranked the state in descending order which means higher the per capita income the rank has to be 1 and immediate second highest to be 2 and so on. Due to the unavailability of UTs data, this analyses is limited with 22 states (both GCS and SCS) of the union.

Table no4 and 5 shows, the per capita NSDP performance of each state in pre and post reform period respectively. The table reveals rather stable pattern of performance of states. The state which had a low rank during 1980 continues to have low rank and state which had high rank sustains its high rank. For instance, in the case of GCS, Bihar, Kerala, Madhya Pradesh, Odisha, Rajasthan, and Uttar Pradesh retain worst performance in the pre economic reform

period. Incontradictory, Gujarat, Haryana, Maharashtra and West Bengal. Moreover, the states which have a medium ranks as Andhra Pradesh, Tamil Nadu and Karnataka. While Punjab, Maharashtra, Haryana, Gujarat and West Bengal are holding top five positions and Bihar, Uttar Pradesh, Odisha, Madhya Pradesh and Rajasthan occupy the five position from the last. Tamil Nadu, Karnataka, Andhra Pradesh and Kerala were retaining middle position during pre-economic reform period. As far as SCS is concerned, Arunachal Pradesh and Himachal Pradesh occupy top two positions whereas Assam and Tripura stand last two positions during the same period.

In GCS, during post reform period there has been marginal change in the top five states. For instance, Tamil Nadu replaces West Bengal, whereas among lower ranked states there has been no change. All southern states were improved one rank ahead and it proves that these states were benefited from reform initiatives.

In the case of SCS, Himachal Pradesh and Nagaland replaces Arunachal Pradesh in the top two states whereas bottom two states Manipur and Assam. Tripura made better performance during Post-reform period.

However, the study found the GCS, has been no significant change in the top and bottom five ranks during pre and post reform periods whereas SCS large variation exist compared to pre reform period. In the case of actual PCI difference between the highest and lowest has much wider during post-reform period compared to pre-reform period, which is to give credibility to the ranks we have given the average rank of over the period and the degree of dispersion over the year.

In order to test the degree of relative changes in the consistency or stability different years in a particular period are used to find the coefficient of concordance. The following formula will explain the stability in relative changes over the time period in both GCS and SCS for two set of periods.

$$\text{Coefficient of concordance } W = \frac{S}{1/12k^2(n^3 - n)}$$

Where

k= no of rankings of the states

n= no of States

S=the sum of deviations of the n sum of ranks allotted to the states in each year in respective means.

In table 3 exhibits that during post-reform period stability of concordance between the rankings were less compared to pre reform period. Both in pre and post-reform period, the

stability of concordance is less when compared with both the sub periods. In the case of SCS, the stability of concordance has relatively less as compared to GCS in all periods. It shows that SCS are relative position frequently changed as compared to GCS. However both the category states are exhibiting in the long term and may have possibility to change position.

In this context, it is useful to compute the average rank and standard deviation which will explain state's average ranking relative to the other states and deviation around the average position respectively for the set of period. It can be observed that the table 3 and 4 for pre and post economic reform period. The fluctuations have been largest in the case of Rajasthan, Odisha, Madhya Pradesh, Kerala and Tamil Nadu during pre-reform period whereas Punjab, Kerala, Gujarat, Haryana and Maharashtra during post reform period.

In the case of SCS largest deviation was Jammu and Kashmir, Assam during pre-reform period whereas Tripura and Nagaland in during post-reform period. In both GCS and SCS, the average standard deviation increased in post-reform period compared to pre-reform period around 0.74 to 0.86 and 0.85 to 0.95 GCS and SCS respectively. The deviation is relatively high in SCS compared to GCS.

However the standard deviation does not show, the state whether position is above or below the average rank. For better understanding count the number of worse years, means by the number of times the state has (short of) exceed the average rank. During pre-reform period the Bihar and Punjab's standard deviation were less compared to rest of others, even the performance of states were worst and better respectively. The deviation can explain only the change of relative position over a time period. To ensure the sign of growth performance among the states between the sub-periods will take difference (Pre-Post) of average rank. If it is 0 there has been no change between the periods; if it's positive the state has been better during post period than the pre reform period and vice versa.

