**Growth, Inequality and Diversification in Consumption Pattern in India – An Empirical Analysis**

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# GROWTH, INEQUALITY AND DIVERSIFICATION IN CONSUMPTION PATTERN IN INDIA – AN EMPIRICAL ANALYSIS

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## ABSTRACT

This paper examines the nature of growth, inequality and the diversification in the consumption pattern in India and also the impact of growth , inequality and degree of urbanisation on the diversification of consumption in a panel data framework using the National Sample Survey Organization's large sample quinquennial data during the period from 1972-73 to 2009-10. The empirical analysis is done separately for rural and urban areas. All the states are found to have increasing trend in the rates of growth of real per-capita income in different degrees such that there is increasing trend in inter-state variability in the same. Moreover, all the states are found to have experienced increasing trends in real MPCE in varying degrees with increasing inter-state variations in rural areas but not in urban areas. We find positive correlation between growth rates of NSDP and that of real monthly per-capita consumption expenditure (MPCE) across states. Further we find a divergent trend in the growth rates of per-capita NSDP and the same for MPCE across the states over the period. Further both the overall inequality and the relative inequality reveal an increasing trend in urban areas coupled with a marginal declining trend in rural areas across the states. Moreover, we find tremendous diversification in the consumption pattern favoring the non cereal food and non-food components both in rural and urban areas of the states. Our panel data exercise provides a very robust result such that in both rural and urban India the relative inequality and the degree of urbanization are found to be the significant explanatory factors with their expected signs for the cross-state and cross-time variability in the diversification of consumption.

**Key Words: Inequality, Consumption, Growth, Diversification, India, Panel Data**

**JEL Classification: P46, P25, C01.**

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# GROWTH INEQUALITY AND DIVERSIFICATION IN CONSUMPTION EXPENDITURE IN INDIA

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## 1.    Introduction:

The commonest perception that we have from the basics of choice theory is that the consumption pattern of any individual over a vector of commodities available before him is influenced by a lot of factors like own price of the commodity, the relative prices of the commodities, the level of income of the individual, the tastes and preferences of the individuals, the geographic and climatic condition of the society where the individual lives, nature of occupation of individual and also by some structural factors like degree of urbanization, the distribution pattern of income, the level of infrastructure( like marketing, roads), the role of media etc. So any change of these factors over time will surely bring about the changes in the consumption pattern of the individual in a society. In the  likewise manner, the consumption pattern of any society  will also be influenced by the same set of factors and the society will be experiencing  changes in the  consumption pattern  through the changes in the above factors. On the other hand, in a society with wide regional diversity it is likely that there will be regional variations of all the factors which will not only bring about variations in consumption across the regions and time but also across rural and urban sector within a region. The consumption expenditure data which are available from various rounds of NSSO also reveal that this kind of transformation in consumption pattern has happened in India since 1970. In this paper we have tried to examine the nature of the changes in the consumption pattern in India both for rural and urban areas not only at the aggregative level but also at the inter-regional level (taking major state as unit) for the period from 1972-73 to 2009-10 and also to find out the trajectories behind this process of transformation. The literature available in this area reveals that the studies have tried to explain the changes in the consumption pattern from cereal food to high value non-cereal food in India in terms of the estimated price elasticities of cereals, expenditure elasticities of commodities for different expenditure classes, the tastes and preferences, the development of infrastructure and mechanization of agriculture etc. such that almost all the studies are dated(Radhakrishna and Ravi,1992;

Kumar and Mathur,1996; Murty,1999and2000;Kumar and Kumar,2003; Meenakshi,1996; Rao,2000 etc). So we have tried to explain the diversification of consumption pattern separately for rural and urban India both across time and across the major states covering the period from 1972-73 to 2009-10 in terms of the growth of per-capita real income, overall and relative inequality, degree of urbanization.

Now it is also well known that the high growth rate of income achieved by our economy since 1980's especially since economic reforms has been incapable of providing any cushion against the deprivation of the vast majority of Indians from minimum levels of living and other social and economic amenities(Bhaduri,2008; Ghosal,2007,2009,2010,2012). So it is plausible to say that the overall high growth rate is not the only solution to the problem of mass poverty and other socio-economic deprivation unless we know how the fruits of growth is being distributed across different classes of people, regions etc. Naturally, therefore, one has to enquire into the nature of the distribution of income i.e. the degree of inequality in the distribution of income. Further, growth is likely to affect the consumption pattern via the changes in the composition of GDP and the distribution of income depending on its nature. If growth is pro- rich then it is obvious that the consumption pattern will change in favor of the richer class as has happened in India since last four decades ( Bhaduri, 2005;2008). Reverse will be the result if growth be pro-poor. Moreover, if growth is neutral then also it is likely to bring about the changes in the consumption pattern. Therefore, one may explore the relation between growth, inequality and diversification in consumption pattern. In fact, with the growth of income either of a country or region one may think of two kinds of effect. First, as the level of income rises the society attains a higher level of living and so one may expect diversification in the consumption pattern through the changes in the composition in the consumption baskets and this may be treated as growth induced diversification. Second, with the increase in the level of per capita real income there is hierarchical shift of consumption of individual from lower stratum to higher stratum. Therefore, one may have a relation between growth and diversification of consumption pattern. Further, the development of infrastructure as well as the transportation systems is likely to bring the modern processed products as well as non-food consumer goods within the ambit of not only the urban people of a region but also the rural people of the region. This in turn will help bringing about diversification in the consumption pattern. This has been found to have happened in India during the last two decades before reforms (Rao, 2000). Moreover,

the process of urbanization is expected to bring about the changes in the preference pattern of the people both in rural and urban areas towards the modern consumer commodities (both food and non-food).Therefore, the degree of urbanization of a society is likely to influence the consumption pattern of the people.  So, the basic question which arises is whether the diversification in consumption pattern in India is growth induced or whether it is due to growth and the change in inequality in the distribution of income (both absolute and relative) or it is the outcome of the growth, inequality and the degree of urbanization. This paper centers round these questions**.**

**Brief Review of Literature.**

As far as Indian economy is concerned it is well established that the consumption pattern of the people of India has undergone a radical change during the last four decades. This has happened in both rural and urban India. The most important feature of his transformation has been the spectacular shift of consumption pattern from food to non-food items especially from cereals food (viz. Rice, wheat, pulses) to non cereal high value food items like meat, egg, fish and fruits. As a fallout of this transformation the Indian economy has experienced tremendous diet diversification. It is also seen that the increasing trend in monthly per capita expenditure on durable consumer goods as well as education and health has been more prominent especially since the post reform period. Another important feature of the diversification of the consumption pattern has been widening of the rural urban differential in the magnitude in per capita consumption of cereals and also the inter-state variations of the shifting of consumption pattern. It is found that over the two decades before reform (i.e., between 1972-73 and 1993-94) the per capita consumption of cereals in rural areas has experienced a steep fall of about 12 per cent while the same in urban areas has fallen by only 5 per cent (Rao, 2000). Post reform period also reveals a declining trend in rural urban differential. Interestingly, the per capita consumption of cereals in rural areas was much higher than that in urban areas during the period. However if we look at the income class wise per capita consumption then it is found that while the bottom 30 per cent of the population have shown an increase in per capita consumption of cereals, the middle 40 per cent and the top 30 per cent of the population have shown a decline in the per capita consumption of cereal food grain such that the top 30 per cent reveals more steeper fall during 1972-73 to 1993-94 in both rural and urban areas (Rao,2000). Further even after the falling trend in prices of cereals  in relation to general price index and the rising per-capita income during the 70's and 80's

the declining trend in the per capita consumption of food grains continued to persist not only during the said period but also during the post reforms period( Radhakishna and Ravi,1992; Gulati,2014)

Several researchers have tried to explain the changing pattern of consumption in India for the pre reform period (1972-73 to 1993-94) and tried to find out the proximate explanatory factors behind this process of transformation (Radhakrishnan and Ravi, 1992: Kumar and Mathur, 1996; Murty, 1999, 2000; Kumar and Kumar, 2003; Meenakshi, 1996; Rao, 2000). However, the studies on the behaviour of the consumption pattern for the post reform period is almost scarce (Gulati, 2014; Morisset and Pramod Kumar,2011).All the authors have analyzed the data on per capita consumption expenditure which are available from various rounds of reports of NSSO and have been unanimous on the declining trend of per capita consumption of cereals vis-a-vis the shifting of the consumption pattern in favour of non-cereal food and non-food both during the pre- reform and the post reform period. However, all the studies are dated as the coverage of the period has been up to 2004-05 i.e. up to the 61$^{st}$ round of NSSO. Now, since with the fall in relative price of food grains vis-à-vis cereals relative to the index of non food grains and the rise in per capita income there is a declining trend in per capita consumption of food grains, most of the authors have claimed that the change in taste and preferences of consumers away from food grains has acted as a crucial explanatory factor behind this trend (Radhakrishnan and Ravi, 1992; Murty, 1992; Kumar and Mathur, Meenakshi, 2000). Radhakrishana and Ravi have shown that changes in taste accounts for about 17 per cent decline in cereal intake in rural area between 1972-73 and 1987-88 at the national level. The corresponding figure for urban area is 8 per cent. Using a linear expenditure system Meenakshi has estimated a fixed effect model with intercept shift corresponding to various regions with and without taste change such that the likelihood ratio test supports strongly in favour of a model with regional specificity as well as the taste change for the decline in food consumption over the period between 1972-73 and 1987-88 albeit this method has limitations like the linearity of Engel curve. Rao (2000) on the other hand, has attributed the sharp decline in demand for food grains in rural India both across the states and expenditure class in 1972-73 and 1993-94 to the development of infrastructure (measured in terms of road length) making other food items and non-food items available in rural areas and the increased mechanisation of agriculture (measured in terms of use of tractors and pump sets in terms of horse power) reducing the requirement of physical labour. He has computed correlation

between per capita consumption of cereals and infrastructure as well as mechanisation across the expenditure classes between the states for the year 1972-73 and 1993-94 and found negative correlations. On the other hand for analysing the inter state variation in rural per capita consumption of cereals he has estimated inter temporal multiple regression for the years 1972-73 and 1993-94 for each expenditure class treating rural per capita consumption food grains as dependent variable and total expenditure, price, road length, mechanization of agriculture as independent variables and has found negative significant relationship in case of roads for all classes excepting bottom (for 1972-73 and 1993-94) and of the index of mechanization for all the classes for 1993-94.

Gulati (2014) has however explained the diversification of consumption pattern in terms of rising income (called income induced diet diversification) and globalisation of diet (globalisation induced diet diversification) the rise in income, falling relative prices of cereals and change in taste and preferences apart . In an interesting study ,Michael Morisset and Promod Kumar(2011 ) has assessed the change in consumption pattern by value added food products (by using different levels of processing of food) on the basis of household level data for the period 2004-05 for urban India. He argues that since there is the concentration of wealthy people in the urban area it is likely that urban population will come forward to introduce new trend in consumption behaviour. He has found that the higher expenditure group of household has shown a shift in consumption pattern away from " first(low)" processing food to "first(high)" and second processing products in urban India. In rural area this switch over was more in favour of first high processed products or primary product. He also found that the magnititude of change is very high for the second processed products. So all the studies are almost dated and there is hardly any study which has tried to find out the proximate explanatory factors behind the cross state and cross time simultaneous variations in the process of diversification in the consumption pattern covering the entire period of the last four decades from 1972-73 to 2009-10.Further, the set of explanatory factors focused by the authors is not exhaustive. So, we have tried to explain diversification of consumption pattern separately for rural and urban India in terms of growth, inequality and the degree of urbanization which have not been considered by others as factors behind the transformation process by applying a Panel data approach.

Under this backdrop this paper is an attempt to examine: i) the nature of growth of income and consumption pattern, ii) the nature and degree of inequality and finally the effect of

growth, inequality, degree of urbanization on the diversifications of consumption pattern in India for the period from 1972-73 to 2009-10 in a panel data framework by using NSSO large sample quinquennial data. This paper is designed as follows: Section II discusses data and methodology used in this paper; Section III analyses the growth of income and consumption expenditure and their nature. The nature of inequality in consumption is examined in section IV. Section V examines the changes in the consumption pattern and its diversification both at the national and cross-state level. Section VI represents the relation between growth, inequality, degree of urbanisation and diversification of consumption in a panel data framework. Finally, section VII presents the concluding observations.

