The phenomenon of income inequality has been a source of worldwide economic and social upheaval. It has become a weapon in the hands of social reformers and a point of intellectual debate among academicians. There has been innumerable empirical research, attempting to measure the relationship between inequality and growth, both within and across nations. Yet the relation between inequality and process of economic growth is far from being well understood. In order to gain background knowledge of problem and to identify appropriate methodology, research design, methods of measuring concepts and techniques of analysis or to be able to formulate the problem precisely, it seems logical to present a brief review of the available literature relating directly or indirectly to the field under study. What follows, makes no claim of being an exhaustive review of all investigations done on this problem, rather an attempt has been made to highlight the main issues related to the topic at various levels from whatsoever, available material. Many studies are available on income distribution in India as well as in other countries. The types of work done in this direction are classified in two sections namely: international and national context. In first section some of the studies conducted in different countries and at international level have been reviewed. In section second, some investigations which had been carried in many states of India and also at national level have been taken care of.
2.1 Section I: Economic Growth and Inequality in Global Context

The primary economic attention of world from the past four decades has been on the ways to accelerate the growth rate of national income. Economists and politicians from all nations, rich and poor, capitalist, socialist and mixed, have worshipped at the shrine of economic growth. “Growthmanship” has become a way of life. Even governments can rise or fall if their economic growth performance ranks high or low on the global score-card (Todaro, 2000). But what is the meaning of that growth if it is not translated into the lives of people. The growth that has taken place has served mainly to benefit the few- the richest 20 per cent of the population (Thirlwall, 1986).

The question of how inequality is generated and how it reproduces over time is really a billion dollar question. The patterns and determinants of changes in inequality are subject of perennial interest to economists and policy makers alike (Prasad, 2000). Moreover, it was argued by Atkinson that 'inequality is what economics should be all about' (Atkinson, 1973). Some of the greatest economists and philosophers of two centuries ago were bold and outspoken about the injustice of extreme inequality, nationally and internationally. Yet by almost every standard, global inequality has grown substantially since that period, just as national inequality has grown in most countries over the last two or three decades. So, there is a case today for more outspokenness about the ills and causes of inequality (Jolly, 2006). Otherwise there will come a time when looking back at today’s world human beings will wonder about how primitive we were that we tolerated all this (Basu, 2005).

The early literature on the evolution of income inequality over the process of development used to be dominated by Kuznets hypothesis (Aghion, Caroli, and

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Penalosa, 1999)². Using both the cross-country and time series data, Simon Kuznets (1963)⁸ found an inverted U-Shaped relation between income inequality and GNP per head. This hypothesis serves as a corner-stone of modernization school which tends to emphasize relative differences in the level of income or wealth as a key determinant of differences in the degree to which income is distributed equally within nations. Dependency theory offers a second major perspective in this area of research. Most of the dependency analysts seem to agree that the main cause of within-nation inequality (especially in the Third world) is between-nation inequality (Chan, 1989)⁹. A brief review of some studies highlighting the relationship between economic growth and inequality at international level has been presented in the following pages.

Ahluwalia (1974)¹⁰ examined the change in 18 industrial and developing countries and related the changes to the rate of growth of national income. He found that “there is no strong pattern relating changes in the distribution of income to the rate of growth of GNP. In both high growth and low growth countries, there are some which have experienced deteriorations in relative equality. The study found the absence of any marked relationship between income growth and changes in come shares.

Ahluwalia (1976)¹¹ examined the relationship between the distribution of income and the economic growth on the basis of cross country data on income inequalities. The study concludes that there is strong support for the proposition that relative inequality increases substantially in the early stages of development, with the reversal of this tendency at the later stages of development.

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Ahluwalia et al (1979)\textsuperscript{12} found that economic growth accompanied by an increase in poverty is the exception. The data from 12 countries, which they took up for analysis, showed no instance of an increase in poverty with increase in economic growth. In reality real per capita income increased among the poorest 20 percent in each case. The study also found that inequality has been higher in Latin America than in Asia.

Barro and Sala-i Martin (1991)\textsuperscript{13} examined convergence across the US states. Using data for per capita personal income, exclusive of all transfers, for 47 states for the period between 1880-1988 they find evidence of convergence in the US. They divided the period into 9 sub-periods and found evidence of convergence except for two sub-periods. For the whole period they get the convergence speed about 2\% per year. Using the data for gross state product for 48 states for the period 1963-1986 they obtain similar results. They also found evidence of convergence examining data for the regions of Germany, United Kingdom, Italy, France, Netherlands, Belgium and Denmark for the period 1950-1985. They conclude that there is convergence both within and between countries.

