Chapter 3

Inequality as Determinant of the Persistence of Poverty

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Additional information is available at the end of the chapter

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Abstract

This chapter aims to establish the relationship between inequality and poverty to explain why poverty persists. For this purpose, four parts are developed. The first one illustrates data on inequality and poverty in the world. In the second one, the background of both problems is traced in order to conceptualize them and determine their relationship. In the third one, a simulation exercise is carried out to show the mentioned relationship; besides, correlations between corruption, inequality, and poverty are made for 18 countries around the world that bear witness to the link between these variables. Finally, it is pointed out that persistent poverty reduction will only succeed if the different types of inequalities are reduced or limited, since it is unacceptable that more than 10% of the inhabitants of the earth live in extreme poverty or that just eight people have the same wealth as half of mankind.

Keywords: poverty alleviation, income inequalities, basal inequalities, secondary inequalities, income distribution

1. Introduction

Income inequality, as in other spheres, has been growing in the world. Therefore, answering questions such as why, what measures have been taken to attack it, or what could be done to reduce it could provide a way to allow humans to live in a more egalitarian world. In this sense, this paper tries to suggest an answer to the last question, proposing a maximum threshold of concentration of the income that has impact in the reduction of the poverty rates due to the close relation between inequality and poverty. To illustrate this, the paper develops four more sections, apart from Section 1. In Section 2, some stylized facts about inequality are shown. In Section 3, the relationship between poverty and inequality is established. In Section 4, a simulation exercise is performed. Finally, a conclusion is made that includes the main aspects of the chapter.

2. Stylized facts

OXFAM reports [1, 2] indicate that in 2016 only 8 men have the same wealth as 3.6 billion people, while in 2015 there were only 62 people, of whom 53 were men and 9 were women. However, in 2016 they are only men. This reveals, on the one hand, the surprising degree of concentration and, on the other, the degree of gender inequality.

According to Arriagada [3], in Latin America, women need to study, on average, 4 years more to get the same income as men in a similar occupation.[1] ECLAC [5] comments that even the educational levels of women are higher than those of men, both primary, secondary, and tertiary remain marked gender gaps. In addition, if the analysis includes ethnicity/race, inequality is aggravated in relation to access, permanence, and completion of studies, which is relevant for a person to enter and remain in the labor market.

In fact, according to OXFAM [1], since "the beginning of this century, the poorest half of the world's population has only received 1% of the total increase in world wealth, while 50% of this "new wealth" has gone to the richest pockets that are just 1%." This eloquent inequality is explained by several factors, among them are the following:

1. According to Piketty [6] due to unbalanced increase in most of the countries of the return on capital to work in favor of the former through the payment of interest and dividends.
2. The tax evasion of capital owners, along with tax incentives that governments to these taxpayers grant, contribute to the increasing of their profits.[2] According to OXFAM [1], there are 7.6 trillion dollars hidden in tax heavens, a figure higher than the gross domestic product (GDP) of the United Kingdom and Germany together.[3]
3. Due to the tax evasion, the governments depend heavily on indirect taxes that mostly affect the poorest sectors of the population reflecting in cuts in social spending (health, education, among others).
4. Practices such as the lobby[4] by some companies expel competitors and cause increase in prices.
5. The fragility of jobs achieved by people. In this regard, the International Labor Office [7] indicated that in 2014 there were more of 201 million unemployed people worldwide which represented an increase of more of 31 million people since the beginning of the economic crisis of 2008.

[1]Barquet [4] says that it is not enough for the women to increase their studies to get out of poverty.
[2]OXFAM [1] says that "the Billionaire Warren Buffett (…) pays less tax than (…) the cleaning person."
[3]For the year 2015, according to World Bank figures, the GDP of both countries reached 6.2 trillion dollars. Retrieved from http://datos.bancomundial.org/indicador/NY.GDP.MKTP.CD.
[4]According to OXFAM [1], for 2014, "pharmaceutical companies spent more than US$ 228 million for lobbying activities in Washington."

6. Governments rule for elites reflecting in the manipulation of laws to the detriment of the rest of the population, eroding democratic governance, as the power of unions that softens the abuse of economic institutions.

Given these facts, Cañón [8] comments that some have criticized "that a more egalitarian distribution could slow down growth, due to the disincentives created by the tax and transfer system." However, according to Ostry et al. [9] there is a strong evidence "that shows that low levels of inequality are positively correlated with higher and more sustained rates of economic growth and that redistribution generally has no negative impact on it."

Another criticism expressed by Cañón [8], citing Robert Lucas who says that "concern for inequality is harmful […] the potential to improve the lives of the poor through the distribution of current production is insignificant compared to the seemingly unlimited ability of the increased production." OXFAM [1] says that those who "defend the *status quo* affirm that the concern for inequality is driven by 'politics of envy,' and they often mention the reduction in the number of people living in extreme poverty as proof that inequality is not such a serious problem." Nonetheless, if inequality had not increased, 200 million more extreme poor would no longer be so by 2015 in the world. That is, instead of 700 they would have been 500 [10].

Consequently, poverty as well as inequality persists in the world. Karelis [11] indicates that "the US poverty rate has been essentially the same for forty years, despite a significant increase in GDP per capita." This means that only economic growth, by itself, does not eliminate poverty. Hence, the Food and Agriculture Organization (FAO) [12] indicates that the *trickle-down effect* or pro-poor growth ceased to be a valid idea.

