POVERTY, INEQUALITY AND SOCIAL DEVELOPMENT:
AN INTER-STATE ANALYSIS OF TRENDS AND PATTERNS IN THE PERIOD OF GLOBALISATION

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MASTER OF PHILOSOPHY

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CERTIFICATE

I, **SRIDHAR KUNDU**, certify that the dissertation entitled **"POVERTY, INEQUALITY AND SOCIAL DEVELOPMENT-AN INTERSTATE ANALYSIS OF TRENDS AND PATTERNS IN THE PERIOD OF GLOBALISATION"**for the degree of **MASTER OF PHILOSOPHY** is my bonafide work and may be placed before the examiners for evaluation.

Sridhar kundu

Forwarded by

PROF. AMITABH KUNDU
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(CHAIRPERSON)

I dedicate my work to my younger brother
Biranchi Kundu

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CHAPTER - I

INTRODUCTION

1.0. Poverty and Inequality are the major concerns in economic development for any developing country. These were the major issues that figured importantly in policy debate during nineties when several developing countries launched the policy of Liberalisation, Privatisation and Structural reforms. The experience of many of the Latin American and African countries where poverty and inequality have sharpened due to the programme of Globalisation, which weighed heavily on the mind of the Indian planners. There were serious apprehensions that India may experience similar trends in these two fields after adopting the policy of Liberalisation, Privatisation and Globalisation. As the country had more than forty percent of the population below poverty line during eighties, the further deterioration of the situation would create serious social tension and threaten democratic structure of the country.

Understandably, there are large number of studies that looked into trends and patterns of poverty and inequality in the country during the period of Globalisation. The trends and patterns of poverty are discussed in the following:

The trends of poverty in India in the nineties have been a matter of intense controversy. Researchers are having different views regarding its trends and patterns, which clouds one's vision to obtain a definitive idea about the impact of the structural reforms on poverty. The debate has often generated more heat than light, and confusion still remains about the extent to which poverty has declined during this period.

In the absence of conclusive evidence, widely divergent claims have been made. Some have argued that the nineties have been a period of unprecedented improvement in living standards. Others have claimed that it has been a time of widespread impoverishment.

It is therefore extremely important to have a look into the trends and patterns of poverty with empirical figures, with analytical techniques that have a high level of accountability.

In stead of using only one measure of poverty it is important to use different poverty indices to get alternate perspectives on the trends in poverty during the period of Globalisation.

1.1. Poverty and Economic Growth

It would be important to analyse the growth of income and consumption expenditure during the period of Globalisation when poverty is reported to have been declined. Because most of the analysts opine that growth is the most important factor for reduction of poverty. Rapid economic growth remains the best bet for reducing India's immense problems of poverty (Raghabendra Jha, 2003). Per-capita income growth mostly accounted for the poverty reduction (Bhalla). It is important to note that the macro economic changes do not confirm to the changes in living condition of the poor and decline of poverty. Understanding the causes and nature of differences in levels and growth of income and expenditure across the regions (states) is very important because even small differences in the growth rates, if cumulated over a long period of time, may have substantial impact on the standards of living of people [Barro and Sala-i-Martin, 1995] and consequently on the poverty level of the region. Further, inequality in any respect gives rise to unequivocal negative effects on subsequent growth and development, and worsens economic, social, and political tension among regions leading to misallocation of resources (Chowdhury, 2003). Therefore, it is important to identify the sources of changes in growth in order to recommend appropriate policies for accelerating growth and achieving equity by raising the standards of living of people in different states. The trends and patterns of poverty at the state level is having a causal link with the patterns of both per-capita income and expenditure growth at the state level, which is shown by the growth elasticity of poverty (Kakwani). Hence, it is essential to show the trends of growth at the state level and find the possible linkages between inter-state disparity in growth and poverty reduction.

1.1.1. Inter-state income disparity in India has shown a rising trend since independence. State Product inequalities have increased in India over the period of twenty years from 1960/61 to 1979/80 (Dholakia, 1985).The disparity has been sharpened after the

economic reforms started in 1991. The range of variation in the growth rate of SDP in the 1980s was from a low of 3.6 percent per year in Kerala to a high of 6.6 percent in Rajasthan, a factor equals to 3. During 1990s (1991 to 1997-98) the variation was much larger, from a low of 2.7 percent per year for Bihar to a high of 9.6 percent for Gujarat, a factor exceeding 6.5 (Montek Singh Ahluwalia, 2002). The co-efficient variation of per-capita SDP growth rate among the 15 major states in India during 1980-90 is 0.14 and it increases to 0.29 during 1990-2000 (B.B.Bhattacharya and Sakthivel, 2004)[1]. The ratio of per capita NSDP of the richest state (Punjab) and the poorest state (Bihar) rose from 3.30 in 1980–1984 to 3.78 in 1990–1994 (UNDP 1999). There is divergence in per-capita SDP growth during the post reform period. The annual per-capita SDP growth shows a positive and significant relationship with the growth rate (Buddhadev Ghosh, Sugata Marjit, Chiranjib Neogi, 1998).

The increasing inter-state disparity is not only evident in per-capita SDP growth. There is also inter-state disparity in growth of per-capita consumption expenditure. There is a strong pattern of inter-regional 'divergence' in average per-capita expenditure (APCE). States that started off with higher APCE levels also had higher growth rates of APCE between 1993-94 and 1999-00.The state in low APCE growth rate had low rate of per-capita SDP and states in the high APCE growth rate had comparatively high annual growth rates of per-capita SDP between 1993-94 and 1999-00. The correlation between the two is 0.45 and significant (Angus Deaton and Jean Dreze, 2002).

Though the inter-state disparity in growth has been increased during the post-reform period, some poor states like Orissa and West Bengal's growth performance is pretty well. Whereas the growth performance of the rich states like Punjab, Haryana is not good, Andhra Pradesh, Gujarat, Karnataka, Maharashtra and Tamil Nadu can be classified as the most reform-orientated states and Orissa, west Bengal are the intermediate reformers[Baipai and Sachs, 1999]. Inter-state disparities in income levels and growth rates as measured by the co-efficient of variation increased over time.

[1] The difference in calculation of per-capita SDP growth rate among the states by B.B.Bhattacharya-Sakthivel and Montek Singh Ahluwalia discussed in appendix-1

However, the relative positions of many states remained unchanged (K L Krishna, 2000). This shows that growth has not been evenly distributed among the states. There is also disparity in poverty incidence among the states. The responsiveness of growth to incidence of poverty varies from states to states. This responsiveness is known as Growth Elasticity of Poverty. The Growth Elasticity of Poverty (Poverty Gap) increased in India from 1973-74 to 1983 (N. Kakwani and K. Subarao, 1990).

1.2. Poverty and Inequality:

To understand the impact of economic growth on poverty, it is important to know the trends of inequality. Because, the inequality effect destabilises the positive effect of economic growth. If economic growth is accompanied by a decline in inequality, poor benefit more than the non-poor. This situation is described in the literature as pro-poor growth (Kakwani, Prakash and Son, 2000; Kakwani and Perina, 2000). Even when inequality rises, observed poverty may still decline. In this case growth effect predominates the inequality effect i.e. the extent of fall in poverty due to growth is larger than the rise in poverty due to rise in inequality. Growth effect which dominates over the inequality effect caused poverty to decline during eighties and nineties (N.R. Brahmamurthy and Arup Mitra, 2003).

Trends of inequality within states are fluctuating from time to time. Gini index and Theil's measure of inequality calculated for 15 major states in India for the year 1972-73, 1973-74,1977-78, and 1983 show that inequality was rising upto the year 1978 and then it decreased in the year 1983. After the economic reforms, these fluctuations became more intensive. The rural inequality started declining while the urban inequality started rising during nineties (Angus Deaton and Jean Dreze, 2002).

1.2.1. The incidence of poverty is higher in rural areas than the urban areas. It would be important to discuss the rural-urban disparity during nineties. The rural-urban inequality in income and consumption expenditure exists in India since independence and even before that. During nineties this disparity has been sharpened after the new economic policy was adopted. The rural economy doesn't show any impressive growth in

comparison to the urban economy during this period. In the rural areas in some of the poorest states, there has been virtually no increase in per-capita expenditure between 1993-94 and 1999-2000 (Angus Deaton and Jean Dreze, 2002). Hence there is disparity in incidence of poverty in rural and urban areas. The differences in inequality, poverty and mean per-capita consumption expenditure is rising over the period 1992 to 1997 (Raghabendra Jha, 2000). The disparity has not only widened in income and consumption expenditure, but it is also reflected in social sector (Basant K. Pradhan, P. K. Roy, M. R. Saluja and Shanta Venkataram, 2000).

1.3. SOCIAL DEVELOPMENT:

It would be important to analyse the inter-relationship of poverty with different aspects of social and human development. Lack of education, poor health, and inadequate access to safe drinking water and sanitation are closely associated with higher level of poverty. Absolute poverty takes into consideration not only income or consumption expenditure but also indicators like calorie intake, health, education and natural factors. This gives a multi-dimensional approach to reach at an accurate understanding of nature of poverty. Increasing calorie deprivation, child mortality rate, illiteracy etc. with the increase in income or consumption expenditure will show negative development. The Human Development Report (HDR) clearly defines the need for enlarging dimensions of poverty from a mere per-capita income/expenditure to social indicators to arrive at a comprehensive index of poverty. The HDR 1993 added a new dimension of global Gender Disparity Index (GDI) which reveals that in every country, there are gender disparity and concludes that: ' No country treats its women as well as it treats men'. Regions within India also revealed the same trend; the inter-state disparity in terms of both Human Development Index (HDI) and GDI were quite high.

Prabhu (2000) has studied the human development indicators and analysed the impact of reforms on this aspect. Kundu, Shariff and Ghosh (2002) have attempted to construct a comprehensive index of human development, which is beyond the changes in income and regional levels of disparity. Patnaik and Vasudevan (2003) have also made a similar attempt to measure the improvement in human development index and suggested some

changes in UNDP's Human Development Index (HDI), with the ornament that this is a need to measure the effects of public policy not merely by income alone but by indicators of human development". During nineties some states have achieved increase in income and consumption expenditure growth but in social sectors they have not shown any such improvement while some states are totally different.

Kerala is well-known for its remarkable achievements in social (human) development. Despite high level of social development, the disappointing performance of the economy led to a series of debate and discussion. Kerala is referred to as a "Paradox of Social Development and Economic Backwardness" (Panikar, 1984). There is mismatch between social development and economic growth. Punjab has the highest GDP per capita among states in India but with a lower HDI. Some other states like Bihar, Rajasthan, Orissa, Madhya Pradesh and Uttar Pradesh are not only impoverished but also have a low HDI compared to most of the major states as well as the national average. Thus economic measures along with non-economic measures, which include political as well as social indicators, seemed to provide a holistic approach to measuring human poverty.

Poverty is not same as inequality. Poverty is absolute whereas inequality is relative living standard across the whole society. United Nations has defined its criteria by taking into consideration the basic needs of cultural and social requirements including education, leisure and security and the higher needs depending upon the surplus income. The World Development Report stated that if these above criteria will be fulfilled, much of the world's poverty would be eliminated. It also states that the rural masses of developing countries are still receiving less than half of the opportunities and social services available to the urban people. There are huge gap among the states in India in provision of basic infrastructure to the rural areas. The rural India provides shelter to nearly 70% of the total population. Hence, the country's economic development is quite dependent upon the rural development.

From the above analysis we come across certain problems which need to be carefully examined with analytical framework. These problems are discussed in the next section.

1.4. STATEMENT OF PROBLEM:

The debate on poverty trend in India during nineties is inconclusive. There is a large difference in incidence of poverty among the states. Some states are extremely poor and their macro economic performance is not comparable with the relatively rich states. The inter-state disparity in per-capita income and per-capita consumption expenditure has widened during the post reform period. Also there is difference in change in incidence of poverty among the states. The interdependence of state level per-capita income and expenditure growth and poverty is not very clear. Growth is not evenly distributed within the states. Some states have experienced higher inequality than the others. The common measure of inequality is the Gini-index of inequality. It cannot capture the polarization within the economy. The state level trend of rural urban disparity and rural-urban polarization is showing no relation with the trend of poverty. Some states are having higher per-capita income but in terms of social development lagging behind the relatively poorer states. The most backward states are also having lower per-capita income as well as showing no progress in social factors. Hence the interdependence of state level per-capita income, growth and social development needs to be analysed.

In view of the above problems, the present study analyses the trends and patterns of poverty, economic growth and disparity, income inequality and social development at the national as well as state level.

1.5. OBJECTIVES OF THE STUDY:

From the problems set above, the following objectives are put forward.

- To study the trends of poverty in Indian states during nineties with the use of alternate indices.
- To study the economic growth at state level and its impact on poverty and inequality (to show whether growth is pro-poor or not).
- To study the interdependence of economic growth, poverty and social development at state level.

1.6. CHAPTERISATION SCHEME:

The first chapter deals with an introduction of the study and literature review. The objective of the study is clearly defined in this section.

The second chapter looks at the scope of the study and methodology. It details out the various measures of poverty, indices used in measuring growth of income and consumption expenditure, disparity in growth, growth elasticity of poverty, measures of inequality and polarization. It further presents a methodology for calculating indices for educational, health, information/communication and other infrastructure in rural areas. It further presents the data sources.

The third chapter focuses on the trends and patterns of poverty at the national level by using various measures of poverty like Head-count Ratio, Poverty Gap Index and Sen's Index. The controversies over the trends of poverty during nineties are discussed in this chapter.

The fourth chapter discusses the state level poverty scenario by using the above mentioned poverty indices. This also reflects the state level disparity in per-capita income and per-capita expenditure growth and inter-dependence of growth and poverty reduction.

The fifth chapter reflects the trends of consumption expenditure inequality and rural-urban disparity. The difference in the trends and patterns of polarization and inequality, rural-urban disparity and rural-urban polarization at state level is also covered in this chapter.

The sixth chapter discusses the interdependence of state level growth, poverty, inequality and social development. State level development in education, health, information and

communication and other infrastructures forms a part of the analysis of this chapter. Rank of different states in rural infrastructure development index is also figured in this chapter. The summary of the analysis and the conclusions obtained in the study are highlighted in the final chapter.

CHAPTER - II

SCOPE AND METHODOLOGY

2.0. The basic concern of the present study is to analyse the trends and patterns of poverty at the national level as well as the major states in India. Three types of indices have been used to measure poverty at the national and state level. They are discussed below.

1 Head-Count Ratio
2. Poverty Gap Index
3. Sen's Index of Poverty

These indices have been computed in Chapter-III and Chapter-IV at the national and state level.

The mathematical formulation of these three indices is given below:

Head-Count Ratio: $\mathbf{H = (q/n)}$

H= head-count ratio

n= total population size

q = no. of people having income below the poverty line.

The Head Count Ratio (HCR) is the most widely used measure of poverty, which specifies the proportion of the population that lives at or below an exogenously defined poverty line. However it ignores the size of the poverty gap, i.e., how far below the poverty line is the per-capita total expenditure of poor households. It also does not reflect relative inequality among the poor.

Estimation Procedure of Head Count Ratio:

In the present study the Head Count Ratio has been estimated from the published National Sample Survey (NSS) household consumption expenditure data. These data are available in a grouped form, giving for each group: (a) the percentage distribution of an estimated number of persons, and (b) the average consumer expenditure in rupees per person. The monthly per-capita expenditure levels are generally grouped into 12 to 14 expenditure classes. To estimate poverty ratio from such data, the class of the household

consumption expenditure in which poverty line lies, is broken by the method of interpolation and the frequency of this broken class is added with the frequencies of all the previous classes and the sum gives the head count ratio.

Poverty gap Index: $$G = H (z - \mu^*)/z.$$

Where,

G = poverty gap ratio,

H = head-count ratio,

z = poverty line,

μ^* = the mean income of the poor (people living below poverty line).

Sen's Index of Poverty:

$$P = (q/n). (1/\pi) [\pi - \nu(1 - G_p)],$$

Where,

P = Sen's Poverty index,

(q/n) = the head-count ratio,

π = poverty line,

Gp = income inequality among the poor.

As Sen's Index uses the Gini Co-efficient among the poor population it is more sensitive to relative inequality[1].

The derivations from the Sen's index which are very helpful for the policy purposes are defined below:

$$M = (\pi/\mu). P$$

Where,

M value measures the percentage of the state income spent to make the poor to come to the poverty line (so that the people living below the poverty line will be having the consumption expenditure which will be equivalent to the poverty line consumption expenditure).

[1] *Sen's Index of Poverty satisfies all the axioms and an improvement over the two indices discussed in appendix-2*

π = poverty line,

μ = mean income of the total population

P = Sen Index of poverty.

$$F = \frac{\pi}{\mu - \nu\,(q/n)}\ P$$

Where,

F value indicates without the change of the state income, the percentage of the transfer of income from the people above poverty line to the below show that they can come the poverty line itself.

ν = mean income of the poor,

(q/n) = head count ratio,

π = poverty line,

μ = mean income of the total population,

P = Sen Index of poverty.

Poverty is calculated at all India level and for fifteen major states both for rural and urban areas, for the year 1983, 1993-94 and 1999-2000. These three periods are taken for the calculation of poverty because our poverty measurement is only based on the big round of NSS household consumption expenditure survey (42^{nd} round, 50^{th} round, 55^{th} round). The trend of poverty in these three time periods can help to make a comparison of the change of incidence of poverty before and after the new economic policy adopted during 1991.

2.1. The second part of the fourth chapter covers the trends and patterns of growth of per-capita GSDP of Indian states. The exponential growth rate is calculated for the fifteen major states and India as whole.

As per the equation given below:

$$Y_a = Y_0 . e^{rt}$$

$$r = \{(1/t). (\text{Log } Y_a - \log Y_0)\}$$

Where,

R = exponential growth rate,

Y_a = income or expenditure in the current year,

Y_0 = income or expenditure in the base year.

t = time period during the current and base year

The growth of sectoral de-composition of GSDP also comes under its coverage. The growth rate is calculated for the pre-reform period defined as 1980 to 1991-92 and the post reform period as 1993-94 to 2002-03. These two time periods are taken to make a comparative analysis of growth rate and impact of globalization on its change. The disparity of Per-capita GSDP growth rate among the states in India is also shown in this part. The divergence of growth rate after the period of globalization is analysed in this section.

The exponential growth of per-capita consumption expenditure has also been calculated both for rural and urban areas in India and the fifteen major states as well. The time period taken for this calculation is 1983, 1993-94 and 1999-2000.

2.2. The third and fourth chapter also discusses growth elasticity of poverty at the national as well as the state level. Growth elasticity of poverty shows the responsiveness of growth on poverty and it is calculated for the rural and urban areas separately.

The method for calculation of Growth elasticity of poverty is given below:

$$= - \frac{\mu}{(z - \mu)}$$

μ - means per-capita consumption expenditure of the poor, z – poverty line.

The elasticity is defined by negative sign showing an inverse relationship between growth of consumption expenditure and poverty gap. Elasticity varies between zero and infinity. $E = 0 \rightarrow \infty$. When all the people below poverty line having zero income which means μ is zero, the elasticity will become zero ($E = 0$). When all the people below poverty line will come to the poverty line then μ will be equal to z and the denominator will be zero which gives the output infinity ($E = \infty$).

2.3. The fifth chapter begins with the trend and pattern of inequality in consumption expenditure. Gini index of inequality and Wolfson index of polarization is calculated for all India and fifteen major states and both for rural and urban areas separately.

The equation for the two indices have been given below:

$$\text{Gini-coefficient} = 1/(100.100).\Sigma (x_n.y_{n+1} - y_n.x_{n+1}).$$

$$x_1 < x_2 < \ldots\ldots\ldots\ldots < x_n.$$

$x_1, x_2, \ldots x_n$ are cumulative percentage of the population in the distribution.

$$y_1 < y_2 < \ldots\ldots\ldots\ldots < y_n.$$

$y_1, y_2, \ldots\ldots y_n$ are cumulative percentages of the share of consumption expenditure of the population in the distribution.

Wolfson (1994) Index of Polarisation is defined as below:

It is twice the area between the Lorenz curve and the tangent line at the median point. It can be written as:

$$\mathbf{W = 2(2T\text{-}Gini)/ (m/\mu) = 2(\mu^* - \mu^L).}$$

$$T = 0.5 - L\ (0.5).$$

Where L (0.5) denotes the income share of the bottom half of the population:

M = median income:

μ = mean income;

μ^* = the distribution corrected mean income which is given by the actual mean times (1- Gini)

μ^L = mean income of the people below poverty line.

When the bottom 50% gets their equal half of the total income the T value becomes zero and W becomes zero. When the bottom 50% gets zero income shares, T becomes 0.5 and 2T becomes 1 and as a whole the W becomes 1.

Maximum polarization occurs when the bottom fifty percent having zero income and polarization will be zero when the bottom 50% gets their equal half. As the bottom fifty percents distant away from their share of fifty percent the T value rises and polarization increases which shows the middle income group collapses. Both Wolfson (1994) Index of Polarisation and Gini-index of inequality has been calculated from the Published household consumption expenditure data. The time period chosen for this purpose is 1983, 1993-94 and 1999-2000

2.4. The fifth chapter also discusses the trend of rural-urban disparity and rural-urban polarization in consumption expenditure is calculated for the same time period for the fifteen major states in India.

The formula used for calculation of rural urban Disparity as:

Modified Sopher Index (Kundu) =

$$\textbf{Log } (x_2/x_1) + \textbf{log } ((200-x_1)/ (200-x_2))$$

Where x_2 is greater than x_1. ($x_2 > x_1$). Here x_2 is taken as the mean household consumption expenditure of the urban people and the x_1 is taken the mean household consumption expenditure of the rural people.

Rural-Urban polarization of consumption expenditure calculated by the following method:

$$P = \frac{\textbf{Between urban-rural inequality}}{\textbf{Within Rural Inequality}}$$

P - Rural-Urban polarization,

Numerator is calculated by modified Sopher index.

