

**INCOME MOBILITY AND ITS IMPLICATIONS ON
INCLUSION IN CONTEMPORARY INDIAN ECONOMY**

INCOME MOBILITY AND ITS IMPLICATIONS ON INCLUSION IN CONTEMPORARY INDIAN ECONOMY

Dissertation submitted in the partial fulfilment of the requirements for the
degree of Master of Philosophy in Applied Economics of the Jawaharlal
Nehru University

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M Phil Programme in Applied Economics

2011-13

This is to certify that the work for the dissertation titled – “*Income Mobility and its implications on Inclusion in Contemporary Indian Economy*” is being submitted as a part of the requirements of the MPhil Programme in Applied Economics of the Jawaharlal Nehru University. I have carried out this work entirely by on my own. I also affirm that the work was not a part of any other programme of study and has not been submitted to any other university for the award of any Degree.

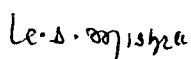
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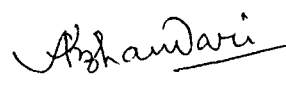
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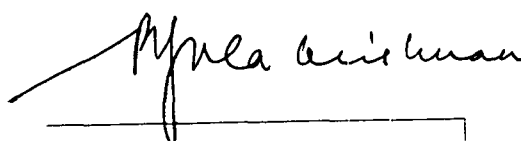
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To those names I miss, please assume that the submissions are getting closer!

Income Mobility and its Implications on Inclusion in Contemporary Indian Economy

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Abstract:

The debates surrounding evaluation of performance of any economy gives rise to a problem of selection of outcome indicators, which decide the nature of evaluation of the economy. However, development should be assessed not only by static outcome indicators but dynamic indicators providing insights into the process of development. We estimate one such indicator, namely, income mobility for the Indian economy. While there exists a literature on income mobility which lauds of strong theoretical conceptualisation and methodological rigour, it does not help us in operationalization of the concept. The lack of panel data, we show, does not prevent us in using positional median based indices to exposit an estimate of income mobility. The method thence developed, indicates the insights one could obtain by a cautious examination of the distributional characteristics of any variable. Using the estimated mobility, we argue for the existence of multiple pathways to reach similar levels of development measured via an assessment of the set of outcome indicators selected. Ipso facto, the notion of a unique ideal policy does not exist.

Further modification and use of these estimates allow us to comment on a much debated, yet relevant concept of inclusion. We try and arrive at a definition of inclusion via a lens of income mobility, always keeping in mind the multifarious nature of the concept. Upon juxtaposition of our method on an analysis of inclusion, we point out the states which generate upward mobility for the lower deciles. We also try and assess the agreement of our measure with the Human Development Index. This provides insightful details on the congruence of various components of the HDI with the income mobility estimated by us. Such an examination of the state of development via a mobility lens brings out the multidimensionality inherent in any development approach. The paper is a modest attempt at inception of the concept of income mobility in the Indian academia. It also tries to rectify the neglect of this concept in the evaluative discourse for Indian economy. It is, also, an urge to sensitize the implications of distribution and lend greater rigour in terms of the methods involved in estimation of income mobility.

Keywords: Income mobility, positional measures, evaluative criterion, inclusion, HDI

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I shall now therefore humbly propose my
own thoughts, which I hope will not be
liable to the least objection.

Jonathan Swift, A Modest Proposal
(As quoted in S. Subramanian, 2012
The Poverty Line, OUP)

Chapter 1

INCOME MOBILITY: BACKGROUND, CONCEPTUALISATION AND THE METHOD

1.0 Setting the Debates: Rise of the Indian Economy

The Indian economy has treaded a dynamic and eventful twenty three years (1990-2013), an era of proliferation of markets. From a 'lumbering elephant' to a 'running tiger'¹, it has made rapid and noteworthy progress. However, it has come under stark criticism for the nature of growth itself. Albeit paradoxical, such criticisms are more often than not justified given evaluation of the parameters which characterise inclusion. Led by a fluctuating agricultural growth across states², alongwith debatably slow rate of poverty reduction³, joblessness of the organised manufacturing, regional disparity in the distribution of growth outcomes, insufficient gendered inclusion have created an 'army of critics' which have instilled suspicion in perceptions about the performance of the economy to the lay observer. We have been reasonably successful, according to Sen (1999), in establishing a democracy. The presence of democratic institutions on one hand legitimizes the decisions taken by elected representative but on the other hand 'hides behind veils⁴' when faced with criticisms listed above. Our 'young' and enthusiastic workforce has been involved in generating an Indian middle class which has created a niche of 'petty bourgeoisie'. *After stacking up the achievements and the fallouts, one fails to grapple with the focal point of the problem as well as the legitimacy of the performance and leaves many groping in the dark.*

Not only does one grope out of confusion, one gropes to obtain a benchmark with which we need to compare the Indian economy. Of trajectories which an economy

¹ Nayyar, D. (2006). Economic Growth in Independent India: Lumbering Elephant or Running Tiger?. Economic and Political Weekly, 1451-1458.

² Figures for agricultural growth across states are provided in the dissertation appendix.

³ Figures for agricultural growth across states are provided in the dissertation appendix.

⁴ To use Robert Heilbroner's term, which is used for the capitalist economies in general.

could tread, the literature on development often tries to contextualize the problem with 'what' and 'how' the now developed nations achieved their outcomes. However, there is a well-recognized problem in making such comparisons. The historical background of the developing economies varies. Alongwith such variations, the nature of trajectories which ought to be tread also vary. And the need to contextualise development trajectories given national as well as international vantage points of the economy, is considered pressing. How would we arrive at a development trajectory if we cannot consider the trajectory of the developed countries as ideal? In search for an ideal trajectory, one would be forced to evaluate and rank various possibilities of achieving the desired outcomes. Not only does one need to carefully choose the trajectories on the basis of outcome measures, one needs to choose the outcome measures itself. Whatever be the outcome of an exercise of setting an ideal trajectory, the need for evaluation of the state of the economy is indispensable for policy as well as planning. All this is assuming a belief that planning as an exercise is still considered relevant in the contemporary setting.

This need to characterise any trajectory based on the deviations from an ideal and also to choose the ideal in the first place, we need to have identifiable 'evaluative criterion'. What we call evaluative criterion is what Sen calls 'informational bases' in his cutting arguments on the need to evaluate a state called 'development' in a broader sense⁵. To put it simply, *one needs to look at parameters which are reflective of the nature of performance of the economy from multitudes*. There is a rich literature on how to characterise development and such characterisation emanates from the selection of outcome measures in various combinations. It is before the advent of development as a concept that an economic evaluation undertaken in the yesteryear analysed trends in growth and productivity in order to comment on the nature of performance. However, the limitations which presented itself in terms of under-development despite the presence of economic growth urged a rethinking. Amidst swings in evaluative criterion and growth in incomes, we have had a churning which presents the

⁵ He then goes on to remark that the most befitting framework is that of capabilities, which neither we endorse nor reject. The debate is provided in chapter 3 of 'Development as Freedom', 1999.

confusion in the literature on development economics in particular and evaluation in general. To such confusions, we add a few more by raising an altogether different question.

All evaluations have been static comparisons and the evaluation of a process which is now known as 'development' has to incorporate an essential dynamicity. This would allow us to move beyond comparisons across cross-sections and arrive at another dimension to look at the problem. *In choosing an evaluative criterion, there are two important issues to be understood before we move forward, to wit, a) the appropriate selection of variables for evaluation and b) to use the variables in order to arrive at conclusions.* On the selection of variables, an entire discourse presents itself contributing to insights of valuable interest - development economics. Looking at mortality rates, mean years of schooling, sex ratios; spread the debate across broader contours. The sufficiency of growth rates and the belief on trickle down took a beating. While one could select many variables of interest, one still needs to understand these variables in greater depth. What could add to the depth? It is this question which would drive our conceptualisation in the pages to follow and provide a new approach at evaluating outcomes. What could be this concept?

What we propose is not new. Joseph Schumpeter had an interesting observation as cited in *Jarvis and Jenkins (1998), Fields (2001)* etc. which is interesting to note, hence reproduced in toto: "It is said that Joseph Schumpeter likened an income distribution to a hotel. The rooms at the top are luxurious, those on the middle levels are ordinary, and those in the basement are downright shabby. At any given time, the occupants of the hotel experience quite unequal accommodations. At a later point in time, we re-examine who is living where. We find that some have moved to higher floors, some have moved to lower floors, and some have stayed where they were. The difference in the quality of hotel rooms at each point in time is what we call inequality. The movement of hotel guests among different quality rooms is mobility. One way in which these are linked is that the more movement of guests there is among rooms, the greater is the long term equality of accommodation..." (Italics added, *Fields 2001*)

Immediately certain insights follow Schumpeter's analysis. Firstly, the mere implications arrived at by analysing inequality outcomes is limited, and there could be compositional shifts overtime given identical level of inequality. Secondly, cross sectional comparison would not allow us to comment upon the nature of changes which occur in time. Thus, there is a need to conceptualise a measure which incorporates this aspect. Thirdly, *the insights by examining distributions could not, in any manner, be replaced by a plethora of variables*. This brings us to an exploration of what is called 'income mobility' and how does it add insights into our evaluative needs. The rest of the chapter would present the discourse as it stands and provide insights into the implications of evaluation using income mobility.

1.1 Income Mobility as Evaluative Criterion: Chapter Structure

Evaluative criterion inclusive of mobility would add a time dimensions in order to evaluate the process of development in a continuous manner. However, we need to conceptualise it and bring out the clamour for a rethinking of the discourse on evaluation and development. In this chapter we would be doing two things in the process - a) we would conceptualise it and define it, as per our understanding and c) We would comment on the methodological adoption of the concept in the literature. The first task would be undertaken in **section 1.2**. At the outset, it is important to mention that we would only be covering the turning points in the theoretical literature by discussing the variation in methods of the three distinct schools in mobility analysis. This approach is adopted in concomitance with a useful summary by *Fields and Oak (1996)*, and would be the core of the chapter in **section 1.3**.

While such an exposition would help us 'conceptualise the concept' and analyse the methodological excursus in the literature, we ought to bind it to our need for an alternative evaluative criterion. It is at this juncture that we would discuss the empirical literature on mobility and draw parallels of evaluation for similar pieces of work. The implications of using such a framework would be elaborated in briefly in **section 1.4**. At this stage, the implications of the concept

are not quite clear to the reader. Neither is there clarity on how we shall use the body of work to arrive at insights to our problem - 'the question of method'. **Section 1.5** would provide pointers to the chapters which follow and try and bind the entire work with an analytical thread. This would automatically imply a statement of the problem we seek to answer. The objective of the entire work would be stated at this juncture. This would in essence be the chapter scheme of the dissertation via a build-up of arguments across the chapters.

1.2 Income Mobility: Conceptualisation, Framework and Types

Going back to what was pointed out by Schumpeter was the distinction between inequality and mobility at a conceptual level. In essence - inequality, irrespective of how we measure it, provides us a number which gives us an idea about the deviations from an ideal distribution. The primitives of inequality analysis are cross sections of distribution. And when one goes on to compare these distributions across time, we arrive a comparative static analysis. What is not analysed is the process of transition. It is this concern which was raised by *Shorrocks (1978)*, *Massoumi and Trede (2001)*, *Fields and Oak (1999)*, *Zhang and Fields (2007)*⁶, *Hass (2009)* etc. The income mobility literature grew largely out of a puzzle of evaluation of economies which had different inequality changes across time but were similar in terms of development outcomes. It was felt that there is a need to incorporate the analytical implications of a 'shuffle in the distribution' for any meaningful resolution of this paradox.

Thus *'income mobility' concerns the changes in economic status of the individuals/households/groups of households from one time period to another*. Ipso facto the primitives are the time paths transgressed by the changes in income distribution. As mentioned earlier, the expansion of evaluative criterion could also be by going into a single variable, in greater depth. The movement of individuals/households/groups of individuals across distribution presented another aspect of readjustment, yet keeping the inequality at previous levels. It

⁶ Working paper at the Cornell University ILR center.

was proposed that such a restructuring adds to the problems in evaluation. What kind of restructuring was the subsequent question in their arguments? What if the restructuring was only a result of redistribution and not Pareto efficient?⁷ What if the inequality increases on account of the upper most quartile moving at a faster rate than lower quartiles, yet a positive and significant movement in lower quartiles? Another view was proposed with the restructuring within income distributions. *Shi et.al. (2010)* argue that these could also prove to be counterproductive. If there is a possibility of everyone settling at the bottom of the quartiles, such volatility might prove counterproductive and any restructuring could not be lauded of having positive welfare connotations. Such confusion was also expressed in *Jarvis and Jenkins (1998)* when they state the following -

“....Also, to some people, greater inequality at a point in time is more tolerable if accompanied by significant mobility: *mobility smoothes transitory variations in income so that 'permanent' inequality is less than observed inequality.* On the other hand, mobility may also be interpreted as a synonym for *income fluctuations and thence economic insecurity, a Bad Thing.....*”(Italics added)

While there is a significant confusion on what is mobility, it boils down to the kind of mobility - the desirable type of mobility. However, there is little doubt in proposing mobility as an added benchmark. *Given the idea behind income mobility, one needs to provide a framework which would essay these concerns of changes in income distribution.* Since we are talking about the income distribution, all incomes would belong to R_+^n with $n \geq 1$. When we represent all the individuals in the income distribution we arrive at a vector $\mathbf{x} = (x_1, x_2, \dots, x_n)$ at a time t_0 ; where we are in a society of countably infinite individuals and the x_i 's represent individual i 's income. At another future time, say t_1 , we assume that the agent i

⁷ As a result of redistribution by the state, one could conceptualize the total national income remaining the same, yet the distributive outcomes changing. In this sense, the poor might gain at the cost of the rich and hence not being Pareto efficient in micro sense.

has witnessed an income change to a earn y_i . When we take the movement in income vector x we say that it has transformed into another vector y . Income mobility is an analysis of such a transformation from $x \rightarrow y$. It is important to note that in our framework is analysed for only two time periods. However, *Shorrocks (1978), Massoumi and Zandvakili (1986), Chakravarty, Dutta and Weymark (1985)* etc. have proved the generalisation for more than two time points.

Moreover, a mobility measure is represented by a functional form of the nature which undergoes the following transformation. $f: R_+^{2n} \rightarrow R$. Also, a comparison of two transformation from x would be represented by the following $f(x, y) \geq f(x, w)$ if the distance covered by the vector x in reaching y is more than the distance covered by it towards w ⁸. Before one provides an idea of the structure which could be imposed on the function to arrive at a class of measures which satisfy various properties, we need to understand the type of mobility which would be of interest. There exists a discussion of income mobility via various perspectives. First of them is a distinction between absolute and relative mobility.

Absolute mobility is one whereby all the individuals earn higher incomes in the current period as compared to previous periods. While the rate of improvement in earnings might be different, a mobility like this is said to be welfare improving. *Relative mobility* on the other hand doesn't consider changes in income of all unless such a resultant mobility doesn't allow for a change in rankings of individuals or distance between individuals whereby some individuals move up the income ladder. There exists two broad definitions of the degree of relative mobility. A strong relative mobility measure implies a f which satisfies the following: $f(\alpha x, \beta y) = f(x, y)$ for all $\alpha, \beta > 0$ and all $x, y \in R_+^n$ according to *Shorrocks (1992)* as well as *Fields and Oak (1996)*. On the other hand, a function of income mobility is weakly relative if $f(\varphi x, \varphi y) = f(x, y) \forall \varphi > 0$ and $\forall x, y \in R_+^n$ (*Kolm, 1976; Blackorby and Donaldson, 1980*). Essentially the debate in such classification is the choice between absolute changes and relative changes in incomes. To illustrate the differences consider an economy with three

⁸ Some of these properties coincide with those of distance functions discussed in the next chapter.

individuals and their ordered pair of earnings for 2004-05 and 2009-10. X (1000rs, 2000rs), Y (1500rs, 2500rs) and Z (3000rs, 3500rs) are then stacked according to their absolute income changes. It is obvious to observe that X has doubled his money and gained at the rate of a 100 percent. Y and Z have gained by 66 and 16 percent respectively. However, Z earned three times as compared to X and twice as compared to Y in time t_0 . Their relative distances in this sense are given in the *table 1.1*. After the income mobility, their relative distances reduced and the rate at which X came closer to Z was greater than the rate at which Y reduced the distance between them. Thus relative mobility incorporates the rankings as well as the relative distances between individuals whereas absolute mobility associates an omnipotence with the estimate of mobility.

Table 1.1 - Difference between absolute and relative mobility concepts

	1999 (in Rs)	2000 (in Rs)	AM	Rel Pos	Rel Pos 2	RM
X	1000	2000	1	0.33	0.57	0.238
Y	1500	2500	0.66	0.5	0.71	0.214
Z	3000	3500	0.16	1	1	0

Source - Hypothetical figures.

The second distinction in mobility types relates to that of structural and exchange mobility. Such a distinction arose in the literature essentially because of the claim that mobility for all individuals in the society could also be on account of growth. Subsequent debates involved an attempt to decompose growth into its structural and exchange components (*Markandya, 1982; Ruiz-Castillo, 2004; Fields and Oak, 1999*). *Structural mobility* is that part of mobility, attributed to the unit of analysis, which accounts for mobility which is purely the consequence of a rise in incomes. On the contrary, the plausibility of a mobility despite no growth refers to the kind of mobility known in the literature as *exchange mobility*. Exchange mobility, is consequentially an outcome of few individuals gaining on account of a loss to few others. Fields and Oak (1999) provide one such decomposition given the class of measures they develop, which

is given as follows⁹. The first part of the right hand side of the equation represents a structural mobility whereas the second part shows the exchange mobility, where L stands for the set of individuals who have lost in the transition. We would not dwell into the structure and the intention here is only to provide a distinction between the structural and exchange types.

$$m_n^*(x, y) = \frac{1}{n} \sum_{i=1}^n (\log y_i - \log x_i) + \frac{2}{n} \sum_{i \in L} (\log x_i - \log y_i);$$

The third characterisation available in the literature is the concept of mobility as *origin independence* and mobility as *time independence*. This typography originates in the literature to assess the capability of an individual/household to be income mobile irrespective of the nature of movements witnessed by all the individuals on an average. Origin independence is thus important in establishing capabilities holding constant endowments as stated by *Fields and Oak (1996)* - "...In an intergenerational context, origin independence seem to capture our intuitions about "equality of opportunity" which can be roughly defined as the extent to which personal characteristics (like talent) rather than parental background determine monetary rewards..." On the other hand *time independence* time independent mobility refers a study of the dependence of present incomes to that of the past. Thus the concept of time independence allows us to gauge opportunities provided by an individual's involvement in economic activity in the current period irrespective of how much he earned in the last period.

The fourth characterisation of mobility is based on the spread of the study. *Macro mobility studies* are those which arrive at a number which represents the income mobility for the entire economy. These are typically estimated for various countries to facilitate inter-country comparison. The question raised by these studies is essentially - How much income mobility does an economy have? Moreover, there is a lot of literature on these studies, and more so for the now developed countries. *Massoumi & Heshmati (1998)* and *Jarvis & Jenkins (1998)* for

⁹ Another decomposition on these lines has also been extended by Ding & Wang (2008) for the Chinese data.

Britain; *Canto* (2000) for Spain; *Mssoumi & Trede* (2001) for USA and Germany; *Buchinsky et al.* (2003) for France; *Glewwe* (2005) for Vietnam; *Fields & Zhang* (2007) for China; *Ayala & Sastre* (2008) for EU; *Ferreira et al.* (2013) for Latin America etc. are the most cited studies on the respective regions which tend to do two distinct things – (i) using some measures to arrive a number indicative of mobility as they conceptualise it and (ii) to facilitate comparison across countries. On the hand, the idea of such a concept at an aggregate level, defeats the purpose with which a distribution sensitive mobility study is looked at. Micro mobility studies focus on individuals/groups of individuals to add to the evaluation of the selected group along with other outcome measures of evaluation. It is also important to note that such studies are picking up momentum and the already nascent discourse is undergoing a change in the usage of mobility. This, we argue is in contrast to the theoretical work which dominates the literature using a welfare centric approach, which floods the macro mobility approach¹⁰. *Jarvis & Jenkins* (1998); *Wilson* (2004); *Glewwe & Nguyen* (2002); *Ding & Wang* (2008) etc. are some of the recently cited work in this area.

Thus any analysis on mobility must specify the nature of mobility one tries to measure, which then has consequences for the selection of the method of enquiry. By aligning with one of these types, the limitations of such alignments are also applicable to the study. As is persistent in the literature, the confusion of what one understands from and by ‘income mobility’ and how one characterises it would decide the placement of the work in the broad contours of the literature. However, this is not the only debate surrounding the literature on income mobility. Infact, the methodological divergence under-shadows the divergence in conceptualisation of what is income mobility. The next section would provide us with these debates on the method in the proper perspective.

1.3 Vicissitudes in Income Mobility: A Methodological Excursus

When one treads the literature on income mobility, there is a stark contrast in the conceptualisation. However, what is interesting to note is that these differences do not stay limited to the conceptual domains and creeps up in

¹⁰ More on welfarist approach on mobility would be discussed in the next section.

the methodological structure of the concept. Upon a careful analysis, we can see three distinct and contrasting strands in the literature on income mobility, namely a) welfarist approach, b) axiomatic approach and c) transition matrices and stochastic processes approach. Once there is a selection of the appropriate mobility which is being enquired, the literature on mobility opens itself up into a largely welfarist approach to the problem of evaluation of income distributions over time. This predominance of the welfarist approach comes historically.

The impingement of welfare economics upon income mobility certainly adds a flavour to the literature. By such an impingement, the changes in income distributions across time are paralleled with welfare gains and losses by the individuals or groups of individuals. The focal point of such a method is that it distinguishes the kind of mobility into two dichotomous categories – desirable and undesirable income mobility. Ultimately, the argument, as provided by theorists, is that if there is no welfare enhancement effect of economic mobility, then the presence of mobility doesn't make much of a difference. A desirable mobility is one which is a Pareto improvement over the previous state of the income distribution. Hence one strives towards the social welfare functions and the corresponding structure which is imposed upon the same in order to arrive at a class of measures which satisfy certain properties.

We would first look at the possible properties which such a measure of income mobility is made to satisfy and the economic logic behind these restrictions. As defined by *Fields & Oak (1999)*¹¹ an income movement measure is defined as any function $m_n: R_{++}^n \rightarrow R_+$ that is continuous and surjective. *Continuity and Surjectivity* are both following from the discussion in the paper. Now, a mobility measure has to satisfy *scale invariance* property, which means that the doubling of all movements would give similar evaluations. It could formally be written as:

$$\forall \mathbf{x}, \mathbf{y} \in R_{++}^n \text{ and } \omega > 0, m_n(\omega \mathbf{x}, \omega \mathbf{y}) = m_n(\mathbf{x}, \mathbf{y})$$

¹¹ The technical discussion follows from *Fields & Oak (1999)* and *Gregg & Vittori (2008)*.

Adding to these is the property of *symmetry* which when possessed by a mobility measure denotes $x \rightarrow y$ and $y \rightarrow x$ with a similar value. Formally:

$$\forall x, y \in R_{++}^n, m_n(x, y) = m_n(y, x)$$

It is interesting to note that these properties are similar to the characterisation of what is known as a distance function¹². However, we must note that such a property might not hold water always. A movement from x to y might come up as similar to a movement from y to x in terms of the mathematical distance covered. However, a movement from a high income state x to a low income state y and a reverse movement cannot be characterised with similar overtones. The property of *subgroup decomposability* of an aggregative measure is also of some importance in order to identify the nature of movements within a distribution. Suppose one tries to group a population into K subgroups, $K \in (1, 2, \dots, n)$ subgroups and let n_k stand for the number of persons in subgroup k . For any $k = 1, 2, \dots, K$ and $x_1, y_1 \in R_{++}^{n_k}$, then

$$m_n\{(x_1, \dots, x_k), (y_1, \dots, y_k)\} = \sum_{k=1}^K \frac{n_k}{n} m_{n_k}(x_k, y_k)$$

There is another property of interest for a mobility theorist, namely, *multiplicative path separability*. If an economy reaches from a point in time 0 to a point in time 3 by a rate α , then the time paths from 0 to 3 could be broken in the following manner:

$$m_n(x, \alpha x) = m_n(x, \beta x) + m_n(\beta x, \alpha x)$$

Given these and some other stronger and weaker assumption on the structure of the mobility measures, along with the regular properties of a social welfare function, a lot of measures are proposed in the literature. We would look at a few in passing and provide the critics opinion on these measures. The noteworthy papers which follow such a framework are primarily *King (1983) and Chakravarty, Dutta and Weymark (1985)*. King's index is structured in terms of ranking the individuals in the economy for a cross section and analysing the

¹² More on this later.

changes in ranks after a time t . However, Fields and Oak (1996) argue that the index doesn't show up in case of absolute rise in incomes for all individuals which are rank preserving. In other words, an individual earning minimal income witnesses a rise in absolute incomes. However, all other individuals in the economy have witnessed a rise such that the individual in question maintains her rank. Under such a scenario, King's index doesn't provide a positive value to the individual's absolute income mobility.