Narayan and Petesch [13], quoting Nolan and Erikson, comment that the latter considered the income mobility of the Swedes from 1990 to the end of the decade, and found that more than three-quarters of those with incomes less than 60% of the median, at the beginning of the decade, remained in that position at the end of this lapse. For the same country, the change in the income of people born between 1920 and 1939 was also analyzed by comparing their income in 1967 and 2000. The results showed that poverty persists, even though Sweden offers favorable conditions to its inhabitants.

Valletta [14] compared the persistence of poverty between the United States and Canada, finding that a child who had only one parent and thus had low levels of education would last 3.5 years in poverty in Canada and 7 years in United States. Instead, a child with parents who were working age and with secondary education would spend only half a year in poverty in Canada and a year in the United States.

A fact that worries Ayala et al. [15] is the increase in child poverty in rich countries in the past two decades; since the way children grow up has consequences not only in the short term but also on their development and future opportunities. In addition, Ayala and Sastre [16] state that the persistence of poverty in countries where it is expected to disappear such as the United States and some countries of the European Union, is comparable.

Other mobility studies, expressed in transition matrices, show that in South Africa and Chile, 32 and 59% of the population, respectively, remain in the poorest quintile for two consecutive

periods. In the same sense, in households of Ethiopia and Iran it was found that 12 and 63% of these households, respectively, remained in the same income or consumption quintile for two continuous periods [13].

Perlman [17] held a 25-year panel of three *favelas* in Rio de Janeiro. The results showed that the exit from poverty is easier for men who have small families, and who were raised in the *favelas* closest to the city. At the same time, this author in a qualitative work showed the importance of family ties, social networks, and psychological factors to escape from poverty.

It is possible to distinguish between monetary poverty and non-monetary poverty—in the latter are included other variables different from the income such as education, nutrition, health, among others—which give different transition matrices. In fact, Baulch and Masset [18] find that monetary poverty is less persistent than non-monetary poverty because, for example, malnutrition has long-term effects. This is due to the consumption/income variables that are measured as flows; on the other hand, education and health are measured as stock, which change more slowly than the flow variables.

Finally, what is clear throughout the studies on persistence of poverty is that increase in income and educational level help people get out of poverty faster, especially if the head of the family has education; instead, between the most representative risks for the household to stay in poverty are few workers in the household, the arrival of a new child, death, marital dissolution or adult children leaving the home [5]. Besides, data on poverty and inequality are often presented indistinctly and sometimes are treated as synonyms. However, both concepts are distinct. To see the difference, we go to the next part where the relationship between them is established.

3. Relationship between poverty and inequality

In principle, there is inequality because there is no equality, but not necessarily who is not in poverty lives in wealth. Thus, inequality and poverty are conceptually distinct. Inequality has simply been defined as lack of balance. But that "lack of" is about something. That something is an attribute, for example, inequality of income, opportunities, gender, rights, and so on. The attribute emphasizes the dimension/condition to be highlighted. Note that by highlighting, inherently, a comparison is made regarding the access or non-possession of that attribute around an analysis unit. Otherwise, one could not know if there is inequality. In short, inequality could be conceptualized as a condition experienced by somebody perceiving that he/she, unlike others, does not enjoy to access to the egalitarian use of the benefits derived from the reference attribute.

On the side of the conceptualization of poverty, it should be noted that there are countless definitions that for space reasons cannot be cited in this document.[5] However, in making a synthesis exercise, it can be stated that most authors, regardless of their line of thought, agree that poverty is a lack or insufficiency of an attribute in relation to a threshold [20], for example, income insufficiency in relation to a poverty line. Thus, if people are below the threshold, they will be considered poor with respect to the chosen attribute.

[5]Generally, conceptualizations on poverty lie between choosing a single reference aspect or many. For a review on these, see Casas [19].

It should be noted that the importance of the conceptualization of inequality and poverty is that it allows the measurement of both, which in turn is a key to identify those who require public assistance to mitigate the negative effects of both phenomena, but since when did they emerge on the planet? Punset [21] points out:

> *20,000 years ago, humans invented agriculture. Until then we were hunters and gatherers, and almost all studies point out that these types of societies were […] egalitarian. But when we invented agriculture, we invented surpluses, people who want to control those surpluses appeared, and so hierarchy and […] poverty arose.*

From the above, it is clear, on the one hand, the element linked to the distribution of surplus, and on the other, the relationship between poverty and inequality. As for the former, the theoretical analysis of classical economists focused on the problem of value and distribution. They sought to determine the causes for the increase of wealth, as well as the laws that regulate its distribution among the different social classes. Therefore, it was essential for them to value the goods to know how much would there be to distribute [22].

In this regard, Smith [23] explains that the main cause of poverty is inequality; nevertheless, he justified it to guarantee stability and the capitalist social order. Also, he considered that the relation between poverty and inequality appears with the private property; consequently, the government protects the wealth of the rich, creating differences between individuals, making inequality[6] as the result of a social agreement between owners and political leaders where the interests of the former are legitimated.

By contrast, for Ricardo [24], poverty depends on inequality and population growth. For Ricardo, poverty reduces the welfare of society and persists for three reasons: (i) the dynamic relationship between demographic and economic forces does not favor the poor; (ii) the nature of the accumulation process perpetuates inequity; and (iii) institutions defend the interests of the rich.