Denominator calculated by the Gini-index of inequality.

Higher inequality within the rural area can give a lower polarization value and thus shows a greater mutually exclusiveness of the rural-urban household consumption expenditure. The lower rural inequality with the urban-rural inequality remaining constant will give the higher rate of polarization.

2.5. The sixth chapter discusses the interdependence of growth and social development at the state level. Availability of basic facilities like education, health, information and communication and other infrastructure to the rural population living in villages is taken

as measure of social development. A rural infrastructure development index has been calculated for the fifteen major states in India for the year 1998-99.

Rural Infrastructure Index is a composite index of Educational Infrastructure Development Index, Health Infrastructure Development Index, Information and Communication infrastructure Development Index, Other Infrastructure Development Index.

Educational Infrastructure Development Index is prepared with the following indicators:
Percentage of the rural population living in villages avail the facilities of

a. Primary School, Middle School, Secondary School, Higher Secondary School, Anganwadi and Adult education centre.

Health Infrastructure Development Index is prepared with the following indicators:
Percentage of the rural population living in villages avail the facilities of

Primary Health Centre, Sub-centre, Hospital, Dispensary/Clinic, Private Doctor, Visiting Doctor, Mobile Health Units, and Village health guide.

Information and Communication infrastructure Development Index is prepared with the following indicators:
Percentage of the rural population living in villages avail the facilities of

Post Office, Telegraph Office, STD Phone Booth, Telephone Connection, Community Centre, community television set, and cable connection

Other Infrastructure Development Index is being prepared with the following indicators:
Percentage of the rural population living in villages avail the facilities of

a. Bank, Electricity , Middle/Small Scale Industry, Credit Co-Operative society, Agricultural Co-Operative Society, Milk Co-Operatives, General Market, Weekly Market

Ranking of the states in Educational Infrastructure Development Index, Health Infrastructure Development Index, Infrastructure for Information and Communication

Development Index and Other Infrastructure Development Index has been done with the help of factor score obtained from the **Principal Component Analysis.**

The Rural Infrastructure Development Index has been prepared with the help of the principal component analysis by taking the factor score of the indices as the indicators and the ranking of the states obtained from the factor score out of them.

In order to show the inter dependence of growth , poverty, inequality and social development, the rank correlation the state in all areas calculated with the Spearman's Rank Correlation Co-efficient.

2.6. DATA SOURCE:

The present study is based on secondary source data. The alternate measures of poverty have been calculated with the help of the published household consumption expenditure data from NSS 42nd round in 1983, NSS 50th round in 1993-94, and NSS 55th round in 1999-00. This data source is also used for the calculation of the growth of per-capita consumption expenditure, inequality and polarization in consumption expenditure, rural-urban disparity, and rural-urban polarisation.

The data source used for the calculation for the growth of per-capita Gross State Domestic Product, inter-state disparity in growth is the National Account Statistics.
For the calculation of the rural infrastructure indices the data source used is the National Family Health Survey-1998-99.

CHAPTER - III

TRENDS IN ECONOMIC GROWTH AND POVERTY AT NATIONAL LEVEL

3.0. One of the paradoxes of our times is the co-existence of extreme economic affluence amidst enormous pockets of poverty. This holds across countries and even more so within countries, and across regions. Cross country and cross regional distributions of per capita incomes seem quite volatile. The extremes seem to be diverging away from each other – with the poor becoming poorer and the rich richer. The present chapter analyses the trend of economic growth and poverty at national level. In India poverty estimates are based on NSS household consumption expenditure survey. Poverty line is defined as a level of income or expenditure required by an individual for an average intake of 2400 calorie in rural areas and 2100 calories for the urban areas per day. Those who do not earn income sufficient for this minimum calorie intake are below poverty line. The trend of poverty in India during nineties has been a controversial issue. The next section deals with the different measures of poverty and the controversies over the trend of poverty.

3.1. Two common measures of poverty have been used in this chapter to measure poverty at the national level. They are Head Count Ratio and Poverty Gap Index. The details about the two indices have been done in the previous chapter. Along with these two indices one more index has been used to calculate poverty i.e. Sen's Index. The details of the Sen's Index and the derivations from Sen's Index such as M-value and F-value have also been done in the previous chapter. Another one measure of poverty which was not discussed is the Squared Poverty Gap (SPG) Index. Both the Sen's Index and Squared Poverty Gap Index take into account the relative inequality among the poor. But they differ from each other in their use of relative measure of inequality among the poor. SPG (Squared Poverty Gap) Index incorporates a squared co-efficient of variation, whereas the Sen's Index uses the Gini Co-efficient among the poor population. Because of their sensitivity to relative inequality, the SPG and Sen's Index are used to indicate the severity of poverty. As they incorporate component measures the HCR and the poverty gap and the measure of relative inequality among the poor, these indicators are by far the

most comprehensive measures of absolute deprivation. Accordingly, given the same HCR and PGI for two populations, the one with higher SPG and Sen's Index reflects a greater severity of poverty.

3.1.1. Controversies over the Trend of Poverty during nineties: Opinions are different regarding the trend of poverty in during nineties. Some are agree with the Planning commission's proposition of the declining trend of poverty, while others are not in favour of this proposition.A lot of studies have been done regarding the trend of poverty during the period of globalisation. Most of them suggest that poverty has declined during this period. The oft-quoted studies in this area are given by:

K. Sundaram and Suresh D. Tendulkar (2003) who has calculated poverty at all India level for the year 1993-94 and 1999-2000 using different measures. They have found that both rural and urban poverty has declined. Rural Poverty measured by Head count Ratio, at all India level has declined by 9per cent (from 37.85per cent to 28.93per cent) and Urban Poverty declined by 5.5per cent (from28.8per cent to 23.09per cent) during 1993-94 and 1999-00. Poverty measured by other indices like Poverty gap, FGT, Sen Index and number of poor also show a declining trend during this period. Trend of Poverty measured by using different indices for the year 1993-94 and 1999-00 is given below:

Alternative Measures of Poverty in India, Estimated by Sundaram and Tendulkar:

	All-India Rural		All-India Urban		All-India all areas	
	1993-94	1999-00	1993-94	1999-00	1993-94	1999-00
HCR	37.85	28.93	28.8	23.09	35.47	27.32
Pov.gap	0.0825	0.0579	0.0672	0.0504	0.0785	0.0558
FGT	0.0267	0.0173	0.0232	0.0160	0.0257	0.0170
Sen Index	0.1145	0.0806	0.0932	0.0695	0.1089	0.0775
No. of poor	249,441	210,498	67.675	63827	317,116	274325

Source: Economic and Political Weekly, January 25, 2003. P-335.

Generally two problems arise while comparing the quinquennial 50th and 55th rounds of the consumer expenditure survey, collected in 1993-94 and 1999-00 respectively. The first problem is that the information in the 55th round CES (Consumer expenditure Survey) concerning household spending items - comprising food, paan, tobacco and

intoxicant and henceforth referred to as 'the food group'- was canvassed on two alternative reference or recall periods of 30 days and 7 days, among the same set of households, and recorded on the schedule of enquiry in blocks juxtaposed side by side. While only 30-day based reporting was published in the 55th round CES (Consumer Expenditure Survey), critics maintain that this reporting may have been biased if households were first canvassed on the 7-day reference period, and subsequently extrapolated this to the 30-day entry by rough multiplicative adjustment. If this were indeed true, then there would be strong grounds to believe that the 55th round overstated consumer expenditures.

The second and less widely recognized problem is that in the 55th round, information on certain infrequently purchased items – namely 'clothing', 'footwear', 'durables', 'education' and 'healthcare' (institutional) – collected only on a 365-day reference period. The published results for all remaining items were based on a 30-day reference period. Accordingly, in the published results the size distributions of the PCTE (Per Capita Total Expenditure) as per the NSS 55th round consumer expenditure survey for 1999-00 are based on a mixed reference period (MRP), in contrast, the published size distributions of PCTE (Per Capita total Expenditure) from the NSS 50th round survey are based on data collected with a uniform reference period (URP) of 30-days for all the items of expenditure. In order to compare both the 55th round and 50th round CES (Consumer Expenditure Survey) the size distribution of the 50th round was recalculated with the mixed reference period to make it directly comparable with the 55th round.

In order to avoid confusion over the comparability of 50th round and 55th round regarding the use of different reference period, K Sundaram (2001) again tried to estimate poverty ratio using the less aggregated consumption data from Employment-Unemployment schedule. He estimated the proportion of population in households below poverty line by gender, age and rural urban location, at all India level, for 1993-94 and 1999-00 based on population by per-capita consumer expenditure size classes derived from the employment and Unemployment Surveys for 1993-94 and 1999-00. Poverty estimates made by him are given below:

Poverty Estimates made by K Sundaram with the help of Employment and Unemployment Survey:

	All-India Rural		All-India Urban	
	1993-94	1999-00	1993-94	1999-00
Poverty ratio	39.36	36.35	30.37	28.76

Source: Economic and Political Weekly August 11, 2001. P- 3048.

The declining trend of poverty ratio during 1990s has been confirmed by Angus Deaton and Jean Dreze (2002). Poverty ratio calculated by them at all India level both for the rural and urban area is given in the following table.

Deaton and Dreze's estimation of poverty ratio:

HCR	All-India Rural		All-India Urban	
	1993-94	1999-00	1993-94	1999-00
Official estimates	37.1	26.8	32.9	24.1
Adjusting for changes in questionnaire	37.1	30	32.9	24.7
Revising the poverty line	33	26.3	17.8	12

Source: Economic and Political Weekly, September 7.2002.P-3730

As it is known that the 55th round and the 50th round can not be compared directly due to questionnaire design, the possible adjustment made by them in terms of price-indices and the recall period. The possibility of adjusting the 1999-00 poverty estimates arises from the fact that the 55th round questionnaire retained the '3o-day recall' approach for a number of items such as fuel and light , non-institutional medical care, and large categories of miscellaneous goods and services. Further it turns out that expenditure on this intermediate group of commodities is highly correlated with total expenditure, and hence, trends in poverty. Turning to the price adjustments, one limitation of the price indexes that have been traditionally used to update poverty lies over time (e.g. consumer price index for agricultural labours) is that they are based on fixed and frequently outdated commodity weights. It is possible to calculate alternative price indices using the information in the consumer expenditure surveys themselves. For more than 170 commodities, households report both quantities and expenditures, and the ratio of the latter to the former provides an estimate of the price paid. These prices can then be combined into consumer price index numbers that allow comparisons across states, and if we use data from different rounds, for states and the whole country at different points in

time. One limitation of these price indexes is that their coverage of commodities is only partial (a little more than half the budget in the 55th Round, though more in earlier rounds), so that they cannot capture price changes in important items such as transportation, housing, most non-food goods, and services. However, CPIAL (Consumer Price Index for Agricultural Labour) data suggests that the inflation rate for the uncovered items is not very different from that applying to the covered items. The price indexes from the surveys have the advantage of being based on several million actual purchases in each round. They also make it possible to use formulas for superlative indexes, such as the Fisher ideal index or the Törnqvist index, that allow for substitution behaviour as households adapt to relative price changes over time. The Törnqvist price index is a weighted geometric index with weights that are the average of the expenditure shares in the base and comparison periods. It is a superlative index in the sense of Diewert (1976). After the adjustment in changes in questionnaire design and the use of Törnqvist index to update the poverty line Deaton and Dreze arrived with the above results.

Pant and Patra (2001) used NCAER survey data to estimate the rural poverty and concluded that the rural poverty declined in 1993-94 (after 2 years of reform), after showing initial increase due to other reasons (including reduced rural per capita expenditure on poverty alleviation programs). Significantly this analysis finds evidence that reducing the poverty level has also led to reduction in depth and intensity of poverty. Surjit S. Bhalla (2003)'s estimation of poverty ratio during the Post-Liberalisation period also follows the same direction. He estimated headcount ratio by using two reference periods, 1983 and 1999-00 and the calculation made by him for this period shows a declining trend which is given in the following table. His estimation of head-count ratio for the year 1999-00 is the same as the official estimates.

Bhalla's estimation of Head-Count Ratio:

	All-India Rural		All-India Urban		All-India all areas	
	1983	1999-00	1983	1999-00	1983	1999-00
HCR	46.2	27.3	45.1	23.4	48.2	29.4

Source: Economic and Political Weekly, January 25, 2003.P-340

R. Radhakrishna, K. Hanumantha Rao, C. Ravi, and B. Sambi Reddy (2004) decomposed the people below poverty line into three different strata: *Extremely Poor, Very Poor and Moderately Poor.* Persons whose per-capita total expenditure is less than 50 percent of state specific poverty line are considered extremely poor. Very poor: all those persons whose per-capita total expenditure is less than 75 percent of the state specific poverty lines. Moderately poor: persons whose per-capita expenditure lies between 75 percent and 100 percent of state specific poverty lines. They have calculated the head count ratio for the 50th and 55th round and found in all these three strata, poverty incidence fall during this period. The result of their poverty estimates are given in the following table.

	All-India Rural		All-India Urban	
	1993-94	1999-00	1993-94	1999-00
Extremely poor	2.0	0.8	2.9	1.2
Very poor	14.7	8.2	15.1	9.2
Moderately poor	22.1	18.3	17.7	14.8
Poor (Below Poverty Line)	36.8	26.5	32.8	24.0

Source: Economic and Political Weekly. July 10, 2004. P- 3124.

The fall of incidence of extremely poor, very poor and moderately poor clearly indicates that the economic reforms have a significant impact on the increase in consumption expenditure in all levels. Over the years the severity of poverty has reduced faster than the extent of poverty. The percentage of very poor was about 8 percent in rural areas and 9 percent in urban areas in 1999-00. As a whole the urban poverty reduced faster than the rural poverty. It is due to faster urban economic growth.

Angus Deaton (2003) adopted an adjusted methodology (given below) to compare the 55th round and 50th round and arrived at the conclusion that the poverty ratio shows a declining trend during the 1990s. He claimed that there are a group of goods for which the questionnaire is the same across all rounds. There are six broad groups, fuel and light, miscellaneous goods, miscellaneous services, non-institutional medical services, rent and consumer cesses and taxes. These items have always been asked using the 30-day reporting period. The first four are important items, and expenditures on the first three are reported by virtually all households. Non-institutional medical expenditures are also important on average, with a mean that is comparable in size to expenditures on

miscellaneous goods or services, but they are incurred by less than half of households over a 30-day period. The fraction of these common items to the other items in the 55th round will be taken to estimate the whole expenditure in the 55th round which is comparable with the 50th round.[1] This methodology helps to compare the 50th round estimate poverty with the 55th round and the result obtained is given below.

	All-India Rural		All-India Urban	
	1993-94	1999-00	1993-94	1999-00
Official	37.3	27.1	32.4	23.6
Estimated	37.2	27.0	32.6	23.5
Adjusted		30.2		24.7

Source: Economic and Political Weekly, January 25, 2003, P-323,324.

The estimation of Gaurav Datt and Martin Ravallion (2002) shows that there is an overall reduction in national poverty incidence, from 39.1per cent in 1993/94 to 34.3per cent in 1999/00, implying a rate of reduction of about 0.8 percentage points per year which is a little under half of the rate of decline implied by the 30-day food recall estimates from the 55 th round.[2]

The estimation of poverty by Raghabendra Jha (2000) for the year 1999-00 which is very close to the Planning Commission's estimates for the 55th round is given below in the following table:

India: Poverty in the 55th Round of NSS, 1999-2000(Rural)

	MeanConsumption(Rs.)	Gini per cent)	HCR (per cent)	PGR (per cent)	SPGR (per cent)	Preferred Distribution
Rural 30day recall)	483.85	26.22	27.61	5.45	1.61	Beta
Rural (7 day recall)	502.02	26.23	24.49	4.75	1.42	Beta

India: Poverty in the 55th Round of NSS, 1999-2000(Urban)

	Mean Consumption(Rs.)	Gini per cent)	HCU (per cent)	PGU (per cent)	SPGU (per cent)	Preferred Distribution
Urban (30 dayrecall)	838.57	34.40	25.09	5.75	1.86	Beta
Urban (7 dayrecall)	860.87	34.25	23.22	5.20	1.67	Beta

Source: Rural Poverty in India: Structure, determinants and suggestions for policy reform - Raghbendra Jha

[1] The mathematical interpretation is given in the appendix-3

[2] The Planning Commission's estimates for the 50th and 55th round (using 30-day recall for food) imply that the poverty rate is falling at 1.7 points per year (over 1993/94-1999/00).

3.1.2. Some scholars have however questioned the thesis regarding the declining trend of poverty during nineties.Tendulkar and Jain (1995) were first to evaluate the impact on economic reform on poverty as early as 1995. This paper analysed NSS consumption expenditure data of 1993-94 and concluded that the expenditure has reduced in real terms (at constant prices) thereby suggesting that the poverty levels have not changed significantly in the period 1987-89 to 1993-94. Sen (1997), using the same set of data from NSS confirmed the above conclusion regarding levels of poverty. Chandrasekhar and Sen (1996) did not have 1993-94 NSS consumption expenditure data, but estimated that in 1991-92, the poverty level was 35 percent, while that in rural areas was 44 percent. According to Tendulkar and Jain (1995) the states of Andhra, Assam, Bihar, Karnataka, Maharashtra & Rajasthan witnessed a significant decline in per capita consumption expenditure (at constant prices) thus indicating an upward movement in poverty. The World Bank estimates for different years (Pre and Post reform periods) based on NSS data (regular consumption expenditure surveys and also annual surveys based on thin samples) suggested (Sen 1997) that the Head-count ratio of rural poverty increased from 36.4 percent in 1990-91 to 38.7 percent in 1993-94.This and other similar studies mentioned above confirm that the reforms were affecting rural population more severely than the urban population which is apparent from the higher levels of rural poverty.

Datt (1999) used the NSS data on consumption expenditure after deflating and estimated three sets of poverty measures Head Count Ratio, Poverty Gap and Squared Gaps. The author did not find any change in rural poverty figures for pre and post reform periods. However, the analysis shows a sharp decline of poverty levels in urban areas during pre-reform period and a much slower decline later.

Abhijit Sen (2000) is a critic of the planning commission proposition about the declining trend of poverty that poverty declined from 36per cent to 26per cent during 1993-94 to 1999-00. He argued that the declining trend of poverty is due to the changing methodology adopted during the large sample 55th round of 1999-00.In this round estimates for clothing, footwear, durable goods and expenditure incurred on education

and on health (institutional) were obtained only with a 365-day recall. For food and intoxicants, every sample household was canvassed by both the one week and the one month reference periods. But the earlier NSS consumption surveys follow a uniform reference period of one month, spreading interviews evenly over months to iron out the problem of seasonal variations. According to Abhijit Sen, total expenditure on food consumption was thirty percent higher due to the change in reference period to one week. The change in methodology adopted during the NSS 55th round is the basic reason behind the poverty level reduction during the post liberalisation period. He also emphasised this point by taking the examples of poverty estimates by different scholars with the use of thin round survey like 54th NSS round (1998). The table depicted below shows the poverty estimates during different NSS round by S.P.Gupta and Tendulkar and Sundaram.

Estimates of poverty in India (head count ratio):

NSS Round	RURAL		URBAN	
	Gupta	Tendulkar/ Sundaram	Gupta	Tendulkar/ Sundaram
50th(1993-94)	37.3	39.7	32.4	30.9
54th(1998)	45.3	44.9	34.6	31.6

Source: Economic and Political Weekly, December 16, 2000. P-4500.

With the use of thin round survey Sundaram and Tendulker estimated that rural poverty ratio has increased from 37.3per cent in 1993-94 to 45.35 during 1998 and urban poverty ratio increased marginally by 1per cent during the same period. The estimation of poverty ratio by S.P. Gupta during the same period with the use of the thin round survey of 54th round confirms that both rural and urban poverty has increased. With this result the critics like Abhijit Sen came forward to question on the decline of poverty calculated with the use of the large sample survey of 55th round of 1999-00.

Sen (2004) using NSS data has come to the conclusion that the reforms have only benefited the elite and affluent classes. With an analysis of per capita consumption expenditure since 1980 in rural and urban India, the author has shown that top 20 percent richest persons have increased there consumption by around 40 percent over period 1989-90 onwards. This observation both, for rural and urban population is indeed surprising as

it is totally contrary to the findings of these economic classes during the period 1965-66 to 1987-88.

The recent and decisive literature on poverty in India (Sen and Himanshu, 2004 a, b) shows that once comparability problems between earlier rounds of the National Sample Survey (household consumption survey) and the latest 55 th rounds were taken care of, and other anomalies including exclusion of critical components of expenditure were dealt with, the decline in poverty is much less spectacular than reported by earlier studies (Sundaram and Tendulker 2003a). The poverty ratio fell at most by 3 percentage points between 1993-94 and 1999-2000, and it is likely that the number of poor increased over this period. The decline in poverty, by this estimate, is more than half compared to that shown by earlier estimates. According to this study, "the number of poor increased in urban areas of more NSS regions than rural despite much faster growth of urban MPCE, and that almost every state had both regions where poverty increased and others where it declined. Poverty numbers were found sensitive to patterns of inequality increase and demographic change, muting the link between growth and poverty reduction. Apart from low growth in many already poor rural regions and limited mobility from these, the other disturbing feature is that although urban growth was much higher than in the past, not only was this associated with increased urban inequality but also many urban areas failed to offer either linkage to their rural hinterlands or escape for the rural poor." (Sen and Himanshu, 2004b, pp.4371).

