

## **Globalization, Growth, Poverty and Inequality: Perspectives from Eastern Europe and South Asia**

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### *Abstract*

*There are volumes of literature in search of linkages between globalization and poverty. The pro-globalization advocates argue that it led to faster growth, reduction in poverty and in inequality. The anti-globalization critics argue that it led to slower but more volatile growth, increased poverty and inequality. We examined the claim of positive relationship between growth rate with reduction of poverty and inequality. We find the claim that growth reduces poverty and inequality has not been realized. Moreover, positive growth due to globalization either immiserizes the poor or trickles down benefits insignificantly.*

**Key Words** : Globalization, Development, Poverty, Inequality, Lorenz Curve

**JEL Classification** : P51, O1, D63

### **I. INTRODUCTION:**

Einstein, while proposing the renowned ‘theory of relativity’, pointed out that the path of a falling body from a running train would be realized differently to two different observers observing from two different frames of reference. While observer on the train would see the falling path as a straight line, the other on the ground would observe that as a curve. In physics, both realizations are considered objectively true. Similarly in present-day political economic system, realization of the phenomenon called ‘globalization’ is different to different social and economic agents depending on their relative position. However, in case of globalization, instead of two, many group each of them having specific interest (frame of reference), are observing, analyzing and interpreting globalization. Thus, it is not surprising that though every one of us understands what globalization is, a precise definition is still elusive.

Most commonly understood and aggressively propagated version, however, is that it is the only way to enhance growth and to increase volume of trade of stagnant economy through pursuing the policies of removing all trade barriers – tariff and non-tariff. Accordingly, it is perceived as the process of

making market, both domestic and international, free from all sorts of intervention. Positive growth with increased volume of trade under free market would ensure efficient mobility of factors of production within countries and across borders. Nothing is novel or original in it, since this is well known neoclassical economic view that believes that any intervention in market is bound to be inefficient. Once you agree with this view then the obvious policy prescription follow: Government should play the role of a facilitator without any intervention in the market. This market, which is a globally integrated one, would then decide on the resource allocation, utilization and distribution. National objectives - political or economic - are to be made compatible with global objectives of maximizing international economic welfare. This orthodox neoclassical argument in favour of complete freedom of market provides the rationale of encroachment of 'local freedoms' by the 'global policy'.<sup>i</sup>

According to this view, since globalization would ultimately make the allocation of resources globally efficient and, thereby, optimum - it is the best strategy of development irrespective of country- developed, under-developed, developing or least developed- whatever it is. Moreover, it is argued that 'the main determinants of income and employment can now only be understood at a global and no longer a national level.' (Glyn and Sutcliffe, 1992, p.77 as quoted in Berger (2000)) This is what Thomas Friedman (2005) refers to when he says in his book that 'the world is flat'- flatness signifies a level playing ground with equal opportunity to grow and to develop. This justifies a new premise of development strategy even for a poorer country. 'The conclusion drawn is that globalization promises economic prosperity for countries that join the system and economic deprivation for countries that do not' (Nayyar<sup>ii</sup>, 2006, P.2). Globalization thus becomes synonymous to development keeping little space for policy decisions of an individual country.

## **II. GLOBALIZATION, GROWTH AND DEVELOPMENT**

Recent works, both empirical and theoretical, on the relationship between globalization, growth and development are not few. Many scholars empirically tested impact of liberalization of trade and financial policy on economic growth of LDCs. On the other hand, many economists studied the impact of growth on poverty. Thus literature on empirical findings on the relationship between globalization, inequality and poverty is huge. (Nissanke and Thorbecke, 2005)

The concept of economic development, however, has changed over time. Nafziger (2006) compares perspectives on the meaning of development in the late 1970s and early 1980s to the contemporary period with reference to the works of Dadly Seers and Amartya Sen. Before this period, growth rate of GDP or per

capita income was considered as objective of development. Seers (1979) introduced reduction of poverty, inequality and unemployment as the purpose of development. Since then, poverty alleviation has always been considered as yardstick to measure the impact of economic development. Sen (1999) broadens further the conception of development as freedom to exercise one's own choices for a decent life. 'Such freedoms are not just constitutive as the primary ends of development. Such freedoms are also instrumental as the principal means of attaining development' (Nayyar, 2013, P.201). People should have the rights, the opportunities and the capabilities to exercise their own choices for wellbeing. Inability to pursue wellbeing due to the lack of economic means implies deprivation. Deprivation represents a multifaceted existence of poverty that includes hunger, ill health, illiteracy, insecurity, humiliation, lack of access to basics of decent life like drinking water, sanitation, education, medical facilities etc (Narayan et al, 2000).

Different international forum have now become convinced of the validity of Sen's approach towards development. In spite, development as an achievement of globalization ironically is most often analyzed and measured by the positive growth rate only. Though there is very little dispute that the growth rate has been impressive in many countries of the developing world in comparison with the growth of pre-globalization period, yet the other fact is also undisputedly accepted that the benefit of growth is generating unbalanced outcomes. A recent cross-country study of 80 countries for the period of 1984-2001 (Kakwani and Son, 2006) revealed that whenever there is a positive growth non-poor benefited much but, in case of negative growth, the poor suffered proportionately more. The growth alone is, therefore, a 'blunt tool' for capability building of the people and reducing deprivation or poverty.

Several publications like 'A Fair Globalization: Creating Opportunities for All' (2004) of World Commission on the Social dimension of Globalization and various issues of Human Development Reports had, in fact, already exposed the severity of poverty in the post-globalized world. Interestingly, while forming a committee to make a draft text of an international development strategy for the first decade of the new millennium according to the resolution of the General Assembly (no-54/206 of 22 December 1999), the United Nations drew '...the Committee's attention on the defining characteristics and structural handicaps of those developing countries that have been marginalized in the process of growth and globalization, and in the age-old fight against hunger and poverty.' (UN, 2000, P. 20) After finalizing the text, this is now known as millennium goal. It reveals that even the UN had the apprehension that some countries might be marginalized

in the process of fighting hunger and poverty through growth and globalization. If some countries are marginalized then does poverty and inequality increase? If poverty, inequality and deprivation increase then the process of 'economic progress' with positive growth rate would not be termed as development.

Thus, there is almost a consensus among development economists that growth alone is not enough to reduce poverty. Much of the attention is now on pro-poor growth, which, many believe, could go well beyond the trickle down theories of a few decades ago. Several works have been done in recent times in order to decompose the actual growth into pro-poor [Kakwani & Pernia (2000), Ravallion & Chen (2003), Kakwani, Khandker & Son (2004), Kakwani & Son (2006)]. Kakwani-Khandker-Son (KKS) defined a hypothetical rate called the 'poverty equivalent growth rate' (PEGR)  $g^*$  and proposed the methodology to measure it. PEGR is said to be pro-poor, if it is larger than the actual growth rate ( $g$ ). Pro-poor PEGR signifies that the incomes of the poor grow more than the average income. If, PEGR is equal or less than the actual growth rate, growth is said not to be pro-poor. They suggest that 'a country's performance should be judged on the basis of the poverty equivalent growth rate and not by growth rate alone.' (Kakwani & Son, 2006, P. 8)

Interestingly, critical analysis of this new measurement would reveal that the relationship between actual growth, poverty and inequality could explain the same without calculating  $g^*$ . There are two broad possibilities: (i)  $g^* > 0$  and (ii)  $g^* < 0$ . In the first case, either  $0 < g^* < g$  or  $g^* > g$ . If  $0 < g^* < g$  then it implies that inequality is increasing and poverty is reducing. This is what is 'trickle down' development situation. If  $g^* > g$ , it implies both inequality and poverty are decreasing. In case (ii),  $g^*$  negative implies that though actual growth rate is positive, both inequality and poverty are increasing. This is what Bhagwati's 'immiserizing growth' is. Thus these new measures<sup>iii</sup> do not provide something new to understand development better. Simply, actual growth rate  $g$ , poverty index and inequality index jointly may give comprehensive and better description of the development process as 'pro-poor' or 'anti-poor' as defined by KKS measure. Moreover, these are all based on decomposition of growth and therefore do not take into account the distribution of income.