## II. DATA AND METHODOLOGY

This study is exclusively based on secondary data. We have used the data on per capita NSDP from the RBI online data base. The per capita NSDP (PCNSDP) has been expressed at constant 1993-94 prices using implicit price deflator. To classify the states into the category of high growth and low growth we have computed annual compound growth rate for the period of 1972-73 to 2009-10 of each state and then the median growth rate. The states having growth rate higher than the median growth rate are called high growth states and the states having growth rates less than the median growth rate are called low growth state. We have used the consumption expenditure data which are available from various rounds of large sample quinquennial survey of NSSO since 1972-73. To study whether the growth rate of per-capita income across the states we have ranked the base year per-capita NSDP of the states and computed the annual growth rates of PCNSDP of the states between base year and terminal year and ranked them. Then we have computed the rank correlation between these two series of ranks for the three phases of our analysis namely ( i) pre-reform(1972-73 to 1990-91); (ii) post-reform(1991-92 to 2009-10) and( iii)overall period(1972-73 to 2009-10). Similar method is applied to study the divergence or convergence of monthly per-capita consumption expenditure (MPCE) across the states. Again to see whether the cross-state monthly per capita consumption expenditure is convergent or divergent we have ranked the annual compound growth rates of real MPCE of the states over the period and the real MPCE for the year 1972-73 and then computed rank correlation between the two series of ranks separately for rural and urban areas. It is worth mentioning that for expressing MPCE of rural and urban areas at constant 1993-94 prices we have used the indices of CPIAL in case of rural and that of

CPIUNME in case of urban. Further, to study the effect of growth on diversification in consumption we have computed inter-temporal growth rate of PCNSDP of each states at constant 1993-94 prices and then used the five years centered average value of growth corresponding to the years of various rounds of NSSO. In our study we have assumed inequality as a potential explanatory factor for the diversification in consumption pattern. To study the relation between diversification and inequality we have used two measures of inequality. First one is Gini coefficient which represents the overall inequality in the distribution of consumption. But it does not throw any light on how the relative position of different classes change over time. The second one is the relative inequality which is measured in terms of the ratio of the percentage share of top 30% of households in total MPCE to that of bottom 30% of population in total MPCE. In our study the urbanization is measured in terms of the ratios of the urban population to total population of the states corresponding to the period of quinquennial surveys of NSSO. Since data on population are available decennially, for finding out the urban and total population of the states for the required intermediate years we have used interpolation method. To study the impact of the growth, relative inequality and urbanisation on the diversification in consumption pattern we have used Panel data technique and used the software LIMDEP (7.0 version). Since the data on the variables are available quinquennially, we have formed five yearly Panel for both rural and urban areas by treating consumption diversification index (DCR for rural and DCU for urban) as dependent variable and relative inequality (INQ RR for rural and INQ RU for urban) and degree of urbanization (URB) as independent variables. Diversification indices are computed in terms of ratios of percentage of expenditure on food to the same on nom food across the states in case of both rural and urban areas. We have excluded three states viz. Bihar, U.P. and M.P. from our Panel as these states have experienced re- organization during the first half of the last decades. Actually, the current data on the variables of these states are not strictly comparable with the data for the years before 2000 i.e. before reorganization. But still our Panel is a balanced panel.

The basic model that we have used is as follows:

$$Y = \alpha + \beta\, X_{it} + \varepsilon_{it} \qquad\qquad (1)$$

Where, i= 1,2,………………,N (N=12) and T = number of time periods(8) at five year interval from 1973-74 to 2009-10; $\varepsilon_{it}$ = the error component or the disturbance terms;$\alpha$ is the intercept or scalar and $\beta$ is K $\times$1 and $X_{it}$ is the it-th observations on K explanatory

variables. For fixed effect model we decompose the error term as: $\varepsilon_{it} = v_i + u_{it}$. Here, $v_i$ is the unit specific residual and $u_{it}$ is the usual residual with standard properties. So the model becomes

$$Y = \alpha + \beta\, X_{it} + v_i + u_{it} \qquad (2)$$

Now if $v_i$'s are assumed to be fixed parameters to be estimated then the model becomes the fixed effect model. The fixed effect model seems to be appropriate in our study.

## III: ANALYSIS OF THE GROWTH AND CONSUMPTION EXPENDITURE

### Analysis of growth of Real Per Capita NSDP

This section is devoted to the analysis of the growth of per capita real NSDP across the 15 major states by dividing the total period from 1972-73 to 2009-10 into three phases: i) Pre reform period from 1972-73 to 1989-90, ii) Post reform period from 1991-92 to 2009-10 and finally the overall period ranging from 1972-73 to 2009-10. We have computed the median value of growth for the three separate phases and classified the states as high growth and low growth states on the basis of the median value. Table 1 gives an overview of the annual average growth rate of per capita real NSDP (GPCNSDP) for the three phases such that all the states have achieved positive growth rate of per capita real NSDP in each of the three phases in varying degrees. However, the average (median) growth rates of all the states are found to be lower (2.28% p.a.) for the pre-reform period than the same for the post reform period (4.15% p.a.) as well as for the overall period (3.11% p.a.) So it is obvious that the states on the average have achieved higher growth rates of per capita income in the post reform period in varying degrees as compared to the same in the pre reform period and overall period.

Taking median growth rate for the pre reform period (2.28% p.a.) as a benchmark we find that the high growth states were Andhra Pradesh, Gujarat, Haryana, Karnataka, Punjab, Maharashtra, Tamil Nadu and Rajasthan. Whereas the low growth states were Orissa, Bihar, Assam, Uttar Pradesh, Madhya Pradesh, West Bengal and Kerala in the first phase( i.e. during the pre-reform period). The Table -1 below gives a clear overview of the states in respect of their performance.  Interestingly the state of Maharashtra has achieved the highest annual average growth rate (3.67% p.a.) followed by Gujarat (3.26%p.a.), Andhra Pradesh(3.11%p.a.), Punjab(3.04%p.a.) , while the states achieving lowest growth rates are Madhya Pradesh(0.43%p.a.) followed by Kerala (0.57%p.a.) and Assam (0.92%p.a.). So the leading states in respect of growth during the pre reform period are Maharashtra,

Gujarat, and Punjab etc. It follows from Table 1 that there have been dramatic increase in the rates of growth of per capita income in real terms during the post reform periods for some of the states (like Tamil Nadu, Maharashtra, Kerala, Karnataka, Gujarat, Andhra Pradesh, Haryana and even Orissa).

TABLE 1: **GROWTH RATES OF PCNSDP( at 1993-94 prices) OF MAJOR INDIAN STATES IN THE PRE AND POST REFORM PERIOD**

| STATES | PRE-REFORM ACGR | POST REFORM ACGR | OVERALL ACGR |
|---|---|---|---|
| ANDHRA PRADESH | 3.11(3) | 4.45(6) | 3.55(4) |
| ASSAM | 0.92(13) | 1.76(14) | 1.49(15) |
| BIHAR | 1.62(9) | 2.49(12) | 2.35(12) |
| GUJARAT | 3.26(2) | 5.35(1) | 3.68(3) |
| HARYANA | 2.67(6) | 4.22(7) | 3.49(5) |
| KARNATAKA | 2.65(7) | 5.06(5) | 3.43(6) |
| KERALA | 0.57(14) | 5.31(3) | 3.26(7) |
| MADHYA PRADESH | 0.43(15) | 2.88(11) | 1.93(14) |
| MAHARASHTRA | 3.67(1) | 5.24(4) | 4.35(1) |
| ORISSA | 1.54(11) | 4.15(8) | 2.52(11) |
| PUNJAB | 3.04(4) | 2.89(10) | 2.89(10) |
| RAJASTHAN | 2.87(5) | 2.99(9) | 3.10(9) |
| TAMIL NADU | 2.28(8) | 5.35(1) | 3.99(2) |
| UTTAR PRADESH | 1.47(12) | 2.01(13) | 1.95(13) |
| WEST BENGAL | 1.58(10) | 0.42(15) | 3.11(8) |
| ALL INDIA | 4.36 | 6.23 | 5.29 |
| MEDIAN GROWTH | 2.28 | 4.15 | 3.11 |

Source: Author's computation from RBI on line data base ( figures in brackets give respective ranks)

Interestingly all the states excepting Punjab and West Bengal have experienced increase in the per capita real income during the post reform period. The proximate explanation for the lower growth rates experienced by Punjab and West Bengal seems to be the tremendous fall in the agricultural productivity. However, the average growth rate (median) across the states has been 4.15% p.a. Using this growth rates as a benchmark, it is seen from Table 1 that whereas Andhra Pradesh, Gujarat, Haryana, Karnataka, Kerala and Maharashtra have achieved the status of high growth states ,the Orissa remains on the border line and other states are recorded as low growth states**.** It is interesting to note that all the high growth states (excepting Punjab and Rajasthan) in the pre reform period have

been able to maintain the status of high growth in the post reform period also. Surprisingly, Punjab and Rajasthan have slipped from their status during the post reform period. Now if we compare the relative position of the states in terms of their ranking as given in Table 1 we find a significant change in the value of the ranks across the states in varying degrees between pre and post reform periods. Interestingly while Tamil Nadu has been able to bring about remarkable improvement over its ranks of growth of per capita real income from the pre reform period (8th) to the post reform period by topping the list of status, status of Gujarat has remained stagnant and that of Maharashtra which was topper in the pre reform period has fallen to the rank of 4 albeit their annual growth rates of real per capita income are much higher during the post reform period. Another feature of the nature of growth has been that the median growth rate is higher (3.11%p.a.) during the overall period than that in the pre reform period (2.28%p.a.).

On the other hand, it is clear from figure-1 that the states like Andhra Pradesh, Gujarat, Haryana, Maharashtra, Karnataka and Tamil Nadu have been able to maintain their status of high growth over the entire period (1972-73 to 2009-10) while West Bengal remains on the border line i.e. on the median value and the rest of the states have failed to achieve even the median growth rate during the same period. If we consider the relative positions of the states in terms of their growth rates of per capita real income, we find that Maharashtra has taken the leading position followed by Tamil Nadu and Gujarat over the period. Surprisingly, while Tamil Nadu has been able to improve itself to the second position in the growth rate of real per capita income over the period, Gujarat has kept her position more or less unabated in the three phases of our analysis.

**FIGURE 1: SCATTER PLOT OF GROWTH RATES OF REAL PCNSDP DURING 1972-73 TO 2009-10**
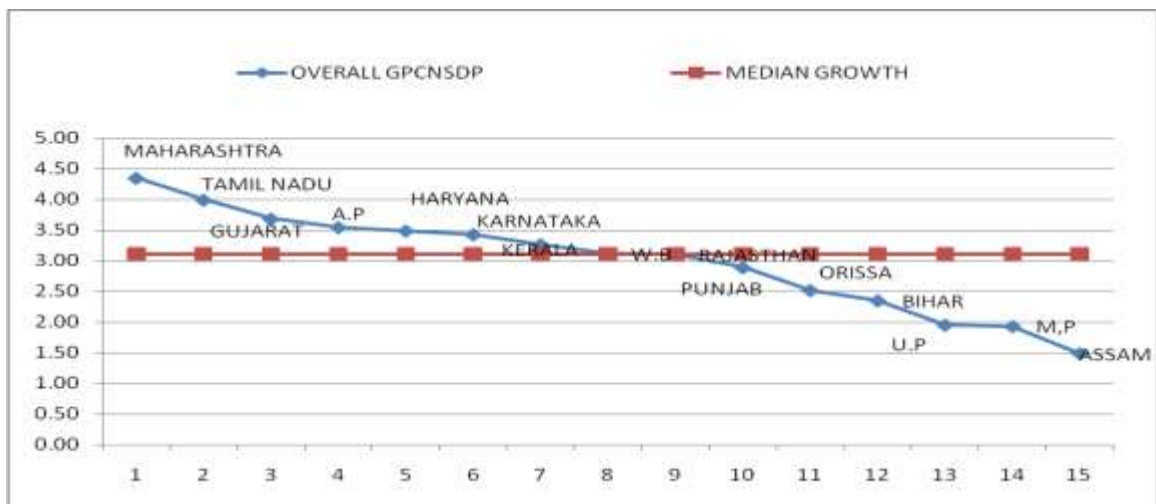
On the whole, while we find some remarkable changes in the relative positions of some of the states in respect of growth, for the other states like Uttar Pradesh**,** Madhya Pradesh, Assam we find marginal changes in their relative positions for the three phases of our analysis of growth. Now it is quite likely that the changes in the rates of growth of the per capita real income over the three phases of our analysis will bring about changes in the magnitude, level, pattern as well as growth of consumption expenditure during the pre reform, post reform as well as for the overall period. So the question arises that whether the high growth states have experienced higher rate of growth of MPCE? Is it true that high growth states have shown higher degree of diversification? Then we highlight the correspondence between growth performance and the extent of diversification of consumption pattern of the states over the period. For this purpose first of all, we analyse the magnitude of the level and pattern of growth of monthly real per capita consumption expenditure for the three phases of our analysis on the basis of NSSO data.