3.2. Trends and Patterns of Poverty by different indices in Rural and Urban areas:

The three measures of poverty used in the present study show that there is a substantial reduction of poverty during nineties. The rural poverty measured by headcount ratio at all India level has been declined by 9.11per cent from 1983 to 1993-94. But the reduction is more in the next six years. It reduced more than 10per cent from 37.32per cent to 27.02per cent during 1993-94 and 1999-00. (Table-3.1). Urban Poverty (head count ratio)

shows a reduction of 8.7per cent from 32.34per cent in 1993-94 to 23.62per cent in 1999-00 at all India level.[3]

Table 3.1: Alternate measures of Poverty in India: All-India Rural, Urban

	RURAL					UBAN				
	HCR	P.G	S.I	M	F	HCR	P.G	S.I	M	F
1983	46.43	0.134	0.182	0.149	0.204	43.01	0.120	0.162	0.124	0.162
1993-94	37.32	0.094	0.133	0.102	0.129	32.36	0.090	0.127	0.081	0.095
1999-00	27.09	0.065	0.094	0.065	0.076	23.62	0.062	0.088	0.049	0.054

N.B: HCR- Head Count Ratio, P.G- Poverty Gap, S.I- Sen's Index.

At all India level the rural poverty gap index (Table-3.1) has been reduced by 31per cent during 1993-94 and 1999-00, while during eighties (1983 to 1993-94) the reduction was 29per cent.

According to Sen's index (Table-3.1) which shows the real incidence of poverty, rural poverty falls by 21.96 percent during 1983 to 1993-94 and 30.64 percent during 1993-94 to 1999-00.

Urban poverty gap also declined during 1993-94 to 1999-00. It declined around 32 percent during this period in comparison to 24 percent during 1983 to 1993-94. Sen's index shows that urban poverty declined by 21.96 percent during 1983-93 and 30.64percent during 1993-99.It follows that the fall of severity of poverty is faster than the extent of poverty. The figure-3.1 and figure-3.2 describe the fall of incidence of poverty at all India level for rural and urban respectively, measured by different indices.

[3] According to Planning commission Estimate of head-count ratio, rural poverty in 1993-94, 37.27per cent, in 1999-00, 27.09per cent and Urban Poverty Ratio in 1993-94 was 32.36per cent and in 1999-00 it was 23.62per cent.

Figure3.1: Reduction of incidence of Rural Poverty at National Level during 1990's measured with alternate indices

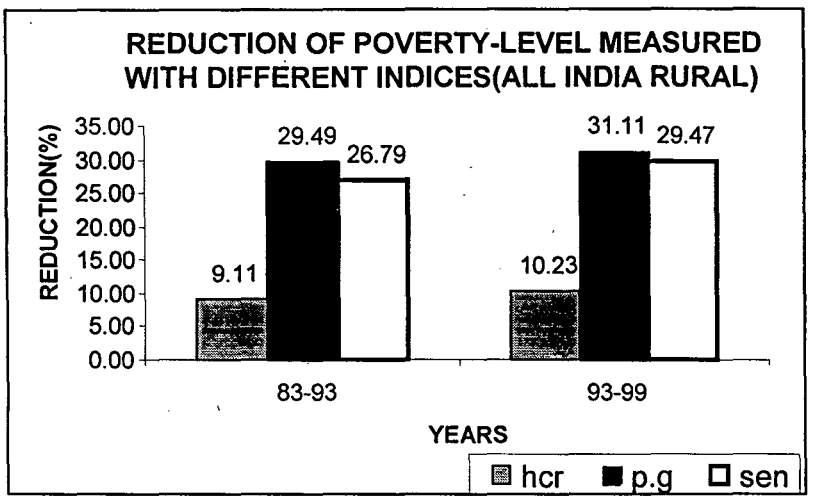
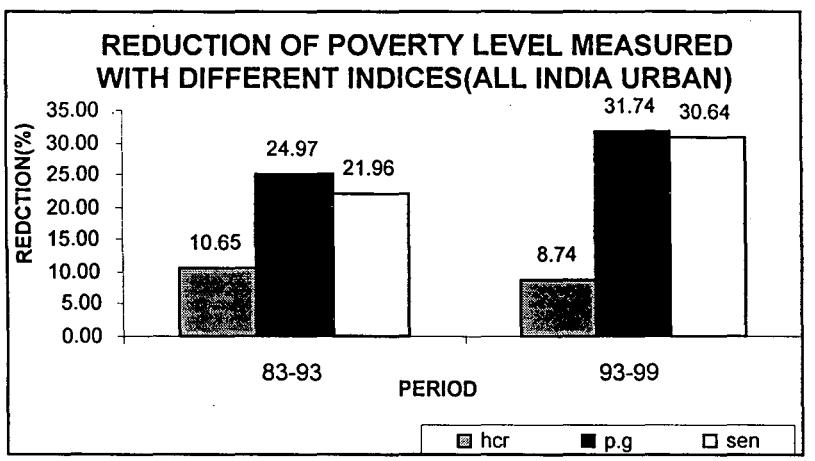


Figure 3.2: Reduction of incidence of Urban Poverty at National Level during 1990's measured with alternate indices



The higher rate of fall of severity of poverty measured by Sen's Index shows that the incidence of extremely poor falls at a higher rate than the fall of simple poverty ratio during nineties. Because the Sen's Index of Poverty captures the incidence of extremely poor more closely than HCR and PG. Sen's Index of Poverty for the urban areas fall at a higher rate than in the rural areas. Table-3.1 show the M and F value which are derived from Sen's index of poverty measure. M-value which shows that the fraction of the state income required to close the poverty gap, F-value shows the fraction of the income of the

people above poverty line should be transferred to close the poverty gap. As a whole 7per cent of the country's income needed to close the rural poverty gap and 5per cent for the urban poverty gap according 1999-00 figure. Keeping the state's income constant, rural and urban people of the above poverty line should sacrifice 8per cent and 5per cent respectively to close the rural and urban poverty gap respectively. And we find from the table (3.1) that over the period 1983 to 1999-00, both the M and F value show a declining trend. Which means every over the period the country need less percentage of its income to close the poverty gap.

3.3. Trends of Economic growth at national level: in India, the growth rate of gross domestic product (GDP) accelerated since 1980s. During 1980s (1980-1991), the exponential growth rate per-capita GDP was 3.05 percent and after economic reforms in the 1990s, it has further accelerated to 4.5 percent between 1993 and 2003. (Refer Table-3.2).

Table 3.2: Growth Rate of Per-Capita MPCE and per-capita GDP (constant prices) at all India level. (Percent per annum)

Growth Rate of Per-Capita MPCE		
	1983-93	1993-99
Rural	9.04	9.31
Urban	10.54	10.30
Growth Rate of per-capita GDP		
	1980-90	1993-2003
All India	3.1	4.5

This shows that the policy of Liberalisation, Privatization and Globalization has a positive impact on country's economic growth. Table 3.2 also reflects the growth rate of per-capita consumption expenditure. During eighties (1983 to 1993-94) the growth rate of monthly percapita expenditure for the rural areas was 9.04 percent and during nineties (1993-94 to 2000) it increased to 9.31 percent. However the growth rate for urban areas was higher than the rural areas in both the period. The growth of consumption

expenditure in urban India during 1983 to 1993-94 was 10.54 percent per annum while it was decreased to 10.3 percent during 1994-94 to 1999-2000.

3.4. Responsiveness of Poverty Gap to the Growth of Consumption Expenditure:

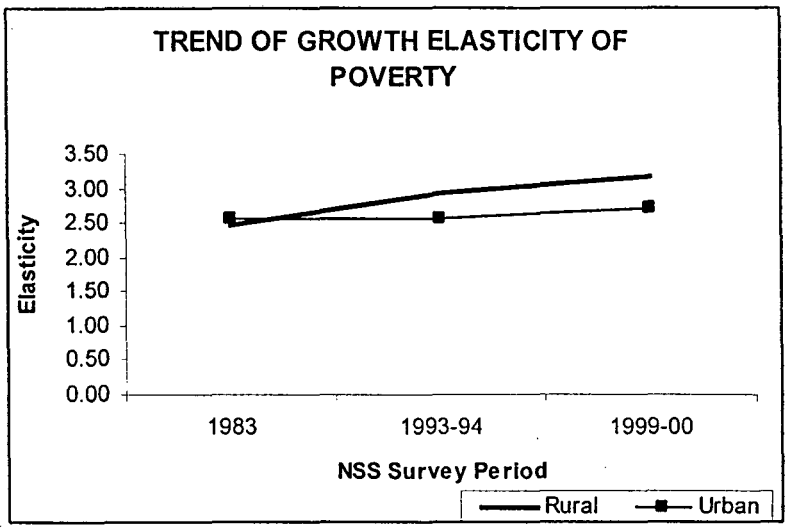
Even if growth is trickling down, because of initial high inequality levels, the effect of growth on poverty may be small. To see how growth affects poverty, poverty elasticities with respect to the mean per-capita consumption expenditure is computed when the effect of changes in inequality has been kept constant. These elasticities which will be referred to as growth elasticities have been derived by Kakwani (1989) for all the poverty indices. In the present study the growth elasticity of poverty has been calculated for the poverty gap index. The growth elasticity of urban India was initially higher than that of the rural India.

Table 3.3: Growth Elasticity of Poverty at the national Level both for Rural and Urban areas

All India	Rural	Urban
1983	-2.47	-2.57
1993-94	-2.92	-2.58
1999-2000	-3.16	-2.73

Growth Elasticity of poverty was higher in urban area in comparison to the rural area during 1983. Since then the elasticity in rural India is rising faster than the urban India. Elasticity measured during 1993-94 and 1999-2000 shows that for the rural India growth elasticity of poverty is higher that that of the urban India. It shows that the rural economy is becoming a homogenous group while the urban economy is becoming more and more heterogeneous. The rural and urban inequality, polarization discussed in the Chapter V will clearly manifest the redistribution of growth in rural and urban India. But it is clear that economic growth rural India is trickling down to the poor rural mass while in Urban India it is not happening. Rural economic growth is showing more responsiveness to the reduction of poverty. The Fig-3.3 shows the trends of growth elasticity of poverty both for rural and urban India.

Figure 3.3: Growth Elasticity of Poverty at the national Level during 1980s and 1990s



The above figure shows that for the rural India, the growth elasticity of poverty is rising faster than the urban India. Which shows that the rural poverty gap is reducing more because of the growth in consumption expenditure in rural area. The urban poverty gap reduction is showing less response to the growth of urban consumption expenditure.

Growth in income or consumption expenditure is important for poverty reduction. But uneven distribution of growth could not create much impact on poverty reduction. For the urban India responsiveness of growth is less in comparison to the rural area. The economic policy should have a higher focus on redistribution. Otherwise economic growth will divert from its objectives of social wellbeing.

CHAPTER - IV

TRENDS IN ECONOMIC GROWTH AND POVERTY AT STATE LEVEL

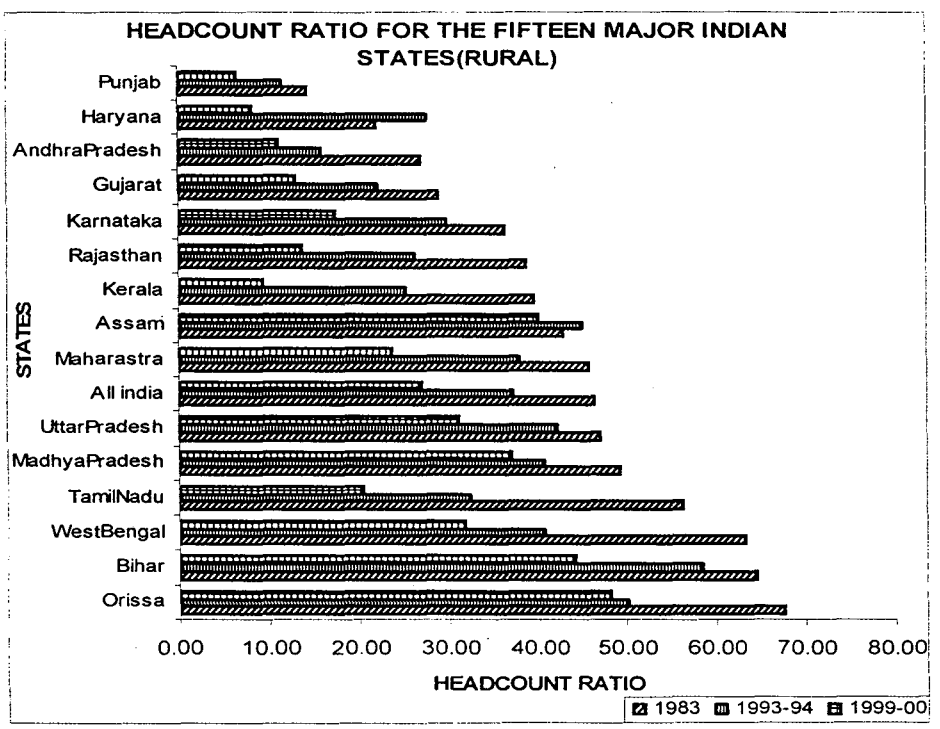
4.0. A large country such as India exhibits significant variations in trends and patterns in growth and poverty across states. Any analysis at the macro level is therefore likely to give an incomplete story that hides more than it reveals. The present chapter analyses the trends and patterns of growth and poverty taking states as observational truths.

Official survey results give data which helps in analysing the inter-state performance in poverty reduction. According to this official data, India has managed to reduce poverty from 36 percent to 26 percent between 1993-94 and 1999-00. As this figure was questioned by a number of scholars as discussed earlier, the previous chapter made an attempt to calculate the trends and patterns of poverty with the use of different indices. The analysis shows that poverty at the national level has been reduced. But this cannot be same for many of the states. The poverty indices that were used to assess the trend of poverty at the national level have been used to measure poverty at the state level as well.

4.1. There is a high inter-state disparity in poverty reduction during nineties. The reduction rate is high in the Developed states. There is evidence that in the poor state like Orissa, the urban poverty ratio has increased during nineties (Refer table 4.1). Where as the state like Punjab, poverty ratio has come down to an average of 5 percent. It is not only Punjab but the other high and medium income group states have also experienced higher rate of poverty reduction. Haryana shows the highest fall in incidence of poverty in rural areas by 74 per cent measured by Sen's index of Poverty while Orissa and Assam show an increase in rural poverty during 1990's (Refer, Table 4.3). The urban poverty incidence measured by Sen's index has also increased in both the states during nineties. The Poverty gap index also shows that in both the states the extent of poverty has increased during nineties. Overall these two states are worst affected by the policy of Liberalisation. Bihar shows a marginal fall in urban poverty while there is a substantial fall in the rural poverty measured by both poverty gap and Sen's index of poverty (Refer table 4.2 for the state level analysis of Poverty Gap Index).

The figures depicted below show that the inter-state poverty reduction performance varies widely. Many of the states with high poverty incidence at the beginning of the period could not reduce poverty at the same rate as the high per capita income states. The figure 4.1 clearly shows the relative performance of the major states in India to reduce the rural poverty ratio. The three bar lines show the Head Count Ratio for the three periods 1983, 1993-94 and 1999-00. Orissa and Assam show a marginal fall in rural poverty ratio over the period. The fall is higher in Kerala, Tamil Nadu, and Maharashtra.

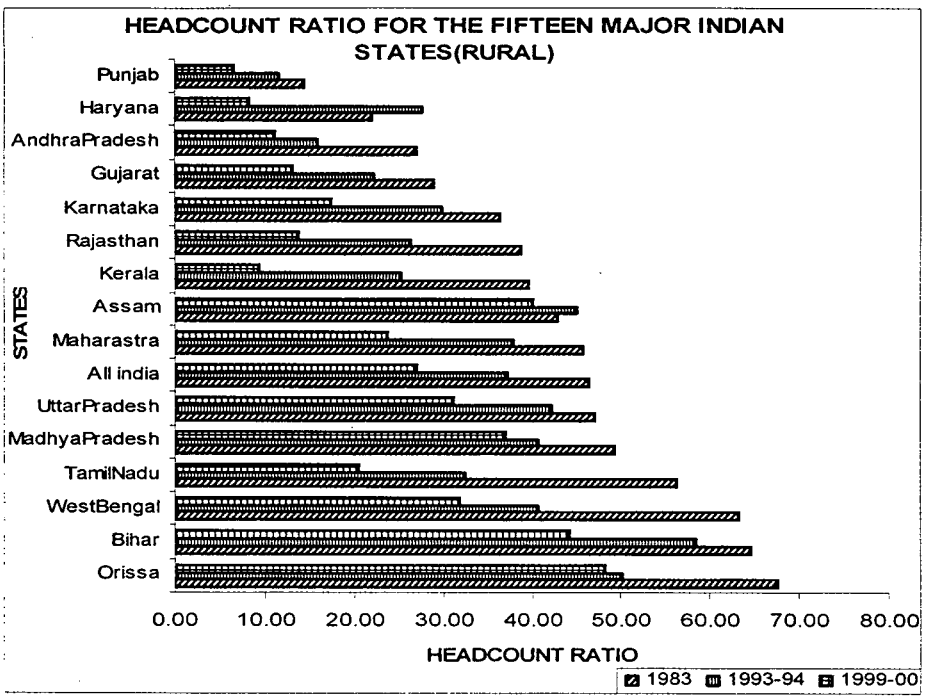
Figure 4.1: Relative performance of the States in India in Reduction of Rural Poverty Ratio



Orissa was having highest poverty ratio during 1983 and Bihar was in second rank. In 1993-94 , the reduction of poverty ratio in Orissa was higher than that of Bihar which pulls Orissa down to the second position and Bihar went up to rank of highest poverty ratio in 1993-94. Again in 1999-2000 the reduction of rural poverty in Orissa became very slow and now Orissa is having the highest poverty ratio in rural areas. Punjab and

Haryana are the two rich states in India having lowest rural poverty ratio among the major states in India. The figure 4.1 clearly shows that there is a huge gap between Punjab and Orissa in rural poverty ratio.

Figure-4.2: Relative performance of the States in India in Reduction of Urban Poverty ratio



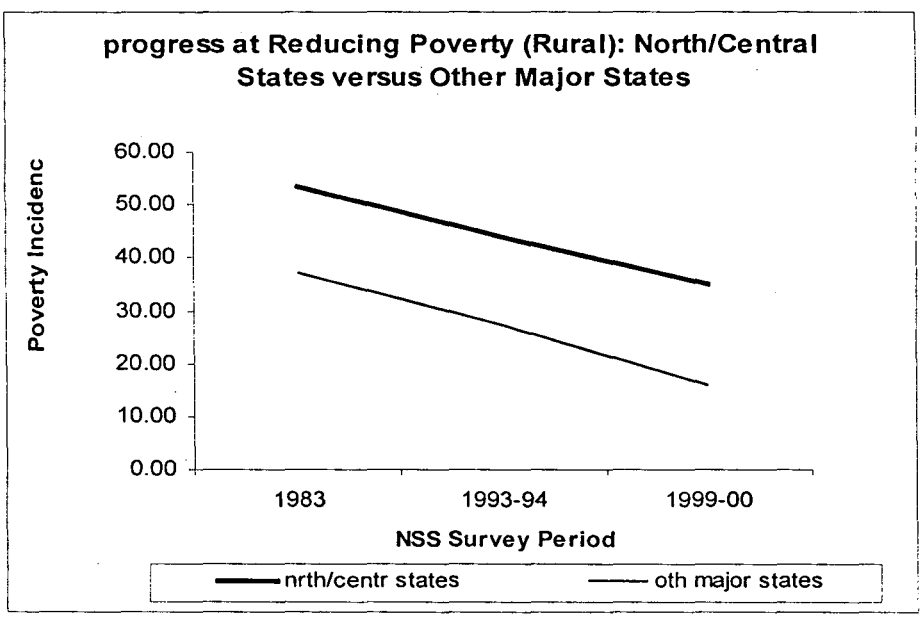
There is also a huge gap urban poverty ratio among the major states in India which is depicted in Figure 4.2. While Orissa is having the highest urban poverty ratio, Punjab is having the lowest one. The gap between the two is very large. There is a high reduction of urban poverty during 1993-94 in Orissa but after that in 1999-00, the reduction became slower. Bihar is second highest in urban poverty ratio during 1999-00. In some states like Haryana, Assam there is an increase in poverty ratio during 1993-94 and then in 1999-2000 these two states witnessed reduction of urban poverty ratio. It shows that in the period of globalization there is more or less declination of both rural and urban poverty

There has been a divergence in poverty reduction across states (Figure 4.1, 4.2).A number of less developed states in Northern, Central and Eastern parts of the country like

Bihar, Madhya Pradesh, Rajasthan, Uttar Pradesh and Orissa have lagged behind the other major states in India in lowering poverty incidence over the last two decades. The reduction in case of these states is sharper resulting in widening disparity of poverty gap over the period.

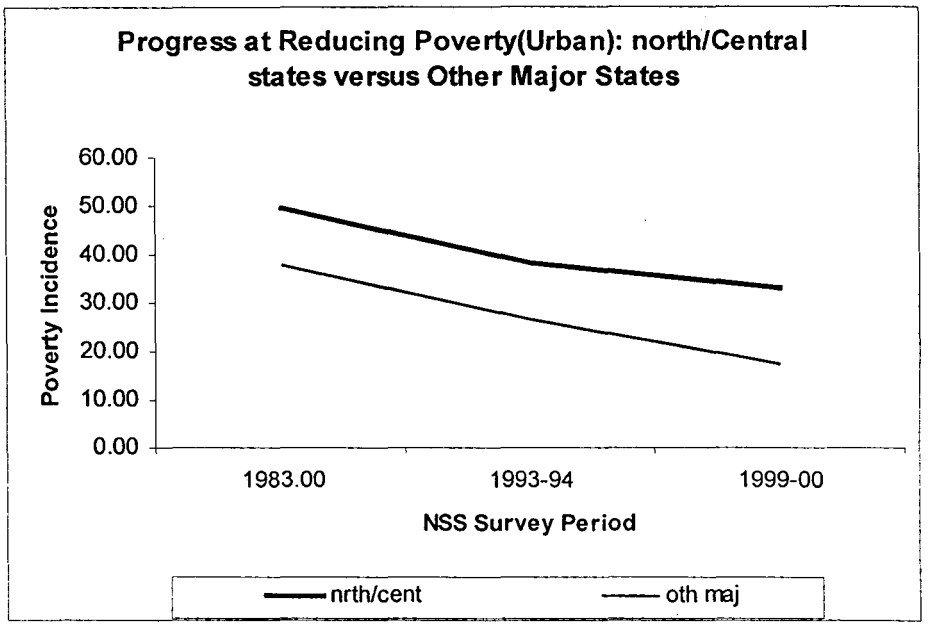
The figure 4.3 shows that the rural poverty gap between the two groups, the north/central group constitutes Bihar, Madhya Pradesh, Rajasthan, Uttar Pradesh and Orissa and the other major group constitutes the 10 major states, like Andhra Pradesh, Assam, Gujarat, Haryana, Karnataka, Kerala, Maharashtra, Punjab, Tamil Nadu and West Bengal. The average poverty ratio of these two groups of states is depicted in the Figure 4.3, Figure 4.4.