### III. OBJECTIVE , METHODOLOGY AND DATA

The objective of this paper is to study to what extent the process of globalization is pro-development meaning deprivation reducing. We believe that without measuring so-called pro-poor growth rate, actual growth rate along with inequality and poverty indices would be sufficient to conclude the impact of

globalization on development. Two factors that are identified in recent literature which make growth pro-poor are (i) initial inequality and (ii) changing income distribution (Ravallion, 2004). Keeping this in mind we have selected two different groups of countries. In the first group, we have all former socialist states of Eastern Europe and central Asia which were supposedly under an egalitarian system of economy before integrating with global market. In the second group, we have all south-Asian countries with highest population concentration, acute deprivation, severe poverty and inexcusable inequality in distribution of income. On account of both factors, these two groups are qualitatively different. The study of deprivation reducing effect of globalization may be helpful to understand the consequence of strategies of development in a region under relatively planned egalitarian economy in one situation and economy which deprived majority of the people in another situation.

**Methodology:** As we have described our objectives above, for our analysis, we require to calculate three different measures: poverty, inequality and growth.

To construct a poverty measure, there are two broad approaches: simple interpolation methods and methods based on parameterized Lorenz curves (Datt, 1998). We adopt the second approach, which is considered better for its relative accuracy.

As usual, our poverty and inequality measures consider the following two functions:

$$\text{Lorenz Curve} \quad L = L(p; \pi), \quad \text{and}$$

$$\text{Poverty measure:} \quad P = P(\mu/z, \pi),$$

where  $L$  is the share of the bottom  $p$  percent of the population in aggregate consumption,  $\pi$  is a estimable parameter vector of the Lorenz curve,  $P$  is a poverty measure,  $\mu$  is the mean consumption,  $z$  is the poverty line. The Lorenz curve captures all the information on the pattern of *relative inequalities* in the population.

Actual functional forms used in the literature on the estimation of Lorenz curves are many. The general quadratic (GQ) Lorenz curve<sup>iv</sup> and the Beta Lorenz curve<sup>v</sup> are frequently used for better performance. We would compute our results

for both. If neither prove valid, then we would accept the function that fits better. In other cases, we would accept GQ parameters for our calculation of indices. Hence, if not stated otherwise, the estimated parameters would imply parameters of GQ Lorenz curve. Detailed formulae for each of the three poverty measures for parameterizations of the GQ Lorenz curve only are shown in the Appendix-I. The poverty measures are calculated using these formulas.

For obvious reason, Foster-Greer-Thorbecke (FGT) class of poverty measures are computed and presented here. The FGT poverty measures are defined as

$$P_{\alpha} = \int_0^z \left[ \frac{z-x}{z} \right]^{\alpha} f(x) dx, \quad \alpha \geq 0$$

where,  $x$  is the household consumption expenditure,  $f(x)$  is its density function of  $x$ ,  $z$  is already stated (the poverty line) and  $\alpha$  is a nonnegative parameter. For  $\alpha = 0, 1, 2$ , the poverty index is Head Count Index (H), Poverty Gap Index (PG) and Squared Poverty Gap Index (SPG) respectively. Higher the value of  $\alpha$  higher is the severity of poverty. Severity implies that longer the distance of a poor from the poverty line greater weight is given to the poor. Elasticities of these three poverty measures are computed following formulae derived by Datt (1998) from Kakwani (1990). Formulae are given in Appendix-II.

Validity of Lorenz curve is tested by two boundary conditions  $L(0; \pi) = 0$  and  $L(1; \pi) = 1$  along with two conditions to verify that the curve is monotonically increasing and convex respectively by  $L'(0^+; \pi) \geq 0$  and  $L''(p; \pi) \geq 0; p \in (0, 1)$ . These conditions are checked by the estimated parameters of the Lorenz curve. In Appendix-III we have shown how these conditions can be checked for parameterization of the Lorenz curve. The range of admissible poverty lines<sup>vi</sup> will be reported.

#### **Data and sources of data:**

There are controversies regarding the nature of data (income or consumption) in estimating inequality and poverty. Deaton & Zaidi (2002) argued in favour of consumption because collecting accurate income data, particularly for developing countries, is difficult for the large rural agriculture sector. Atkinson &

Bourguignon (2000) did not share this view mainly because of the difficulties of the treatment of durables and the necessity of imputing value for their services.

However, objective of this study is not resolving the methodological issues related to accuracy of the estimation or measurement of inequality and poverty. Secondly, whatever may be the different views, we are to accept the data that is available. There are two accessible data sources. The first one is the World Bank data. World Bank's official estimates are based on unit record household survey data that has been either provided by the individual country or has been purchased by the World Bank. But, this unit record data is not available for public use. However, the grouped data of household survey is accessible. Whether these grouped data would be on consumption or income depends on the unit record data collected by the survey conducting organization/country. All household survey data of South Asian countries are consumption data<sup>vii</sup>. On the other hand, in case of East European and Central Asian countries, both income and consumption are considered as welfare indicators. But, this particular database considers consumption as welfare indicator.

Another database, which contains all countries and is freely available, is World Income Inequality Database. The latest one – corrected, revised, updated and standardized- is WIID2a. This also provides grouped data in quintile, decile, and percentile group shares along with inequality co-efficient Gini (or reported Gini - Deininger & Squire using POVCAL). For the use of former one the guidelines provided by Chen & Ravallion (background paper) and for the second User Guide and Data Sources (V2.0a June, 2005) provide necessary information and instructions.

We use PovcalNet, an interactive computational tool, to calculate the poverty measures. It used the Purchasing Power Parity (PPP) for 1993 estimates for consumption. PPPs for 1993 are based on new price and consumption basket data collected by the 1993 International Comparison Project (ICP), which covered 110 countries. Having converted the international poverty line at PPP to local currency in 1993 PovcalNet converts it to the prices prevailing at each survey date using the country-specific official Consumer Price Index (CPI). Only for India, however, poverty measures are estimated separately for urban and rural areas using sector specific CPIs. As discussed in Datt and Ravallion (1998) a corrected version of the rural CPI (the Consumer Price Index for Agricultural Laborers) is used.

#### **IV. EMPIRICAL RESULTS AND ANALYSIS:**

We have two groups of countries: (i) all former socialist states of Eastern Europe and Central Asia and (ii) South Asian Countries excepting Bhutan.

In group (i), there are altogether 25 states. Many of these states were Soviet Republics within former USSR. These states declared independence and initiated reform process of their planned economy in order to transform into a capitalist market economy in early nineties. Major steps of their economic reform process were to (i) open their erstwhile closed economy for export and import, (ii) denationalize industries and banks, (iii) allow foreign capital and (iv) discontinue social welfare schemes in health, education and agriculture sector. States other than Soviet Republics also followed almost identical reform process but they had started the process of integrating of markets a few years earlier than Soviet Republics.<sup>viii</sup> However, since these countries were under socialist economy for a long time and followed planned economy where providing welfare to the people and making the income distribution egalitarian were the state's obligations, we could expect that severity of poverty was less in those countries.