**Analysis of the level of consumption expenditure and its growth**

To examine the levels of living of the state as a whole as well as at the national level we have taken the weighted average figures of the levels of rural and urban combined  MPCE using proportion of rural and urban population of the respective states as weights. It is worth noting that while converting nominal MPCE into real (at constant 1993-94 prices) we have used price indices of CPIAL and CPIUNME for the rural and urban areas respectively.  It is evident from Table 2 that the level of real (MPCE) at the national level has registered an increasing trend over the period from 1972-73 to 2009-10.  It has also shown an increasing trend not only in the pre reform period (1972-73 to 1987-88) but also in the post reform period (1993-94 to 2009-10). Interestingly, the magnitude of change in real MPCE (indicating the levels of living at the national level)between the two periods are not much different as the pre reform and post reform periods have registered the increases in MPCE of 27.25% p.a. and 27.58% p.a. respectively. Thus we can say that the levels of living measured in terms of real MPCE has improved over the period of our analysis. The important features which are discernable from Table 2 can be outlined as follows. First, almost all the states in our country have achieved an increase in their real per capita consumption expenditure both in the pre reform and in the post reform period (excepting Karnataka) as well as over the period in varying degrees. Interestingly, we have seen that all the states have also experienced increase in their respective real per capita income in different degrees. Second, some states like W.B, U.P, MP, Orissa, Bihar, Assam

and A.P have their average levels of real MPCE lower than the national average of real MPCE throughout the period in varying degrees. However, the state like Tamil Nadu has made a remarkable improvement in her real MPCE in the post reform period albeit it trailed behind the national average during the pre reform period. Conversely, it is Karnataka which maintained her level of real MPCE at a level much higher than the national average up to 2004-05 and then slipped down to the national average level in 2009-10.

**Table: 2  Monthly Per-Capita Real Consumption Expenditure (Rural Urban Combined) of the states (at 1993-94 Prices)**

| States | 1972-73 | 1977-78 | 1983 | 1987-88 | 1993-94 | 1999-00 | 2004-05 | 2009-10 |
|---|---|---|---|---|---|---|---|---|
| Andhra Pradesh | 225.47(11) | 256.57(10) | 293.27(7) | 312.49(8) | 321.06(9) | 332.74(9) | 383.28(90 | 472.7(6) |
| Assam | 249.17(7) | 240.84(11) | 276.75(11) | 298.14(11) | 281.19(13) | 299.81(12) | 360.80(12) | 346.9(12) |
| Bihar | 212.13(14) | 217.03(14) | 215.59(15) | 252.46(14) | 235.31(15) | 259.91(14) | 263.93(14) | 264.7(15) |
| Gujarat | 258.10(6) | 306.23(5) | 328.68(6) | 328.60(6) | 356.36(6) | 426.53(4) | 446.86(4) | 477.7(5) |
| Haryana | 344.09(2) | 368.74(3) | 415.44(2) | 407.95(2) | 407.83(3) | 488.61(2) | 516.81(2) | 558.7(3) |
| Karnataka | 274.55(5) | 296.44(7) | 373.22(3) | 300.54(10) | 420.37(2) | 451.49(5) | 436.92(5) | 405.7(9) |
| Kerala | 275.18(4) | 321.89(4) | 369.20(4) | 394.51(3) | 399.02(4) | 508.94(1) | 557.21(1) | 780(1) |
| Madhya Pradesh | 212.99(12) | 232.24(13) | 268.14(12) | 285.83(12) | 309.53(10) | 326.13(11) | 363.08(11) | 350.5(11) |
| Maharashtra | 242.30(10) | 301.66(6) | 290.70(9) | 359.47(4) | 326.23(8) | 367.78(8) | 390.79(8) | 545.8(4) |
| Orissa | 199.86(15) | 206.45(15) | 216.60(14) | 247.01(15) | 262.39(14) | 267.57(13) | 288.71(130 | 290.1(14) |
| Punjab | 353.14(1) | 426.21(1) | 425.28(1) | 442.11(1) | 423.69(1) | 449.32(3) | 463.07(3) | 594.7(2) |
| Rajasthan | 295.02(3) | 420.35(2) | 368.39(5) | 336.66(5) | 365.71(5) | 401.03(6) | 431.57(6) | 419.1(8) |
| Tamil Nadu | 242.87(9) | 268.87(9) | 284.59(10) | 325.93(7) | 341.23(7) | 392.30(7) | 403.44(70 | 459.2(7) |
| Uttar Pradesh | 245.12(8) | 283.85(8) | 290.89(8) | 284.49(13) | 306.82(12) | 359.18(9) | 368.65(9) | 340.8(13) |
| West Bengal | 212.82(13) | 232.37(12) | 245.22(13) | 310.30(9) | 309.18(11) | 326.36(10) | 363.51(10) | 401.3(10) |
| All-India | 249.88 | 275.4 | 295.2 | 318 | 331.92 | 365.6 | 408.5 | 423.5 |
| CV | 17.97 | 23.54 | 21.41 | 17.01 | 17.04 | 20.42 | 19.16 | 29.86 |

Source: Author's computation from different NSSO reports  ( Figures in parentheses are respective ranks)

Third, the relative positions of the states relating to the levels of living of their people measured in terms of ranks of the real MPCE have changed over the period in varying degrees such that the states like Kerala, Maharastra, Tamil Nadu, and Andhra Pradesh have registered substantial improvement. While the states west Bengal, Bihar, Orissa etc

have experienced almost stagnant position over the period. Conversely Punjab, Harayana have able to maintain their leading positions throughout. But the states like Karnataka, U. P, and Rajasthan have experienced a decline in their relative position in levels of living over the period and especially during the post reform period. Finally the magnitude of inter-state disparity in real MPCE measured in terms of values of the time profile of C.V does not reveal uniform pattern. However, we find an increasing trend in the inter-state disparity in the levels of living during the post reform period.

Now, if we look at the levels of living of rural and urban sector across the states separately then we find that the level of real MPCE in the urban areas of all the states as well as the national average urban MPCE are much higher than that in the rural areas throughout the period of our analysis (see appendix table 1 and 2). As far as the rural area is concerned, the following points emerged out of the close scrutiny of the cross-time and cross-state data on real MPCE. First, at the national level we find a substantial increase in the real MPCE i.e. the levels of living of people in the rural area across all the states such that the rate of increase in the real MPCE during the pre-reform period is found to be a bit larger (27.35%) than that in the post-reform period (21.69%). Second, it is found that eight states like W.B, Tamil Nadu, Orissa, Bihar, M.P., Karnataka, Assam and A.P. have had real MPCE vis-à-vis levels of living lower than the national level during the pre-reform period. Surprisingly, amongst these eight states six states like W.B., Bihar, Assam, Orissa, M.P., Karnataka and additionally U.P have revealed their real MPCE much lower than the national average even during the post-reform period. However, the rest of the states have achieved higher levels of living of their rural peoples than the average both before and after the reforms. Interestingly, Kerela, Punab and Haryana have experienced a remarkable increase in the MPCE of rural people during the post-reform period. Third, it is note worthy that the states like Punjab, Haryana, Rajasthan having higher values of real MPCE for rural people in the pre-reform period have been able to retain their relative positions throughout the period. Surprisingly, it is Kerela, which has experienced precipitous improvement in its relative position regarding level of real MPCE during post reform period such that it dominates over all the states in terms of levels of living. It seems that Kerela has been able to reap the benefits of market economy along with the proper implementation of various rural development projects. In fact it has been found that the states like Kerela, Tamil Nadu, and Maharastra have performed much better in respect of the implementation of National Rural Workfare programmes ( viz.MNREGS etc. ) than

other states ( Dreze & Sen;2002,2013). On the other hand, the states with low base level real MPCE in rural sector like W.B., Bihar, Orissa have failed to bring about improvement over their relative positions over the period from 1972-73 to 2009-10, especially after the inception of reform. However, all the states are found to have experienced an increasing trend in real MPCE throughout the period in varying degrees. Finally, as far as the relative positions of the states ( measured in terms of ranks) in their levels of living is concerned we find that the states like Punjab, Haryana, Kerela, Rajasthan have maintained their relative positions more or less unchanged upto 1987-88 followed by an improvement during the post-reform period when Kerela, Punjab, Haryana have occupied the leading positions. On the other hand Bihar, Orrissa, U.P. have maintained their worst positions during the period of our study. On the whole we find that the relative positions of the states in the levels of living of their rural people have changed in different degrees over the period.

On the other hand, the appendix table-2 gives an overview about the levels of living (measured in terms of real MPCE) of the urban people of the states during 1972-73 to 2009-10. The following observations emerged from the analysis of the urban levels of real MPCE. First, it is seen from the table that the monthly average real per-capita consumption expenditure in urban India is much higher than that of its rural counter part throughout the period since 1972-73. The urban people of India have experienced a substantial increase in MPCE in real term both before and after the economic reforms. However, we find a marginal fall in real MPCE of urban people between 2004-05 and 2009-10. Second, it is worth noting that some states like W.B., Assam and Bihar have real MPCE for urban people much lower than the national average MPCE, throughout the period, albeit these states have experienced an increase in real MPCE. Further, all other states have experienced an increase in real MPCE for urban people in varying degrees over the period. Surprisingly, some of the states have revealed a remarkable increasing trend in real MPCE for urban people during the post-reform period. It seems that this increase in real MPCE is partly due to market economy and partly due to state actions. Most of the states excepting Bihar, have experienced changes in relative ranking in respect of the levels of real MPCE over the period with some states like Kerela, Maharastra, Rajasthan, A.P. have shown remarkable improvement in their relative position for levels of living since 2004-05.

As far as the growth rate of real MPCE of rural, urban and rural-urban combined sector of the states is concerned the table-3 gives us a clear overview on the same. If we look at the states as a whole we find the following features of the growth of the MPCE across the states over the period of our study. First, it is found that the national average annual growth rate of real MPCE during the pre-reform period (1972-73 to 1987-88) was 1.52%. But the same has declined to 1.44% p.a. during the post-reform period (1993-94 to 2009-10), albeit the median growth rate for the same period has been 1.55%. Surprisingly, the annual average growth rate of real MPCE during the period of our study has been 1.4% which is lower than the same for the pre-reform period. Second, the growth rates of real MPCE (i.e. the levels of living) of the states like Kerela, A.P., Maharastra, T.N., Gujarat,W.B. and Punjab are found to be larger than the national average as well as the median growth rate during 1972-73 to 2009-10. While the other states trail behind the same .Third, the growth of real MPCE during the post-reform period of all the above states are found to be higher than the national average and median growth rate. Interestingly, the states like Kerela, Maharastra have achieved much higher growth rate of real MPCE in the post-reform period followed by A.P, Gujarat, Punjab. This seems to be due to the realization of the benefits of market economy through the persuasion of the process of growth cum public action led development strategy. Fourth, if we look at the levels of living of the rural and urban people of the states separately, then we find that the national average growth rates of real MPCE are positive in both the sectors in pre-reform, post-reform and over the period such that in the pre-reform period growth rate of real MPCE in rural areas is higher than the same in urban area and the reverse holds during the post-reform and over-all period. Fifth, almost all the states have experienced positive growth rate of real MPCE for both of their rural and urban counterparts in the three phases of our analysis. Surprisingly, Karnataka and Orissa have experienced negative growth rate of the same in urban areas during the pre and post- reform periods. Sixth, if we compare the relative positions of the states in respect of the levels of living of the rural and the urban people in terms of the ranks then we find that the states like Kerela, Maharastra and A.P. followed by Tamil Nadu and W.B. have occupied the leading positions during the three phases of our analysis. Interestingly, if we look at the levels of living of both the rural and urban people as well as the state as a whole, it is Kereala which have occupied the top position throughout the period of our study. However, it is worth mentioning that the relative positions of all the states excepting Kerela have registered change from phase to phase.