Table: 3

Kendall's Coefficient of Concordance

Period/States	GCS	SCS
1980-92	0.96	0.84
1993-11	0.94	0.81
1980-11	0.91	0.62

(The Results are significant at 1per cent level)

Source: Author's calculation

Concordance Indices to assess the mobility of ranking

The following methodology was proposed of Boyle and McCarthy (1997), based on this methodology can construct index to assess the mobility of ranks over the time period. It can easily catch inter temporal mobility in terms of ranking of states over the year by per capita income levels. They have proposed multiannual version of RCt and a binary version of RCat of the concordance index. The multi annual measure, extending over the whole period, contains all-

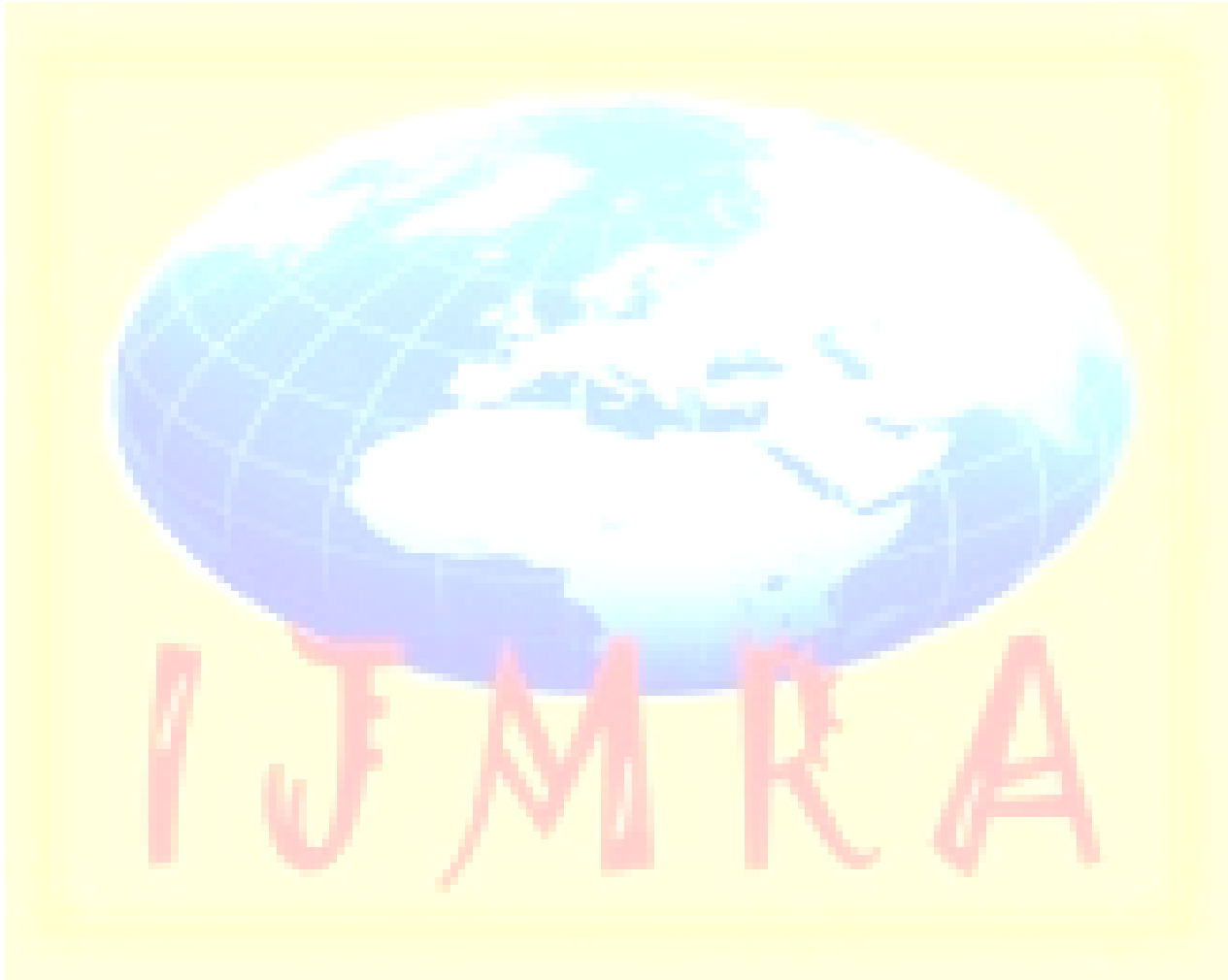


Table: 4

Per capita NSDP Ranking during Pre-Reform Period (1980-1992)