On the other hand South Asian countries are, we all know, densely populated poor countries. These countries were under colonial rule for a long time and almost half of the extremely poor and illiterate population of the world resides in this region. Almost one-third of the people in this region live in poverty and experience absolute deprivation in so far as obtaining basic and minimum human necessities. Not only in number, in terms of severity of poverty and inequality of income distribution this region occupies the top most position in the world. Severity could be understood by the incidence of starvation deaths, which is such a usual affair that government dares to ignore it without fearing any public protest or hue and cry. Lack of adequate sanitation facilities, inaccessible drinking water, denial of health care provisions, sufferings from malnutrition and many other different facets of severity of poverty has identified this region as most notoriously backward.

There are volumes of literature in search of linkages between globalization and poverty. The result, however, is inconclusive with respect to positive relationship by the claim (World Bank, 2002) and counter claim (Khor, 2002; Watkins, 2002; Kakwani & son, 2006). 'The pro-globalization advocates argue that it led to faster growth, that it reduces poverty, and that it brought about a decrease in inequality. The anti-globalization critics argue that it led to slower but more volatile growth, that it increased poverty in most parts of the world and that there was an increase in equality' (Nayyar, 2006, P. 2). However, in the literature it is claimed that 'two sets of factors can be identified as the main proximate causes of the differing rates of poverty reduction at given rates of growth: the initial level

of inequality and changing income distribution' (Ravallion, 2004, P. 14). Moreover, the World Bank identifies six country conditions that are particularly relevant for the case study of pro-poor growth strategies which are (i) population density and its degree of urbanization, (ii) assets and income inequality, (iii) importance of agriculture, (iv) importance of climatic variability, (v) fertility and (vi) institutions (World Bank, 2005, P. 75-76). Here lies the rationale of selecting these two groups of countries by us in order to study the impact of globalization and growth on poverty. Because, when these countries started the economic reform process in accordance to the prescription of globalization, two groups differed with respect to each and every condition, as mentioned above, identified by the poverty monitoring organization as well as the main initiator of globalization – the World Bank<sup>ix</sup>. A comparative study of impact of growth during the period of globalization on the economy of countries belonging to two different sets, which differ with respect to the factors influencing pro-poor growth, would be helpful to verify and understand the claim of the World Bank as well as pro and anti-advocates of globalization.

**Results of Eastern Europe and Central Asia:** For our basic objective of the study, we try to compute poverty indices on the data of a period that could capture the poverty situation of the socialist system, to be compared with the indices of poverty after functioning as a capitalist country for a certain period under globalization. However, except Hungary and Slovenia, we could not get data relating to a majority of countries prior to 1988-89. However, for Albania, Armenia, Azerbaijan, Georgia, FYR Macedonia, Romania and Tajikistan the earliest available data are of the year 1997, 1996, 1995, 1996, 1998 and 1999 respectively. Mentioning of these years is important for the reason explained below.

In the early phase of transformation of the socialist planned economy into a capitalist market economy, these countries faced terrible economic recession. There was negative growth rate in each and every country (Table-11) during the period 1991 to 1995. For example, in the year 1992, GDP declined to the extent of -44.9, -41.8, -34.9, -34.6, -30.3, -22.6, -21.3, -21.2 and -14.5 percent in Georgia, Armenia, Latvia, Moldova, Tajikistan, Azerbaijan, Lithuania, Estonia and Russia respectively. In any capitalist economy, when there is positive growth, poorer section receives less but at the time of negative growth poorer section suffers the most. There is no reason to believe that it did not happen in these newly transformed capitalist states. Naturally, this consistent decline in GDP for a period of five years should have eroded the benefits of egalitarian system of distribution,

if there was any, and have increased the level of poverty, inequality and severity of poverty. Despite this poverty measures H, PG, and SPG presented in Table-2 of these countries (poverty line \$2.day) reveal that poverty in terms of incidence, distributionality and severity were very low. The World Poverty Monitoring Agency (the World Bank) considers headcount index less than 40 percent (the mean poverty rate for the developing world around 1980) and inequality index Gini less than 30.0 is low (Ravallion, 2006, p-16). In this respect all former socialist countries show reasonably low rate of poverty and inequality at the time of denouncing socialist system.

According to the above standard, only two countries, namely Tajikistan (58.67) and Azerbaijan (44.2) were above the low level. The most significant point is that among 25 countries, except another 5 countries, all had poverty rate (H) less than 1 percent. These 5 countries are Armenia (31.5), Albania (11.28), Turkmenistan (9.94), Georgia (8.5) and Macedonia (4.01). However, so far inequality is concerned, only four countries had above the low level of distributional index Gini. These are Armenia (44.42), Georgia (37.13), Azerbaijan (35.99) and Tajikistan (31.25). Thus, though Tajikistan had higher rate of poverty it had less inequality and that also was marginally above the low level. The first important point to be noted is that there were at least three countries where poverty was absent, namely, Uzbekistan, Kyrgyz Republic and Czech Republic. There were 11 more countries where though  $H > 0$  but so insignificant that poverty could be considered nonexistent. For example, value of H in Slovak signifies that there was only 1 person in every 10,000 population who had income less than \$2 per day. Among these 11 countries, poverty was highest in Russia where 33 persons in every 10,000 population had income less than \$2 per day.

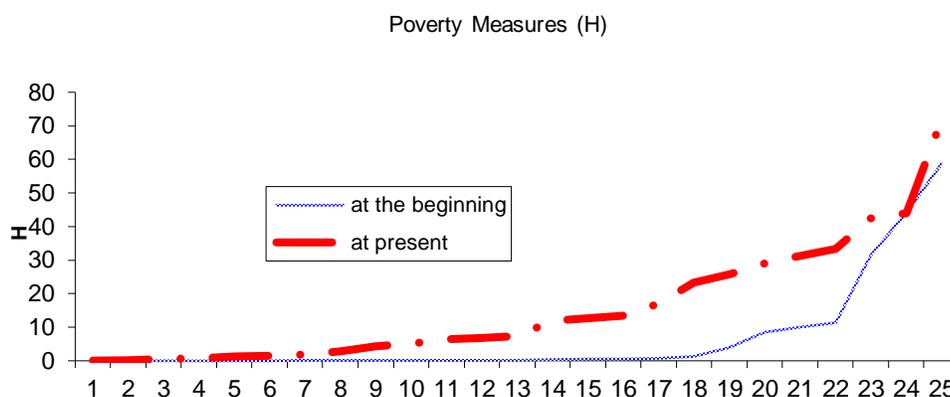
Second significant point is that the values of H of Azerbaijan and Tajikistan, which show poverty higher than the low level, are actually computed on the basis of survey data of 1995 and 1998. During 1991 to 1995, they had experienced very high level of negative growth (Table-5) under capitalist rule. This probably shows the effect of globalization during transition phase. The same is true for other countries, such as Armenia, Albania and Georgia, which had low level of poverty but higher than other former socialist states.