**Table-3 ACGR OF MPCE (RURAL, URBAN AND COMBINED) OF MAJOR INDIAN STATES IN THE PRE AND POST REFORM PERIODS**

| STATES | ACGR OF MPCE RURAL | | | ACGR OF MPCE URBAN | | | ACGR OF MPCE COMBINED | | |
|---|---|---|---|---|---|---|---|---|---|
| | PRE-REFORM | POST REFORM | OVERALL | PRE-REFORM | POST REFORM | OVERALL | PRE-REFORM | POST REFORM | OVERALL |
| Andhra Pradesh | 2.26(2) | 1.57(4) | 1.70(2) | 1.05(11) | 2.99(4) | 1.84(4) | 2.06(4) | 2.30(3) | 1.97(3) |
| Assam | 0.72(14) | 1.24(6) | 0.72(14) | 2.65(2) | 0.79(9) | 1.41(9) | 1.13(10) | 1.24(9) | 0.87(14) |
| Bihar | 1.01(12) | 0.83(10) | 0.52(15) | 1.24(10) | 0.30(12) | 0.89(12) | 1.09(11) | 0.69(12) | 0.58(15) |
| Gujarat | 1.24(10) | 1.13(8) | 1.19(6) | 1.67(9) | 1.97(6) | 1.82(5) | 1.52(70 | 1.74(7) | 1.63(6) |
| Haryana | 0.71(15) | 1.72(3) | 1.10(8) | 1.93(4) | 1.83(7) | 1.50(8) | 1.07(12) | 1.87(5) | 1.28(9) |
| Karnataka | 1.54(8) | 0.59(15) | 0.97(10) | -1.36(15) | -1.44(15) | 0.52(14) | 0.57(15) | -0.21(15) | 1.03(10) |
| Kerala | 2.27(1) | 3.34(10 | 2.56(1) | 1.81(6) | 4.58(1) | 2.57(1) | 2.28(3) | 4.02(1) | 2.78(1) |
| Madhya Pradesh | 1.63(6) | 0.91(9) | 1.10(9) | 1.77(8) | 0.07(13) | 1.28(10) | 1.86(6) | 0.73(11) | 1.32(8) |
| Maharashtra | 2.18(3) | 1.86(2) | 1.63(3) | 2.43(3) | 3.72(2) | 2.22(2) | 2.50(1) | 3.07(2) | 2.16(2) |
| Orissa | 1.55(7) | 0.81(12) | 0.94(11) | -0.76(14) | -0.52(14) | 0.25(15) | 1.33(9) | 0.59(14) | 0.99(11) |
| Punjab | 1.26(9) | 1.37(5) | 1.15(7) | 1.78(7) | 3.11(3) | 1.74(6) | 1.41(8) | 2.01(4) | 1.38(7) |
| Rajasthan | 0.94(13) | 0.82(11) | 0.82(13) | 0.14(12) | 0.63(10) | 0.91(11) | 0.83(14) | 0.81(10) | 0.93(12) |
| Tamil Nadu | 1.71(5) | 1.16(7) | 1.43(4) | 1.83(5) | 1.76(8) | 1.52(7) | 1.86(5) | 1.76(6) | 1.69(4) |
| Uttar Pradesh | 1.02(11) | 0.65(14) | 0.83(12) | 0.04(13) | 0.34(11) | 0.58(13) | 0.94(13) | 0.62(13) | 0.87(13) |
| West Bengal | 2.02(4) | 0.73(13) | 1.31(5) | 2.88(1) | 2.49(5) | 2.04(3) | 2.38(2) | 1.55(8) | 1.68(5) |
| all-India | 1.52 | 1.16 | 1.17 | 0.98 | 1.47 | 1.35 | 1.52 | 1.44 | 1.4 |
| Median Growth | 1.54 | 1.13 | 1.1 | 1.77 | 1.76 | 1.5 | 1.41 | 1.55 | 1.32 |

Source: Author's computation from NSSO data. (Figures in parenthesis are ranks) *Pre-reform period-1972-73 to 1988-89, *Post reform period- 1993-94 to 2009-10, *Overall period – 1972-73 to 2009-10

Now the basic questions which crop up are: (1) whether the states achieving high growth rate of real PCNSDP have shown higher levels and growth of MPCE; (ii) whether the growth rate of income and consumption across the states are convergent or divergent, i.e. whether the poor states are catching up the rich states in respect of growth of income and consumption. Now, to find out the answer of the first question we have computed the correlation between GNPCE and GPCNSDP of the states for the three phases. For the pre-reform period we do not find any significant relation between the two. For the post-reform period we find a positive correlation which is very low (r= 0.37). However, over the period of our study we find a strong and statistically significant correlation between the two ( r=0.61). Now to have a distinct view on whether the high growth states have high growth rate of MPCE, we have used scatter plot of the two for the overall period of our study (see figure-2). It is discernable from figure-2 that the first quadrant contains the cluster of five states having high growth rates of income coupled with high growth of MPCE (i.e. above median levels of the growth of MPCE and PCNSDP). These states are Maharastra, A.P., Tamil Nadu, Gujarat and Kerela. Interestingly, it is Kerela which has

achieved growth rate of income (3.26%) marginally higher than the median growth rate (3.11%) which is accompanied by highest growth rate of consumption (2.78%). On the other hand the states like Maharastra, Tamil Nadu, Gujarat and A.P. have achieved above average growth rates of income as well as per-capita consumption during the period of our study. It is Maharastra ranking first in the combination of this two. Surprisingly, it is W.B. which has achieved the average growth rate of income but the above average growth rate of consumption. On the other hand States like M.P., Orissa, U.P., Bihar fall in the third quadrant experiencing growth rates of both MPCE and PCNSDP lower than the average over the period of our study. Astonishingly, Karnataka and Haryana have achieved growth rates of income higher than the average growth rate coupled with lower growth rate of MPCE than the average rate. So, we can say that the scatter plot gives us the clear picture about the levels of living across the states over the period from 1972-73 to 2009-10, such that we do not find close correspondence between growth rates of PCNSDP and that of MPCE for all the states.

**FIGURE-2: SCATTER PLOT OF GMPCE AND GPCNSDP FOR THE OVERALL PERIOD**
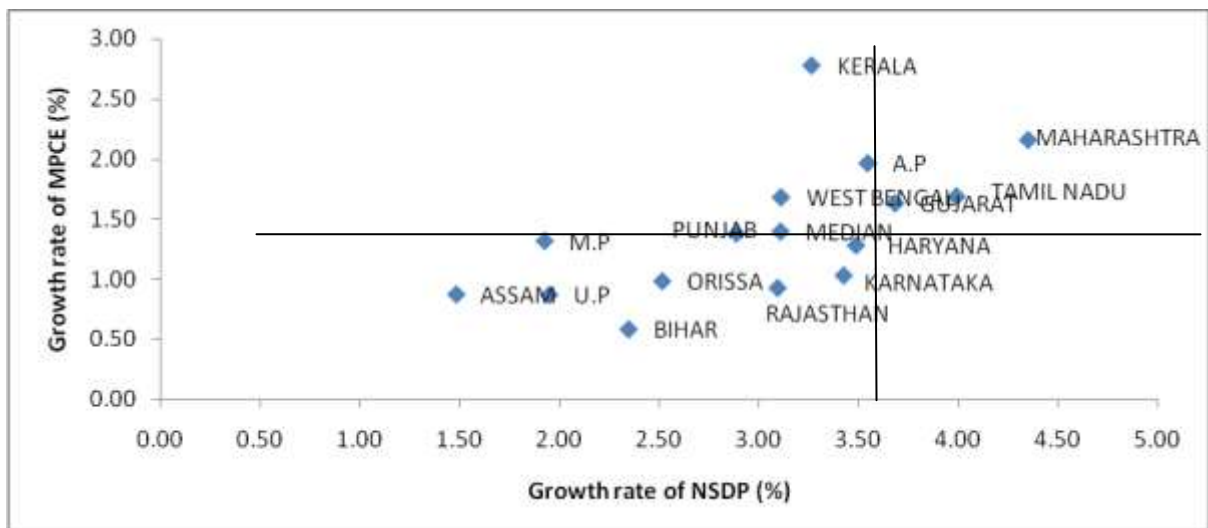


On the other hand, we find a divergent nature of growth of per-capita income across the states both in the pre-reform and post-reform as well as for the overall period, the values of the rank-correlation coefficient being 0.39,0.55 and 0.88 for the pre, post and overall period respectively. This clearly indicates that states with higher base level of PCNSDP have achieved higher growth rates of income so that the poor states have failed to catch up the rich states. The existing literature also supports this finding ( Ghosh, Margit, Neogi, 1998).On the other hand to see whether the growth rates of real MPCE across the states or the levels of living of people across the states are divergent or convergent in nature we

20

have used Spearman's rank correlation coefficient between the ranks of base level MPCE and those of the annual growth rate of the same for each period. This is done in case of growth rate of rural-urban combined MPCE for pre-reform, post-reform and overall period. Further, we have computed the same for rural-urban separately for the three phases. In case of growth rate of rural-urban combined MPCE ( i.e. treating state as a whole) we find negative correlation between the two series of ranks (-0.35) for the pre-reform period and positive rank correlation (0.41) for the post-reform period and also a positive negligible correlation coefficient for the over-all period. This indicates a convergent nature of growth of MPCE for the pre-reform period but divergent nature of growth of MPCE for the post-reform and for the over-all period. But for the rural and urban sector separately we find the same trend for the pre and post-reform period but the reverse trend for the overall period such that the rank correlation coefficient for the three phases in rural area are -0.51for pre-reform, 0.37 for post-reform and -0.08 for overall period respectively. The figures for urban sector are -0.67, 0.31, -0.41 respectively. So it is clear that post-reform period has witnessed a divergent nature of levels of living across the states and also for rural and urban areas. Now it is plausible to conclude that the reform process have failed to bring down the inter-state disparity in the levels of living of the people and also the disparity in the  levels of living between the rural and urban sector across the states. It is also worth noting that the divergent nature of growth rate of real MPCE is compatible with the divergent nature of growth rate of per-capita real NSDP across the states.

## IV. **ANALYSIS OF INEQUALITY IN CONSUMPTION**

This section highlights the nature and degree of inequality in consumption expenditure in rural and urban areas not only at the aggregative level but also at cross-state level. We have measured inequality in consumption expenditure in two forms. First, we have used Gini coefficient as a measure of overall inequality which does not focus on the relative positions of different classes. Second, to view the relative inequality we have computed the shares of the bottom and top 30% of the population in total MPCE for each period of the large sample quinquennial surveys of NSSO. Further, we have used the ratio of shares of top to bottom 30% of the population in total MPCE as index of relative inequality such that the value equal to unity indicates absence of relative inequality and higher values beyond unity indicate higher degree of relative inequality.

The information on the nature and degree of inequality in MPCE at the national level is given in the Table-4 below separately for rural and urban areas. It is evident from the table that the overall inequality in consumption expenditure (measured in terms of values of Gini- coefficients) in rural areas has shown a declining trend during the pre-reform period. But the same has revealed an increasing trend during the post-reform period (during 1993-94 to 2009-10). But if we compare the values of Gini- coefficient between 1972-73 and 2009-10 we find only a marginal decline in overall inequality in the consumption expenditure of rural households. As far as the relative inequality is concerned, it is discernable from table-4 that the shares of top 30% of total rural population in total MPCE are much higher than that of the bottom 30% of the rural population throughout the period. Although the share of bottom 30% of population in consumption expenditure has increased marginally from 15% in 1972-73 to 16.7% in 1999-00, the same has declined in the next decade to 15.62% in 2009-10.The reverse is true for the top 30% of rural population. So it is obvious that the reform process has failed to provide adequate cushion against the relative inequality in rural areas such that poor people are gradually getting poorer.

On the other hand if we look at the urban inequality, the time-profile of Gini-coefficient reveal an increasing trend both in the pre-reform period and post-reform period. In fact, the over-all inequality in the distribution of consumption expenditure has increased over the period from 1972-73 to 2009-10. Interestingly, if we consider the relative inequality in urban consumption then we find that during the pre-reform period the share of bottom 30% population in MPCE has fallen marginally while in the post reform period the same has declined steadily. Conversely, the share of consumption of the top 30% population has shown increasing trend during the pre-reform period followed by a steady increasing trend during the post-reform period. Thus it is clear that the deprivation of the poorer people of the urban area in the levels of consumption has increased substantially during the post-reform period. So it is plausible to conclude that the reform process has increased the relative inequality such that the poorer people have been left out of the benefits of reform.

**Table-4: Trends in Consumption inequality in India during 1972-73 to 2009-10**

| Year | RURAL | | | URBAN | | |
| | Gini-Coefficient | Share in consumption expenditure (%) | | Gini-Coefficient | Share in consumption expenditure (%) | |
| | | Bottom 30% population | Top 30% population | | Bottom 30% population | Top 30% population |
|---|---|---|---|---|---|---|
| 1972-73 | 0.302 | 15 | 50.9 | 0.341 | 13.9 | 54.3 |
| 1977-78 | 0.337 | 14.3 | 53.9 | 0.345 | 13.5 | 54.9 |
| 1983 | 0.298 | 15.2 | 50.9 | 0.330 | 13.9 | 53.7 |
| 1987-88 | 0.291 | 15.8 | 50.4 | 0.352 | 13.4 | 55.3 |
| 1993-94 | 0.281 | 16 | 49.9 | 0.340 | 13.6 | 54.7 |
| 1999-00 | 0.260 | 16.7 | 48.3 | 0.343 | 13.4 | 54.7 |
| 2004-05 | 0.297 | 15.5 | 51.6 | 0.373 | 12.4 | 56.9 |
| 2009-10 | 0.291 | 15.62 | 51.06 | 0.382 | 11.83 | 58.27 |

Source: Rattan Chand(2007); Values for 2009-10are computed from 66th rounds of NSSO.