Chakravarty et al. (1985) is considered to be the most significant paper in the literature alongwith *Shorrocks (1978)*, *King (1983)* and *Fields and Oak (1999)*, and *Dardanoni (1995)*. In terms of the method, they follow a similar welfarist framework. The significance in terms of a contribution is the ethical connotation they provide for the mobility estimates, clearly distinguishing between various types of income movements on the basis of its desirability. While being strongly relative, their measure benchmarks complete immobility when the income shares remain constant over time for all individuals:

$$\frac{x_i}{\mu(x)} = \frac{y_i}{\mu(y)}$$

Consequently, $x \rightarrow \frac{\mu(y)}{\mu(x)}x$ is considered completely immobile, and for obvious reasons. Immobility, generically could then be written as $\alpha(x, y) = \beta(x, y)$. They go onto define their index, the structure on which is not discussed here, as follows:

$$M(x, y) = \frac{\beta(x, y)}{\alpha(x, y)} - 1$$

They define it as - this index "...measures mobility as the percentage change in the equally distributed equivalent income of the actual aggregate distribution compared with what it would be with the immobile benchmark structure...." *Chakravarty, Dutta & Weymark (1985)*. While there are proponents who point out to the weakness of this measure in not incorporating absolute income changes, one cannot hold it against the measure. It was categorically a relative welfarist measure. We believe that the operationalization of a

benchmark gives this measure an extra edge over other measures in the literature and has been greatly used and modified in theoretical discussion.

However, by choosing a method based on the welfarist lines, these fall prey to the general limitations of adopting this framework. To simply quote Sen's critique to utilitarianism would suffice to put the point across:

"...Lionel Robbins and other methodological positivists that interpersonal comparisons of different people's minds were 'meaningless' from the scientific point of view. Robbins argued that there are 'no means whereby such comparisons can be accomplished'. He even cited the doubts first expressed by W.S. Jevons, the utilitarian guru himself: "Every mind is inscrutable to every other man and no common denominator of feelings is possible"" - *Amartya Sen (1999,pg 67)* on the impossibility of direct utility comparisons. Further, he goes on to argue that the rate at which conversion into utilities differ and hence the need to deviate from such a framework is a must.

To this effect there is an ever growing literature on the axiomatic approaches to mobility. This literature essentially tries to choose criterion which must then be used to arrive at a certain class of measures. Their choice of desirability of the income movements does not follow the welfare connotations and it depends upon researcher's subjectivity to provide structure to the measures. Moreover, there is a rectification by the axiomatics about the limitations of both the earlier cited works. In terms of making it sensitive to absolute changes as well as rank alterations, certain measures have been extended. It is also important to note that the distinction between axiomatics and welfare has been weakening lately with authors incorporating multiple approaches (*Shi et al., 2010*). Following *Fields and Oak (1996)*, a measure of mobility is a distance function, with two distinct properties a) translation invariance and b) linear homogeneity to begin with. They then include weak decomposability which indicates that the components of the aggregate mobility function should be clearly broken up into individual mobility contribution in total mobility. This function was further assumed to be symmetric, non-zero, strictly increasing, continuous and possessing population consistency. By

incorporating 'individualistic contribution' in the axioms, they try to measure individual's contribution at the margin. This then narrows the class of mobility indices into a singleton, which is their absolute income mobility measure. However, this approach comes under stark criticism of not having a theoretical framework and hence making the selection of the measures rather arbitrary. On an empirical level, these measures are still macro measures and thus the problem of aggregation exists.

The third main approach in the literature is that of the monotone mobility matrices for a stochastic process, a la *Shorrocks (1978)* along with *Bibby (1975)*, *Kelison and Kester (1977)*, *Conlisk (1985, 1989)*, *Dardnani (1995)* led to a class of measures which explored the time paths of income distributions across various states of movements. A mobility matrix or a transition matrix is an $m \times n$ matrix where the a_{ij} 's are probabilities of individual in a certain income state i moving to a certain income state j within a specified time interval. *Shorrocks (1978)*, taking a cue from *Champernowne (1953)* provides a generalised variant of the markovian mobility matrix expounded by him. The structure put on the income distributions assumes that income is a markovian process which has no memory of its past, however the future income values are inexorably linked to the current incomes via a stochastic process. For Shorrocks, the mobility measure is $M: P \rightarrow R$ with the following property: $M(I) \leq M(P) \leq M(Q)$, where I is the identity matrix and Q is any $m \times m$ transition matrix for which all rows are identical. Intuitively, an identity matrix gives us the least mobility values as the off diagonal elements are zero and the identity matrix gives us the maximum movement possible. Hence, none of the individuals witnessed mobility to move onto another state in an identity matrix. However, the method doesn't provide theorists with a limited set of mobility functions and hence there was need for putting further structure.

Kelison and Kester (1977) expounded the idea that the class of measures could be significantly narrowed down if we restrict ourselves to a state where the individual is assured to earn better in the second time period and hence the incomes distribution for a later time period stochastically dominates that of the initial. The technical details are for the interested to pursue. This paved way for

a class of measures which required income distributions to possess certain properties in order to be able to arrive at a limited set of mobility measures. The restrictions which are put on the data on income distributions are also empirically verified in a paper by *Adelman (1958)*. Further insights about the empirical sufficiency of the properties is provided by *Dardanoni (&Forcina 1993, 1995)* etc.

While these methods had a bearing on the inferences arrived at to estimate income mobility, it is important to point out that a lot of empirical testing came much later. While we should point out that the literature assumes a possibility of mapping income changes across identifiable set of households, the insufficiency of panel data could have delayed the empirical application and testing. Moreover, the literature had put a lot of structure on the functional forms and unless the data was in agreement with these assumptions, any attempt to estimate income mobility would have been futile. It is also important for our purposes to note that this literature provides one with a lot of technical exercise however the space within which it has been dealt with is thoroughly insufficient. Thus, an extended discussion is not required for reasons which would be clear later. Having analysed the divergences in methods and the concept of income mobility, it is important to point out the basic empirical evidences which would argue for a trajectory of income mobility over time for certain countries. This is followed in the next section.

1.4 Implications of Method and Empirical Illustrations

Though one has previously provided the range of empirical applications which have lately given way to a lot of testing of these methods we need to restate the conclusions arrived at by some of these and provide pointers for our analysis. *Firstly*, the developing countries have arrived at a historical juncture whereby their income mobility has slowed down over the years. This could be also because of the level from which their per capita incomes grew, allowing for limited mobility. This has been the case with Britain (*Jarvis & Jenkins, 1998*), USA (*Sawhill & Morton, 2007*), Scandinavian countries (*Aaberge, 2002*) etc. These authors point to the slowing down of the mobility estimates in the recent years,

however do not dwell into the determinants for such trends. It was also pointed out that USA in general is not a good prospect in terms of future incomes being higher than present incomes. Youth mobility was also found to be low in USA. Similar is the case with Britain pointed out by *Jarvis & Jenkins (1998)*, with surprisingly higher youth mobility. However, a study of the population which is relatively mobile pointed out the comparatively better youth mobility in Britain. Aaberge (2002) does a similar exercise for Scandinavian countries and finds out that the level of mobility is even lower in the Scandinavian countries as compared with that of the USA. This again confirms to our hypothesis of the level sensitivity with which income mobility is associated with.

Secondly, emanating from a broadly spaced set of studies on the developing countries, it could be argued [as is argued by *Glewwe (2005)* for Vietnam] that there is a high inequality component for developing countries along with high incomes mobility. Moreover, this could be expected to last a little while, after which the inequalities in income are expected to fall alongwith a fall in income mobility. *Ferreira et al. (2013)* argue for a higher mobility in Latin America along with *Ding & Wang (2008)* who argue the same for China.

Thirdly, it is also argued by *Shi et al. (2010)* that within the developing countries there is a significant difference in patterns of mobility in rural as well as urban areas. It is argued that the mobility in rural areas is greater than the urban areas, however these inferences are not explained with adequate causation. *Fourthly*, these measures are mostly absolute mobility measures and the literature takes care of both upwards and downward income mobility. *Finally*, the empirical illustrations follow various methods, none of which are applicable to the Indian data and for our subsequent work.

If this is the case, we have to identify a method which would provide an estimation of the kind of mobility we desire and corroborate these with the trends visible for developing countries in the empirical literature. Moreover, the empirical literature has also left an open ended question on the determinants of such income mobility. To this effect we shall try to provide pointers which need to be focused in order to add strength to the literature on income mobility. The

whole debate then brings us to a closure of the review, raising two essential groups of questions. These questions could be clubbed into two types - (i) the question of methodology of operationalization of the concept of income mobility and (ii) the implications of the empirical outcomes of income mobility for the evaluative discourse in particular as well as the development discourse in general.

1.5 Nature of Enquiry: Some Questions

To recapitulate, we started out with an enquiry of the various ways to evaluate the state of an economy. Any evaluation would require looking at processes and outcomes in order to arrive at conclusions about the health of the economy, given a conceptualisation of what could be called a 'healthy economy'. The conceptualisation of the health of the economy has undergone drastic changes which have culminated into the birth of development economics itself. *The perception of health of an economy has transgressed beyond growth into a plethora of conceptions, one of which is the capability approach.* The moot point was the idea about the health of the economy and its parallel conceptualisations. Another issue in terms of evaluation has been the selection of outcome indicators which quantify the processes and outcomes of a healthy economy. This also has undergone a complete overhaul. *Beginning with a simple and persistent obsession with growth rates to a deadlock with the HDI, there has always been lethargy in rethinking and improvising the outcomes indicators.* Our endeavour would be to augment the existing outcome measures with that of income mobility.

This brings us to the question of estimating income mobility for the Indian economy and its subsequent use in evaluating the recent development discourse. The important link between the existing literature and our exploration of the NSS data presents us with the valuable task of operationalization of income mobility measures for India. However significant this task be, it is then important to provide linkages between our operationalization of the concept and its implications on evaluation of the development process. Thus income mobility is intended to add to the existing plethora of measures and provide a sense of comparison which incorporates the changes in incomes over time. *The*

conceptualisation, estimation and its implications on how we understand India's recent development trajectory would be our first objective, which would be undertaken in the next chapter.

While we intend to comment upon the development trajectory of the Indian states, we need to restrict our analysis to the recent decade. In order to do this, we restrict our analysis to the last two rounds of NSS-Consumption Expenditure Survey. Moreover, such a selection is also based on the plausibility of comparison of various NSS rounds. It is important to mention that the 55th NSS round could not be compared with the later rounds and hence our analysis is also limited by the data at our disposal. This would inadvertently focus our analysis to a comment on the recent past, which in any case is of greater relevance for the immediate future.

Another issue which is of great relevance is the nature of development outcomes and its impact on the lives, individuals have reasons to value. One such implication is pertaining to the degree of inclusion witnessed in the past decade. *Given the thrust on the inclusiveness of outcomes, it is important to analyse the implications of income mobility on the nature of inclusion, which then forms our second objective.* At the outset we need to do two things – (a) to define inclusion in terms of the outcome measure so chosen, namely, income mobility and (b) to derive implications of our definition on the outcomes in the economy. This would be undertaken in chapter three. While we continue our excursus on income mobility estimation for the Indian economy, we are aware of the multi-dimensionality intrinsic in any evaluation of the state of the economy in general and development in particular. Hence it is imperative for us to provide the agreements/disagreements of income mobility with other such measures of development and this would follow our analysis of inclusion hence explicated.

Thus we are essentially trying to build the literature and import the insights of income mobility for the Indian economy. We are also trying to raise a point in passing about the sensitivity towards distributional variations of any outcome measure and the grave requirements to distance ourselves from inferences on the basis of an aggregative

method of enquiry. To sum up, we would restate our objectives, answers to which are sought in the pages to follow.

- A) To estimate the income mobility for the Indian economy and to provide implications of such evaluation, using the measures developed, on the development trajectories tread by the Indian states.
- B) To understand inclusion via an income mobility lens and to juxtapose it with other outcome measures of development.

We have posed certain questions which would determine the course of the arguments built over the course of this enquiry. While these questions would be contained in separate chapters, the argument essentially cuts across the chapters and provides us a perspective with which to view the entire work. The following chapter would begin with the exposition of estimating income mobility for India and arrive at the conclusions which follow.

Chapter 2

INCOME MOBILITY AND DIFFERENTIAL DEVELOPMENT TRAJECTORIES: A COMMENT

2.0 Recapitulation

In the preceding chapter we tried to give a broad brushstroke upon the Income Mobility literature. It was essentially a picture of a growing discourse which provides an evaluative dimension. Identifying the kind of mobility one wants to measure, choosing the measure and subsequent interpretations based on the measure(s) chosen provided us with some insights into a distinct evaluation; albeit theoretically. Properties of sub group consistency, decomposability, transitivity, rank reversals have all paved way for a class of measures which satisfy certain elegant mathematical properties. While the mathematical properties provide robustness, there is a definitive economic logic in demanding a measure to satisfy these properties. Hence these mobility studies are located in the literature with growing empirical mileage and application, along with theoretical rigour. While there are empirical evidences where countries and regions have shown significant improvement in terms of growth rates of national income, their income mobility has lagged behind. In our effort to place mobility as another evaluative criterion for the economy, we have further moved away from aggregative outcomes and have confronted the multitudes in evaluative judgements.

Specifically, the distinctions in methodological approaches to income mobility have grown a clear demarcation in terms of the conceptualisations of mobility methods. While the axiomatic segments of literature¹³, a la *Fields and Oak* (1996, 1999) have gone against the conventional welfarist approach dominating the evaluative discourse; their approach is also bound to run into problems of being too aggregative at times. *Shorrocks* (1978) and *Atkinson's* (1981)

¹³ It is to note that the literature is conceptualized by us as comprising of three distinct fields as argued in the earlier chapter.

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approach to mobility using 'transition matrices' to arrive at distributions on a segregated level have gained popularity amidst academia. Yet there is an immaculate construction with which *Chakravarty et al. (1985)* etc. have used the existing welfare framework and provided foundations of mobility research. As argued earlier, there is a limited expansion of the literature on mobility in the international discourse in general, and Indian literature in particular. This is as true of theoretical conceptualisation as is with empirical examination. United States of America, United Kingdom, Scandinavian countries, Germany, France etc. have all witnessed differing nature of mobility in the developed world. Studies extending such investigation to the less developed countries such as China, Vietnam etc. have also witnessed a peculiar mobility pattern, to which some light is a legitimate concern. Yet, there have been no mobility studies on the Indian subcontinent. In this light, the current chapter tries to do two things to fill the gaps in the literature - a) provide mobility estimates for the Indian states and elaborate on their development trajectory and b) creatively use the NSS-Consumption Expenditure Surveys (henceforth CES), the need for which was also reiterated by *Bhardan (2005)*:

“...We have a *relative abundance of household data on consumption and employment*. This has fuelled the endless debates on measurement of poverty and inequality over the last four decades. Yet to this day we know very little on inter-generational mobility [*as is true for income mobility*], which is probably the most important aspect of inequality in an extremely hierarchical society like ours, and there are very few attempts at collecting the requisite longitudinal surveys of families¹⁴...” (italics added)

2.1 From the NSS-CES to Conceptualisation of Mobility

The neglect discussed by *Bardhan* could, in some manner, be rectified by applications of the CES data to income mobility and the rest of the chapter would try and address this issue. Before dwelling into the analytical framework which places income mobility according to what we understand, and what we could

¹⁴ There is still limited clarity whether income mobility should be construed as a part of inequality or should be looked as a separate standalone concept. Their juxtaposition for meaningful inferences, on the other hand, is not doubted.

arrive at (given the data), we would have to provide a familiarity with the National Sample Survey (henceforth NSS)-CES data set¹⁵. This would be covered in **section 2.2**. The analytical framework would be as much a function of the theoretical understanding of mobility we have gained in the preceding chapter as it would be of our understanding of the NSS data¹⁶. This conceptualisation would thus follow the aforesaid note on the data in **section 2.3**. **Section 2.4** would then take this framework into uncharted empirical grounds for the Indian economy as well as for selected states. At this juncture, a moot point is indispensable. We are looking at the Indian states with a view of understanding their recent development trajectory. The argument is one embedded in trajectories of development of these states. Whilst some states have different outcome indicators which then provides criterion for ranking performances, the induction of mobility into the group fuzzes such clear demarcation. Moreover, this fuzziness spills over to the kind of policies which were lauded on the basis of achievements of these outcome measures. What we want to highlight is the need to appreciate differing development trajectories of states having similar performance scores on a complex evaluative criterion inclusive of 'income mobility'. In other words, states can arrive at similar levels of development with different time paths and diverse policies.

Section 2.5 would elaborate on these differing development trajectories, and we arrive at some noteworthy (yet apprehensive) results. **Section 2.6** would try and provide an alternative development trajectory based on a certain notion of an ideal. Such an exercise poses the hypothetically relevant counterfactual (solely for comparison purposes), and adds-in a footnote to the entire argument. While we acknowledge the contentions of selecting an ideal trajectory, we would provide such an exercise only to enhance the idea of differing development

¹⁵ And what we derive out of it for our purposes.

¹⁶ While we do not endorse this view completely, there is a certain degree of innovation required to synchronize a valid theoretical construct to meet the requirements of the data available at our disposal.

trajectories¹⁷. By the end of this discussion we would arrive at certain conclusions about the performance of the various Indian states and could comment on the deeper motivations of presenting the entire exercise. Such motivations and the corresponding conclusions would be stated in **section 2.7**.

2.2 The NSS Consumer Expenditure Surveys - A Data Note

After going through the ever growing literature, one fails to understand the absolute neglect which income mobility encounters in the Indian academia. There could be two plausible reasons for the same. Firstly, as argued by mobility theorists, such neglect is attributed to the kind of data the National Sample Survey publishes. The lack of panel data for tracing individual or household units across time does limit our analysis, but could in no way undermine the whole conception. Secondly, it could also be attributed to a certain 'academic inertia' and the limited innovative caricatures of the NSS data used by the academia. Before we dwell into the framework of analysis, we need to draw out those parts of the NSS-CES that are required for our study.

The NSS-CES came out with its first report in the year 1972-73. Each quinquennial series of consumer expenditure surveys, it dedicates a part of its report providing explanations for their methods, definitions and outcomes of the survey. None of the details need to be discussed here as they are readily available to the interested. However, certain instrumental points need to be mentioned in context of using the data for setting up an income mobility apparatus. First and foremost, *it is important to understand that the unit of analysis is a 'household'*. A household is defined as '*...group of persons normally living together and taking food from a common kitchen.... The word "normally" means that temporary visitors are excluded but temporary stay-aways are included...*' Consequentially when we analyse the results of the survey with respect to their incomes, we are analysing a *household's mobility*. As a corollary, we can argue

¹⁷ While we acknowledge that we are complicating the story further, we believe that there is a need to add in more questions before we make grand generalization on the basis of scanty outcome measures.

nothing about intra-household allocations and any consequential distortion within the household cannot be commented upon. Secondly, we are considering the *URP for maintaining comparison of the data set across time*, and we do not intend to entangle in that debate.

Thirdly, we only make use of two rounds of the NSS-CES i.e. the 2004-05 (61st round on Level and Pattern of Consumption Expenditure) and the 2009-10 (66th round on Level and Pattern of Consumption Expenditure). This is because of three reasons – a) we need to analyse the performance of post-liberalisation Indian economy in terms of mobility and make the story of contemporary relevance; b) we couldn't take NSS-CES from the 1990s because of the changes in the manner in which the survey was done for the year 1999-2000. A comparison with the 1994-95 (50th round) alongwith the remaining two rounds intended to be used would have provided a gap in understanding the story of change in development trajectories in general and distributive outcomes in particular; c) a third limitation is also in terms of the time required to analyse the unit level data post extraction. Fourth important caveat associated with NSS-CES for mobility is the *use of consumption expenditures as proxy for incomes*¹⁸. *While it is clear that the proxies are weak, the impact would be on the interpretation, and all the results should be taken with this caveat.* Fifth and final point to be kept in mind is that the selection of states is on the basis of conventions, and development trajectories for all states are not analysed. Given this background to what is being sought from these consumption expenditure surveys, we would now proceed to formulate an apparatus for Income Mobility given the limitations of the data.

2.3 Conceptualizing Mobility using 'Distance Functions'

It is important to mention that the literature discussed doesn't provide us a cue to measurement of mobility given the nature of data. The measures discussed elaborately are almost redundant for our empirical analysis and there

¹⁸ It is important to note that while there needn't be a one to one linear relationship between consumption and incomes, as convention consumption is used as the next best alternative. Moreover, it is also quintessential to understand that no one consumption function could fit the idea when the income differences are so significant. It is this very income diversity which creates the idea of a uniform consumption function a weaker concept in our economy.

needs to be an independent projection of the concept. However, we take cue from the literature in terms of our conceptualisation of what we call as income mobility. This entire exercise could be broken into the following steps to help the lay reader navigate and cross check the calculations. These are as follows:

1. Identifying the vector of incomes: Let there be a vector \mathbf{x} defined over the R_n^n space of all income distributions with population $n \geq 1$. Each element of the vector so defined represents a household from the sample of selected states. The vector could be expanded as $\mathbf{x} = (x_1, x_2, \dots, x_n)$ representing n households at time t_0 , which in our case is 2004-05.
2. Transforming these vectors to positional vectors: Since the households could not be identified across rounds, we need to transform this vector such that we could compare the transformed values across time, by choosing a representative household. *The transformation which we apply in our case would convert all the x_i 's into a relative x_i' .*

The transformation is a function, as follows:

$$f: R_n^+ \rightarrow R_n^+$$

$$x_i' = \frac{x_i}{x_j} * 100$$

such that $x_j \in \mathbf{x} \forall x_i$

3. Choosing the position attribute: The choice between the x_j 's would then provide the next challenge. Given our objective to trace transformation of a vector onto another, the mapping done by our transformation would have positional significance. *If the x_j is chosen as median then it merely indicates a positional distance of each x_i from the median.* As a corollary, the choice of x_i would not matter for our interpretations.

4. Dividing into deciles: But we are interested in the distance covered by an identifiable¹⁹ representative household in the distribution which we have now transformed. The identifiability is important for us to talk about mobility across time period, for the representative household. In order to do this, we are cutting the transformed distribution into deciles and taking the decile cutoffs as the representative positional household.

$$\mathbf{x}' = (x'_1, x'_2, \dots, x'_d, \dots, x'_d, \dots, x'_d, \dots, x'_n)$$

such that $\mathbf{x}'_d = (x'^1_d, x'^2_d, \dots, x'^9_d)$ and $\mathbf{x}'_d \in \mathbf{x}'$

We need to comment on the selection of the decile cutoffs as the choice for the transformation before we proceed. A natural convention to represent the decile empirics is by taking the decile average. *In our case, if we consider the decile average, it would be a representation of the decile values and would be distorted by the extremes. By taking the decile cutoffs, we are not only avoiding the extremes, but are depicting the character of the overall distribution and selecting the representative household for comparison.* Moreover, it is also well understood that this cutoff would have similar positional feature indicative of a certain positional characteristic in the larger income distribution. Given the new set of x'_d we can calculate the same for another period in time, say t_1 .

5. Using 'distance function' to arrive at income mobility: Thus we have a similar \mathbf{y}'_d for time period t_1 , which in our case is 2009-10; such that we could conceive of a transformation of the form:

$$g: R_{2n}^+ \rightarrow R_n^+$$

*such that $x'_d \rightarrow y'_d$, is interpreted as a '**mobility**' from state x to state y .*

Again, the specification of the function 'g' is of importance. For our purposes, 'g' refers to a class of functions which are known as the 'distance

¹⁹ Identifiable in terms of having an interpretation with respect to its position in the larger income distribution. For example – a decile cutoff represents the highest consumption value of a decile but is a feature of the larger distribution. On the contrary, a decile mean or median would take into consideration the characteristic features of the sample within the decile. Since we are interested in the overall population distribution, we use decile cutoffs.

functions'. Any distance function has the following three basic generic properties:

In a vector space V with a set of all R_n^+ , a function $f: V \rightarrow R_n^+$ is a distance function if it satisfies the following distance conditions²⁰:

- a) $f(v) = 0$, if and only if $v = 0$
- b) $f(v) = f(-v)$
- c) $f(v_1 + v_2) \leq f(v_1) + f(v_2), \forall v_1, v_2 \in V$

6. Specification of distance functions: In what follows we would discuss five different estimates of income mobility by specifying the generic distance function stated above.

a) Non Directional Income Mobility Estimate (NDIME): In order to arrive at this, we need to revert back to the literature on income mobility. As discussed earlier, when we consider any change in incomes, irrespective of the direction of change, we arrive at a function which is termed as Non-Directional Income Mobility²¹ (NDIM, following the *World Bank* convention). The is merely a function of the form:

$$g: R_{2n}^+ \rightarrow R_n^+, \text{ where } n = 1, 2, \dots, 9$$

$$g \text{ is specified as } \mathbf{m}_2 = ||y'_d - x'_d||$$

Such measures are simpler representations of change in terms of mobility, when *income flux* is considered for accounting the total mobility in an economy, as noted by *Dagnum (1980)*, extended by *Shorrocks (1982)* and used consequentially by *Schluter and Trede (2003)*, *Haberfeld (2009)* and *World Bank (2013)*. While considering *income flux*, we are estimating the *income mobility* irrespective of whether it is an *upward mobility* or *downward mobility*. Though there

²⁰ Akleman, E. R. G. U. N., & Chen, J. (1999, October). Coupled Modeling of Solid Textures and Implicit Shapes. In *Proceedings of Implicit Surfaces' 99*.