Barro, R. J. and Sala-i-Martin, X. (1992),\textsuperscript{14} found that the existence of convergence in economies tend to grow faster in per capita terms when they are further below the steady-state position. This phenomenon holds good for the U.S. states over various periods from 1840 to 1988. Over long samples, poor states tend to grow faster in per capita terms than rich states and the speed of convergence appears to be roughly the same-around 2 percent per year-regardless of the time period or whether we consider personal income or GSDP. They further found the evidence of convergence for a sample of 98 countries from 1960 to 1985 only in a conditional sense, that is, only if we hold constant variables such as initial school enrollment rates and the ratio of government consumption to GDP. They interpret these variables as proxies for the steady-state value of output per effective worker and the rate of technological progress.

Quah (1993b)\textsuperscript{15} is the first study that analyses convergence in the distribution dynamics framework. He uses empirical methodology based on Markov chains by partitioning the income space and tries to examine the change in income distribution over time. For the GDP per capita data for 118 countries in the period 1962-1985, he finds persistence of economies in their initial states and concludes that there seems to be no sign of convergence. He further (1996b)\textsuperscript{16} found evidence of convergence of US states since the transition probabilities in the Markov chain reveal a high degree of mobility among classes and the ergodic distribution presents no sign of bimodality. Johnson (2000) supports the findings of Quah (1996b) using stochastic kernel estimation procedure for transitions of distributions.

Durlauf and Johnson (1995)\textsuperscript{17} use Summers-Heston data set and detect the existence of convergence clubs in the sample of 121 countries for the period 1960-1985. They split the data in terms of control variables and check whether sub samples behave differently. They estimate different coefficients in the convergence regressions when the data is divided by initial income and literacy rates. Therefore, they conclude the presence of convergence clubs. Chatterji and Dewhurst (1996) conclude that there exist two convergence clubs in Great Britain using a nonlinear specification by adding higher powers of initial per capita income as additional regressors.

Sala-i Martin (1996)\textsuperscript{18} finds evidence of absolute convergence in Japanese prefectures in the period 1955-1987. The estimated rate of convergence is again 2 %. He also reports absolute convergence within five European countries, Italy, UK, Germany, France and Spain with speed of convergence ranging from 1.5 % to 2.9 % in the period from 1950 to 1990. For the same time period, he also finds conditional convergence in

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European regions using country dummies with a convergence rate of 1.5 %. Therefore, he concludes that as a general rule, there is convergence with a speed of around 2 %.

Rey and Montuori (1999) find strong evidence of positive spatial dependence among 48 US states in both levels and growth rates of per capita income for the period 1929-1994. They conclude that traditional unconditional β-convergence model suffers from spatial dependence. Baumol et al. (2002), using GDP per capita data for 138 European regions, conclude that there is spatial autocorrelation in β-convergence regression. They also estimate a strong spatial spill-over effect and propose that average growth rate of per capita GDP of a given region is positively affected by the average growth rate of neighbouring regions.

Li Hongyi and Zou Heng-fu (2002) used cross-country panel data on income distribution to explore the impact of inflation on income distribution and economic growth. By applying a systematic regression analysis they arrived to the conclusion that inflation worsens income distribution, increases the income share of the rich, has a negative but insignificant effect on the income shares of the poor and the middle class, and reduces the rate of economic growth.

Kaufman et al. (2003) examined the role of federal transfers in the process of economic convergence across Canadian provinces by looking directly at the impact of equalization payments on growth, and indirectly at the impact of employment insurance schemes on migration. They found that the equalization payments might have helped spur the process of output convergence, while the employment support scheme seems to have deterred convergence by discouraging migration across Canadian provinces. Second, and related to the first approach, the role of fiscal policy for the process of

convergence might be investigated by looking at \( \sigma \)-convergence, or how measures of income and output dispersion were influenced by fiscal variables.

Solanko (2003)\(^{23}\) uses cross-sectional regressions controlling for education, agriculture, and the mining sector: the author finds both evidence of increasing income dispersion, i.e. sigma divergence, and beta convergence, signaling the presence of club convergence between homogenous groups of regions.

Darvas et al. (2005),\(^{24}\) investigated the relationship between fiscal divergence (increase in convergence) and business cycle synchronization using a panel of 21 OECD countries and 40 years of annual data, they found that countries with similar government budget positions tend to have business cycle that fluctuate more closely. That is, fiscal convergence (in form of persistently similar ratios of government surplus/deficit to GDP) was systematically associated with more synchronized business cycles. They also found evidence that reduced fiscal deficits increased business cycle synchronization.