Third significant point to be noted is that the poverty indices shown in Table-2 are on the basis of \$2 per day as poverty line. The present World Bank poverty line for developing countries is \$1 per day. On this basis we have computed and presented poverty and inequality indices in Table-1. According to

Headcount index H and Poverty Gap index PG there were only 4 and 3 countries respectively having index value more than one. These are again the same countries whose indices are computed on the basis of survey data of much later period as we have said already. Excluding these, values of H, PG and SPG indicate non-existence of poverty in almost all countries with respect to the present definition of poverty of the World Bank for developing countries. For 6 countries these values are actually zero.

In Table-3, we have presented the poverty and inequality indices of countries of the first group considering \$2 per day as poverty line. Depending on the availability of latest data, the year we consider is either 2002 or 2003 except in 4 cases where survey data are of late 1990s. With respect to Headcount index, results show that there are four cases where poverty has declined. In case of Azerbaijan H reduces to 33.41 from 44.2, in Armenia it declines to 31.33 from 31.50, in Macedonia it comes down to 1.82 from 4.01 and in Tajikistan it improves substantially from 58.67 percent to 42.49 percent. But poverty increases substantially in case of remaining 21 countries. Increase of poverty in few cases is strikingly high. For example, in Uzbekistan poverty was nil by all measures but it increases to 71.71 percent with respect to index H. Similarly in Turkmenistan H value increases to 42.49 percent from 9.94 percent. Another example is Kyrgyz Republic where poverty rises to 23.32 percent from zero level. In order to comprehend the overall change in the incidence of poverty during this period in this region we present graphically the index H below.

**Figure-1**



**Figure-1:** Incidence Of Poverty In East European And Central Asian Countries At The Beginning Of Globalization And At Present. Values Are Arranged In Descending Order.

Most important aspect that is revealed by the results presented in Table-3 is Gini co-efficient, which indicates inequality. Comparing the values with Table-2, we find that (i) except in two cases, namely Albania and Armenia, Gini coefficient increases in every country and (ii) barring a few, all countries crossed the low inequality limit Gini=30.0. In Table-5, yearly GDP growth rates of these countries from 1991 to 2004 and a simple average over the period 1995 to 2004 are given. The average growth rate during this period of each country is positive. So, we can classify three categories of countries following the methodology described in section-II as follows:

a) Where growth is positive and poverty reduces along with declining inequality. This is pro-poor growth situation. Armenia is the only country, which falls within this group.

b) Where positive growth with reducing poverty and increasing inequality. This is 'trickle down' growth process. Three countries fall in this category, namely Azerbaijan, Macedonia and Tajikistan.

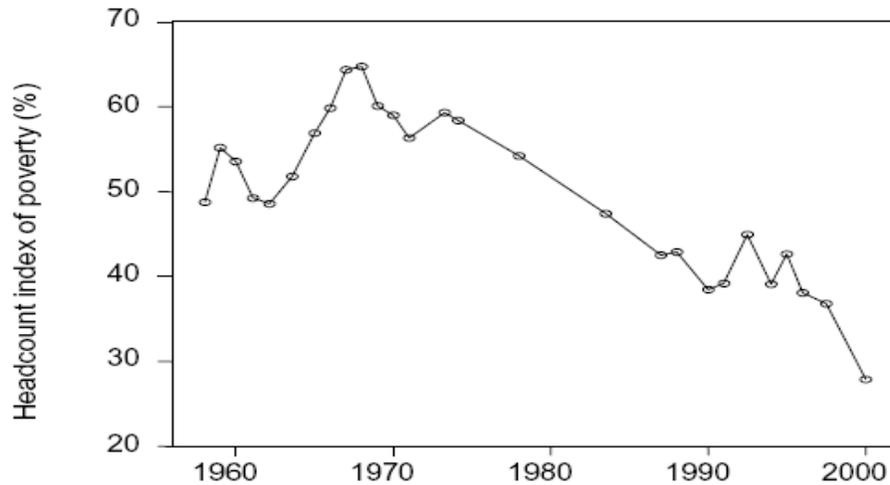
c) Where positive growth increases poverty and inequality. This is 'immiserizing' growth situation. It implies that the adverse effect of high inequality is such that it offsets the beneficial impact of growth on poorer section of the population. Though Kakwani & Son (2006) claimed that this situation is rare, in case of former socialist state turned capitalist country this phenomenon appears predominant, because remaining<sup>x</sup> 20 countries fall in this category.

Therefore, in case of former socialist states of Eastern Europe and Central Asia, positive growth due to globalization is making the conditions of people worse.

**Result of South Asia:** We include 5 countries of this region, namely, India, Bangladesh, Nepal, Pakistan and Sri Lanka. More of the world's poor live in this region than any other continents, particularly India where almost one third of world's poor live. Recent times, particularly after globalization, many urban centers cropped up in India very rapidly and there had been a higher rate of migration of population from rural to urban area. We, therefore, considered poverty measures separately for rural and urban in case of India.

India's poverty reduction programme is not only considered important for Indian progress but also overall progress of the world too. It is, therefore, not surprising that much attention had been drawn towards Indian GDP's growth and its consequence on incidence of poverty in the post globalization period. Round & Whalley (2002), Bhanumurthy & Mitra (2006), Datt & Ravallion (2002) are among many who studied the experience of globalization with relation to growth and poverty of south Asian or India.

However, in recent times many expressed doubt regarding the assessment of India's poverty. 'Given the concerns about whether poverty reduction had been stalling in the post-reform period, the release of the data from the 55th round, covering 1999-00, was keenly awaited. Based on these data, India's Planning Commission (2001) reported a similarly sharp reduction in poverty in 1999-00 to that evident in our Figure 2. This points to an encouraging acceleration in poverty reduction. However, it is puzzling why the decline in poverty was so sudden; there is no obvious reason why the bulk of the reduction in poverty in the 1990s would have happened in just the last two years of the decade.' (Datt & Ravallion, 2002, P. 6).

**Figure 2: Poverty Incidence in India, 1960-2000**

*Source: Datt & Ravallion (2002, p-33)*

We, however use the World Bank's Global Poverty Monitoring database and Bank's methodology implemented in PovcalNet for all countries in this group like previous one.

We consider \$2 per day as poverty line. Firstly, our objective is not to estimate the number of poor following any accepted definition but to verify the contention that, as we have discussed before, pro-poor growth depends on two factors – initial inequality and changing income distribution. Secondly, many of the countries of the former group being middle income as per World Bank's specification, we consider standard poverty line for such economy \$2 per day as poverty line. Now, for comparability of the results of this group with the former we consider the same poverty line. The objective, methodology and approach of our study actually are not dependent on definition of poverty line.

We present the results, both initial phase and present time, in Table-4. Except Nepal, survey year for all is the beginning of 1990s. Only in case of Nepal, it is 1995-96. However, though India opened her economy in 1991 others joined in the globalization process much earlier than India. In this context, survey year of the initial phase for other countries does not actually mean the beginning of reform process for them.

Results show that poverty in all countries, excepting Sri Lanka, declined with respect to all measures. PG and SPG for all countries, excepting Sri Lanka, also show substantial decline. For example, in urban sector of India PG index reduces to 22.48 from 28.07, and in rural sector, reduces to 40.81 from 44.66. It implies not only the poverty but also its severity is reduced in both rural and urban India during 1990s. It is also true for Bangladesh, Nepal and Pakistan. Only country, where poverty increases is Sri Lanka. However Sri Lankan poverty level is much lower than any other country of the region and is close to the degree of poverty identified as 'low level'.

