The early literature on the evolution of income inequality used to be dominated by the inverted U–hypothesis, suggested by Kuznets (1955). According to this hypothesis, income tend to be distributed relatively equally in the poorest countries. As these countries begin to undergo economic growth, their income distribution becomes more unequal. This deterioration in equality is likely to be arrested and reversed again after these countries reach a certain threshold of economic growth and aggregate affluence better termed as trickle-down effect. Thus, both mature industrialized economies and pre industrial societies are postulated to have more egalitarian income distribution than countries at intermediate levels of economic growth.

The theoretical relationship between economic growth and income distribution generally turns out to be a complex one. It will be prudent to look at the theoretical models of economic growth to find out if there is any discussion on growth and income distribution. The Cambridge models of Kaldor (1956) and Pasinetti (1974) have discussed the relationship between growth and distribution in the framework of equilibrium growth. Two important parameters in these models are the workers’ and the capitalists’ propensities to save. Both Kaldor and Pasinetti, insisted on the irrelevance of workers’ propensity to save. But the overall relationship between the growth of income and the extent of equality in the distribution of income between wage earners and capitalists is a negative one. Another important aspect of Cambridge growth
models as well as the neoclassical growth models is that in the process of income redistribution the real rewards going to the various economic classes do not remain constant. Both in the Cambridge models and the neo-classical models one finds a relationship between growth and distribution only when the economy is off the steady-state path. If one assumes that the economy is always on the steady state path, the rate of growth of income is determined by the exogenously given rate of growth of population with no change in income distribution as neither the factor shares nor the real returns to factors change.

Income distribution can be solely determined by the state in a command economy along with a plan to achieve high rates of economic growth. But in a market economy, growth is generally believed to cause income inequalities at least at some stages of economic development. The literature dealing with growth and income distribution is fairly diversified, as it includes theoretical issues, country experiences and econometric modelling of processes that are related with growth, poverty and income distribution. The last two decades have witnessed the economic emergence of developing countries, which have as a group exhibited relatively high GDP growth rates, in excess of those prevailing in the developed countries. The gap has been particularly apparent since the middle 1990s. Much of this ‘shifting wealth’ has, furthermore, been translated to increasing human development, such as poverty reduction. Global poverty has fallen substantially, with a major portion of the decline attributable to China. Even when China is omitted from the sample, poverty reduction is still considerable.

The Indian economy witnessed a higher growth in the gross domestic product (GDP) associated with rising concentration of income and wealth (Sengupta et al 2008). It is well recognised that the avowed objectives of our social planners immediately after independence of our economy were the eradication of poverty, ignorance and the inequality of opportunities. Of course, there has been an evolution of policy strategies from time to time since independence towards this direction. But ironically even after the elapse of sixty eight years of independence about one-third of our total population still suffer from abject poverty and a large section of poverty afflicted people is entangled by the poverty trap i.e. they suffer from chronic poverty. The incidence as
well as intensity of poverty has also been reflected in its various dimensions viz. the social, regional, occupational, ethnical etc. in both rural and urban areas of our economy albeit with some degree of variations. Interestingly the government has made changes in the policy strategies towards the objective of alleviation of poverty depending on the dynamic behaviour of our macro-economic scenario during the plan period. In fact up to the early 70s we actually followed the strategy of growth mediated development policies on the basis of the expectation of the operation of the” Trickle Down Hypothesis” such that the fruits of economic growth would automatically percolate amongst all sections of people irrespective of region, religion and castes etc. But astonishingly the proportion of people lying below the poverty line remained well above 50% up to mid-70s which was followed by a declining trend thereafter albeit with some degrees of fluctuation. Because of this pessimistic experience of the failure of trickle down hypothesis, our government made a radical shift of her policy strategy towards the direct attack on poverty by pursuing various workfare and welfare programmes viz. different employment generating programmes like IRDP, SJGSY (latter renamed as SGSY) and other social security programmes like NREG etc. so that the benefits of this programmes could reach the target group. These policies were followed up to the end of 80s. Of course this has led to the deceleration of poverty not only at the national level but also at the inter-state level. In fact the incidence of poverty declined up to 39 % at the national level. Majority of the states also experienced declining trends in poverty in varying degrees. Later in the early 90s i.e. since 1991 India introduced the policy of economic reforms. This on-going process of reforms in various spheres viz. trade, Investment and finance, have indeed led to gradual withdrawal of the public sector coupled with the increasing reliance on the market fundamentalism. The growth of employment in the post-reform period (1993-94 to 2004-05) was mainly concentrated in the self-employment category, while the growth of wage employment remained more or less stagnant. The rise in self-employment is argued as a distress movement from wage employment, which also enhances income inequality among the workers (Chandrasekhar and Ghosh 2007). Interestingly, since 90s the government has been pursuing the policy of growth cum public action –led development strategy with its major focus on the participatory development process
vis-à-vis the inclusive growth which has later been carried forward to the 12th five year plan (2012 to 2017) as its principal objective of faster sustainable inclusive growth. As a fall out of this policy evolution the incidence of poverty has declined both at the national level (29.8% in 2009-10 as per Planning commission) and also at the inter-state level in varying degrees albeit at a lower magnitude. But unfortunately as per estimate of the Planning Commission about 354.6 million of our total population (278.2 million in rural areas and 76.5million in urban areas) still suffer from abject poverty in 2009-10. The latest estimates of poverty are available for the year 2011-12. These estimates have been made following the Tendulkar Committee methodology using household consumption expenditure survey data. For 2011-12, the percentage of persons living below the poverty line is estimated as 25.7 percent in rural areas, 13.7 percent in urban areas, and 21.9 percent for the country as a whole.