Grammy Abbas and Assane Djeto (2006)\(^{25}\) examined the role of interaction between distribution and growth in reducing absolute poverty by using data on sixty-six developing countries over the periods 1970-1979, 1980-1989 and 1990-1998. They had identified three major factors contributing to poverty reduction: (a) Improvement in income distribution is fundamental for poverty reduction (b) Growth accompanied by improvement in income distribution works better than growth and distribution alone and (c) Provision of civil liberties and political rights enable people to more actively participate in reducing poverty. They also found that the interaction between growth and improved distribution exhibited positive and significant effects on poverty reduction.


Birdsall Nancy (2007)\(^{26}\) concluded that Two stylized facts emerge from empirical studies: inequality is more likely to harm growth in countries at low levels of income (below about $3200 per capita in 2000 dollars); and it is at high levels of inequality (at or above a Gini coefficient of .45) that a negative association emerges. Between 15 and 40 percent of the developing world’s population lives in countries with these characteristics, depending on the inclusion of China, whose level of inequality has recently been measured at almost 0.45.

Bouvet (2007)\(^{27}\) sought to explain regional output inequality within 13 EU countries during the period 1977-2003, and used social transfers as an explanatory fiscal variable. Somewhat surprisingly, social transfers were found significant in reducing output inequality only when Greece, Spain and Portugal (countries that received the largest support from the EU) were excluded from the analysis. Third, some insights as to the impact of fiscal policy on income convergence might be revealed by comparing the convergence rates across various income indicators, such as per-capita GDP, personal income, and personal disposable income. The difference between the last two reflects the effect of tax and redistribution policies.

Grier K. and Grier R. (2007)\(^{28}\) used a sample of 90 countries from 1961–1999, to confirm the finding of strong and continued income divergence. They found “convergence, big time” in many input and policy variables, which deepens the puzzle of pervasive output divergence. They divided data into two groups: 22 rich countries and 68 developing countries and concluded that the 68 developing country subsample, inputs and policies are converging while output is rapidly diverging, i.e., developing countries’ inputs and policies are converging to those of the rich countries, their output levels are not, which means that the mimicking of rich countries may be necessary, but definitely is not sufficient, to achieve output convergence. While analyzing the neo-


classical framework to investigate whether cross country patterns of R&D spending, financial development, or institutions are consistent with the observed patterns of output divergence. They found that R&D spending and one measure of financial development evolve in a manner generally consistent with that of national incomes, which cannot be said of capital accumulation, education, degree of openness or size of government. Of course, these variables may be endogenous, that is caused by growth instead of causing growth.

Ahrend (2008)²⁹ performs an extreme-bound analysis in a panel of 77 regions before and after the financial crisis of 1998, i.e. he analyses the intervals 1993 to 1998 and 1998 to 2004. The author does not find a robust relationship between initial levels of gross regional product and its growth rate. He identified the factors which affect economic growth during periods of crisis and growth: in the former scenario, initial conditions, in particular resource endowments and industrial structure, explain the differences in regional growth, whereas only natural resources remain significant in periods of growth, when other factors such as political reforms contribute to the path.

Guriev and Vakulenko (2012)³⁰ perform inequality decompositions by income sources and study convergence in Gross Regional Product, incomes and wages. They find convergence in incomes and wages, but not in Gross Regional Product.

Akhmedjonov et al. (2013)³¹ investigate convergence in the time period 2000-2008 using a non-linear panel unit root test and non-linear cross-sectional Augmented Dickey-Fuller (ADF) regression models. The authors do not find evidence of unconditional beta convergence, though conditional convergence is found within similar neighbouring regions.

Gallo L. M. and Sagales O. R. (2013)\textsuperscript{32} used an unbalanced panel of 21 high-income OECD countries for the period 1972–2006 and found that the increasing distributive expenditure in high income countries with a well-established welfare state reduces income inequality but does not necessarily harm GDP growth (it depends on how this public spending is financed). And, alternatively, rising non-distributive expenditure decreases GDP growth while increasing income inequality, regardless of how it is financed. They also concluded that the only fiscal policy that can break the trade-off between efficiency and equity are non-distributive expenditures, since a cut in this kind of government expenditures reduces inequality while increasing economic growth.

