National Sample Survey Data Revealed Diverse Countryside Domestic Consumption Expenses across Fifteen States in India

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ABSTRACT

Recent debate in development literature pertains to identifying the focus of development, whether it should be growth, poverty, or inequality. The re-emergence of the age old issue of growth inequality has brought the debate on poverty to the center stage with large political and emotional undertone. This has been also been facilitated by the quality and the type of data (panel data on household consumption expenditure) which was not the case earlier. "Report of the Expert Group to Review the Methodology for Estimation of Poverty", Planning Commission, GOI (2009) observed that "While acknowledging the multi-dimensional nature of poverty, the estimates of poverty will continue to be based on private household consumer expenditure of Indian households as collected by the National Sample Survey Organization (NSSO)". The largest numbers of poor, primarily landless workers, are in rural areas and the majority of them still rely on farm work for their livelihood. It will be of relevance to have a comparative analysis of Rural Household Consumption Expenditure over different time periods and across difference states in India. This paper is an attempt towards analyzing trends in rural household consumption expenditure over last two decades using NSS data.

Keywords: Developments, Planning Commission, NSSO, Comparative.

Indian growth story is passing through a rough patch in recent times. High growth rate which was witnessed till 2007-08 has slowed down since then (post subprime crisis). Although strong fiscal stimulus was able to provide support to the growth story macro-economic developments over last couple of years has not been very positive. Decline in the growth rate coupled with high inflation has added to the problem of instability in the macro-economic environment. The phase of high growth was heralded as the success of the reform process initiated in 1990's. The recent macro- economic developments has once again provided an opportunity to relook at the impact of these changes on inequality and poverty which has been studied extensively but the direction of causation among them is still inconclusive. Whereby, there exists a two- way causation on the one hand inequality and poverty affects growth and on the other side they are also affected by the growth itself.

The general assumption of growth focused approach was that it growth itself be capable in increasing the income levels within as well as across countries, which in turn will reduce the gap across countries as well as there will be reduction in poverty with in the developing countries. This construct was under the implicit assumption that the internal distribution of income would remain unchanged during the process of development, so that automatically all income groups would proportionally benefit from the overall growth of per capita income. Indian policy makers, has been very ambitious about the targets set for growth over last few five year plans. 11th targeted 9%, 12th plan approach paper also targeted the same but revised later on to 8%. Another change from 11th plan to 12th plan was inclusive growth has been made into more inclusive growth.

The focus on inclusive growth has brought the old debate that what should development focus upon – growth, inequality or poverty. The re-emergence of the age old issue of growth inequality has brought the issue of the poverty to the center stage. This has been also been facilitated by the quality and the type of data (panel data on household consumption expenditure) which was not the case earlier. This had led to tremendous increase in the number of studies looking at the various combinations of the above mentioned variables. This has also changed the trajectory whereby, trying for empirical validation of strong theoretical construct (between inequality and growth) has been given way to measuring their effect on poverty and poverty reduction through advances in the methodology.

Kuznets' inverted-U hypothesis proposed that economic growth would initially lead to greater inequality, which would later decline as the economy continued to develop, Solow's growth model indicated convergence across poor and rich countries through the equalization of the marginal returns to the factors of production (Filho 2010). Convergence failed to happen along with deterioration in income distribution. Empirical validity of sustenance of equality-generating processes has been hard to find.

In numerous policy documents, Government of India has stated that macroeconomic fundamentals are strong but raising growth to double digit will need additional reforms. At the same time government also admitted that the major problem of this growth has been that it has not been inclusive. The composition of the growth has been problematic in terms of:

1. Widening of rural urban divide, creation of severe distress in places across rural India;

2. Regional imbalances and

3. Poor delivery mechanism of essential social services at the grass root level.

The percentage of the population below the official poverty line has been falling but even as that happens, the numbers below the poverty line remain large. According

to the latest official estimates of poverty based on the Tendulkar Committee poverty line, as many as 29.8% of the population, that is, 350 million people were below the poverty line in 2009–10 (12th Five Plan Vol.1) (Table 1).

