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Poverty and income inequality: a complex relationship

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> "There is, perhaps, no better test of the progress of the nation than that which shows what proportion are in poverty" (Bowley, 1923, p. 214).

Introduction

For a long time, poverty has not been an important concern for mainstream economists. In fact, it is a relatively new area in orthodox economic analysis. Economics of Poverty was only identified by JEL as a distinct field of research in 1969.

This was because it was assumed that poverty reduction is just an automatic by-product of economic growth. So, the emphasis was placed on growth enhancement rather than on poverty alleviation.

Piketty's best-seller book has brought distributional issues to the fore of economic debate. This is perhaps its main contribution. Piketty centers his analysis on inequality, which, under capitalism, goes hand in hand with economic growth, according to his analysis. In my critical review of the book (Beker, 2014) I asked whether reduction of inequality or reduction of poverty should be our main concern, warning that the relationship between inequality and poverty is a rather complex one.

Of course, this does not happen if poverty is measured in relative terms. As I point out in section 4.2, a relative poverty measure is essentially a measure of inequality. In such a case, poverty and inequality move in parallel.

As Milanovic (2016b) points out, "it is precisely the growth in the middle, fueled by the resurgent Asia, and the quasi-stagnation of incomes around the 80-90th percentile of the global income distribution where Western middle classes are, that have attracted most attention." The middle class in the developed world has been the big loser of a process in which it has been squeezed by the twin forces of globalization and technological innovation. This is the source of so much middle-class discontent in advanced economies reflected in events such as Brexit, the election of Donald Trump and protests in France.

In this paper I refer to poverty as absolute poverty, which I think is the concept that better let us analyze the situation in the low-income countries where most of the world's population lives. Relative poverty becomes an urgent concern only once absolute poverty is no longer a first order problem. Contrary to an extended belief, there is no necessary positive correlation between income inequality and (absolute) poverty. Moreover, there are examples that show that inequality may rise and simultaneously poverty may decline and vice versa. For example, one case is when a society becomes absolutely equalitarian because everybody is poor; another one, when a society changes toward a more inegalitarian one where, however, everybody is better off than before.

It is worthwhile remembering that the first of the United Nations' "Millennium Development Goals" set by the world's leaders in September 2000 had to do with poverty. The target was to halve the incidence of poverty between 1990 and 2015. The proportion of people living on less than $1.25 a day globally fell from 36 per cent in 1990 to 15 per cent in 2011 (UN, 11). However, the poorest and most vulnerable people are still being left behind (ibid, 8).

As a matter of fact, multiple issues are involved in the relationship between economic growth, income inequality and poverty. Let us have a look at some of them.

First, does economic growth increase or decrease income inequality? Second, does poverty increase or decrease with economic growth?

Third, does growing inequality mean increasing poverty? Or increasing inequality is compatible with decreasing poverty?

In what follows I present a survey of the literature on these matters which illustrates that the relationship between inequality and poverty is a rather complex one and that empirical results are, in some cases, contradictory. There is still a vast field open for research in this area.

Section 1 is devoted to the relationship between growth and inequality; Section 2 has to do with the relationship between economic growth and poverty; Section 3 deals with the relationship between inequality and poverty; Section 4 is devoted to the geography of poverty; Section 5 analyzes several issues connected with anti-poverty policies. Section 6 concludes. An Addendum with some preliminary reflections on the effects of the COVID-19 pandemic on inequality and poverty is included.

1. Growth and inequality

1.1. The effect of growth on inequality

Whether growth leads to increased inequality or not is an old question in economics.

The Kuznets curve hypothesis proposed by Simon Kuznets (1955 and 1963) holds that as incomes grow in the early stages of development, income distribution would at first worsen and then improve as a wider segment of the population participates in the rising national income. In fact, Kuznets found an inverted U-shaped relation between income inequality and GNP per head. At a first stage incomes would become more unequal while at a second stage growth would reduce inequality after some crucial level was reached.

The initial studies on the Kuznets curve hypothesis used cross-sectional data and compared poor countries to rich countries in order to test hypotheses about income distribution and growth. Several investigations have found some support for the Kuznets hypothesis (e.g. Oswang, 1994; Ali, 1998; Milanovic, 1994; as well as Fishlow, 1995). However, further work on the Kuznets curve has found the relationship weak, as it is dependent on the precise functional form adopted (e.g. Anand and Kanbur, 1993; Deininger and Squire, 1998).

> "Histories of individual countries show that in some countries income distribution has worsened over time (e.g. Brazil) and in others it has improved (e.g. Indonesia in the 1970s). In fact we can observe countries in

> each of the four possible quadrants representing combinations of growth and changes in income distribution" (Stewart, 2000).