Deaton, A. (2015),\textsuperscript{33} in his notable paper stated that whenever individuals can fully insure against idiosyncratic income shocks, the marginal utilities of all individuals should evolve in parallel over time. Assuming sufficiently stable preferences, individual consumption paths should also evolve in parallel. On the other hand, if insurance is missing, the permanent component of idiosyncratic income shocks will lead to increasing consumption inequality as the members of a cohort age. This implication was strikingly verified in Deaton and Paxson’s empirical study of data for the U.S., U.K. and Taiwan. He also noted that a study of the joint characteristics of individual income and consumption can help to evaluate the availability of insurance households against income shocks. People’s health is not only instrumental in determining their income and consumption possibilities, but also an important element of wellbeing in its own right. Thus, to measure and understand wellbeing requires grasping the relationship between health and income, as well as the distributions of these in the population. Deaton’s contribution has addressed an important issue of health and its relation with inequality.

\textsuperscript{32} Gallo L. M., Sagales O. R. (2013), “Joint Determinants of Fiscal Policy, Income Inequality and Economic Growth” Economic Modelling, 30, 2012 Published by Elsevier B.V.

2.2 Section II: Economic Growth and Inequality in Indian Context

Given the world-wide media coverage, everybody surely knows by now that India is one of the fastest growing countries in the world. Well Known Economists and the various studies conducted across the globe predicted that India will emerge as a global power in the 21st century along with China. Although the world has just discovered it, India’s economic development is still far behind than developed nations. Since independence Indian economy has thrived hard for improving its pace of economic development. For half a century before independence, the Indian economy was stagnant. Between 1900 and 1950, economic growth averaged 0.8 per cent a year—exactly the same rate as population growth, resulting in no increase in per capita income. In the first decade after independence economic growth picked up averaging 3.5 per cent from 1950 to 1980. Indians mournfully called this “The Hindu rate of growth” (Das, 2006)\textsuperscript{34}. Let us have a look on some of the studies conducted in India on the relationship between economic growth and inequality.

The pioneering attempt was made by Shirras (1935)\textsuperscript{35} while making an inquiry into the validity of Pareto’s law. He analysed income tax data and super-tax data from 1913-1929 for British India and found that the logarithmic curve of income distribution did not fall on the straight line and hence refuted the validity of the law. However, four out of five derived Pareto graphs Shirras were contradicted by Adikar and Gupta (1963)\textsuperscript{36} who found them ‘prima facie linear’.

Lydal (1960)\textsuperscript{37} found that the top five percent of population command as much as 23 percent of total income, while as lower 20 percent receive as little as 9.5 percent in 1955-56.


NCAER\textsuperscript{38} found that during 1960 the share of top 10 percent of population in the total income of rural and urban sectors was 33.6 percent and 42.4 percent respectively. Again 75 percent of urban population (household) received an income which was less than the average incomes for all urban households, while as top 14 percent of households commanded as much as 50 percent of total income before tax, and 99 percent of households command only 77 percent of total rural income.

Iyenger and Mukherjee (1961)\textsuperscript{39} in their exhaustive research paper (A note on the derivation of size distribution of personal household income derived from a given distribution of consumer expenditure) for the year 1956-57 uses NSS expenditure data. Their estimates show that the share in total income of top 5 per cent is less than Lyndal’s estimates, while as the income share of upper 10 per cent and lowest 20 per cent is more than Lyndal’s estimates.

Ojha and Bhatt (1964)\textsuperscript{40} used NSS consumer expenditure data and saving figures of RBI and then calculated the share of different decile groups in the total income and the concentration ratio having increased from 0.376 to 0.382 in terms of distribution between decile groups of population also, the share of both the top 10 and 20 per cent of the population increased over the reference period and the share of the bottom 10, 20 and even 50 per cent of the population has declined.

Mukherjee and Chatterjee (1967)\textsuperscript{41} in their study (Trends in the Distribution of National Income) for the period of 1950-65 concluded that Reckoned at current prices, there appears to be some reduction in the disparity of the distribution of consumption expenditure during the period covered both within rural and urban areas and for the country as a whole. However in real terms, they found a tendency for disparities to increase, “roughly there appears to be relative stability within both rural and urban


areas. The all India figures, however, exhibit a higher level of disparity during the second and third plan.

Ahmad and Battacharya (1972)\textsuperscript{42} in their study “size distribution of per capta personal income in India: 1956-57 to 1963-64” used the NSS consumption expenditure distribution for the lower expenditure groups and income tax data for the upper groups calculated that the concentration ratio has decreased from 0.418 in 1956-57 to 0.372 in 1963-64. This study shows that the share of the bottom 10, 20 and even 50 per cent of the population in the total income has increased and that of the top decile decreased from 25.80 to 22 per cent during the reference period.