Figure 4.3: Regional Variation in Rural Poverty Reduction: North/Central States versus Other Major States during 1980s and 1990s



For the rural areas the gap between the average poverty ratio of the aforesaid two group states is widening over the period. This shows a clear divergence among the states in poverty ratio. The poorer states are lagging behind their rich counterparts in rural poverty reduction.

Figure 4.4: Regional Variation in Urban Poverty Reduction: North/Central States versus Other Major States during 1980s and 1990s



The widening gap in urban poverty between the two group of the states is clearly visible in the above figure. In 1999-2000 the north/central group states have performed poorly in urban poverty reduction than the other major states.

One part of the explanation is that regional economic growth has been slower in the north. Recent research by the World Bank and the Confederation of Indian Industry reveals that a weaker investment climate in lagging states may be behind this slower growth in the north, as will be discussed in more detail below.

The end result is that the majority of the poor are increasingly concentrated in a few states. Fifty four percent of India's 267 million poor are now living in Uttar Pradesh, Bihar, Orissa, and Madhya Pradesh. The discussion of state-level disparities in economic growth and poverty reduction indicates that the poorest states and their comparatively large populations have become increasingly marginalized during the first decade of neo-liberal reforms. The phenomenon of state-level pockets of poverty is one that is repeated at a smaller scale, within states.

The policy of Liberalisation has affected the rich states. The rich states are armed with high level of social and economic infrastructure and hence able to attract more and more private investment. That's why, they are able to increase their per-capita income more rapidly than the relatively poorer states. The open economic policy influences the industry and service sector to grow rapidly. These two sectors put their base in the rich and highly urbanised states. The Table 4.6 shows the sectoral composition of GSDP of the states during nineties. In Orissa and Bihar agriculture plays a dominant role in the State Domestic Product. But in Maharashtra and Gujarat like industrial states industry's share in GSDP (Gross State Domestic Product) is very high. For this purpose the industrial states have derived the advantages of open economic policy while the agrarian states are reeling under poverty.

Table 4.4 and Table 4.5 show the M and F value which are derived from Sen's index of poverty measure. M-value which shows that the fraction of the state income required to close the poverty gap, F-value shows the fraction of the income of the people above poverty line should be transferred to close the poverty gap. M value is for both rural and urban is highest in Orissa 0.2 and 0.15 respectively. The state has to spend 20 percent of the whole rural income and 15 percent of the urban income or consumption expenditure to close the rural and urban poverty gaps respectively. Orissa is followed by Bihar in terms of M value in rural areas i.e. 14 percent. But for the urban Madhya Pradesh is above Bihar. Madhya Pradesh has to spend 11 percent of urban income or consumption expenditure to close the poverty gap while Bihar has to spend only 9 percent. In Punjab both for rural and urban M value is the lowest one, nearly 1 percent. The F value for Bihar, Orissa and Madhya Pradesh is very high while in Punjab it is very lo both for rural and urban areas.

From both the table it is evident that the expenditure of the state income and in other way sacrifice from the rich is very high for the poorer states like Orissa, Bihar and Madhya Pradesh. The poverty eradication in these states needs more govt. support and as well as people participation.

4.2. Disparity in inter-state economic growth: The relative economic performance of India's states has become a topical issue. Two explanations seem important: first, recent developments in economic growth theory have encouraged the investigation of regional growth experience and although most work has been carried out using international cross-sectional data, intra-country studies have also been made. India's national performance in many aspects marks considerable inter-state variation. Economic growth performance is no exception, making India an interesting case for regional growth analysis. Secondly, India's process of economic policy reform that began in 1991 has had important implications for state-level growth. The increasingly competitive environment between the states has brought the issue of relative performance during nineties.

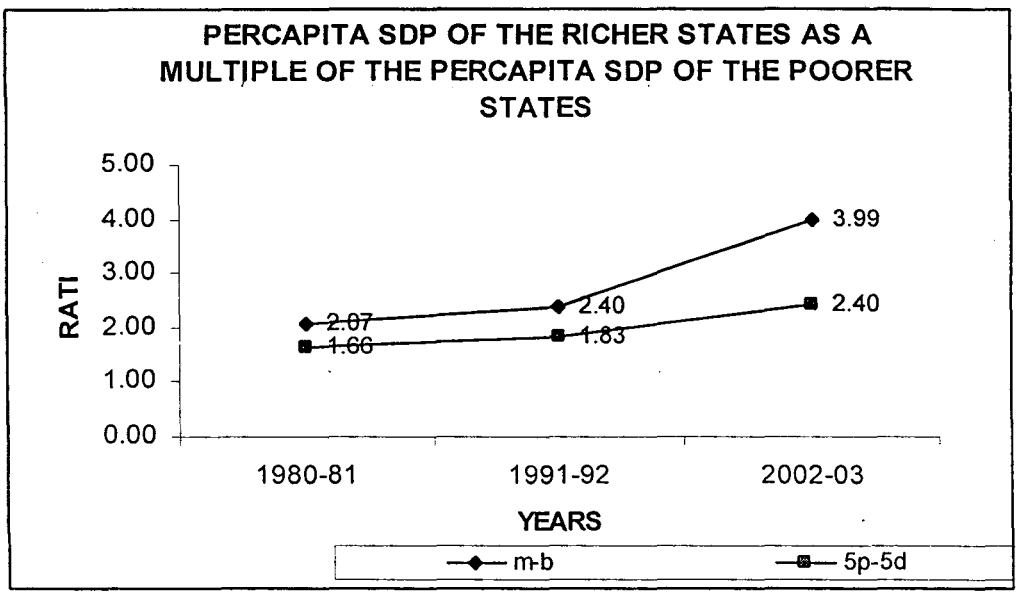
For India as a whole, annual per capita GDP growth in real terms averaged hardly 1.5 per cent during the three decades from 1950-51 to 1980-81 *[Acharya et. al., 2003]*. However, during the 1980s, growth improved to about 3 per cent, and following the introduction of economic reforms in 1991, it increased to about 4.5 per cent. However, these macro-level trends conceal much state-level diversity. Inter-state inequalities are not new to India. At the end of the colonial period, there were wide disparities between states, and the Indian government amplified these by unevenly focusing development efforts.

The indication of growing economic inequality is evident from the gap between the wealthier states such as Punjab and Maharashtra on one hand, and Orissa and Bihar on the other. A closer look at the relative difference between Maharashtra and Bihar, one of the highest and lowest per capita SDP respectively, shows that inequality in absolute terms between these two states have risen dramatically during the 1990s (See Figure 4.5).

If we compare the gap as an average between the five poorest (Bihar, Orissa, Madhya Pradesh, Rajasthan and Uttar Pradesh) and five richest states (Maharashtra, Punjab, Haryana, Gujarat and Tamil Nadu) the rise has been less drastic, but remains significantly higher than the previous decade. There are as such indications of an increasing economic gap in per capita SDP between the richest and poorest states during the 1990s compared to earlier periods. If we look at actual growth in per capita SDP across states, it is

confirmed that low income states such as Assam, Bihar, and Orissa are falling behind (See Table 4.7).

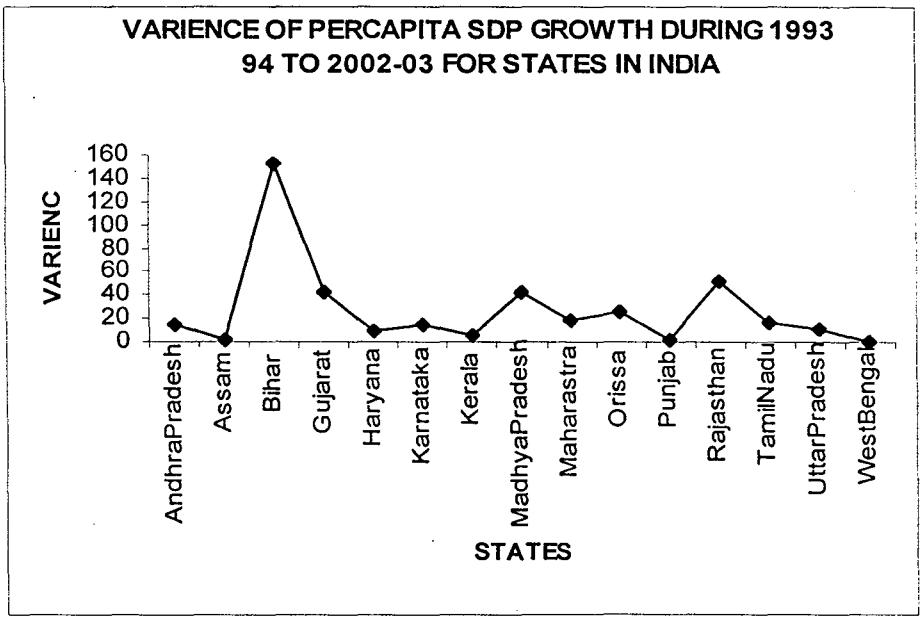
Figure 4.5: Per capita SDP of the richer states as a multiple of the per capita SDP of the poorer states during 1980s and 1990s



During 1980 to1990-91 defined as the pre-liberalisation period, Kerala recorded the lowest growth rate of 1.71per cent. During this period Haryana, initially relatively wealthy (second in terms of per-capita SDP among the fifteen major states in the initial year 1980-81) was the fastest growing state having the growth rate 4 percent per annum. But Rajasthan which is comparatively a poor state (ranks 12th in terms of per-capita SDP among the fifteen major states in the initial year 1980-81) comes second in terms of growth rate i.e. 3.89 percent. Tamil Nadu and Maharashtra follow these two rapid growing states. The wealthiest state, Punjab occupies the 5th rank in terms of growth rate during 1980 to1990-91 having the growth rate of 3.4 percent. The poorest states like Orissa and Bihar are having comparatively lower growth rate. Orissa having 2.13 percent growth rate occupies 12 th rank during 1980 to 1990-91. The big states like Uttar Pradesh and Madhya Pradesh were found other two slow growing states during this period. In the period from 1991onwards, Karnataka and Andhra Pradesh were the fastest growers and enjoyed rates of growth 5.525 and 4.47per cent respectively, comparable with East Asian economies. West Bengal, the

highest rice producing state in India, which is least affected by the market economy started shining with the second highest growth rate after the structural reform took place. The situation in Assam doesn't show a sign of improvement. This state is also the slowest growing states during 1993-94 to 2002-03 followed by Uttar Pradesh. Maharashtra in terms of per-capita income exceeded Punjab and Haryana. The growth rate of these two states Punjab and Haryana is very slow, 2.5 per cent and 3.3per cent having 11^{th} and 7^{th} rank respectively. In addition to indicating considerable diversity in state-level wealth and growth rates, Table 4.7 shows that this diversity increased after the reforms. During 1980-1991-92 the coefficient of variation in per-capita SDP growth rate was .26 and it increased to 0.37 during the post reform period 1993-94 to 2002-03. The variance of growth rate during 1993-94 to 2002-03 for Bihar and Rajasthan is very high from Table 4.10.

Figure 4.6: The variance in per-capita State Domestic Product is depicted in the figure below



That's why these two states some times occupying higher rank in growth rate and some times having very lower rank. It shows that the BIMORU (Bihar, Madhya Pradesh, Orissa, and Uttar Pradesh) states are not getting full recovery, after getting the reform pills. These states need a steady-state growth in order to converge with the developed states. The developed states like Punjab and Haryana whose economic growth is smooth

and steady always perform better than the other states. Besides these two states Kerala and West Bengal show a steady-state growth during the globalization period.

The southern states like Karnataka, Kerala and Tamil Nadu performed significantly better than the other developed states during the reform period. Because in these three states service sector is developing tremendously, which evident from the sectoral composition of the SDP in Table 4.6. Agriculture contributes very less to the SDP and industry and services contribute more than eighty percent to their economy. They are attracting private and foreign capital due to better infrastructure facilities. This is the basic reason behind their steady state-growth. The sixth chapter widely discussed the development of infrastructure in these states.

Maharashtra and Andhra Pradesh also show a steady-state growth without much variance during the 1990s. Andhra Pradesh which occupies 5th ranks in terms of per-capita SDP growth is 4 ranks ahead of Maharashtra among the fifteen major states under study. But these two states are growing both in industry and services sector.

Contrary to the steady state growth in these states, the eastern states like Orissa and Bihar in which a large portion of the SDP comes from agriculture and its allied sector (for Bihar 42.1per cent, Orissa 34.3per cent in 2002-03) experience fluctuating growth rate. Because agriculture is not that much developed in these states that its growth rate will remain stable. Still agriculture in these states is looking for the blessings of monsoon. Industries and services sector in these states need public sector investment. Private investment is very low due to lack of infrastructure and market availability. The political factors cannot be ignored besides economic and natural factors for the lack of steady-state growth in these states.

In another two states, Madhya Pradesh and Rajasthan whose economy shows a rapidly transformation with the shrinking share of agriculture and increasing share of service sector to the SDP. Still agriculture carrying a thirty percent share in the SDP. And the important thing is that the growth of primary sector in these two states is very low

(negative in case of MadhyaPradesh-Table-4.11).because the state government is neglecting this sector. Again lack of continuous flow of public as well as private investment in the other two sectors is the reason behind the fluctuating growth rate in these states.

Hence it is apparent from the above discussion that though the less developed states have improved their growth performance, but because of lack of steadiness there is not any possibility of convergence in near future. The variation of growth rate is rising from eighties to nineties. Table 4.10 shows that the coefficient of variation of growth rate is rising from .26 to .42. Which shows that the economy is getting more and more divergent.

But one thing is very clear that during 1990s, the per-capita income doesn't have a significant relationship with growth rate, contrary to Buddhadeb Ghose, Sugata Marjit and Chiranjib Neogi study of economic growth and regional divergence during 1960 to 1995, where they have showed that there is a positive and significant relationship with the growth rate and initial per-capita income.

The per-capita SDP growth rate and initial per-capita SDP during the period of globalization (1993-94 to 2002-03) for the fifteen major states has been depicted by the following linear equation.

$$gi.-g = .0412 + 1.464\ (\log yi - \log y)$$
$$(.110) \quad (.642)$$

$$R^2 = .031$$

The growth rate of per-capita SDP shows a positive but insignificant relation with the initial per-capita SDP. The value of R^2 is .031 and the t-value (.642) is highly insignificant. It shows that the initially poorer states have not failed to pace up their growth rates with the richer states after the reforms started in the year 1991-92.

The scatter in appendix-4, diagram shows that there is a negative association between the variables. It is very interesting to see the low per-capita income states like Orissa and Bihar achieved higher growth than their base period counterparts. While Punjab and Haryana like higher per-capita states have lagged behind. It suggests some preliminary features of convergence.

4.3. Growth Elasticity of Poverty: The responsiveness of growth to reduction of poverty gap is depicted by the growth elasticity of poverty. In the previous chapter, it is shown that there is a rising trends of growth elasticity of poverty at the national level. Further rural poverty is more elastic to growth rather than urban poverty. The Table 4.13 shows the growth elasticity of poverty gap for the fifteen major states in India for both rural and urban areas. The negative sign indicates the inverse relationship between consumption expenditure growth and poverty gap. The higher the consumption expenditure growths the lower the poverty gap and the extent of reduction of gap is elasticity. The table 4.13 shows that the high per-capita income states have shown high growth elasticity than the low percapita income states. growth elasticity of urban poverty is very high in Punjab. This state has shown a high growth elasticity of poverty for rural as well which has grown up over time. This means that the responsiveness of growth to poverty gap is rising. Orissa, Assam and Bihar have shown relatively low elasticity in both rural and urban areas. These three states are having elasticity which is less than the national average.

It is evident from the above description that the low per capita income states are not only having low growth rate, but also the growth they are achieving is leading to low poverty reduction. The high per capita income groups are experiencing rapid income growth as well as high poverty reduction .in other wards the developed states have performed well in growth as well as in terms of its redistribution. While the poor states have failed in both fronts.

Table 4.1: State Level Head Count Ratio

	RURAL					URBAN				
STATES	1983	1993-94	Reduction per cent	1999-00	Reduction per cent	1983	1993-94	Reduction per cent	1999-00	Reduction per cent
Andhra Pradesh	27.13	15.84	11.28	11.14	4.71	41.38	38.33	3.05	26.55	11.78
Assam	42.97	45.07	-2.10	40.20	4.87	26.84	7.73	19.11	7.47	0.25
Bihar	64.63	58.36	6.27	44.22	14.14	51.04	34.50	16.54	32.98	1.51
Gujarat	28.94	22.20	6.74	13.17	9.03	42.23	27.89	14.34	15.59	12.30
Haryana	21.95	27.71	-5.76	8.27	19.45	27.28	16.38	10.90	10.00	6.38
Karnataka	36.41	29.84	6.57	17.36	12.48	43.75	40.14	3.62	25.25	14.89
Kerala	39.63	25.39	14.24	9.38	16.01	48.08	24.55	23.53	20.27	4.28
Madhya Pradesh	49.30	40.84	8.47	37.09	3.75	54.97	48.38	6.59	38.50	9.88
Maharashtra	45.72	37.95	7.76	23.82	14.13	41.12	35.15	5.97	26.91	8.24
Orissa	67.59	50.24	17.35	48.13	2.11	50.95	41.64	9.31	43.08	-1.44
Punjab	14.46	11.55	2.91	6.44	5.11	23.79	11.35	12.44	5.42	5.93
Rajasthan	38.73	26.43	12.30	13.65	12.78	41.05	30.49	10.56	19.81	10.68
Tamil Nadu	56.32	32.40	23.92	20.55	11.85	51.68	39.77	11.91	22.17	17.60
Uttar Pradesh	47.03	42.30	4.73	31.22	11.08	50.44	35.41	15.02	30.93	4.49
West Bengal	63.19	40.77	22.42	31.82	8.95	32.63	22.41	10.22	14.87	7.54
All India	46.43	37.32	9.11	27.09	10.23	43.01	32.36	10.65	23.62	8.74

Table 4.2: State Level Poverty Gap Index

	RURAL					URBAN				
STATES	1983	1993-94	Reduction per cent	1999-00	Reduction per cent	1983	1993-94	Reduction per cent	1999-00	Reduction per cent
Andhra Pradesh	6.04	3.74	38.08	3.13	16.43	10.85	8.80	18.91	6.81	22.5
Assam	8.30	8.58	-3.38	9.80	-14.13	5.39	1.24	76.94	2.46	-98.1
Bihar	19.99	16.12	19.33	10.74	33.39	14.91	10.09	32.34	9.85	2.3
Gujarat	6.12	4.44	27.37	2.81	36.84	10.10	6.61	34.59	2.76	58.2
Haryana	4.82	5.74	-19.02	1.39	75.72	6.02	3.48	42.19	2.66	23.5
Karnataka	9.79	7.40	24.39	3.45	53.43	13.15	12.53	4.72	6.38	49.1
Kerala	9.94	5.72	42.47	1.59	72.23	14.58	6.19	57.58	4.46	27.9
Madhya Pradesh	13.81	10.96	20.65	10.25	6.48	15.15	12.54	17.25	11.21	10.6
Maharashtra	11.91	10.66	10.48	5.44	48.97	11.99	11.05	7.83	7.37	33.3
Orissa	22.64	13.82	38.96	15.45	-11.81	14.03	12.80	8.81	13.74	-7.4
Punjab	3.32	1.91	42.33	0.80	58.32	6.31	1.93	69.50	0.92	52.0
Rajasthan	13.71	5.57	59.36	2.26	59.51	11.63	7.68	33.95	3.73	51.5
Tamil Nadu	20.22	8.29	59.00	4.84	41.66	15.19	10.82	28.75	5.58	48.4
Uttar Pradesh	12.62	11.33	10.24	6.91	38.99	14.58	10.84	25.63	9.05	16.6
West Bengal	21.49	8.82	58.94	7.26	17.71	8.03	5.36	33.20	3.25	39.4

Table 4.3: State level Sen's Index of Poverty

	RURAL					URBAN				
STATES	1983	1993-94	Reduction per cent	1999-00	Reduction per cent	1983	1993-94	Reduction per cent	1999-00	Reduction per cent
Andhra Pradesh	0.08	0.05	34.71	0.05	17.03	0.16	0.13	16.56	0.10	26.30
Assam	0.11	0.12	-4.59	0.14	-19.17	0.07	0.02	73.87	0.03	-72.91
Bihar	0.26	0.22	16.01	0.15	30.67	0.20	0.14	26.76	0.14	0.58
Gujarat	0.08	0.06	25.72	0.04	34.20	0.14	0.09	34.42	0.04	56.50
Haryana	0.07	0.08	-19.79	0.02	74.70	0.08	0.05	37.86	0.04	23.45
Karnataka	0.13	0.11	19.56	0.05	53.12	0.18	0.17	2.11	0.09	47.96
Kerala	0.13	0.08	41.15	0.02	71.14	0.20	0.09	55.07	0.06	29.00
Madhya Pradesh	0.19	0.16	16.78	0.15	5.88	0.20	0.18	10.00	0.16	11.70
Maharashtra	0.16	0.15	5.37	0.08	47.72	0.16	0.15	3.95	0.11	30.26
Orissa	0.30	0.19	35.27	0.22	-11.86	0.19	0.18	5.67	0.19	-9.42
Punjab	0.05	0.03	40.70	0.01	57.24	0.09	0.03	68.83	0.01	46.04
Rajasthan	0.19	0.08	58.57	0.03	57.48	0.16	0.11	31.88	0.06	48.40
Tamil Nadu	0.27	0.12	56.72	0.07	39.01	0.20	0.15	26.02	0.08	47.13
Uttar Pradesh	0.17	0.16	7.34	0.10	36.74	0.19	0.15	21.06	0.13	13.33
West Bengal	0.15	0.12	15.39	0.11	14.03	0.11	0.08	30.46	0.05	33.98
										30.64