On the other hand, if we look at the nature of overall inequality across the states both in rural and urban areas the appendix table-3 and 3A gives us a clear overview. We do not find unique trend in the values of Gini- coefficient across the states and over the period of our study. It is found from the table that while the states like Bihar, Gujarat, M.P., Orissa, Punjab, Rajasthan and W.B. have experienced declining trend in the consumption inequality in rural areas during the pre-reform period, the other states like Kerela, A.P., Assam,T.N., Karnataka etc. have experienced increasing trend in the same during the same period. However, in the post reform period we find tremendous increase in the rural consumption inequality in Kerela and Assam followed by a moderate increase in Orissa, Punjab, and Gujarat. But the other states have shown a declining trend in the same. As far as the inter-state variability in the inequality of rural consumption is concerned, the time profile of coefficient of variations (C.V.s)  clearly reveal a declining trend in the pre-reform period followed by an increasing trend in the post-reform period, albeit, the magnitude of the degree of the variability has been found to be lower. On the other hand,

urban inequality in distribution of consumption expenditure across the states is concerned so far, it is evident from the appendix table-3A that while eight states like A.P., Assam, Gujarat, T.N., W.B., U.P., Rajasthan, and Karnataka have experienced increase in the degree of inequality, the other seven states have experienced the reverse trend during the pre-reform period. Surprisingly, almost all the states excepting Tamil Nadu have shown an increasing trend in the degree of inequality in urban consumption expenditure during post-reform period with some states like A.P., Kerela, M.P., Maharastra, Orissa, Punjab, Rajasthan, U.P. and W.B. have shown tremendous increase in the degree of inequality in urban consumption expenditure. On the other hand, although the degree of inter-state variability in inequality is low, it has shown a declining trend in the pre-reform period which is followed by an increasing trend in the post-reform period.

Now, if we consider the relative inequality in the distribution of MPCE across the states and national level both for rural and urban area, appendix table 4 and 4a give us a complete scenario. It is found that the relative share of the top 30% of the rural population in total real MPCE hovers around 50% to 51% during the period of our study while the same for the bottom 30% of the rural population hovers around 15% during the same period. So, we can say that the relative inequality in the distribution in the MPCE in rural areas of our economy remains at a very high level irrespective of the period of reform. The table-4 clearly reveals almost same picture across the states. Surprisingly, it is Kerala where the share of bottom 30% of population in rural area in total MPCE has fallen tremendously from 16% to 11.93%. Now, since Kerela , Maharastra, A.P., Gujarat belongs to the category of high growth state, one can say that the growth has not been pro-poor across the states. As far as the relative inequality in the urban sector is concerned, we find almost the same picture such that at the national level the relative share of the bottom 30% of the total population in MPCE has fallen tremendously from 13.9% in 1972-73 to 11.83% in 2009-10 and conversely that of the top 30% population in total MPCE has increased from 54.3% in 1972-73 to 58.27% in 2009-10 such that the post-reform period has witnessed the steady fall in the former case and the reverse in the latter case. Surprisingly, the same state Kerela has experienced a tremendous fall in the share of bottom 30% of population in total MPCE from 17% in 1972-73 to 9.05% in 2009-10 and conversely same for top 30% of population has increased precipitously from 51.1% to 67.85%. Similar is the case for other high-growth states like Maharastra, Haryana, Gujarat

etc. So, it is plausible to conclude that the growth has been pro-rich and elite-centered specially, during the post-reform period.

Further, we have also seen that most of the states have experienced the increase in real PCNSDP during 1972-73 to 2009-10 in varying degrees which is also accompanied by the increase in real MPCE during the same period. Now, if we look at the correlation coefficients between MPCE and Gini-inequality for each state during 1972-73 to 2009-10 then we find from the appendix table-6 that the most of the states in rural India it is negative and in almost all the states excepting Orissa and Karnataka the coefficient is positive in urban area and for some of the states this are highly statistically significant. This leads us to conclude that although in rural India the increase in real MPCE across the states has been accompanied by fall in over all inequality, in urban sector of the states the increase in real MPCE has been accompanied by the increase in overall inequality over the period of our study. So it is plausible to conclude that the increase in real PCNSDP in urban sector of the states has led to the increase in inequality. Interestingly, we find a strong positive and significant correlation between the GMPCE and GPCNSDP(r=0.61).This indicates higher base level inequality in income causes higher inequality in MPCE vis-à-vis the further higher overall inequality.

## V. Consumption Pattern and its Diversification:

This section analyses the changes in the composition of consumption expenditure during the period of our study. We find a dramatic change in the consumption pattern both in rural and urban areas. The most important features of this diversification in the consumption has been the continuously declining trend in the share of expenditure on food in both rural and urban areas which is accompanied by tremendous increase in that on non-food. The figure-3 and 4 below give us a clear overview on the trend in the changes in consumption pattern in the rural and urban areas respectively. As far as the rural India is concerned the share of expenditure on food has declined tremendously from 72.9% in 1972-73 to 53.6% in 2009-10, same for urban India has declined from 64.5% to 40.7% over the same period. Amongst the food group the share of expenditure in cereals has been found to be much higher in rural area as compared to urban area and the same has registered the largest decline among all other items in the food group from 40.6% to 15.6% in rural India and from 23.3% to 9.1% in urban India over the period. An interesting feature of the changes in the consumption pattern of the food group is that the

share of expenditure on beverages has increased tremendously from 2.4% in 1972-73 to 5.6% in 2009-10 in rural India while the same for urban India has registered a marginal decline.

**Figure-3: Trends in the composition of consumption expenditure of rural households during 1972-72 to 2009-10**
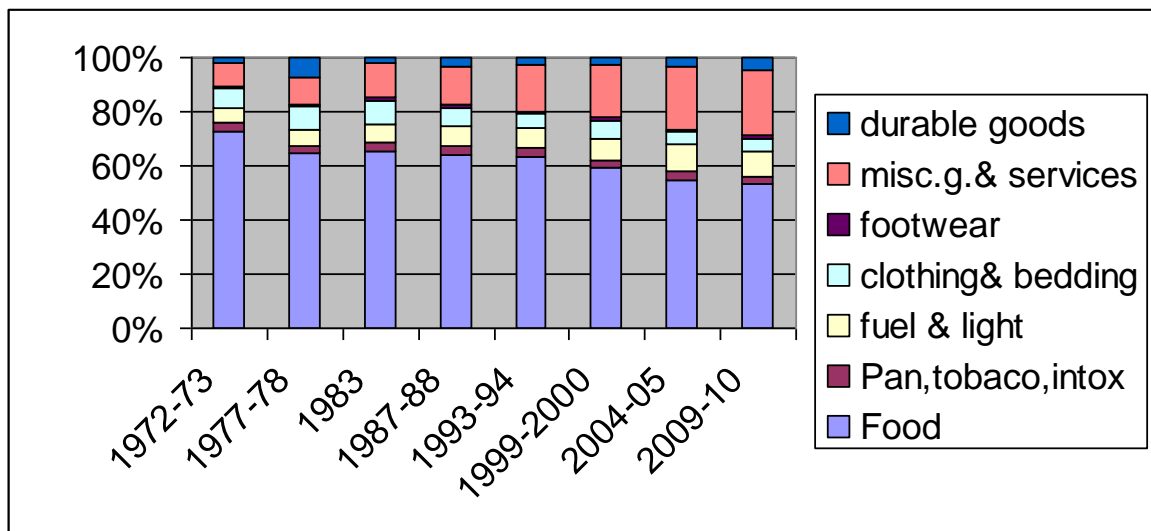


**Source: Author's computation from various issues of NSSO reports**

What is interesting to note in this context is that even with the rise in the real income of the people both in rural and urban area the consumption of cereals has been falling, which clearly indicates that cereals have gradually become inferior to the people. Further, it also indicates the changes in the taste and preference of the people.It seems that people are gradually getting more interested in consuming durable consumer goods, high value processed foods and expanding education of their children and health care ( Morisset and Kumar, 2011). It is also observed that the proportion of expenditure on pulses and related products which is the main source of protein especially to the rural poor has also shown a declining trend in both rural and urban India. Interestingly, the proportion of expenditure on egg, fish and meat remain almost stagnant in rural India while the same for urban India reveals a declining trend. Alongside the proportion of expenditure on vegetables in rural India has shown a marginal increasing trend since 1987-88 but the same for urban India reveal a declining trend. All these clearly indicate a shift in the food habit to processed food not only in urban India but also in rural India. This seems to be due to the increasing

female workforce participation, urbanization, expansion of media and information technology and also to the diet globalization.

**Figure-4: Trends in the composition of consumption expenditure of urban households during 1972-72 to 2009-10**
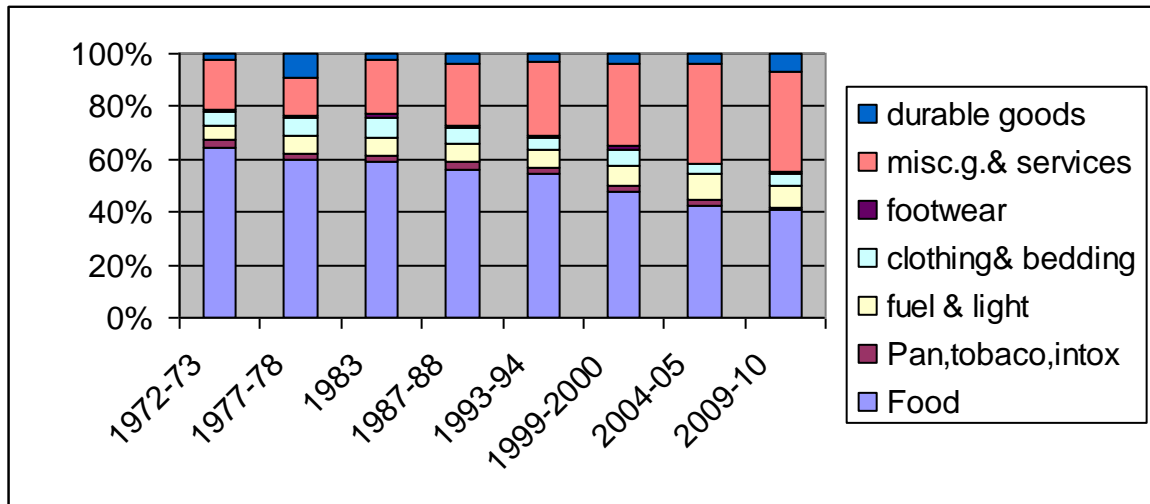


**Source: Author's computation from various issues of NSSO reports**

On the other hand, with the increase in the proportion of expenditure on non-food items both in rural and urban area, the expenditure on misc. goods and services which includes education and medical care has increased tremendously from 8.7% in 1972-73 to 24% in 2009-10 in rural India and from 19.2% to 37.8% in urban India over the same period. This trend seems to have two implications; first, consciousness of people both in rural and urban India about education has increased; secondly, it seems that with the continuously degradation of environment medical expenditure on health has largely increased. Further, medical treatment has also become costly enough. Another interesting feature which is evident from figure-3 and 4 is that the proportion of expenditure on durable goods has registered an increasing trend both in rural and urban India. This clearly indicates an increasing trend in sophistication of consumption pattern of the people of India.

On the whole, we find a distinct diversification in the consumption pattern in both the rural and urban India. The diversification indices (ratio of proportion of expenditure on food to non-food) across the states of rural and urban India which are given in the appendix table 5 and 5A also indicate the same. It is evident from the table 5 and 5A that

both the rural and urban India has registered a continuous declining trend in the value of the diversification indices. Further, almost all the states in rural India have experienced declining trend in the values of indices before and after the reform as well as over the period in varying degrees. For some states the rates of decline in the indices are found to be much faster during the post reform period. The same trend is found persist across the states of urban India also. Another feature which is discernable from the table is that there is inter-state variability in the degree of diversification of consumption over the period of our study. Now the question is what are the proximate explanatory factors for this spectacular diversification of consumption pattern in both rural and urban India? It seems that the variability in real per-capita income, the degree of overall and relative inequality, the degree of urbanization, the development of infrastructure, the variability in female workforce participation rates across the states are the most proximate explanatory factors other factors apart behind the cross state and cross-time variability in the rate of diversification of the consumption pattern in rural and urban India.

## VI. <u>ANALYSIS OF THE RESULTS OF PANEL REGRESSION</u>

In this section we analyze the results of the panel regression separately for rural and urban areas. As we have already mentioned in section-2 that data on regressors and regressand are available quinquinnially and so we have formed a five yearly panel. Our panel is a balanced panel. Since we have chosen the cross-section observations (12 states) non-randomly out of fixed small number of states in India and further since the effect of omitted variables like development of infrastructure, preference pattern etc. which is taken into account in terms of error component seem to have relation with the regressors and the time component is also small in number we have applied the fixed effect model of panel regression. Moreover, the Hausman test with high significant values goes in favour of fixed effect model. We use the following forms of model specification for rural and urban areas.