Gupta (1977)\textsuperscript{43} found that the direct taxes have increased inequality in disposal income as they failed to mobilize a growing proportion of the incomes which have accrued to the upper class.

Lakshman (1979)\textsuperscript{44} based his study on the data collected by Burdhan (1970), Ahmad and Battacharya (1970), Dandakar and Rath (1971), Minhas (1971), Vaidyanathan (1971), Randive (1971), Ojha and Bhat (1974), and the Institute of Public Opinion, New Delhi (1976) and concluded that in spite of economic growth, poverty and inequalities of income, have considerably increased over the period. He further adds that there cannot be any denial of the fact that inflation has further accentuated the income contrasts between the masses. He takes asset holding as a cause of this inequality in incomes.

Sinha et al. (1979)\textsuperscript{45} based their study on consumption expenditure and per capita income of NSS consumption expenditure and CSO’s income accounts has found that consumption expenditure is more equally distributed in both rural and urban sectors, than incomes. On similar basis Bhattt (1974) suggests that inequality in distribution of

\textsuperscript{42} Ahmad and Battacharya (1972), “Size Distribution of Per capita Personal Income in India: 1956-57 to 1963-64”, Economic and Political Weekly. Special Number, Vol. VIII.

\textsuperscript{43} Gupta (1977), “Central Government Taxes-Have they Reduced Inequality?” Economic and Political Weekly.


per capita expenditure is uniformly less than the inequality in all states and among all
the three categories of rural population (i.e., cultivators, agricultural workers and non-
agricultural workers).

Rao (1982)\textsuperscript{46} analysed NSS data and divides the population in to fourteen classes on
the basis of consumption expenditure for the year 1973-74. It seem that the bottom 9
expenditure classes, whose overall expenditure on food is less than that of the
 corresponds figures for all classes and consumption expenditure for the bottom 7
expenditure classes remained more or less constant and shows a positive tendency to
decline over the subsequent expenditure classes.

Gupta et al (1982)\textsuperscript{47} while calculating income distribution in India for the period 1953-
54 to 1976-77 concludes that there was a tendency towards greater equality over the
period, except minor departure in 1961-62, the study based on gross income and in
some cases on assessed income highlights that the exemptions and deductions granted
according to the income tax Act did not affect the relative positions of assesses. The
beneficiaries during this period were top decile as the income tax failed to mobilize the
benefits of growth which accrued to the upper class.

Kumar, B. (1984)\textsuperscript{48} concludes that in 1965-66, 60 percent of India’s population was
receiving income below Rs. 27 per month while as 110 million people receive income
less than Rs. 13 per month. He further reveals that there is an increasing trend in
inequality between the different strata of population over the period. In 1972-73,
number of people receiving income less than the subsistence level at Rs. 40 per capita
per month has increased to 80 percent while as 219 million received income less than
Rs. 20 per month.

Ezekiel, H. (1984)\textsuperscript{49} estimates show that the consumption expenditure of the bottom
decile has increased during the period 1979-80 to 1984-85, from Rs 34.12 to Rs 61.17


New Delhi.
per month at 1979-80 prices. The study shows inequality in consumption expenditure between the rural and urban sectors’ bottom decile but the inequality is statistically insignificant.

Ali, N. (1985)\textsuperscript{50} used tax data for individuals and Handu undivided families (HUF), calculated Gini co-efficient, Pareto’s law, Kuznets’ index etc. and found that inequality decreased in India from 1953-54 to 1975-76, confirmed by both Pareto’s co-efficient and Gini co-efficients. Gini co-efficient decreased from 0.4085 to 0.3040 in 1975, on the other hand Pareto coefficient (α) increased from 1.7239 to 2.1450.

Ali Nasir (1985) while analyzing agricultural development and income distribution in J&K found that for farm land the Lorenz curve has been far away from the line of equal distribution, but the inequality is found greater among apple cultivating households. His study reveals that bottom 20 percent of paddy farms share 4.83 percent of the total income and the bottom 20 percent of apple farms share only 3.41 percent of the total income; the top 20 percent of paddy growing households share 48.50 percent of the total income and the top 20 percent of apple farms share 56.7 percent of the total income. This indicates greater income concentration among the apple calculating households. The share of the top 10 percent has been about 40 percent of the total income (apply farms), while the same has been about 32 percent in case of the paddy cultivating households. The Gini’s concentration coefficient worked out to be 0.6566 for apple farms and 0.4100 for the paddy farms.