Table 4.4 :Derivations From Sen's Index- M - Value

	RURAL			URBAN		
	1983	1993-94	1999-00	1983	1993-94	1999-00
Andhra Pradesh	0.05	0.03	0.03	0.12	0.09	0.06
Assam	0.1	0.11	0.12	0.05	0.01	0.01
Bihar	0.28	0.22	0.14	0.17	0.1	0.09
Gujarat	0.06	0.04	0.02	0.11	0.06	0.02
Haryana	0.04	0.05	0.01	0.05	0.03	0.02
Karnataka	0.1	0.08	0.03	0.14	0.12	0.05
Kerala	0.1	0.05	0.01	0.16	0.05	0.03
Madhya Pradesh	0.16	0.12	0.12	0.18	0.14	0.11
Maharashtra	0.13	0.11	0.05	0.12	0.1	0.06
Orissa	0.33	0.18	0.2	0.16	0.13	0.15
Punjab	0.02	0.02	0.01	0.05	0.01	0.01
Rajasthan	0.14	0.06	0.02	0.45	0.07	0.03
Tamil Nadu	0.25	0.09	0.05	0.17	0.11	0.04
Uttar Pradesh	0.14	0.13	0.07	0.16	0.1	0.08
West Bengal	0.15	0.1	0.08	0.21	0.04	0.03

Table 4.5: Derivations from Sen's index-f-value

	RURAL			URBAN		
States	1983	1993-94	1999-00	1983	1993-94	1999-00
Andhra Pradesh	0.06	0.04	**0.03**	0.16	0.11	**0.07**
Assam	0.14	0.16	**0.17**	0.06	0.01	**0.01**
Bihar	0.51	0.38	**0.19**	0.25	0.12	**0.11**
Gujarat	0.07	0.05	**0.03**	0.15	0.07	**0.02**
Haryana	0.05	0.06	**0.01**	0.06	0.03	**0.02**
Karnataka	0.12	0.09	**0.03**	0.18	0.16	**0.06**
Kerala	0.13	0.06	**0.01**	0.22	0.06	**0.04**
Madhya Pradesh	0.22	0.16	**0.15**	0.27	0.19	**0.14**
Maharashtra	0.18	0.14	**0.06**	0.15	0.12	**0.07**
Orissa	0.63	0.26	**0.28**	0.23	0.17	**0.2**
Punjab	0.03	0.02	**0.01**	0.06	0.01	**0.01**
Rajasthan	0.16	0.06	**0.02**	0.16	0.08	**0.04**
Tamil Nadu	0.37	0.1	**0.05**	0.24	0.13	**0.05**
Uttar Pradesh	0.19	0.17	**0.09**	0.23	0.12	**0.09**
West Bengal	0.25	0.14	**0.1**	0.09	0.05	**0.03**

Table 4.6.: Sectoral composition of state domestic product (SDP) in 1980s and 1990s

		1980-81	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03
AP	P	41.2	35.7	33.4	33.3	33.4	28.7	31.5	29.9	31.5	30.3	27.1
	S	21.9	21.9	23.6	23.5	23.0	25.0	23.7	23.5	22.0	22.2	23.8
	T	36.9	42.4	43.0	43.1	43.6	46.3	44.7	46.6	46.5	47.5	49.2
ASM	P	50.1	46.9	45.9	45.3	43.7	45.5	44.1	42.8	40.3	39.8	39.8
	S	20.2	14.9	15.7	15.3	15.8	16.1	15.7	14.4	15.6	14.9	13.8
	T	29.7	38.2	38.3	39.3	40.5	38.4	40.2	42.9	44.2	45.3	46.3
BHR	P	59.9	48.8	51.2	46.5	50.1	41.8	46.0	40.8	43.4	39.4	42.1
	S	21.9	9.9	8.3	9.5	8.3	12.0	9.5	12.1	10.3	11.4	10.2
	T	18.2	41.3	40.5	44.0	41.6	46.2	44.5	47.1	46.3	49.2	47.7
GUJ	P	46.3	25.5	29.4	24.8	28.3	25.5	25.1	18.4	16.7	19.4	15.7
	S	29.9	35.8	34.8	38.0	37.1	36.3	36.7	40.0	39.5	37.2	41.6
	T	23.9	38.8	35.8	37.2	34.6	38.1	38.2	41.6	43.8	43.4	42.6
HAR	P	58.8	42.4	42.4	39.5	39.2	35.6	34.9	33.9	32.6	31.2	29.5
	S	11.0	26.2	26.7	28.3	27.1	28.4	28.8	28.2	28.0	28.1	28.1
	T	30.2	31.3	30.8	32.3	33.7	36.0	36.3	37.9	39.4	40.8	42.4
KAR	P	46.6	36.3	34.3	32.9	31.7	29.0	28.5	29.5	30.1	26.2	24.5
	S	24.5	25.4	26.1	26.2	26.3	28.1	29.5	26.7	24.9	25.6	25.6
	T	28.9	38.3	39.6	40.8	42.0	42.9	42.0	43.7	44.9	48.2	49.9
KER	P	42.3	30.6	30.9	29.4	29.0	26.8	25.7	24.6	19.4	19.1	18.2
	S	25.4	20.6	21.1	21.5	20.6	20.7	21.1	20.1	21.2	20.7	20.6
	T	32.3	48.8	48.0	49.2	50.4	52.5	53.2	55.4	59.4	60.2	61.3
MP	P	50.7	43.2	41.1	39.9	39.5	38.2	37.1	35.5	30.3	33.6	29.3
	S	29.6	21.1	23.5	24.0	23.4	24.2	24.9	28.0	29.4	27.1	29.0
	T	19.7	35.7	35.4	36.2	37.1	37.6	38.0	36.5	40.3	39.3	41.7
MAH	P	28.8	20.2	19.4	18.2	20.1	16.5	17.0	16.7	16.5	16.6	15.3
	S	35.4	32.8	32.7	33.9	33.7	35.7	33.2	32.2	29.2	28.1	28.3
	T	35.8	47.1	47.9	47.9	46.3	47.8	49.8	51.1	54.4	55.3	56.4
OR	P	49.8	45.0	43.0	42.5	40.6	42.6	41.5	37.3	36.2	38.3	34.3
	S	17.2	19.8	21.0	20.6	19.3	18.2	19.4	21.3	19.6	18.6	19.6
	T	33.0	35.3	36.0	36.9	40.1	39.2	39.2	41.4	44.2	43.1	46.0
PUN	P	47.9	46.1	45.7	43.9	43.8	40.6	39.6	40.2	40.1	39.9	37.9
	S	18.9	21.8	22.2	23.2	22.2	23.8	25.0	23.5	23.7	23.5	24.2
	T	33.2	32.1	32.1	32.9	34.0	35.6	35.4	36.3	36.2	36.7	37.8
RAJ	P	51.9	36.3	38.1	35.9	38.5	36.2	35.0	30.3	27.9	31.8	25.9
	S	18.8	25.0	25.8	26.8	24.3	26.4	26.2	30.2	28.8	26.7	29.4
	T	29.3	38.8	36.0	37.3	37.2	37.4	38.9	39.5	43.6	42.0	45.2
TN	P	24.6	24.8	24.5	20.7	19.6	19.6	20.4	18.3	17.8	18.2	13.9
	S	34.8	33.7	34.6	36.4	35.4	33.3	32.0	33.4	33.5	31.0	33.0
	T	40.6	41.5	40.9	42.9	45.0	47.0	47.5	48.3	48.7	50.8	53.2
UP	P	49.5	39.8	38.8	38.1	37.7	35.9	36.1	37.2	36.6	35.9	33.6
	S	19.5	21.5	23.2	23.6	24.5	24.6	24.4	23.1	23.1	23.7	24.4
	T	30.9	38.8	38.1	38.3	37.9	39.6	39.5	39.6	40.3	40.4	42.0
WB	P	33.2	33.8	34.2	32.5	32.2	32.1	29.5	28.3	27.4	27.4	25.1
	S	27.5	23.0	22.5	23.3	23.0	22.7	22.5	22.8	22.1	21.6	21.3
	T	39.4	43.1	43.3	44.1	44.9	45.2	48.0	48.9	50.6	51.0	53.5

Table 4.7: Per-capita GSDP growth rate of fourteen major states and their tanks

States	1980-91	RANKS	1993-03	RANKS
Andhra Pradesh	3.39	6	4.47	3
Bihar	2.56	10	3.00	8
Gujarat	2.84	8	3.67	6
Haryana	4.00	1	3.30	7
Karnataka	3.14	7	5.52	1
Kerala	1.71	14	3.92	5
Madhya Pradesh	1.73	13	1.75	13
Maharashtra	3.60	4	2.89	9
Orissa	2.13	12	2.31	12
Punjab	3.40	5	2.50	11
Rajasthan	3.89	2	2.83	10
Tamil Nadu	3.77	3	4.29	4
Uttar Pradesh	2.58	9	1.44	14
West Bengal	2.32	11	5.46	2
S.D	0.781	-	1.250	-
Average	2.933	-	3.382	-
C.V	0.266	-	0.370	-
RANK CORRELATION coefficient			**0.116484**	

Table 4.8: Mean monthly per-capita consumption expenditure for fifteen major states in India.

	RURAL MEAN MPCE			URBAN MEAN MPCE		
STATES	**1983**	**1993-94**	**1999-00**	**1983**	**1993-94**	**1999-00**
Andhra Pradesh	113.12	290.54	443.56	146.93	404.01	765.05
Assam	113.58	258.61	421.14	150.55	457.18	810.10
Bihar	93.66	214.67	377.44	135.52	349.10	585.37
Gujarat	118.39	298.85	540.29	157.38	449.46	880.65
Haryana	143.34	353.98	677.09	172.08	474.23	908.42
Karnataka	115.37	262.03	489.77	157.12	419.28	885.40
Kerala	134.85	360.09	690.25	157.71	465.36	914.07
Madhya Pradesh	99.86	242.54	390.79	139.57	391.96	668.97
Maharashtra	109.63	258.50	483.15	172.44	509.39	921.28
Orissa	97.88	214.49	361.18	148.20	398.42	601.70
Punjab	163.86	397.89	695.38	171.93	508.91	887.94
Rajasthan	113.49	310.21	542.92	152.13	424.67	785.41
Tamil Nadu	104.92	273.86	486.52	148.77	418.59	858.96
Uttar Pradesh	102.25	265.19	453.27	132.29	381.03	668.40
West Bengal	104.47	268.39	448.30	159.13	462.76	821.95

Table 4.9: Growth rate of monthly per-capita consumption expenditure

	RURAL				URBAN			
	1983-93	RANK	1993-99	RANK	1983-93	RANK	1993-99	RANK
Andhra Pradesh	9.43	6	7.05	15	10.12	12	10.64	6
Assam	8.23	13	8.13	13	11.11	1	9.53	10
Bihar	8.29	12	9.41	7	9.46	15	8.61	14
Gujarat	9.26	7	9.87	5	10.49	7	11.21	4
Haryana	9.04	8	10.81	2	10.14	11	10.83	5
Karnataka	8.20	14	10.42	3	9.82	14	12.46	1
Kerala	9.82	2	10.84	1	10.82	4	11.25	3
Madhya Pradesh	8.87	9	7.95	14	10.33	9	8.91	13
Maharashtra	8.58	11	10.42	4	10.83	3	9.88	8
Orissa	7.85	15	8.69	11	9.89	13	6.87	15
Punjab	8.87	10	9.30	9	10.85	2	9.28	12
Rajasthan	10.06	1	9.33	8	10.27	10	10.25	7
Tamil Nadu	9.59	3	9.58	6	10.34	8	11.98	2
Uttar Pradesh	9.53	4	8.93	10	10.58	6	9.37	11
West Bengal	9.44	5	8.55	12	10.67	5	9.57	9
S.D	0.662	-	1.10	-	0.450	-	1.424	-
Average	9.004	-	9.29	-	10.381	-	10.043	-
C.V	0.074	-	0.12	-	0.043	-	0.142	-

Rank Co-relation coefficient(Rural) **0.103571**

Rank Co-relation coefficient (Urban) **-0.00714**

Table-4.10: The variance in growth rate of per capita state domestic product during 1990's for the fifteen major states in India

STATES	1994-95	1995-96	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03	VARIENCE
Andhra Pradesh	3.95	4.39	4.89	-2.54	10.99	3.67	7.91	4.05	1.07	14.50
Assam	0.84	0.85	1.09	-0.59	-1.63	1.87	2.77	3.31	2.12	2.46
Bihar	8.34	-15.98	20.73	-6.28	4.81	0.89	17.27	-7.87	13.26	152.08
Gujarat	15.73	3.45	12.38	0.66	5.64	-2.56	-3.98	5.31	8.74	42.88
Haryana	4.47	-0.02	8.90	-1.06	2.96	4.98	4.00	2.65	3.32	8.32
Karnataka	3.69	4.45	7.21	5.41	11.21	3.97	8.52	-2.57	2.50	15.34
Kerala	6.93	3.22	2.43	1.74	6.11	6.24	3.84	0.58	5.67	5.08
Madhya Pradesh	0.61	3.79	4.23	2.77	4.33	8.25	-11.55	6.49	-7.52	43.10
Maharashtra	0.40	9.19	2.95	3.47	0.96	7.61	-5.39	3.22	5.53	18.42
Orissa	3.69	3.56	-6.14	11.52	1.05	3.66	-1.98	6.20	-0.80	25.80
Punjab	1.02	2.20	5.35	2.12	2.55	3.66	1.42	1.45	0.30	2.29
Rajasthan	14.37	1.54	8.54	8.57	1.43	-0.45	-3.95	5.78	-8.90	50.66
Tamil Nadu	11.28	2.31	3.84	7.10	3.72	5.24	6.67	-2.91	1.60	15.87
Uttar Pradesh	3.39	1.33	8.24	-2.36	0.42	3.08	-1.17	1.95	-1.51	10.50
West Bengal	4.85	5.55	5.20	6.56	4.81	5.44	5.08	5.99	5.35	0.32

Table 4.11: State wise sectoral GSDP growth rates in the 1980s and 1990s

	1980-1990			1993-94 to 2002-03		
	primary	secondary	tertiary	primary	Secondary	tertiary
Andhra Pradesh	2.37	5.93	6.62	3.28	5.59	7.27
Assam	2.41	4.94	5.63	0.55	1.68	4.82
Bihar	2.62	6.15	9.84	3.10	8.12	7.76
Gujarat	-0.34	7.83	11.34	-0.74	7.25	8.10
Haryana	3.37	15.08	7.49	1.56	6.54	9.80
Karnataka	2.83	7.58	9.17	3.20	6.95	9.96
Kerala	1.24	2.31	8.88	-1.77	4.64	7.94
Madhya Pradesh	1.53	4.85	12.05	-0.17	7.40	5.61
Maharashtra	2.93	6.27	7.74	2.00	2.79	7.22
Orissa	4.75	7.44	5.67	1.06	3.21	6.69
Punjab	4.75	6.26	5.04	2.09	5.33	6.21
Rajasthan	3.27	11	10.36	1.50	7.20	7.70
Tamil Nadu	4.99	5.68	7.72	0.20	4.30	8.30
Uttar Pradesh	2.55	8.34	8.64	2.33	4.42	4.74
West Bengal	6.39	4	5.04	3.49	6.21	9.70

Table 4.12: Ranking of state wise sectoral growth rates of GSDP

	Primary Sector		Secondary Sector		Tertiary Sector	
STATES	1980-90	93-94to02-03	1980-90	93-94to02-03	1980-90	93-94to02-03
Andhra Pradesh	12	2	10	8	11	9
Assam	11	11	12	15	13	14
Bihar	9	4	9	1	4	7
Gujarat	15	14	4	3	2	5
Haryana	5	8	1	6	10	2
Karnataka	8	3	5	5	5	1
Kerala	14	15	15	10	6	6
Madhya Pradesh	13	13	13	2	1	13
Maharashtra	7	7	7	14	8	10
Orissa	3	10	6	13	12	11
Punjab	4	6	8	9	14	12
Rajasthan	6	9	2	4	3	8
Tamil Nadu	2	12	11	12	9	4
Uttar Pradesh	10	5	3	11	7	15
West Bengal	1	1	14	7	15	3

Table 4.13: Growth elasticity of poverty for the major fifteen major states in India

	1983-		1993-94		1999-00	
STATES	Rural	Urban	Rural	Urban	Rural	Urban
Andhra Pradesh	-3.47	-2.78	-3.22	-3.35	-2.52	-2.96
Assam	-4.06	-3.82	-4.25	-5.19	-3.08	-1.84
Bihar	-2.20	-2.42	-2.62	-2.42	-3.10	-2.25
Gujarat	-3.72	-3.16	-3.99	-3.22	-3.63	-4.43
Haryana	-3.56	-3.49	-3.83	-3.72	-4.74	-2.76
Karnataka	-2.68	-2.27	-3.02	-2.20	-3.93	-2.92
Kerala	-2.92	-2.29	-3.44	-2.96	-4.67	-3.49
Madhya Pradesh	-2.55	-2.56	-2.72	-2.85	-2.61	-2.39
Maharashtra	-2.78	-2.42	-2.55	-2.18	-3.23	-2.53
Orissa	-1.96	-2.56	-2.62	-2.25	-2.11	-2.13
Punjab	-3.37	-2.75	-5.01	-4.87	-6.53	-4.41
Rajasthan	-1.82	-2.53	-3.74	-2.97	-4.76	-4.10
Tamil Nadu	-1.77	-2.36	-2.91	-2.67	-3.13	-2.94
Uttar Pradesh	-2.72	-2.46	-2.73	-2.27	-3.49	-2.32
West Bengal	-1.94	-2.99	-3.61	-3.18	-3.27	-3.31
All India	-2.47	-2.57	-2.92	-2.58	-3.16	-2.73

CHAPTER - V

TRENDS AND PATTERNS OF INEQUALITY, RURAL URBAN DISPARITY AND POLARISATION

5.0. It is widely argued that economic growth plays a key role in enabling effective poverty reduction. But how effective growth is in delivering poverty reduction depends critically on one of the age-old development issues: the relationship between growth and distribution. Obviously the distributional pattern of growth has implications for the evolution of inequality, which has direct consequences for the extent of poverty reduction.

How Inequality differs from Polarisation:

Both inequality and polarisation are measures of distributional change. But some key features of distributional change are missed out in the measures of inequality (gini-coefficient) which are better described by polarisation. A standard measure of inequality is "a scalar numerical representation of the interpersonal difference in income within a given population". An inequality index essentially measures the spread of an income distribution. It emphasizes the deviation from the global mean, ignoring clustering around local means. A key motivation behind inequality is the "Pigou-Dalton axiom". That is, any transfer from rich to poor, without changing their rank always decreases inequality. If the resource transfer takes place from the middle class section to the lower middle class or to the people below poverty line without affecting the income of the higher class, the inequality trend shows declining but at the same time economy will get polarized at the higher income groups. The society will find two income groups, lower and higher section and middle class collapses.

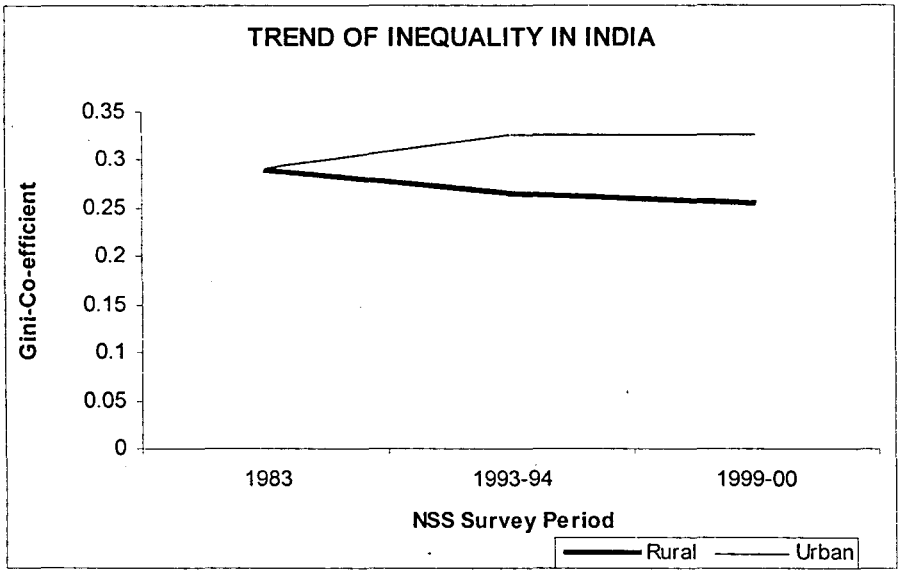
The standard measures of inequality fail to capture the "disappearing the middle class" or "clustering around extremes". It is to characterize such phenomena that Estaben and Ray (1994), Wolfson (1994), and Tsui and Wang (1998) have proposed alternative indices of polarisation. These indices seek evidence for clustering in the distribution of personal income at the lower and upper ends. It is claimed that, at least in theory, they

represent a major departure from standard measures of inequality. In the present study Wolfson Index of polarisation has been calculated for the national level and the state level as well in both rural and urban areas.