In terms of the relationship between poverty and inequality, according to Sen [25], "analyze poverty as a problem of inequality or vice versa, would not do justice to any of the two concepts. It is clear that both concepts are related, but neither replaces the other." Therefore, it can be inferred that inequality exists because there is private property or clearly established hierarchies. But there are areas where inequality is inevitable.

Cadenas [26], citing Giegel [27], expresses that a distinction between basal inequalities and secondary inequalities must be made. The former correspond to those situations that are unavoidable in society, for example, relationships: teacher/student, employer/employee, and parent/child, while the second ones are avoidable. The existence of basal inequalities has motivated the neglect of secondary because they make that inequality appears as a normal situation.

[6]A common confusion is that equality is synonymous with equity. An example could eliminate the confusion. Let´s suppose a partnership of two people. **A** wins 1000 and **B**, 5000. In that society, there will be equality if both pay 100 for taxes, since they pay exactly the same value. From this may appear value judgments, such as that is unfair, it is an unacceptable situation, among others. Placing the discussion in these terms, it is no longer talking about equality, but about equity, that is, the way things should be in a society without favoring some members at the expense of others.

However, it has nothing to do with normality, because in secondary inequalities come into play what Luhmann [28] called rules of convertibility that produce strong *distribution structures,* which refer to those connection capabilities that impose rules of inclusion and exclusion (e.g., lobby) to maintain these inequalities and favor certain members of society. When this convertibility happens, we talk about corruption.

But inequality, being corruption one of its most visible forms, is functional for the system, as it reveals stratification in economic classes [29]. Parsons [30] finds that stratification has manifestations at the individual and institutional levels. In the first one, six criteria stand out: kinship, qualities, achievements, possessions, authority, and power. In the second one, it is expressed in four institutions: economy, politics, law, and culture.

Thus, the use of these conditions individually generates status within society, materializing inequality especially at the institutional level in economic and political aspects, through payments in money to those who hold political power to influence procedures that allows the ruling class to maintain its position of dominance or inequality [26]. This is confirmed by Cortés et al. [31] stating that "social inequality is built through a complex process, which occurs at the discursive, normative, social and subjective levels of reality" in which "discriminatory practices determine hierarchies in social relations."

In this sense, Bárcena and Prado [32] state that inequality is perceived as unjust, especially when its beneficiaries have been placed in that position through what has been called the "culture of privilege," which according to ECLAC [5] "refers to a set of norms, values and institutional mechanisms through which social inequalities are legitimized and preserved." The problem of inequality is that it can have consequences such as political and social violence [33]. However, when addressing equality or inequality, it should be specified, as Sen does [34], equality of what?

It is clear that inequality is a multidimensional phenomenon. In addition to income inequality, there are inequalities associated with political participation and with social, cultural, health, education, gender, ethnicity/race aspects, among others. In this regard, ECLAC [5] highlighted five structuring axes of inequality for Latin America. They are summarized in **Table 1**.

ECLAC [5] concludes that social inequality is conditioned by the productive structure. Thus, the design of policies aimed at reducing inequality in each of the axes must take into account the heterogeneous productive structure of each country. However, it is important to note that the labor market[7] is the bridge between the economic and the social. That is, access or real opportunities to find and/or remain in employment are decisive in mitigating the negative consequences of the indicated inequalities, which in turn are barriers to the eradication of poverty. In this line of thought, the United Nations comments that

[7]ECLAC [5] states that "unemployment is one of the main indicators of exclusion from the labor market […] In general, in all regions of the world, it affects women and young people, it is also indicated that […] it affects more the indigenous and afro-descendants."

Axis	Key elements	It manifests itself in	It reproduces in areas such as
Socioeconomic stratum	Property, distribution of power, resources and productive assets.	Inequality of income.	Education, health, and labor market.
Gender	Sex (woman/man).	Gender inequality.	Income and work, education, social development, social and political participation, enjoyment of rights and autonomy to make decisions.
Ethnicity/race	White, black, indigenous.	Ethnic/racial inequality.	The ethnicity explains the inequality of income, work, social protection, education, health, housing and basic services, social participation, enjoyment of rights, and autonomy to make decisions.
Territory	Urban/rural cities and towns: center/periphery	Territorial inequality.	The territory of birth or residence establishes opportunities and socioeconomic conditions. It also influences political, economic, and social rights. Territorial inequalities explain migration.
Age	It distinguishes between Childhood	Intergenerational inequality.	In **childhood** risk dimensions such as health, nutrition, early stimulation, and education converge. The vulnerability of this stage is due to its high level of dependence on others.
	Youth		In **youth**, social inequalities may widen or be reduced if there is no public policy intervention, because aspects that mark adulthood are defined: completion of studies, work history, family formation.
	Adulthood		In **adulthood**, access to income and welfare depend mainly on the capacity of people to enter the labor market. In fact, the type of relationship has consequences for future well-being: if this is informal, the person will not be entitled to a taxable pension in his old age.
	Old age		In **old age** due to rising life expectancy of the population, it should ensure the inclusion of older people in all areas and open spaces to address the main risks of this stage: health and lower pension and retirement coverage.

Source: own construction based on ECLAC [5].

Table 1. Structuring axes of inequality.