So, empirical evidence has been inconclusive with respect to the relationship between economic growth and income distribution.

In this context, Piketty published his best seller providing an impressive amount of data which shows that under capitalism wealth and income inequality increases with economic growth. He argues that to the extent that the rate of capital accumulation (r) is higher than the rate of growth of the economy (g), inequality expands; In particular, Piketty (2014, 32) argues that the rapid increase observed in income inequality in the United States, which started in the 1980s, largely reflects an unprecedented explosion of very elevated incomes from labor. Although this phenomenon is seen mainly in the United States and to a lesser degree in Britain, the trend in other wealthy countries is in the same direction. Inequality has much to do with the advent of "supermanagers" who obtain extremely high, historically unprecedented compensation packages for their labor, he concludes.[1]

Varoufakis (2014, 28) argues that a very simple argument leads to Piketty's conclusions without being necessary to resort to the so called "laws" the French author uses in his now famous book: "It is, demonstrably, a simple matter to prove that when the rich have a higher propensity to save than the average person, the chances are that their share of wealth will be rising. As long as they save more than the poor and receive total income (wage income plus returns to their wealth) well over and above the average citizen's income, the rich will find themselves on a perpetual escalator that guarantees them a constantly increasing share of aggregate wealth. And even if they enjoy less than half of aggregate income, it is still possible to show that their wealth share will be rising as long as their marginal propensity to save is considerably greater than that of the poorer citizens."

Some time ago, Frank and Cook (1995) described capitalism as a winner-take-all society where there is a commanding financial advantage for those at the top but nothing like it for those, however good, who are further down in the hierarchy.

This means that not only wealth and income distribution follow a power law – as is well known since Pareto's times – but also that wealth and income growth rates are distributed according to a power law. Once a firm – or an individual – gets some advantage over its competitors the process becomes reinforcing producing the so called Matthew effect according to which the rich get richer and the poor get poorer. Once the playing field is slightly tilted positive feedbacks tip the system in favor of the initially benefitted.

Grave inequalities in the distribution of income are the straightforward result. Winner-take-all markets dramatically widen the gap between rich and poor by concentrating all rewards among just a small handful of winners.

1.2. Inequality and technical change

Aghion et al. (1999) postulated three candidate explanations for the increasing inequality in developed countries namely, trade liberalization, skill-biased technical change, and organizational change.

[1] For a critical review of Piketty´s book see Beker (2014) and other articles in the same volume.

Aghion et al. (1999) argue that trade between high-skill and low-skill economies should cause, in the former, an increase in the demand for domestic skill-intensive commodities at the expense of the demand for domestic unskilled intensive commodities. In the poor country where abundant unskilled labor is cheap the trade boom drives up the demand for unskilled labor and drives down the demand for skilled labor. Thus, earnings inequality increases in the rich economies but declines in the poor ones. However, empirical studies have shown that these effects seem to be rather small.

Technical change has been pointed out as another possible responsible for growing inequality. If technological change is to generate an increase in wage inequality, it must be because technological change is biased toward certain skills or specializations.

Skill-biased technical change induces a shift in labor demand towards skilled labor within all industries. Empirical studies for the US and the UK corroborate that most of the increase in the non- manual share in total employment was due to within industry shifts. Therefore, technical change and not trade liberalization seems to be the main responsible for increasing inequality in developed countries.

Finally, Aghion et al. (1999) identify organizational change as another likely source of inequality. The productivity gap between individuals with different skill levels increases when changes in the organization take place. It happens because organizational change itself is skill-biased.

Aghion et al. (1999) conclude that technological change is the most important factor to explain increasing inequality, since both trade liberalization and organizational change only affect earnings inequality insofar as they are associated with technical change. Technical progress is by itself a crucial source of inequality whenever itis not neutral, that is, if it affects differently the productivity of the various types of labor.

Milanovic (2016a) introduces the concept of "Kuznets waves": inequality rises, falls and then rises again, perhaps endlessly. According to this author, Kuznets waves are driven mostly by a technological revolution. In the case of the present Kuznets cycle, it is mainly driven by the transfer of labor from more homogenous manufacturing into skill-heterogeneous services (and thus producing a decline in the ability of workers to organize) together with globalization. These two forces together are responsible for the hollowing out of the middle classes in the west and the consequently rise in inequality. According to Milanovic, since the 1980s developed countries are on the first part of a second Kuznets cycle. This implies that inequality is only a transitory phenomenon: in a certain future the second part of the Kuznets wave will come on and the present inequality trend will be offset, counteracted, canceled and reversed. In this way he rejects the idea of the existence of a permanent increasing inequality trend. Time will tell. Anyway, he admits that in the short run inequality will not come down.