²¹ It is important to note that we deviate from the literature in another significant manner. We have not dwelled into the problems of aggregation of the mobility measure. We have left the disaggregation and it is intended that this would help read directly from the tables at the outset rather than trusting the stability and uniqueness of the number hence estimated.

are welfare connotations in the direction of movement, there is no clear distinction in the literature. Ethical and welfare connotations such as in *Chakravarty, Dutta and Weymark (1985)*, carried forward by *Dardanoni et. al. (2002,2008)*, *Ruiz-Castillo (2004)* have placed a negative mobility as welfare reducing. However, *Fields and Oak (1999)* have reiterated that a downward mobility for the upper quintile of the population, under a zero growth assumption indicates redistributive policies at work and would be desirable for the economy. Thus there are unresolved issues in the literature on the nature and directions of mobility and their desirability. This was sought to be resolved by a transition matrix approach, but the subjective bias of desirability of a certain type of mobility remains contested.

- b) Direction Sensitive Income Mobility Estimate (DSIME): A simple corollary of the aforementioned distance function which is sensitive to the direction and considers an upward movement of incomes and a downward movement of incomes differently is as follows:

$$m_1 = [y'_d - x'_d]$$

This treats the earlier measured distance differently, with a negative value to a downward mobility and a positive value to any upward mobility. Intuitively, it associates a sign with the estimates to indicate the direction, however with no ethical connotations. Ideally the positional values should converge towards the median and we need the gaps to reduce. This could be done theoretically by a positive mobility of the lower deciles and a negative mobility of the upper deciles. We would thus want an *S-shaped curve* if the estimates are to be considered ideal for the DSIME to show convergence or desirability in mobility.

- c) Canberra Distance Function based Income Mobility Estimate (CDFIME): This distance function estimate derives its usage from comparing ranked

lists or two pairs of points on a vector space. It presents a normalisation of the distance between two points with a sum of their own magnitudes, in turn giving a certain weightage. In essence, it tries to neutralise the estimates of their respective base levels.

$$m_3 = \left[\frac{|y'_d - x'_d|}{|y'_d + x'_d|} \right] = \left[\frac{y'_d - x'_d}{y'_d + x'_d} \right]$$

- d) Median Normalised Income Mobility Estimate (MdNIE): This measure tries to deflate the cutoffs with their distributional artefact - the 'median'. It could be interpreted as the distance covered by the representative household irrespective of the distribution to which it belongs. This is a different weighing criterion as compared to the earlier measures, interpretations of which would be clearer as we follow.

$$m_4 = \left[\frac{y'_d}{0.5} - \frac{x'_d}{0.5} \right]$$

- e) Origin Independence Income Mobility Estimate (OIIME): When we ask a different question with respect to the movements we want to envisage, we modify it as follows. Here we are trying to understand - how much the representative individual would have moved if he would not have belonged to this population? *In some sense, it represents the opportunity to a better life independent of endowments.* This also has a representation in the literature with *Fields and Oak (1996)*, *World Bank (2013)* being some notable examples.

$$m_5 = \left[\frac{y'_d - y_{Md}}{IQR_{y'}} \right] - \left[\frac{x'_d - x_{Md}}{IQR_{x'}} \right]$$

What we deduce from these estimates deserves a digression from the chain of arguments extended so far. By extending these mobility estimates, we are not intending to provide a number, the quantum of which could be read of as the extent of mobility. In turn we are providing rough estimates of what could

be happening in terms of income mobility for the Indian states. Also, *we are looking at income mobility with a larger view in mind, namely the development trajectories of various states.* It is this characterisation which is of interest in order to understand the larger ramifications of various policies of development. In what follows, we would now put to empirical scrutiny, the measures extended by us and try and analyse the status of income mobility in India.

2.4 Income Mobility Estimates of India and the States (2000-2010)

Amartya Sen (1999) in concluding his work on 'Development as Freedom' remarks the following:

"...since freedom is concerned with the process of decision making as well as opportunities to achieve valued outcomes, the domain of our interest cannot be confined only to the outcomes in the form of the promotion of high output or income, or the generation of high consumption....both the process aspect and the opportunity aspect of freedom require us to go well beyond the traditional view of development in terms of "the growth of output per head."" (Page 291, italics in original).

There are two points of immediate interest – a) there is a reiteration to move beyond traditional measures like the growth of output per capita and b) there is a call for identifying a 'developed nation' as possessing opportunities to achieve valued outcomes. We argue that the inclusion of income mobility as another informational base/evaluative criterion reinforces the move beyond traditional approaches to evaluation and provides a measure for analysing the development trajectory alongwith the already existing measures²². *By incorporating such a measure, we are in turn going deeper into a variable and hence adding value in terms of unearthing the distributive aspects of the development story.*

²² We only claim that income mobility needs to be added to the existing measures of evaluating policies, and do not endorse it to substitute other measures. Moreover, it is important to understand that we are yet focusing on incomes as the measure, and we would advocate a wider range of outcome measures. To this effect, the arguments in the following chapter are geared towards such an approach of combining income mobility alongwith other outcome indicators.

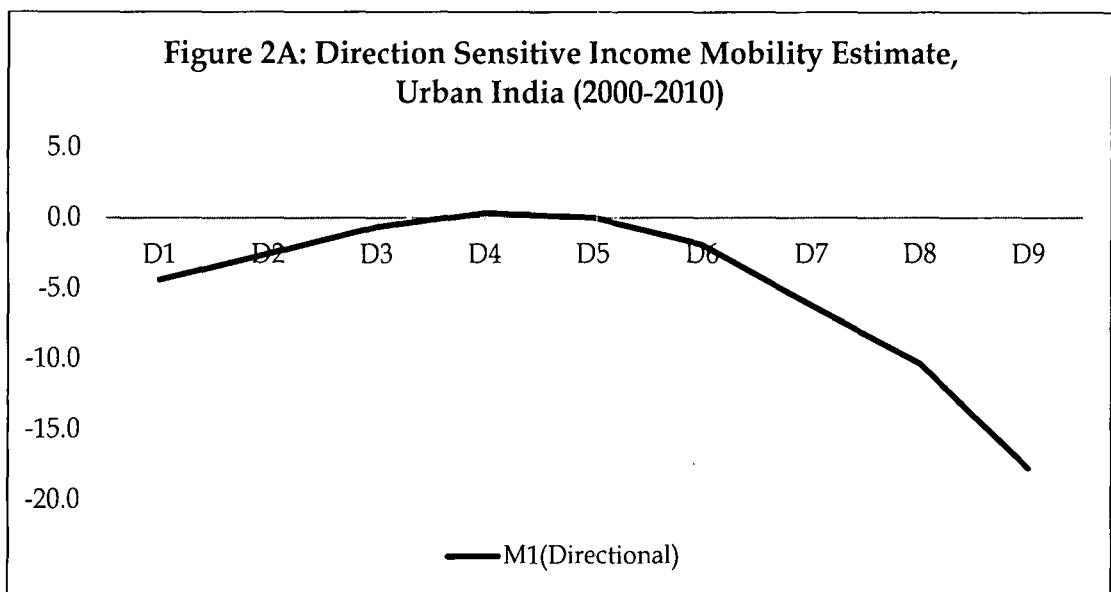
While, this in no way substitutes the inclusion of other variables, it provides us with rich insights to understand, or further complicate India's development story.

Before we venture into the interpretation of the results, we need to keep few things in mind. *Firstly*, we are unable to state the movement of each household, and hence we would only be inferring about the income mobility of the representative household. It is in some sense '*an average mobility*' for the decile as a whole. *Secondly*, since we have transformed the data to arrive at positional outcomes, we are already in domains of relative mobility. We negate the effect of growth and distance ourselves from absolute mobility. Analytically, this is concomitant with our belief of reliance on relative mobility. *Thirdly*, since we have positioned our values of the representative household according to the median, we would be able to deduce convergence merely by looking at the distance from the median covered across the two rounds. *Fourthly*, since we are taking the decile cutoffs as the representative household, extreme observations are missing. This handicaps us in corroborating our results with those of income inequality. *Finally*, and most important cue in terms of interpretation of result is the thumb rule - *negative figures on the left of the median (D5) indicate a downward mobility for the lower deciles which are treated as undesirable. Negative figures on the right hand side of the median (D5) indicate a downward mobility, but are treated as desirable because they foster convergence.* With these points in considerations, let us try and analyse the trends in income mobility as provided by our estimates.

We would expect an 'S-shaped curve' from our DSIME, where the lower deciles have positive mobility and upper deciles have negative mobility. This would lead to a convergence of the decile cutoffs around the median. Having a look at the DSIME's given in *figure 2A* we observe a worsening mobility for the lower deciles in urban areas²³. The lower deciles, namely D1 to D3 are moving

²³ At this point, it is important to earmark that the need to look at income mobility separately for urban as well as rural areas is essentially a requirement of our methodology adopted. If we position values of these areas clubbed together, then the distribution gets skewed with the

further away from the median and hence there is a divergence in distribution at the lower end of the Income spectrum. However, when we notice the upper end of the income distribution spectrum, we notice a convergence towards the median. While there is a distancing of the representative household at the lower end of the spectrum, the representative households at the higher end of the spectrum have moved closer to the median. *This means that though there is mobility in the economy, not all of it is helping the representative households generate equal opportunities for choosing the lives they have reason to value.*



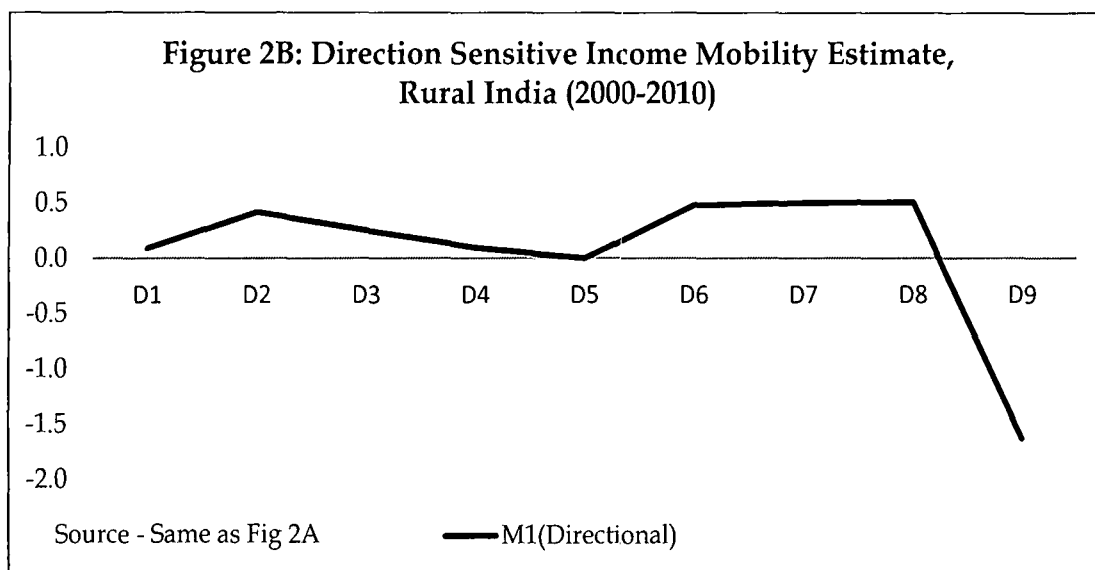
Sources - All figures follow from NSS-CES 2004-05 and 2009-10 surveys.²⁴

Juxtapose these trends with that of rural India, we find that rural India is much closer to the desirable mobility status in terms of the representative households of the lower deciles showing improvement in their income mobility over time. However, deciles D6, D7 and D8 have moved away from the median. In this sense there is a churning taking place in India. One could argue of a possible connection between the rural and the urban mobility trends. *It could be the case that there is an influx of people from lower deciles into the urban areas which*

variations of urban income distributions affecting those of the rural areas. The treatment would be maintained throughout the chapters, and we would elaborate more on this problem later.

²⁴ Figures have varying scale merely for neat presentations and the arguments still hold on similar scales for various states.

leaves the rural areas relatively less burdensome generating such pattern²⁵. While one cannot be sure of this hypothesis, such high mobility for lower deciles is also seen in other developing countries such as China as argued by *Shi et al. (2010)*. We witness a similar mobility in the statistics of Latin America, where the lower decile people move up (*World Bank, 2013*).



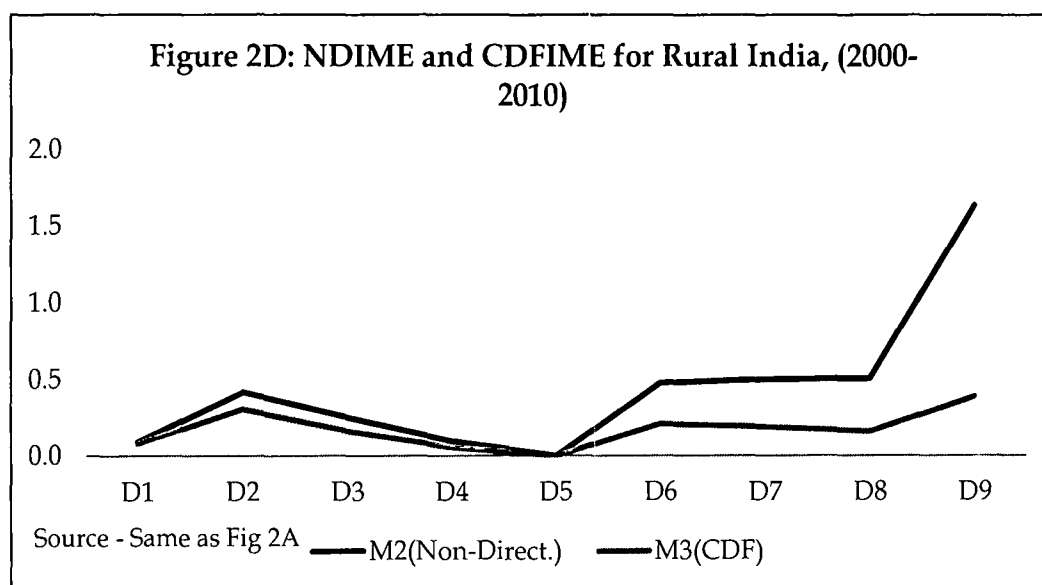
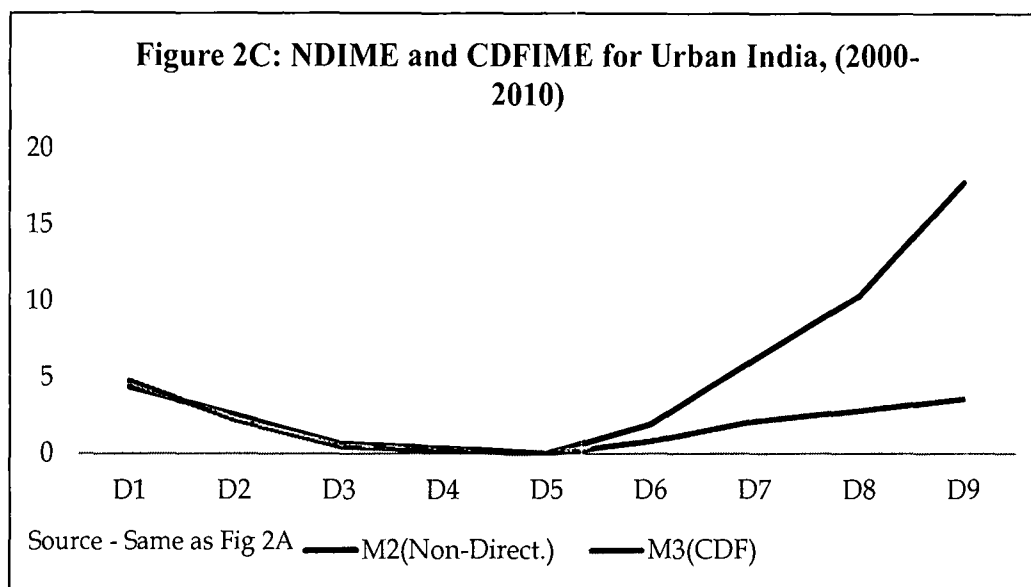
When we look at this mobility estimated after the adjustments and weighing explained earlier, we are still facing a grim picture where representative households in the upper deciles move further away from those of the lower deciles. However, there is mobility across deciles and the difference is only in terms of magnitude of mobility²⁶. This is evident in *figures 2C and 2D*, for urban and rural India respectively. Interestingly, we notice a slightly different picture for rural India which is noteworthy. *The canberra normalisation provides a discomfoting picture for the lowest decile in rural India. This could also be the case of rural distress where households engaged in farming, have had to suffer serious loss of income generating capacity (Abraham 2009)*²⁷. An important point would then be to understand the nature of income mobility in times of rural distress, which would be a fruitful exercise in itself.

²⁵ There is a literature on an increase in vulnerability in the urban areas cited later.

²⁶ We do not strictly follow the magnitudes, keeping them at an indicative level only.

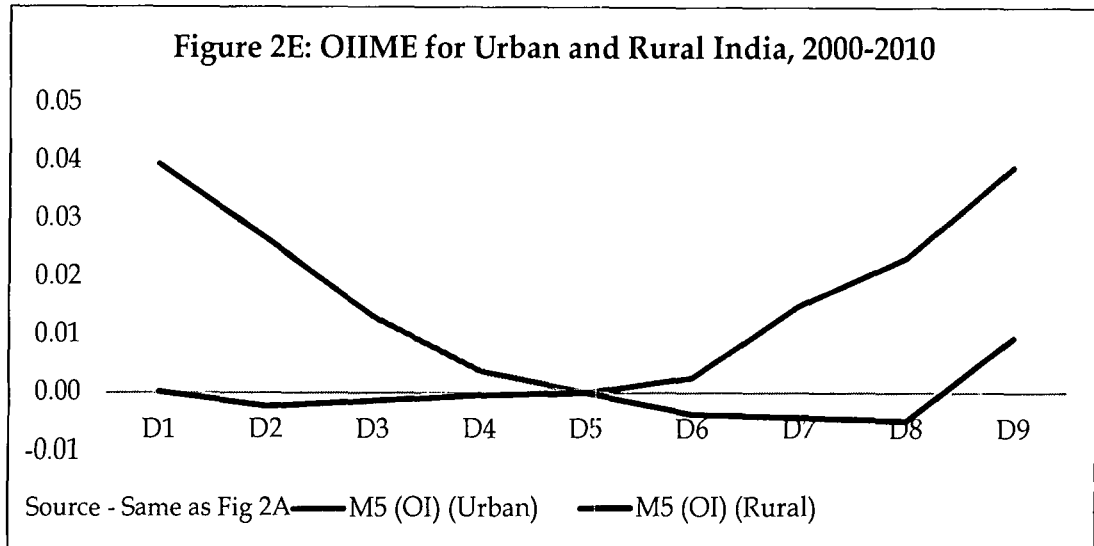
²⁷ Abraham (2009) provides an excellent survey of rural distress and tries to narrow down the causes for the same.

If we ask yet another question – *what would happen to these representative individuals if they were not a part of this income distribution*, we are trying to hint at an estimate of opportunities provided by economic activities to be upwardly mobile. This is strongly argued in the literature by *Fields and Oak (1996)*, *Atkinson (1980)*, *Sawhill and Morton (2007)* etc. What we observe is a higher absolute mobility in urban India and a relative absolute immobility in rural India for all the deciles, by looking at *figure 2E*.



Moreover, we also observe a divergence in urban India with no signs of convergence in rural India. This corroborates with our story on a rural stagnation along with migration which allows for a higher opportunity to climb up the

income ladder. Therefore, people going to urban centers do witness a positive absolute income mobility, which provides the reason for a household/individual to migrate. *It is to be noted that, only on absolute levels could we argue for the urban households in lower deciles to be showing an improvement.*



While we have advanced certain estimates for India as a whole, a comparison with its developing country counterparts, where mobility studies have been conducted, has shown a relatively similar pattern. What other pattern could we expect? *While we expect developing countries to show a higher mobility than developed countries with relatively lesser inequality of incomes, we also expect a continuing pattern of higher mobility across regions.* What is worrisome is that there are no immediate indications of convergence and this raises a question on the nature of policies which are being implemented. However, the scenario across India is not the same. This brings us to our next question of differing development trajectories across states.

2.5 Differing Development across Various States: Lesson from Evaluation

We started out with elaborating an essential point, to wit, *there is no ideal trajectory to development.* We tried to establish a connection between the outcomes of the Indian economy in the last decade by formulating certain mobility measures and evaluating its outcomes in order to comment upon the trajectories

of development itself. We tried to indicate reasons for these trends at an aggregate level, but what is often true at the aggregate breaks down into diverse and complex trajectories at a dis-aggregated level. In what follows, we are trying to understand the composition of aggregate Indian income mobility across states. *There could be some states where migration as plausibility holds and certain others which stand out in terms of an ideal mobility pattern. There are states which have handled rural distress well by relying more on income generation via industry and services sector or by effective public policy for employment.* Let us analyse the same by dividing these state into geographical areas for our convenience in order to place them in terms of regions within India.

For urban areas, we broadly observe trends which creep into the aggregate scenario for India. *Figures 2F* provide an illustration for the discussion which follows. For almost all states excepting Bihar and Rajasthan, we observe a downward mobility for higher deciles. Bihar and Rajasthan show a divergence from the median across deciles. This reinforces their backward status in terms of mobility in incomes. However, we surprisingly see a convergence of incomes of representative households in terms of income mobility for Maharashtra. This is not true of any other state and Maharashtra is the only state which forms the perfect S shape in terms of the DSIME, for urban areas²⁸. There are two important hypotheses emanating out of a look at the southern states. *Tamil Nadu, which is lauded for its redistributive policies hasn't been able to generate enough capabilities for the households to reap the benefits of their policies or its outreach in urban areas. On the other hand, the Kerala model of development also has run out of its initial momentum and witnesses a relative immobility across deciles for urban areas. Such stagnation could be indicative of a need to reinvigorate the Kerala economy with fresh stimulus to generate incomes within the economy.* Karnataka and Andhra Pradesh

²⁸ This could be attributed to the urban centers performing well in Maharashtra reinforcing the effect at an aggregate level. As noted earlier, the method used to position the household MPCE distorts the aggregate picture significantly. At the level of inference, one could argue the dominance of rural population in terms of absolute numbers and hence being a stronger representation of income mobility in India as a whole.

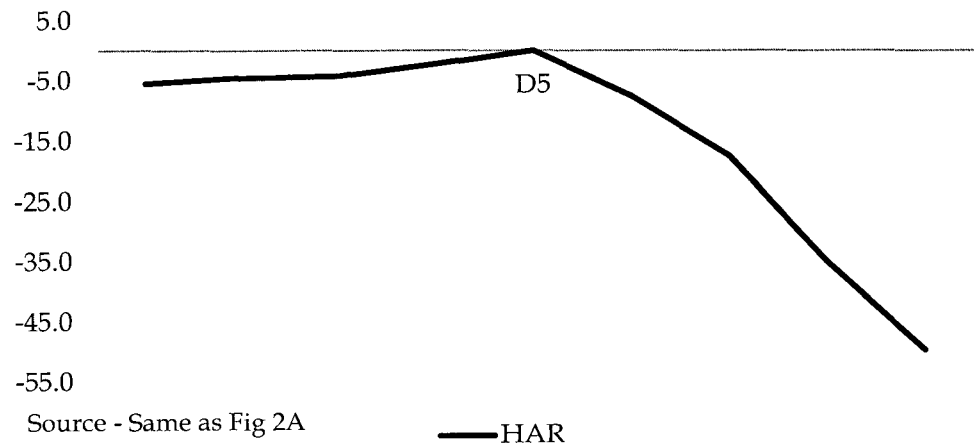
have underperformed in terms of income mobility of those households in the lower deciles.