> *The facts show that, above a certain threshold, inequality impairs growth and poverty reduction, the quality of relations in the public and political spheres of life, and the sense of realization and self–esteem of people.*[8]

[8]Goal 10, of the 17 sustainable development goals proposed by the United Nations, is on inequality: "Reducing inequality in and between countries." Retrieved from http://www.un.org/sustainabledevelopment/es/inequality/. on January 10, 2017.

In addition, the United Nations in the first sustainable development objective raises "Put an end to poverty in all its forms and around the world." And in turn, the goal 1.1 is "By 2030, eradication of extreme poverty for all people and worldwide."[9] According to the data of the institution, there are in the world about 836 million people who remain in conditions of extreme poverty, that is to say 11.2% of the human beings of the planet lives with less than US$ 1.25 per day.

The fact that more than 10% of the inhabitants of the earth live in extreme poverty is worrisome, since to continue considering that poverty is natural is an act of cynicism with those who live in this condition, because now there is enough wealth for all [35]. Karelis [11] indicates that the very idea that poverty is persistent is *per se* persistent. In addition, he goes to some quotes from the Bible[10] to show it seems that poverty is part of the natural order.

According to Sanchez et al. [36], the persistence of poverty refers to assessing the duration of the periods in which the individuals are in poverty situation. This requires a survey that classifies households/individuals who are poor *always, sometimes* or *never.* If a household/individual from one survey to another is *always* considered *poor,* it will be said that it/he is in chronic poverty, whereas if it/he is sometimes poor, it/he is in temporary poverty.[11]

Formally, the measurement of persistence of poverty resides in using logit or probit models, in order to calculate the probability of going out or falling into poverty from one period to another [13]. Another way of estimating it is to regress with real per capita household consumption based on other explanatory variables of the individual/household. In sum, these estimates assess whether a household/individual is below an established poverty line, both in the first survey and in the second. If in both surveys it/he is below the line, it/he persists in poverty.

However, Narayan and Petesch [13] point out that surveys are sometimes done for dissimilar populations and use different lines, so their results cannot be comparable and possibly contain measurement errors (construction of the income variable, representativeness of the sample, lack of response to questions, biases, and errors associated with sampling). Anyway, any regression of poverty persistence is affected by the criticism of Ravallion that reduces a continuous variable into a discrete one; therefore, there are results of two surveys conducted in different years.[12] Thus, his conclusions are not definitive about the persistence of poverty.

In that sense, it worth to ask who is affected to a greater extent by the persistence of poverty. This question involves analyzing the determinants of this, that is, going beyond regressing or estimating the probability that a household/individual has to fall or leave poverty. That is why this document distances itself from the measurement for two reasons. The first has

[9]Retrieved from http://www.un.org/sustainabledevelopment/es/poverty/. On January 10, 2017.
[10]For example: "The poor will never leave the earth" or when Jesus said: "The poor you will always have with you, but you will not always have me."
[11]Jalan and Ravallion [37] presented the dichotomy between the concepts of chronic and transitory poverty. Thus, a temporarily poor person or household is someone who is not poor at all periods but only in some periods, whereas it will be considered in chronic poverty if it/he is poor at all periods.
[12]Income and expenditure surveys are those used to estimate poverty lines. But they are usually done every 10 or 12 years, since their cost is very high.

to do with some reasons that expose Stiglitz et al. [38], in the report of the Commission on the Measurement of Economic Performance and Social Progress,[13] regarding the message to improve the statistical system of countries on the measurement of population welfare, rather than in economic production. That is to say, there is a lack of appropriate data on welfare that allow a proper understanding of the phenomena of poverty and inequality. The second reason derives from the previous one, in the sense that before measuring, it is necessary to understand the relationship between inequality and poverty in order to make adequate use of the measuring instruments and thus to implement public policies aimed at reducing the adverse effects of these.

As the objective of the chapter is to establish the relationship between inequality and poverty, in order to observe why poverty persists, we must recognize the multidimensional nature of both phenomena. That is to say, they go beyond the one-dimensional evaluation of an attribute. In that sense, it is noted that both inequality and poverty refer to lack of an attribute. However, they differ in the access and comparison of the attribute.

In terms of access, inequality implies that the individual clearly recognizes whether or not he or she has the enjoyment of access to equal use of the benefits derived from the reference attribute. That is, when speaking of access a right to the individual is implicitly recognized. Hence, when he ***does not perceive*** this equal access, he feels dispossessed, decreased, at a disadvantage compared to others; because he feels he is worthy of receiving the same treatment or the same amount of the attribute, given that he thinks he is part of something that merits him to enjoy the access of the attribute in question. In the case of poverty, access is not taken into account; it is only evaluated if the lack or insufficiency that the person experiences with respect to the chosen attribute is below the ***threshold*** or minimum amount necessary for him to be considered as poor.

In relation to comparison, in inequality the person confronts others with the enjoyment of access to equal use of the reference attribute; on the other hand, in poverty it is made between the chosen magnitude that has the person of the attribute and the established threshold. In other words, inequality implies interpersonal comparison or between people regarding their access to the attribute. By contrast, poverty implies a single-person or intrapersonal comparison of the attribute against the threshold.