$DCR_{it} = f$ (Constant, $GR_{it}$, $INQRR_{it}$, $URB_{it}$)………….. (I)  i= 1,2….12 (states),

t= 1,2…8.(time)

$DCU_{it} = F$ (Constant, $GR_{it}$, $INQRU_{it}$, $URB_{it}$)…………. (II)

Since the state specific factors influence in the consumption pattern vary across the states over time the assumptions of the constancy of the intercept and slope parameters are unreasonable and so we allow the intercept term to vary over time and across the unit by

using fixed effect model. However, to see the effect of overall inequality on the diversification of consumption across state and time we have also run separate panel regression by including INQAR and INQAU instead of INQRR and INQRU into the same model specification for rural and urban areas and we get almost same results.

The results of the regression analysis for the rural area are given in table-5 below. It is evident from the result that the three variables (GR, INQRR, URB) together explained about 95% of the cross state and cross time variations in the diversification of consumptions in rural India such that the relative inequality and urbanization are found to be highly significant as is indicated by their respective p-values. Further, the variables have their expected signs (i.e. negative) which indicates that the rise in relative inequality and the urbanization have led to fall in the diversification in consumption pattern i.e. the ratio of food to non-food consumption in the rural areas. The effects of the state specific factors like the region-specific preference pattern, absolute and relative prices of the commodities, the geographical and climatic factors, and effectiveness of public distribution system are also included in the value of adjusted $R^2$. So on the basis of the results we can draw the following conclusions. First, in relative term 1 percent point increase in relative inequality has led to a 43.09 points decline in the ratio of food to non-food consumption across the states and time in rural India. This conclusion supports the findings of Rao(2000).Secondly, we can say that in relative term that 1% increase in the degree of urbanization had led to 1.44 point decline in food consumption in relation to non-food. Finally, the effect of growth i.e. the five yearly centered inter-temporal growth rate of per-capita real income is statistically insignificant. The model specification is also found to be highly statistically significant as is evident from the p-values of F-statistic and the diagnostic log likelihood. So on the whole we can conclude that the relative inequality as well as the urbanization are the crucial explanatory factors behind the cross-state and cross-time consumption pattern in rural India during 1972-73 to 2009-10, the others state specific factors apart. Further, since the coefficient of relative inequality assumes large values in relation to urbanization it is plausible to conclude that the higher income group have shown larger fall in their consumption of food grains as compared to poorer income group.

**Table-5: Results of Panel Regression (Rural)**

| Dependent Variable- DCR | | |
| --- | --- | --- |
| **Variables** | **Coefficient** | **P- values** |
| GR | .4057898137 | 0.8479 |
| INQRR | -43.09082599 | 0.0000 |
| URB | -1.436877788 | 0.0011 |
| R-squared | 0.953240 | |
| Adjusted R-squared | 0.94719 | |
| Model Test: F [ 11,85] | 157.53 | 0.00000 |
| Diagnostic: Log-L | -463.3108 | |

Now, we analyze the results of panel regression for urban India which is given in table-6 below. The value of adjusted $R^2$ (0.99) and the model test ( F-value) as well as the log likelihood ratio indicate a good fit of the model. Like rural India it is also evident from the results that the variables relative inequality as well as the degree of urbanization are significant explanatory factors (as is evident from their respective p-values) with their expected signs in explaining the cross-state and cross-time variation in the diversification ratio of consumption pattern in urban India. In case of Urban India also we can draw the following major conclusions from our econometric results. First, from the coefficient of INQRU we can say that 1 percent point increase in relative inequality has led to 13.11 points decline in the consumption of food grains across the states in urban India during 1972-73 to 2009-10**.** The economic implication of this has been that higher income group has experienced larger fall in their consumption of food grains by switching over to non-cereal food grain like processed high value food. This is also found by Rao (2000), Morisset and Kumar (2011). Secondly**,** it is plausible to say that 1% increase in the degree of urbanization has led to 0.84 points fall in the consumption of food grain across the states and over the period of our study. It seems that the increase in urbanization over time and across the states has led to the concentration of the relatively wealthy households in

the urban areas such that they have got the access to the vector of new high value non-cereal food as well as processed food so that their preference pattern has moved in favour of non-cereal food Further, it has been found that the proportion of household, spending on consumption of food away from house is increasing ( Gaiha, Jha and Kulkarni 2009) Moreover, the NSSO data also confirm that there has been a steeper increase in MPCE on education, health and consumer durables both in urban and rural India and it is much more prominent in case of urban India especially, during the post reform period. The figures 3 and 4 also indicate the same trend in terms of miscellaneous goods and services. Finally, we can say that growth rate of real per-capita income over time and across the states have failed to produce significant impact on the diversification in consumption pattern in urban India. On the whole we can say that our econometric results are compatible with the conclusion of the previous studies albeit the studies are dated.

**Table-6: Results of Panel Regression (Urban)**

| Dependent Variable- DCU | | |
|---|---|---|
| Variables | Coefficient | P values |
| GR | 0.4529191329 | 0.8042 |
| INQRU | -13.11134271 | 0.0112 |
| URB | -0.8440849117 | 0.0245 |
| R-squared | 0.993173 | |
| Adjusted R-squared | 0.99236 | |
| Model Test: F [ 11,92] | 1216.72 | 0.00000 |
| Diagnostic: Log-L | -482.8253 | |

## VII CONCLUDING OBSERVATIONS:

The following conclusions emerge from our study.

First, all the states have achieved positive growth rates of per capita real income during the three phases of our study in varying degrees such that there has been dramatic increase in the rates of growth of per capita real income during the post reform period for some of the

states like Tamil Nadu, Maharashtra, Kerala, Karnataka, Gujarat, Andhra Pradesh, Haryana and Orissa.. However, only five states have been able to maintain their growth rate of per-capita real income above the median growth rate over the period from 1972-73 to 2009-10. The relative positions of all the states in respect of growth of per-capita income have changed between pre and post reform period in varying degrees such that it has been remarkable for some states and marginal for some other states. Like other studies we find a divergent nature of growth of per-capita real NSDP across the states.

Second, almost all the states in our country have achieved increase in their real per capita consumption expenditure both in the pre reform and in the post reform period in varying degrees. Further, the relative positions of almost all the states relating to the levels of living of their people have changed over the period in different degrees. Moreover, the magnitude of inter-state disparity in real MPCE does not reveal uniform pattern. Interestingly, we find an increasing trend in the inter-state disparity in the levels of living during the post reform period.

Third, the level of real MPCE in the urban areas of all the states as well as the national average urban MPCE are found to be  much higher than that in the rural areas throughout the period of our analysis. However, we find a substantial increase in the real MPCE i.e. the levels of living of people in the rural area across all the states. The state Kerala has experienced precipitous improvement in its relative position regarding level of real MPCE during post reform period such that it dominates over all the states in terms of levels of living.

Fourth, we do not find any uniform trend in the annual growth rates of real MPCE of the states as a whole and also for rural and urban sectors separately over the three phases of our analysis. However almost all the states are found to have experienced positive growth rates of real MPCE throughout the period in varying degrees. The correlation between the growth rates of real PCNSDP and that of real MPCE is found to be low for post reform period. However, over the period of our study we find a strong and statistically significant correlation between the two.

Fifth, the scatter plot indicates one to one correspondence between high growth rates of PCNSDP and that of MPCE for five states only. We also find a divergent nature of growth rate of Real PCNSDP and that of real MPCE across the states of India both for the post reform and overall period.

Sixth, the overall inequality in consumption expenditure in rural areas has shown a declining trend during the pre-reform period which is accompanied by an increasing trend during the post-reform period. However, we find a marginal decline in overall inequality in the consumption expenditure of rural household over the period of our study. So it is obvious that the reform process has failed to provide adequate cushion against the relative inequality in rural areas such that poor people are gradually getting poorer. On the other hand the overall inequality in the distribution of consumption expenditure in the urban areas has increased over the period of our study such that the rate of increase is much larger in urban areas during the last decade of post reform period.. Further, the relative inequality in both rural and urban areas is found to have increased over the periods. So it is plausible to conclude that the reform process has increased the relative inequality such that the poorer people have been left out of the benefits of reform. The inter-state variability in the inequality has increased substantially in rural areas but marginally in urban areas over the period.

Seventh, we also find a continuously declining trend in the share of expenditure on food in both rural and urban areas which is accompanied by tremendous increase in that on non-food. Amongst the food group the share of expenditure in cereals has been found to be much higher in rural area as compared to urban area and the same has registered the largest decline among all other items in the food group. All these clearly indicate a shift in the food habit to processed food not only in urban India but also in rural India. This seems to be due to the increasing female workforce participation, growth of income,urbanization, expansion of media and information technology, the diet globalization, increasing tendency of the households to spend on consumption of food away from home etc.

Eight, the expenditure on misc. goods and services which includes education and medical care is found to have increased tremendously and the proportion of expenditure on durable goods has also registered an increasing trend both in rural and urban India. Further, a continuous declining trend in the value of the diversification indices is found to persist in both rural and urban areas such that there is wide inter-state variability in the degree of diversification of consumption over the period of our study.

Ninth, our panel regression result reveal that the three variables viz.GR, INQRR, URB together explained about 95% of the cross state and cross time variations in the diversification of consumptions in rural India such that the relative inequality and

urbanization are found to be highly significant Further, the variables are found to have their expected signs. The model specification is also found to be highly statistically significant as is evident from the p-values of F-statistic and the diagnostic log likelihood. It is also evident that in relative term 1 percent point increase in relative inequality and urbanization has led to a 43.09 points and 1.44 points decline in the ratio of food to non-food consumption respectively across the states and time in rural India.

Finally, it is also evident from the results that the variable relative inequality and the degree of urbanization are significant explanatory factors with their expected signs in explaining the cross-state and cross-time variation in the diversification ratio of consumption pattern in urban India. We again conclude that 1 percent point increase in relative inequality and urbanization has led to 13.11 points and 0.84 points decline in the consumption of food grains across the states in urban India during 1972-73 to 2009-10. It seems that the increase in urbanization over time and across the states has led to the concentration of the relatively wealthy households in the urban areas such that they have got the access to the vector of new high value non-cereal food as well as processed food so that their preference pattern has moved in favour of non-cereal food. It can also be said that growth rate of real per-capita income over time and across the states have failed to produce significant impact on the diversification in consumption pattern in rural and urban India.

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# APPENDIX

**Appendix table-1: Monthly Per-capita Consumption Expenditure (Rural) at constant 1993 prices of all Major States of India During 1972-72 to 2009-10**

| States | 1972-73 | 1977-78 | 1983 | 1987-88 | 1993-94 | 1999-00 | 2004-05 | 2009-10 |
|---|---|---|---|---|---|---|---|---|
| Andhra Pradesh | 198.04 (12) | 223.19 (10) | 258.91 (9) | 283 (7) | 288.7 (7) | 281.23 (11) | 325.85 (7) | 376.38 (4) |
| Assam | 242.34 (5) | 226.89 (9) | 266.7 (6) | 272 (9) | 258.11 (12) | 270.59 (12) | 325.16(8) | 318.45 (9) |
| Bihar | 206.02 (10) | 206.83 (12) | 204.04 (14) | 242 (14) | 218.3 (14) | 245.3 (14) | 249.73 (14) | 251.29 (15) |
| Gujarat | 233.82 (6) | 259.75 (6) | 297.79 (5) | 285 (5) | 303.32 (5) | 349.37 (4) | 340.4 (5) | 367.16 (7) |
| Haryana | 339.1 (2) | 364.01 (3) | 400.64 (2) | 380 (2) | 385.01 (3) | 460.34 (3) | 486.4 (2) | 514.39 (3) |
| Karnataka | 206.7 (9) | 231.14 (8) | 261.74 (8) | 264 (11) | 269.38 (11) | 301.28 (8) | 292.75 (12) | 297.79 (12) |
| Kerala | 261.16 (4) | 308.11 (4) | 356.37 (3) | 374 (3) | 390.41 (2) | 498.17 (1) | 574.39 (1) | 683.03 (1) |
| Madhya Pradesh | 193.83 (13) | 205.7 (14) | 232.21 (11) | 251 (13) | 252.01 (13) | 249.02 (13) | 258.68 (13) | 294.10 (13) |
| Maharashtra | 201.89 (11) | 258.05 (7) | 243.98 (10) | 285 (6) | 272.66 (10) | 303.93 (7) | 305.55 (11) | 373.06 (5) |
| Orissa | 176.6 (15) | 172.88 (15) | 180.28 (15) | 226 (15) | 219.8 (14) | 211.55 (15) | 237.57 (15) | 252.03 (14) |
| Punjab | 353.42 (1) | 450.45 (1) | 450.11 (1) | 432 (1) | 433.00 (1) | 478.84 (2) | 482.39 (3) | 546.13 (2) |
| Rajasthan | 271.18 (3) | 407.99 (2) | 341.7 (4) | 315 (4) | 322.39 (4) | 344.44 (5) | 340.52 (4) | 370.48 (6) |
| Tamil Nadu | 208.08 (8) | 219.82 (11) | 229.4 (12) | 273 (8) | 293.62 (6) | 328.4 (6) | 336.36 (6) | 357.20 (8) |
| Uttar Pradesh | 223.46 (7) | 264.48 (5) | 265.44 (7) | 263 (12) | 273.83 (9) | 295.06 (9) | 310.11 (10) | 305.90 (11) |
| West Bengal | 192.42 (14) | 206.56 (13) | 218.73 (13) | 265 (10) | 278.78 (8) | 286.7 (10) | 324.12 (9) | 315.50 (10) |
| All-India | 219.86 | 249.48 | 258.62 | 280 | 281.40 | 305.50 | 322.83 | 342.44 |
| CV | 22.50 | 30.31 | 26.98 | 19.57 | 20.82 | 26.63 | 27.46 | 31.76 |