On the other hand, one cannot of course deny the fact that Indian Economy since her independence has gradually been moving towards the achievements of faster rate of growth of GDP after surpassing the long term (1950 – 75) persistence of Hindu Growth rate. The country has indeed moved to the trajectory of high growth path by experiencing a sharp increase in national income (i.e. about 7% to 9% during 2000 to 2007) which has made as one of the fastest growing countries in the globe. Of course most of the states have also experienced sharp increase in their SDP during the same period. But this growth has mainly been informal service sector –led growth which is basically predatory and job destroying (Rakshit, 2007, 2009; Bhaduri, 2008).The usual perception is that this elite centered as well as service sector driven growth process has led to the increase in both absolute and relative inequality in the distribution of income which in turn has led to boost the growth vis–a-vis the persistence of the inequality and poverty. The persistence of the trajectory of high growth both at the national and inter-state level and the higher incidence of poverty as well as inequality is indeed puzzling. So how can one reconcile between the persistence of high growth rate of national income and the staggering dimensions of chronic poverty even after the pursuance of growth mediated and public action –led development strategies since 80s is a million dollar question that does not have any easy answer.
There is growing evidence that achieving both high and equitable growth is strengthening the linkage between growth and poverty reduction. This represents a major departure from the trickle-down development approach whereby economic growth benefits the more affluent in the first stages of the development process, followed by the less well-off. It simply means that the development process will be accompanied by a rise in the inequalities since the poor benefit less proportionately from economic growth than do the non-poor. That is why, now a good number of economists are rejecting the trickle down approach and suggesting pro-growth policies for achieving the objective of growth with equity. It seems very much clear by now that economic growth that does not lead to sharp and sustained reductions in poverty may create more problems than it solves. Similarly, if rapid growth is achieved at the expense of worsening in the distribution of resources, it ultimately becomes unsustainable.

Despite India’s recent strong growth performance, there is a growing concern that benefits of growth have been concentrated in India’s richer states, leaving the poorer states lagging behind. Since India’s poorest states are most populous, depriving them from the benefits of growth, will give rise poverty, inequality which intern will lead to social, political and economic crises. There exists a trade-off between reducing inequality and improving growth performance or a virtuous circle in which growth leads to lower inequality and reduction in inequality in turn lead to increased growth. Therefore, in the context of Indian economy, it would not be exaggeration to say that, indeed, economic growth has taken place but somehow development is lacking. This is more prevalent in case with key geographical regions especially the BIMARU (Bihar, Madya Pradesh, Rajasthan, and Uttar Pradesh) states. As Ahluwalia (2011) concluded that, convergent growth rates have not translated into equalising incomes across states. The coefficient of variation of per capita net state domestic product (NSDP) has increased from around 28% in the early 1980s to 36% in 2004-05 and further to 41% in 2011-12. Human development indicators show greater convergence than incomes across states. The India Human Development Report 2011 (IHDR-2011), which estimates the Human Development Index (HDI) for states at beginning of the decade and for the year 2007-08, allows us to compare HDI across states and over time. The
top five ranks in HDI in both years are attained by Kerala, Delhi, Himachal Pradesh, Goa and Punjab. At the other end of the spectrum are states such as Chhattisgarh, Odisha, Bihar, Madhya Pradesh, Jharkhand, Uttar Pradesh and Rajasthan. These states have shown tremendous improvement in their HDI and its component indices over time, leading to a convergence in HDI across states. (Bakshi et al, 2015).

A comparison of the growth performance for both the non-special category and special category states shows that on an average the growth rate of GSDP (2004-05 prices) has been higher during 2001-10 as compared to 1995-2000. The growth rate of the non-special category states on an average has been at 7% which is higher than the 6.09% growth witnessed during 1995-2000, whereas the special category states witnessed a steeper 2% increase in growth during the 2001-10 period (7.7%) compared to the 1995-2000, period (5.8%). It would be pertinent to note here that this high growth has not been observed uniformly across the states. And states such as Goa, Karnataka, Rajasthan and West Bengal, which were high growth states during 1995-2000, witnessed slower growth during 2001-10. Likewise among the special category states Mizoram, Manipur, Meghalaya and Jammu and Kashmir witnessed lower growth during 2001-10 compared to 1995-2000. (Raju S. 2012). It follows from the aforesaid discussion that there is legitimate role for public policy in the promotion of fairness and in the pursuit of equity. Particularly, public action should aim to expand the opportunities of those who in the absence of policy interventions have the least resources, voices and capabilities.

