Inclusive Growth: A Sustainable Perspective

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1. Introduction

Contemporary policy emphasis is no longer only on eradicating absolute deprivation of income but on eradicating deprivation in its multiple dimensions. The multiple dimensions include both economic and non-economic aspects, which is in appreciation of the UNDP advocacy on promoting human development. Ever since the UNDP started advocating 'Inclusive Growth', developing countries in particular have set it as an avowed goal of development policies.[1] Though the concept is not explicitly defined, there is an implicit belief that the objective is to pursue a strategy that would provide for the inclusion of the socially and economically marginalized sections in the mainstream economy and its growth process. Policy evaluations of 'inclusive growth strategies', however, are carried out largely with reference to changes in income/consumption based deprivation measures like per capita income/consumption and incidence of poverty. However, policy pursuit sans explicit goals, targets and measures would be anybody's guess. Hence, it is quite important to define the concept of 'Inclusive Growth' and its statistical measures before any policy formulation for 'Inclusive Growth', which is economically sustainable. This would naturally raise the following questions:

1. What is meant by mainstream economy?
2. How does one measure it?
3. How does one measure its growth?
4. How does one define and measure the deprived?
5. How does one measure inclusion of the deprived?
6. How to ensure the sustainability of the inclusive process?

This perspective attempts to develop a conceptual approach to sustainable inclusion by addressing the questions listed above. It is organized as follows. Section 2 describes the approach

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[1] See, for instance, Suryanarayana (2008) and UNDP (2008).

and the salient features of a sustainable process. Section 3 develops a quantitative framework from the growth perspective. Section 4 examines the preconditions for the application of such a framework in the development context. The final section sums up the perspective.

2. Conceptual Approach

2.1 Conventional Approach

2.1.1 Economic performance:

Conventional approach to measure economic performance of a country/region is to define an outcome measure of economic activity, say, income per head of population and estimate its percentage changes per unit of time, say, annum. Consistent with this approach, one would measure the mainstream in terms of a measure of location of income distribution like level of per capita income (what a statistician would call mean based estimator of average) and the country's economic performance in terms of percentage changes in levels of real per capita income. This approach has its own limitations for the following reasons. Per capita income is a robust/good measure of average or location of a distribution only when the distribution of income is equal/normal or at least symmetric. However, when the distribution of income/consumption is skewed, estimates of per capita income generally reflect changes in the upper percentiles (higher (richer) incomes but not changes in the location of the entire distribution. Hence, quite often per capita income growth profiles could be misleading if the purpose is to make distributional assessments. However, experts end up theorizing without any reference to such fundamentals. The debates on Kuznets curve and pro-poor growth are two examples. Now 'inclusive growth' is a new addition to the list.[2]

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[2] This could be partly because we are left with Hobson's choice when it comes to measuring economic growth since we do not have distributional information on income generation. With scalar macro estimates of gross/net domestic product and total population, we can work out only estimates of per capita GDP/NDP. Hence, what is important is not to theorize but to know the limitations of concepts and measures and explore alternative options to overcome them.

2.1.2 Inclusion:

When it comes to measuring inclusion, current approach is to use welfare measures like levels of living and deprivation in terms of incidence of poverty and food insecurity. This explains the contemporary emphasis of public activists on programmes like universal public distribution system. However, the limitation of this approach is that measures of consumption and poverty essentially reflect an economic scenario after income generation, its distribution, and redistribution through fiscal and non-fiscal instruments. A moot question is that if such a policy programme for inclusion based only on redistributive mechanisms would be sustainable in the long run. This is because there are reports and field studies, which indicate that farmers, small scale ones in particular, are no longer interested in cultivation when food grains are guaranteed at prices lower than the actual cost of production.