1.3 Inequality and economic policy

Piketty (2014, 27) admits that "the resurgence of inequality after 1980 is due largely to the political shifts of the past several decades, especially in regard to taxation and finance." But this implies that the main determinant of the ups and downs of inequality has been the changing correlation of forces between capital and labor and not the "laws" which the French author would have discovered. This changing balance of forces has resulted in different policies over time from the welfare state of the post-war period to neoliberal deregulation of the 1980s. Until the appearance of Piketty's book, the resurgence of inequality after 1980 has been mainly considered the direct effect of Reagan-Thatcher economic policies that, among other things, eroded union power. Piketty admits that the inequality r>g is a contingent historical proposition, which is true in some periods and political contexts and not in others. The crucial issue to elucidate is whether inequality is just the result of an intrinsic trend in capitalist development or is the consequence of policies like the ones which consisted of deregulation, weakening of the labor unions and the like. Piketty himself seems to choose a middle-of-the road explanation. He recognizes that there are "powerful mechanisms pushing alternately toward convergence and divergence" as far as wealth distribution is concerned. However, he predicts that "certain worrisome forces of divergence" will prevail in the future; but his forecast is based precisely on the behavior of the United States and Europe after 1980. He maintains that "the return of high capital/income ratios over the past few decades can be explained in large part by the return to a regime of relatively slow growth" (Piketty, 2014, 33). This kept the rate of return on capital significantly above the growth rate. But weren't the low rate of growth and the high rate of return on capital just the results of Reaganite and Thatcherite policies? If so, the inequality r>g is just the outcome of those policies and may be reversed by a change of policies.

2. Growth and poverty

2.1. The causes of poverty

For the economically active population there are two basic causes of poverty, whatever precise definition one uses for it:

1. Unemployment.[2]
2. Income that cannot meet the basic needs level.

Poor people are those who do not earn an income at all or those who earn an income which is insufficient to satisfy their basic needs.

So, any research on the causes of poverty should be focused on the causes of unemployment and of low remunerations.[3] Any policy aimed at fighting poverty should be oriented towards the elimination of unemployment and low payment. For instance, in 2012, 10.8% of the workforce in the European Union was unemployed and an estimated 9.5% was affected by in-work poverty, summing up a total of more than 32 million people, (European Anti-Poverty Network, 2013).

Of course, it may be discussed how to appropriately measure poverty. Sen (2006) showed why the usual indicators are not satisfactory remarking that ¨there is a long way to go still to make adequate social sense of economic measures¨ (Ibid, 46). I come back on this issue in section 4.2.

[2] In those countries where there is an unemployment subsidy the contribution of unemployment to poverty depends on the amount of that subsidy.
[3] On the subject see the contribution by Bhaduri et al (2015).

2.2. Some arithmetic on inequality, poverty and growth

Kanbur (2005) points out some mechanical properties in the relationship between poverty, growth and inequality. “First, holding inequality constant, an increase in per capita income (in other words, growth) reduces poverty. Second, holding per capita income constant, an increase in inequality increases poverty” (Kanbur, 2005, 224). This means that, although growth is positively correlated with poverty reduction, if growth is accompanied by increased inequality, then the net effect on poverty is no longer clear.

Kanbur (2005, 228) goes on with some awkward questions. For instance, if the total number of the poor goes up but, because of population growth, the percentage of the poor in the total population goes down; has poverty gone up or down? Even worse, the incidence of poverty falls each time a poor person dies because of poverty. Another case: let us suppose that poverty declines because the poor who are engaged in activities that are favored by growth are better off, but those engaged in activities that are not favored are worse off than before. Shall we consider this outcome as an improvement? This is an issue of great ethical and political significance.

Poverty persistence might indicate one of two things; either the determinants of poverty reduction are not known, or they are known but the policies to fight them are not being put in place or a combination of the two (Kanbur, 2010).

2.3. Growth and poverty

The relationship between growth and poverty is subject to some controversy.

The importance of economic growth as a basis for lessening poverty cannot be overstated. Table 1 shows how small differences in growth rates may generate, in the long run, quite different outcomes.

Table 1

	Country A	Country B	Country C
Years later	**1% growth**	**5% growth**	**10% growth**
0	$1.000	$1.000	$1.000
10	$1.105	$1.629	$2.594
20	$1.220	$2.650	$6.727
30	$1.348	$4.322	$17.449
40	$1.489	$7.040	$45.259
50	$1.645	$11.467	$117.391

Let us have a look at the effect of different rates of growth on the standard of living of three hypothetical countries (A, B, and C) that start with a per capita income of $1,000. 50 years later, the country C that has been growing at an annual 10 percent gets a per capita income 70 times higher than the country that has only grown by 1% and 10 times higher than of the country B which has grown at an annual rate of 5%.