STATES	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	SD	AVE
General Category States (GCS)															
Andhra Pradesh	9	8	7	7	8	8	8	8	8	8	7	8	8	0.6	7.8
Bihar	14	14	14	14	14	14	14	14	14	14	14	14	14	0.0	14.0
Gujarat	4	4	4	4	4	4	4	5	4	4	4	4	4	0.3	4.1
Haryana	3	3	2	3	3	2	2	3	2	3	2	2	3	0.5	2.5
Karnataka	6	7	6	6	7	7	6	6	7	7	8	7	7	0.6	6.7
Kerala	7	9	9	12	9	9	9	9	11	10	10	9	10	1.2	9.5
Madhya Pradesh	10	10	10	10	12	11	13	10	13	13	11	12	11	1.2	11.2
Maharashtra	2	2	3	2	2	3	3	2	3	2	3	3	2	0.5	2.5
Orissa	11	11	13	11	13	10	10	12	10	11	13	13	13	1.3	11.6
Punjab	1	1	1	1	1	1	1	1	1	1	1	1	1	0.0	1.0
Rajasthan	13	12	12	9	10	13	11	13	9	9	9	10	9	1.7	10.7
Tamil Nadu	8	6	8	8	6	6	7	7	6	5	5	5	5	1.2	6.3
Uttar Pradesh	12	13	11	13	11	12	12	11	12	12	12	11	12	0.7	11.8
West Bengal	5	5	5	5	5	5	5	4	5	6	6	6	6	0.6	5.2
Special Category States (SCS)															
Arunachal Pradesh	3	3	2	1	1	1	1	1	1	1	1	1	1	0.8	1.4
Assam	8	6	6	6	6	6	6	7	8	8	8	8	8	1.0	7.0
Himachal Pradesh	2	1	4	3	4	3	2	3	2	2	2	2	2	0.9	2.5
Jammu & Kashmir	1	2	1	2	2	2	3	5	4	4	4	5	5	1.5	3.1
Manipur	4	5	5	5	5	5	5	4	5	5	5	4	4	0.5	4.7
Meghalaya	5	7	7	7	7	7	7	6	7	6	6	6	7	0.7	6.5
Nagaland	5	4	3	4	3	4	4	2	3	3	3	3	3	0.8	3.4
Tripura	7	8	8	8	8	8	8	8	6	7	7	7	6	0.8	7.4

Table: 5

Per capita NSDP Ranking during Post-Reform Period (1993-2011)