It is against this backdrop that in present study an attempt has been made to examine the relationship between economic growth and income inequality. The specific objectives of the study and findings there off are presented as:

O1: To study the changes in the pattern of income distribution across Indian states.

Findings: The states like Goa, Bihar, Chandigarh and Uttar Pradesh did not changes their position in terms of GSDP per capita over the reference period 1993-94 to 2013-14, i.e. Goa remained at number first, Chandigarh at second, Uttar Pradesh at twenty nine and Bihar at thirty as per the ranking of their per capita state domestic product is
Summary and Conclusion

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concerned. There are some states and union territories whose order of fluctuations is very large and few among them were able to improve their ranking position over the reference period, such as Karnataka’s rank has improved from 21th to 16th, Pondicherry from 13th to 4th, Sikkim from 15th to 5th and Uttaranchal from 17th to 11th and those whose relative position has deteriorated over the period are states like Arunachal Pradesh which has skipped from 8th rank to 17th rank in terms of GSDP per capita, Jammu & Kashmir from 16th to 21th, Nagaland from 11th to 18th position, and Punjab from 5th to 14th. The majority of the states and union territories show some fluctuations but within the acceptable limits.

O2: To examine the extent of income inequality across Indian States and selected Northern States.

Findings: It has been found that there is an increase in inequality across Indian states/union territories during the reference period measured in terms of GSDP per capita as the value of Gini coefficient has increased from 0.23141 to 0.28125, the value of Theil’s index (L) i.e. GE(0) has increased from 0.08952 to 0.13011 and that of Theil’s index (T) i.e. GE(1) from 0.09382 to 0.12871, which means there is an increase in inequality across Indian states/union territories in terms of per capita GSDP during the reference period. While using NSS consumption data it has been found that there is a significant variation in income inequality across different states/union territories in India. By estimating income inequality across the three northern states it has been found that the highest value Gini coefficient and theil’s entropy is for Himachal Pradesh as compared to J&K and Punjab, which means that there is unequal distribution of income in Himachal Pradesh followed by Punjab while as the level of inequality is lowest in case of Jammu & Kashmir.

O3: To study the impact of economic growth on income inequality in all Indian states in general and in selected Northern States in particular.

Findings: it has been found that there is week evidence in favour of Kuznets inverted U-hypothesis i.e. with increase in economic growth in Indian as a whole and three selected northern states in particular the income inequality has increased. There is more
increase in income inequality in advanced states as compared to backward states because in advanced states there is concentration of wealth in few hands i.e. industrial giants. However, besides the failure of trickle-down effect other factors like ineffective and inefficient redistribution policies, infrastructure gaps, etc. and the time period also impacts the results, as it is well known from the literature that the Kuznets hypothesis holds good for a long period of time, since the reference period of present study is just 20 years so possibility of inequality and per capita GDP level in the form of an inverted “U” is low.

**O1:** To find out the convergence across Indian States in terms of per capita incomes.

**Findings:** It was found that the results support for unconditional convergence (income convergence) in growth performance across all states as the coefficient of the log of the per capita of Gross State Domestic products (logGSDPpc) is negative and statistically significant. Across the states there is sign of convergence (income convergence) over the time, hence support the Solow’s model of growth convergence. While estimating the convergence test across the three sample states, it is found that for whole period there were convergence and for sub-periods initially these states converged in terms of their growth performance and later on they diverged in terms of their growth performance. The same result has been found when applying sigma convergence.

**Hypotheses:** The following hypotheses were put to test in present study:

**H1:** Income inequality has narrowed down across Indian states over the period.

**Findings:** For testing hypothesis, t-test has been used to test the change in income inequality over time at 5 percent level of significance, the calculated value of ‘t’ is greater than the table value of ‘t’. The results show that during the study period income inequality has increased. It has been found that income inequality across Indian states has increased as the value of Gini coefficient increased from 0.23141 to 0.28125 and based on NSS consumption data it has been found that there is a significant variation in income inequality across different states/union territories in India. Thus H1 does not hold good, hence, rejected. And an alternative hypothesis is that, income inequality has increased in the states over the period of time.
**Summary and Conclusion**

**H₂:** Economic growth of northern states has no direct impact on the level of income inequality.

**Findings:** It has been found that with increase in economic growth in Indian as a whole including three selected northern states the income inequality has increased because there is week evidence in favour of Kuznets inverted U-hypothesis in both the equations used to test the impact on economic growth on income inequality and the income-growth term has a negative coefficient but not statistically significant. That means there is no sign of inverted U-hypothesis as the growth in per capita takes place, the level of inequality increased during the reference period. Thus null hypothesis is rejected and an alternate hypothesis is accepted.