Source: Author's Computation from Various Reports of NSSO ( Figures in Parenthesis Represent Ranks)

**Appendix table-2: Monthly Per-capita Consumption Expenditure (Urban) at constant 1993 prices of all Major States of India During 1972-72 to 2009-10**

| States | 1972-73 | 1977-78 | 1983 | 1987-88 | 1993-94 | 1999-00 | 2004-05 | 2009-10 |
|---|---|---|---|---|---|---|---|---|
| Andhra Pradesh | 336.59 (8) | 375.5 (9) | 401.1 (8) | 398 (11) | 408.6 (11) | 470.37 (11) | 521.86(10) | 674.15(4) |
| Assam | 307.47 (13) | 326.8 (13) | 335.5 (13) | 467 (3) | 458.57 (6) | 502.73 (9) | 593.23 (5) | 523.81 (11) |
| Bihar | 265.35 (15) | 294.75 (15) | 295.51 (15) | 323 (15) | 353.03 (15) | 377.97 (15) | 381.75 (15) | 371.43 (15) |
| Gujarat | 319.16 (11) | 414.36 (4) | 394.65 (10) | 416 (8) | 454.18 (7) | 558.64 (6) | 612.5 (4) | 632.31(6) |
| Haryana | 366.51 (5) | 387.15 (6) | 466.3 (3) | 498 (1) | 473.92 (5) | 560.5 (5) | 584.75 (7) | 645.58 (5) |
| Karnataka | 479.48 (1) | 470.24 (2) | 641.39 (1) | 385 (13) | 746.93 (1) | 750.35 (1) | 698.81 (2) | 583.67 (8) |
| Kerala | 345.97 (7) | 385.33 (7) | 419.14 (5) | 461 (5) | 423.14 (10) | 539.52 (8) | 521.87(9) | 905.78 (1) |
| Madhya Pradesh | 308.02 (12) | 346.15 (12) | 403.42 (7) | 408 (10) | 493.83 (4) | 548.43 (7) | 647.4 (3) | 499.66 (12) |
| Maharashtra | 329.64 (9) | 387.54 (5) | 374.1 (11) | 484 (2) | 408.06 (12) | 456.7 (12) | 502.15(11) | 759.18 (2) |
| Orissa | 440.69 (2) | 489.93 (1) | 478.93 (2) | 390 (12) | 529.8 (2) | 592.54 (3) | 566.58 (8) | 484.70 (13) |
| Punjab | 352.25 (6) | 358.27 (11) | 361.8 (12) | 467 (4) | 402.54 (13) | 389.84 (14) | 427.33 (14) | 677.89 (3) |
| Rajasthan | 402.86 (3) | 469.62 (3) | 464.9 (4) | 412 (9) | 510.73 (3) | 587.27 (4) | 721.45 (1) | 568.03 (10) |
| Tamil Nadu | 321.91 (10) | 373.22 (10) | 395.54 (9) | 430 (7) | 424.73 (9) | 479.7 (10) | 483.78 (12) | 571.09 (9) |
| Uttar Pradesh | 372.83 (4) | 381.25 (8) | 403.74 (6) | 375 (14) | 438.29 (8) | 606 (2) | 585.06 (6) | 464.29 (14) |
| West Bengal | 274.16 (14) | 306.33 (14) | 317.9 (14) | 432 (6) | 388.97 (14) | 428.92 (13) | 458.74 (13) | 590.48 (7) |
| All-India | 364.72 | 356.2 | 397.2 | 426 | 474.19 | 524.2 | 619 | 607.48 |
| CV | 16.71 | 14.99 | 20.18 | 11.06 | 20.03 | 18.29 | 17.35 | 21.73 |

**Source: Author's Computation from Various Reports of NSSO (Figures in Parenthesis Represent Ranks)**

**Appendix Table-3 : Gini Coefficient of Consumption Expenditure in Rural India**

| STATE | 1972-73 | 1977-78 | 1983 | 1987-88 | 1993-94 | 1999-00 | 2004-05 | 2009-10 |
|---|---|---|---|---|---|---|---|---|
| A.P | 0.273 | 0.298 | 0.294 | 0.301 | 0.284 | 0.233 | 0.288 | 0.278 |
| ASSAM | 0.18 | 0.179 | 0.192 | 0.222 | 0.176 | 0.2 | 0.197 | 0.244 |
| BIHAR | 0.288 | 0.259 | 0.256 | 0.264 | 0.223 | 0.206 | 0.208 | 0.226 |
| GUJARAT | 0.302 | 0.285 | 0.257 | 0.233 | 0.236 | 0.234 | 0.268 | 0.253 |
| HARYANA | 0.277 | 0.288 | 0.272 | 0.281 | 0.301 | 0.238 | 0.323 | 0.301 |
| KARNATAKA | 0.273 | 0.321 | 0.303 | 0.292 | 0.265 | 0.241 | 0.264 | 0.235 |
| KERALA | 0.31 | 0.353 | 0.33 | 0.323 | 0.287 | 0.27 | 0.341 | 0.417 |
| M.P | 0.306 | 0.331 | 0.295 | 0.29 | 0.277 | 0.243 | 0.269 | 0.292 |
| MAHARASHTRA | 0.31 | 0.462 | 0.285 | 0.331 | 0.303 | 0.258 | 0.31 | 0.268 |
| ORISSA | 0.312 | 0.301 | 0.267 | 0.267 | 0.243 | 0.244 | 0.282 | 0.262 |
| PUNJAB | 0.307 | 0.303 | 0.279 | 0.295 | 0.265 | 0.239 | 0.278 | 0.288 |
| RAJASTHAN | 0.316 | 0.464 | 0.343 | 0.303 | 0.26 | 0.208 | 0.248 | 0.225 |
| T.N | 0.272 | 0.319 | 0.325 | 0.323 | 0.306 | 0.279 | 0.315 | 0.264 |
| U.P | 0.277 | 0.299 | 0.29 | 0.279 | 0.278 | 0.245 | 0.287 | 0.356 |
| W.BENGAL | 0.305 | 0.292 | 0.286 | 0.252 | 0.252 | 0.225 | 0.273 | 0.239 |
| CV | 11.81 | 22.34 | 12.70 | 11.27 | 13.12 | 9.28 | 14.10 | 18.69 |

**Source : Various Reports of NSSO**

**Appendix Table-3A : Gini Coefficient of Consumption Expenditure in Urban India**

| STATE | 1972-73 | 1977-78 | 1983 | 1987-88 | 1993-94 | 1999-00 | 2004-05 | 2009-10 |
|---|---|---|---|---|---|---|---|---|
| A.P | 0.297 | 0.319 | 0.327 | 0.361 | 0.32 | 0.313 | 0.37 | 0.382 |
| ASSAM | 0.267 | 0.324 | 0.276 | 0.337 | 0.287 | 0.31 | 0.314 | 0.324 |
| BIHAR | 0.323 | 0.304 | 0.301 | 0.297 | 0.306 | 0.323 | 0.33 | 0.332 |
| GUJARAT | 0.242 | 0.308 | 0.264 | 0.285 | 0.287 | 0.287 | 0.304 | 0.328 |
| HARYANA | 0.315 | 0.317 | 0.313 | 0.297 | 0.28 | 0.287 | 0.361 | 0.36 |
| KARNATAKA | 0.323 | 0.342 | 0.334 | 0.334 | 0.315 | 0.323 | 0.365 | 0.334 |
| KERALA | 0.39 | 0.395 | 0.374 | 0.387 | 0.337 | 0.321 | 0.4 | 0.498 |
| M.P | 0.348 | 0.377 | 0.306 | 0.331 | 0.327 | 0.315 | 0.393 | 0.364 |
| MAHARASHTRA | 0.367 | 0.362 | 0.337 | 0.352 | 0.352 | 0.348 | 0.371 | 0.41 |
| ORISSA | 0.347 | 0.323 | 0.296 | 0.324 | 0.304 | 0.292 | 0.348 | 0.389 |
| PUNJAB | 0.313 | 0.38 | 0.319 | 0.278 | 0.276 | 0.29 | 0.393 | 0.371 |
| RAJASTHAN | 0.333 | 0.301 | 0.304 | 0.346 | 0.29 | 0.28 | 0.367 | 0.378 |
| T.N | 0.315 | 0.333 | 0.348 | 0.348 | 0.344 | 0.381 | 0.358 | 0.332 |
| U.P | 0.312 | 0.327 | 0.319 | 0.329 | 0.322 | 0.329 | 0.37 | 0.329 |
| W.BENGAL | 0.338 | 0.317 | 0.327 | 0.353 | 0.333 | 0.342 | 0.376 | 0.384 |
| CV | 11.34 | 8.82 | 8.70 | 9.15 | 7.78 | 8.66 | 7.65 | 12.28 |

**Source : Various Reports of NSSO**

**Table-4 : PERCENTAGE  SHARE OF BOTTOM 30% OF POPULATION IN TOTAL MPCE (RURAL)**

| STATE | 1972-73 | 1977-78 | 1983 | 1987-88 | 1993-94 | 1999-00 | 2004-05 | 2009-10 |
|---|---|---|---|---|---|---|---|---|
| A.P | 15.9 | 15.3 | 15.6 | 15.5 | 16.1 | 18 | 15.9 | 15.99 |
| ASSAM | 19.8 | 21.6 | 19.9 | 18.1 | 20.4 | 18.9 | 19.2 | 17.85 |
| BIHAR | 15.1 | 16.6 | 16.7 | 17.1 | 18.2 | 19.2 | 19.1 | 17.88 |
| GUJARAT | 15.2 | 15.8 | 17.2 | 18.3 | 17.5 | 17.6 | 16.4 | 17.27 |
| HARYANA | 15.7 | 15.4 | 16.3 | 15.9 | 14.8 | 17 | 14.6 | 14.61 |
| KARNATAKA | 15.9 | 15.1 | 14.8 | 15.5 | 16.5 | 17.7 | 17.7 | 17.83 |
| KERALA | 14.7 | 13.2 | 14.4 | 14.6 | 14.6 | 16 | 12.5 | 11.93 |
| M.P | 15.1 | 14.8 | 15.5 | 15.7 | 16.3 | 17.7 | 16.7 | 15.41 |
| MAHARASHTRA | 15 | 11.6 | 15.9 | 14.9 | 15.3 | 16.7 | 15.1 | 16.40 |
| ORISSA | 14.5 | 14.9 | 17.4 | 16.7 | 17.3 | 17.4 | 15.9 | 16.19 |
| PUNJAB | 14.7 | 14.6 | 18.9 | 15.3 | 16.6 | 17.1 | 15.8 | 15.70 |
| RAJASTHAN | 14.3 | 10.8 | 16.7 | 14.2 | 16.7 | 18.7 | 17.8 | 18.22 |
| T.N | 16.1 | 14.6 | 16.2 | 14.4 | 15.2 | 16.1 | 15.6 | 16.77 |
| U.P | 16.5 | 16.9 | 15.4 | 16.2 | 16 | 17.6 | 16.4 | 17 |
| W.BENGAL | 15 | 15.2 | 15.3 | 17.4 | 17.9 | 18.1 | 17 | 17.74 |
| ALL INDIA | 15 | 14.3 | 15.2 | 15.8 | 16 | 16.7 | 15.5 | 15.62 |

Source: Rattan Chand(2007); Values for 2009-10are computed from 66th rounds of NSSO.