5.1. Trends of Inequality in national and state level:

Table 5.1 provides systematic evidence on the recent changes in consumption inequality within each state with the use of Gini-Coefficient of inequality. It is evident from the table that during 1990's there is substantial reduction of rural poverty with little or no increase in urban inequality. Fig-5.1 clearly shows the trend of rural and urban inequality during the NSS survey period.

Fig 5.1: Trends of Inequality in India both for Rural and Urban



The above figure confirms that the rural economy is moving towards a homogenous unit unlike urban economy. During the period of globalization the urban area attracts more private investment than the rural areas, because of having good infrastructure[1]. That's why growth remains concentrated in urban areas. Urban areas are viewed as the growth pole of the economy.

[1] A.Kundu, A New Economic Policy and Urban Poverty in India. P-199, Economic Reforms and Poverty Alleviation in India, edtd. by C.H.Hanumantha Rao and Hans Linnemann.

As described in the Chapter-3 that urban consumption expenditure growth is higher than the rural consumption expenditure. Higher growth in the urban areas captured by some section of the population which doesn't let the inequality to fall down during nineties. At the same time the development of education in rural areas, manufactures the skilled labour and land reforms in most of the states for ex- in West Bengal 'Operation Bagra' helps to increase the standard of living of the poor and thus bridges the consumption gap. However, all the states do not follow the same trend of inequality as at the all India level. Some states have managed to reduce inequality and able to make growth pro-poor, while in some states the inequality has worsened.

Table 5.1: Trends of Inequality (Gini Coefficient) at national and state level

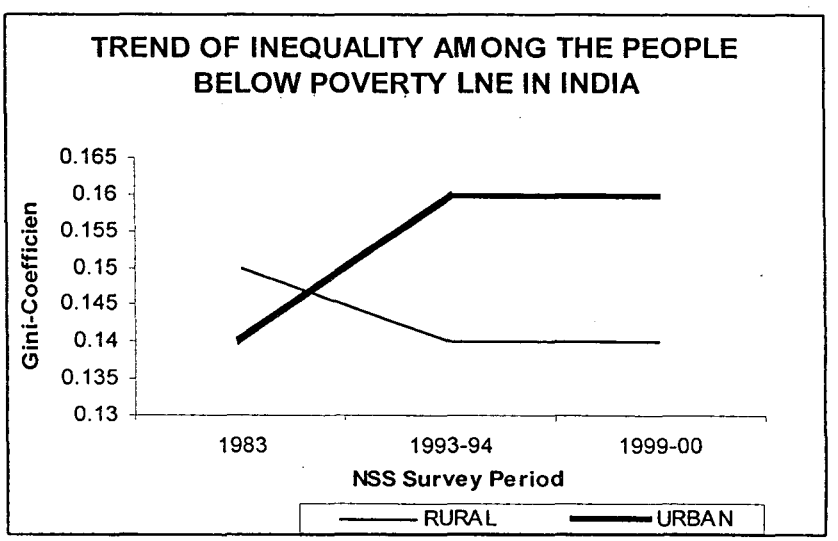
	RURAL			URBAN		
STATES	**1983**	**1993-94**	**1999-00**	**1983**	**1993-94**	**1999-00**
Andhra Pradesh	0.284	0.26	0.245	0.284	0.324	0.315
Assam	0.2	0.182	0.214	0.235	0.286	0.315
Bihar	0.257	0.236	0.225	0.283	0.324	0.341
Gujarat	0.25	0.226	0.226	0.255	0.281	0.281
Haryana	0.27	0.251	0.209	0.29	0.282	0.285
Karnataka	0.291	0.26	0.235	0.302	0.322	0.312
Kerala	0.288	0.239	0.213	0.301	0.305	0.314
Madhya Pradesh	0.291	0.271	0.259	0.274	0.313	0.315
Maharashtra	0.282	0.286	0.254	0.294	0.336	0.322
Orissa	0.272	0.258	0.28	0.278	0.315	0.313
Punjab	0.261	0.21	0.201	0.288	0.268	0.283
Rajasthan	0.343	0.236	0.203	0.282	0.296	0.277
Tamil Nadu	0.331	0.273	0.256	0.301	0.321	0.313
Uttar Pradesh	0.282	0.271	0.241	0.292	0.329	0.339
West Bengal	0.294	0.23	0.226	0.29	0.326	0.314
ALL India	0.291	0.266	0.255	0.293	0.327	0.327

Orissa places the higher rank in rural inequality while Bihar places the same rank in urban inequality. The gap of inequality between the rich states and the poor ones is quite high. The rich state like Punjab is having the lowest inequality in rural areas. Punjab is also having very urban inequality. Rajasthan is having the lowest urban inequality in India during 1999-2000. Astonishingly Bihar is having the highest urban inequality in all India during the same period.

Table 5.2: Inequality among the people Below Poverty Line

	1999-00		1993-94		1983	
states	RURAL	URBAN	RURAL	URBAN	RURAL	URBAN
Andhra Pradesh	0.18	0.15	0.14	0.15	0.11	0.13
Assam	0.14	0.19	0.09	0.11	0.09	0.09
Bihar	0.14	0.18	0.14	0.17	0.15	0.13
Gujarat	0.13	0.1	0.1	0.12	0.1	0.12
Haryana	0.1	0.17	0.11	0.12	0.12	0.1
Karnataka	0.12	0.14	0.15	0.17	0.13	0.15
Kerala	0.09	0.11	0.12	0.14	0.12	0.15
Madhya Pradesh	0.17	0.17	0.16	0.15	0.14	0.13
Maharashtra	0.14	0.16	0.16	0.18	0.12	0.14
Orissa	0.19	0.19	0.16	0.16	0.17	0.13
Punjab	0.07	0.11	0.08	0.09	0.12	0.15
Rajasthan	0.09	0.1	0.11	0.13	0.22	0.14
Tamil Nadu	0.15	0.14	0.15	0.14	0.2	0.14
Uttar Pradesh	0.12	0.18	0.14	0.18	0.13	0.13
West Bengal	0.13	0.14	0.11	0.13	0.17	0.12
All India	0.14	0.16	0.14	0.16	0.15	0.14

Fig-5.2: Inequality among the people below poverty line at all India level during the NSS survey period-1983, 1993-94, 1999-00



Inequality among the people below poverty line shows the incidence of ultra poor. The Figure-5.2 shows that the rural inequality among the people below poverty line (BPL) has decreased during the 1983 and 1993-94 and then it remains constant. While the urban

inequality among the people below poverty first increased (1983 to 1993-94) and then remains constant. The urban inequality moves above the rural inequality among the people below poverty line and the gap between the two remains same over 1993-94 and 1999-00. Orissa is having the highest inequality among the people below poverty line both for rural and urban areas.

5.2. Trends of Polarisation in national and state level:

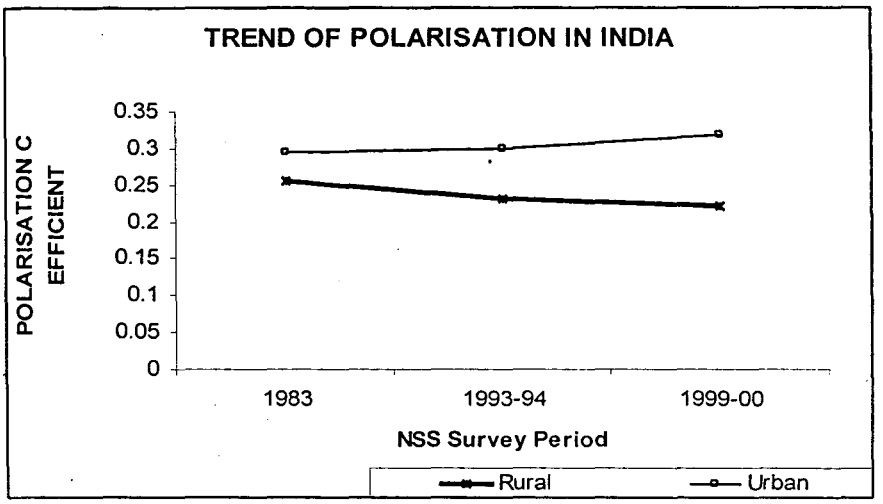
The Trends of Polarisation at the national as well as state level has been depicted in the following table.

Table 5.3: Trends of polarisation in India both for Rural and Urban areas (Wolfson Index of Polarisation)

	RURAL			URBAN		
STATES	1983	1993-94	1999-00	1983	1993-94	1999-00
Andhra Pradesh	0.256	0.223	0.162	0.274	0.29	0.274
Assam	0.169	0.156	0.181	0.222	0.269	0.307
Bihar	0.224	0.191	0.176	0.269	0.274	0.307
Gujarat	0.217	0.199	0.197	0.242	0.239	0.262
Haryana	0.25	0.255	0.221	0.325	0.248	0.254
Karnataka	0.257	0.222	0.202	0.305	0.297	0.307
Kerala	0.267	0.231	0.233	0.299	0.27	0.306
Madhya Pradesh	0.248	0.226	0.209	0.251	0.265	0.27
Maharashtra	0.25	0.244	0.221	0.318	0.339	0.308
Orissa	0.227	0.197	0.221	0.259	0.291	0.262
Punjab	0.255	0.218	0.212	0.292	0.273	0.253
Rajasthan	0.311	0.218	0.188	0.27	0.264	0.253
Tamil Nadu	0.288	0.232	0.226	0.301	0.283	0.294
Uttar Pradesh	0.246	0.235	0.206	0.273	0.281	0.298
West Bengal	0.251	0.191	0.183	0.293	0.317	0.307
ALL India	0.254	0.231	0.22	0.293	0.3	0.317

Table 5.3 shows, for rural India, polarisation follows a declining trend since 1983. Which implies that the growth improved the share of the bottom fifty percent of the rural population. The middle class section has been able to get their income share from the process of growth. The figure below shows that the urban polarisation has increased over the period and the rural polarisation has declined. The urban polarisation is moving above the rural polarisation. Interestingly the state level trend of polarisation is different from inequality trend. Kerala shows the highest rural polarisation. In urban polarisation Kerala with the neighboring southern state Karnataka show higher rate of polarisation.

Fig 5.3: Trends of Polorisation in India at National Level



5.3. The movement of inequality and polarisation in case of India and the major states in India is analysed in the following:

Both inequality and polarisation has been moving in the same direction which is depicted in the following figure. The Figure 5.4 shows the movement of rural inequality and polarisation. Both show a declining trend over the period 1983, 1993-94 and 1999-00. it follows that all India trend of rural inequality and polarisation move in the same direction.

For Urban India both inequality and polarisation show an increasing trend since 1983. The economic reforms have little impact on redistribution effect and thus urban welfare. Both inequality and polarisation are moving in the same direction. This is depicted in the Figure 5.5.

Fig 5.4: All India trends of rural inequality and polarisation over the period 1983, 1993-94 and 1999-00

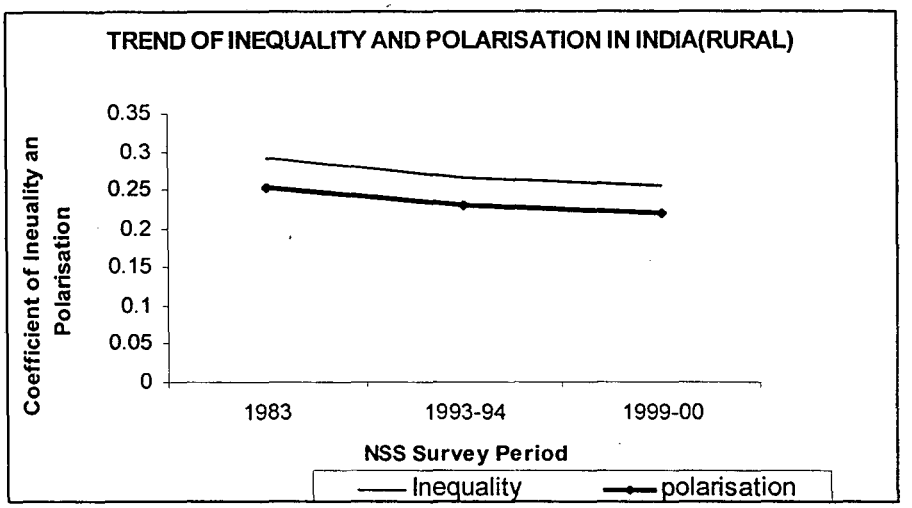
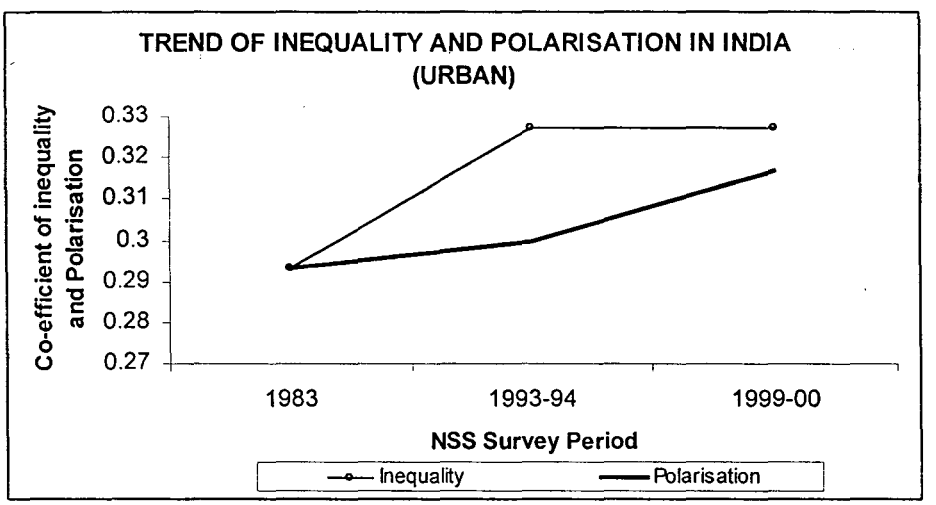


Fig 5.5: All India trends of urban inequality and polarisation over the period 1983, 1993-94 and 1999-00



The increasing trends of inequality and polarisation show that in urban India as a whole the middle class section is gradually disappearing and at the same time while the bottom level people are not getting the share of growth, growth is only concentrated at the higher income groups.

Economic reforms have a great impact on income distribution in urban economy of the states in India. Both Table 5.1 and Table 5.3 show that in Punjab and Haryana the pre-reform consumption expenditure distribution was better than during the post-reform period. While for Haryana both inequality and polarisation has increased in the post-reform period, for Punjab only inequality has increased with the decreased in polarisation. In the post reform period the urban Punjab experienced an opposite movement of inequality and polarisation trend, which shows the lower class section are badly affected by the growth and redistribution and the share of the middle class section increased.

But the economic reforms benefited the urban Karnataka, Maharashtra, West Bengal and Orissa where both inequality and polarisation have decreased while in the pre-reform period both show an increasing trend. In the urban Rajasthan the inequality shows an increasing trend in both pre and post-reform period but the polarisation only decreased in the post- reform phase which means the middle class section have not been affected by the growth and redistribution which takes place in the post-reform phase.

Besides these states, in all the other states like Kerala, Andhra Pradesh, Bihar experience increasing trend in both inequality and polarisation for the urban area. The economic reforms have less impact on the redistributive effect in favor of poor and middle class population in urban area.

The states like Orissa, Assam and Maharashtra are exceptions. For Orissa and Assam the inequality and polarisation first show a declining trend from 1983 to 1993-94 and again it increased in the year 1999-00. This shows that after economic reforms take place in the year 1991-92 the rural economy of these two backward states has deteriorated. Both the lower and middle class section of the rural population has been severely affected by the growth and redistribution effect.

For Maharashtra the inequality first increased from 1983 to 1993-94 and then it declined in the year 1999-00 but polarisation shows a declining trend throughout the period. The

economic reforms have developed the conditions of the lower and middle class section of rural Maharashtra.

It is a good sign for the backward states like Bihar where the both the inequality and polarisation shows a downward trend. Though growth is not very high for Bihar during this period (1.8percent -1980-2000) the redistribution effect has much impact on lower section. Here for the Rural Bihar the middle class section is hardly visible as more than fifty percent of the population is lying below poverty line. It is the redistribution effect which causes the rural poverty to decline from 65 percent in 1983 to 44 percent in 1999-2000. For rest of the states both inequality and polarisation show a declining trend. This shows that growth has benefited the bottom 50percent of the population in those states. The share of the bottom 50percent of the rural population has increased with the declining trends of inequality in those states. These states are proceeding towards attainment of high rate of social welfare.

5.3. Trends of Rural-urban disparity and Rural-urban Polarisation:

The Wolfson index of polarisation only aims to capture the "clustering" along the income dimension into high and low income groups. However debates on polarisation are often conducted in the framework of recognized and accepted non-income groupings. The clustering of rural-urban income levels, caste-groups and religious groups' income levels is as much concern as the "disappearing middle class". This type of divergence or "polarisation" cannot be captured by the polarisation measure defined by the Wolfson index. Hence the Wolfson index which only explains the polarisation within a group or within a region can't be helpful for measuring polarisation between groups or between regions. The difference in mean shows the inequality between two groups but fails to capture inequality within group. The richest in the low mean group could well be richer than the poorest in the high mean group. Such overlaps go against the notion of polarisation between groups. As there are inequalities within group, there is possibility of income overlaps between groups. The further apart are the means; one can argue the greater is the polarisation. For any given gap in means, however, the greater the spread

within each of the groups, the greater the overlap between members' incomes. These two tendencies can be quantified using well-known concepts of "between groups inequality" and "within group inequality" for decomposable inequality measures. The ratio between-group inequality to within-group inequality can be regarded as scalar polarisation index because it captures the average distance between the groups in relation to the income differences seen within groups. As income differences within group diminish, i.e. as the groups become more homogenous internally, differences across groups are, relatively speaking, magnified and "polarisation" is higher. Similarly for given group differences, as the groups means drift apart. Poalrisation increases. Writing more formally, we can therefore define polarisation Index as:

P = between group inequality/within-group inequality.

Table 5.4 shows the trends of rural-urban inequality and polarisation for the major states in India for the year 1983, 1993-94 and 1999-00.

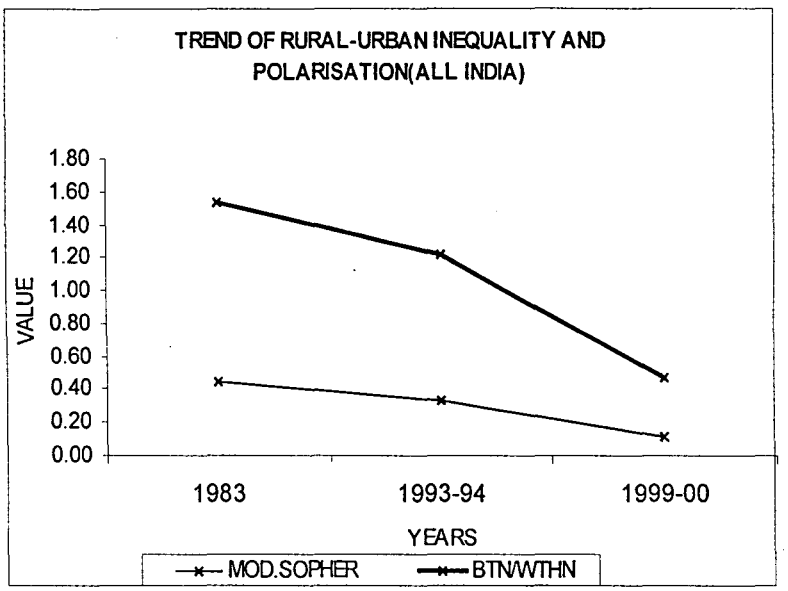
Table-5.4: Rural-Urban Inequality and Polarisation for India and Major States

	Mod.Sopher			Betn/Wthn		
STATES	1983	1993-94	1999-00	1983	1993-94	1999-00
Andhra Pradesh	0.328	0.210	0.129	1.155	0.807	0.525
Assam	0.365	0.395	0.157	1.822	2.170	0.730
Bihar	0.378	0.796	0.146	1.469	3.371	0.651
Gujarat	0.406	0.225	0.089	1.623	0.994	0.393
Haryana	0.387	0.124	0.044	1.432	0.493	0.211
Karnataka	0.429	0.344	0.117	1.476	1.323	0.497
Kerala	0.256	0.108	0.041	0.888	0.453	0.194
Madhya Pradesh	0.365	0.446	0.157	1.254	1.643	0.607
Maharashtra	0.712	0.429	0.126	2.526	1.501	0.496
Orissa	0.475	0.868	0.175	1.749	3.368	0.624
Punjab	0.131	0.087	0.036	0.500	0.411	0.182
Rajasthan	0.384	0.173	0.072	1.120	0.733	0.354
Tamil Nadu	0.420	0.287	0.115	1.271	1.051	0.448
Uttar Pradesh	0.271	0.286	0.098	0.963	1.056	0.408
West Bengal	0.551	0.348	0.136	1.873	1.510	0.598
All India	0.445	0.325	0.118	1.530	1.220	0.463

It is evident from the above table that there is interstate disparity in rural-urban inequality in consumption expenditure. Orissa has the highest Rural-urban disparity while Punjab is the lowest in this front during 1999-2000.

Assam is having highest rural-urban polarisation followed by Bihar and Orissa. These three states followed by Madhya Pradesh. But in case of Rural-urban inequality both Madhya Pradesh and Assam are occupying the second highest rank after Orissa during 1999-2000. Rajasthan is experiencing the tremendous declination of both rural-urban inequality and polarisation.