2.2. Alternative Approach

2.2.1 Homogeneous Society:

Given the limitations of the conventional approach cited in the preceding section, the relevant questions would be how do we measure the mainstream location of a variable like income, which is skewed in its distribution? How do we identify the mainstream? How do we identify the deprived or marginalized sections? How do we measure their inclusion in the mainstream? What would ensure the sustainability of the process? The answers would also differ depending upon the extent of homogeneity/heterogeneity of the social/economic structure in the country. For a socially homogeneous or economically well-integrated society, the approach could be as follows:

Economic performance:

For unequal distributions, order-based averages like median would provide robust estimates of changes in the location of the distribution. Median is the fiftieth percentile and half of the population has income less than the median. Mainstream could be identified with a broad range of income in the neighborhood of the median encompassing an interval whose length is twice a fraction (δ) of the median. This band could be a range beginning from a fraction (say 60 per cent) of the median up to its 140 percent.

Inclusion:

An improvement in the fraction of bottom half of the population in the mainstream band would indicate inclusion in the mainstream economic activity and vice versa. This would be a relative perspective on deprivation, that is, anyone whose income is less than the threshold, that is, 60 per of the median is considered deprived and if his income exceeds this threshold, he is considered included in the mainstream. Thus, one could define a measure or coefficient of inclusion in terms of the proportion of bottom half of the population in the 'mainstream band'.

2.2.2 Heterogeneous Society:

How do we define progress and inclusion in a plural society like India? When there are different social groups, and welfare schemes exclusively meant for certain social groups are pursued, it would be worthwhile to verify progress and inclusion of each of the social groups independently and also in a collective sense. In other words, one may distinguish between inter-group and intra-group dimensions of progress and inclusion. This would call for defining measures of independent group-specific progress as well as progress relative to the overall/collective progress in terms of respective median and overall/collective median estimates. In a similar way, one may measure inclusion of the deprived of each social group in its own progress as well as that of the mainstream.

Such a pursuit would call for verification of status/improvement in (i) median income/ consumption of the specific social group as a whole relative to the total-population/overall median (inter-group inclusion); and (ii) income/consumption of the bottom rungs of the social group relative to its own (sub-group-specific) median (subgroup-specific/intra-group inclusion) as well as the overall median (Mainstream/Overall inclusion). As regards the former issue, that is, assessment of the relative status of a given social group as a whole with respect to the mainstream, estimates of inter-group disparity in the average (median) of the variable under review may be used. As regards the latter issue, that is, participation of the bottom rungs of the social group concerned in its own progress (intra-group inclusion) or mainstream progress (Overall inclusion), estimates of proportion of bottom half of the social group with consumption

greater than 60 per cent of median of the of the social group or that of the total population could be used.

2.2.3 Economic Sustainability:

As already noted, an inclusive process based only on redistribution would not be sustainable from an economic perspective. To be sustainable, an inclusive growth process should involve participation in the economic activity (employment), receiving rewards for it (income) and enjoying it (consumer expenditure). In other words, conceptually, a sustainable inclusive broad based growth process would be one, which involves an improvement touching upon the three alternative perspectives of macro economy, viz., production, income generation and income distribution (expenditure). It is with this perspective that we explore an alternative approach, framework and measures.

3. Sustainable Inclusive Growth: A Framework

In an ideal set-up, a broad based growth process could be characterized as one wherein there is all-round improvement as reflected in the three alternative perspectives of macro economy, viz., production, income and expenditure. We propose to measure all-round improvement in terms of a robust order-based average like the median. We would prefer to define inclusion (participation) of the relatively deprived in such a growth process with reference to the order-based average of the outcome measure only, that is, assess their economic status with reference to a threshold, specified as a function of the median.

3.1 Measure of Exclusion

By 'Inclusive Growth', we intend to convey the idea that the growth process under review or being proposed is such that it has benefited even those sections that are deprived of both physical and human asset endowments, hence, generally belong to the bottom rungs of income distribution, and are incapable of participating in / benefiting from the growth process. Thus, the definition of the concept presupposes the identification of the set of deprived that cannot and hence, does not (i) participate effectively in the production process; (ii) benefit from it in terms of income generated; and (iii) experience welfare improvements as measured by consumption. At the same time, in order to verify whether this deprived set has benefited / participated in the

programme, it is important to ensure that the norm used for its identification is also related to some measure of economic performance so that categorical statements about their participation or otherwise in the process can be made. If so, an absolute norm for identification of the poor may not constitute an appropriate approach. Instead, it has to be the one relative to the average economic performance or level of the economy, which may be measured in terms of a rank-order based median to ensure robustness. Towards this end, we define the set of deprived as given by

$$\theta \;=\; F(\delta \xi_{.50}) \;=\; \int_{0}^{\delta \xi_{.50}} f(x)dx \qquad\qquad \textbf{...(1)}$$

Where θ = incidence of the deprived.