Apart from Assam, which shows an improvement in terms of improvement of income mobility of the lower deciles, none of the other states show such a pattern. But there is evidence of convergence via redistribution (either by design or automatic) for most states, evident in the negative numbers on the right hand side of the median, for the upper deciles in urban areas. This is true for West Bengal as well as Orissa. The story remains the same for the northern states and while there seems to be some convergence from above, the fruits of such are not generating any income mobility for those in lower deciles. These broad patterns are shown in the *figures 2F* for the urban areas and the tables are kept in appendix.

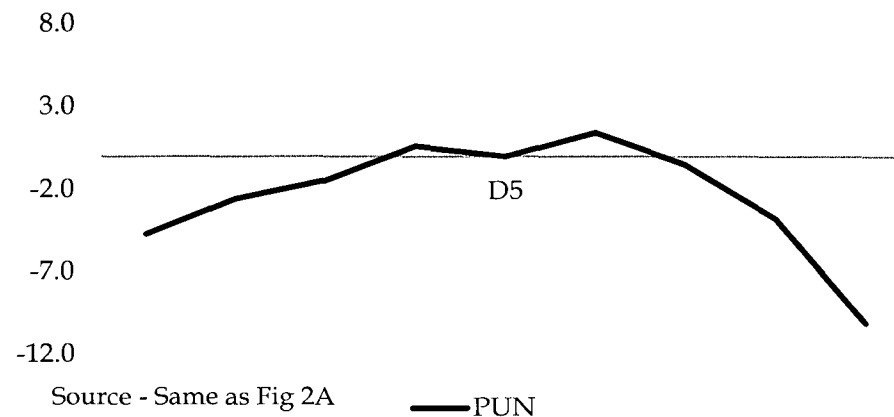
For rural areas, the scenario is very different. Desirable mobility is shown by atleast one state in all the regions. *We witness a near perfect S shaped curve across deciles for Uttar Pradesh, Maharashtra, Andhra Pradesh and Tamil Nadu.* Not only this, but the rural mobility is of a desirable variety for states like Punjab, West Bengal and Gujarat. In these states, the households in the lower deciles have witnessed an upward income mobility and hence there seems to be either some automatic or policy induced effort working in the two group of states. We can call the first group as ideal income mobility states and the second clearly as pro poor income mobility states. While Kerala maintains its stagnation even in the rural areas, Rajasthan is joined by Bihar, Orissa and Madhya Pradesh in terms of worsening income mobility in these states causing divergence. The broad patterns are shown in *figures 2G*, while the table is provided in the appendix to this chapter²⁹.

²⁹ The references to this chapter also contain tabulations for OIIME for the selected states across regions. Interested reader may pursue.

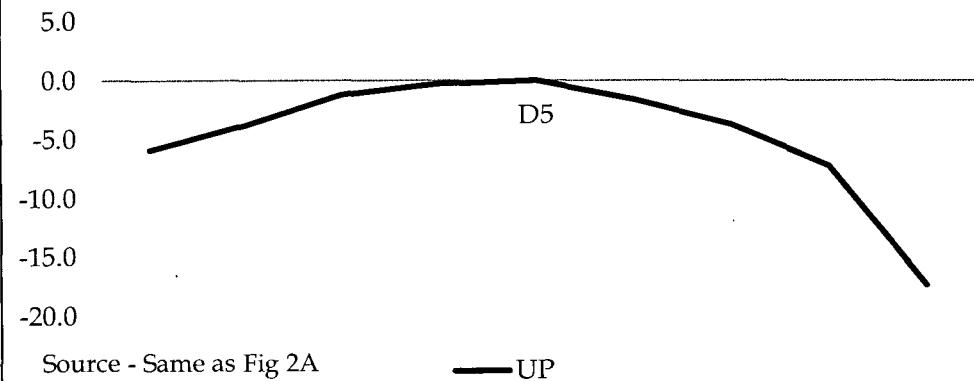
2F.1 Haryana (Urban)



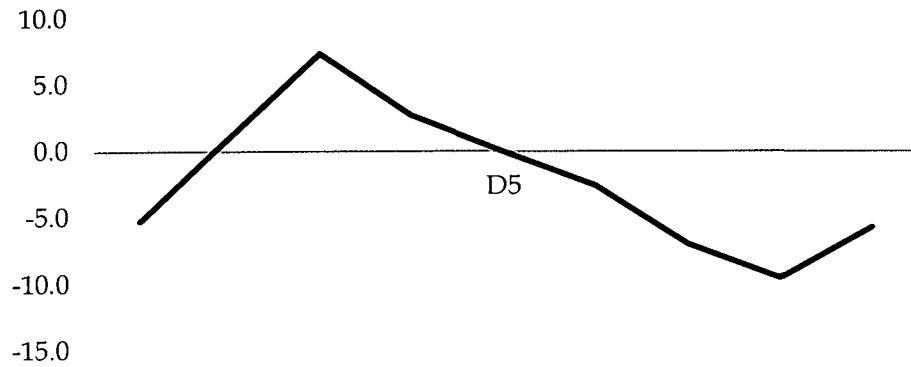
2F.2 Punjab (Urban)



2F.3 Uttar Pradesh (Urban)

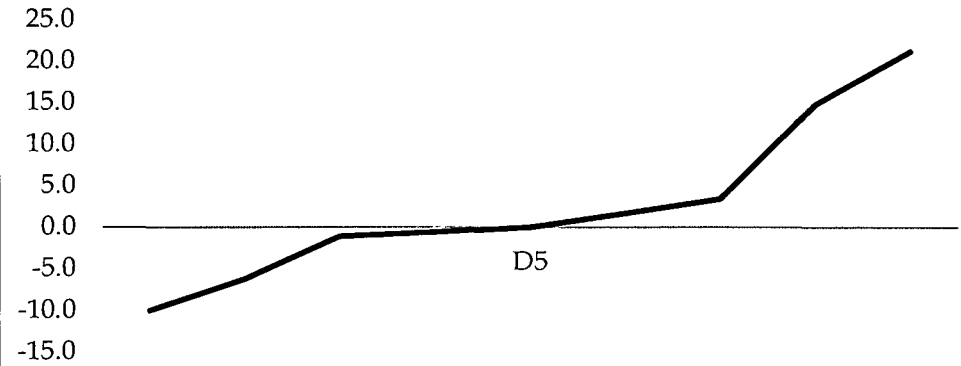


2F.4 Assam (Urban)



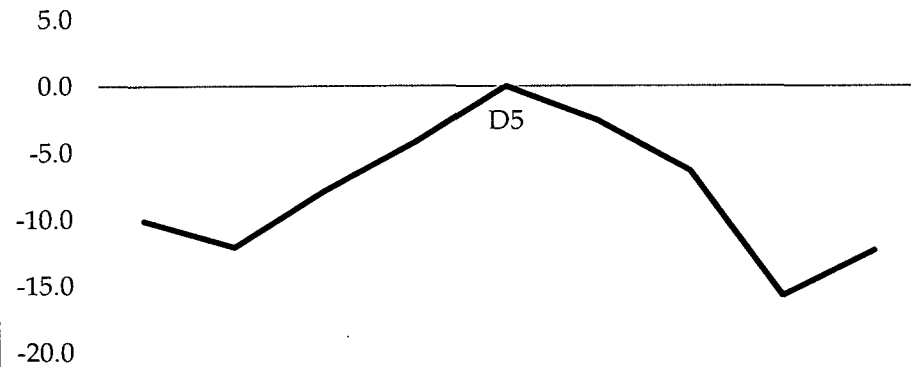
Source - Same as Fig 2A — ASS

2F.5 Bihar (Urban)



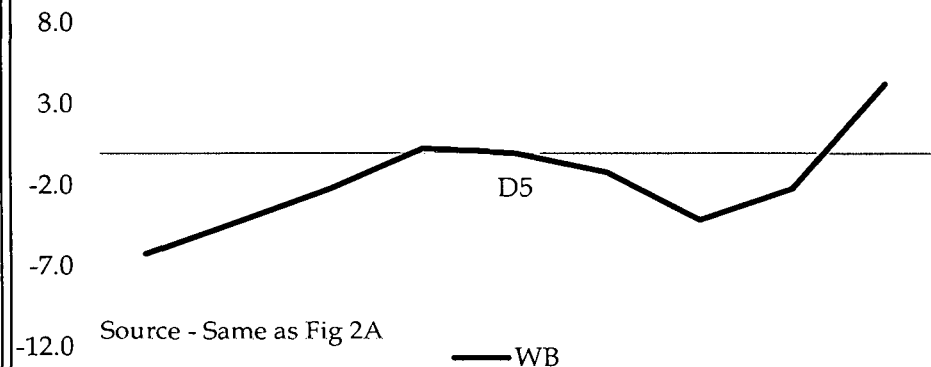
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2F.6 Odisha (Urban)

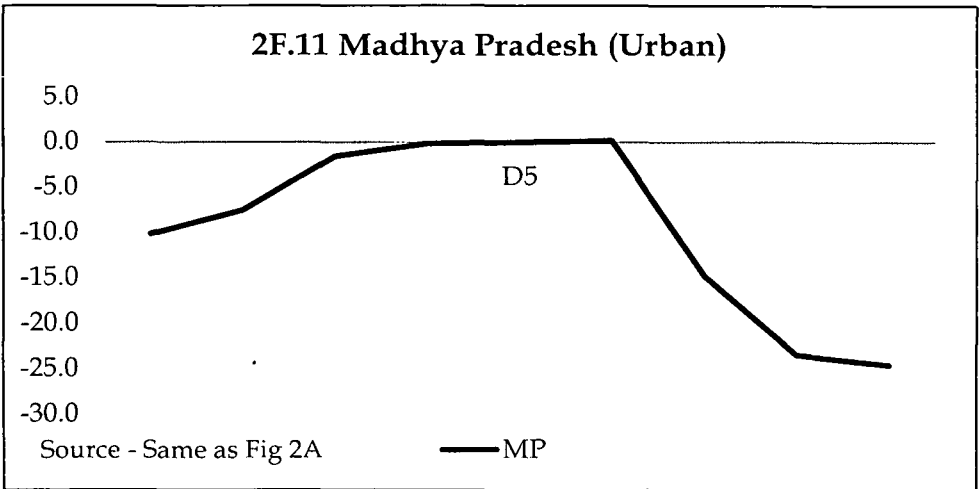
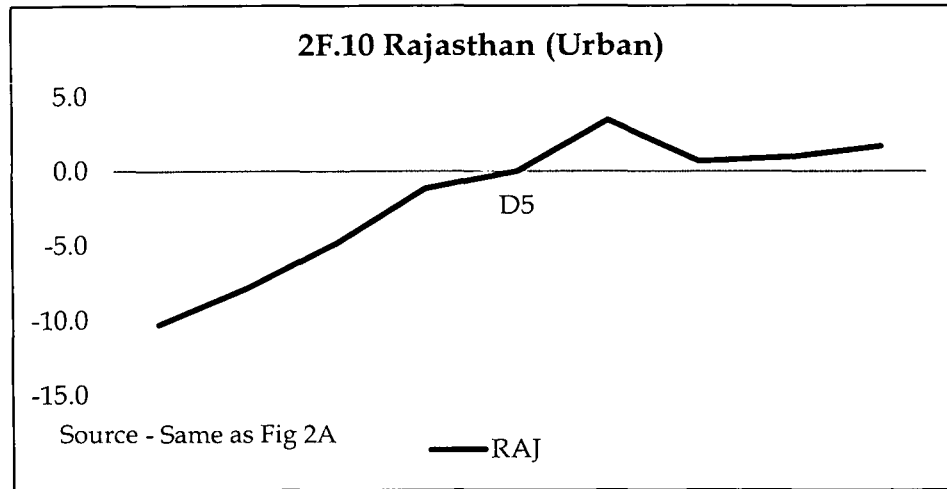
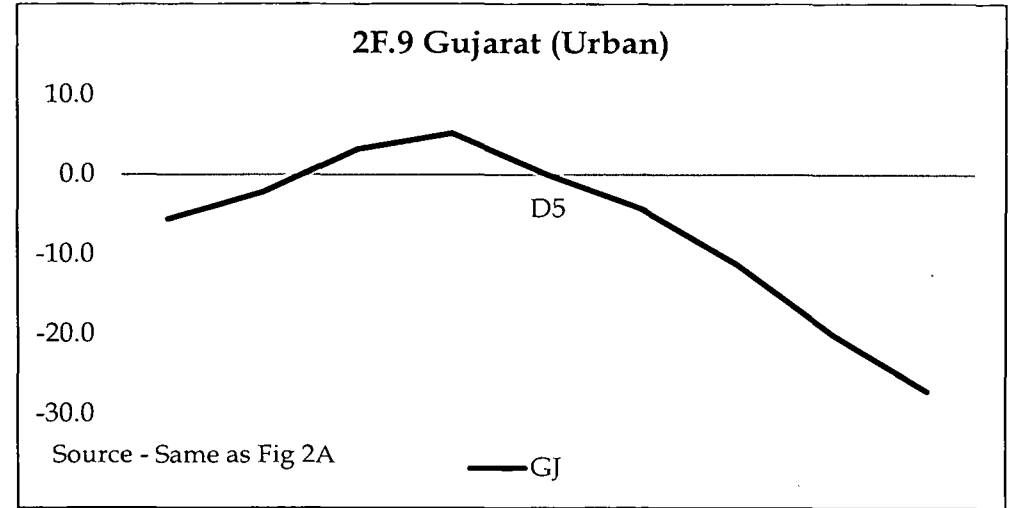
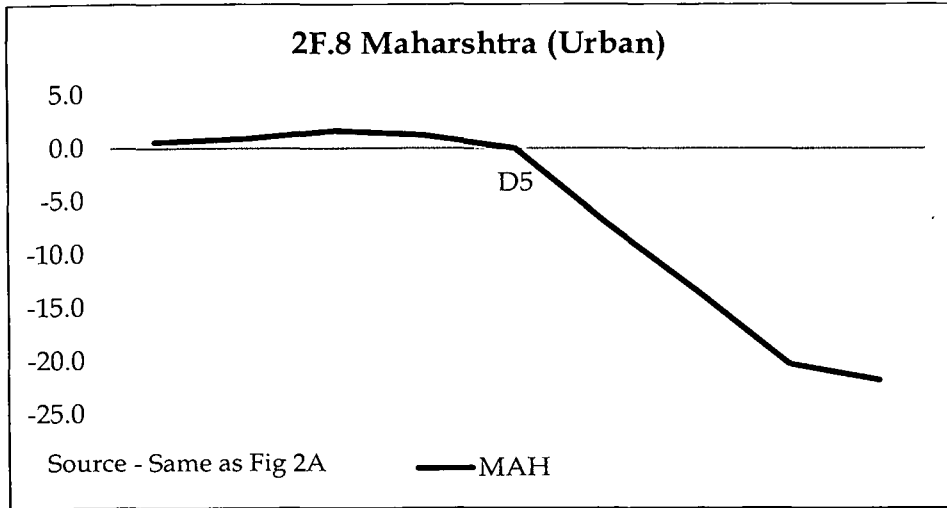


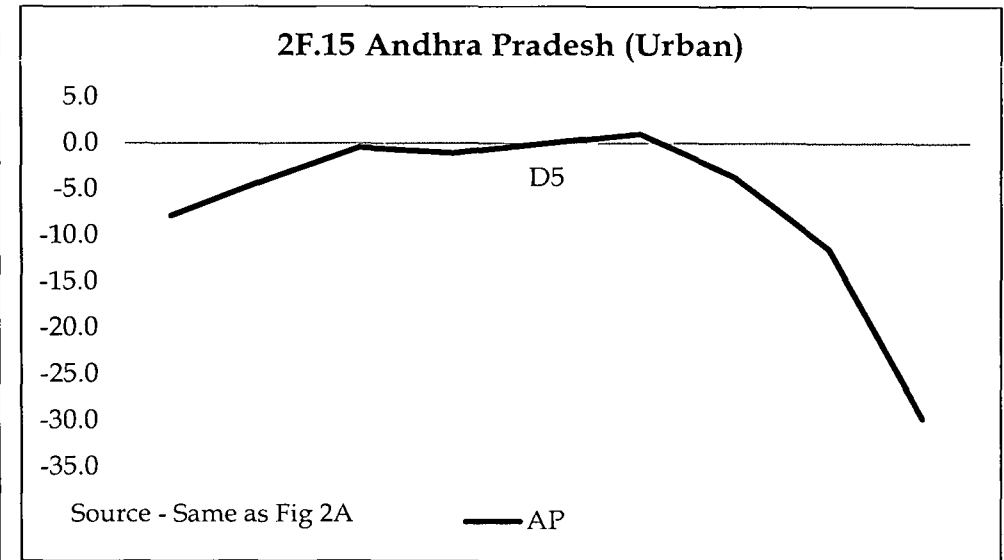
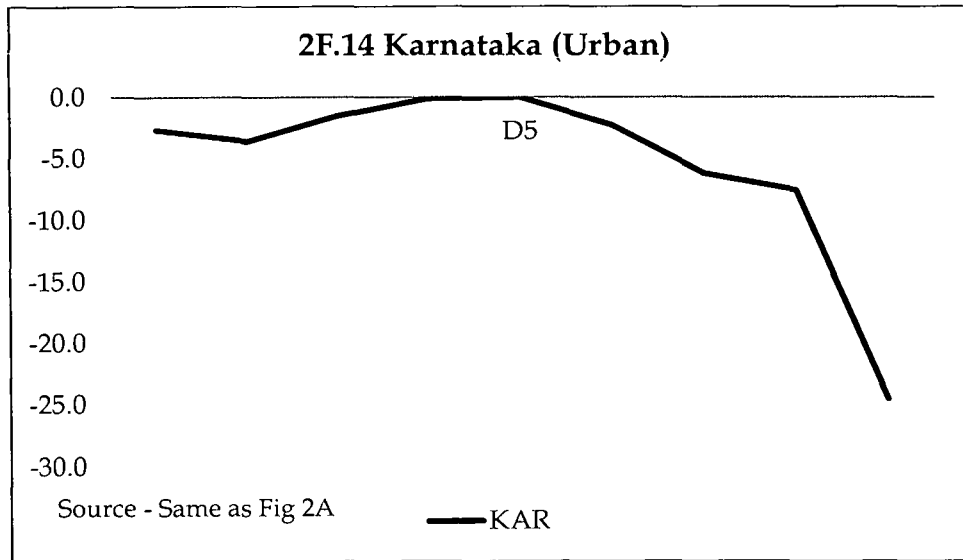
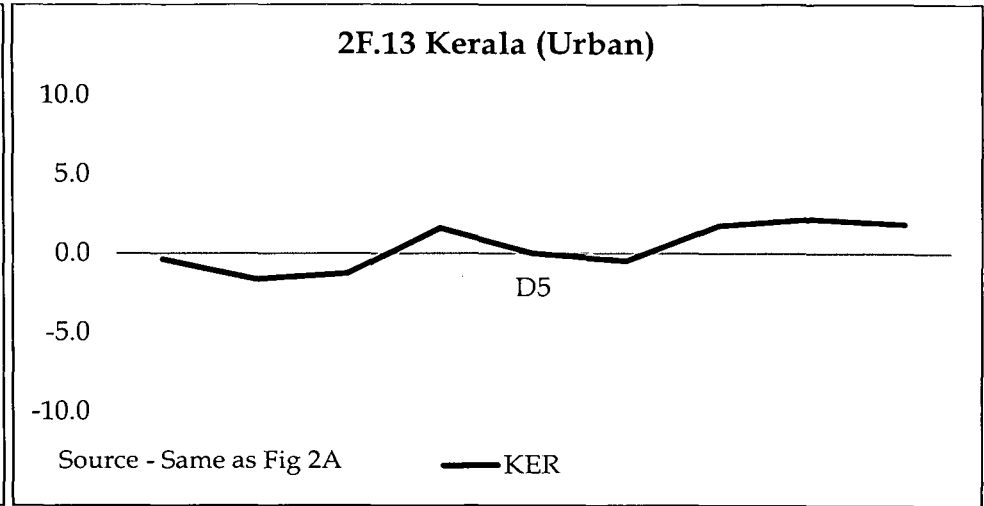
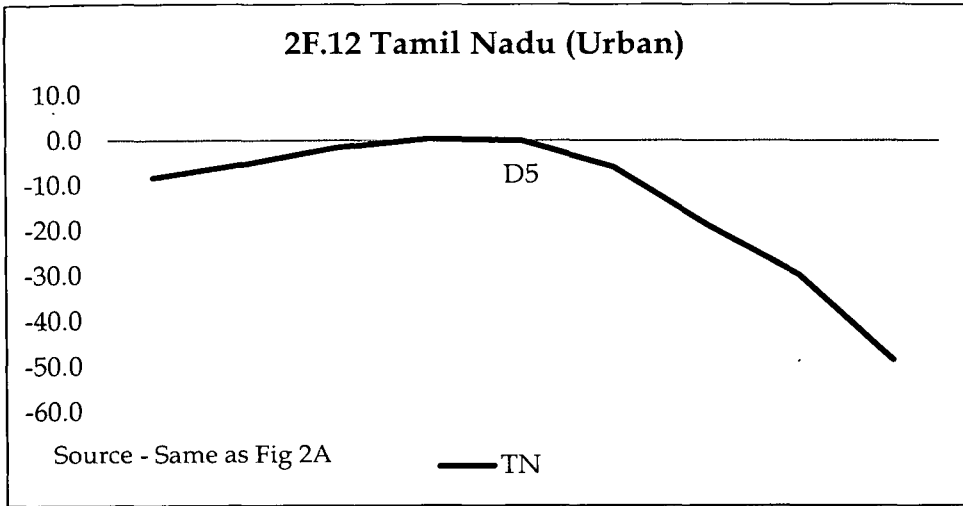
Source - Same as Fig 2A — ORI

2F.7 West Bengal (Urban)

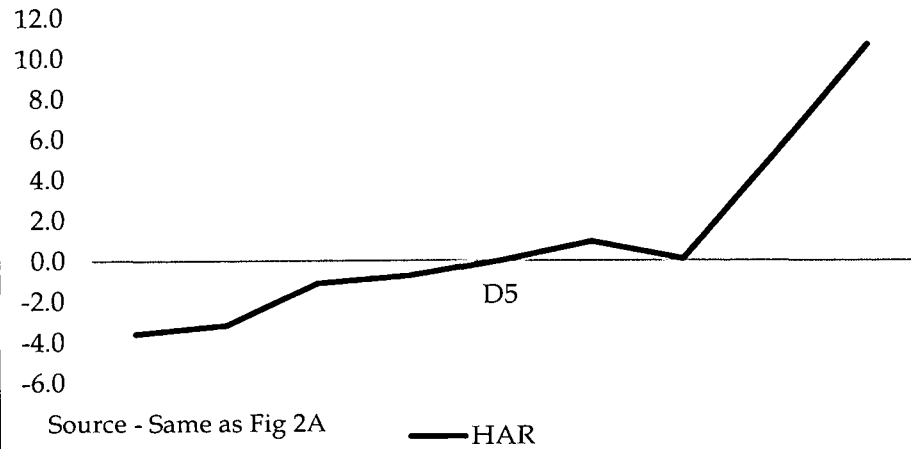


Source - Same as Fig 2A — WB

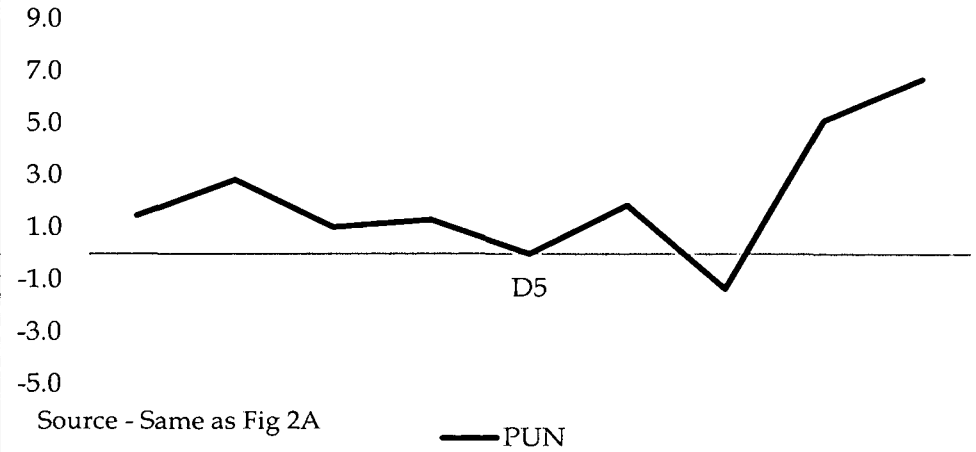




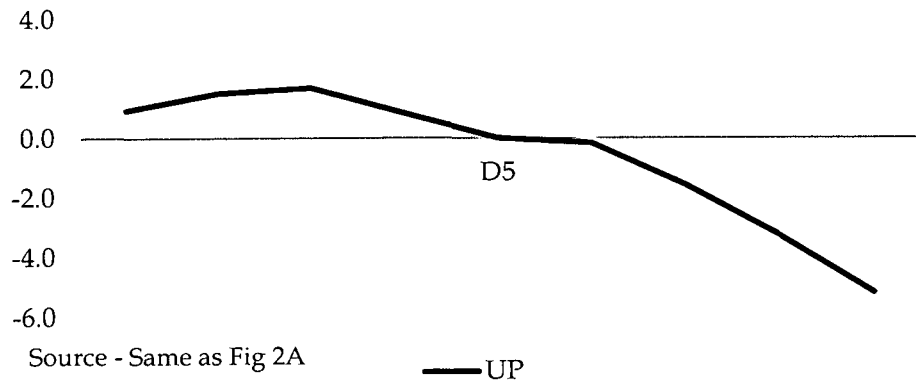
2G.1 Haryana (Rural)