This means, among other things, that, in the long run, the poor in a country with a higher rate of growth may attain a better standard of living than the middle class of a country with lower rate of growth. Of course, this happens if income distribution remains constant over time.

However, if income distribution became less equal with growth, poverty might not be declining or even worsen.

The depth and persistence of poverty has created serious doubts about the ability of economic growth to reduce poverty by itself. Poverty however we define it has gone down in some parts of the world but gone up in others over the past half century.

2.4. Empirical studies on the relationship between growth and poverty

Empirical studies have found that a lesser level of development and a higher level of inequality reduce the growth elasticity of poverty (Bourguignon, 2003, 16). This means that countries with a very low level of development and very concentrated income distributions have very low probabilities of leaving the poverty trap. The mineral-rich economies are a typical case; they are usually very underdeveloped and have very concentrated income distributions.

Salvatore and Campano (2012) created a data base of income distributions by quintiles with multiple years for most countries. The results show that the 25 year period from 1980 to 2005 has been beneficial to the poorest populations in both the developed and the developing countries. Moreover, the income gap between the developed and developing countries has been closing. Much of this can be accounted for by the rapid growth rates in China and India. However, the authors conclude that if the present growth rates prevail it would take developing country people hundreds of years to close the income gap with the developed country people.

Ravallion (1995) uses a sample of 16 developing countries in the decade of 1980s and finds that a 3% rate of growth in consumption per capita can be expected to result in a 6-10% rate of reduction in the proportion living on less than $1 per day.

On the other hand, while the Gini coefficient decreased from 0.4414 to 0.4081 in developed countries, in the developing countries it increased from 0.5219 to 0.5414 (Salvatore and Campano, 2012, 10). This outcome seems to endorse the idea that, for less developed countries, economic growth goes hand in hand with increasing inequality.

However, as it was pointed out before, even with growing inequality poverty may be declining. Therefore, let us have a look to the relationship between inequality and poverty.

3. Inequality and poverty

3.1. Inequality and poverty: empirical studies

In the literature on income distribution, the terms inequality and poverty are often used as if they were interchangeable. An increase in inequality is interpreted as an increase in poverty and vice versa. For instance Dagdeviren et al.(2000, 5) refer to poverty-reducing policies and then they state: “the ‘High Performing’ Asian countries, prior to the financial crisis of the late 1990s, combined rapid growth of per capita income with relatively stable and low inequality,” concluding that “the experience of the ‘high performers’ suggested, at the least, that there might be policy measures to foster the benign combination of high growth and rapid poverty reduction,” as though lower inequality would unequivocally mean lower poverty. And it is just one example among many.

However, as it is easy to realize, a decrease in poverty is not necessarily accompanied by a decrease in inequality;[4] it may in fact be accompanied by an increase in it. China experienced a sharp reduction in poverty together with a significant increase in inequality. Conversely, an increase in poverty may be accompanied by a decrease in inequality overall. Finally, there may be widespread poverty in a society and yet very little economic inequality.

Ravallion (1995) finds that there is no sign that growth has been associated with a clear tendency for inequality within developing countries to either increase or decrease.

De Janvry and Sadoulet (1999) analyze poverty and income inequality data for 12 Latin American countries between 1970 and 1994; they find that income growth reduces urban and rural poverty but not inequality. They also find that there is an asymmetry in the impact of growth on poverty and inequality, with recessions having stronger effects on both poverty and inequality than equivalent increases in income. De Janvry and Sadoulet (ibid, 9) find that urban poverty is anti-cyclical, falling with income growth and rising in recession. However, they also find that growth is only effective in reducing urban poverty when inequality is not too high. Thus countries with high levels of inequality cannot rely on growth to reduce poverty. This result coincides with Bourguignon’s, which has been mentioned above. Although it cannot be said that growth is unequalizing, neither can reliance be placed on growth to reduce inequality.

De Janvry and Sadoulet’s results coincide with those in Bruno et al. (1996) who found the effect of growth on inequality to be indeterminate. However, they point out that lower initial inequality raises the likelihood that growth will reduce poverty.

Quah (2002) analyzes the cases of China and India, which carry within them a third of the world’s population. He concludes that aggregate economic growth might well come about only with increases in inequality. In spite of this he argues that growth is unambiguously beneficial for the poor. He underlines that only under inconceivably high increases in inequality would economic growth not benefit the poor.

Besley and Burgess (2003, 11) find a positive and significant association between inequality and the level of poverty within a country. However, as Honohan (2004) points out, this association is almost tautological: if the mean income is held constant the more of the

[4] Unless inequality is part of the definition of poverty. We shall discuss this issue later in section 4.2.

national income is taken by the rich the less is available for the rest and more people are likely to be poor.