The growth performance, measurement of income inequality and convergence test of all the states/union territories of India has been conducted with special emphasis on three northern states Jammu & Kashmir, Himachal Pradesh and Punjab. The performance of northern states is reflected in a number of areas and has important implications on the ability of the country to climb further up the development ladder. The average per capita income of northern states has fallen below that of the southern region. A major contributory factor in this regard has been the highest population growth in the northern region. This is the only region where the rate of population growth did not fall in the last decade. The northern region’s GDP growth has slowed down in the 1990s. The northern region is socially much behind the southern and western regions. The poverty ratio in northern states remains above the national average. Northern states have vast economic potential in respect of natural resources, human resources, location (if old trade routes are opened), tourism, etc. The realisation of this potential is a matter of management at the political and bureaucratic levels by offering better governance and an atmosphere for investment. The scope of the study is restricted to a comparative analysis of the trends in economic growth, income inequality and convergence test across all states in general and sample of three selected northern states namely J&K, HP and Punjab in particular.

The study is predominantly based on secondary sources. The main data sources used in the present study include states time series data (GSDP per capita) of Central Statistical
organisation, various publications of National Sample Survey organisation, Handbook of Statistic of Reserve Bank of India (RBI), various issues of Economic survey and the unit level 68th Consumption Expenditure Round Data. The data on GSDP per capita was available on two different constant prices i.e. 1993-94 and 2004-05 prices and an adjustment factor method has been used to convert the data on same base year prices of 2004-05. The GSDP per capita data of 30 states/union territories has been taken into account to test the convergence\(^1\) across states/union territories and rest of states/union territories has been dropped because the time series data was not available for them. The unit-level data on Consumption Expenditure Data of 68th Round Type 1 and Type 2 has been purchased from NSSO New Delhi and has been used to estimate income (consumption) inequality across Indian states/union territories. Different econometric and statistical models have been used to estimate inequality, growth rate, and convergence test and the relationship between economic growth and income inequality. The major methods used in this study are as: Gini Coefficient, Theil mean Log Deviation Index, Theil’s Entropy Indices, Atkinson Index, Lorenz Curve, Coefficient of Variation, Test of U hypothesis, \(\sigma\) Test of Convergence \(\beta\) Test of Convergence Cross Section Regression, Panel Regression, Compound Growth rate, Annual average Growth rate (per cent per annum) etc.

The extent of inter-state patterns of income distribution across Indian states/union territories have been examined by ranking analysis and after assigning ranks to various states, the relative position of these states has been analyses during the reference period. The growth rate has also been calculated. By using average annual growth rates it was found that different states/union territories have shown random behaviour in terms of their GSDP per capita for the period of 1993-94 to 2012-13. For example, The states like Goa, Bihar, Chandigarh and Uttar Pradesh did not changes their position in terms of GSDP per capita over the reference period 1993-94 to 2013-14, i.e. Goa remained at number first, Chandigarh at second, Uttar Pradesh at twenty nine and Bihar at thirty as per the ranking of their per capita state domestic product is concerned. There are some states and union territories whose order of fluctuations is very large and few among

\(^{1}\) For details see Chapter on “Convergence Analysis across Indian States”.
them were able to improve their ranking position over the reference period, such as Karnataka’s rank has improved from 21\textsuperscript{th} to 16\textsuperscript{th}, Pondicherry from 13\textsuperscript{th} to 4\textsuperscript{th}, Sikkim from 15\textsuperscript{th} to 5\textsuperscript{th} and Uttaranchal from 17\textsuperscript{th} to 11\textsuperscript{th} and those whose relative position has deteriorated over the period are states like Arunachal Pradesh which has skipped from 8\textsuperscript{th} rank to 17\textsuperscript{th} rank in terms of GSDP per capita, Jammu & Kashmir from 16\textsuperscript{th} to 21\textsuperscript{th}, Nagaland from 11\textsuperscript{th} to 18\textsuperscript{th} position, and Punjab from 5\textsuperscript{th} to 14\textsuperscript{th}. The majority of the states and union territories have shown some fluctuations but within the acceptable limits. While in terms of the growth rates of 30 states/union territories the performance average states was lower for the period of 1993-94 to 2002-03, while as during 2003-04 to 2012-13 the average performance of states/union territories has improved to a large extent.