So inequality encompasses all the human beings of a society, while poverty individualizes. As the whole contains the individual, poverty is immersed in inequality. According to Coudouel et al. [39], poverty is an absolute measure of well-being, whereas inequality is a relative measure of well-being. Hence, inequality is a broader concept because it encompasses the entire population, along with the distribution of some attribute among the members of the population, and not just those below the threshold, which are the ones in the lower part of the distribution of the chosen attribute [40].

[13]The Stiglitz, Sen, and Fitoussi [38] report makes 12 recommendations aimed at "having a better view of available or potential indicators that might be useful for designing, implementing and evaluating policies to increase well-being and to promote social progress."

Therefore, as inequality contains poverty, poverty persists because inequality exists. However, to be able to attack both phenomena it is necessary to identify the causes of each one. In this respect, OXFAM [2] highlights the following causes of inequality: (i) large companies are at the service of the richest; (ii) capitalism stifles workers as well as small producers; (iii) tax evasion and elusion; (iv) a short-term vision of capitalism where the maximization of welfare is prioritized; and (v) governments rule for elites.

Now, the persistence of poverty is explained by multiple causes such as insignificant provision of land, limited access to public goods and different forms of discrimination [12], inadequate schooling [41], precarious social protection system [42], poor institutional structure, lack of opportunities, income inequality [43], chronic unemployment, inadequate access to markets that have the most disadvantaged populations [44], poor health, domestic and external factors, corrupt governments and elites, even the regime implemented by a State influences the persistence of poverty [45].

Once the causes of inequality and poverty are identified, it is pertinent to identify their consequences. In that sense, the main consequence of inequality is poverty, which in turn has *consequences* such as hunger, uncertainty, impotence, suicide, lack of voice, social isolation, resistance, deprivation, corruption, abuses of dignity, humiliation, lack of access to basic infrastructure,[14] dependency, begging, shame, illiteracy, disease, crime, households disintegration,[15] breach of social norms, creating disorder, and violence both at household level and at the regional and national level [46].

Therefore, the overcoming of both issues is in the field of design and implementation of social policies. This implies taking into account aspects related to the degree of access and control over economic and social assets such as education, health, taxes [47], labor, land, productive resources, social and civic participation, security and justice [31]. Stiglitz et al. [38], at the same time, commented that human well-being is multidimensional, and at least seven dimensions should be guaranteed: (i) material conditions (income/consumption and wealth), (ii) health, (iii) education, (iv) personal activities (work), (v) political participation, (vi) social relations, (vii) environment, and (viii) economic and physical insecurity.

Nevertheless, the implementation of these policies may find obstacles and put in tension certain hegemonic actors and blocks within a society, since the policies touch social and political interests, which can cause that what is socially desirable does not materialize in certain political regimes. Narayan and Petesch [13] point out that a liberal regime (which gives the State a minimum welfare role) is associated with high rates of persistent poverty. On the other hand, a social-democratic regime (which assigns the State an important redistributive role) is associated with higher rates of escape from poverty.

Cañón [8] indicates that consolidated welfare States "reduce inequality. Proof of this is that when they began to fall back redistributive consequences were clearly adverse." Similarly, Atkinson [48] states that social protection schemes appeared to protect people from the

[14]Such as, transport, streets, drinking water.

[15]This happens when women become the breadwinner of the family, which implies a redistribution of power within the household.

risks of precarious employment, and preserve social and political stability. However, he warns that currently these schemes are considered adverse to economic goals rather than complementary.

Then, poverty and inequality are connected by multiple aspects. However, there is a preponderant: the ability of people to enter the labor market, because this is a bridge between the economic and the social, since the absence of employment is decisive for fall and/or remain in poverty [31]. Recently, the World Economic Forum (WEF) [49] highlighted two of the risks that people face: unemployment and precarious employment. This is explained because people receive from employment the income to purchase the goods and services to meet their needs.

Consequently, people flee to both inequality and poverty. However, they support the first one more easily than the second one because poverty touches them more in their being due to its one-person character, unlike the inequality that exists by hierarchy between people. This happens because in the course of mankind, it has been obscured human being right to access to live better and he has been forced to accept living in mere subsistence conditions.

We must remember that equality has to do with the enjoyment of access to equal use of the attribute (or right), but as in the case of poverty there is no right, the human being that lives in it becomes accustomed, unwittingly, to live without such a right. That is why he does not see relevant to defend his right to live in a more egalitarian society, which would lead to reduce his poverty. So, there is a kind of submissive acceptance and tolerance of inequality that, despite supporting it, unknowingly, he sinks more in this poverty.

A fact that diverts attention from what has been commenting is temporary declines in poverty rates due to improvements in economic growth. In this regard, ECLAC [5] comments that "while economic growth is essential factor for poverty reduction, inequality can significantly limit this process (…) there is evidence that growth is less effective in achieving this reduction in countries with high levels of inequality and the reduction rate tends to be higher in more egalitarian countries."

Accordingly, it is evident that inequality and poverty are related sometimes stronger and others weaker. There will be a strong relationship when both the same attributes are analyzed, for example, the income. Instead, there will be a weak relationship when different attributes are analyzed, for example, in poverty the income is evaluated while in inequality the gender. In this case, it could be explained, weakly, that there is poverty, in part, by the existence of gender inequality, and it is strongly explained because besides gender inequality, there is also income inequality.