Kraay (2006) decomposes poverty changes into three elements: a) growth in average incomes; b) the sensitivity of poverty to growth; and c) changes in the distribution of income. In a large cross-country sample, he finds that growth in average incomes accounts for some 70 percent of the variation in (headcount) poverty changes in the short run, and over 95 percent in the medium to long run. So, he concludes that growth is the key instrument for poverty reduction.

López and Servén (2006) use a large cross-country database including both industrial and developing countries and spanning almost 40 years to test the null hypothesis that the size distribution of per capita income can be described by a lognormal density. The empirical tests are supportive of the lognormal approximation to the distribution of per capita income. Lognormality of the distribution of income allows the authors to derive some qualitative and quantitative implications for the relative roles of growth and inequality in poverty reduction under alternative initial conditions, using a variety of poverty measures.

The authors highlight four main points:

> i) inequality hampers poverty reduction, both because of its negative impact on the growth elasticity of poverty and because of its negative impact on the inequality elasticity of poverty;
>
> ii) for a given poverty line, the impact of growth on poverty is stronger in richer than in poorer countries, and hence the latter will find it harder than the former to achieve fast poverty reduction;
>
> iii) the share of the variance of poverty changes attributable to growth should be generally lower in richer and more unequal countries; this means that in poorer and more equal countries growth should be expected to be the main driver of poverty reduction, while inequality changes tend to play a more prominent role in richer and/or more unequal countries; and
>
> iv) given the initial levels of development and inequality, the relative poverty-reduction effectiveness of growth and inequality changes depends on the poverty line – the higher the poverty line, the bigger the role of growth and the smaller the role of distributional change (ibid, 2).

The inequality elasticity falls as inequality rises, for a given value of average income relative to the poverty line. However, the relationship is highly nonlinear, and at very low levels of development its sign is reversed. The more equal and the poorer the economy the more effective growth will be relative to redistribution in attacking poverty. As the economy becomes richer and more unequal, distributional change plays a relatively larger role in poverty changes. At very low levels of development the poverty-reducing effects of growth outweigh the poverty-raising effects of a worsening distribution of income. So, the authors pose that when poverty reduction is the overriding policy objective, poorer and relatively equal countries may be willing to tolerate modest increases in income inequality in exchange for faster growth -more so than richer and highly unequal countries.

Housseima and ben Rejeb (2012) use panel data from 52 developing countries over the period 1990-2005, to determine the main sources of poverty reduction and show the interdependence between poverty, inequality and growth. They find that an increase of 1 percentage point in per capita GDP causes a reduction of poverty rate of 0.40 percentage points. On the other hand, they find that increased levels of inequality increase the proportion of poor in the population. Estimation results show that an increase of 1 percentage point in the Gini coefficient causes an increase of the poverty rate of 3.26 percentage points. Therefore, increasing inequality may hamper economic growth's role in reducing poverty.

However, Alvaredo and Gasparini (2013, find a weak relationship between poverty and inequality. The correlation coefficient between the headount ($2 line) and the Gini coefficient is only 0.17.

3.2. The poverty trap

It has been argued that there exists a poverty trap which explains why people (and countries) that start poor remain poor. A set of self–reinforcing mechanisms determine that poverty begets poverty. An early example of this kind of literature is Nelson (1956) who developed a growth model with low saving and investment rates at low income levels. So, low levels of income generate low saving and investment rates, trapping countries in poverty. The same scheme may be applied to individuals.

Kraay and McKenzie (2014) reject this point of view arguing that even the initially poorest 10 percent of countries has grown at a rate similar to the historical growth rate of the United States over the last 50 years. However, this argument does not contradict the idea of a poverty trap if those that initially were the poorest remain the poorest 50 years later. The issue at stake is whether the income growth rate of the poor exceeds the growth rate of the non-poor. Using data on poverty measures over time for 90 developing countries Ravallion (2012) finds that although their overall poverty rate has been falling since at least 1980 the proportionate rate of decline has not been higher in the poorest countries. The author finds that the initial level of poverty has a negative effect on growth rates and that a high poverty rate also weakens the effect of growth on reducing poverty. According to Ravallion both effects explain the lack of poverty convergence. Countries starting out with a high incidence of poverty do not have a higher proportionate rate of poverty reduction, which would allow poverty convergence.

In her analysis of anti-poverty policies in USA, Sawhill (1988) examines the period between 1967 and 1985 and concludes that the rise in unemployment is one of the main explanatory variables of their failure; she adds that the chance of being poor in US is greatly increased if one is black, lives in a female-headed family or is a child under 18. Children who are born in a poor family go on to spend a long time living in poverty.

In her analysis of the role of segregation, Ananat (2011) finds that segregation creates places where black poverty and inequality are higher while white poverty and inequality are lower, compared to places that are less segregated.