$0 < \delta < 1$

(We choose 0.6 as the value for δ (a policy parameter) following international convention for relative poverty)[3]; and $\xi_{.50}$ such that

$$\int_{0}^{\xi_{.50}} f(x)dx \;=\; \frac{1}{2} \;=\; \int_{\xi_{.50}}^{\infty} f(x)dx \qquad\qquad \text{...(2)}$$

F is the cumulative distribution function.

f(x) is the density function of the variable concerned.

Some important features and implications are as follows:

- It is well known that θ lies in the open interval (0, 0.5).
  - (i) θ tends to 0 as the bottom half of the distribution gets concentrated in the interval, 'inclusion zone', given by $[\delta \xi_{.50}, \xi_{.50}]$; and

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[3] This approach would do away with price indices associated with updating the poverty lines for exercises of the sort presented in GoI (2008).

- o (ii) It approaches 0.5 when its concentration is in the interval, what may be called the 'exclusion zone', given by $[0, \delta \xi_{.50})$.[4]

- From a conceptual perspective,

  - o Case (i) represents a situation wherein the growth process is inclusive with the poor participating in the growth process and hence, experience an improvement in their economic lot; and

  - o Case (ii) emerges when the growth process is exclusive with little/negative participation by the poor such that there is a slide in their economic position.

- Hence, whether the economic process under review is inclusive or exclusive could be defined and measured with reference to the concentration of the distribution in / out of the 'inclusion zone' given by the interval $[\delta \xi_{.50}, \xi_{.50}]$, which should get reflected in variations in θ.

- Given this conceptual framework, a Coefficient of Inclusion or Poor' Participation may be defined by suitable normalizations with reference to its bounds as follows:

3.2 Inclusion in a Singular Society

This section proposes an inclusive measure for the bottom half of the population in a singular society characterized by a single homogenous social group.

i) We define an ' **Inclusive Co-efficient**' (IC) in terms of 'ψ' given by

$$\psi = 1 - 2 \int_{0}^{\delta\xi_{.50}} f(x)dx \qquad \qquad \ldots(3)$$

Where $0 < \delta < 1$ and $\xi_{.50}$ such that

$$\int_{0}^{\xi_{50}} f(x)dx = \frac{1}{2} = \int_{\xi_{50}}^{\infty} f(x)dx$$

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[4] In the literature, this is called the relative deprivation zone.

where $0 < \psi < 1$. In this study, we assign 0.6 as the value for δ. It has the following relevant properties:

a) When the 'number of relatively poor' participating and hence, benefiting from the mainstream economic process is nil, ψ will tend to the value 0; it will approach unity, as the set of beneficiary poor tends to exhaust the set of all relatively poor.

b) Any value greater than ½ for ψ, would indicate a situation where the proportion of the bottom half of the population falling in the inclusion zone or the mainstream is more than the proportion in the relative deprivation-zone, implying a scenario of inclusion.

c) Progressive improvement in ψ and its positive covariance with median income/consumption would indicate Inclusive Growth; a constant ψ would imply perpetuation of status quo and a decline in ψ with negative covariance with median income/consumption would be evidence of exclusion.

d) Being a rank-order based measure, it will reflect the deterioration / amelioration in the lot of the bottom half of the population satisfactorily. However, for the very same feature, it suffers from the limitation that the measure is not additive and hence, not decomposable.