Analyzing the inequality co-efficient Gini (we have also shown the elasticities of poverty measures with respect to mean distribution and inequality measures Gini in Table-7), we find that the distribution of income became more concentrated in all countries including Sri Lanka. Moreover, in case of Sri Lanka and Nepal increment of inequality measures is much higher than others. In Table-6 we represent annual GDP growth rates from 1991 to 2004 and its simple average over the whole period of each country. It reveals that the overall GDP growth is positive for all countries. Comparing poverty and inequality indices along with growth rate we can now classify these countries into two categories:

a) Where positive growth with reducing poverty and increasing inequality. This is 'trickle down' growth process. Bangladesh, India (Rural), India (Urban), Nepal<sup>xi</sup> and Pakistan fall in this category.

b) Where positive growth increases poverty as well as inequality. This is 'immiserizing' growth situation. Sri Lanka falls in this category.

Therefore, in South Asia there is no incidence of 'pro-poor' growth<sup>xii</sup>. Majority of the countries being in category (a), we could explain that the poorer section of South Asia receives trickle down benefits of positive growth and the distribution of benefit is biased towards non-poor. So far the poor people of Sri Lanka are concerned, the benefit of growth is being offset by the adverse effect of high-level increase in inequality.

## V. CONCLUSION:

Summarizing the results, it can be said that the claim that 'growth reduces poverty and that it brought about a decrease in inequality' has not been realized with respect to countries belonging to East Europe, Central Asia and South Asia. Moreover, positive growth due to globalization either immiserizes the poor (turns their condition from bad to worse) or trickles down benefits insignificantly irrespective of the country conditions laid down by the World Bank. Moreover, the impression that 'immiserizing' growth concept is rare in reality is not true. On the

contrary, positive growth in socialist turned capitalist countries predominantly makes the condition of the poor worse.

Moreover, the results of this study raise question about the validity of Kuznets' thesis (1955). According to Kuznets, income inequality generally rises in the early stages of economic development and it declines in the latter phases of the development process. The present analysis thus indicates the necessity of reviewing his hypothesis of an inverted-U relationship between inequality and development, which has since been known as the Kuznets Curve, on the basis of the experience of post-globalization period.

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<b>TABLE-I</b>								
Level of Poverty and Inequality at Early Phase of Globalization								
Former Socialist States of Eastern Europe & Central Asia								
Poverty Line \$1/day								
<b>Country</b>	<b>Survey Year</b>	<b>Mean\$</b>	<b>H(%)</b>	<b>PG(%)</b>	<b>SPG(%)</b>	<b>Watts</b>	<b>Gini(%)</b>	<b>MLD</b>
<b>Albania</b>	1997	143.47	0.10	0.01	0.00	0.0002	29.12	0.14
<b>Armenia</b>	1996	134.58	6.65	1.45	0.52	0.0187	44.42	0.34
<b>Azerbaijan</b>	1995	89.58	10.94	2.62	1.01	0.0338	35.99	0.22
<b>Belarus</b>	1988	237.38	0.09	0.07	0.07	N/A	22.76	0.09
<b>Bulgaria</b>	1989	353.86	0.05	0.05	0.05	N/A	23.43	0.09
<b>Croatia</b>	1988	371.00	0.04	0.04	0.04	N/A	22.78	0.09
<b>Czech Republic</b>	1988	432.14	0.00	0.00	0.00	N/A	19.40	0.06
<b>Estonia</b>	1988	341.09	0.05	0.05	0.04	N/A	22.97	0.09
<b>Georgia</b>	1996	226.70	1.74	0.96	0.95	0.0034	37.13	0.24
<b>Hungary</b>	1987	330.05	0.06	0.06	0.06	N/A	20.96	0.08
<b>Kazakhstan</b>	1988	359.53	0.02	0.01	0.01	N/A	25.74	0.11
<b>Kyrgyz Republic</b>	1988	359.60	0.00	0.00	0.00	N/A	26.01	0.11
<b>Latvia</b>	1988	476.56	0.03	0.03	0.03	N/A	22.49	0.09
<b>Lithuania</b>	1988	221.87	0.08	0.05	0.05	0.0000	22.48	0.09
<b>Macedonia, FYR</b>	1998	204.63	0.90	0.71	0.70	N/A	28.21	0.14
<b>Moldova, Rep.</b>	1988	324.88	0.00	0.00	0.00	N/A	24.14	0.10
<b>Poland</b>	1985	211.26	0.21	0.14	0.14	0.0001	25.16	0.11
<b>Romania</b>	1989	291.61	0.25	0.24	0.24	N/A	23.31	0.10
<b>Russian Federation</b>	1988	285.81	0.08	0.06	0.06	N/A	23.80	0.10
<b>Slovak Republic</b>	1988	349.88	0.00	0.00	0.00	N/A	19.54	0.06
<b>Slovenia</b>	1987	409.91	0.02	0.02	0.02	N/A	23.60	0.09

## Globalization, Growth, Poverty and Inequality

<b>Tajikistan</b>	1999	69.18	13.87	3.44	1.47	0.0429	31.52	0.17
<b>Turkmenistan</b>	1988	130.50	0.00	0.00	0.00	N/A	26.39	0.11
<b>Ukraine</b>	1988	362.02	0.06	0.06	0.06	N/A	23.31	0.09
<b>Uzbekistan</b>	1988	204.40	0.00	0.00	0.00	N/A	24.95	0.10

Note: Initial Survey Year of each country is not identical because of non-availability of household survey data. Prior to 1990 many of these countries did not exist separately. We consider the earliest available year for each country. Specially, for Tajikistan, data before 1999 is not available.

<b>TABLE-II</b>								
Level of Poverty and Inequality at Early Phase of Globalization								
Former Socialist States of Eastern Europe & Central Asia								
Poverty Line \$2/day								
Country	Survey Year	Mean\$	H(%)	PG(%)	SPG (%)	Watts	Gini(%)	MLD
Albania	1997	143.47	11.28	1.84	0.45	0.0212	29.12	0.1411
Armenia	1996	134.58	31.5	10.18	4.54	0.1393	44.42	0.3431
Azerbaijan	1995	89.58	44.2	15	6.84	0.2131	35.99	0.217
Belarus <sup>2</sup>	1988	237.38	0.47	0.15	0.1	0.0013	22.76	0.0882
Bulgaria <sup>2</sup>	1989	353.86	0.15	0.08	0.08	0.0003	23.43	0.0937
Croatia <sup>3</sup>	1988	371	0.12	0.06	0.06	0.0002	22.78	0.0892
Czech Republic <sup>2</sup>	1988	432.14	0	0	0	N/A	19.4	0.0611
Estonia <sup>2</sup>	1988	341.09	0.18	0.07	0.07	0.0005	22.97	0.0901
Georgia	1996	226.7	8.5	2.01	0.64	0.036	37.13	0.2404
Hungary <sup>3</sup>	1987	330.05	0.15	0.09	0.09	N/A	20.96	0.0718
Kazakhstan <sup>2</sup>	1988	359.53	0.06	0.02	0.01	0.0002	25.74	0.1112
Kyrgyz Republic <sup>2</sup>	1988	359.6	0	0	0	N/A	26.01	0.1054
Latvia <sup>3</sup>	1988	476.56	0.07	0.04	0.04	0	22.49	0.0854
Lithuania <sup>2</sup>	1988	221.87	0.52	0.14	0.09	0.0014	22.48	0.0855
Macedonia, FYR <sup>5</sup>	1998	204.63	4.01	0.6	0.12	0.0116	28.21	0.1361
Moldova, Rep. <sup>6</sup>	1988	324.88	0.2	0.08	0.07	0.0005	24.14	0.0994
Poland <sup>2</sup>	1985	211.26	1.22	0.35	0.22	0.0035	25.16	0.1104
Romania <sup>3</sup>	1989	291.61	0.67	0.36	0.35	0.0016	23.31	0.0955
Russian Federation <sup>2</sup>	1988	285.81	0.33	0.12	0.09	0.0009	23.8	0.0964
Slovak Republic <sup>2</sup>	1988	349.88	0.01	0.01	0	0	19.54	0.0636
Slovenia <sup>3</sup>	1987	409.91	0.06	0.03	0.03	0.0001	23.6	0.0932