Table 1: Percentage and Number of Poor (Tendulkar Methodology)

	Poverty Ratio (%)			Number of Poor (million)		
	Rural	Urban	Total	Rural	Urban	Total
1993-94	50.1	31.8	45.3	328.60	74.50	403.70
2004-05	41.8	25.7	37.2	325.81	81.41	407.22
2009-10	33.8	20.9	29.8	278.21	76.47	354.68

Source: Planning Commission

Absolute number of poor has declined from 328.60 in 1993-94 to 278.21 million in 2009-10 over 16 years in the rural India but in case of urban India it shows a marginal increase from 74.5 to 76.47 million over the same time period. While the Head count ratio of the poor fell, the number of the poor barely changed over the last two decades, which remained above 350 million (403.12 million in 1993-94, 407.22 in 2004-05 to 354.68 million in 2009-10).

Rural poverty in rural India is getting concentrated in agricultural labour and artisan households and urban poverty in casual labour households. In so called developed states poverty was highly concentrated among agricultural labour households, and in contrast in backward States poverty extended to other occupational groups including self employed in agriculture. Among social groups, SCs, STs, and backward castes accounted for 80% of the rural poor in 2004–05, considerably more than their share in the rural population (*Working Group on Poverty, Planning Commission, 2006*).

DATA BASE AND METHODOLOGY

The study uses NSS data. The Indian National Sample Survey (NSS) has been conducting Household Consumption Expenditure surveys regularly since its inception in 1950. The data used in this study is MPCE (Monthly Per Capita Consumption Expenditure) For a population with low per capita income levels, Monthly Per Capita Consumption Expenditure (MPCE) is perhaps a better indicator of the economic well- being of people than per capita income estimates (Planning Commission, 2002). The MPCE is considered to be a fair indicator of human living standards, since it aggregates the monetary value of all goods and services actually consumed during a particular reference period. (This includes consumption out of purchase, home produce, free collection, gifts etc.). The MPCE data spans over 17 years of post- reforms period and it pertains to the following years: 1993-94, 1999-00, 2004-05, 2009-10.

There are several indicators to measure diversification: likely Gini coefficient,

Theil, Generalized Entropy index, and Atkinson's inequality index. The Gini ratio or coefficient is the measure of inequality that is most widely used which measures twice the surface between the Lorenz curve, which maps the cumulative income share on the vertical axis against the distribution of the population on the vertical axis, and the line of equal distribution. A large number of mathematical expressions have been proposed for the Gini index, but the easiest to manipulate is based on the covariance between the income Y of an individual or household and the F rank that the individual or household occupies in the distribution of income (this rank takes a value between zero for the poorest and one for the richest). Denoting by $\bar{y}$ the mean income, the standard Gini index is defined as:

$$Gini = 2 \ cov \ (Y, F) \ / \ \bar{y}$$

Generalized Entropy Index is defined as follows -

$$GE(\alpha) = \frac{1}{\alpha(\alpha-1)}\left[\frac{1}{N}\sum_{i=1}^{N}\left(\frac{y_i}{\bar{y}}\right)^{\alpha} - 1\right]$$

Where y_i is the income of the ith household and $\bar{y}$ is the mean income and α is the distributional parameter. As the value α of approaches to zero, the GE class is more sensitive to changes at the lower end of the distribution and equally sensitive to changes across the distribution for α equal to one (which is the Thiel index) and sensitive to changes at the higher end of the distribution for higher values (Foster, 1983). The GE class for each distributional parameter $\alpha = 0, 1, 2$ can thus be expressed Where the parameter α represents the weight given to levels of wellbeing at different parts of the distribution. The most commonly used values of α are 0 (sensitive to the lower end of the distribution), 1 (sensitive to the middle), and 2 (sensitive to the upper end). GE with α value of 0 is called Theil's 1 (L) while GE with $\alpha = 1$ is called Theil 2(T) and GE with α value of 2 as GE. . The value of the GE index ranges from zero to infinity, with GE = 0 implying no inequality in the distribution.

The last widely used inequality measurement is the Atkinson index. This index is a measurement of inequality that explicitly incorporates normative judgments about social welfare (Atkinson, 1970). The general formula for the Atkinson index is:

$$A_\varepsilon = 1 - \left[\frac{1}{N}\sum_{i=1}^{N}\left(\frac{y_i}{\bar{y}}\right)^{1-\varepsilon}\right]^{\frac{1}{(1-\varepsilon)}}$$

Where, ε is the degree of inequality aversion or a society's preference for equality. Higher values of ε indicate that a society is more averse to inequality. Hence, the calculation is more sensitive to changes in the lower end of the distribution. The Atkinson index ranges from 0 to 1, with 1 indicating perfect inequality.