Anyway, in any case (strong or weak) inequality and poverty are related. However, if we want to succeed in reducing poverty persistently it should be a sine qua non condition: *before attacking poverty measures must be taken, in a strong and weak sense, leading to reduce or limit the different types of inequalities*. That is to say, it is not enough only to attack strongly on the direct attribute but also on the indirect. Even so although inequality is attacked only in a strong sense, it would have a significant impact on poverty. This is evidenced in the following section.

4. Simulation

This section shows a simulation exercise conducted in Excel, from the calculation of the Gini coefficient[16] and arbitrary values of poverty lines (PLs)[17] to observe the strong relationship between inequality and poverty. That is, when considering both the same attribute is taken into account, which in this case is the income. After simulating, some correlations between corruption, inequality, and poverty are shown for 18 countries worldwide in order to demonstrate that to greater corruption more inequality.

In that vein, the simulation involved a partnership with 10 individuals and each of them was associated with a random income, with the random function of Excel, ranging from 100 to 10,000. With random income, Gini coefficient was calculated using the following equation:

$$G = \left| 1 - \sum_{k=1}^{n-1} \left(X_{k+1} - X_k \right) \left(Y_{k+1} - Y_k \right) \right| \tag{1}$$

where G is the Gini coefficient, X is the cumulative proportion of variable population, and Y is the cumulative proportion of variable income. It is important to clarify three aspects of the coefficient calculation: (i) the absolute value is used; (ii) restricted value from 0 to 1; and (iii) it is obtained from the quotient of two areas, in which the Lorenz curve is key.[18]

Then, five poverty line values (thresholds) were placed, which correspond to the entry of the first quantile, the first quartile, the median, the average, and the income belonging to 60% of the distribution. When the simulation exercise was performed, a Gini of 0.45 was obtained, which is the result of the data presented in **Table 2**.

In calculating the poverty incidence rate in each of the five lines, 10, 20, 50, 60, and 50% were obtained, respectively. Then and in order to check the strong relationship between inequality and poverty, a proactive exercise was made aimed to use a policy of income redistribution of those individuals who concentrate more than 15% and it could be equally distributed among those that concentrate less than 5%. In other words, the proposal aims to place a maximum threshold of income concentration, as it is done with the PL.

A marginal analysis of the variation of this threshold was made to observe the importance of the proposal. It began imposing a threshold of 19%, then 18%, and so on up to 14% because

[16]It measures the surface area between the Lorenz curve and a hypothetical absolute equity line, expressed as a percentage of the maximum surface area below the line. The coefficient is a number that goes from 0 and 1, where 0 indicates perfect equality and 1 means perfect inequality. We can also speak of the Gini index, when the coefficient is multiplied by 100.

[17]This method has been the most used to make quantitative evaluations on the poverty in the world. Of this method, there are three modifications: subjective PL, relative PL, and absolute PL. Absolute PL is more widely used in developing countries, with the exception of the United States. By contrast, developed countries use the relative PL. This difference is because the developed ones want to assure to their inhabitants a relatively high average well-being; on the contrary, underdeveloped countries tend to reach basic living standards. In any modification of the line, this method classifies a household/individual as poor if his income/expenditure is less than the value of a given PL (or threshold).

[18]The details of calculating Gini coefficient are beyond the scope of this paper. It is suggested to see Medina [50].

Person	Income (*Y*)	% of income (*Y*)	Population proportion (*X*, %)
A	170	0.4	10
B	368	0.9	10
C	1660	4.2	10
D	1793	4.5	10
E	2191	5.5	10
F	3060	7.7	10
G	5206	13.2	10
H	7620	19.3	10
I	8075	20.4	10
J	9419	23.8	10
Total	**39,562**	**100**	**100**

Source: own calculations.

Table 2. Distribution of random income.

as seen in **Table 2**, people H, I, and J concentrate 19.3, 20.4, and 23.8% of income, respectively. The results of marginal analysis are shown in **Table 3**. This has eight columns from the second to the sixth; the percentage results of poverty were placed. In the seventh column, Gini coefficient obtained for each item appears. In the eighth one is the percentage change between the Gini of calculated item and the initial situation.

It is important to note that in the initial situation in the five lines, at least a percentage of poverty is recorded. However, when a threshold of 19% is imposed, it begins to see the decline in the PL whose threshold corresponds to the first quantile. Likewise, when the concentration threshold is 18%, there would be no poverty to PL corresponds to income in the first quartile. As concentration threshold decreases, relative poverty reduces in respect of raised PL. However, we observe that from the concentration threshold of 16–14%, variation in poverty rates was zero.

This could be some leeway for the State, which could place the intermediate percentage (15%). By way of example and in order to make the proposal clearer, if the State imposes this threshold it should draw 4.26, 5.41, and 8.81% of income from H, I, and J people, respectively, as they concentrate more than 15%. The surplus would give an amount of 7311.1 to be transferred and distributed, equally, among people who account less than 5% of income. In this case, persons A–D would deserve the transfer. Therefore, 7311.1 should be divided between 4 and adding it to the initial entry of these people. By doing this, society income would be as shown in **Table 4**.