**Table-4a : PERCENTAGE SHARE OF TOP 30% OF POPULATION IN TOTAL MPCE (RURAL)**

| STATE | 1972-73 | 1977-78 | 1983 | 1987-88 | 1993-94 | 1999-00 | 2004-05 | 2009-10 |
|---|---|---|---|---|---|---|---|---|
| A.P | 48.9 | 50.9 | 50.9 | 51.6 | 50.6 | 53.6 | 50 | 49.93 |
| ASSAM | 42.3 | 42 | 43.2 | 45.6 | 41.8 | 43.6 | 42.7 | 47.58 |
| BIHAR | 49.8 | 47.3 | 47.5 | 48.6 | 45.7 | 44.3 | 44.1 | 45.75 |
| GUJARAT | 51.6 | 49.1 | 47.6 | 46.6 | 46.1 | 46.1 | 48.9 | 48.27 |
| HARYANA | 49.3 | 50.4 | 47 | 49.6 | 51.6 | 47.1 | 53.8 | 51.47 |
| KARNATAKA | 48.5 | 52.8 | 50.9 | 50.6 | 48.8 | 46.7 | 48.5 | 46.74 |
| KERALA | 52 | 54.4 | 53.9 | 53.6 | 50.6 | 50 | 56.9 | 61.31 |
| M.P | 51.9 | 51.8 | 50.5 | 50.2 | 49.6 | 46.7 | 48.8 | 51.14 |
| MAHARASHTRA | 51.4 | 62.7 | 50 | 53.7 | 51.2 | 48.1 | 51.9 | 49.28 |
| ORISSA | 51.7 | 51 | 48 | 48.7 | 48.3 | 46.9 | 50 | 48.51 |
| PUNJAB | 51.5 | 50.7 | 50.7 | 51 | 49.6 | 47.3 | 50.7 | 50.98 |
| RAJASTHAN | 52.5 | 63.7 | 54.4 | 51.6 | 48.2 | 44.4 | 46.9 | 45.87 |
| T.N | 48.9 | 52.6 | 52.8 | 53.1 | 52.1 | 49.7 | 52.7 | 49.09 |
| U.P | 49.3 | 48 | 50.1 | 49.8 | 49.7 | 47.3 | 50.4 | 49.09 |
| W.BENGAL | 49.8 | 50.4 | 49.5 | 47.6 | 47.8 | 45.2 | 48.7 | 46.93 |
| ALL INDIA | 50.9 | 53.9 | 50.9 | 50.4 | 49.9 | 48.3 | 51.6 | 51.06 |

Source: Rattan Chand(2007); Values for 2009-10are computed from 66th rounds of NSSO.

**Table-4A : PERCENTAGE SHARE OF BOTTOM 30% OF POPULATION IN TOTAL MPCE (URBAN)**

| STATE | 1972-73 | 1977-78 | 1983 | 1987-88 | 1993-94 | 1999-00 | 2004-05 | 2009-10 |
|---|---|---|---|---|---|---|---|---|
| A.P | 16.8 | 14.5 | 14.8 | 13.2 | 14.5 | 14.6 | 13 | 12.05 |
| ASSAM | 16.8 | 15 | 18 | 14.9 | 15.8 | 15.5 | 14.1 | 13.15 |
| BIHAR | 14.3 | 15.1 | 15.2 | 16.2 | 15.1 | 14.9 | 14.3 | 13.62 |
| GUJARAT | 17.6 | 15.4 | 17.2 | 15.8 | 15.6 | 15.6 | 14.6 | 13.51 |
| HARYANA | 14.3 | 14.9 | 15 | 15.6 | 15.6 | 15.1 | 13 | 12.47 |
| KARNATAKA | 15 | 13.6 | 13.3 | 13.8 | 14 | 13.1 | 12.4 | 12.83 |
| KERALA | 17 | 11.5 | 12.6 | 12.7 | 14.1 | 13.8 | 11.5 | 9.05 |
| M.P | 14.5 | 13.1 | 15.7 | 14 | 14.6 | 14.6 | 12.1 | 12.38 |
| MAHARASHTRA | 12.2 | 12.2 | 13.2 | 12.7 | 12.5 | 13 | 12.2 | 11.08 |
| ORISSA | 13.5 | 13.9 | 19.3 | 14 | 14.5 | 15.5 | 12.9 | 12.21 |
| PUNJAB | 15 | 12.8 | 14.9 | 15.9 | 15.8 | 15.6 | 12.5 | 12.37 |
| RAJASTHAN | 14.9 | 15.2 | 14.8 | 14.4 | 15.3 | 16.1 | 13.4 | 12.95 |
| T.N | 14.7 | 13.9 | 13.4 | 15.3 | 13.8 | 12.7 | 13.2 | 13.45 |
| U.P | 14.9 | 14.4 | 14.7 | 14.1 | 14.1 | 14.3 | 13 | 12.68 |
| W.BENGAL | 13.3 | 14 | 13.9 | 14.4 | 13.6 | 13.9 | 12 | 11.78 |
| ALL INDIA | 13.9 | 13.5 | 13.9 | 13.4 | 13.6 | 13.4 | 12.4 | 11.83 |

Source: Rattan Chand(2007); Values for 2009-10are computed from 66th rounds of NSSO.

**Table-4A : PERCENTAGE SHARE OF TOP 30% OF POPULATION IN TOTAL MPCE (URBAN)**

| STATE | 1972-73 | 1977-78 | 1983 | 1987-88 | 1993-94 | 1999-00 | 2004-05 | 2009-10 |
|---|---|---|---|---|---|---|---|---|
| A.P | 47.9 | 53 | 53.3 | 56 | 53.1 | 52.4 | 57 | 58.43 |
| ASSAM | 48.5 | 52.8 | 48.5 | 54.2 | 55.8 | 52.1 | 52.7 | 53.21 |
| BIHAR | 42.7 | 51.4 | 51.8 | 51.3 | 52.3 | 53.3 | 53.9 | 54.16 |
| GUJARAT | 41.9 | 52.1 | 48.6 | 50.2 | 54.4 | 50.4 | 51.6 | 53.38 |
| HARYANA | 52.9 | 52.5 | 53.5 | 51 | 49.6 | 49.6 | 55.6 | 56.63 |
| KARNATAKA | 50.8 | 54.5 | 54 | 53.7 | 52.4 | 52.9 | 56.6 | 53.94 |
| KERALA | 51.1 | 58.5 | 57.6 | 59 | 54.4 | 53 | 59.3 | 67.85 |
| M.P | 54.8 | 57.2 | 52.1 | 53.9 | 53.3 | 52.4 | 58.7 | 56.61 |
| MAHARASHTRA | 53.6 | 55 | 54.8 | 55 | 55.3 | 54.9 | 56.7 | 60.56 |
| ORISSA | 54.3 | 52.8 | 51.9 | 53 | 51.6 | 50.9 | 55.3 | 59.45 |
| PUNJAB | 52.2 | 56.2 | 53.7 | 47.8 | 49.4 | 50.6 | 58 | 57.60 |
| RAJASTHAN | 53.8 | 51.4 | 51.3 | 54.8 | 50.5 | 50 | 56.6 | 58.08 |
| T.N | 52.5 | 53.8 | 55 | 49.1 | 54.6 | 57.3 | 55.7 | 54.35 |
| U.P | 52.9 | 53.6 | 53.1 | 53.3 | 53.4 | 53.7 | 56.3 | 56.91 |
| W.BENGAL | 54.4 | 52 | 53.5 | 54.7 | 54.3 | 54.8 | 57.4 | 58.64 |
| ALL INDIA | 54.3 | 54.9 | 53.7 | 55.3 | 54.7 | 54.7 | 56.9 | 58.27 |

Source: Rattan Chand(2007); Values for 2009-10are computed from 66th rounds of NSSO.

**Appendix table-5: Diversification Indices of Consumption Expenditure in rural India**

| State | 1972-73 | 1977-78 | 1983 | 1987-88 | 1993-94 | 1999-00 | 2004-05 | 2009-10 |
|---|---|---|---|---|---|---|---|---|
| A.P | 275.9398 | 182.4859 | 151.8892 | 145.7002 | 147.5248 | 153.1646 | 123.2143 | 127.53 |
| Assam | 344.4444 | 300 | 275.9398 | 235.5705 | 261.0108 | 208.642 | 194.1176 | 155.95 |
| Gujarat | 275.9398 | 218.4713 | 194.9853 | 223.6246 | 203.9514 | 148.7562 | 138.0952 | 127.47 |
| Haryana | 205.8104 | 165.252 | 174.7253 | 155.102 | 150.6266 | 124.7191 | 94.55253 | 104.54 |
| Karnataka | 277.3585 | 172.4796 | 173.9726 | 174.7253 | 163.1579 | 144.4988 | 125.7336 | 135.07 |
| Kerela | 237.8378 | 157.732 | 161.0966 | 149.3766 | 153.1646 | 115.9827 | 81.81818 | 60.84 |
| Maharasthra | 208.642 | 99.20319 | 159.7403 | 139.2344 | 146.9136 | 120.7506 | 107.0393 | 103.92 |
| Orissa | 301.6064 | 249.6503 | 278.7879 | 221.5434 | 213.4796 | 178.5515 | 160.4167 | 145.09 |
| Punjab | 167.3797 | 148.139 | 142.1308 | 135.8491 | 137.5297 | 109.6436 | 96.85039 | 91.61 |
| Rajasthan | 283.1418 | 95.69472 | 154.4529 | 163.1579 | 165.252 | 146.9136 | 121.2389 | 119.88 |
| Tamil Nadu | 257.1429 | 191.5452 | 186.533 | 178.5515 | 168.8172 | 142.1308 | 110.084 | 106.78 |
| West Bengal | 342.4779 | 266.3004 | 284.6154 | 244.8276 | 201.2048 | 193.2551 | 142.1308 | 136.80 |
| **All India** | 269.0037 | 180.112 | 190.6977 | 177.7778 | 171.7391 | 146.3054 | 122.2222 | 115.5172 |

Source: Author's Computation from Various Reports of NSSO

**Appendix table-5A: : Diversification Indices of Consumption Expenditure in urban India**

| State | 1972-73 | 1977-78 | 1983 | 1987-88 | 1993-94 | 1999-00 | 2004-05 | 2009-10 |
|---|---|---|---|---|---|---|---|---|
| A.P | 209.5975 | 145.098 | 380.7692 | 111.8644 | 116.4502 | 90.11407 | 71.23288 | 65.86 |
| Assam | 216.4557 | 163.1579 | 197.619 | 135.8491 | 148.139 | 123.7136 | 98.0198 | 101.73 |
| Gujarat | 269.0037 | 146.3054 | 161.0966 | 151.8892 | 140.3846 | 98.4127 | 81.4882 | 72.05 |
| Haryana | 171.7391 | 148.139 | 136.4066 | 137.5297 | 116.9197 | 84.84288 | 70.64846 | 70.62 |
| Karnataka | 204.878 | 159.7403 | 138.6635 | 131.4815 | 125.7336 | 86.21974 | 76.05634 | 76.90 |
| Kerela | 184.0909 | 160.4167 | 146.3054 | 133.1002 | 116.9197 | 96.07843 | 66.66667 | 44.99 |
| Maharasthra | 157.0694 | 127.7904 | 139.2344 | 126.7574 | 112.766 | 82.81536 | 67.78523 | 58.83 |
| Orissa | 189.0173 | 194.1176 | 188.1844 | 154.4529 | 136.9668 | 132.5581 | 99.6008 | 74.37 |
| Punjab | 153.8071 | 119.7802 | 126.2443 | 123.2143 | 112.766 | 89.03592 | 60.25641 | 66.22 |
| Rajasthan | 194.9853 | 155.7545 | 135.8491 | 131.4815 | 130.9469 | 103.252 | 71.23288 | 68.29 |
| Tamil Nadu | 178.5515 | 155.102 | 140.3846 | 121.2389 | 120.2643 | 83.82353 | 74.52007 | 74.46 |
| West Bengal | 179.3296 | 173.224 | 155.102 | 135.8491 | 126.7574 | 109.6436 | 76.67845 | 73.94 |
| All India | 181.6901 | 150 | 144.4988 | 129.3578 | 120.7506 | 92.67823 | 73.91304 | 68.63406 |

Source: Author's Computation from Various Reports of NSSO

**Table-6: Correlation coefficients between MPCE AND GINI coefficients of inequality of major states of India (Rural and Urban) during 1972-73 to 2009-10**

| MAJOR STATES | RURAL CORRELATION COEFFICIENT | URBAN CORRELATION COEFFICIENT |
|---|---|---|
| A.P | -0.06185036 | 0.770448818 |
| ASSAM | 0.676570357 | 0.525657058 |
| BIHAR | -0.674342783 | 0.495028597 |
| GUJARAT | -0.596468754 | 0.785045596 |
| HARYANA | -0.22331677 | 0.468832071 |
| KARNATAKA | -0.642906959 | -0.075081446 |
| KERALA | 0.493945999 | 0.708305428 |
| M.P | -0.524206787 | 0.220904805 |
| MAHARASHTRA | -0.331183764 | 0.802226448 |
| ORISSA | -0.541800368 | -0.24150067 |
| PUNJAB | -0.369619488 | 0.269963542 |
| RAJASTHAN | 0.347250145 | 0.275690245 |
| T.N | -0.344213993 | 0.425541954 |
| U.P | 0.282506462 | 0.659350082 |
| W.BENGAL | -0.75234358 | 0.867407576 |
| ALL INDIA | -0.465103633 | 0.797478466 |

Source: Author's computation from various rounds of NSSO data