STATES	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	SD	AV E
General Category States (GCS)																					
Andhra Pradesh	8	8	8	8	10	8	8	8	9	9	7	7	8	8	8	8	8	8	8	0.7	8.1
Bihar	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	0.0	14.0
Gujarat	4	4	3	3	3	3	4	7	6	6	5	5	3	4	3	3	3	3	3	1.3	3.9
Haryana	3	3	4	4	4	4	3	2	2	1	1	1	2	2	2	2	1	2	2	1.1	2.4
Karnataka	7	7	7	7	6	6	6	6	7	7	9	8	7	7	7	7	7	7	7	0.7	6.9
Kerala	9	6	6	6	7	7	7	5	4	4	4	4	4	5	5	5	5	5	5	1.3	5.4
Madhya Pradesh	11	11	11	11	11	11	11	11	11	11	12	12	12	12	12	12	12	12	12	0.5	11.4
Maharashtra	1	2	1	2	1	2	1	3	3	3	3	3	1	1	1	1	2	1	1	0.9	1.7
Orissa	13	13	13	13	13	12	12	12	12	12	11	11	11	11	11	11	11	11	11	0.8	11.8
Punjab	2	1	2	1	2	1	2	1	1	2	2	2	6	6	6	6	6	6	6	2.2	3.2
Rajasthan	10	9	10	10	8	10	10	10	10	10	10	10	10	10	10	10	10	10	10	0.5	9.8
Tamil Nadu	5	5	5	5	5	5	5	4	5	5	6	6	5	3	4	4	4	4	4	0.7	4.7
Uttar Pradesh	12	12	12	12	12	13	13	13	13	13	13	13	13	13	13	13	13	13	13	0.5	12.7
West Bengal	6	10	9	9	9	9	9	9	8	8	8	9	9	9	9	9	9	9	9	0.8	8.7
Special Category States (SCS)																					
Arunachal Pradesh	1	3	2	3	3	3	3	5	3	5	3	3	3	4	3	3	4	5	5	1.1	3.4
Assam	8	6	6	8	8	8	8	7	8	7	7	8	8	8	8	8	8	8	8	0.7	7.6
Himachal Pradesh	2	2	3	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.6	1.3
Jammu & Kashmir	5	5	5	5	5	6	6	6	6	6	6	6	6	6	6	6	6	6	6	0.5	5.7
Manipur	4	7	8	7	7	7	7	8	7	8	8	7	7	7	7	7	7	7	7	0.8	7.1
Meghalaya	7	4	4	4	4	4	2	4	5	4	5	4	5	5	5	5	5	5	4	1.0	4.4
Nagaland	3	1	1	1	1	2	4	2	4	3	4	5	2	2	2	2	2	2	2	1.2	2.4
Tripura	6	8	7	6	6	5	5	3	2	2	2	2	4	3	4	4	3	3	3	1.8	4.1

-possible pairs of years for which the binary measure could be computed. We have calculated the multi-annual measure of inter-temporal mobility in the ranks of states. The measure seeks to capture the Kendall's index of rank concordance. The value of indices ranges from 0 to 1. The value is closer to 0, the mobility of states over the period within the distribution; whereas 1, perfect immobility of states. The following formula will explain the logic behind methodology,

$$RC_t = \frac{\text{Variance} \sum_{t=1}^T AR(Y)_{it}}{\text{Variance}\{(T+1)*AR(Y)_{i0}\}}$$

Where $AR(Y)_{it}$ = the actual rank of country i 's per capita income level in year t ; $AR(Y)_{i0}$ = the actual rank of country i 's per capita income level in initial year 0; $(T+1)$ = number of years for which data are used in computing the index. The binary measure, on the other hand, can be obtained by considering the ranks in years t and 0 and given by

$$RCA_t = \frac{\text{Variance} \{AR(Y)_{it} + AR(Y)_{i0}\}}{\text{Variance}\{2*AR(Y)_{i0}\}}$$

Clearly, the multi-annual measure, extending over the whole period, contains all possible pairs of years for which the binary measure could be computed. The intuitive interpretation of this measure is not for to seek. First of all, let's note that the multi-period measure can be calculated for every value of T , that is $T=0, 1, 2$, and so on. Second, the denominator gives the variance of the sum of the rankings if the relative position of the states remains unchanged in every period from 0 to T . This is obtained by multiplying the base period ranking by $(T+1)$ and then calculating the variance of the product across states. The numerator, on the other hand measures the inter-state variation of the sum of the actual rankings of the states over the period from 0 to T . Now, it can be shown that the variance of the sum of rankings (ie, denominator of $[RC_t]$) is maximum if the states did not have any change in the ranking over time. The variance in the numerator, however, could be zero since the ranking may change in such a manner that the sum becomes the same for all the states.

We have calculated index of concordance for each category of states and also for both pre and post-reform period; using multi-annual version of index of concordance for inter-temporal mobility of the states in terms of PC NSDP. These results are presented in table 9. It shows that among the GCS, the relative income position of states did not much vary over the 30-year period; in contrast compared to GCS, SCS states were achieved considerable change during the

same period. In the case of sub periods, during post reform period the GCS, there has been no considerable mobility among the ranking whereas in the case of SCS, significant mobility among the ranking of states compared to pre reform period.