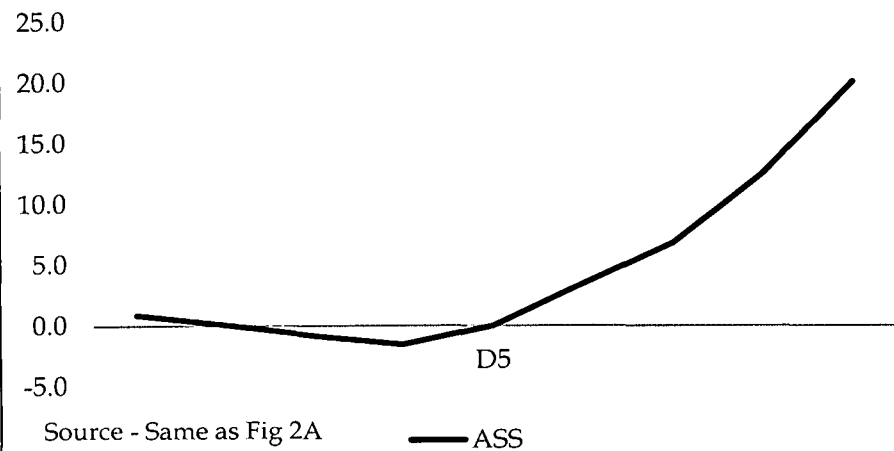
2G.2 Punjab (Rural)



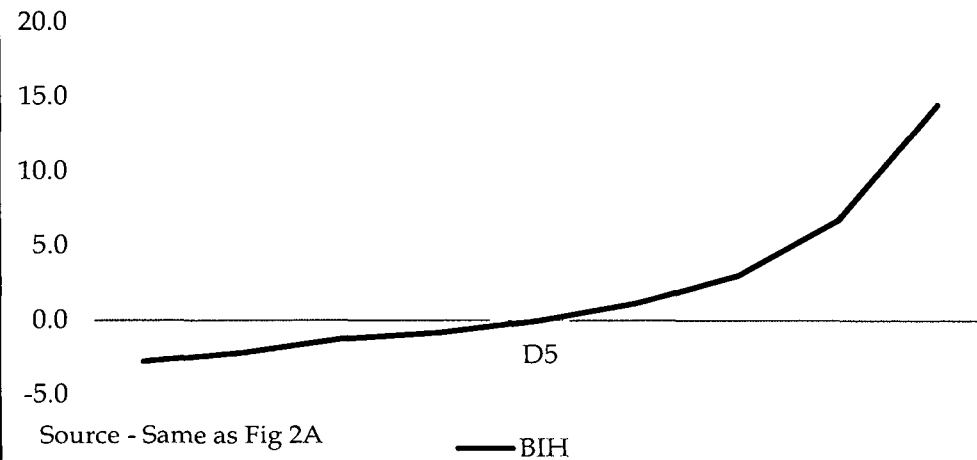
2G.3 Uttar Pradesh (Rural)



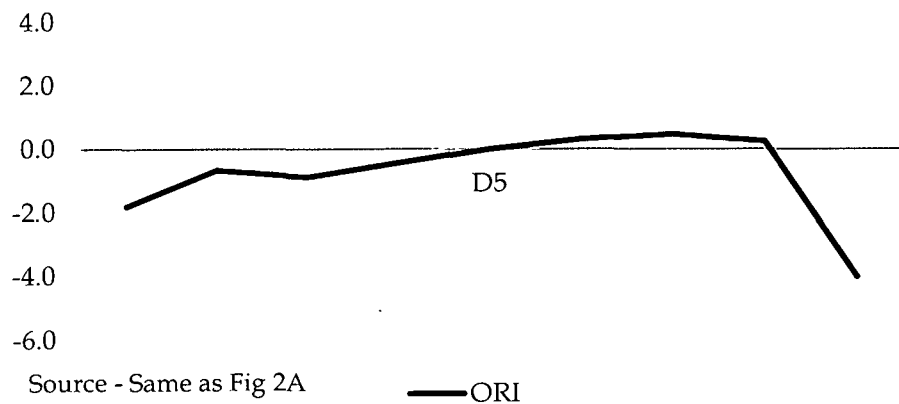
2G.4 Assam (Rural)



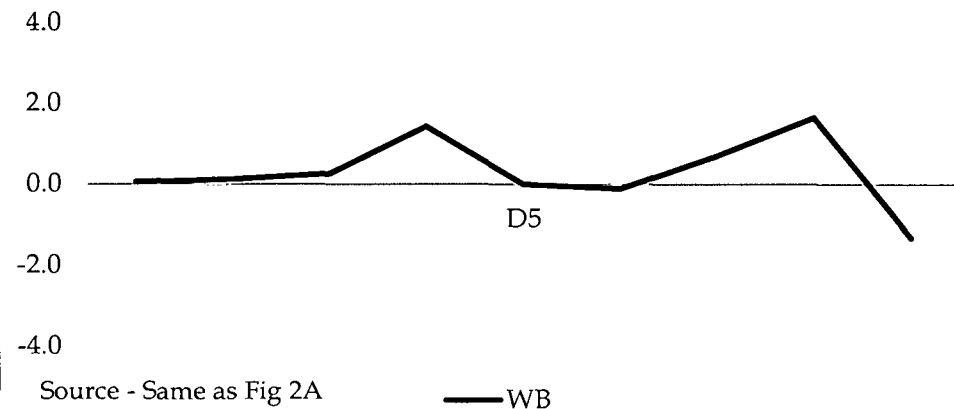
2G.5 Bihar (Rural)

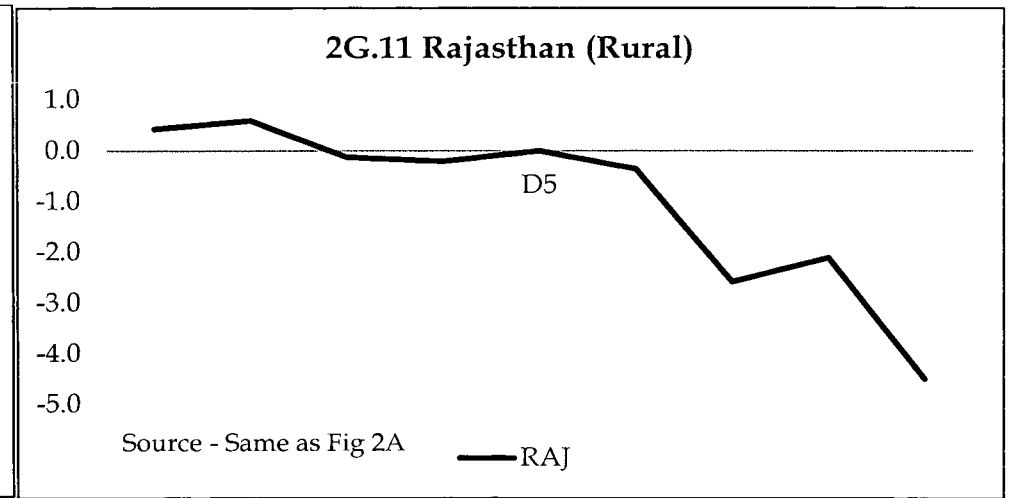
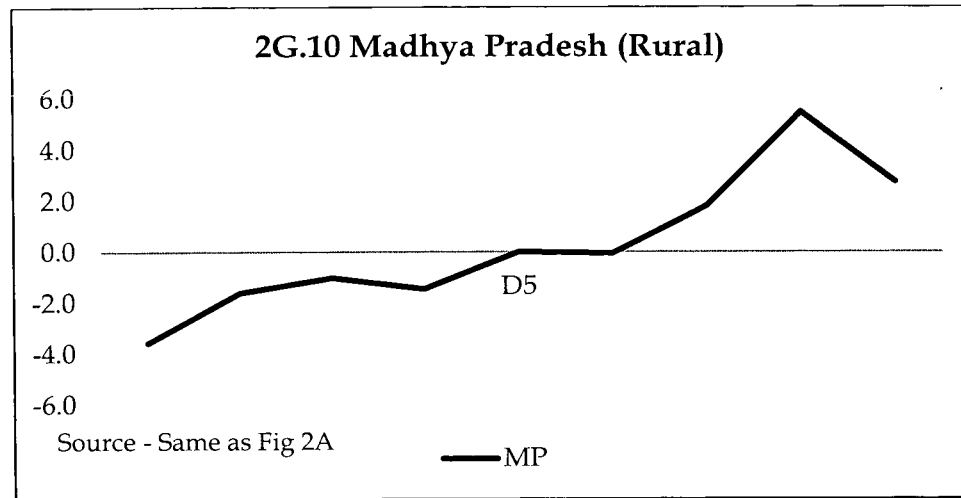
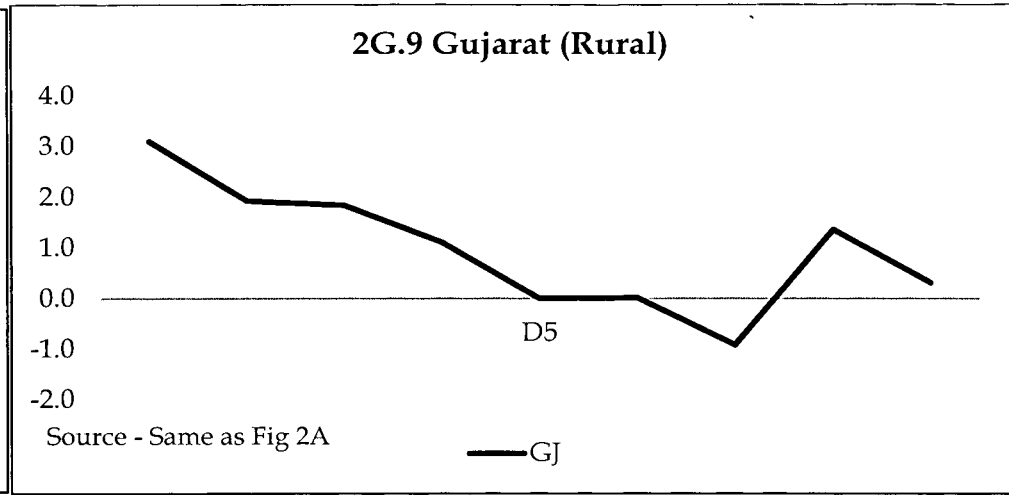
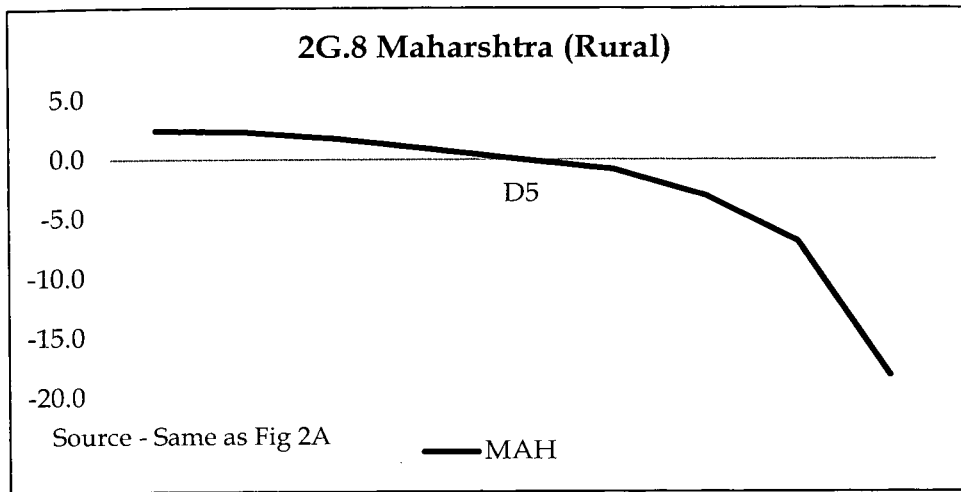


2G.6 Odisha (Rural)

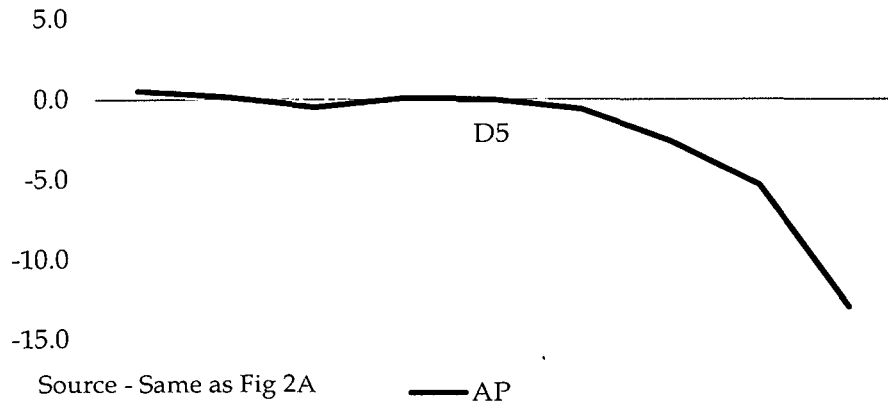


2G.7 West Bengal (Rural)

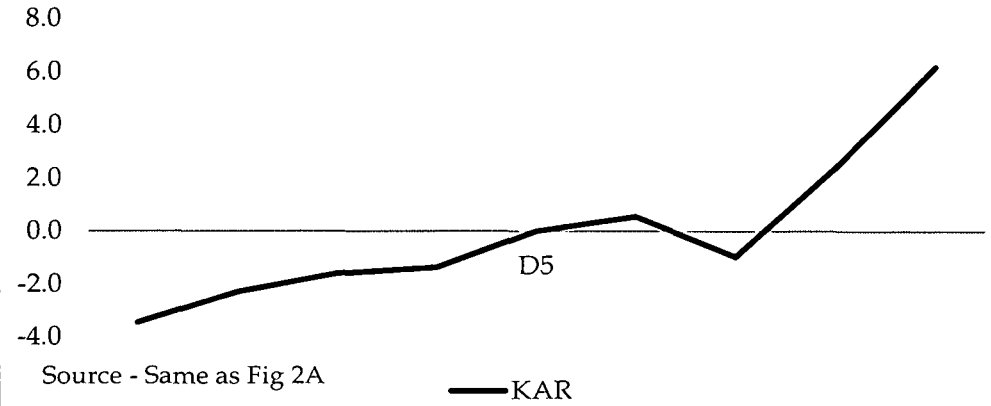




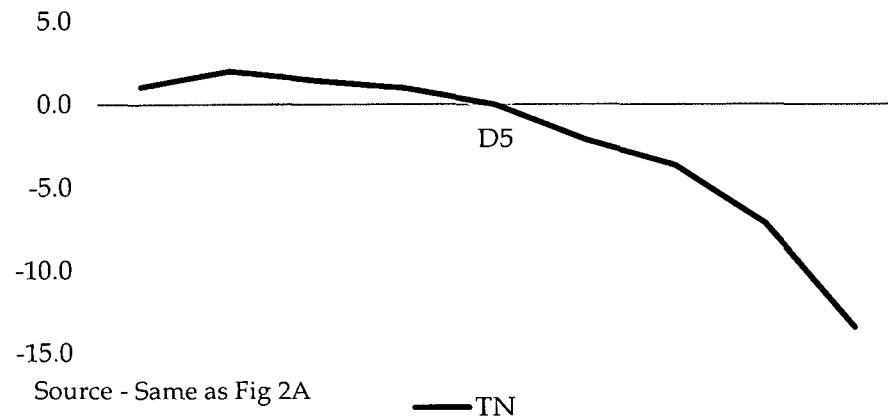
2G.12 Andhra Pradesh (Rural)



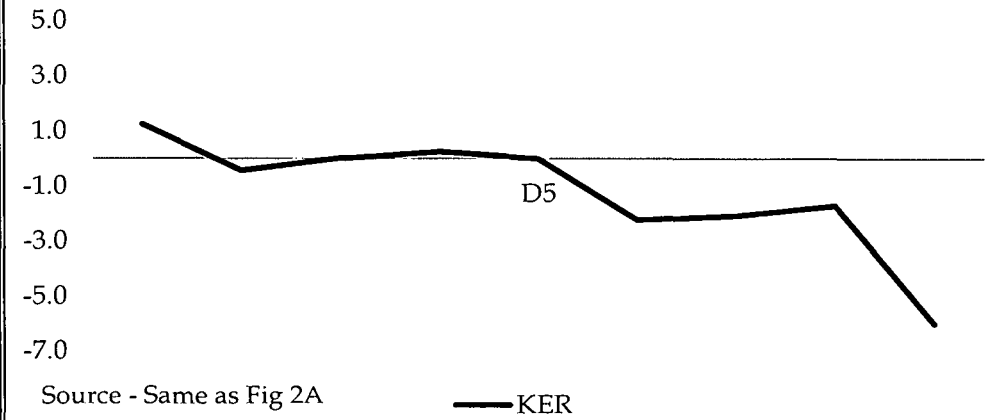
2G.13 Karnataka (Rural)



2G.14 Tamil Nadu (Rural)



2G.15 Kerala (Rural)



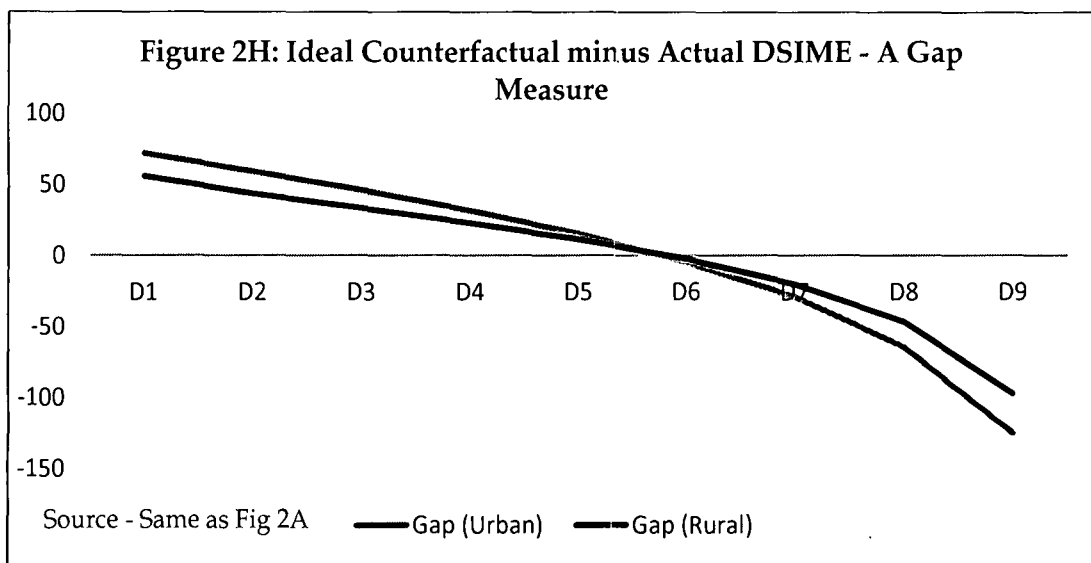
What could be inferred from these numbers? We are trying to show the complexities with which such a comparison is faced. While there different policies in all the states, yet there is some coherence in the outcomes. *States like Maharashtra and Tamil Nadu having similar and desirable rural mobility numbers tread different paths to public policy by which they are characterised in the literature, say by Besley and Burgess (2002).* Infact a whole detailed policy analysis of a certain type is done in the paper so mentioned, looking at the differences in political and economic institutions. Thus the trajectories of both these states are different but the outcomes remain similar. It is this moot point which could lend credibility to the analysis of income mobility. *Thus our analysis not only provides a picture of the income mobility in the Indian economy, it also tries to establish the case for similar development outcomes which are not necessarily backed by similar policies and there could be multiple paths to development.* To extend the argument further and caution the readers, merely desirable growth in income per capita and income mobility would not necessitate for what is known as development. However, the evaluation undertaken for the Indian states does bring out another facet of development involving income mobility. Given that we had a look at some estimates advanced upto now, we need to raise a counterfactual. What would have been the desirable income mobility for the decade analysed and how far are we missing the mark? This analysis is followed in the next section.

2.6 Ideal Counterfactuals and a Case of Policy Insufficiency

We have argued about the differing development trajectory across states and have pointed out that similar outcomes could be reached differently. But how much income mobility would we target? With this question being raised, we need to have a certain conception of an ideal. One could think of many ideal distributional outcomes, but the simplest one is where every household gets the exact same amount of income³⁰. Given such a distribution where the aggregate output is equally shared in the economy, we arrive at a certain mobility estimate.

³⁰ It is important to note that this is not the only and the most appropriate way to distribute aggregate income. The debates surrounding this are not undertaken in our analysis.

It is via such an estimate that one could provide an assessment of where the policies have failed to work and where the emphasis of these development policies should lie. In line with our argument above, we observe that the rural mobility is marginally better than the urban mobility despite there being a rural distress, arguable so. It was also argued that the state of urban mobility is somehow inexorably connected to that of the rural income generation avenues³¹. Ipso facto, the difference between ideal mobility for rural areas as compared to actual mobility would be less, as shown in the gap measure on the actual and counterfactual ideal mobility. This is also shown in *figure 2H* below. We also observe the S shape for the mobility gap measure.



To add to the overall picture of a counterfactual, the scenario for the states is also more or less similar. What could easily be seen is that there is a slight difference in the gaps across deciles. For the lowest decile in urban areas, states which need to cover the maximum distance are Uttar Pradesh, Bihar, Orissa, West Bengal, Madhya Pradesh and Kerala³². Another state which though witnessed desirable mobility for these lower deciles but still needs to cover the maximum distance in terms of counterfactual ideal is Maharashtra. This on one

³¹ More on the overall development linkages of the rural-urban mobility would be discussed in the next chapter.

³² It is important to keep in mind that when we are calculating counterfactuals, we are providing a shift in the entire distribution so much so that even the median is supposed to be mobile to a certain extent. This merely indicates that the levels of convergence are different, and in no manner changes the relative-ness with which we approach the entire framework.

hand shows that there has been some churning in the urban Maharashtra but has yet not been sufficient to lower the inequality and impart mobility of the nature which we idealize. Similar changes are there for the other deciles. Another interesting aspect is the inclusion of certain different states in terms of the distance which needs to be covered by them to reach an ideal distribution. Haryana (D6,D7), Assam (D7), Gujarat (D6, D7) and Andhra Pradesh (D7) break the pattern of desirable mobility as we move into upper deciles. This could be indicative of the fact that even though these states have witnessed high mobility otherwise, might not have done enough to ensure redistribution. This is shown in *table 2.1* provided below.

Table2.1: Ideal Counterfactual minus Actual DSIME: A Gap Measure

M1 = Urban DSIME, for Select states, 2000-10									
	D1	D2	D3	D4	D5	D6	D7	D8	D9
Northern States									
HAR	67.25	54.34	43.13	29.79	12.24	-6.47	-29.42	-56.58	-114.26
PUN	66.41	53.52	41.83	27.86	12.59	-5.89	-28.72	-57.09	-110.51
UP	72.36	60.49	48.60	36.63	20.63	0.29	-27.87	-68.47	-142.68
Eastern States									
ASM	67.47	55.80	43.51	29.32	11.52	-5.15	-30.65	-59.78	-112.05
BIH	75.31	63.36	49.16	37.46	20.66	-0.01	-25.96	-72.33	-147.66
ORI	75.06	64.76	50.93	36.61	17.08	-6.52	-32.97	-69.49	-135.46
WB	74.19	62.43	49.03	34.26	16.45	-5.15	-29.26	-69.49	-132.45
Western States									
GUJ	63.68	51.98	37.79	23.95	9.17	-8.21	-28.27	-51.77	-98.31
MAH	71.75	58.68	44.76	30.81	15.11	-3.21	-25.73	-61.14	-131.02
MP	71.22	57.98	44.27	30.87	15.17	-5.81	-26.43	-58.63	-128.64
RAJ	69.02	56.66	44.66	30.07	15.69	-5.09	-26.04	-60.76	-124.21
Southern States									
AP	71.64	57.52	44.76	31.76	14.95	-5.67	-32.03	-64.40	-118.54
KAR	71.88	60.19	45.59	31.89	14.92	-3.97	-28.36	-65.84	-126.29
KER	79.55	68.07	54.54	37.30	21.98	-2.88	-34.07	-76.68	-147.81
TN	70.37	58.04	45.26	31.46	13.45	-6.36	-30.41	-63.93	-117.89

Source: Computations from NSS CES 2004-05 and 2009-10.