## Globalization, Growth, Poverty and Inequality

<b>Tajikistan</b>	1999	69.18	58.67	19.92	9.21	0.2847	31.52	0.1686
<b>Turkmenistan<sup>5</sup></b>	1988	130.5	9.94	0.88	0.1	0.0297	26.17	0.1103
<b>Ukraine<sup>3</sup></b>	1988	362.02	0.17	0.09	0.09	N/A	23.31	0.0887
<b>Uzbekistan<sup>2</sup></b>	1988	204.4	0	0	0	N/A	24.95	0.1018

<sup>1</sup> Either both BETA and GQ are valid Lorenz Curve or GQ valid and fits better <sup>2</sup> BETA is valid Lorenz Curve and fits better <sup>3</sup> Neither BETA and GQ are valid. BETA fits better <sup>4</sup> Neither BETA and GQ are valid. GQ fits better <sup>5</sup> GQ specification is a valid Lorenz curve, but BETA is not. BETA fits better <sup>6</sup> BETA is a valid Lorenz Curve but GQ fits better (if not stated specifically it means 1)

Note: Initial Survey Year of each country is not identical because of non-availability of household survey data. Prior to 1990 many of these countries did not exist separately. We consider the earliest available year for each country. Specially, for Tajikistan, data before 1999 is not available.

**TABLE-III**

## Level of Poverty and Inequality at Present Stage of Globalization

## Former Socialist States of Eastern Europe &amp; Central Asia

## Poverty Line \$2/day

Country	Survey Year	Mean\$	H(%)	PG(%)	SPG(%)	Watts	Gini(%)	MLD
<b>Albania</b>	2002	135.67	11.83	2.04	0.55	0.0241	28.15	0.1319
<b>Armenia</b>	2003	104.9	31.33	7.08	2.4	0.0868	33.8	0.1977
<b>Azerbaijan</b>	2001	108.96	33.41	9.11	3.48	0.1172	36.5	0.2254
<b>Belarus<sup>2</sup></b>	2002	255.64	1.38	0.41	0.26	0.0042	29.73	0.1494
<b>Bulgaria<sup>5</sup></b>	2003	169.31	6.41	1.02	0.22	0.0215	29.24	0.1457
<b>Croatia<sup>2</sup></b>	2001	308.08	0.53	0.14	0.08	0.0014	31.1	0.1649
<b>Czech Republic<sup>3</sup></b>	1996	437.95	0.23	0.2	0.2	N/A	25.82	0.1155
<b>Estonia</b>	2003	212.46	6.72	1.87	0.93	0.0216	35.78	0.2198
<b>Georgia</b>	2003	138.53	25.82	8.82	4.34	0.1185	40.37	0.2874

## Globalization, Growth, Poverty and Inequality

<b>Hungary<sup>2</sup></b>	2002	234.15	0.72	0.18	0.1	0.0019	26.82	0.1223
<b>Kazakhstan</b>	2003	144.25	17.07	3.88	1.28	0.0465	33.85	0.1939
<b>Kyrgyz Republic</b>	2003	114.52	23.32	4.5	1.17	0.0545	30.3	0.1477
<b>Latvia</b>	2003	254.68	4.4	1.04	0.44	0.0126	37.66	0.2468
<b>Lithuania</b>	2003	204.84	7.42	1.66	0.62	0.0221	36.01	0.2242
<b>Macedonia, FYR</b>	2003	342.24	1.82	0.38	0.15	0.0043	38.95	0.2633
<b>Moldova, Rep.</b>	2003	114.36	29.06	7.52	2.74	0.0935	35.08	0.2073
<b>Poland<sup>2</sup></b>	2002	261.61	1.48	0.28	0.11	0.003	34.05	0.1967
<b>Romania</b>	2003	143.4	12.68	2.91	1.12	0.0383	31.06	0.1685
<b>Russian Federation</b>	2002	190.02	13.48	3.11	1.04	0.0384	39.9	0.2729
<b>Slovak Republic<sup>5</sup></b>	1996	263.98	2.88	0.84	0.34	0.0164	25.81	0.1286
<b>Slovenia<sup>3</sup></b>	1998	502.25	0.06	0.03	0.03	N/A	28.41	0.1316
<b>Tajikistan</b>	2003	88.17	42.49	12.79	5.2	0.1726	32.63	0.1751
<b>Turkmenistan</b>	1998	99.38	43.99	15.42	7.08	0.2198	40.77	0.2778
<b>Ukraine</b>	2003	160.77	5.01	0.85	0.27	0.0101	28.05	0.1325
<b>Uzbekistan</b>	2000	56.76	71.71	25.18	11.78	0.3561	27.03	0.1247

<sup>1</sup> Either both BETA and GQ are valid Lorenz Curve or GQ valid and fits better <sup>2</sup> BETA is valid Lorenz Curve and fits better <sup>3</sup> Neither BETA and GQ are valid. BETA fits better <sup>4</sup> Neither BETA and GQ are valid. GQ fits better <sup>5</sup> GQ specification is a valid Lorenz curve, but BETA is not. BETA fits better <sup>6</sup> BETA is a valid Lorenz Curve but GQ fits better.

(if not stated specifically it means 1)

**Note: Survey Year of each country is not identical because of non-availability of household survey data. We consider the latest available year for each country.**

<b>TABLE-IV</b>								
Poverty and Inequality of Five South Asian Countries								
at the Beginning of Globalization								
Country	Survey Year	Mean\$	H(%)	PG(%)	SPG(%)	Watts	Gini(%)	MLD
Bangladesh	1991.5	44.88	86.4	37.88	19.78	0.5572	28.27	0.1319
India (Rural)	1990	38.74	91.17	44.66	25.05	0.6882	27.72	0.1261
India (Urban)	1990	59.89	71.25	28.07	13.87	0.4062	33.98	0.1899
Nepal	1995.5	55.07	77.85	34.42	18.38	0.5176	37.67	0.2379
Pakistan	1990.5	41.66	87.87	43.69	25.32	0.6905	33.23	0.1838
Sri Lanka	1990	86.84	40.58	10.76	3.96	0.1382	30.1	0.1517
at Present								
Bangladesh	2000	48.78	82.82	36.33	18.88	0.5334	31.79	0.1657
India (Rural)	1999	42.33	88.41	40.81	21.9	0.6115	28.11	0.129
India (Urban)	1999	70.46	60.54	22.48	10.64	0.3199	35	0.1993
Nepal	2003.5	79.99	65.29	26.79	13.47	0.3916	47.3	0.3908
Pakistan	1996.5	50.84	81.3	33.24	16.53	0.4795	30.28	0.1524
Sri Lanka	2002	105.5	41.43	12.07	4.58	0.1617	40.18	0.2671

Except in case of Nepal (2003-04 data), both BETA and GQ are valid Lorenz curves.