Misri and Bhat (1994)\textsuperscript{51} while using NSS consumption expenditure data for J&K concluded that monthly per capita total consumption expenditure, both nominal and real, has displayed an increasing trend across the fractile classes and different NSS rounds. But the improvement is not much appreciable. The increase is sharper at current prices compared to constant prices. This is in line with the impact of price inflation on the purchasing power of money incomes. They further found out that all the indices of


inequality turned out to be very low and exhibits a fair degree of stability across the different NSS rounds. Those indices increase marginally from the base (1960-61) to terminal year (1987-88).

Panda (1998)\(^{52}\) divides the total population in to five quintiles for the period 1977-87 to 1993-94 on the basis of personal income and concludes that during the reference period the top quintile has benefited more than the bottom quintile as their income ratio (Q5/Q1) increased over period.

Rao, S. and Kalirajan (1999)\(^{53}\) showed that the pattern of economic growth in India since mid-1960s did not confirm to the predictions of neo-classical growth theory. Per capita income across states over the last three and a half decade displayed divergence and further dispersion had been much sharper in the initial stages of liberalization. The determinant of difference in growth rates among states also confirmed the divergence. The states with high initial levels of income grew faster than those with lower income, leading to divergence in per capita income over time. The authors also revealed that pattern of private investment is a major determinant of economic growth and divergence in income levels has been mainly caused by allocation of private investment, which in turn has been influenced by the inequitable spread of infrastructure.

Jha, R. (2000)\(^{54}\) while estimating poverty and inequality in India, based his study on consumption expenditure data of NSS concludes that inequality in urban and rural sectors have increased during the period 1957-58 to 1997. The rise in inequality was modest in rural while significant in urban sector, because of migration of people from rural to urban.

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Kumar, Ashutosh (2003)\textsuperscript{55} in his remarkable work (Economic Development and Income Distribution) has found that there has been no perceptive change in the consumption distribution since 1960. The Gini co-efficient has generally fluctuated between 0.29 and 0.36. However, his estimates of 1999-00 reflect Gini coefficient all-time low of 0.26 calculated from 55\textsuperscript{th} NSS round. Measuring relative inequality by comparing the ratio of the share of the top quintile with that of bottom shows, a declining trend in the ratio from above 5 in the mid 1950’s to 3.67 in 1999-00.

Gosh, Jayati (2004)\textsuperscript{56} estimates income inequality in India in the post reform era and finds that the period since neo-liberal economic reforms were introduced in India has been one of the dramatically increased income inequalities. For the bottom 80 percent of rural population who number nearly 600 million, per capita income has actually declined since 1989-90.

Piketty and Qiam (2004)\textsuperscript{57} in their exhaustive work concluded that the inequality in income in India has increased over the period 1986-2001. The income share of the top one percent increased by more than 50 percent from 6 percent in 1986 to 9.50 percent in 2001. Further they show that only 4 percent of India’s total population pays income tax. During their study they assert, that the small number of tax payers in due to the increase in the exemption threshold, that has been increased continuously in India, therefore they call Indian income tax as elite tax.

Bhattacharya, B. and Sakthivel (2004)\textsuperscript{58} concluded that the growth performance and structure changes in the domestic product of Indian states in the last two decades has been uneven in terms of development process. The advanced industrial states have tended to leapfrog in the reform years, other states have lagged behind. The regional disparity in the growth rates becomes sharper in terms of per capita income. The poorer


states have not only performed poorly but their failure to stem population growth has left them in even worse position.

Saksena, K. D. (2005)\(^{59}\) takes consumption expenditure into consideration for the year 1997 and calculates the Gini co-efficient, ratio of richest 10 and 20 percent to the poorest 10 and 20 percent of population. All the three measures indicate glaring inequalities of consumption (or income) in India between different groups of population. The Gini co-efficient was 37.80, ratio of richest 10 percent to poorest 10 percent was 9.50 percent, and ratio of richest 20 percent to poorest 20 percent was 5.7 percent. These measures further assert that the inequalities are more between the two extreme groups and it is lower among middle income groups.

Vaidyanathan, A. (2005)\(^{60}\) used NSS data; found that the Lorenz ratio shows that the inequalities in nominal consumption remained more or less stable up to 1957-58. Since then, they have reduced appreciably.

Foldvary Fred E. (2006)\(^{61}\) discussed in detail different indices of measurement of concentration and diversification of income among population. He came to the conclusion that the Herfindahl-Hirchman and Tideman-Hall indices show satisfactory results for measuring the inequality as compared to Gini coefficient and Tideman-Hall-Foldvary index as a function of the Gini coefficient has the desirable qualities for the measurement of concentration, inequality and diversification.