Similarly, for rural areas the counterfactuals follow the trend elaborated above and explanations could be extended for these places also. A distinction from the urban scenario is that we see singular states which come out in the lowest deciles needing to cover maximum ground. In terms of binding the entire

rural-urban argument together in terms of counterfactuals one could observe similar states coming up with the maximum desired movement. *Take the example of Kerala and Maharashtra. Both these states showcase the maximum deficit from the ideal scenario. However, they do so for entirely different reasons. Maharashtra is known for its rural urban divide and rising income inequalities. It has witnessed reasonable growth in the recent past but has not been able to harp on redistribution of the same. On the contrary, Kerala is a case of a near stagnant economy alongwith rising wealth inequalities which provide for greatest difference in income (consumption). While this seeming stagnation provides for a relative immobility, it keeps the redistribution avenues open due to the influx of remittances. While such explanations might unsettle the normal discourse, keen observers of the Kerala economy could corroborate the story. Again for the upper deciles we witness some states coming into highlight rendering a need for redistribution unavoidable. The gap measures are shown below in table 2.2:*

Table 2.2: Ideal minus Counterfactual DSIME: A Gap Measure

M1 = Rural DSIME, for Select states, 2000-10									
	D1	D2	D3	D4	D5	D6	D7	D8	D9
Northern States									
HAR	56.87	44.78	33.14	22.37	9.34	-5.10	-21.81	-46.72	-92.88
PUN	54.76	42.89	34.23	23.52	11.43	-2.71	-18.48	-47.71	-97.92
UP	49.37	38.83	29.38	20.37	9.87	-2.08	-17.68	-40.86	-87.19
Eastern States									
ASM	45.40	35.98	27.63	19.70	8.81	-3.32	-18.22	-39.80	-76.17
BIH	47.80	37.32	28.03	18.79	8.93	-2.51	-16.75	-39.16	-82.44
ORI	55.62	43.13	31.97	21.65	10.25	-3.03	-20.66	-47.21	-91.71
WB	48.75	37.36	28.04	17.97	9.11	-2.39	-17.41	-40.47	-80.95
Western States									
GUJ	49.45	39.20	29.59	20.59	10.62	-2.78	-18.93	-42.52	-85.22
MAH	50.38	38.32	28.71	19.61	8.38	-3.81	-19.76	-40.97	-80.85
MP	55.09	42.20	31.84	22.16	10.02	-2.78	-20.98	-47.17	-90.37
RAJ	43.66	32.93	24.18	16.00	6.83	-3.09	-15.26	-34.57	-70.68
Southern States									
AP	52.48	41.56	31.55	21.06	9.82	-3.12	-19.91	-44.34	-89.11
KAR	49.76	38.05	28.04	19.84	9.59	-2.12	-16.93	-40.67	-85.56
KER	64.64	52.96	41.76	29.49	16.07	0.32	-23.61	-59.15	-122.47
TN	50.23	38.33	29.81	20.58	9.93	-1.55	-17.60	-41.66	-88.06

Source: Computations from NSS CES 2004-05 and 2009-10.

2.7 Income Mobility Estimates and Conclusions for Differential Development Trajectories

In this chapter we set out to do two things – a) to extend certain income mobility estimates for the Indian economy and various states and b) to use these estimates to argue a case for arriving at similar development outcomes albeit treading different development trajectories. What we observe is a relative downward mobility for the lower deciles in the urban areas which could be indicative of diminishing household opportunities to climb up the income ladder. However, at the same time we see some effects of redistribution at play as indicated in the downward mobility for the upper deciles in the urban areas. In the rural areas, in congruence with China and other developing countries, we have witnessed more desirable upward mobility. While a juxtaposition of the rural-urban story fuzzes such a simplistic representation, it does not negate the possibility of changes in income mobility for the economy as a whole. Moreover, the distributional implications of India's growth are clearer by our analysis – which includes income mobility in the set of evaluative criterion. The prime task of extending such measures would lead to a complication in the way economic development could be analysed in the recent decade.

We also argued about the nature of development trajectories being distinctly different across the states. *Based on the prevalent outcome measures, formulation of an ideal policy would have created problems, when the set of outcome measures do not include income mobility. Our analysis argues that the conception of a desirable policy for development is not a unique package, rather a contrasting one.* Similar trajectories of development could be attained by both market driven policies like Maharashtra and state led policies as in case of Tamil Nadu. It is also important to note that Kerala's example is not extended as an ideal case according to our analysis. This is simply because of the relative immobility in incomes witnessed in the Kerala economy, which indicates limited opportunities for households to move up the income ladder. Inclusion of income mobility implicates that a household in

Kerala has lesser opportunities to move up the income ladder. Ipso facto, a comparison of an economy indicating a greater mobility with an economy indicating lesser mobility, a higher preference should be given to that of higher mobility indicating the availability of opportunities for upward movement. Such a possibility could be the effect of either a state led redistribution at work or market providing greater opportunities to earn better.

Appendix 2A

Tables showing the mobility estimates for various distance functions proposed in our analysis for urban India during the years 2000-10 is provided in table 2A. Table 2B shows the same estimates for rural areas during the same time period.

Table 2A: India's Urban Mobility Across Deciles - Various Estimates

Urban	D1	D2	D3	D4	D5	D6	D7	D8	D9
M1(DSIME)	-4.37	-2.56	-0.65	0.33	0.00	-1.91	-6.19	-10.35	-17.80
M2(NDIME)	4.37	2.56	0.65	0.33	0.00	1.91	6.19	10.35	17.80
M3(CDFIME)	4.78	2.22	0.47	0.20	0.00	0.79	2.10	2.80	3.57
M4(MdNIE)	-8.74	-5.12	-1.30	0.67	0.00	-3.82	-12.39	-20.70	-35.59
M5 (OIIME)	0.04	0.03	0.01	0.00	0.00	0.00	0.02	0.02	0.04

Source: Computations from NSS CES 2004-05 and 2009-10.

Table 2B: India's Rural Mobility Across Deciles - Various Estimates

Rural	D1	D2	D3	D4	D5	D6	D7	D8	D9
M1(DSIME)	0.09	0.42	0.25	0.10	0.00	0.48	0.50	0.51	-1.64
M2(NDIME)	0.09	0.42	0.25	0.10	0.00	0.48	0.50	0.51	1.64
M3(CDFIME)	0.08	0.31	0.16	0.05	0.00	0.21	0.19	0.16	0.39
M4(MdNIE)	0.19	0.83	0.51	0.19	0.00	0.96	1.00	1.02	-3.27
M5 (OIIME)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-0.01	0.01

Source: Computations from NSS CES 2004-05 and 2009-10.

Tables 2C and 2D provide numbers for the figures used to argue the case in the chapter and are of vital importance. They provide an illustration of the direction sensitive income mobility estimates for urban and rural India respectively.

Table 2C: Direction Sensitive Urban Mobility Comparisons across Select States

M1 = Absolute Directional Mobility implies a distance function which is sensitive to convergence.									
	D1	D2	D3	D4	D5	D6	D7	D8	D9
Northern States									
HAR	-5.40	-4.60	-4.29	-2.27	0.00	-7.53	-17.41	-35.05	-49.69
PUN	-4.70	-2.56	-1.43	0.60	0.00	1.44	-0.50	-3.74	-10.09
UP	-5.89	-3.75	-1.20	-0.28	0.00	-1.57	-3.71	-7.21	-17.28
Eastern States									
ASS	-5.24	1.07	7.33	2.71	0.00	-2.60	-7.00	-9.52	-5.72
BIH	-9.96	-6.22	-1.13	-0.61	0.00	1.66	3.36	14.70	21.08
ORI	-10.10	-12.06	-7.88	-4.24	0.00	-2.60	-6.35	-15.71	-12.31
WB	-6.22	-4.23	-2.17	0.28	0.00	-1.18	-4.11	-2.18	4.28
Western States									
GJ	-5.61	-2.22	3.19	5.17	0.00	-4.35	-11.23	-20.02	-27.11
MAH	0.56	0.91	1.65	1.23	0.00	-7.02	-13.45	-20.22	-21.80
MP	-10.18	-7.56	-1.59	-0.19	0.00	0.17	-14.78	-23.49	-24.61
RAJ	-10.25	-7.81	-4.82	-1.16	0.00	3.46	0.69	0.96	1.68
Southern States									
AP	-7.88	-4.03	-0.45	-1.07	0.00	0.99	-3.66	-11.45	-29.68
KAR	-2.68	-3.60	-1.54	-0.14	0.00	-2.30	-6.21	-7.58	-24.55
KER	-0.38	-1.62	-1.26	1.62	0.00	-0.47	1.76	2.18	1.86
TN	-8.29	-5.22	-1.60	0.36	0.00	-5.89	-18.65	-29.80	-48.53

Source: Computations from NSS CES 2004-05 and 2009-10

Table 2D: Direction Sensitive Rural Mobility Comparisons across Select States

M1 = Absolute Directional Mobility implies a distance function which is sensitive to convergence.									
	D1	D2	D3	D4	D5	D6	D7	D8	D9
Northern States									
HAR	-3.57	-3.17	-1.12	-0.76	0.00	0.95	0.09	5.29	10.68
PUN	1.47	2.84	1.02	1.30	0.00	1.86	-1.35	5.11	6.70
UP	0.94	1.50	1.69	0.84	0.00	-0.17	-1.59	-3.26	-5.16
Eastern States									
ASS	0.89	0.06	-0.83	-1.54	0.00	3.44	6.82	12.51	20.08
BIH	-2.76	-2.20	-1.26	-0.82	0.00	1.19	3.02	6.70	14.49
ORI	-1.79	-0.67	-0.89	-0.45	0.00	0.31	0.47	0.24	-4.02
WB	0.06	0.12	0.26	1.43	0.00	-0.12	0.70	1.65	-1.33
Western States									
GJ	3.10	1.93	1.84	1.11	0.00	0.01	-0.92	1.36	0.32
MAH	2.43	2.28	1.72	0.87	0.00	-0.82	-3.03	-6.89	-18.11
MP	-3.56	-1.61	-1.02	-1.46	0.00	-0.07	1.79	5.47	2.73
RAJ	0.43	0.59	-0.13	-0.21	0.00	-0.36	-2.59	-2.11	-4.50
Southern States									
AP	0.53	0.16	-0.47	0.04	0.00	-0.62	-2.59	-5.34	-12.99
KAR	-3.45	-2.29	-1.59	-1.36	0.00	0.55	-0.95	2.40	6.20
KER	1.24	-0.44	0.00	0.24	0.00	-2.23	-2.07	-1.70	-5.99
TN	1.04	1.98	1.41	0.95	0.00	-2.12	-3.67	-7.15	-13.44

Source: Computations from NSS CES 2004-05 and 2009-10.

Tables 2E and 2F show us origin independent mobility estimates across selected states for urban and rural areas respectively.

Table 2E: Origin Independent Urban Mobility Comparisons across Select States

M5 = OI implies the capability of movement irrespective of position in the distribution									
	D1	D2	D3	D4	D5	D6	D7	D8	D9
Northern States									
HAR	0.035	0.030	0.027	0.014	0.000	0.040	0.091	0.186	0.260
PUN	0.028	0.016	0.009	-0.003	0.000	-0.009	0.001	0.017	0.050
UP	0.030	0.019	0.006	0.002	0.000	0.007	0.017	0.034	0.082
Eastern States									
ASS	0.063	0.025	-0.012	0.000	0.000	0.001	0.004	-0.004	-0.058
BIH	0.020	0.007	-0.012	-0.007	0.000	0.004	0.011	-0.021	-0.008
ORI	0.060	0.065	0.043	0.024	0.000	0.005	0.014	0.045	0.012
WB	0.035	0.024	0.013	0.000	0.000	0.003	0.015	0.002	-0.035
Western States									
GJ	0.089	0.060	0.017	-0.008	0.000	0.001	0.011	0.027	0.008
MAH	0.044	0.031	0.017	0.007	0.000	0.017	0.028	0.029	-0.021
MP	0.092	0.069	0.030	0.013	0.000	-0.017	0.036	0.051	0.001
RAJ	0.038	0.029	0.017	0.001	0.000	-0.012	0.013	0.025	0.046
Southern States									
AP	0.052	0.030	0.010	0.009	0.000	-0.010	0.006	0.036	0.112
KAR	0.050	0.046	0.027	0.012	0.000	-0.003	-0.002	-0.021	0.013
KER	-0.022	-0.011	-0.007	-0.014	0.000	0.013	0.015	0.030	0.062
TN	0.092	0.067	0.039	0.017	0.000	0.005	0.034	0.047	0.071

Source: Computations from NSS CES 2004-05 and 2009-10

Table 2F: Origin Independent Rural Mobility Comparisons across Select States

M5 = OI implies the capability of movement irrespective of position in the distribution									
	D1	D2	D3	D4	D5	D6	D7	D8	D9
Northern States									
HA R	-0.0003	0.0036	-0.0052	-0.0017	0.0000	0.0011	0.0173	-0.0078	-0.0221
PU N	-0.0103	-0.0201	-0.0072	-0.0092	0.0000	-0.0134	0.0095	-0.0371	-0.0488
UP	0.0178	0.0070	-0.0003	0.0004	0.0000	-0.0063	-0.0054	-0.0075	-0.0224
Eastern States									
ASS	-0.0728	-0.0480	-0.0245	-0.0036	0.0000	-0.0132	-0.0209	-0.0401	-0.0522
BIH	-0.0097	-0.0054	-0.0057	-0.0013	0.0000	-0.0007	-0.0048	-0.0189	-0.0524
ORI	0.0130	0.0050	0.0064	0.0032	0.0000	-0.0023	-0.0035	-0.0020	0.0280
WB	-0.0127	-0.0097	-0.0080	-0.0150	0.0000	0.0046	0.0022	0.0012	0.0391
Western States									
GJ	-0.0034	0.0002	-0.0041	-0.0033	0.0000	-0.0070	-0.0083	-0.0375	-0.0516
MA H	0.0171	0.0082	0.0044	0.0030	0.0000	-0.0041	-0.0013	0.0090	0.0569
MP	0.0027	-0.0053	-0.0041	0.0046	0.0000	0.0075	0.0032	-0.0108	0.0341
RAJ	0.0081	0.0031	0.0069	0.0049	0.0000	0.0000	0.0166	0.0059	0.0161
Southern States									
AP	0.0117	0.0104	0.0113	0.0038	0.0000	-0.0003	0.0076	0.0184	0.0567
KA R	0.0292	0.0193	0.0134	0.0116	0.0000	-0.0046	0.0085	-0.0200	-0.0522
KER	-0.0017	0.0067	0.0029	0.0001	0.0000	0.0110	0.0074	0.0013	0.0188
TN	0.0312	0.0131	0.0090	0.0034	0.0000	0.0042	-0.0001	0.0019	0.0025

Source: Computations from NSS CES 2004-05 and 2009-10.

Chapter 3

ON MOBILITY AUGMENTED INCLUSION: IMPLICATIONS FOR A DEVELOPMENT APPROACH

“...Summary statistics encapsulated in simple social indicators must not be expected to communicate complex and nuanced truths....” *Subramanian (2011)*

3.0 Recapitulation

The earlier chapter has given us a fair idea about the nature of movements we are illustrating. While we concede to the idea of including as many variables as possible to make the evaluation robust, the need to look into incomes doesn't vanish. In fact, *our analysis flags off the idea of deeper analysis of a single variable by dissecting its distributional changes across time*. Purely in terms of an evaluative judgement, these aspects of mobility are of immediate interest. We also tried to elucidate the manner in which we could interpret these changes and connect them to the way policies have implicated these changes. Our argument in fact complicates the story and brings out the heterogeneity. To extend it further, we have arrived at an ideal which could provide us a gap measure to help direct our policies and systematically engage in a 'continuous evaluative process'. While the conclusions reiterated at the end of the previous chapter were following from the arguments, we would want to take the argument further.

In order to go beyond such expositions - which are a restrictive evaluation³³ - and analyse how mobility adds to our understanding on a specific evaluative outcome, namely 'inclusion', we need to understand how we conceptualise the term at the outset³⁴. Immediately, two questions would

³³ Any evaluation based on inclusion of limited variables is bound to be restrictive.

³⁴ It is important to note that the outcomes which we talk about are inclusiveness, growth, sustainability etc. These are the outcomes which we would then want to evaluate using evaluative criterion (Sen calls them 'informational bases') namely, growth in national incomes, poverty

emanate in terms of validity of such an exercise – What is inclusion and how could an exercise of estimating income mobility enrich our evaluation in terms of the outcome of Inclusiveness of Development? This lends a perspective to our analyses and tries to specify the implications in a systematic manner. More importantly, we raised a number of issues pertaining to a difference in the development trajectories across states. It is not only important to identify these problems, but to filter some important trends and provide some analytical insight. Is the mobility in Maharashtra better than that of Kerala, in terms of achieving certain levels of development? Why is Tamil Nadu and Gujarat arriving at a similar pedestal despite stark differences in their development discourse? More importantly, how these different theoretical trajectories could shed some light on the inclusiveness of India's economic development? Before we dwell into these aspects of interconnections between two strands of development literature – namely income mobility and inclusion, we need to conceptualise these strands in the context of problem we are trying to analyse. In what follows, we shall give an outline which would be followed in the rest of the chapter, linking these two distinct discourses.

3.1 From Income Mobility to Inclusion: Whither Development?

An extension of an alternative evaluative criterion, which in our case is income mobility, to comment on developmental outcomes has two problems, a) to understand which particular aspect of development we are interested in and to subsequently define it in terms of this new evaluative criterion; and b) to harmonize this evaluative criterion with others existing in the literature so as to provide the multi-dimensionality inherent in the nature of development³⁵.

estimates, changes in inequality as well as income mobility. It is important to understand that we are using our lens of income mobility to evaluate economic outcomes of growth or inclusion. The need to evaluate growth and inclusion in whichever manner we define them is to ultimately understand economic development in its entirety. By doing so, we are automatically evaluating the policies in place. In fact, the link between outcomes and these evaluative criteria are the policies formulated to attain a certain level of these outcomes. If one understands this, then one could automatically add more evaluative criterion into the set of evaluative criteria for understanding the functioning of the economy as well as analyzing the effectiveness of policies.

³⁵ These are the two tasks at hand with which we begin our exposition, and what follows in the chapter would be connected to these two objectives.

Section 3.2 would thus set out to do the first of these aforesaid mentioned tasks. In this section, we would try and provide an exposition, which would place the literature on inclusion in light of the discourse of development. We would have two tasks at hand – a) to characterise inclusion as it exists in the literature and to conceptualise it in terms of income mobility and b) to provide implications of an inclusive development in terms of the desirability of the outcome measure hence selected. **Section 3.3** would then go on to elucidate a simplistic framework which takes a cue from our mobility approach, and tries to provide modification to make it inclusion sensitive. This formulation would again be restrictive and would tread uncharted territories in the literature. The neglect follows from those mentioned previously. **Section 3.4** would, illustrate the nature of movements intended in order for any development trajectory to be inclusive in terms of mobility. We would provide a preliminary state-level analysis and comment on the trends.

Inclusion, at the outset, means a conscious effort either by means of policy or by tinkering with the mechanism of market to bolster the opportunities of the excluded classes. Interestingly, in the Indian context, the question of caste appears to be as relevant as the question of class based inclusion. While the reasons for this are historical, there is a need for us to integrate this reality in our analysis. **Section 3.5** does precisely this by providing an estimate of the nature of movements across caste categories. While we need to caution immediately that there is an extensive and rich debate about caste in economic development, we would take the literature as given and not venture into either the history or a statement of the debates. At this juncture, it is important to reiterate that our evaluation is restrictive. In order to bring in multitudes, we would juxtapose mobility estimates hence reached with other conventional development estimates, in order to depict further differences in a picture of the development trajectory of the various states. It is needless to say that this would be the most challenging aspect of the entire work and would be undertaken in **section 3.6**, given our restrictive capacity. Conclusions reached in this section are bound to be at a level of apprehension, yet the need to cut across a point of multi-

dimensionality is unavoidable³⁶ and we believe it is appropriate to understand the process encompassing development. Section 3.7 raises pointers which would be discussed throughout the chapter and concludes the debate by earmarking the obvious implications of our evaluation.

3.2 Inclusion, Mobility and the Development Rhetoric

The concept of inclusion is invoked time and again in the literature, but has undergone a lot of convolution. Differing perspectives on development have crept into diverse understanding of inclusion, and often creating confusion between inclusion and deprivation (Sen, 2000)³⁷. *Moreover, there is a known acceptance of the confusion of inclusion as a standalone concept, as pointed out by Suryanaryana (2008)*. Hence the task at hand would certainly include a firm conceptualisation of what we understand as inclusion, given our evaluative criterion. It is also important to link the scattered discourse on inclusion with the origins of the concept as we read it. Inclusion, like any other concept³⁸, has been equally used in sociology and economics in general and development economics in particular. Government of India's twelfth five year plan is also titled 'Faster, More Inclusive and Sustainable Growth'³⁹, brings to fore the concept in terms of poverty reduction, generation of employment, reduction of group inequality etc. Yet it fails to identify and conceptualise the term 'inclusion'.

In order to make headways in understanding the concept, one needs to understand an important aspect. *Inclusion in any economy has to be an outcome of state intervention (Freeman, 2005; Mody, 2005)*. In an economy where market is the dominant mechanism by which the economic activities are taking place, state would have to play an active role in ensuring equality of opportunity. This could

³⁶ This is even more so after the work of Sen and others who talk about evaluative discourses with an inherent multi-dimensionality. The idea of capability enhancement and conception of development as much-much beyond growth rate in incomes reinstates this idea, which we are in agreement with.

³⁷ Sen (2000) brings out this point in terms of making a difference between exclusion and deprivation. He then goes on to define exclusion. While taking a cue from his understanding, we shall deviate for our purposes on the question by approaching it from a different angle.

³⁸ To name one is mobility.

³⁹ http://planningcommission.nic.in/plans/planrel/12thplan/pdf/vol_1.pdf

be done by providing basic education, investment in public health or even by generating capabilities by using subsidies to adjust market outcomes. While such adjustment of market outcomes could be called 'intrusive', one needs to keep in mind the capacity with which individuals in differing historical capacities would enter a market. To wit, an urban uneducated slum dweller would not be having similar capacities to take advantage of market opportunities as a research student at the Jawaharlal Nehru University. This is only because of the advantages endowed upon the individuals, the reasons of which could be linked to their individual familial histories. Such interventions are hence often a necessity in market economies, as is true for state led economies. Thus, the mere invoking of the term 'inclusion', at the outset involves some kind of intervention via policies - either direct or indirect⁴⁰.

Apart from the obvious involvement of state, one needs to identify the *categories which are involved in the concept of inclusion*. This would be better understood if we can identify who are the excluded and what causes their exclusion. As an inference, those who are excluded would then be the target population, who are to be included. Who are to be included and in what they are to be included would be subsequent questions. As elucidated in *Sen (2000)*, *Renoir (1974)*, *Silver (1995)* went on to identify a list of probables which could be considered as excluded. However, we need to distance ourselves from such an extensive list and focus on economic aspects of exclusion. This is certainly not to say that the idea of social exclusion is of lesser relevance, instead we only wish to express our inadeptness to handle the same. *Ipsa Facto, all those individuals or households who are either unable to reap benefits of economic growth by enhancing their capabilities and functionings are those who are excluded from the process of growth. When one broadens the criterion upon which inclusion rests, one could talk about*

⁴⁰ Policies are said to be direct if they provide identifiable advantage to the target population. Indirect policies, by corollary are policies which do not provide direct advantage to the target population but act as corrective mechanisms whereby the target population could be at a vantage point to reap advantage of the circumstances hence evolved. For example - an increase in fertilizer subsidy would provide direct support to the farmers and could be called as a direct policy. On the contrary, if the government puts a ban on multi brand retail, then the local business would be able to compete without any threat from the Multinational monopoly capitalists. It is also imperative to note that such clear distinctions are merely theoretical and often a single policy could be having both direct and indirect implications.

individuals excluded from access to basic education and health, minimum sanitary provisions etc. Thus the measure of those who are excluded brings us back to our evaluative criterion with which we analyse an economy.