Likewise, it can be seen in **Figure 1** that imposing a maximum threshold of concentration income, in addition to having a favorable impact on the decline in poverty, also affects inequality in society. Obviously, there are areas for adjustment such as transfers, instead

Item	PL (20%) income (%)	PL (25%) income (%)	Medium PL (%)	Media PL (%)	PL (60%) income (%)	Gini	Gini Δ%
Initial situation	10	20	50	60	50	0.4502	
Maximum concentration threshold (19%)	0	20	50	60	50	0.3568	−20.73
Maximum concentration threshold (18%)	0	0	40	60	50	0.3178	−29.40
Maximum threshold concentration (17%)	0	0	30	60	50	0.2788	−38.06
Maximum concentration threshold (16%)	0	0	30	60	30	0.2398	−46.72
Maximum concentration threshold (15%)	0	0	30	60	30	0.2008	−55.39
Maximum concentration threshold (14%)	0	0	30	60	30	0.1618	−64.05

Source: own calculations.

Table 3. Gini and poverty from restricting the concentration threshold.

Person	Income (*Y*)	% of income (*Y*)	Proportion of population (*X*, %)
A	1997.78	5.0	10
B	2195.78	5.6	10
C	3487.78	8.8	10
D	3620.78	9.2	10
E	2191.00	5.5	10
F	3060.00	7.7	10
G	5206.00	13.2	10
H	5934.30	15.0	10
I	5934.30	15.0	10
J	5934.30	15.0	10
Total	**39,562**	**100**	**100**

Source: own calculations.

Table 4. Distribution of income obtained after redistribution.

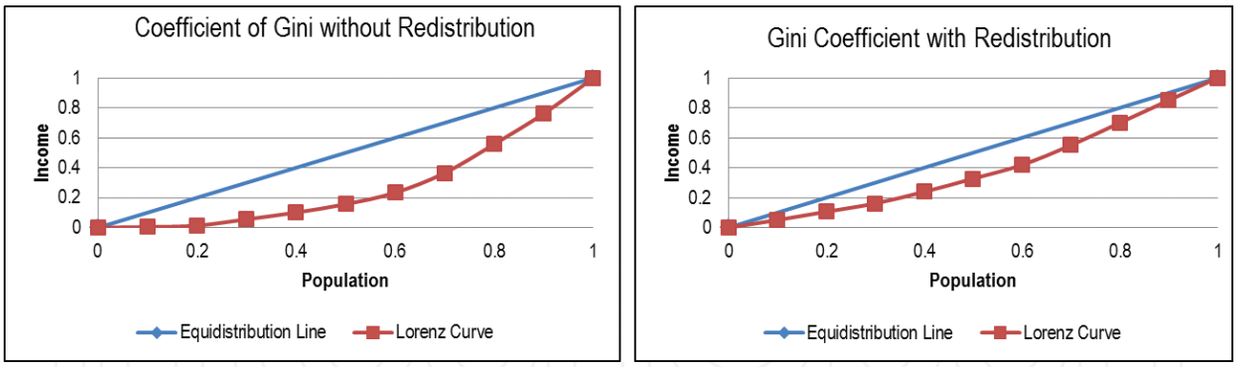

Figure 1. Gini coefficient with and without redistribution. Source: own construction.

of being direct could be indirect through the promotion of public goods (education, health, infrastructure, among others) aimed at providing people with higher levels of welfare instead of basic living standards.

Finally and in order to compare the robustness of the proposal, data related to corruption, inequality, and poverty were sought. So if the proposal is unlikely to be valid, there must be correlation between these variables. Particularly, we went to the corruption perception index (CPI) of Transparency International, as a proxy variable that could reveal the extent of equal access against an established attribute and thus to observe the relationship with income inequality, collected through the Gini coefficient. Furthermore, it took into account the incidence of national poverty rate to see the relationship between the Gini and poverty in 18 countries worldwide.

The countries were selected according to three criteria. The first wanted to collect at least one country from each continent. The second sought to distinguish between low-income countries, lower middle, upper middle, and high (according to the World Bank classification). The third chose countries with high levels of corruption, media, and low by the CPI. The selected countries are shown in **Table 5**.

It is pertinent to indicate that the CPI indicates the degree of corruption in the public sector in 168 countries, according to the perception of businessmen and analysts of the country. The score ranges from 0 (highly corrupt) to 100 (perceived lack of corruption). Habitually, the least corrupt countries are characterized by high levels of press freedom, clarity about where the money comes from and how it is spent, and a judicial branch that makes no distinction between rich and poor. Instead, the most corrupt countries are characterized by fragile institutions, media without independence, poor governance, conflicts, and wars.

In **Figure 2**, the correlation between the CPI and the Gini is shown. Looking at the trend line, it is noted that increases in the perception of corruption are associated with a higher concentration of income. Therefore, both variables are related, which should lead to take measures to restrict the degree of income concentration, as it is proposed with the threshold previously discussed.

When performing the correlation between the Gini and the rate of incidence of national poverty, the difficulty of not finding poverty data for Haiti, Zambia, China, The United States,

Continent	Country	Income
Africa	Zambia	Low middle
America	Argentina	High middle
America	Bolivia	Low middle
America	Brazil	High middle
America	Colombia	Low middle
America	Haiti	Low
America	Honduras	Low middle
America	Mexico	High middle
America	United States	High
Asia	China	High middle
Asia	Israel	High
Europe	Finland	High
Europe	France	High
Europe	Germany	High
Europe	United Kingdom	High
Europe	Romania	High middle
Europe	Russia	High middle
Oceania	Australia	High

Source: own construction.

Table 5. Selected countries.