Figure 5.6: Trends of Rural-Urban Inequality and Polarisation (All India)



The Fig 5.6 shows that both inequality and polarisation show a declining trend at the all India level. During 1990s there is severe fall of rural-urban polarisation as the slope of the trend line is very high during 1993-94 and 1999-00. In comparison to the period 1983 to 1993-94 the polarisation trend line is very smooth which the pre-reform period don't show a rapid downfall of polarisation. As far as the inequality trend line is concerned it shows a smooth declination of rural-urban inequality.

The result of the analysis is shown from the figure 5.6. Both rural-urban inequality and rural-urban polarisation move in the same direction. Both show a declining trend. The decline of rural-urban polarisation is rapid after the process of globalization started in 1991.

CHAPTER - VI

INTER-DEPENDENCE OF ECONOMIC GROWTH, POVERTY AND SOCIAL DEVELOPMENT

6.1. Poverty is a multi-dimensional concept. It is often taken to reflect human deprivation in terms of income, health facilities, education, nutrition, housing, clean drinking water etc. In India however poverty estimates are based on NSS household consumption expenditure data. Poverty line is defined as a level of income or expenditure required by an individual for an average intake of 2400 calorie in rural areas and 2100 calories for the urban areas per day. Those who do not earn income sufficient for this minimum calorie intake are below poverty line. This concept is more or less uni-dimensional as it does not cover the deprivations related to other vital basic needs like housing, clothing, clean drinking water, toilet facilities etc.

As UNDP's concept of human development covers deprivations in three basic dimensions of human development. a. A long life b. Education to improve quality of life c. decent standard of living.

In whatever manner we define it, poverty is pervasive in India. In social sector India is lagging behind most of the developing countries in the world. Along with income poverty the country shows a poor performance in education and health and other social sectors .it is only when Increase in per-capita consumption is backed up by development in sector then one can claim to witness healthy development.

6.2. Patterns of Social Development across states: Education and Health are two important components in social sector. Unfortunately, the performance of the country in social sector is not admirable. The literacy rate is 65 percent which is less than most of the developing countries in Asia. In other social indicators like life expectancy and infant mortality rate the country is lagging behind other countries. Within India also there is a large variation in state level performance in social sector. Some states are cut off from the main stream of social development while in some states the development in this sector

can be comparable with the most developed nations of the world. Table 6.1(Refer, p 78) shows the state level performance in social sectors (literacy, life expectancy and infant mortality rate) in the nineties and eighties. The trend of income poverty and social sector development show a surprising trend. Orissa is an example of having highest poverty percentage and is having literacy rate which is higher than its neighbour Andhra Pradesh which is relatively rich in terms of per-capita income. Bihar is having high poverty ratio as well as low literacy rate. But this state is having a good performance in health sector. In terms of life expectancy and infant mortality rate this poor state did better than the national average. Even it places a higher rank than Andhra Pradesh, Gujarat and Karnataka. Orissa and Madhya Pradesh are two poor states and are also bad performers in health sector. These two states are having infant mortality rate very close to 100. Life expectancy in these two states is below 60. The bad performance in health sector can have a bad implication in the long run and make these two states remain inside the vicious circle of poverty. High poverty and poor performance in health indicators is a sign of negative development during nineties. While performance of Bihar in health sector is admirable. The infant mortality in Bihar is 67 percent which is lower than national average and lower than Uttar Pradesh, Rajasthan and even Haryana. West Bengal shows an exemplary performance in social as well as economic field during nineties. It is having poverty ratio which is lower than national average. It shows a steady and standard growth rate during nineties. In the social sector this state has also performed very well. In the three indicators discussed here as the literacy rate, life expectancy and infant mortality rate, West Bengal is ahead of many major states in India.

Kerala is showing an exemplary performance in all the social indicators. It is having literacy rate 91percent which can be comparable with any developed nation. In other social indicators like life expectancy which is higher than the rich states like Punjab and Haryana. The infant mortality rate in Kerala is 3 to 4 times lower than that of Punjab and Haryana.

The performance of the other southern states like Tamil Nadu and Karnataka in social sector cannot be ignored. In poverty ratio, as well as literacy, life expectancy and infant

mortality rate (IMR) these states are in a more comfortable position. The two rich states in India i.e. Punjab and Haryana have failed to maintain their same status in education and health sector. Although having the lowest concentration of poverty, Punjab comes below some reform oriented states in literacy, life expectancy and infant mortality rate. If one compares the development in 1980s and in 1990s, most of the states have done better in 1990s especially in education sector.

Almost all the states have improved their literacy rate during nineties. Kerala which has already reached a saturation point shows a little improvement during nineties i.e. literacy rate has increased from 90.59percent to 91percent. Of course it is true that high rate of changes occur with low base. Still some states are unique in their performance. Orissa though having higher literacy rate than Bihar during 1981, the change of literacy rate is higher in this state during nineties, than that of Bihar. Madhya Pradesh which was having lower literacy rate than Orissa during 1981 and 1991 outperformed the latter during 2001. Gujarat which was higher literacy rate than Punjab during 1991, the change in literacy rate is higher in Punjab during 2001.

6.2.1. Inter dependence among the social indicators:

	Literacy	Life Expectancy	Infant Mortality rate (IMR)	Poverty Ratio
Literacy	1.00	.635*(.011)	-.725**(.002)	-.477 (.072)
Life Expectancy	.635* (.011)	1.00	-.901** (.000)	-.589* (.021)
Infant Mortality rate (IMR)	-.725** (.002)	-.901** (.000)	1.00	.563* (.029)
Poverty Ratio	-.477 (.072)	-.589* (.021)	.563* (.029)	1.00

* correlation is significant at 1 percent level of significance
** correlation is significant at 5 percent level of significance.

Literacy rate shows a positive and significant relationship with Life expectancy. The states which are having high literacy rate also showing higher life expectancy. Literacy rate is having negative and significant relationship with Infant Mortality Rate (IMR). This shows the higher the literacy rate, lower is the infant mortality rate. But the

correlation between the literacy rate and Poverty ratio is not significant. It means the poor states are not necessarily underdeveloped in education. For example, Orissa. Though it is the poorest state in India, its literacy rte is very close to national average. Poverty ratio shows a positive and significant relationship with Infant Mortality Rate (IMR). This shows that the poor states are having higher rate of Infant Mortality Rate (IMR). Poverty ratio also shows a negative and significant relationship with Life Expectancy. It reveals the fact that the poor states are having low rate of life expectancy. As most of the poor are lacking the minimum standard of living, the life expectancy is very low for them.

6.3. Rural Infrastructure across states: it is however clear that there exists inter-state disparity in social as well as economic field. It should not be ignored from mind that there has occurred a rapid development in the urban areas during the period of globalisation. Urban areas are the main centre of growth during this period. It attracted more and more investment and started flourishing. While the rural areas cripple with poverty, unemployment and social backwardness. India's economic development is predicated upon India's rural development because around 700million Indians live in rural India. An astonishing one out of every ten living humans lives in rural India. Rapid progress in GDP growth and globalization in the last decade has primarily impacted the urban economy .While software exports, business process outsourcing, etc. have helped urban economic growth, it has done relatively little for the rural economy. Without rural economic development, India has little chance of achieving growth rates required to become a developed nation. Furthermore, economic development is both a cause and a consequence of urbanisation. Clearly, in the Indian context, urbanisation through further rural to urban migration is both unsustainable and socially disruptive. Therefore urbanisation of the rural population will have to be achieved in the rural areas. Rural India is caught in what is called a Development Trap. Because of lack of economic opportunities, incomes are low. Therefore, they are unable to pay for goods and services that would enable them to increase their incomes. This leads to low demand for goods and services. Consequently, firms don't find it profitable to do business in rural India. This leads to the inadequate provision of infrastructure, which in turn, leads to lack of economic opportunities, and so on.

Therefore, while discussing on inter-state poverty and social development, the inter-state disparity in rural infrastructure development during the nineties is brought into focus. Education is the base of human development. There is high level of rural-urban disparity among the states in India in education. Most of the villages in some states have not seen a primary school and children in these villages have to come a long distance about more than 5 km. to avail the elementary education, e.g. Ramdashpur, a village in Jajpur district of Orissa. During the time of rainy season this village remains cut off from the mainstream and children fail to come to attain the classes. Most of the rural people living in villages are unable to have a couple of meals a day. In this case, giving education to children remains a dream for them. Anganwadi has now become a chief means of providing elementary education in villages.

Educational Infrastructure Development Index for the major states in India is prepared with the following indicators: Percentage of the rural population living in villages avail the facilities of Primary School, Middle School, Secondary School, Higher Secondary School, Anganwadi, Adult education centre. Table 6.2 (p 79) shows that Assam shows negligible performances in provision of elementary educational infrastructure in rural areas. Only 57percent percentage of population living in villages are able to access the facility of primary school education while Punjab shows a great success in providing primary school facility in villages. West Bengal shows a bad performance in providing school facilities in villages basically, middle school and higher secondary schools. Orissa performed poorly while, Andhra Pradesh is good in providing school facilities in villages and secured Rank-2 in the Educational Infrastructure development Index (Refer, Table-6.2.).

Table 6.6: Rank of the major states in India in Education, Health, Information and Communications and other infrastructure development

STATES	EDI	HDI	ICDI	OIDI	RIDI
Andhra Pradesh	2	4	3	3	2
Assam	15	15	15	8	14
Bihar	12	13	14	15	15
Gujarat	7	6	6	7	8
Haryana	3	3	5	2	3
Karnataka	6	8	7	5	6
Kerala	1	1	1	1	1
Madhya Pradesh	13	11	10	14	12
Maharashtra	4	5	4	6	5
Orissa	11	14	11	12	11
Punjab	5	2	8	4	4
Rajasthan	8	12	9	11	9
Tamil Nadu	9	10	2	9	7
Uttar Pradesh	14	9	12	13	13
West Bengal	10	7	13	10	10

N.B: EDI - Infrastructure of Education Development Index, HDI - Infrastructure of Health Development Index, ICDI - Infrastructure for Information/communication Development Index, OIDI - Other Infrastructure Development Index, RIDI - Rural Infrastructure development Index.
Source: the indices are calculated form the rural infrastructure data from the NFHS, 1998-99.

Bihar and Uttar Pradesh again shows their poor quality of development being unable to provide better educational facilities in villages. Maharashtra is also placed in a good rank in provision of educational infrastructure in rural areas. In this state 96percent of the rural population living in villages avail the facilities of primary school, and average 40percent of people in rural areas avail the middle, higher secondary educational facilities.

The rural areas in India are far from the landmark of providing primary health facilities to all. A large number of poor in rural areas used to die of malnutrition and ill-health even today. There is existence of inter state disparity in provision of health care in rural reas. There is a huge gap between Kerala and other states. (Refer, Table 6.3) In Kerala, nearly 75percent of rural population living in villages avail the facilities of primary health

centre, while most of the other states have not touched the 20percent mark. Primary health centre which is for 5000 population and Sub-centre which is situated in every village are basic health infrastructure. Besides these two, Hospitals, Dispensaries/Clinics, Private Doctors, Visiting Doctors, Village Health Guides, Mobile Health Units are coming under health infrastructure. While the developed states are in a good form in provision of these entire infrastructures in rural areas, the poor states like Bihar, Orissa, Assam are poor performer. It shows a real divergence in social sector. (Refer table-3 for the rank of states in Health Infrastructure Development Index).

The rural population living in villages used to remain isolated from the mainstream of development because of lack of information and communication. Lack of knowledge about the outer world is one of the reasons behind the increasing inequality. Post office which is a cheap mode of communication between people to people has been with the rural folks for a long time ago. Some states are able to provide telephone facilities to most part of the rural areas. In Haryana and Punjab nearly 90percent rural people in villages avail the telephone facilities (Refer Table 6.4), but the eastern states like Orissa, Bihar and West Bengal are poor performer in this area. Still only 30percent of the rural population are in touch with telephone facilities. Kerala is well developed in provision of all the means of communication. Besides post office and telephone, the other means of communication in the villages basically are such as, telegraph, STD booth, cable connection, and community television set. The infrastructure for information and communication development index prepared with the help of these indicators, Kerala places itself as the highest rank, while the backward states like Assam, Bihar, Orissa and Uttar Pradesh are satisfied with their lower ranks (Refer, Table 6.4).

The other rural infrastructures like, banks, electricity, Credit Co-operative Society, Agriculture Co-operative Society, Milk Co-operative, General Market, and Weekly Market are important for providing a better rural life. Without these the rural people cannot dream of a better life. Despite some eastern states like Bihar, West Bengal and Assam, in almost all the states, an average of 80percent rural population are availing electricity in 1998-99 (Refer, Table 6.5).Middle/Small Scale Industry, Fair Price Shop,

Pharmacy Medical Shop, Mahila Mandal, Youth Club also constitute major part in rural infrastructure. The middle/small scale industry encourages rural employment and thus helps in the development of standard of living. The high dependence on agriculture in rural areas of some of the states makes the rural-urban disparity widening over the period. The presence of fair price shop and youth club facilitates the rural life. Pharmacy medical shops are most important for the rural areas. The rural health care system fully depends on the pharmacy medical shops.

6.3. Inter-dependence of education, health and other infrastructure Development and possibility of divergence:

Table 6.7: Rank Correlation ship of the Major States in India in Education, Health, Information/ Communication and Other Infrastructure Development in Rural Areas, 1998-99

Spearman rho	**Education**	**Health**	**Information/ communication**	**Other Infrastructure**
Education	1.000	.850* (.000)	.836* (.000)	.861* (.000)
Health	.850* (.000)	1.000	.693* (.004)	.804* (.000)
Information/ communication	.836 * (.000)	.693 * (.004)	1.000	.707* (.003)
Other Infrastructure	.861* (.000)	.804* (.000)	.707* (.003)	1.000

* Correlation is significant at .01 level (2 – tailed)

The above table shows that Education has positive and highly significant correlation with Health. The states which are having better educational infrastructure in rural areas h also with developed health infrastructure. Health shows a positive and significant correlation with information/ communication. Similarly, education and health show positive and significant correlation with other infrastructure. It clearly shows that the states which are developed in one educational infrastructure are also developed in health, information/communication and the infrastructure. States which are lagging behind in one area, also remain behind in other areas. For example, Kerala occupies the highest rank in all the development indices, where as Assam, Bihar, Madhya Pradesh and Orissa

got the lower ranks in all the development indicators. Kerala's per-capita income is low in comparison to Gujarat and Maharashtra. But in social sector this state is highly developed. All the villages of this state are connected with road, electricity, water supply. Every village is having Primary health centre. There are schools, colleges in every village. Most of the villages are having more than 60,000 population. The villages are basically semi-urban areas. The richer states like Punjab, Haryana, Gujarat, and Maharashtra follow Kerala in terms of social sector development. In Bihar and Orissa most of the villages are not yet connected with roads. The benefits of Prime Minister GramSadakYojana (PMGSY) have not reached every part of the state. Electricity and water supply remain a dream for some villages in this state. Power sector reforms in Orissa in 1996-97 has been a little success. Till now most of the villages are not connected with electricity. Lack of connectivity of road, electricity lead to other shortages like telephone, postal, banks, television etc. Most of the villages are not yet covered under Public Distribution System. This leads to the underdevelopment of the rural folks. Hence Poverty in this state is not only the reason of lack of income or consumption expenditure growth but because of the other factors which cumulatively affect the poverty to rise substantially. From the above correlation table it is evident that there is a clear divergence in social sector development.

6.4. Interdependence of Growth, Poverty, Inequality, Polarisation, Rural-Urban Disparity and Rural-Urban Polarisation and Rural Infrastructure Development:

The rank of the major states in India in consumption expenditure growth, poverty ratio, and Gini coefficient of consumption expenditure, polarisation, rural-urban inequality and rural-Urban Polarisation and Rural Infrastructure development is given in the table 6.8.

The correlation between consumption expenditure growth and poverty reduction is negative and significant (At 5 percent level of significance).Poverty reduction is highly dependent on Consumption expenditure growth. The negative sign indicates that the growth and poverty are going in opposite direction. The states which are attaining high growth rate are also keeping the poverty ratio low. (Refer, Table 6.9).

The growth in consumption expenditure and inequality shows a weak and an insignificant relationship. The negative sign shows that high growth states are having low inequality. Orissa and Bihar are two poor states where growth is low and these two states are having higher inequality. Whereas in Punjab like rich state growth rate is low and inequality is also low. Hence inequality and growth show no significant correlation in Indian states.

The poverty ratio and inequality show positive and significant correlation. The states with higher poverty ratio show high level of inequality and the states with lower poverty ratio show low level of inequality. As it is discussed that the poor states like Orissa and Bihar show high level of inequality and the rich states like Punjab, Haryana, and Maharashtra are having low inequality.

Table 6.8: Rank Correlationship of the Major States in India in Education, Health, Information/ Communication and Other Infrastructure Development in Rural Areas, 1998-99

States	Cons.exp.grth	Poverty ratio	Gini-Coeff	Polarisation	Rur-Urb inq	Rur-Urb Pol	RIDI
Andhra Pradesh	12	10	7	15	6	6	2
Assam	13	6	10	7	3	1	16
Bihar	11	2	6	8	4	2	17
Gujarat	5	13	12	13	11	11	9
Haryana	3	14	13	11	13	13	3
Karnataka	1	9	8	4	8	7	6
Kerala	2	12	11	1	14	14	1
Madhya Pradesh	14	3	4	10	2	4	14
Maharashtra	6	5	3	2	7	8	5
Orissa	15	1	1	9	1	3	13
Punjab	8	15	14	12	15	15	4
Rajasthan	7	11	15	14	12	12	11
Tamil Nadu	4	8	5	3	9	9	7
Uttar Pradesh	9	4	2	5	10	10	15
West Bengal	10	7	9	6	5	5	10

N.B. Cons.exp.grth- Consumption Expenditure growth in 1999-00, Poverty ratio- head Count Ratio in 1999-00, Gini-Coeff- Gini Coefficient in 1999-00, polarization, Rural Urban Inequality and Rural Urban polarization in 1999-00, RIDI- Rural Infrastructure Development Index for 1998-99.

The rank of all the states in all these indicators has been arranged in descending order, which means that states having higher growth, higher poverty ratio, higher inequality, higher polarisation, higher rural/urban inequality and polarisation, higher rank in rural infrastructure development index, are put in higher rank (ascending order 1, 2...15).

Table 6.9: Rank Correlationship of the Major States in India in Education, Health, Information/ Communication and Other Infrastructure Development in Rural Areas, 1998-99

Spearman rho	Cons.exp.grth	Poverty ratio	Gini-Coeff	Polarisation	Rur-urb inq	Rur-Urb Pol	RIDI
Cons.exp.grth	1.000	-.636 ** (.011)	-.418 (.121)	.361 (.187)	-.750* (.001)	-.696* (.004)	.600** (.018)
Poverty ratio	-.636* (.011)	1.000	.850* (.000)	.314 (.254)	.846* (.000)	.804* (.000)	-.718* (.003)
Gini-Coeff	-.418 (.121)	.850* (.000)	1.000	.418 (.121)	.661* (.007)	.564** (.028)	-.357 (.191)
Polarisation	.361 (.187)	.314 (.254)	.418 (.121)	1.000	.046 (.869)	.068 (.810)	.025 (.930)
Rur- urb inq	-.750* (.001)	.846* (.000)	.661* (.007)	.046 (.869)	1.000	.968* (.000)	-.604** (.017)
Rur-Urb Pol	-.696* (.004)	.804* (.000)	.564** (.028)	.068 (.810)	.968* (.000)	1.000	-.650* (.009)
RIDI	.600** (.018)	-.718* (.003)	-.357 (.191)	.025 (.930)	-.604** (.017)	-.650* (.009)	1.000

* Correlation is significant at .01 level (2 – tailed)
** Correlation is significant at .05 level (2 – tailed)

Polarisation doesn't show any significant relationship with the other indicators taken in this study. Even inequality and polarisation do not follow a complete correlation among them.

Rural-Urban inequality shows a negative and significant correlation with the consumption expenditure growth. This shows that the states which witnessed higher growth subsequently led rural-urban inequality into a high point. Poverty ratio follows a positive and significant relationship with rural-urban inequality. The states with higher growth, lower poverty ratio follow a low rural-urban inequality. Rural-urban inequality

and rural-urban polarisation follow a positive and significant relationship. The states with high rural-urban inequality also witness high rural-urban polarisation.

The Rural Infrastructure Development follows a positive and significant relationship with consumption expenditure growth and negative and significant relationship with the Poverty, ratio, rural-urban inequality and rural-urban polarisation. The positive relationship with the growth of consumption expenditure shows that the states having higher growth also at the same time witness higher rural infrastructure development. In other way round the states with low poverty ratio, low rural-urban inequality and low rural-urban polarisation got the higher rank in rural infrastructure development index.

It is evident from the above table that consumption expenditure growth, poverty ratio, rural-urban inequality and rural-urban polarisation and rural development are highly correlated. Some of the major Indian states are highly developed in all the areas while some are extremely poor in all these respects.

It shows a clear divergence not only of per capita income or per capita consumption expenditure but also growing inter-state disparity in social sector.