Husmann (2016) reminds that marginality is a root cause of poverty; marginality refers to a position of individuals or groups at the margins of social, political, economic, ecological, and biophysical systems. She uses this concept to create a marginality map of Ethiopia by overlaying seven indicators capturing different aspects of marginality. Marginality hotspots are identified.

Sawhill's, Ananat's and Hussmann's studies suggest that poverty may be path dependent: people belonging to particular social groups and/or living in specific neighborhoods have a higher probability of being poor.

4. The geography of poverty

4.1. Where are the poor?

The main source of statistical information for poverty analysis at a large international scale is the World Bank's PovcalNet,[5] a compilation of distributive data built up from national household surveys, generally fed by national statistical offices. However, this database does not include the developed countries. In fact, the use of a low international poverty line has the unintended effect of limiting poverty statistics to developing countries.[6]

According to PovcalNet, in 2011, 2.1 billion people – 36 per cent of the developing world's population – lived with less than $2 a day in 2011 purchasing power parity. In absolute numbers, income poverty was concentrated in India and China. Around 740 million people in India lived with less than $2 a day, representing 60% of its total population. The number in China was 250 million, which was 19% of this country's population. Both countries are home of 46% of the poor in the world. The following three countries – Bangladesh, Indonesia and Pakistan – represent 14%. So, income poverty is highly concentrated from a geographical point of view. The other geographical area which greatly contributes to poverty numbers is the Sub-Saharan region with 617 million which represented 70% of its total population. Altogether, these areas summed up 89% of the developing world's income poverty.

Gentilini and Sumner (2012) compute global poverty using the national poverty lines officially set in each country instead of using international poverty standards; they include developing as well as developed countries. They find that 22.5 per cent of the world's population, or some 1.5 billion people, live in "poverty" as locally defined. 30% of this total belongs to South Asia, 17% to East Asia and 24% to Sub-Saharan Africa. This shows that the geographical distribution of poverty is not substantially affected by the way of measuring it. However, they find that 11% of the world's poor live in high-income countries – United States and some European countries. Moreover, 3 countries – Brazil, Mexico and United States – contribute with 139 million to the 1.5 billion total. Each of them has more poor population than Pakistan or Indonesia.

Therefore, when analyzed with a national poverty lines lens, poverty is less geographically concentrated.

The use of national poverty lines provides for some countries a substantially lower aggregate than the $2 a day line. This indicates that for some countries those living with such a budget are not considered poor. A notable case is India. Out of the 740 million people who in 2011 lived with less than $2 a day, the national poverty line only considered poor 355 million.

The discrepancies between poverty measured by an international *vis a vis* a national poverty line emerge primarily from the fact that what is considered poor is socially determined and

[5] http://iresearch.worldbank.org/PovcalNet/.
[6] Some of the problems that involve the use of an international poverty line are detailed in Deaton (2010).

therefore varies across time and space. What we consider poor now is not the same as what was considered poor 200 years ago. The same applies between countries of different levels of development.

For example, the countries in the European Union consider poor those with incomes below 60 percent of the median. So, the definition of poverty is tied up to income evolution. The absolute incomes of low-end households may increase but if the household incomes at the median increase in the same proportion the poverty rate will remain the same. Probably many of the people labeled as poor in Europe will not be considered as such in India or Pakistan.

We have here two issues at stake. First, international versus national poverty lines. Second, the national poverty line may be an absolute value – $2 a day for some countries and $1 for others – or it may be defined in relative terms as it is the case of the EU.

This leads us to the discussion between absolute and relative measures of poverty.

4.2. Relative and absolute measures of poverty

People who do not have their basic necessities that they need to lead a reasonable life – the food, the shelter, the clothing – are considered to be poor. However, what a reasonable life is varies across countries and over time.

Once it is recognized that needs are socially determined, a poverty line can be established for a given country at a given time. It will measure the amount of money needed to buy the basket of commodities necessary to satisfy the socially determined basic needs in that country at that time. This may be an absolute value or a relative one. For example, the poverty line may be estimated in $2 a day or it could be set at some percentage of the country's mean income. This leads us to the postponed discussion on how to measure poverty.

Some authors argue that poverty should necessarily be measured in relative terms. For instance, MacEwan (2007, 10) claims that "there are no poor unless there are also rich". In an egalitarian society poverty has no meaning at all, he adds. So, poverty refers to a certain layer in the social structure. The lack of goods and services does not mean poverty if all members of society are in the same situation. Following this reasoning he argues that

> "in two societies where the absolute income of the bottom segment (say the bottom quintile) is the same, poverty will be greater in the society where income distribution is more unequal because in that society the bottom segment will be further from the norm and thus more lacking in that society's socially determined needs" (ibid, 11).