While estimating the level of inter-state income inequality in chapter fifth, it has been found that there is an increase in inequality across Indian states/union territories during the reference period measured in terms of GSDP per capita as the value of Gini coefficient has increased from 0.23141 to 0.28125, the value of Theil’s index (L) i.e. GE(0) has increased from 0.08952 to 0.13011 and that of Theil’s index (T) i.e. GE(1) from 0.09382 to 0.12871, which means there is an increase in inequality across Indian states/union territories in terms of per capita GSDP during the reference period. By using NSS consumption expenditure data it was found that in some of the states/union territories like Kerala, Karnataka, Maharashtra, Dadra & Nagar Haveli and Chandigarh the value of Gini coefficient is as high as 0.40821, 0.42321, 0.40189, 0.41318, and 0.38671 respectively. Some other states/union territories have witnessed a very low value of Gini coefficient. These are: Daman & Dui 0.18534, Manipur 0.21224, Nagaland 0.2264 and Bihar 0.23995. In rest of states/ union territories the Gini coefficient ranges between 0.24 to 0.37 and the same trend is depicted by the Theil’s entropy index. While estimating income inequality across the three selected northern states the highest value Gini coefficient and Theil’s entropy been observed in case of Himachal Pradesh as compared to J&K and Punjab, which means that there is more unequal distribution of income in Himachal Pradesh followed by Punjab. Among the three J&K has witnessed low level of inequality. The low level of inequality in J&K can be attributed to land reforms, socio-cultural and religious factors, local and
indigenous cottages industries, Handicrafts, tourism and government jobs, etc. as various sources of earnings.

To estimate impact of economic growth on income inequality across states/union territories two quadratic equation (OLS model) of Kuznets have been used in the present study. It is an important part of the present work used to estimate the relationship between income inequality and economic growth in Indian states over the period of time. The results suggest that there is week evidence in favour of Kuznets hypothesis in both the equations and the income-growth term has a negative coefficient but not statistically significant. This means there is no sign of inverted U-hypothesis as the results show that with increase in per capita income level of inequality too increased.

It was found that the Kuznets hypothesis does not hold good in case of present study mainly because of period under reference. As for the Kuznets hypothesis is concerned the study period was very long.

An attempt has also been made in present study test the convergence across states/union territories in Indian states. The two methods of convergence testing namely cross sectional regression model and panel data regress model have been applied to estimate two types of convergence viz. sigma convergence and beta convergence. From the cross sectional estimation of convergence, we came to the conclusion that there is divergence across Indian states and the same result was found by estimating sigma convergence.

While applying panel data regression model for the period 1993 to 2012, it was found that the results support for unconditional convergence (income convergence) in growth performance across all states as the coefficient of the log of the per capita of Gross State Domestic products (logGSDPpc) is negative and statistically significant. Across the states there is sign of convergence (income convergence) over the time, hence it supports the Solow’s model of growth convergence. While dividing the whole study period into two sub-periods viz. 1993-2002 and 2003-2012, convergence hypothesis has been proved in both the time periods. While estimating the convergence test across the three sample states, it is found that for whole period there were convergence and for sub-periods initially these states converged in terms of their growth performance and
later they diverged in terms of their growth performance. The same result has been found when applying sigma convergence.

7.1 Summary of main Findings of the Study

The empirical evaluation of growth and inequality over the period of time presents the following picture.

1. **GSDP position of States:** - The states like Goa, Bihar, Chandigarh and Uttar Pradesh did not change their position in terms of GSDP per capita over the reference period 1993-94 to 2013-14, i.e. Goa remained at number first, Chandigarh at second, Uttar Pradesh at twenty-nine and Bihar at thirty as per the ranking of their per capita state domestic product is concerned. There are some states and union territories whose order of fluctuations is very large and few among them were able to improve their ranking position over the reference period, such as Karnataka’s rank has improved from 21th to 16th, Pondicherry from 13th to 4th, Sikkim from 15th to 5th and Uttarakhand from 17th to 11th and those whose relative position has deteriorated over the period are states like Arunachal Pradesh which has skipped from 8th rank to 17th rank in terms of GSDP per capita, Jammu & Kashmir from 16th to 21th, Nagaland from 11th to 18th position, and Punjab from 5th to 14th. The majority of the states and union territories show some fluctuations but within the acceptable limits. It has been found that there is an increase in inequality across Indian states/union territories during the reference period measured in terms of GSDP per capita as the value of Gini coefficient has increased from 0.23141 to 0.28125, the value of Theil’s index (L) i.e. GE(0) has increased from 0.08952 to 0.13011 and that of Theil’s index (T) i.e. GE(1) from 0.09382 to 0.12871, which means there is an increase in inequality across Indian states/union territories in terms of per capita GSDP during the reference period.