**Note: Survey Year of each country is not identical because of non-availability of household survey data. For Nepal, data prior to 1995-96 not available.**

<b>Table-V</b>																
Estimates of Rates of Growth of GDP (in Percent)																
	YEARS															
	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	Av <sup>1</sup>	
<b>Country or Area</b>																
Albania	-28	-7.2	9.6	8.3	13.3	9.1	-10.2	12.7	10.1	7.3	7.2	3.4	6	6	66.49	
Armenia	-11.7	-41.8	-8.8	5.4	6.9	5.9	3.3	7.3	3.3	5.9	9.6	15.1	13.9	10	8.12	
Azerbaijan	-0.7	-22.6	-23.1	-19.7	-11.8	1.3	5.8	10	7.4	11.1	9.9	10.6	11.2	9.5	6.5	
Belarus	-1.4	-9.6	-7.6	-11.7	-10.4	2.8	11.4	8.4	3.4	5.8	4.7	5	7	11	4.91	
Bulgaria	-10.4	-7.3	-1.5	1.8	2.9	-9.4	-5.6	4	2.3	5.4	4.1	4.9	4.3	5.5	1.84	
Croatia	-21.1	-11.7	-8	5.9	6.8	5.9	6.8	2.5	-0.9	2.9	4.4	5.2	4.3	3.8	4.17	
Czech Republic	-11.6	-0.5	0.1	2.2	5.9	4.2	-0.7	-1.1	1.2	3.9	2.6	1.5	3.7	4.6	2.58	
Estonia	-8	-21.2	-8.5	-2	4.3	4.5	10.5	5.2	-0.1	7.8	6.4	7.2	5.1	5.9	5.68	
Georgia	-21.1	-44.9	-29.3	-10.4	2.6	11.2	10.5	3.1	2.9	1.8	5.2	5.4	11.6	7.7	6.2	
Hungary	-11.9	-3.1	-0.6	2.9	1.5	1.3	4.6	4.9	4.2	5.2	3.8	3.5	2.9	4.2	3.61	
Kazakhstan	-11.1	-5.4	-9.2	-12.6	-8.2	0.5	1.7	-1.9	2.7	9.8	13.5	9.8	9.3	9.4	4.66	
Kyrgyzstan	-7.9	-13.8	-15.5	-20.1	-5.4	7.1	9.9	2.1	3.7	5.4	5.3	0	6.7	6	4.08	
Latvia	-10.4	-34.9	-14.9	0.6	-0.8	3.8	8.3	4.7	3.3	6.9	8	6.4	7.5	8.5	5.66	
Lithuania	-5.7	-21.3	-16.2	-9.8	3.3	4.7	7	7.3	-1.7	3.9	6.4	6.8	9.7	7.1	5.45	
Macedonia	-6.2	-6.6	-7.5	-1.8	-1.1	1.2	1.4	3.4	4.3	4.5	-4.5	0.9	3.4	2.5	1.6	
Poland	-7	2.7	3.7	5.3	7	6	6.8	4.8	4.1	4	1	1.4	3.8	5.3	4.42	
Republic of Moldova	-17.5	-34.6	-1.2	-30.9	-1.4	-5.9	1.6	-6.5	-3.4	2.1	6.1	7.8	6.6	7.3	1.43	
Romania	-12.9	-8.8	1.5	3.9	7.1	3.9	-6.1	-4.8	-1.2	2.1	5.7	5.1	5.2	8.3	2.53	
Russian Federation	-5	-14.5	-8.7	-12.7	-4.1	-3.6	1.4	-5.3	6.4	10	5.1	4.7	7.3	7.3	2.92	
Slovakia	-14.5	-6.6	1.9	6.2	5.8	6.1	4.6	4.2	1.5	2	3.8	4.6	4.5	5.5	4.26	
Slovenia	-8.9	-5.5	2.8	5.3	4.1	3.6	4.8	3.6	5.6	3.9	2.7	3.3	2.5	4.6	3.87	

Globalization, Growth, Poverty and Inequality

Tajikistan	-9.5	-30.3	-12.5	-20.3	-12.4	-16.7	1.7	5.3	3.7	8.3	10.2	10.8	11	10.6	3.25
Turkmenistan	-4.6	-15	1.5	-17.3	-7.2	6.7	-11.4	7.1	16.5	5.5	4.3	0.3	3.3	5	3.01
Ukraine	-11.8	-10	-14.1	-22.9	-12.2	-10	-3	-1.9	-0.2	5.9	9.2	5.2	9.4	12.1	1.45
Uzbekistan	-0.5	-11.1	-2.3	-5.2	-0.9	1.7	5.2	4.4	4.4	4	4.5	4.2	4.4	4.5	3.64

Source: United Nations Statistics Division

<sup>1</sup> Simple Average Growth Rate from 1995 to 2004.

<b>Table-VI</b>															
Estimates of Rates of Growth of GDP (in Percent) for South Asian Countries															
YEARS															
<b>Country or Area</b>	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	Aver <sup>1</sup>
Bangladesh	4.2	4.6	4.1	4.9	4.6	5.4	5.2	4.9	5.9	5.3	4.4	5.3	7.5	4	5.02
India	0.4	5.4	5	7.5	7.6	7.4	4.5	6	7.1	3.9	5.2	4.6	8.2	6.4	5.66
Nepal	6.4	4.1	3.8	8.2	3.5	5.3	5.3	2.9	4.5	6.1	4.8	-0.5	2.3	3.3	4.28
Pakistan	7.8	1.3	3.7	5	4.8	1	2.6	3.7	4.3	2.7	1.9	3.2	5.1	6	3.79
Sri Lanka	4.8	4.4	6.9	5.6	5.5	3.8	6.4	4.7	4.3	6	-1.4	4	5.9	5	4.71

Source: United Nations Statistics Division

<sup>1</sup> Simple Average Growth Rate from 1991 to 2004.

<b>Table-VII</b>							
Elasticities of Different Poverty Measures with respect to Mean of the Distribution and Gini Co-efficient Corresponding to Table-3							
Country	Elasticities with respect to	POVERTY INDEX (At the beginning)			POVERTY INDEX (At Present)		
		<b>H</b>	<b>PG</b>	<b>SPG</b>	<b>H</b>	<b>PG</b>	<b>SPG</b>
Bangladesh	Mean	-0.45272	-1.28079	-1.83008	-0.49555	-1.27976	-1.84885
	Gini	-0.14243	0.28246	0.79506	-0.12638	0.41857	1.01839
INDIA	Mean	-0.28535	-1.04164	-1.56478	-0.36834	-1.1666	-1.72636
Rural	Gini	-0.11653	0.16626	0.54426	-0.13023	0.23401	0.68257
INDIA	Mean	-0.82121	-1.53861	-2.04734	-1.01582	-1.69317	-2.22529
Urban	Gini	-0.07011	0.78328	1.65448	0.07726	1.20483	2.32135
Nepal	Mean	-0.58334	-1.26155	-1.74517	-0.765	-1.43692	-1.97776
	Gini	-0.09274	0.64046	1.40459	0.16952	1.54001	2.88145
Pakistan	Mean	-0.3491	-1.0111	-1.45061	-0.60108	-1.44573	-2.02226
	Gini	-0.12699	0.26841	0.74476	-0.13439	0.45318	1.1007
Srilanka	Mean	-0.49555	-1.27976	-1.84885	-1.50671	-2.43302	-3.27455
	Gini	-0.12638	0.41857	1.01839	0.92041	3.09714	5.22209

Note: Except in case of Nepal (2003-04 data), both BETA and GQ are valid Lorenz curves.