The way of reflecting this difference is by using relative measures of poverty.

This has a direct impact on the policies to deal with poverty. If poverty is measured in relative terms there is no way of reducing it without changing the income distribution. If income increases across all quintiles at the same rate poverty will remain unchanged. On the contrary, if income decreases for all quintiles but at a smaller rate for the lowest one, poverty measured in relative terms will decline. A relative poverty measure is essentially a measure of inequality within the bottom half of the income distribution.

On the other hand, if poverty is measured in absolute terms it might be reduced just with economic growth.

Therefore, the way poverty is measured is not an innocent issue. It is directly linked to the policies recommended to reduce it. Those who argue in favor of a relative measure are in favor of income redistribution. Those who back an absolute measure advocate in favor of economic growth.

The relative one is a measure of subjective poverty. People may feel better off if their income decreases but their neighbors' incomes decrease in a higher proportion. In the same way, they may feel worse off if their income increase at a slower speed than the rest of society.

The absolute measure assumes that poverty has to do with the amount of commodities available to an individual – or a family – to satisfy the basic needs disregarding what happens to the rest of the people.

The relative measure mixes up poverty with equality. But they are two different concepts. One has to do with the lack of means to satisfy one's needs, whatever defined. The other refers to the way income or wealth is distributed within society. Relative poor are people whose income or wealth is less than the average one of the rest of society, independently of the quantity of goods they can consume with that level of income or wealth.

The policies to deal with poverty may or may not be the same to reduce inequality. There are some authors – from Kuznets to Quah to Basu – who have argued that there is a trade-off between fighting poverty and reducing inequality. China seems to be a clear example of this.

Therefore, in evaluating policies against poverty it seems advisable to measure it in absolute terms and reserve relative poverty to inequality analysis together with other instruments as the Gini coefficient, the Lorenz curve or the Theil-index.

5. Some policy issues concerning poverty and inequality

Martin Feldstein (1999) argues that policy should address poverty, not inequality. He points out that changes that increase the incomes of high-income individuals without decreasing the incomes of others clearly satisfy the Pareto principle. However, it may be argued that although the poor are not worse off in absolute terms they are in relative ones; this may make them feel poorer as if they had lost part of their income. A policy change which improves the situation of the upper one percent of the population without changing the situation of the rest is undoubtedly a Paretian improvement. However, this more efficient alternative will be rejected in many societies in the name of equity. The Pareto improvement concept implicitly assumes that absolute and not relative situations are relevant. However, it is society and not economists who should decide what weight should be given to efficiency and what weight to equity: it is typically a value judgment. It will depend on the idea of equity that in that society prevails (Beker, 2005, 17).

Basu (2005) introduced the concept of poverty-minimizing inequality as the amount of inequality that society should tolerate to minimize poverty. He remarks that a society of perfect equality would be crushingly poor (Basu, 2005, 1367). Therefore, instead of attempting perfect equality he suggests to take as welfare criteria a normative simple rule:

maximizing the per capita income of the poorest 20 per cent of the population. He calls this the “quintile income” of a country.

Basu warns that the quintile measure should not be confused with a poverty measure of a society. It is a practical objective for policy design purposes. It can be generalized by giving weights to the incomes of people at different levels of poverty with the poorest people getting the highest weights and then looking at the weighted per capita income of society (Basu, 2005, 8).

Klasen (2003, 65) argues that pro-poor growth should at a minimum involve disproportionate growth of the incomes of the poor; the income growth rate of the poor must exceed the growth rate of the non-poor.

The much used elasticity of the poverty rate with respect to the mean growth rate (the so-called poverty elasticity of growth) does not consider information about the distribution of incomes among the poor. Indeed, a high poverty elasticity of growth might often just mean that many poor who were close to the poverty line were lifted above it rather than high income growth among the severely poor, who should be of particular concern (ibid, 64/65).

Governments should ideally be able to focus on policies that have the largest marginal effect on pro-poor growth. Some policies have a large effect on growth, but may not be particularly pro-poor; others do not have such a large effect on growth, but are extremely pro-poor. The best policies are obviously those that have a large effect on both, but not enough is known about which policies fall into what category (ibid, 84).

Klasen underlines that, according to experience, successful reform was particularly likely in countries that faced severe economic crises with few economic options. These countries built up a consensus for change prior to reforms, had substantial indigenous technical capacity at their disposal, and used aid and technical advice to sustain the reforms. Donors were able to assist successful reformers, although donor aid sometimes also delayed reforms or reduced the ownership of reforms through excessive conditionalities (ibid, 85).