2. **Correlation Coefficient:** - The analysis shows that the value of correlation coefficient in different pair of years is highly significant. Therefore there is high degree of stability in the relative position of states in different years. In this context, it became important to calculate the average rank of each state to
ascertain the state’s average rank in relation to other states and the standard deviation around the average rank to ascertain the extent of deviation from this average. The value of coefficient of variation during the period of 1993-94 to 2002-03 is 0.70 and during 2003-04 to 2012-13 it is 0.43 which means in 1990s there was more dispersion among the states as compared to 2000s, for example Bihar, Madhya Pradesh, Utter Pradesh, Orissa, etc. have performed below average during 1993-94 to 2002-04 and during 2003-04 to 2012-13 their performance has increased in terms of growth rate but the rank in terms of their per capita GSDP remained almost same throughout the period. It is because there is already a gap between backward states and advanced states known as ‘Development Gap’ and it talks a long time period to a poor state to reach the per capita level of income of a rich state and eliminate the gap completely.

3. **Growth position of States:**

3.a. **Period 1993-94:** Except eleven states viz. –Andhra Pradesh, Chandigarh, Delhi, Goa, Gujarat, Himachal Pradesh, Karnataka, Meghalaya, Pondicherry, Tamil Nadu and West Bengal –all other states witnessed below four percent growth during the period 1993-94, against the combined growth rate of 3.84 per cent per annum. Chandigarh, Goa, Gujarat, Himachal Pradesh, Karnataka, Pondicherry, and West Bengal progressed rapidly during the period of 1993-94 to 2002-03 with over 5 per cent per annum growth, with Pondicherry recording the highest at over 14 per cent. In general states growth rate is comparatively balanced during the period of 1993-94 to 2002-03, even though disparity widened across the states.

3. b. **Period of 2003-2012:** During the period of 2003-04 to 2012-13 the states like Sikkim, Uttarakhand, Tamil Nadu, Bihar, Maharashtra Andhra Pradesh, Haryana, Delhi, Goa, Himachal Pradesh, Kerala, Odisha and Gujarat progressed at higher growth rate more than the combined average growth rate of 7.79 percent of all states. While as states like Arunachal Pradesh, J&K, Jharkhand, Manipur, Punjab, Rajasthan, Uttar Pradesh, etc. grew at a lower rate as against the combined average growth rate of all 30 states.
4. **Values of Gini Coefficient and Theils Entropy**: By using NSS consumption data it has been found that there is a significant variation in income inequality across different states/union territories in India. It has been found that income inequality across the states in India has increased as the value of Gini coefficient increased from 0.23141 to 0.28125. The findings based on NSS consumption data also reveal a significant variation in income inequality across different states/union territories in India. By estimating income inequality across the three northern states it has been found that the highest value Gini coefficient and Theil’s entropy is for Himachal Pradesh as compared to J&K and Punjab, which means that there is more unequal distribution of income in case of Himachal Pradesh coefficient being 0.34 followed by Punjab as 0.32 and J&K as 0.29.

5. **Values on the basis of Atkinson’s Measure**: By using Atkinson’s class of inequality indices, we found that states/union territories like Nagaland, Bihar, Sikkim, Manipur, Tripura, Meghalaya and Daman & Diu have low level of income inequality (Atkinson’s Measure) and it ranges between 0.11158 to 0.19274, while states/union territories like Karnataka, Delhi, Chandigarh, Arunachal Pradesh, Kerala, Dadra & Nagar Haveli etc. have high level of income inequality (Atkinson’s Measure) and it ranges between 0.31266 to 0.4082. In rest of the states the inequality ranges between 0.20701 to 0.29811. The same is evident from the practical examples of advanced countries of the world where the problem of inequality always remained the burning issue and great concern of policy makers. For example USA, UK, Germany, France, etc. despite of developed countries suffered from high inequality.

6. **Relevance of Kuznets inverted U-hypothesis**: It has been found that there is weak evidence in favour of Kuznets inverted U-hypothesis both at all India level as well as in sample states. This is simply attributed to the failure of trickle-down effect besides other factors like ineffective and inefficient redistribution policies, infrastructure gaps, etc. There is more increase in income inequality in advanced states as compared to backward states because in advanced states there is concentration of wealth in few industrial giants. It due to corporatism,
wage differentials in various sectors, lack of income earning opportunities to weaker sections of society, polarization and backwash effect, etc. It has been found that with increase in economic growth in India as a whole and three selected northern states in particular the income inequality has increased because there is weak evidence in favour of Kuznets inverted U-hypothesis in both the equations used to test the impact on economic growth on income inequality. Further, the income-growth term has a negative coefficient but not statistically significant. That means there is no sign of inverted U-hypothesis as the growth in per capita takes place, the level of inequality increased during the reference period.

7. **Convergence test:**

7. a. **Cross-sectional convergence:** By using the cross sectional convergence method the results found do not support unconditional convergence (cross-sectional) in growth performance across all states as the coefficient of the log of initial per capita GSDP (estimated $\beta$ equals 0.86) is positive. This implies unconditional divergence across states, i.e. the states are not converging to identical steady states. The results given above are not in line with neo-classical convergence model. This shows that the regional economies evolve in multiple ways. They can converge and diverge simultaneously at different regional scales.