However, in the absence of comprehensive and related information on production (in particular) and income accounts, one would not be able to estimate and examine order-based averages and inclusion coefficients for these dimensions but only for household consumption distribution. Hence, this paper proposes to cover at least the income dimension (for which information could be obtained from the National Accounts Statistics (NAS)) with reference to co-variation between growth in income and consumption, and measure of inclusion in consumption. In other words, profiles of inclusion could be examined to some extent by examining mean-based estimate of average income and consumption, and order-based estimates of inclusion in consumption distribution. The relevant measures could be as follows:

i. Elasticity of mean consumption with reference to mean income (η), which would indicate, from an economic perspective, whether growth in income is broad based and inclusive since if growth were concentrated at the top, even mean

consumption would not increase at a corresponding rate and η would be less than unity.

ii.   Elasticity of mean consumption with reference to mean income $(\eta) = \dfrac{\partial \mu_c / \mu_c}{\partial \mu_y / \mu_y}$,

Where μ_c and μ_y stand for mean consumption and mean income respectively.

iii.   Elasticity of median consumption with reference to mean consumption (ε) where

$(\varepsilon) = \dfrac{\partial \xi_{50} / \xi_{50}}{\partial \mu_c / \mu_c}$. A value for ε > 1, would imply a scenario approaching broad based growth. This would further corroborate the results on inclusive growth based on estimates of η; and

iv.   Inclusion coefficient for consumption distribution (ψ).[5]

3.3 Inclusion in a Plural Society

This section provides a generalization of the inclusion measure presented in the preceding section for a plural society for the following reasons:

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[5] In a corresponding fashion, one could consider a coefficient of broad based income generation and distribution 'γ' with reference to median income/consumption for welfare evaluations where $\gamma = \int_{\delta\xi_{50}}^{(2-\delta)\xi_{50}} f(x)dx$ where f (x) is the income/consumption density function and γ lies in the interval (0,1). In an ideal scenario on broad based growth, that is inclusive, ψ and γ would converge. To verify whether the growth process is broad based one might consider adjusting the median by taking the product of median and γ.

i)   Countries like India have a plural society, that is, a society consisting of different groups like the Scheduled Castes (SCs), Scheduled Tribes (STs), Other Backward Castes (OBCs) and other social groups called 'Others'.[6] For historical reasons, in India these social groups differ with respect to mean as well as distribution of economic welfare, however measured. For instance, in India SCs and STs constitute the socially vulnerable and economically backward classes.

ii) In pursuit of social welfare, governments pursue both mainstream economic policies and targeted welfare programmes to uplift the generally backward classes.

iii) However, for reasons like Type I and Type II errors, even the targeted programmes do not end up providing for a general improvement of the backward social groups.[7] As a result, there are situations when only a subsection of the backward communities is included in the mainstream / benefited from welfare programmes.

iv) Therefore, inclusion in a plural society has two dimensions: (i) inter-group and (ii) intra-group. Inter-group dimension could be examined with reference to differences / disparities in median levels of income / consumption expenditure across social groups while the intra-group dimension could be examined in terms of ICs defined with respect to group-specific as well as overall median.

Some details about these measures are as follows:

1) Inter-group inclusion as measured by proximity of sub-group-specific median ($\xi^S_{.50}$) to overall median (of the total /mainstream population, i.e., all sub-groups inclusive given by $\xi^M_{.50}$).[8] For a given δ such that ($0 < \delta < 1$), there can be two situations:
   a. Case (a) $\xi^S_{.50} < \delta \, \xi^M_{.50}$ implies exclusion of the sub-group
   b. Case (b) $\xi^S_{.50} \geq \delta \, \xi^M_{.50}$ would imply inclusion of the sub-group concerned.

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[6] For that matter, one could consider different occupations/regions/sectors/states instead of social groups.
[7] When a targeted welfare programme fails to reach/benefit the intended beneficiaries, it is called Type I error. Type II error refers to a situation when the programme benefits the unintended beneficiaries (Cornia and Stewart 1993).
[8] The mainstream median ($\xi^M_{.50}$) may be defined with reference to different combinations of the social groups including as well as excluding the sub group under review depending upon the context. For illustration purpose, we have considered the median of the total population here.