RESULTS AND DISCUSSION

Indian policy of economic growth, poverty, and inequality has always aligned itself with that of World Bank. And hence it is essential to briefly review the policy approach and its shift at World Bank since 1980's till date. I can find three broad strands at World Bank in this regard over last 3 three decades: Early 80's till late 90's (Washington Consensus), late 90's till 2008 (Pro Poverty Growth) and 2008 (Inclusive Growth) onwards. In late 90's it was openly acknowledged that reduction in poverty is not an obvious outcome of growth but poverty reduction needs to be addressed separately. And Pro-Poor Growth was proposed. Several studies attempted to relate inequality to income level, poverty, and economic growth. Causality between inequality and growth is two way. However the relationship across these two has been observed to be both positive as well as negative. Easterly and Rebello (1993) observed that growth is adversely effected by redistribution whereas Aghion *et al.*, (1999) and Benabou (1996) observed that redistributing from rich to poor would improve productivity and hence growth. Studies have negated the importance of inequality and claimed that it is poverty rather than inequality that should be tackled with vigor (Feldstein 1998). Ravallion (1997) studied the relationship across poverty, disparity, and growth. He observed two routes through which inequality and poverty interact. The first route is through a via-route where initial high inequality impedes growth which in turn slows down the rate of reduction in poverty. The second route is through the "growth-elasticity argument". He also observed that higher inequality tends to entail a lower rate of poverty reduction at any given positive rate of growth.

The extent of poverty depends mainly on levels of income and distribution of income. The increase in average income leads to reduction in poverty whereas it increases with increased inequalities Poverty reduction can be approached through two routes: through higher growth rate or reduction in inequality. And if the growth component dominates over the inequality component, then growth-maximizing policies may be adequate in achieving a rapid reduction in poverty. If the inequality component dominates, then the policies that are pro-poor and thus reduce inequality should be adopted (Kakwani, 1993).

When I analyse the different inequality indices I observe a common pattern where the disparities has reduced from 1993-94 to 1999-00 and then in 2004-05 disparities has increased and followed by decline in year 2009-10. Assam as a state had the least disparities in 1993-94, 1999-00, and 2004-05. In 2009-10 Bihar had the least disparities. Highest disparities were observed in case of Tamil Nadu in the first three time periods which were replaced by Orissa in year 2009-10 (Table: 2, 3, 4, 5, and 6).

Table 2: Gini Coefficient across 15 States and years under study

Sl. No.	States	Gini Coefficient in different Years			
		1993-94	1999-00	2004-05	2009-10
1	Arunachal Pradesh	0.34362	0.30263	0.35842	0.27803
2	Assam	0.30168	0.29592	0.31531	0.24377
3	Bihar	0.31859	0.29923	0.31995	0.22546
4	Gujrat	0.31968	0.29567	0.33211	0.25323
5	Hariyana	0.3393	0.30658	0.3778	0.30143
6	Karnataka	0.3279	0.30102	0.37303	0.23464
7	Kerala	0.33945	0.31638	0.37721	0.41681
8	Madhya Pradesh	0.34034	0.30515	0.33129	0.29204
9	Maharastra	0.34222	0.30474	0.35312	0.26812
10	Orissa	0.31939	0.28762	0.34057	0.40789
11	Punjab	0.33107	0.3087	0.34193	0.28839
12	Rajasthan	0.33333	0.29371	0.34312	0.22482
13	Tamil Nadu	0.35083	0.32684	0.38715	0.26379
14	Uttar Pradesh	0.32485	0.30918	0.35655	0.26256
15	West Bengal	0.34445	0.30425	0.35751	0.23858

Source: Compiled by the Scholar

Table 3: Theil across States and years under study

Sl. No.	Sates	Theil in different Years			
		1993-94	1999-00	2004-05	2009-10
1	Arunachal Pradesh	0.20289	0.1502	0.2856	0.13404
2	Assam	0.147	0.14319	0.16316	0.10343
3	Bihar	0.16703	0.14721	0.16943	0.08289
4	Gujrat	0.1687	0.142	0.18508	0.11193
5	Hariyana	0.19577	0.15404	0.25865	0.15375
6	Karnataka	0.17933	0.1489	0.25406	0.2856