Table: 6

Concordance Indices

	GCS	SCS	GCS	SCS	GCS	SCS
	1980-11		1980-92		1993-11	
1980	1.000	1.000	1.000	1.000		
1981	0.987	0.946	0.987	0.946		
1982	0.979	0.914	0.979	0.914		
1983	0.961	0.926	0.961	0.926		
1984	0.960	0.929	0.960	0.929		
1985	0.960	0.944	0.960	0.944		
1986	0.961	0.949	0.961	0.949		
1987	0.962	0.919	0.962	0.919		
1988	0.958	0.907	0.958	0.907		
1989	0.956	0.907	0.956	0.907		
1990	0.954	0.909	0.954	0.909		
1991	0.955	0.905	0.955	0.905		
1992	0.955	0.900	0.955	0.900		
1993	0.956	0.898			1.000	1.000
1994	0.948	0.869			0.969	0.798
1995	0.943	0.843			0.974	0.804
1996	0.941	0.826			0.977	0.827
1997	0.937	0.814			0.975	0.850
1998	0.937	0.798			0.977	0.852
1999	0.937	0.772			0.978	0.824
2000	0.933	0.737			0.969	0.797
2001	0.930	0.714			0.965	0.771
2002	0.928	0.684			0.961	0.754
2003	0.925	0.668			0.957	0.747
2004	0.923	0.653			0.955	0.740
2005	0.919	0.658			0.949	0.757
2006	0.915	0.656			0.946	0.767
2007	0.912	0.662			0.944	0.781
2008	0.910	0.668			0.943	0.793
2009	0.909	0.668			0.942	0.801
2010	0.908	0.665			0.942	0.805
2011	0.907	0.663			0.942	0.809

Source: Author's calculation

V.Conclusion

Let us briefly summarize the major findings of the study. The reform policies made a considerable positive impact on the country's economy as a unit. In terms of inter-state growth in NSDP and PC NSDP, Indian states have been significantly rising during post reform period compared to pre reform period. Whereas PC NSDP ranking shows that relative positions of the states remain unchanged even after receiving considerable change in absolute growth of NSDP. The growth rate of NSDP has been significantly improved than the PC NSDP. It's due to the effect of uneven population growth among the Indian states. The reform policies extended support to developed states rather than less developing states. The population growth in BIMARU states is greater than the rest of GCS. It may be one of the possible reasons to deteriorate PC NSDP of BIMARU states. The stabilization growth of population and demographic structure is the pre-condition to enhance economic growth of BIMARU states.

The states like Kerala and Tamil Nadu have achieved good social and demographic development despite low level of economic development interims of per capita income. The Kerala is an exemplary model to show the positive relation between the women's welfare and economic growth. The growth performance of states assessed by PC NSDP ranking shows that there has been no considerable change in improvement of economic growth.

References

- [1] Ahluwalia, Montek.S(2000): "Economic performance of States in Post-reforms Period" Economic and political weekly May 6, 2000, pp.1637-1648.
- [2] Bhattacharya, B. B and S.Sakthivel(2004): "Regional Growth and Disparity in India Comparison of Pre- and Post-Reform Decades", Economic and Political Weekly, Mar 6, 2004, pp. 1071-1077.
- [3] Dasgupta, Dipankar and Maiti Pradip, et.al (2000): "Growth and interstate disparities in India", Economic and Political Weekly, July1, 2000, pp.2413-2422.
- [4] Databook of planning commission, Dec.2013.
- [5] Dholakia H (2009): "Regional sources of Growth Acceleration in India", Economic and political weekly November 21, 2009, pp.67-74.
- [6] Francois Perroux (1955): "Notes on the concept of growth poles", I.M.Livingston(Ed),

[7]Handbook of census of India 2011

[8]Handbook of Statistics on Indian Economy, RBI

[9]Kumar, Nagesh(2000): “Economic reform and their Macro- Economic impact”, Economic and political weekly March 4, 2000, pp.803-812.

[10]Kurian, N.J (2000): “Widening regional Disparities in India Some Indicators”, Economic and political weekly February 12, 2000, pp.538-550.

[11]Misra(2007): ‘Regional Growth Dynamics in India in the Post-Economic Reform Period’, Palgrave Macmillan, pp.13-100

[12]Population Projections for India and states 2001-2026, Registrar General of India.

[13]ShandRic and S. Bhide(2000): “Sources of economic Growth: Regional Dimensions of Reforms”, Economic and political weekly October 14, 2000, pp.3747-3757.