Taking a cue from the need to identify the evaluative criterion upon which we base our understanding of inclusion, we need to sort our approach towards inclusion. It is well received that the lowness of incomes and the consequent deprivation of income related capabilities creates certain intrinsic as well as instrumental 'unfreedom'. *Not only does the lowness of income provide for this unfreedom, but such an unfreedom is also caused by the lack of opportunity to attain higher incomes.* In other words, the lack of plausibility to be upwardly mobile makes an individual worse off than he otherwise would have been even with the low levels of income. For certain others, such an evaluative criterion included education (Fennell, 2010), finance (Chakravarty & Pal, 2010) and even the concept at the borders of economics, to wit, social exclusion (Thorat and Dubey, 2012). In this sense we are trying to work through two different strands of the development literature and provide a framework in intersection. To this we shall return shortly.

Before elaborating on the linkages between income mobility and inclusion further, we need to answer questions raised earlier about the conceptualisation of inclusion. Firstly, as a standalone concept, inclusion would help focus upon issues, so that we could address the problems which were earlier left unaddressed. Inclusion, in this sense needs to be distinguished from pro-poor growth and inclusive development. Kanabur and Rauniyar (2009) state the differences between inclusive growth and development to be found in their teleology. *While such a difference could be accepted at the outset, we need to state that pro-poor growth/development has the state of being income-poor at the core of their conceptualisation.* At a conceptual level we need to look at multifarious evaluative criteria, which could mean that non-poor also have a chance at being excluded on certain grounds. *Inclusion in this sense need not be associated with the state of being income-poor.* Secondly, there is a strand of development literature which argues

*that inclusion is merely a language rhetoric*⁴¹ whereby academics are “running all over the place arranging seminars and conferences to find a researchable content in an umbrella concept for which there is limited theoretical underpinning...” as described by *Else Oyen, cited in Sen (2000)*. Moreover, the task of inclusion, according to them is to include the majority in the prosperous minority and hence is a mockery of the idea of development. While there could be some merit in these arguments, the idea of inclusion being language rhetoric is difficult to justify given the analyses under the umbrella of inclusion. These limitations at a conceptual level could be overcome by taking income mobility as one of the many evaluative criteria to understand the nature of inclusion in the Indian economy.

3.3 Income Mobility and Inclusion: A Framework

*Income Mobility as yet another evaluative criterion in the set of evaluative criteria would then mean that, an economy could be undergoing economic development if those in the lower deciles have upward income mobility in general and everyone has the chance to be higher up the income ladder in the next time period. Included would be those who now have an opportunity to attain standard of living akin to the median household/individual. In terms of our exposition, such inclusion would indicate of an S-shaped curve across deciles whereby, the redistribution is reflected in an active policy involvement to make the growth inclusive*⁴². Moreover, there could also be a possibility whereby there is no redistribution, but

⁴¹ “...Indeed, the language of exclusion is so versatile and adaptable that there may be a temptation to dress up every deprivation as a case of social exclusion...” Sen cautions in usage of the term social exclusion and argues that the usage without invoking its relational features could do more harm in the literature than to provide clarity on deprivation. “...Sure enough, the exclusionary perspective can be very useful in some contexts, but it can also be linguistically invoked even when it adds little to what is already well understood without reference to relational features...” The misuse of the word in our structure of income mobility could also be argued, and hence before setting forth we need to establish the relational linkages of income mobility in terms of inclusion/exclusion. That, there is a case of exclusion is not merely the matter here. It is to be understood whether such exclusion has its associations with income mobility.

⁴² **When we consider a certain type of mobility inclusive, we are talking in terms of an upward movement of lower deciles. This in our case is synonymous to pro-poor growth described in the literature with an additive dynamic component.** However, we need to understand that the term inclusive, as elaborated earlier is much broader than to be completely captured by a pro-poorness of growth in incomes only.

there is a dynamic pro poor growth (or pro poor growth over time) indicative in the upwards mobility of the lower deciles without a parallel downward mobility of the upper deciles. While the nature of movements we intend to obtain are following from the framework elucidated in the earlier chapter, we haven't been able to make the measures sensitive to inclusion until now. In what follows, we shall rectify this lacuna and reconcile the literature on inclusion and income mobility.

We would largely follow the framework from the previous chapter and develop it further in order to make the measure of income mobility inclusion sensitive. Steps 1 to 5 follow from the previous exposition and the only difference in specification is in terms of making the erstwhile estimates sensitive to differential movements of these representative household across deciles. One could conceptualise it by a lot of ways, but the simplest would be a reverse weighing whereby any movement in the lowest decile gets the maximum weightage. By doing so the measures would be as follows:

$$g: R_{2n}^+ \rightarrow R_n^+, \text{ where } n = 1, 2, \dots, 9$$

$$g \text{ is specified as } \mathbf{m}_i = \frac{w_i}{\sum w_i} x'_d$$

$$\text{Such that: } w_i = (w_1, w_2, w_3, \dots, w_9) \text{ and } w_1 \gg w_2 \gg w_3 \dots$$

$$\text{And } \sum w_i = 1$$

We should again be cautious in representing the quantum of changes provided by the figures arrived at; however we could compare these estimates at an absolute scale on the basis of weights provided to make them inclusion sensitive. This is the noteworthy difference in the estimates from those of the earlier chapter. From these measures, and the estimates extended in the next section, the following could be argued. *Firstly*, an upward mobility for the lower deciles implies that the households, on an average, have an opportunity to earn

more income than they used to earn in the earlier period. *Secondly*, this implies an overall improvement in income capabilities of the households who witness upward income mobility. *Thirdly*, it also implies the process of growth is such that they have been included in reaping the benefits of the process, irrespective of the possibility of a positive growth rate for the region/state to which they belong. The following section would provide illustrations for the same and try to characterise the nature of inclusion in terms of an income mobility apparatus for the Indian states.

3.4 Inclusion, Income Mobility and the Indian States

Inclusion, when viewed with a distribution lens provides us cunning insights facilitating deeper understanding. Such a distributional exercise elucidated theoretically in the section above has various merits. *Firstly*, rather than conforming to certain static outcome measures, we are providing a dynamicity in outlook by approaching it via income mobility. *Secondly*, the conventional evaluation which compares outcomes ahistorically and the degree of improvements often tend to be mis-interpreted. In other words, there is a lack of 'base sensitivity'⁴³ in the outcome measures. *Thirdly*, *by invoking inclusion using our positional apparatus we are making comparisons easier within as well as across groups, in terms of comparison of the income movements*. *Fourthly*, the very rhetorical exposition is bypassed by our restatement of the evaluative criterion. This on one hand narrows the confines of the nature of inclusion yet lends the required credibility. *Finally*, *inclusion is intrinsically related with distributive outcomes, and our approach, needless to say, views the entire exercise in terms of distributive outcomes over time*.

Upon adjustment of the earlier estimates we largely have the following inferences. A look at *table 3.1* would immediately indicate the general lack of inclusive upward mobility for most states, in urban areas. Both the northern and the southern states are seen to be lacking inclusion in the sense defined before.

⁴³ Mishra, U. S., & Subramanian, S. (2006). On measuring group-differentials displayed by socioeconomic indicators. *Applied Economics Letters*, 13(8), 519-521.

The lower deciles (D1, D2 and D3) have not witnessed an upward mobility, and the lowest decile is in-fact excluded by a sizable margin. That margin reduces as we move closer to the median. Kerala, Tamil Nadu and Punjab indicate a slight inclusive mobility for the deciles next to the median but this could be ignored following a general inference from the other lower decile cut offs. However, if this is plausible, then we should highlight that the nature of inclusion in Punjab and the other two states should be very different. Meanwhile, for the urban areas of the eastern and the western regions, only Assam, Gujarat and Maharashtra show an inclusive pattern. One would wonder why this is the case? While these states have witnessed high and sustained NSDP growth rates⁴⁴, their rate of inclusion via income mobility needs further analysis. Whether it is an automatic mechanism of inclusive income mobility or is it by policy design is the real question, given the nature of estimates.

Table 3.1 Inclusion Sensitive Urban Mobility Estimates, for Various States, 2000-10

M6= Inclusion Sensitivity implies a distance function with reverse weighing given a DSIME.									
	D1	D2	D3	D4	D5	D6	D7	D8	D9
Northern States									
HAR	-1.08	-0.82	-0.67	-0.30	0.00	-0.67	-1.16	-1.56	-1.10
PUN	-0.94	-0.45	-0.22	0.08	0.00	0.13	-0.03	-0.17	-0.22
UP	-1.18	-0.67	-0.19	-0.04	0.00	-0.14	-0.25	-0.32	-0.38
Eastern States									
ASS	-1.05	0.19	1.14	0.36	0.00	-0.23	-0.47	-0.42	-0.13
BIH	-1.99	-1.11	-0.18	-0.08	0.00	0.15	0.22	0.65	0.47
ORI	-2.02	-2.14	-1.23	-0.57	0.00	-0.23	-0.42	-0.70	-0.27
WB	-1.24	-0.75	-0.34	0.04	0.00	-0.10	-0.27	-0.10	0.10
Western States									
GJ	-1.12	-0.39	0.50	0.69	0.00	-0.39	-0.75	-0.89	-0.60
MAH	0.11	0.16	0.26	0.16	0.00	-0.62	-0.90	-0.90	-0.48
MP	-2.03	-1.34	-0.25	-0.03	0.00	0.01	-0.99	-1.04	-0.55
RAJ	-2.05	-1.39	-0.75	-0.15	0.00	0.31	0.05	0.04	0.04
Southern States									
AP	-1.58	-0.72	-0.07	-0.14	0.00	0.09	-0.24	-0.51	-0.66
KAR	-0.54	-0.64	-0.24	-0.02	0.00	-0.20	-0.41	-0.34	-0.55
KER	-0.07	-0.29	-0.20	0.22	0.00	-0.04	0.12	0.10	0.04
TN	-1.66	-0.93	-0.25	0.05	0.00	-0.52	-1.24	-1.32	-1.08

Source: Computations from NSS CES 2004-05 and 2009-10

⁴⁴ Table showing NSDP growth rates for various states is in the dissertation appendix and arguments have been built up on their general trend.

One would consequently want to understand the situation in rural areas. As expected, the inclusion sensitive mobility estimates indicate comparatively better income mobility in rural areas, as shown in *table 3.2*. Apart from states like Haryana, Bihar, Orissa, Madhya Pradesh and Karnataka; all the other states witness an income mobility which indicates a process of inclusion. *In terms of distribution, the lower deciles have moved closer to the median, irrespective of the levels at which they started their convergence. This in essence provides a meaningful comparison because we are not expecting an underperformer to match absolute outcomes of a relatively developed state.* The plausibility that the poorer households could be exiting the state thereby providing for higher earnings capacity for those who stay back, could hold true for the lower deciles. This is indicative of an increase in influx of migrants from the rural to urban areas, and incidentally these out-migrants from rural areas are the most vulnerable of the distribution⁴⁵. *A recent study by Novignon et al. (2012) seems to be suggesting such a movement of the most vulnerable for Ghana, which could mean an overcrowding of the lower deciles in urban areas which then causes the distribution to be not so upwardly mobility for these lower deciles.* Ipso facto, this could mean a 'clearing-up' of the rural areas which provides for inclusion in the rural areas in terms of income mobility. Hence the theoretical possibility of such an impact of migration could not be ruled out even in the Indian case. Having pointed out these evidences, one would further necessitate an enquiry of income mobility and its implication on inclusion.

This section would be summarised by raising pointers for further analysis and flag off certain possibilities. Firstly, the theoretical possibility of migration explaining a consistent pattern of rural upward mobility for lower deciles and a parallel downward mobility for urban areas could be the linkage (UNFPA 2007⁴⁶). An indicative preliminary analysis citing similar conclusions was presented by Mahapatro (2012) at the European Population Conference⁴⁷.

⁴⁵ A distribution of change in the rural urban migrants for two rounds is calculated in order to corroborate these figures. This is provided in the appendix.

⁴⁶http://www.unfpa.org/webdav/site/global/shared/documents/publications/2007/695_filena_me_sowp2007_eng.pdf

⁴⁷ <http://epc2012.princeton.edu/papers/121017>

Secondly, this plausibility of migration as a relief for urban areas could come under the scanner by the recent rural agrarian distress⁴⁸, and one needs a specific focused study to enquire into the same. It is important to note that this possibility of a rural distress would have come up in our mobility values and is also in contrast with the point raised above. Thirdly, the duration of our enquiry coincides with a major paradigm change in rural employment opportunities, to wit, the Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS). A gainful employment for the rural areas would then mean a possibility of upward income mobility for the rural households. A study by *Korra (2012)* provides an assessment of the impact of MGNREGS, stating in passing that those who stay back and avail MGNREGS have gained more as compared to those who have migrated.

Table 3.2 Inclusion Sensitive Rural Mobility Estimates, for Various States, 2000-10

M6= Inclusion Sensitivity implies a distance function with reverse weighing on Rawlsian principles, for M1.									
	D1	D2	D3	D4	D5	D6	D7	D8	D9
Northern States									
HAR	-0.71	-0.56	-0.17	-0.10	0.00	0.08	0.01	0.23	0.24
PUN	0.29	0.50	0.16	0.17	0.00	0.17	-0.09	0.23	0.15
UP	0.19	0.27	0.26	0.11	0.00	-0.01	-0.11	-0.14	-0.11
Eastern States									
ASS	0.18	0.01	-0.13	-0.21	0.00	0.31	0.45	0.56	0.45
BIH	-0.55	-0.39	-0.20	-0.11	0.00	0.11	0.20	0.30	0.32
ORI	-0.36	-0.12	-0.14	-0.06	0.00	0.03	0.03	0.01	-0.09
WB	0.01	0.02	0.04	0.19	0.00	-0.01	0.05	0.07	-0.03
Western States									
GJ	0.62	0.34	0.29	0.15	0.00	0.00	-0.06	0.06	0.01
MAH	0.49	0.41	0.27	0.12	0.00	-0.07	-0.20	-0.31	-0.40
MP	-0.71	-0.29	-0.16	-0.19	0.00	-0.01	0.12	0.24	0.06
RAJ	0.09	0.11	-0.02	-0.03	0.00	-0.03	-0.17	-0.09	-0.10
Southern States									
AP	0.11	0.03	-0.07	0.01	0.00	-0.05	-0.17	-0.24	-0.29
KAR	-0.69	-0.41	-0.25	-0.18	0.00	0.05	-0.06	0.11	0.14
KER	0.25	-0.08	0.00	0.03	0.00	-0.20	-0.14	-0.08	-0.13
TN	0.21	0.35	0.22	0.13	0.00	-0.19	-0.24	-0.32	-0.30

Source: Computations from NSS CES 2004-05 and 2009-10

⁴⁸ For a detailed literature on rural distress driven migration see Abraham (2009)

Fourthly, there is a possibility of generation of capability by public policy. With the onset of measures to bolster primary education in the early post liberalisation period, the momentum to keep the rural mobility at a desirable rate would act upon the rural population with some lag. Finally, the inclusiveness depicted in these estimates only means a relative improvement in the positioning of the representative household for the respective decile. *It does not automatically have interconnections with decline in poverty or a reduction in inequality since we cannot comment upon the levels of income attained at a point in time after the observable income mobility.*

While we have commented upon the inclusiveness of the population by adjusting our estimates, in order to provide closure to the story of inclusion, we need to extend this analysis to those who are excluded on the basis of caste. Our statement of this problem would be restricted to a level of empirical investigation and not venture into an explanation for the cause of such caste exclusion in the first place. This is addressed in the section which follows.

3.5 Caste based Inclusion and Income Mobility

Inclusion, if it has to be envisaged holistically, needs to indulge in the outcomes surrounding certain caste groups. Why does the question of inclusion via income mobility necessarily entail income mobility across caste categories, is a long entrenched historical question. It is, but common to encounter caste based exclusion. *If the income mobility of a particular historically backward caste is greater than the historically forward, then the opportunities for the backward caste to move up the income ladder is persistent in the economy, over time.* There is a rich literature surrounding inclusion across caste categories which examine the impact of economic policies on social inclusion by looking at the performance of various caste groups using different evaluative criterion (*Srinivasan and Kumar 1999, Thorat and Dubey 2012 etc.*) However, *our analysis of income mobility tries to dispel certain misgivings in making comparisons among incomparables.* Usually, the outcome evaluation in caste groups, the most politically sought after, ends up comparing aggregates. We also see an abundance of cross sectional comparison

without invoking the distributional implications of the same. When we position the values according to their own group median for these caste groups, we are escaping the question of level sensitivity. Again, upon our dissection across deciles, inclusion within caste groups is impressed upon the reader. Such an analysis thus tries to throw light on a more meaningful inclusion in social caste categories.

Following the literature on examining performance of caste groups, we also extend our income mobility estimates for various caste groups at the national level. Again, our analysis of *table 3.3* shows that there is a relative immobility for urban India. For India as a whole, the scheduled caste, tribes and other backward castes are not included in terms of income mobility. Infact, their downward non-inclusive mobility gets reflected in the overall figures for India as a whole. However, when we observe the inclusion adjusted income mobility for other caste categories which definitionally is the 'general' category, we note that there exists a greater mobility for their representative households. Thus, *there is a certain exclusion of caste groups in urban areas also, and the arguments of urbanisation diluting caste barriers do not hold water.*

Table 3.3 DSIME for Urban areas across caste groups, 2000-10

M1 = DSIME for social caste categories sensitive to the direction of mobility									
	D1	D2	D3	D4	D5	D6	D7	D8	D9
India	-4.37	-2.56	-0.65	0.33	0.00	-1.91	-6.19	-10.35	-17.79
ST	-2.50	-3.80	-3.48	0.87	0.00	-2.09	-4.37	-10.22	-13.98
SC	-7.30	-6.96	-5.58	-3.23	0.00	1.61	3.32	3.70	2.90
OBC	-7.23	-5.41	-3.23	-2.04	0.00	0.37	-2.16	-6.37	-13.89
Others	0.01	2.37	2.75	1.89	0.00	-2.69	-3.46	-4.85	-10.82

Source: Computations from NSS CES 2004-05 and 2009-10.

Immediately such a contrast would bring in the limited impact of economic policies to respond to the caste based needs for inclusion. In essence, the sensitivity of caste based exclusion either has not really touched the policy analysts or the policies themselves have not had the desired effect. In contrast, as has been the case up till now, the rural income mobility displays a positive upward mobility for India as a whole. *A greater upward mobility could be seen for*

the scheduled tribes and the other backward caste as compared to the scheduled caste. However, a recent paper by Thorat and Dubey (2012) shows that outcome indicator for scheduled castes have been better in terms of the rate of reduction of poverty. Such improvement could also be in line with our analysis. Even though there is a greater rate at which poverty alleviation takes place, income mobility might not be as much for the scheduled caste category as it is found out to be for the scheduled tribe and the other backward caste categories. Infact, when one distils out the income mobility of the scheduled tribes, scheduled castes and other backward castes; the other category is seen to be having downward income mobility for rural areas. One needs to analyse the occupational and the household specific characteristics to answer such questions, and it is, at present out of our purview.

Table 3.4 DSIME for rural areas across caste categories, 2000-10

M1= DSIME across caste categories sensitive to the direction of mobility									
	D1	D2	D3	D4	D5	D6	D7	D8	D9
India	0.092	0.417	0.253	0.096	0.000	0.480	0.501	0.508	-1.637
ST	2.196	3.321	1.657	-0.086	0.000	-0.313	-0.517	0.916	3.606
SC	-1.980	-1.770	-1.249	-0.544	0.000	-0.097	1.188	1.189	-0.698
OBC	-0.111	0.337	0.082	0.073	0.000	-0.030	-0.387	-0.109	-3.819
Others	-1.108	-0.975	-1.082	-0.596	0.000	0.373	0.211	-0.704	-0.129

Source: Computations from NSS CES 2004-05 and 2009-10.

Having commented upon the nature of inclusion and income mobility across the social categories, one tends to grope in the dark with further curiosity about the impact of income mobility across various categories as well as across various regions. The complete non-existence of a literature on income mobility hence is surprising. *It is also surprising that there is very little effort to look into the distributional aspects of these evaluative criteria and identify how exactly the policies are consistently missing their targets.* Having said this, we should admit that our evaluation has entirely been on income as a variable and its distributional aspects by looking at income mobility. However, a look at only incomes cannot but be a limited method of evaluation. Again, Sen states the following in this regard -

“...The impoverishment of our lives results frequently from the inadequacy of income, and in this sense low income

must be an important cause of poor living. And yet...ultimately poverty must be seen in terms of poor living, rather than just as lowness of incomes (and “nothing else”)..... If our paramount interest is in the lives that people can lead – the freedom they have to lead minimally decent lives – then it cannot but be a mistake to concentrate exclusively only on one or other of the means to such freedom...”

3.6 HDI, Income Mobility and Dimensions in Evaluation

Following from what is argued by Sen and others about the essential multi-dimensionality indispensable in a holistic development approach, we are going to do two things in this section. A) We are going to look at the development indicators of the states for the three broad areas selected for construction of the human development index. *Using these index values as proxies for development, we shall try and analyse the agreements and disagreements of these indicators with our estimates on income mobility.* The argument is as follows – it is not only a concern to raise the per capita incomes for individuals in an economy, but to provide them a *possibility to share the opportunities of growth* by making them more income mobile. *A digression from an absolute rise in incomes, the existence of ‘income mobility’ depicts an existing or possible relative income improvement in the standard of living or income capabilities of a household/individual.* Hence we are adding a newer dimension to the income component of HDI. However we are not recalculating it, but merely indicating an agreement with respect to the nature of mobility arrived at in order to make our approach more robust. B) In expositing such juxtaposition, we order the state⁴⁹ as the ideal, which has higher HDI value along with a desirable income mobility estimate. In other words, in a comparison of two states at identical levels of HDI, that state would be ranked higher which has greater and desirable income mobility. Implications of such an exercise would be analysed shortly.

⁴⁹ State here refers to the Indian states.

In what follows we characterise income mobility into four broad groups, namely, (i) 'desirable convergence' are those states which indicate a perfect s shaped income mobility estimate⁵⁰, (ii) 'pro-poor convergence' are those states for which all the lower deciles show an upward mobility which brings them closer to the median without a downward mobility for the upper deciles, (iii) 'neutral/immobile outcome' are for those states which do not fit into a regular pattern but shown desirable mobility for few deciles only and (iv) 'undesirable divergence' are for those state which show a downward mobility for lower deciles and an upward mobility for upper deciles thus spreading the entire distribution over a larger range of values. While such characterisations are not really water tight comparisons, but the entire exercise is to lend congruence with the multitudes of development outcomes evaluation.

Further, we also characterise the aggregate as well as component wise score for the HDI into four categories of high, medium, lower and lowest values. Now, we have two characterisations, and any congruence and agreement in these measures would provide us insights into the placement of income mobility in the spectrum of outcome measures. It is important to clarify at the outset that there is no problem of comparing income mobility estimates with the HDI and especially with its income component. *The income component of the HDI is a static measure whereas income mobility allows us to gauge the dynamic relative increase in incomes of the households in the population.* Despite having a high per capita for a state, one could and infact should expect relative income immobility. This is mathematically because of the base level sensitivity characterising these numbers which are starting from a high base and hence grow at a lesser rate or it could also be attributed to the non-existence of any mobility.

⁵⁰ We are classifying the mobility values on the basis of rural DSIME as provided in Table 2D in chapter appendix to chapter 2.