2) Intra-group inclusion for any given social group 'i' could be measured with respect to either own median ($\xi^S_{.50}$) **providing a measure of ψ_i^S** (that is, IC-Subgroup) or overall median ($\xi^M_{.50}$) providing a measure of ψ_i^M (that is, IC-Mainstream). These two measures would (a) be distinct and different for situations when there is inter-group exclusion; and (b) converge with progressive inter-group inclusion:

   a. IC-Subgroup (ψ_i^S) would measure the extent of inclusion of the bottom half of the sub-group under review in its *own* progress.

   b. IC-Mainstream (ψ_i^M) would measure the extent of inclusion of the bottom half of the sub-group under review in the progress of the *country/society as a whole*. The limits for IC-Mainstream (ψ_i^M) are as follows:

   $\psi_i^M = (-)\ 1$ implies perfect exclusion of the sub-group

   $\psi_i^M = 1$ implies perfect inclusion of the entire subgroup

3) IC index in a Plural Society: The ratio (ω_i) of IC-Mainstream (ψ_i^M) to IC-Subgroup (ψ_i^S) for a given social subgroup 'i' would provide a measure of its inclusion from an integrated perspective.

$$\omega_i = \frac{\psi_i^M}{\psi_i^S} \qquad\qquad \ldots(4)$$

where 'ψ_i^M' = IC-Mainstream defined with respect to median of the *total* population ($\xi^M_{.50}$)

'ψ_i^S' = IC-Subgroup defined with respect to median of the *Social group* population ($\xi^S_{.50}$)

The conceptual Limits for IC index (ω) are given below:

$\omega = (-) \text{ infinity}$ implies perfect intra- and inter-exclusion.

$\omega = \text{infinity}$ implies perfect intra-exclusion and inter-inclusion of the entire subgroup.

4) For situations when $\xi^S_{.50} < \delta\ \xi^M_{.50}$, a comprehensive measure of inclusion for the entire (as against for the bottom half) social sub-group 'i' population in the mainstream would be indicated by the β-measure given by:

$$\beta_i = \tfrac{1}{2}\,(1 + \psi_i^M) \qquad\qquad \ldots(5)$$

where $0 \le \beta_i \le 1$.

The β-measure indicates the proportion of the subgroup population participating/included in the growth process as reflected in outcome measures like consumer expenditure distribution. Its limiting values will be zero and one; it will be zero when the entire social sub group is excluded from the mainstream and unity, otherwise.

4. Preconditions for a Development Process

An application of the framework presented in the preceding section would call for an integrated economy/market for the citizens. Otherwise, one would end up making wrong inferences, which one comes across often in development policy discussions. For instance, welfare policies like food subsidies are designed on a uniform basis at the state/national level as if the citizens operate in an integrated market. However, this may not be true. For instance, budget share Engel function for food across districts in Maharashtra (see Figure 1 attached), contrary to what such policy formulations would presuppose, is not a single-valued function. Instead, it is a multi-valued one involving multiple budget shares for the same level of income and vice verse, which would imply segmented markets with differential economic and non-economic costs. Hence, a mechanical application of the framework proposed would end up generating wrong inferences and policy recommendations.