Shaban A. (2006),\(^{62}\) found that the overall high economic development, Maharashtra suffers from acute regional disparity. About a half of the total income in the state is accounted for only by the Konkan region, comprising the districts of Greater Mumbai, Thane, Raigad, Sindhudurg, and Ratnagiri. After the Konkan, western Maharashtra is the next highest developed region and is followed by Vidarbha and Marathwada. Four


highly urbanised districts of Greater Mumbai, Thane, Pune and Nagpur also account for about one-half of the total state income, and about 60 per cent of tertiary sector income. There has been marked stability in the ranking of regions in economic development over the years in almost all the sectors. The findings further show that giving a boost to economies of interior and backward districts like Parbhani, instead of Greater Mumbai, Pune or Nagpur, would be more beneficial for balanced regional development of the state, as beneficial effects generated due to the shocks are propagated mainly to backward districts. The study shows that it is likely that most of the benefits due to investment and development in Greater Mumbai and Pune would remain concentrated in the Konkan and western Maharashtra region, already relatively highly developed regions in the state.

Ojha, R. K. (2007)\textsuperscript{63} estimated consumption expenditure and income inequality and found that both consumption and income inequalities have decreased due to the decrease in the consumption expenditure and income of upper decile and increase in the consumption and income of the lower deciles.

Datt Ruddar (2007)\textsuperscript{64} concluded that the extent of decline in the post-reform period in poverty is not higher compared to the pre-reform period in spite of overall growth. Apart from other factors, an increase in inequality seems to have slowed down the rate of reduction in the post-reform period. However, there are two unambiguous conclusions. One is that there is no evidence of a higher rate of decline in poverty in the post-reform period as a whole compared to the pre-reform period. Secondly, inequality increased significantly in the post-reform period as compared to the earlier decade. Higher inclusive growth that increases agriculture and non-farm growth, and a reduction in regional, rural-urban and social disparities are important for a faster reduction in poverty. Human development is equally important for poverty alleviation. Therefore, policies that increase growth and equity have to be followed simultaneously. There is also a need for focused intervention on the 115 million hardcore poor.


Pal Parthapratim and Ghosh Jayati (2007) concluded that the analysis of data substantiated that inequality has increased in the post-liberalization period. Comparable estimates of the 50th (1993-1994) and 55th (1999-2000) rounds of National Sample Survey data reveal that inequality increased both in rural and urban India. They also found that, both at the national and the state levels, income disparities between the rural and urban sectors has increased during this period. State-level data also showed that not only had the income gap between the poorest and the richest states increased during the 1990s, but urban inequality increased for all the 15 major states in India. Inequality also alarmingly increased in the North-Eastern part of the country, where all the states experienced increased rural and urban poverty during this same period.

Nayyar G. (2008) found that states in India are converging to very different steady states and attributes to increasing interstate disparities in levels of private and public investment and an insignificant equalising impact of centre-state government transfers. He identified per capita private investment, literacy rate, infant mortality rate, and per capita public investment as important determinants of a state’s steady state level of income and came to conclusion that the first three are significantly influenced by the fourth, which is a policy-driven variable, thereby implying that state governments can play an important role in enhancing their own growth prospects.

Sharma Savita et al (2010) while analysing data on Net State Domestic Product (NSDP) per capita and District Domestic Product (DDP) per capita, came to conclusion that disparities among states, between regions within states and between urban and rural areas has been increasing. They highlighted that the cross tabulation of states show that Bihar is the only state with a very low per capita income (about 1/3 of National per capita income) in both the years i.e., 1999-00 and 2004-05 and Gujarat is the only state whose relative performance has improved from average in 1999-00 to high in 2004-05 and number of states falling in the categories of very low and low per capita income in

1999-00 were 7 which has increased to 10 in 2004-05. The study revealed that the disparity is increasing within states for most of the states and the gap is widening significantly in the less developed states and in developed states the income gap is widening among regions.

Krishna Pravin and Sethupathy Guru (2011)\textsuperscript{68}, in their combined study found that overall inequality varied modestly over the period of the study, falling between 1988 and 1994, rising between 1994 and 2000, but falling again by 2005. Hence, the evolution of inequality since 1994 has been non-monotonic. Furthermore, a similar non-monotonic inequality trend has been seen within most states. While rural-urban inequality and across state inequality have risen slightly from 1994-2005, these constitute an extremely small portion of overall inequality. More than 60% of overall inequality is found at the micro-level within urban blocks and rural villages. The change in inequality across households within states is found to un-correlated with the change in state-level measures of tariff and non-tariff protection.