7	Kerala	0.19575	0.16988	0.25603	0.34589
8	Madhya Pradesh	0.19775	0.15367	0.18355	0.14699
9	Maharastra	0.19946	0.15355	0.21623	0.12202
10	Orissa	0.16744	0.2856	0.19596	0.2856
11	Punjab	0.18664	0.15736	0.19975	0.2856
12	Rajasthan	0.18827	0.14019	0.2856	0.08444
13	Tamil Nadu	0.21356	0.18315	0.2856	0.11983
14	Uttar Pradesh	0.1754	0.15949	0.22376	0.12047
15	West Bengal	0.20611	0.2856	0.22612	0.09734

Source: Compiled by the Scholar

Table 4: Theil:1 across States and years under study

Sl. No.	Sates	Theil:1 in different Years			
		1993-94	1999-00	2004-05	2009-10
1	Arunachal Pradesh	0.190475	0.14602	0.207661	0.12522
2	Assam	0.143855	0.139187	0.157822	0.095058
3	Bihar	0.162323	0.142154	0.162359	0.080777
4	Gujrat	0.272934	0.138457	0.176256	0.103257
5	Hariyana	0.272934	0.151397	0.231808	0.146911
6	Karnataka	0.172147	0.143953	0.22511	0.087961
7	Kerala	0.1851	0.15924	0.232862	0.29174
8	Madhya Pradesh	0.18664	0.148215	0.175414	0.137268
9	Maharastra	0.188981	0.148077	0.272934	0.114753
10	Orissa	0.163293	0.131646	0.186183	0.110104
11	Punjab	0.174542	0.152676	0.186599	0.132403
12	Rajasthan	0.177544	0.13679	0.187979	0.272934
13	Tamil Nadu	0.198737	0.17121	0.244472	0.111688
14	Uttar Pradesh	0.168614	0.151902	0.204651	0.110615
15	West Bengal	0.190248	0.147292	0.205817	0.09156

Source: Compiled by the Scholar

Table 5: Entropy across States and years under study

Sl. No.	Sates	Entropy in different Years			
		1993-94	1999-00	2004-05	2009-10
1	Arunachal Pradesh	0.192961	0.146079	0.211679	0.127893
2	Assam	0.143612	0.139347	0.158225	0.098219
3	Bihar	0.162202	0.142751	0.163459	0.081169
4	Gujrat	0.163507	0.138472	0.177687	0.106378
5	Hariyana	0.186973	0.150497	0.239422	0.148121
6	Karnataka	0.17289	0.144452	0.234028	0.272439
7	Kerala	0.187016	0.161996	0.238571	0.309436
8	Madhya Pradesh	0.188667	0.148834	0.176547	0.140131
9	Maharastra	0.190628	0.14868	0.204366	0.117004
10	Orissa	0.162882	0.130262	0.187705	0.110345
11	Punjab	0.177569	0.152746	0.189767	0.135602
12	Rajasthan	0.179797	0.136755	0.192158	0.081688
13	Tamil Nadu	0.202062	0.174141	0.254759	0.114398
14	Uttar Pradesh	0.1693	0.15344	0.209831	0.114175
15	West Bengal	0.194441	0.148036	0.211499	0.093511

Source: Compiled by the Scholar

Table 6: Atkinson across States and years under study

Sl. No.	Sates	Atkinson in different Years			
		1993-94	1999-00	2004-05	2009-10
1	Arunachal Pradesh	0.094154	0.071706	0.103039	0.062924
2	Assam	0.070517	0.06846	0.077548	0.048506
3	Bihar	0.079457	0.070102	0.080059	0.040173
4	Gujrat	0.080082	0.068038	0.08687	0.052482
5	Hariyana	0.091302	0.073833	0.131581	0.072689
6	Karnataka	0.084577	0.070922	0.131581	0.044082
7	Kerala	0.091322	0.079358	0.115728	0.131581
8	Madhya Pradesh	0.092109	0.073032	0.086326	0.068838
9	Maharastra	0.093043	0.072958	0.099573	0.057646

Contd.