Promoting pro-poor growth in countries with high inequality and where the poor are politically and economically marginalized is likely to be difficult. As a result, success in implementing pro-poor policies depend greatly on creating and strengthening pro-poor coalitions, which can involve parts of governments, non-governmental organizations, donors, and civil society (ibid, 85). In this respect Kanbur points out that if a set of instruments harms the interests of the dominant coalition, it will not be implemented, even if it is known to be a determinant of poverty reduction (Kanbur, 2010).

Given the importance of unemployment as a determinant of poverty, one should pay attention to the effect of economic policies on the level of employment. For example, the adjustment policies inspired in the Washington Consensus have implied a vast destruction of jobs where they were applied.[7]

[7] See Beker (2012, 14) for the Argentine case.

6. Conclusions

For a long time, poverty has not been an important concern for mainstream economists. The reason for this was that it was assumed that poverty reduction is just an automatic by-product of economic growth.

The first of the United Nations' "Millennium Development Goals" set by the world's leaders in September 2000 was to halve the incidence of poverty between 1990 and 2015. The goal has been achieved. The proportion of people living on less than $1.25 a day globally fell from 36 per cent in 1990 to 15 per cent in 2011. However, the poorest and most vulnerable people are still being left behind.

The paper addresses some of the multiple issues involved in the relationship between economic growth, income inequality and poverty.

The main conclusions arrived at are the following.

- First of all, although empirical evidence is not conclusive there are strong signs that there is a positive association between economic growth and rising inequality. If so, the gap between rich and poor widens as the economy grows. China seems to be a clear example of this.

- Second, skill-biased technological change is an important factor to explain increasing inequality.

- Third, economic growth reduces poverty if income distribution remains constant or improves over time. However, if income distribution becomes less equal with growth, poverty might not be declining or even worsen.

- Fourth, poverty seems to be path dependent: people belonging to particular social groups and/or living in specific neighborhoods have a higher probability of being poor.

- Fifth, the initial level of poverty has a negative effect on growth rates and a high poverty rate also weakens the effect of growth on reducing poverty. Countries with a very low level of development and very concentrated income distributions have very low probabilities of leaving the poverty trap without income redistribution. In poor but more equal countries growth should be expected to be the main driver of poverty reduction, while inequality changes tend to play a more prominent role in richer and/or very unequal countries.

- Sixth, using the national poverty lines officially set in each country, 22.5 per cent of the world's population or some 1.5 billion people, live in 'poverty' as locally defined. 30% of this total belongs to South Asia, 17% to East Asia, 24% to Sub-Saharan Africa and 11% to high-income countries.

- Seventh, governments should focus on policies that have the largest marginal effect on pro-poor growth. This implies to choose policies which warrant that the income growth rate of the poor exceeds the growth rate of the non-poor.

- Last but not the least, some authors have argued that there is a trade-off between fighting poverty and reducing inequality. China seems to be a clear example of this. If so, it is society who should decide what weight should be given to poverty and what weight to equity: it is typically a value judgment. It is society who should decide how much more poverty is tolerable in order to reduce inequality or how much more inequality is acceptable when reducing poverty.

In sum, the relationship between inequality and poverty is not a simple one; policies addressed to fight inequality have to take into consideration their side effects on poverty and vice versa. There is still a vast field open for research on this subject.

Addendum: inequality and poverty after the coronavirus (AC)

The article above has dealt with the Before Coronavirus (BC) era. This addendum has to do with the After Coronavirus (AC) era.

Perhaps it is too early to draw general conclusions about the main consequences the COVID-19 pandemic may have on income inequality and poverty. However, there are some clues of what they may be.

Historically, epidemics led to a decrease in population, an increase in mean income, higher wages (because of labor scarcity) and thus lower inequality. This time it is quite different.

The pandemic has shown the vulnerabilities and fragility of the present socio-economic system based on human labor. This time it was the coronavirus pandemic, tomorrow it may be another yet unknown global virus pandemic.

For this reason, large scale substitution of machines, robots, and other digital technologies for labor in the production process will accelerate. Machines and robots do not get sick or stay home when there is a pandemic. Dependence on human labor will be reduced as far as possible. Technological unemployment will significantly increase. On the other end, some reduced number of highly skilled workers will see their wages increased due to the high demand for their skills. Longstanding inequalities will exacerbate.

The intensified use of capital and technology instead of human labor will have far-reaching consequences for developing countries. Low-wage countries will lose their main competitive advantage**.** This will make it even more difficult for them to provide jobs for their population; higher unemployment and lower wages for unskilled labor will be likely outcomes. Probably, inequality and poverty will rise together.

The BC era world economy will not be restored. On the contrary, saving labor existing trends will deepen.

Providing income for large numbers of unemployed will become an urgent need. The time for a universal basic income may have come. It should be implemented together with a highly progressive income tax to make sure that those people who do not need it refund that money to the state.

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