Table 6.1. State wise performance in Social Sector 1981,1991, 2001

	Literacy			Life Expectancy			Infant Mortality rate			Poverty Ratio		
STATES	1981	1991	2001	1981	1991	2001	1981	1991	2001	1983	1993-94	1999-00
Andhra Pradesh	35.66	45.11	61	58.4	61.8	63.9	91	55	66	34.3	27.1	18.8
Assam	N.A.	53.42	64	51.9	55.7	59.9	N.A	92	78	34.9	26.4	23.8
Bihar	32.3	38.54	48	52.9	59.3	65.2	94	75	67	57.8	46.4	38.6
Gujarat	52.21	60.91	70	57.6	61	63.6	115	78	64	35.6	25.0	14.4
Haryana	43.85	55.33	69	60.3	63.6	67.0	126	52	69	24.6	22.0	9.1
Karnataka	46.2	55.98	67	60.7	62.5	64.4	81	74	58	40.1	35.0	21.3
Kerala	81.56	90.59	91	68.4	72.9	73.3	54	42	16	43.9	25.0	14.8
Madhya Pradesh	34.22	43.45	64	51.6	54.7	58.6	150	133	97	52.1	44.6	37.8
Maharashtra	55.83	63.05	77	60.7	64.8	68.3	119	74	49	43.4	36.6	25.4
Orissa	40.96	48.55	64	53	56.5	59.9	163	125	98	59.3	45.9	45.6
Punjab	48.12	57.14	70	63.1	67.2	70.9	127	74	54	19.1	11.4	5.9
Rajasthan	30.09	38.81	61	53.5	59.1	62.5	141	87	83	39.9	28.5	16.7
Tamil Nadu	54.38	63.72	73	56.9	63.3	68.4	104	54	53	54.0	36.1	21.4
Uttar Pradesh	33.33	41.71	57	50	56.8	63.8	130	99	85	48.7	38.9	31.1
West Bengal	48.64	57.72	69	57.4	62.1	67.7	95	62	53	47.9	31.6	23.3
All India	43.56	52.11	65	55.5	60.3	64.8	115	77	71	44.7	34.8	25.4

Part of Table 6.1

	Per-Capita SDP growth	
States	1980-91	1993-03
Andhra Pradesh	3.4	4.5
Bihar	2.6	3.0
Gujarat	2.8	3.7
Haryana	4.0	3.3
Karnataka	3.1	5.5
Kerala	1.7	3.9
Madhya Pradesh	1.7	1.7
Maharashtra	3.6	2.9
Orissa	2.1	2.3
Punjab	3.4	2.5
Rajasthan	3.9	2.8
Tamil Nadu	3.8	4.3
Uttar Pradesh	2.6	1.4
West Bengal	2.3	5.5
All India growth rate	3.1	4.5

Source: Life Expectancy, Infant Mortality Rate and Literacy Rate taken from National Human Development Report 2002,
Poverty ratio, per capita SDP growth are calculated in the previous chapter

EDUCATION INFRASTRUCTURE IN RURAL AREAS

Table 6.2: Percentage of Rural Population Living in Villages Avail the Facilities of Education 1998-99

STATES	P.S	M.S	S.S	H.Sc	Ang.	Ad.Cen	EDI fsc	Rank
Andhra Pradesh	93.3	61.2	47.6	28.6	73.8	58.2	1.13646	2
Assam	57	31.9	10.7	8.4	40.5	22.7	-1.2437	15
Bihar	82	40.3	18.5	7.9	39.8	7	-0.8817	12
Gujarat	78	48.3	24.7	15.2	90.2	2.3	-0.2025	7
Haryana	96.2	79.6	58.6	14.9	95.9	16.9	1.04991	3
Karnataka	67.9	55.8	25	12.5	93.7	29.9	0.01318	6
Kerala	90.1	87.1	74.1	46	95.8	57.8	2.28529	1
Madhya Pradesh	64.1	28.2	13.8	10.3	67.9	14.4	-0.947	13
Maharashtra	96	67.7	41.2	20.5	86.3	44	0.97662	4
Orissa	70.2	39.9	22.1	10.3	56.9	20.2	-0.6602	11
Punjab	99.8	63.3	37.8	18.5	79.8	17.2	0.5603	5
Rajasthan	78.4	49.4	26.1	5.8	63.8	34.5	-0.2655	8
Tamil Nadu	67.3	38.3	28.9	21.3	63.6	16.6	-0.3879	9
Uttar Pradesh	75.1	31.9	12	9.7	39.3	18.8	-1.008	14
West Bengal	87.6	24.1	24.8	8.4	74.3	23.1	-0.4253	10

P.S- Primary School, M.S – Middle School, S.S – Secondary School, H.Sc –Higher secondary, Ang. – Angan wadi, Ad. Cent -Adult center, Rank – rank of the major states in Educational development Index, EDI fsc- Educational development index factor scores,

Source: National Health Family Survey, 1998-99

HEALTH INFRASTRUCTURE IN RURAL AREAS

Table 6.3: Percentage of Rural Population Living in Villages Avail the Facilities of Health Care, 1998-99

STATES	P.H.C	S.C	Hosp.	Disp.	Pvt.doct.	Vist.Doct	Vil.H.G	M.H.U	HDIfsc.	Rank
Andhra Pradesh	14.6	45.7	15.7	47.1	60.8	57.3	43.7	31.2	0.65365	4
Assam	1.4	8.9	6.2	3.5	23.3	36	30.2	7.6	-0.99146	15
Bihar	13.1	28	5.9	9.4	32.5	17.8	12.2	1.3	-0.74997	13
Gujarat	9.2	41.7	6.6	36.1	37.1	33	2.6	11.4	-0.27458	6
Haryana	19	38.4	7.6	81.1	82.4	44.2	75.8	25.9	0.97955	3
Karnataka	14.7	20.8	8.8	23.2	44.2	32.2	37	9.9	-0.31704	8
Kerala	74.2	78.6	53	76.5	87.6	44.9	38.2	9.8	2.71274	1
Madhya Pradesh	9.6	17.1	6.3	11.7	29.1	33	61.2	14.1	-0.60452	11
Maharashtra	22.9	35.1	15.8	48.6	54.1	43.6	25.6	14.6	0.41519	5
Orissa	10.1	12.1	7.5	13.1	13.7	28.2	32.3	25.3	-0.91795	14
Punjab	8.3	39.9	8	82.1	79.4	70.3	63	13.7	1.05961	2
Rajasthan	9.7	46.4	7.1	20	20.4	13	25.4	13.9	-0.60695	12
Tamil Nadu	13.7	42	11.7	21.3	16.5	1.1	65	98.6	-0.58552	10
Uttar Pradesh	4.4	18	5.3	25.2	51.8	26	39	3.4	-0.48604	9
West Bengal	7.3	50.8	4.6	21.3	32.1	30.4	41.9	6.9	-0.28671	7

Source: National Health Family Survey, 1998-99

Hosp. – Hospital, Disp - Dispensary, M.H.U – Mobile health Unit, HDIfsc.- Health development Index factor score, P.H.C- primary Health Center, S.C- Sub center, Pvt.doct- Private Doctors, Vist.Doct- Visiting Doctors, Vil.H.G- Village Health Guide.

INFRASTRUCTURE FOR INFORMATION AND COMMUNICATION

Table 6.4: Percentage of Rural Population Living in Villages Avail The Facilities of Information and Communication, 1998-99

STATES	P.O	Telg.	S.T.D	Tel.	C.C	C.Tv	Cab.Cn	inf	Rank
Andhra Pradesh	72.3	16	16.6	68.9	28.7	17.3	88.4	0.76045	3
Assam	16.6	4.8	6.8	34.7	9.1	8.1	4.3	-1.08145	15
Bihar	32.3	5.6	12.2	29.9	7.4	2.9	5.3	-0.98311	14
Gujarat	60	8.4	11.8	79.9	16.4	31.8	32.2	0.015	6
Haryana	67.5	6.6	10.9	89.2	34.9	3.9	18.4	0.05429	5
Karnataka	46.8	10.2	14	74.6	17.2	7	62.5	-0.01037	7
Kerala	89.4	51.7	85.7	61.3	39.5	61.7	78.5	2.61979	1
Madhya Pradesh	20.6	8.3	7.6	43.9	16.7	22.1	24.6	-0.55742	10
Maharashtra	52.2	21.1	16.1	62.5	36.3	31.8	29.6	0.50509	4
Orissa	26.9	6.9	7.2	26.9	27.2	6.5	12.6	-0.62717	11
Punjab	57.2	8	17.2	88.4	31.4	1.4	12.3	-0.06638	8
Rajasthan	49.2	10	11.4	52.8	16	3	23.2	-0.42916	9
Tamil Nadu	19.8	16.2	77	28.4	38.9	87.1	72.6	1.40726	2
Uttar Pradesh	31.7	5.1	7.2	49.4	14.7	9.7	5.1	-0.79828	12
West Bengal	41.4	7	8.2	30.1	6.9	6.8	18.2	-0.80854	13

Source: National Health Family Survey, 1998-99

Tel.-Telephone Connection C.C- Community Center, C.Tv – Community Television, Cab.Cn- Cable Connection, inf – Factor score in Information and communication development index, Rank- ranks of the major states in information/ communication development index.
P.O – Post office, Telg – Telegraph, S.T.D- STD phone booth

OTHER INFRASTRUCURE

Table 6.5: Percentage of Rural Population Living in Villages Avail The Facilities of other Infrastructure, 1998-99

STATES	M.S.I	C.C.S	A.C.S	M.C	G.M	W.M	F.S	F.M.S	M.H	Y.C.	El.	Bank	Otiddfsc	Rank
Andhra Pradesh	51.7	43.6	44.2	42.6	89.9	26.7	93.3	39.7	71.5	51.1	100	28.3	0.9872	3
Assam	46	19.2	13	1.2	35.6	55.5	84.4	32.7	42.9	66.2	66	9.3	-0.323	8
Bihar	5.7	9.5	10.2	6.5	64.7	32.2	48.9	30.4	7.8	12.9	42	12.7	-1.242	15
Gujarat	7.6	12.1	40.1	58.1	72.8	1.9	71.2	9.4	36.2	31.7	100	19	-0.157	7
Haryana	37.4	65.2	79.8	49.2	97.5	1.4	92.2	29.7	72.8	23	100	24	1.1443	2
Kamataka	39	40.1	37.4	41.7	63.1	16.8	77.3	28.2	40.5	52.1	100	24.9	0.38	5
Kerala	78.7	81.4	50.8	67.2	66.5	37	91.3	81.7	83.9	91.4	100	89.4	2.3687	1
Madhya Pradesh	11.4	18.6	16.2	3.5	66.2	18.1	36.3	11.3	25.2	19.5	88	12	-1	14
Maharashtra	12.9	33.2	38.2	39.4	85	29.7	67.7	28.6	70.8	47.8	94	35.6	0.3477	6
Orissa	26.3	21.3	14.1	4.5	39.6	24.9	35.1	14.6	36.2	68.6	84	10.6	-0.751	12
Punjab	37.2	65.4	67.2	41.5	96.6	2	76.7	24.1	49.9	49.8	99	29.1	0.8628	4
Rajasthan	19.7	33.8	28.9	18.5	81.5	5.6	31.2	14.2	17.4	22.3	86	12.4	-0.67	11
TamilNadu	14	34	2.4	31	14.7	78		24.9	49.3	55.9	28	54.3	-0.487	9
Uttar Pradesh	17	12.8	15.5	14.1	64.5	23.2	55.7	15.3	8.7	18.5	76	11	-0.963	13
West Bengal	23.3	16.7	28.6	3.6	65.1	31.3	56.4	30.8	22.2	72.6	65	21	-0.498	10

Source: National Health Family Survey, 1998-99.

M.S.I- Middle/ small scale industry, C.C.S- Credit Co-operative society, A.C.S – agriculture cooperative society, M.H- Mahila mandal,
M.C- Milk Co-operative, G.M- General Market, W.M- Weekly Market F.S – fair price shop, F.M.S Y.C- youth club, El. - electricity, Bank

CHAPTER - VII

CONCLUSION

The present chapter gives a brief summary of the major findings of the study.

Chapter-I and Chapter-II presents introduction and methodology and no definite conclusion is emerging here.

Chapter III discusses the macro perspective of poverty in India. It highlights the trends of poverty which has become a debatable issue, particularly after the policy of Liberalisation adopted in 1991. Controversies over the trend of poverty in India during nineties are discussed in this chapter. The trends of poverty at the national level are calculated with the three alternative measures like Head Count Ratio, Poverty Gap Index and Sen's Index of Poverty. All the three indices used for the measure of poverty in India show a declining trend. Sen's index which measures severity of poverty and the Poverty Gap Index which measure the depth of poverty show higher rates of decline than the Head-Count Ratio. This shows that fall in incidence or depth of poverty is higher than the fall of poverty ratio during the period of globalization. Decline of poverty incidence measured by Sen's Index and Poverty gap index is higher in Urban than in rural areas; whereas the Head-Count Ratio gives an opposite result. The growth elasticity of poverty gap is calculated at the national level both for rural and urban areas. The overall trend of growth elasticity of poverty at national level shows a rising trend. But the rise is higher in rural than urban area. From this result it is concluded that the reduction of poverty gap is responsive to the growth in consumption expenditure in rural areas than urban area.

Chapter IV analyses the inter-state disparity in reduction of poverty ratio and disparity in growth of percapita income and percapita consumption expenditure. From this analysis it is evident that the inter state disparity in poverty in both rural and urban areas has been rising during nineties. This is because the richer states have performed better in terms of poverty reduction than their poor neighboring states. But Bihar shows an exemplary achievement in reduction of rural poverty.

The inter-state disparity in Per-capita income and Per-capita Expenditure has widened during nineties. High income states such as Punjab and Haryana have experienced lower per capita SDP growth compared to the middle income states such as Tamil Nadu and Karnataka. Of central interest is that the five lowest income states have experienced annual per capita SDP growth rates consistently lower than the national average. Higher aggregate growth rates in India have been driven by a few reform-orientated states rather than by broad based economic growth.

There is inter-state disparity in the growth elasticity of poverty. The poor states like Orissa and Bihar are lagging far behind in terms of growth elasticity of poverty than the rich states like Punjab, Haryana. This shows that in the high per-capita income states growth is more pro-poor than in the low per-capita income groups.

Chapter-V discusses the trends and patterns of inequality, rural urban disparity in consumption expenditure and poalrisation. It reveals that the rural inequality has decreased during nineties with marginal or no increase in urban inequality. The poor states like Orissa and Bihar show high level of rural and urban inequality respectively. Even inequality among the people below the poverty line is comparatively high in these poor states. The southern states like Kerala and Karnataka show high level of rural and urban polarisation. This shows that the share of the upper fifty percent of the population in total consumption expenditure has increased over the period though these states experience comparatively low inequality.

Both inequality and polarisation at all India level are moving in the same direction in case of rural areas. The same result doesn't occur in case of urban India. Urban polarisation has increased during 1990's, while the urban inequality remains stagnant during this period. There is also a conflicting trend of state level inequality and plarisation. In some states they move in the same direction while in others there is an opposite movement. There is a fall of both the rural urban disparity and rural urban polarisation during nineties. The fall of rural urban polarisation is comparatively high than the fall of rural

urban inequality during the same period. This shows that the mutual exclusiveness of the rural and urban consumption expenditure has increased over the period.

Chapter-VI discusses the inter- state disparity in social sector development. In social sector three indicators have been taken. These are Literacy, Life Expectancy and Infant Mortality Rate (IMR). It is found that there are strong linkages among these three indicators. Literacy rate shows a positive and significant correlation with life expectancy and negative and significant relationship with Infant Mortality Rate (IMR). Higher rate of literacy shows high life expectancy and low rate of infant mortality. The poverty shows no significant relationship with literacy but it shows a positive and significant relationship with Infant Mortality Rate (IMR).again poverty ratio shows a positive and significant relationship with life expectancy. This shows that in poor states are having low life expectancy and higher infant mortality rate (IMR). But these states are not poor performer in educational development.

The Rural Infrastructure Index has been calculated with the help of Principal Component Analysis. It is composite index of Education Development Index, Health Development Index, Information/communication Development Index and Index for other Infrastructure Development. The rank correlations between all these above four indices are positive and significant which shows that several states are developed in all areas of infrastructure while others suffer deprivations in all.

Finally, the interdependence of consumption expenditure growth, poverty ratio, inequality, polarisation, rural urban disparity in consumption expenditure, rural urban polarisation and Rural Infrastructure Development has been discussed. There is a negative and significant relationship with the growth of consumption expenditure and poverty ratio. This suggests that the states that are registering higher rate of growth of consumption expenditure are also having low poverty ratio.

The growth of consumption expenditure shows no significant relation with inequality and polarisation. But it shows a negative and significant relationship with rural-urban

disparity, rural-urban polarisation, and positive and significant relationship with rural infrastructure development. This shows that the high growth of consumption expenditure is taking place in states with low level of rural urban inequality and rural urban polarisation and high level of rural infrastructure.

Poverty ratio shows a positive and significant relationship with inequality, rural-urban disparity, rural urban polarisation and negative and insignificant relationship with rural infrastructure. This shows that the states which are having high poverty ratio are having higher inequality, higher rural-urban disparity, higher rate of rural-urban polarisation and low rate of rural infrastructure development.

It is the poverty syndrome which seems to trap the less developed states which manifests in negative consequences in all spheres of development.

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APPENDIX-1

Difference in Methodology Adopted By Montek **Singh Ahluwalia and B.B.Bhattacharya and Sakthivel to Calculate GSDP:**

Montek Singh Ahluwalia found the inter-state variation is increasing after the reforms. According to his view, the comparison of the state performances in SDP growth faces a problem. There is a lack of consistency between the SDP series for different states and the national accounts data. This is a major lacuna in our statistical system and there is need for a greater effort by the CSO and the state statistical departments to make the data more comparable in future. However this will not deter us from using state level data for analyzing state level performance. In his estimation, the degree of dispersion in growth rates across states increased very significantly in the 1990s.

B.B.Bhattacharya and Sakthivel found that, Alhuwalia's study covers data upto 1998-99, but he has compared the pre and post reform periods on the basis of two different sets of SDP data. The 1993-94 base GDP (and corresponding SDP series) are based United Nations system of national accounts (SNA) 1993.The new GDP and SDP series not only changed base year in terms of price, but also revised the production boundary in a number of sectors, notably, agriculture, real estate and finance. It has also shifted the occupation force database from the Census to the National Sample Survey (NSS).finally it has incorporated some new dynamic economic activites, such as software, which were no included in the earlier series. The earlier series therefore cannot be compared with the same from the revised series. A proper comparison of pre and post reform regional growth and equity should be therefore done through a common database. The revised series of SDP is available only from 1993-94. For a proper analysis of regional growth and disparity over time, the revised series of SDP is extended backwards by the price correction factor (defined as the ratio of implicit deflator for 1993-94 series to the 1980-81 series for the year 1993-94). The price correction factor is computed for each state and sector separately. The aggregate and major sub-sectors-primary, secondary and tertiary-SDP deflators for the years 1980-91 through 1992-93 are then calculated as weighted averages of appropriate sub-sectors'indices.The weights for the period 1980-81 through

1992-93 are assumed to be the same as in 1993-94 series. As the definition of the production sector changes in 1993-94 SDP series, these changes also incorporated in 1980-81 SDP series, with the quantum correction factor. Then the 1993-94 SDP current price series extended backwards upto 1980-81. dividing the computed current prices(corrected for the production changes) by the computed price deflator (corrected for the price changes) the constant price SDP series for each sector and state for the period 1980-81 through 1992-93 is computed that are consistent with the 1993-94 series data. They found the co-efficient variation of growth rate among the 15 major states during 1980-90 is 0.14 and during 1990-00 it increases to 0.29.

APPENDIX-2

Methodology adopted by Angus Deaton to compare NSS 50 th and 55 th round of household consumption expenditure data

.**Angus Deaton** adopted an adjusted methodology (given below) to compare the 55th round and 50th round and arrived at the conclusion that the poverty ratio shows a declining trend during the 1990s. He claimed that there are a group of goods for which the questionnaire is the same across all rounds. There are six broad groups, fuel and light, miscellaneous goods, miscellaneous services, non-institutional medical services, rent and consumer cesses and taxes. These items have always been asked using the 30-day reporting period. The first four are important items, and expenditures on the first three are reported by virtually all households. Non-institutional medical expenditures are also important on average, with a mean that is comparable in size to expenditures on miscellaneous goods or services, but they are incurred by less than half of households over a 30-day period. Taken together, expenditures on the six broad categories account for more than 20 percent of all expenditures, and more in urban areas, and highly correlated with the total household expenditure.

Let x = log (T.E), m= log (T.E.p)

Where T.E- household total expenditure per head,

T.E.p- household total exp.on these 30-day goods

P = F (z). Where P- head count ratio, z-poverty line.

Probability of being poor conditional on spending m, F (z/m).

$$P = \int_0^{\infty} F(z/m)\, g(m)\, dm = E_m [F(z/m)]$$

Where g (m) is the density function of the logarithm of expenditure on 30-day goods m. the equation gives us the probability of being poor given the expenditure on 30-day goods. If the F (z/m) is constant over time and the density function g (m) is same, then the actual marginal distribution of m from 55th round can be used for

conditional head count function F (z/m) from earlier rounds. Deaton used 50^{th} round to compute the headcount conditional on m and estimate the 55^{th} round poverty rate according to

$$\hat{P}_{55} = \int_0^{\infty} \hat{F}_{50}(z/m)\hat{g}_{55}(m)\, dm = \hat{E}_{m55}[\hat{F}_{50}(z/m)]$$

Where $\hat{}$ denotes the estimates.

APPENDIX-3

The most common procedure for handling this problem seems to be simply to count the number of poor and check the percentage of the total population belonging to this category. This ratio is commonly known as Head Count Ratio, used by the Planning Commission. This is obviously a crude index. An unchanged number of people below the poverty line may go with a sharp rise in the shortfall of income from the poverty line.

The measure is also completely insensitive to the distribution of income among the poor. A pure transfer of income from the poorest to the poor those who are better off will either keep H unchanged, or make it go down- surely a perverse response.

Measure H thus violates both of the following axioms:

Monotonicity Axiom: given other things, a reduction in income of a person below the poverty line must increase the poverty measure.

Transfer Axiom: Given other things, a pure transfer of income from a person below the poverty line to anyone who is richer must increase the poverty measure.

Another common measure is the so-called '**poverty gap**' which is the aggregate shortfall of the income of all the poor taken together from the poverty line. This satisfies the monotonicity axiom but violates the transfer axiom.

Sen's Poverty Index is used for this purpose as it satisfies both the axioms.

APPENDIX-4

Scatter Diagram Showing the relation between initial per-capita income and Growth rate.