10	Orissa	0.079783	0.06407	0.09165	0.054411
11	Punjab	0.086814	0.074915	0.092633	0.131581
12	Rajasthan	0.087878	0.067209	0.093771	0.040427
13	Tamil Nadu	0.098479	0.085175	0.123323	0.131581
14	Uttar Pradesh	0.082859	0.075249	0.102164	0.131581
15	West Bengal	0.094858	0.072649	0.102954	0.046209

Source: Compiled by the Scholar

When I analyze the two ways ANOVA I find that the differences across the states is insignificant but differences across years are significant indicating the fact the variations in the disparities across the years has been quite significant (Table 7).

Table 7: ANOVA Gini / Theil / Theil 1 / Entropy / Atkinson

ANOVA (Gini)				
Source of Variation	SS	df	MS	F
Rows	0.020707	14	0.001479	1.642473
Columns	0.043777	3	0.014592	16.20454
ANOVA (Theil)				
Source of Variation	SS	df	MS	F
Rows	0.05405	14	0.003861	1.397291
Columns	0.033318	3	0.011106	4.019585
ANOVA (Theil1)				
Source of Variation	SS	df	MS	F
Rows	0.029712	14	0.002122	1.468712
Columns	0.050111	3	0.016704	11.55982
ANOVA (Entropy)				
Source of Variation	SS	df	MS	F
Rows	0.034122	14	0.002437	2.339216
Columns	0.041002	3	0.013667	13.11753
ANOVA (Atkinson)				
Source of Variation	SS	df	MS	F
Rows	0.010217	14	0.00073	2.147662
Columns	0.007999	3	0.002666	7.846551

Source: Compiled by the Scholar

Similar results were witnessed when I analyzed the one way ANOVA results across the years (Table 8). The result for the regression equation in 1993-94 was as follows:

Table 8: One way ANOVA results across the years

	Coefficients	Standard Error	t Stat
Intercept	0.317388	0.006399	49.60254
X Variable 1	0.003202	0.001271	2.518533*
R Square	0.327923		

Source: Compiled by the Scholar

It indicates a positive relationship between growth and inequality, i.e. as growth increased disparities also increased. It is observed that for the years 1999-00 and 2004-05 this was positive but the coefficient was insignificant. In 2009-10 the result was as follows (Table 9):

Table 9: Relationship between growth and inequality

	Coefficients	Standard Error	t Stat
Intercept	0.28601	0.083335	3.432057
X var 1	-0.0007	0.009549	-0.07379
R Square	0.000419		

Source: Compiled by the Scholar

It indicates a weak negative, relationship between inequality and growth, i.e. high growth reducing the levels of inequality. But this relationship turns out to be insignificant.

When I analyze these coefficients one feature which is common is that inequality coefficients for rural consumption for year 2010 are lower as compared to the year 1994. But I cannot observe that there is a gradual decline over years rather there has been substantial swings across the years in these coefficients. From year 2004-05 to 2009-10 disparities has declined. But from 1999-00 to 2004-05 these coefficients have increased. From 1993-94 to 1999-00 the disparities has decreased. The effect of growth leading to reduction in disparities is very weak because, the correlation across these coefficients and the growth rates found positive in 1993-94 (significant), 1999-00 (insignificant), 2004-05 (insignificant) and negative in 2009-10, but statistically insignificant. A two ANOVA was applied on disparities indices and it was observed that the differences were significant across the years and but insignificant across the states.

CONCLUSION

The changes in the Indian policy changes synchronize with the policy shift at World Bank. The policy reforms in India had lacked distributive aspects which get noticed while analyzing MPCE data. They had not been very effective as poverty reduction is not an obvious outcome of growth. Enhancing growth is not an end in itself. These reforms had not really favoured the least poor. The relationship between inequality and economic growth has been observed to be inversely lately but it is quite weak. The obvious limitations in the 80's World Bank guided policies were theoretical contradictions, regressive distribution of assets; wealth, power etc. have been well documented. Pro Poor Growth policy also emphasizes on faster growth leading to poverty reduction, rather specific policies targeting poverty. There is considerable need for policy interventions directed towards poverty alleviation and determining the distributional impact of growth, but such public policies usually need to modify the structural features of the economy to have any definitive impact.

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