7. b. **Panel Data Convergence:** The results of the study support unconditional convergence (income convergence) in growth performance across all states as the coefficient of the log of the per capita of Gross State Domestic products ($\log\text{GSDP}_{pc}$) is negative and statistically significant. Across the states there is sign of convergence (income convergence) over the time, hence findings of the present study are in complete accord with the Solow’s model of growth convergence.

7. c. **Sigma Convergence:** While estimating sigma convergence it was found that there is divergence across Indian states during the period 1993 to 2012, the value of coefficient of variation fluctuated from 47.09 to 54.34. However, during 1993-2002, coefficient of variation increased to the
highest value of 59.66 and in 2003 it decreased to 53.63. During 2003 to 2010 the value of coefficient of variation fluctuated between 52.26 to 55.08. However, after 2010 there is a rise in the coefficient of variation which points towards the emergence of divergence in growth across states. It can be implied from the above results that the Indian states do not exhibit sigma convergence and have diverged in terms of per capita GSDP during the reference period.

7.d. Convergence test of Sample States: - While estimating the convergence test across the three sample states, it is found that for whole period there were convergence and for sub-periods initially these states converged in terms of their growth performance and from 2000 onwards they diverged in terms of their growth performance. The same result has been found when applying sigma convergence.

7.2 Suggestions

In the light of above findings the following suggestions are put forth for balanced regional economic growth and equitable distribution of income.

1. Region specific policies like capital expenditure for infrastructure facilities, investment avenues, employment generating initiative towards good governance, etc. must be framed to promote balanced regional development. Political factor has an important weightage in this regard especially in states like J&K, North eastern states, Bihar, etc.

2. Efforts should be made to increase stock of human capital and enhance the skill of existing stock, as increase in human capital has led to the decrease in inter-state disparity because there is positive and direct relationship between economic growth and rate of increase in human capital. To overcome the shortage of human capital which is an important factor in enhancing economic growth, steps are to be taken to promote the required skills by education, training and development of human resources at grass-root level.

3. Financial inclusion also have an important role in reducing inequality within and among states. Measures like Private-Public Partnership, Self-help Groups,
Grameen type banks, easy credit schemes, etc. need to be taken in order to help all sections of the society to avail financial facilities.

4. Adequate physical infrastructure should be provided to backwards states/regions in order to reduce the gap between developed and underdeveloped states. Proper public action is must to review the regional development policies of state.

5. The structure of public policy should be framed in a manner that takes care of each region, so that inequality anywhere does not become a cause of conflict everywhere.

6. Region specific industrial base should be built-up, this will increase the living standard of people and hence regional growth.

7. Sector specific policy should be framed in such a way so that growth in secondary sector and tertiary sector should not hamper the growth in primary sector because almost 60 percent of population in India are engaged still with agricultural for their livelihood.

8. Undoubtedly there has been increase in divergence across states during post-reform period. Government policies like public investment, efficient planning and resource allocation, initiatives for private investment, etc. should be taken to reduce the inter-state divergence.

9. The value of inequality coefficients have not remained stable during the study period. There have been wide fluctuations in the value of coefficients of inequality during the period of analysis. Long term strategies with regard to development of human and physical resources are needed to lessen the year to year fluctuations in income inequality across and within states.

10. The states are diverging both in terms of per capita income (in absolute sense), and in inequality (in relative sense). Time is not far away when this divergence will approach to alarming rates if proper public action is not taken against it. Public policy must keep this divergence in acceptable limits through watching the functioning of states. Proper institutional set-up with an increasing role of all stakeholders from bottom to top need to put in place. Panchayats, local government, NGO, pressure groups, civil society actors, youth, etc. if
empowered can play an active role at different levels towards growth and development of states.

11. There should be a strong case proactive public policy to induce more investment in backward states like J&K, Bihar, Madhya Pradesh, Assam, etc. either through public investment or through fiscal incentives and simultaneously, efforts should be made to restrain population growth, especially in backward states.

12. An effective broad based tax structure moderately progressive in nature, based on ability to pay Approach must apply to all states.

13. Inception of target-oriented safety nets and welfare schemes to ensure benefits only to the target groups, thereby reducing income inequalities.