Table 3.5 Agreements of HDI Index and its components with DSIME for select states, 2000-10

		Mobility characterisation			
	HDI Components	Desirable Convergence	Pro Poor Convergence	Neutral Immobile Outcomes	Undesirable Divergence
High	HDI Scores		PUN (0.605)	KER (0.790)	
	Income Scores		PUN (0.495)	KER (0.629)	HAR (0.408)
	Education Scores	MAH (0.715) TN (0.719)		KER (0.924)	
	Health Scores	MAH (0.65)	WB (0.65) PUN (0.667)	KER (0.817)	
Medium	HDI Scores	TN (0.570) MAH (0.572)	GJ (0.527)		KAR (0.519) HAR (0.552)
	Income Scores	MAH (0.351) TN (0.355)	GJ (0.371)		KAR (0.326)
	Education Scores		PUN (0.654)	ASS (0.636)	KAR (0.605) HAR (0.622)
	Health Scores	TN (0.637)	GJ (0.633)		HAR (0.627) KAR (0.627)
Lower	HDI Scores	AP (0.473)	WB (0.492)	RAJ (0.434), ASS (0.444)	
	Income Scores	AP (0.287)	WB (0.252)	RAJ (0.253) ASS (0.288)	
	Education Scores	AP (0.553)	GJ (0.577) WB (0.575)		MP (0.522)
	Health Scores	AP (0.58)		RAJ (0.587)	BIH (0.563)
Lowest	HDI Scores	UP (0.380)			ORI (0.362) BIH (0.367) MP (0.375)
	Income Scores	UP (0.175)			BIH (0.127) ORI (0.139) MP (0.173)
	Education Scores	UP (0.492)		RAJ (0.462)	BIH (0.409) ORI (0.499)
	Health Scores	UP (0.473)		ASS (0.407)	ORI (0.45) MP (0.43)

Source - Calculations from NSS-CES 2004-05 and 2009-10 and India Human Development Report 2011

In terms of our income mobility and its associations with the HDI index, we observe an interesting pattern shown in *table 3.5*. One would anticipate the matrix to have crowded diagonals when income mobility and HDI are pitched together. However, such a co-occurrence is difficult if not impossible. We observe that there are no states which have desirable income mobility estimates and high HDI. We have congruence in states like Gujarat, Assam, Rajasthan, Madhya Pradesh, Bihar and Orissa. Albeit, such congruence are on different grounds. While Gujarat indicates a pro poor mobility, its overall human development is also in the medium bandwidth. Madhya Pradesh, Bihar and Orissa are the worst in terms of a comprehensive evaluation inclusive of HDI and income mobility. Neither are these states witnessing desirable income mobility nor are they doing well on other indicators of human development. It is also interesting to note the case of Kerala, not only in congruence with HDI but also with its individual components. While Kerala ranks the highest in HDI, it has a neutral and non-pro poor mobility estimate. *Thus by ensuring a decent level of development, it has attained a high ranking, but in terms of improvement of opportunities for households to be income mobile, Kerala fails to stimulate its economy.*

The flip side of the argument is also true. The fact that a state is showing desirable income mobility estimates does not mean that it has reached a better level of development. *And even if we argue for the possibility of households in Andhra and Uttar Pradesh to have better future opportunities, we cannot be sure of the translation of income mobility to generation of a decent level of income as well as to translate such a decent level of income into capabilities which would affect evaluative outcomes with a lag.* Similar arguments could be arrived at by comparing income component of the HDI and the income mobility categories. While we mention the difference in the income component of HDI and income mobility estimate earlier, it is important to focus on implication of income component of HDI on the total HDI index. There is a lot of literature which argues the predominance of income component determining the direction of HDI movements. Since our congruence of income mobility goes well with HDI as well as income component, there seems to be some evidence of these claims.

In terms of states which require special mention for a divergence between mobility and income component are Haryana, Karnataka as well as Uttar Pradesh. Like Kerala, *Uttar Pradesh is also a state which stands out in our analysis, demonstrating desirable mobility without a parallel level in HDI and its components.* This could only be caused by the 'lowness' of its development indicators. An improvement in its rank is not to be seen solely because of its relative position being the same as compared to other states, necessitating a paradigm change in its policies. When we compare income mobility alongside the education and health components of HDI, we see a subtly different result. While we indicated that there were very few states for which the outcome indicators of income and composite HDI were close at hand to those of income mobility and there was a cluster away from such neat trends; for education and health components, this doesn't hold true anymore.

Tamil Nadu and Maharashtra (notably different public policies) have high education and health component in congruence with a desirable mobility estimate. Kerala and Uttar Pradesh remain exceptions where the conceptual coexistence of income immobility/mobility and development/underdevelopment coexists. The southern states (excepting Andhra Pradesh) perform well in terms of education and health. While Kerala and Karnataka exhibit a certain degree of immobility, Andhra Pradesh as well as Tamil Nadu provide the contrary experience. Tamil Nadu, is evidently a public policy model for state intervention, with sceptics raising a caution in generalisation whereas, Andhra Pradesh is seen to have high income mobility which could also be attributed to the low level from which the growth in incomes takes place.

The lack of income mobility estimates agreeing to the HDI estimates presented for the aforementioned states points out to a bigger picture. There must necessarily be a caution in interpreting the HDI as the ultimate benchmark for success of a state economy. *While there is a general need to not measure development in terms of outcomes but in terms of processes requiring continuous evaluation, there are certain points worthy of attention which follows from the exercise undertaken above.* Firstly, the fact that the southern states have had a level advantage with HDI doesn't make their outcomes desirable in terms income

mobility. Low income mobility lends limited future opportunities for households. There could be a relative immobility of incomes persistent with a high level of development. *Secondly*, while we have states like Tamil Nadu and Gujarat recording inclusive income mobility as well as improving HDI estimates, policy conclusions from their performance would be difficult to reach. Both have followed a very diverging public policy intervention. *Ipsa facto, there is no ideal policy which could be argued as desirable in an economy which has a mix of both market functioning and state intervention.*

Thirdly, even a development approach which is in congruence with the HDI approach could not be called sufficient. There are two grounds for such an argument. One is that the indicators which are used in the approach to human development are contentious to say the least. A paper by *Mishra et al. (2013)* argues for one such adjustment to rectify the faults in measurement of HDI and its components. Second, only a selection of three indicators doesn't provide the desired holism of 'state of development' of an economy. The aims of operationalizing the capability approach do not get distilled into the human development index approach to begin with, let alone the incorporation of freedom to live the kind of lives one has reason to value. *Fourthly*, our approach to inclusion in terms of income mobility and the consequent efforts to synchronise it with the HDI merely adds into the set of evaluative criteria and cannot be thought as a substitute to a multi-dimensional evaluative process. *Finally, and specifically*, the need to integrate income mobility with other evaluative outcomes is indispensable since the existing concepts are stock outcomes and do not extend the idea of development as a process whereas income mobility precisely tries to achieve the same.

3.7 Concluding the Debates

In this chapter, we set out to do two distinct things, namely, a) to adjust our mobility estimates in order to make it more sensitive to inclusion and b) to try and integrate our income mobility with the overall HDI approach and evaluate the development trajectories of these states. In concern with the second objective, we have argued an essential need to incorporate the opportunities to be income mobile despite the existing high levels of development in some states. We have also argued about the varying nature of development trajectories in which states with desirable income mobility have deficiencies in terms of other outcome indicators, thus indicating the complementarity of these evaluative criteria in the process of assessing the goals set forth by our policy makers. There is a general advocacy to not measure development in terms of outcomes but in terms of processes requiring continuous evaluation.

In concern with inclusion, we have made our estimates sensitive to the position of the representative household in the income distribution. To wit, a household with x mobility belonging to the lowest decile would be valued more than a household with x mobility in the highest decile. This sensitivity is achieved by operationalizing the simplest of reverse weighing technique and is hence indicative of the nature of inclusion in terms of income mobility taking place in our economy. At a conceptual level, we have operationalized inclusion in terms of the opportunities a household has to move up the income ladder and in this sense made our approach to inclusion much more dynamic.

Appendix 3A

A1. The following tabulation is for DSIME across states combining both rural as well as urban areas. However, we limit our interpretation of this tabulation since our mobility is relative and the income variation across both rural as well as urban areas would be clubbed together in one single distribution. This could lead to an error in these estimates.

Table 3A: DSIME for Various States, Urban and Rural Combined, 2000-10

M1 = Rural DSIME, for Select states, 2000-10									
	D1	D2	D3	D4	D5	D6	D7	D8	D9
Northern States									
HAR	-4.89	-4.56	-1.88	-1.17	0.00	2.21	4.48	6.24	4.73
PUN	-2.45	-0.65	-0.24	0.66	0.00	0.01	3.28	0.36	-1.15
UP	-1.48	-0.80	-0.31	-0.43	0.00	0.22	-1.07	-0.19	-3.29
Eastern States									
ASS	-1.48	-0.8	-0.31	-0.43	0.00	0.22	-1.07	-0.19	-3.29
BIH	-4.81	-3.80	-1.89	-1.32	0.00	1.38	4.89	8.85	24.00
ORI	-2.91	-1.93	-2.49	-1.41	0.00	1.13	4.39	5.44	2.11
WB	-3.02	-2.34	-0.89	-0.48	0.00	4.09	6.87	8.13	10.29
Western States									
GJ	-2.88	-4.00	-3.49	-1.13	0.00	-2.94	-3.49	-10.51	-26.73
MAH	1.49	1.69	0.90	0.56	0.00	-3.31	-7.87	-21.16	-41.51
MP	-5.97	-4.98	-4.42	-2.21	0.00	1.99	4.60	-0.06	-10.76
RAJ	-2.95	-3.01	-2.29	-1.17	0.00	0.01	2.68	12.37	9.86
Southern States									
AP	-3.62	-3.08	-2.55	-1.10	0.00	0.63	4.12	7.84	8.55
KAR	-5.21	-3.58	-3.55	-1.50	0.00	2.91	7.20	5.32	-7.12
KER	-1.40	-2.09	-1.91	-0.61	0.00	-1.56	31.51	2.61	3.54
TN	-2.79	-1.54	-0.90	0.07	0.00	-0.30	-2.99	-14.76	-32.50

Source: Computations from NSS CES 2004-05 and 2009-10.

A2. The analysis which follows is at a level of apprehension

Table 3B Absolute values and changes in HDI and its components, for select states, 2000-10

	Health Index 2000	Health Index 2008	ΔHealth Index	Income Index 2000	Income Index 2008	ΔIncome Index	Education Index 2000	Education Index 2008	Δ Education Index	HDI 2000	HDI 2008	Δ HDI Index	Ranking 1999-00	Ranking 2007-08	Rankings Change
Northern States															
HAR	0.576	0.627	0.051	0.417	0.408	-0.009	0.512	0.622	0.110	0.501	0.552	0.051	7	9	2
PUN	0.632	0.667	0.035	0.455	0.495	0.040	0.542	0.654	0.112	0.543	0.605	0.062	5	5	0
UP	0.398	0.473	0.075	0.179	0.175	-0.004	0.371	0.492	0.121	0.316	0.380	0.064	18	18	0
Eastern States															
ASS	0.339	0.407	0.068	0.152	0.288	0.136	0.516	0.636	0.120	0.336	0.444	0.108	17	16	-1
BIH	0.506	0.563	0.057	0.100	0.127	0.027	0.271	0.409	0.138	0.292	0.367	0.075	19	21	2
ORI	0.376	0.450	0.074	0.076	0.139	0.063	0.372	0.499	0.127	0.275	0.362	0.087	22	22	0
WB	0.600	0.650	0.050	0.210	0.252	0.042	0.455	0.575	0.120	0.422	0.492	0.070	13	13	0
Western States															
GJ	0.562	0.633	0.071	0.323	0.371	0.048	0.512	0.577	0.065	0.466	0.527	0.061	10	11	1
MAH	0.601	0.650	0.049	0.297	0.351	0.054	0.606	0.715	0.109	0.501	0.572	0.071	6	7	1
MP	0.363	0.430	0.067	0.127	0.173	0.046	0.365	0.522	0.157	0.285	0.375	0.090	20	20	0
RAJ	0.520	0.587	0.067	0.293	0.253	-0.040	0.348	0.462	0.114	0.387	0.434	0.047	14	17	3
Southern States															
AP	0.521	0.580	0.059	0.197	0.287	0.090	0.385	0.553	0.168	0.368	0.473	0.105	15	15	0
KAR	0.567	0.627	0.060	0.260	0.326	0.066	0.468	0.605	0.137	0.432	0.519	0.087	12	12	0
KER	0.782	0.817	0.035	0.458	0.629	0.171	0.789	0.924	0.135	0.677	0.790	0.113	2	1	-1
TN	0.586	0.637	0.051	0.285	0.355	0.070	0.570	0.719	0.149	0.480	0.570	0.090	8	8	0

Source: India Human Development Report, 2011

Table 3B shows the change in HDI value for various states during the recent decade and also provides a change in the disaggregated score of its components, alongwith their absolute values for level comparison. The acronyms for changes in health index, income index and education index used below are ΔHI , ΔII and ΔEI respectively. This is a two period comparison for these indices. Alongwith these figures, their ranks for the period 2007-08 are also provided. When we keep the inclusion adjusted income mobility along with the values for HDI, immediate yet apprehensive conclusions follow. For the northern states, Punjab and Uttar Pradesh have relatively greater inclusion than Haryana. Parallel to this they also have improvement in HDI value maintaining identical rank. However not only does Haryana have an undesirable income mobility pattern, it is also worse off in its income per capita component of HDI. We should also note that Punjab still has the highest HDI with a level difference as compared to UP and this should be kept in mind while assessing the progress.

The eastern states have lowest level of HDI along with an income mobility which doesn't add to the aim of inclusion in any significant manner. Here, West Bengal is the only exception in terms of inclusion as well as improvements in HDI, however not moving upwards in HDI ranking. It is important to note that our case of Assam with a peculiar income mobility pattern again shows up in its relative increase in HDI rank. This could be because of a relative worsening of other states rather than an improvement in Assam's overall development levels or could be because of an astounding increase in literacy from 69 to 82 percent for rural areas during the same period which shows up in their mobility also.

There is a wide gap in terms of income mobility and HDI amongst the western states. While Gujarat and Maharashtra have done better on both grounds, Rajasthan and Madhya Pradesh have lagged behind. There is a distinct level difference in HDI of Gujarat and Maharashtra as compared to the other two. A similar level difference is also evident in both rural and urban inclusion sensitive mobility. Such a gap is not as prominent in the southern states and there is coherence of HDI as well as income mobility estimates at least for rural areas.

However contrasting the HDI with the urban mobility estimates, we find a divergence. This could be a debate to focus ones attention on.

Note - Other figures for state performance evaluation which have formed the basis of the evaluation albeit indirectly, are provided as thesis appendix.

Chapter 4

INCOME MOBILITY AND THE DEVELOPMENT DISCOURSE: SOME CONCLUSIONS

Development in the broadest sense is in essence -
“....replacing the domination of circumstances and chance
over individuals by the domination of individuals over
chance and circumstances....”

Karl Marx and Friedrich Engels, The German Ideology (1846)

4.0 Revisiting the Debates

The examination of the state of an economy is important to understand what works and what does not. The outcomes are like ‘black boxes’ where one cannot distinguish between the bitter ingredients which impede development and those other better recipes which provide for development. However, if the task were to present itself as a commonsensical solution, the entire brigade of development economists would run for cover elsewhere. This clearly not being the case, the task of evaluation is as important now as it was half a century ago. However, the problems faced by the evaluative discourse then are the problem faced by it now - what are the outcome indicators that could be selected to understand the health and functioning of the economy. It is this task of understanding the mix of outcome indicators, which describe various state of development, which we ventured into.

A swift reading of the discourse engages us with variables near to income and its rate of growth. The literature is flooded with assessment based on growth rate of GNP, growth in per capita incomes, growth in per capita expenditure etc. This nevertheless confronts one with an empirical question - the ill health of the economy despite a sustained rise in incomes. Subsequent explorations of other outcome measures provided us with the HDI. The emphasis on a broader capability framework was thought to be distilled in the

use of HDI allowing for a broader assessment which is not restrictive of income growth etc. This, it is important to point out, was only one mechanism to rectify the limitations with a yesteryear evaluation. An exploration of the distribution of incomes across various categories would have lent insights which an aggregate growth based representation could not have given. Yet, the methods used for evaluation surrounding the variable 'income' were stuck in aggregates. Moreover, these methods were then comparing these outcome indicators for various cross sections in time. What happens to the process of development and which outcome indicator would provide answers to such questions were not explored.

An analysis of income mobility explored in the earlier chapters takes care of these two lacunae. Especially, our formulation is at a level of disaggregation which comes in close contact with the distributional features of the variable income. Further, we are merely trying to explore income in greater depth instead of including variables which have wider coverage. Chapter 2 formulates some estimates of income mobility using the NSS-CES data providing a distinct dimension in evaluation. The limitations of level differences across time and the implausibility of tracking individuals could be overcome by our positional formulation.

The importance of such formulation is as good as the explanatory power of our measure in understanding the development discourse of various Indian states. We argued the need to incorporate income mobility in order to assess the development trajectories tread by these states. Our analysis indicates that a benchmark of desirable mobility could be reached by alternative and often distinctly diverse policies. The case of Tamil Nadu and Gujarat is evidence to such claims. The trajectories are thus catalysed by very different levels of state intervention. It requires a deeper causality test to associate the levels of income mobility and development achieved by these states and their respective policies. The very fact that pathways to development are not unique focuses our attention, not so much on policies, as much on their implementation and other factors which affect the outcomes.

While we understood the aforementioned aspect of our analysis, we tried to focus our measure on a specific outcome which is lately a political rhetoric, namely inclusion. We pointed out the limitations of understanding inclusion via outcome indicators which are often aggregative. Once the whole endeavour is to identify the impact of development on specific population groups it is necessary to implicate the distributional aspects of income in order to understand whether the policies are having the desired impact. We show a mixed scenario for various states and an inclusion via a mobility lens is far from satisfactory. Inclusion in another sense hurls us in domains of outcomes across caste categories. We observe greater mobility for the tribes as compared to the scheduled castes, despite a level improvement in consumption levels of the scheduled castes. We noted that such results are also in agreement with our results. An economy may be having high mobility, despite low absolute levels. This is true to a greater extent in our analysis where we seek to understand the relative positions of a particular caste group with its own median. While some interesting results were discussed with due apprehension, it was also pointed out that the idea is not to substitute conventional outcome measures like the HDI with income mobility.

The thrust of the argument was to incorporate changes across time and hence analyse income mobility, but also to juxtapose it with HDI so as to check the robustness of our results. The exercise presented in later half of chapter three brings out closer agreement of income mobility with income component of the HDI. It was also noted that there were few states which displayed high HDI but low mobility and vice versa. The explanations of this could either be found in lowness of incomes of these states, the public policy or a plethora of other reasons which necessitate a causal analysis. The task of placing income mobility in the Indian literature on measurements and evaluation was the basic purpose of this entire work; and to set the ball rolling. However, a closer observation of the analysis would certainly raise many more questions than those which it tried to answer by such exposition. A few of these need explicit mention.

4.1 Future Directions and Data Sufficiency

The inter connections between rural and urban India needs to be empiricised further. It is important to enquire into the performance of agriculture and rural livelihoods along with public policy in order to assess the nature of rural development. All this has to be linked with income mobility also in order to prove the necessary causation. Moreover, it is also important to indulge in combining the estimates of income mobility alongwith other outcome measures, as is the case with the HDI.

Pertaining to income mobility, there needs to be a debate regarding method, in order to generate alternative conceptualisations for the same. This would necessitate a push for longitudinal data which could track a sample of households, binding the existing measurements of income mobility with the Indian economy.

4.2 Distribution Sensitivity

While this work bring is larger intuitive points about the development trajectories and a need to evaluate with utmost caution, there is a subtle point in passing. This is brought out explicitly here. The idea is a thrust on exploring data with a view to analyse the distributional aspects of the data. This would facilitate stricter identification of the problem, improved policy targeting as well as better evaluation. Even simplistic exercise like ours with a view at exploring distributions provided us with insights, the validity of which is hard to question.

APPENDIX 5A

The tables provided here are contributing to the arguments made in the dissertation.

Table 5A: NSDP growth rates, at Current Prices for select states

	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11
Northern States										
HAR	12.34	10.50	14.36	13.01	13.55	18.60	17.64	20.51	21.91	19.22
PUN	5.14	3.13	8.63	7.42	11.37	17.84	20.80	14.09	15.27	13.45
UP	4.08	8.48	9.75	8.54	11.95	14.74	13.16	16.96	16.64	14.68
Eastern States										
ASS	3.95	12.25	8.97	10.68	11.15	8.76	9.31	14.65	15.41	12.70
BIH	-0.37	13.34	0.67	10.62	7.33	24.96	14.86	28.65	17.61	23.06
ORI	7.28	7.65	22.26	15.63	8.18	19.54	26.37	14.77	10.82	19.17
WB	8.91	6.68	12.53	9.90	10.37	13.78	14.64	13.52	19.01	17.09
Western States										
GJ	10.31	16.05	20.66	8.88	19.84	16.61	16.97	11.69	17.02	19.82
MAH	7.46	9.83	13.81	12.87	17.70	20.89	17.16	10.76	20.25	14.35
MP	9.17	-1.11	18.54	3.06	9.68	16.47	11.95	22.30	15.38	14.61
RAJ	11.15	-5.29	28.24	4.21	11.27	20.82	13.75	18.40	13.74	23.30
Southern States										
AP	8.72	6.23	14.17	10.32	13.94	17.33	21.12	17.81	15.05	20.23
KAR	2.65	7.08	7.87	19.67	17.60	16.53	19.24	14.61	9.71	18.01
KER	6.50	11.61	11.69	12.79	14.79	12.33	13.97	16.98	14.47	19.40
TN	0.75	5.22	11.30	15.17	18.18	20.92	13.41	14.53	18.17	15.62

Source: Data for the use of Deputy Planning Commissioner, 2010.

Table 5B: Agriculture Growth Rates for Select States

	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09
Northern States							
HAR	-1.13	7.73	3.37	-1.80	14.16	-0.05	7.32
PUN	-1.22	5.76	2.16	0.95	2.85	3.82	2.03
UP	0.14	3.85	-1.05	2.34	2.42	3.51	3.80
Eastern States							
ASS	1.22	1.51	-1.35	2.56	1.91	2.82	1.94
BIH	24.64	-16.27	13.52	19.41	9.71	26.39	2.70
ORI	-17.12	2.81	3.30	3.34	1.94	4.66	1.87
WB	-1.77	3.56	2.02	2.22	2.12	6.21	-2.35
Western States							
GJ	-6.83	39.89	-6.76	23.10	-0.73	8.73	-7.17
MAH	2.52	10.43	-6.04	9.22	10.73	13.25	-13.30
MP	-18.59	36.75	-4.31	7.04	2.35	-1.49	10.20
RAJ	-33.51	81.37	-13.56	0.31	7.51	1.62	4.19
Southern States							
AP	-7.76	15.14	4.44	6.12	1.97	17.38	0.76
KAR	-7.55	-12.81	23.68	9.92	-2.84	12.37	2.27
KER	1.86	-1.39	5.21	4.98	-6.28	-1.23	1.98
TN	-20.55	-2.42	18.01	13.26	13.24	-4.41	-2.29

Source: Data for the use of Deputy Planning Commissioner, 2010.

Table 5C: Gini Coefficient across NSS Rounds for select states.

	Rural 2004-05	Rural 2009-10	Change	Urban 2004-05	Urban 2009-10	Change
India	0.300	0.291	-0.009	0.371	0.382	0.011
Northern States						
HAR	0.322	0.301	-0.021	0.360	0.360	0.000
PUN	0.279	0.288	0.009	0.393	0.371	-0.022
UP	0.286	0.356	0.070	0.366	0.329	-0.037
Eastern States						
ASS	0.195	0.244	0.049	0.316	0.324	0.008
BIH	0.205	0.226	0.021	0.330	0.332	0.002
ORI	0.281	0.262	-0.019	0.350	0.389	0.039
WB	0.270	0.239	-0.031	0.378	0.384	0.006
Western States						
GJ	0.269	0.253	-0.016	0.305	0.328	0.023
MAH	0.308	0.268	-0.040	0.372	0.410	0.038
MP	0.265	0.292	0.027	0.393	0.364	-0.029
RAJ	0.246	0.225	-0.021	0.367	0.378	0.011
Southern States						
AP	0.289	0.278	-0.011	0.370	0.382	0.012
KAR	0.263	0.235	-0.028	0.364	0.334	-0.030
KER	0.341	0.417	0.076	0.400	0.498	0.098
TN	0.316	0.264	-0.052	0.356	0.332	-0.024

Source: Planning Commission, Report for DC, Select Indicators.

Table 5D: Poverty Headcount for select states

	Rural 2009-10	Rural 2004-05	Change	Urban 2009-10	Urban 2004-05	Change
India	33.80	42.00	8.20	20.90	25.50	4.60
Northern States						
HAR	18.60	24.80	6.20	23.00	22.40	-0.60
PUN	14.60	22.10	7.50	18.10	18.70	0.60
UP	39.40	42.70	3.30	31.70	34.10	2.40
Eastern States						
ASS	39.90	36.40	-3.50	26.10	21.80	-4.30
BIH	55.30	55.70	0.40	39.40	43.70	4.30
ORI	39.20	60.80	21.60	25.90	37.60	11.70
WB	28.80	38.20	9.40	22.00	24.40	2.40
Western States						
GJ	26.70	39.10	12.40	17.90	20.10	2.20
MAH	29.50	47.90	18.40	18.30	25.60	7.30
MP	42.00	53.60	11.60	22.90	35.10	12.20
RAJ	26.40	35.80	9.40	19.90	29.70	9.80
Southern States						
AP	22.80	32.30	9.50	17.70	23.40	5.70
KAR	26.10	37.50	11.40	19.60	25.90	6.30
KER	12.00	20.20	8.20	12.10	18.40	6.30
TN	21.20	37.50	16.30	12.80	19.70	6.90

Source: Planning Commission, Report for DC, Select Indicators.

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Author's Note – It is but obvious to say that have benefited from the general reading which I have had over the years. An avid association with the subject has helped me shape my thoughts in general and possibly provide the desired flavour. The works cited below are hence a compilation of my painful attempt to engage, which have much often than not, crept into these pages of exposition without directly being cited. Hence, the usage of the term 'bibliography' instead of 'references' as the title for the list is justified. I must also admit that during the long course of time of writing this dissertation, I have had my 'promising' poor memory help me not provide a richer direct involvement of all the work cited below. I would certainly wish to improve upon the same.

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