Weisskopf Thomas E. (2011)\textsuperscript{69} concluded that the government of a poor country such as India can reduce economic inequalities while promoting economic growth and combating poverty. The most promising policies that limit the economic gains of the rich are those that tax their income and reduce “corporate welfare”, that break up monopolistic market positions, and that shift ownership away from absentee asset-owners (especially of land). The most promising policies that expand the economic gains of the poor and the marginalised are those that improve their health, that increase their access to good-quality education institutions, that improve their access to credit markets, that promote higher employment, and that shift asset ownership to actual producers (especially cultivators). That these policies are not pursued to a much greater extent nowadays is a sad commentary, not on any iron laws of economics, but on the current constellation of political power in most countries around the world. The recent


experience of Brazil demonstrates how rapid economic growth can indeed be combined with reduction of economic inequality.

Bakshi, S. et al. (2015),\textsuperscript{70} found that among the various axes of inequality in India, regional disparities have acquired greater salience in recent times, with demands being made for special status for certain states on this basis. What has been completely overlooked in the process is that regional backwardness in India is a moving frontier with the most intense forms of poverty and deprivation getting increasingly concentrated within enclaves of backwardness. They further found the relationship between growth rates from 2001-10 and log of initial per capita income i.e. per capita NSDP is upward sloping means that States with higher initial per capita NSDP on average grew faster, suggesting that the inequality across states is actually increasing.

It is important to clarify that although there is no unconditional convergence (reducing dispersion of income), but still there might be conditional convergence. Conditional convergence can be consistent with divergence in PCIs over a certain period of time. It is possible that Indian states are converging to increasingly divergent steady states.

Basole, A. and Basu, D. (2015)\textsuperscript{71} have used data of different consumption expenditure rounds of NSSO to calculate consumption inequality over time. They found that overall consumption inequality has increased mainly because the share of non-food spending has increased in the household budget. The relative Gini-coefficient of food and non-food spending, has not increased much but since non-food spending by its very nature, is likely to be more unequal at any point in time and overall inequality increased when its importance in the budget increases. It was also found that the absolute and intermediate Gini-coefficient of non-food expenditure has increased several fold between 1987-88 to 2011-12 and this is a matter of serious concern.


2.3 Conclusion

By way of conclusion we find researchers both at international and national level highlighting following main reasons for growing inequalities across the countries: skill differential, lack of healthcare facilities, infrastructure bottlenecks, lack of self-organisation of the poor at the community level, underdeveloped financial institutions and lack of access to credit, poor governance, geographical dualism, social dualism, etc. The measure policy recommendation suggested by these studies to address this burning issue are: investment in human capital; participation of people in political process and local decision-making; effective tax structure policies; policies to curtail rapid growth of population; proactive government policies; the quality of governance and in particular the efficiency of investment should be given more attention at the local level. The review of above studies enriched the background knowledge of concepts and methodology to be used in the present study. Various conceptual and methodological issues have been discussed by different researchers by using various sources of data like NCEAR, RBI, NSSO, CSO, etc. The main tools and techniques to study the growth and inequalities have been Lorenz Curve, Gini Coefficient, Range, Standard Deviation, Size Distribution, etc. However, there are certain gaps in the available literature like, a good number of studies have analysed the performance of states by taking either growth or the inequality variable only. But one cannot reach to any conclusion until and unless both variables are taken together. There is so far no study covering the twenty year period after reforms by utilizing the data of per capita GSDP of all states/union territories and using latest consumption expenditure rounds of NSSO comprising Type I and Type 2 Rounds for calculating consumption inequality across states. Further, the maximum studies on the problems under reference have used only the conventional ‘Gini Coefficient’ for estimating the inequality. But ‘Gini Coefficient’ has its own limitations. The present study will use along with ‘Gini Coefficient’ other measures of inequality belonging to Generalized entropy class and normative measure of inequality (Atkinson Index) for a complete analysis. The present study attempts to test convergence analysis across states by using both Sigma (σ) and Beta (β) convergence with cross sectional regression and Panel Data Model which has not used so far now. The present study will utilize the Econometric software like STATA, SPSS, DASP, etc.
for estimating the Interstate inequality and decomposing the same at regional and convergence test. A few studies have used such software to Indian data so far. However, the concepts that emerged from the review of above literature and many more issues regarding the growth and income distribution will be discussed in next chapter.