7.3 Conclusions

By way of conclusion it can be said that the Indian economy witnessed a higher growth in the gross domestic product (GDP) associated with rising concentration of income and wealth. It is well recognised that the avowed objectives of our social planners immediately after independence of our economy were the eradication of poverty, ignorance and the inequality of opportunities. The incidence as well as intensity of poverty has also been reflected in its various dimensions viz. the social, regional, occupational, ethnical etc. in both rural and urban areas of our economy albeit with some degree of variations. In fact up to the early 70s we actually followed the strategy of growth mediated development policies on the basis of the expectation of the operation of the” Trickle Down Hypothesis” such that the fruits of economic growth would automatically percolate amongst all sections of people irrespective of region, religion and castes etc. But astonishingly the proportion of people lying below the poverty line remained well above 50% up to mid-70s which was followed by a declining trend thereafter albeit with some degrees of fluctuation. Because of this pessimistic experience of the failure of trickle down hypothesis, since 1991 India introduced the policy of economic reforms. This on-going process of reforms in various spheres viz. trade, Investment and finance, have indeed led to gradual withdrawal of the public sector coupled with the increasing reliance on the market fundamentalism. The growth of employment in the post-reform period (1993-94 to 2004-05) was mainly
concentrated in the self-employment category, while the growth of wage employment remained more or less stagnant. Interestingly, since 90s the government has been pursuing the policy of growth cum public action – led development strategy with its major focus on the participatory development process vis-à-vis the inclusive growth which has later been carried forward to the 12th five year plan (2012 to 2017) as its principal objective of faster sustainable inclusive growth.

In the present study growth performance, measurement of income inequality and convergence test of all the states/union territories of India has been conducted with special emphasis on three northern states Jammu & Kashmir, Himachal Pradesh and Punjab. The study is predominantly based on secondary sources. The major methods used in this study are as: Gini Coefficient, Theil mean Log Deviation Index, Theil’s Entropy Indices, Atkinson Index, Lorenz Curve, Coefficient of Variation, Test of U hypothesis, σ Test of Convergence β Test of Convergence Cross Section Regression, Panel Regression, Compound Growth rate, Annual average Growth rate (per cent per annum) etc. While estimating the level of inter-state income inequality it has been found that there is an increase in inequality across Indian states/union territories during the reference period measured in terms of GSDP per capita as the value of Gini coefficient has increased from 0.23141 to 0.28125, the value of Theil’s index (L) i.e. GE(0) has increased from 0.08952 to 0.13011 and that of Theil’s index (T) i.e. GE(1) from 0.09382 to 0.12871, which means there is an increase in inequality across Indian states/union territories in terms of per capita GSDP during the reference period. By using NSS consumption expenditure data it has been found that in some of the states/union territories like Kerala, Karnataka, Maharashtra, Dadra & Nagar Haveli and Chandigarh the value of Gini coefficient is as high as 0.40821, 0.42321, 0.40189, 0.41318, and 0.38671 respectively. Some other states/union territories have witnessed a very low value of Gini coefficient are Daman & Dui 0.18534, Manipur 0.21224, Nagaland 0.2264 and Bihar 0.23995. The estimation of the relationship between income inequality and economic growth in Indian states over the period of time using Kuznets hypothesis is important part of the present work and it has been found that the Kuznets hypothesis does not hold good neither at all India level nor in case of sample states. An attempt has also been made in present study test the convergence across states/union
Summary and Conclusion

Territories in Indian states and it has been found that there is divergence across Indian states and the same result was found by estimating sigma convergence. While applying panel data regression model for the period 1993 to 2012, it was found that the results support for unconditional convergence (income convergence) in growth performance across all states as the coefficient of the log of the per capita of Gross State Domestic products (logGSDPpc) is negative and statistically significant. Across the states there is sign of convergence (income convergence) over the time, hence it supports the Solow’s model of growth convergence. While dividing the whole study period into two sub-periods viz. 1993-2002 and 2003-2012, convergence hypothesis has been proved in both the time periods. While estimating the convergence test across the three sample states, it is found that for whole period there were convergence and for sub-periods initially these states converged in terms of their growth performance and later they diverged in terms of their growth performance. The same result has been found when applying sigma convergence.

7.4 Limitations and Scope for Future Research

The study possesses certain limitations too. The very first limitation is regarding the authenticity of data used, as the whole data used comes from secondary sources, so the limitations of this secondary data bear implications in the entire thesis. Particularly, many questions are raised by economists from time to time about the NSSO data and its technicalities regarding survey period, mixed reference and modified mixed reference period. Secondly, we have only used 68th consumption expenditure round for calculating income inequality but for a comprehensive and comparative study different rounds of NSSO consumption expenditure could have been used to view changes in various indicators over a period of time. Thirdly, estimating the relationship between income inequality and economic growth by Kuznets inverted U-hypothesis, far a time period of just 20 years instead of a longer period in order to have strong evidence in favour of Kuznets inverted U-hypothesis. Lastly making a comparative analysis of sample states seems out of scope of present study. Since, these states are part of comprehensive study covering 30 Indian states, there was no need to have a special mention in the title. However, utmost care has been taken to justify the title. Therefore,
the future agenda of research will be on, identifying, quantifying and analyzing the factors responsible for current state of income inequality and increase in disparity across states in terms per capita GSDP growth. A sector wise convergence across and within states and regions over different periods based on different NSSO consumption expenditure rounds is also an area to be explored for future research. Besides NSSO data there is need to explore some other sources of data to substantiate the results obtained from NSSO data. However, Annexure (A) though presenting different type of data for sample states, gives an idea about their comparative positions in overall growth and development.