### Endnotes:

1. This gradual process of encroachment, however, may cause tension. Prof. Kausik Basu studied one such tension between 'global policy and local freedoms'. Basu K. (2003)
2. Nayyar, of-course, argued that macroeconomic objectives and policies should not be identical for all countries.
3. Other than kakwani et al, there is another measure proposed by Ravallion and Chen (2003) to estimate pro-poor growth. However, kakwani et al (2006) claimed that Ravallion-Chen estimate violates Axiom-1
4. Equation GQ Lorenz curve:  $L(1-L) = a(p^2 - L) + bL(p-1) + c(p-L)$
5. Beta Lorenz curve:  $L(p) = p - \theta p^\gamma (1-p)^\delta$
6.  $[\mu L'(0.001; \pi), \pi L'(0.999; \pi)]$
7. See appendix in Chen & Ravallion (Background Paper) for country wise details of survey year and welfare indicators.
8. However, many republics were reluctant to come out from soviet system, particularly of Asian region. While the Baltic States led the fight for independence, Central Asian states were afraid of it. Michael McFaul wrote in '*Russia's Unfinished Revolution*' that "the centrifugal forces pulling the Union apart were weakest in Central Asia. Well after the August 1991 coup attempt, all Central Asian countries believed that the Union might somehow be preserved".
9. Martin Ravallion is associated with poverty research and monitoring programme of the World Bank.
10. Except Albania. The case of Albania is unexplainable. It indicates increasing poverty but declining inequality with positive growth. I hope more scrutiny on data is required to analyze Albanian condition.
11. Nepal's result is somewhat perplexing. Inequality increases with a very high rate i.e., 10 percent but severity of poverty along with poverty reduces substantially.

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## Appendices

**Appendix I:**

Poverty measures for parameterizations of the General Quadratic Lorenz curve:

Equation of the Lorenz Curve L(P):

$$L(1-L) = a(p^2 - L) + b(L-1) + c(p-L)$$

or

$$L(p) = -\frac{1}{2}[bp + e + (mp^2 + np + e^2)^{\frac{1}{2}}]$$

Head Count Index H:

$$H = -\frac{1}{2m} [n + r(b + \frac{2z}{\mu})((b + \frac{2z}{\mu})^2 - m)^{-\frac{1}{2}}]$$

Poverty Gap Index PG:

$$PG = H - (\frac{\mu}{z})L(H)$$

Distributionality

$$P_2 = 2(PG) - H$$

Sensitivity or Squared Poverty Gap

Index

$$SPG = -(\frac{\mu}{z})^2 \left[ aH + bL(H) - (\frac{r}{16}) \ln \left( \frac{1 - \frac{H}{s_1}}{1 - \frac{H}{s_2}} \right) \right]$$

Where,

$$e = -(a + b + c + 1)$$

$$m = b^2 - 4a$$

$$n = 2be - 4c$$

$$r = (n^2 - 4me^2)^{\frac{1}{2}}$$

$$s_1 = (r - n)/(2m)$$

$$s_2 = -(r + n)/(2m)$$

**Appendix-II**

Elasticities of poverty measures with respect to the mean and the Gini index		
with respect to		
Elasticity of	Mean ( $\mu$ )	Gini index
H	$-z/(\mu HL''(H))$	$(1-z/\mu)/(HL''(H))$
PG	$1 - H/PG$	$1 + (\mu/z - 1)H/PG$
SPG	$2(1 - PG/P)$	$2[1 + (\mu/z - 1)PG/P]$

**Appendix-III:**

**Conditions can be checked for parameterization of the GQ Lorenz curve**

**Condition**

**Checking**

$L(0; \pi) = 0$

$e < 0$

$L(1; \pi) = 1$

$a+c \geq$

$L'(0^+; \pi) \geq 0$

$c \geq 0$

$L''(p; \pi) \geq 0; p \in (0,1)$

(i)... $m < 0$ ...or

(ii)... $0 < m < (n^2/(4e^2)); n > 0$ ...or

(iii)... $0 < m < -\frac{n}{2}, m < (\frac{n^2}{4e^2})$

**Appendix-IV: Explanation**

• **Headcount (H):** % of population living in households with consumption or income per person below the poverty line.

• **Survey year:** The “survey year” is the year in which the underlying household survey data were collected.

- **Mean\$**: The “mean\$” is \$ the average monthly per capita income/consumption expenditure from survey in 1993 PPP.
- **PL**: Poverty line. The World Bank’s PL for developing country is \$1 per day (\$32.74 per month) and for middle income country \$2 per day.
- **PPP**: It refers to Purchasing Power Parity. The default option is the PPP rates for consumption in 1993 estimated by the World Bank’s Development Data Group.
- **Poverty Gap (PG)**: Mean distance below the poverty line as a proportion of the poverty line.
- **Squared poverty gap (SPG)**: Mean of the squared distances below the poverty line as a proportion of the poverty line.
- **Watts' poverty index**: This is the mean across the population of the proportionate poverty gaps, as measured by the log of the ratio of the poverty line to income, where the mean is formed over the whole population, counting the nonpoor as having zero poverty gap.
- **Gini index**: This is a measure of inequality between 0 (everyone has the same income) and 100 (richest person has all the income)
- **MLD index**: It stands for the mean log deviation. This is an index of inequality, given by the mean across the population of the log of the overall mean divided by individual income.

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<sup>i</sup> This gradual process of encroachment, however, may cause tension. Prof. Kausik Basu studied one such tension between ‘global policy and local freedoms’. Basu K. (2003)

<sup>ii</sup> Nayyar, of-course, argued that macroeconomic objectives and policies should not be identical for all countries.

<sup>iii</sup> Other than kakwani et al, there is another measure proposed by Ravallion and Chen (2003) to estimate pro-poor growth. However, kakwani et al (2006) claimed that Ravallion-Chen estimate violates Axiom-1

<sup>iv</sup> Equation GQ Lorenz curve:  $L(1-L) = a(p^2 - L) + bL(p-1) + c(p-L)$

<sup>v</sup> Beta Lorenz curve:  $L(p) = p - \theta p^\gamma (1-p)^\delta$

<sup>vi</sup>  $[\mu L'(0.001; \pi), \pi L'(0.999; \pi)]$

<sup>vii</sup> See appendix in Chen & Ravallion (Background Paper) for country wise details of survey year and welfare indicators.

<sup>viii</sup> However, many republics were reluctant to come out from soviet system, particularly of Asian region. While the Baltic States led the fight for independence, Central Asian states were afraid of it. Michael McFaul wrote in ‘*Russia's Unfinished Revolution*’ that “the centrifugal forces pulling the Union apart were weakest in Central Asia. Well after the August 1991 coup attempt, all Central Asian countries believed that the Union might somehow be preserved”.

<sup>ix</sup> Martin Ravallion is associated with poverty research and monitoring programme of the World Bank.

<sup>x</sup> Except Albania. The case of Albania is unexplainable. It indicates increasing poverty but declining inequality with positive growth. I hope more scrutiny on data is required to analyze Albanian condition.

<sup>xi</sup> Nepal’s result is somewhat perplexing. Inequality increases with a very high rate i.e., 10 percent but severity of poverty along with poverty reduces substantially.

<sup>xii</sup> For \$1 per day poverty line, there is no basic change in the situation. We find only one change. Bangladesh shows ‘immiserizing’ growth instead of ‘trickle down’ growth.