Figure 1: Engel relation: Rural Maharashtra (2004/05)
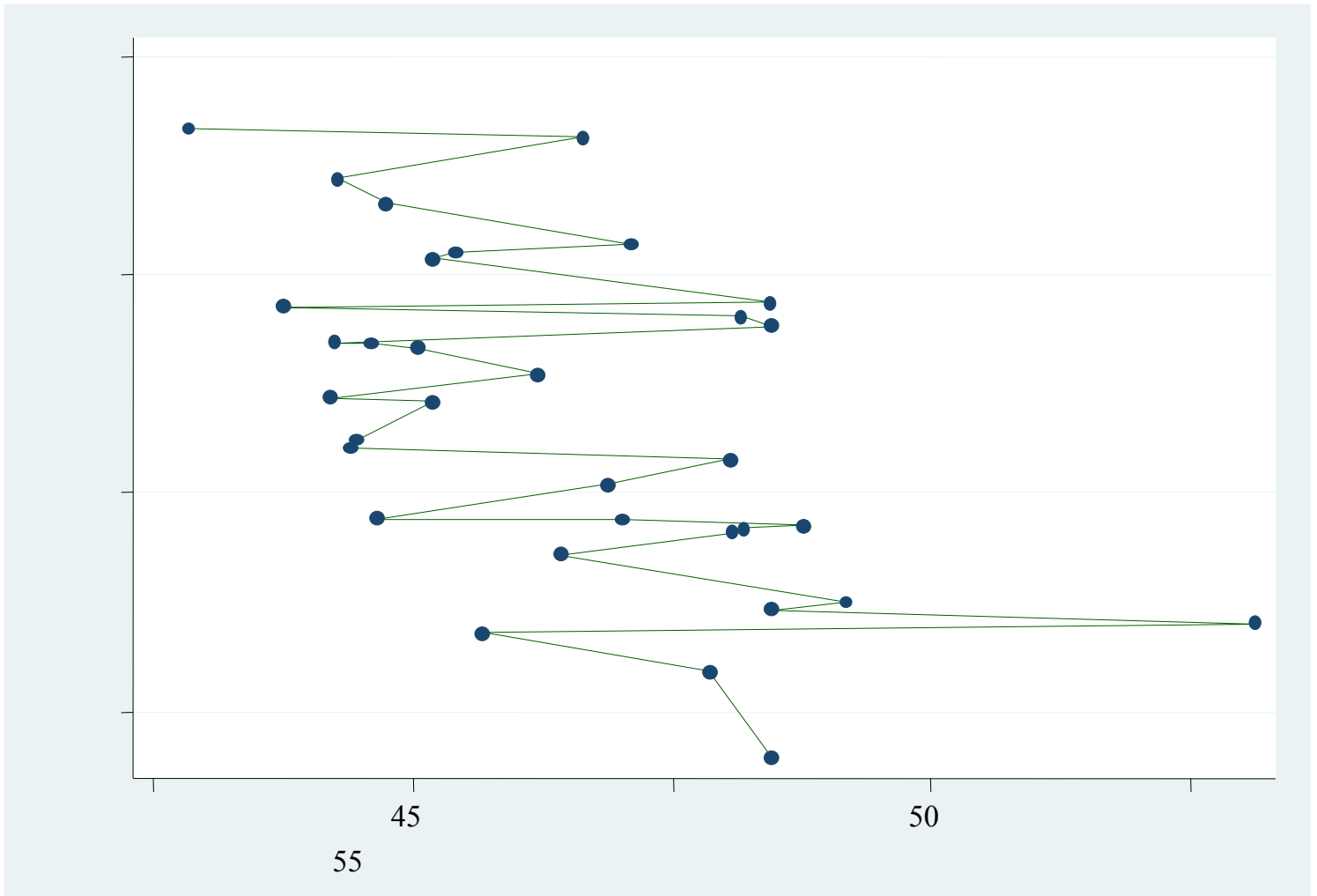
Source: Based on Government of Maharashtra (2009).

5. A Sum up

This paper reviews the conventional approach to measure growth and assess its distributional consequences. In the light of its methodological limitations and failure to locate as well as provide profiles of a skewed distribution in a satisfactory manner, this study proposes to use order based averages like the median as a measure of location and to provide an estimate of mainstream in terms of an interval surrounding the mean. Conceptually, a sustainable inclusive broad based growth process would be one, which involves an improvement touching upon the three alternative perspectives of macro economy, viz., production, income generation and income distribution (expenditure). However, for lack of comprehensive data, exploring all the

three dimensions of the growth process would be difficult, if not impossible. Based on National Accounts Statistics and household consumer expenditure distributions, three relevant summary measures could be attempted as follows: (i) Elasticity of mean consumption with reference to mean income (η), which would indicate, from an economic perspective, if growth in income is really broad based and inclusive since if growth in income were concentrated at the top, even mean consumption would not increase at a corresponding rate and η would be less than unity; (ii) Elasticity of median consumption with reference to mean consumption (ε) - a value for $\varepsilon > 1$, would imply a scenario approaching broad based growth; and (iii) Inclusion coefficient (ψ) for consumption distribution which measures the proportion of bottom half of population (ordered with respect to per capita income) in the mainstream (neighborhood of the median, however defined). Such a framework would also provide for analysis of inclusion/exclusion of different social groups in a plural society. A rigid application of this framework, however, presupposes a well integrate market where economic agents as both consumers and producers operate facing identical economic environments.

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