Israel, Finland, France, Germany, United Kingdom, and Australia was reported. With other countries, the correlation was conducted and a high degree of negative correlation between the two variables was found, which means that declines in the Gini are reflected in declines in poverty (see **Figure 3**).

Unfortunately, data on inequality and poverty are poor. Hence, the relevance of what Stiglitz et al. [38] with respect to improving statistical information on welfare indicators express because the State does not keep on the agenda to which the trail is not followed. Anyway, in **Figure 4** the average of the variables CPI, poverty and Gini is shown for the period 2002–2014.

In this chart, Haiti was placed at the bottom because the only year for which data are available, it presented the highest Gini coefficient, then followed by Honduras up to Finland that has the lowest Gini of the selected countries. It is worth noting that Haiti is the most unequal country in the sample and, simultaneously, the most corrupt; instead, Finland is the most equitable and least corrupt country.

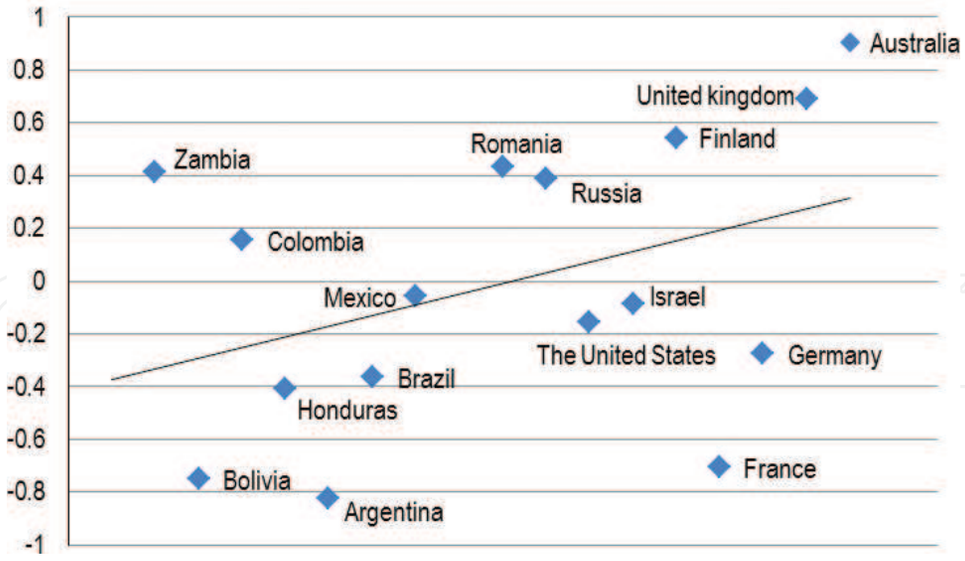

Figure 2. Correlation between the CPI and the Gini (2002–2014). Note 1: World Bank data can be found in the link: http://databank.bancomundial.org/data/reports.aspx?source=base–de–datos–sobre–pobreza–y–desigualdad. However, for Haiti and China no Gini data. Note 2: CPI data for each year were retrieved from: http://transparencia.org.es/. Source: own construction with data from databases indicated.

Finally, these calculations evidence the relationship between inequality and poverty, and they are an important indication that explains why poverty persists despite these limitations; because if it cannot establish a linear relationship between the perception of corruption, poverty, and income distribution, as measured by the mentioned indicators, it follows that countries with high levels of corruption are characterized by a very unequal income distribution, which affects the persistence of poverty, and vice versa.

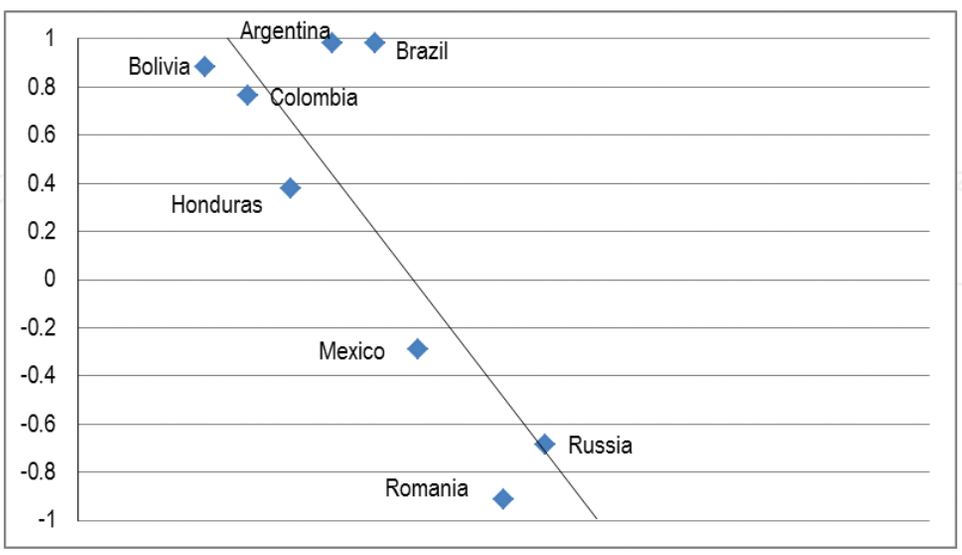

Figure 3. Correlation between Gini and Poverty (2002–2014). Source: own construction with World Bank and Transparency International data.

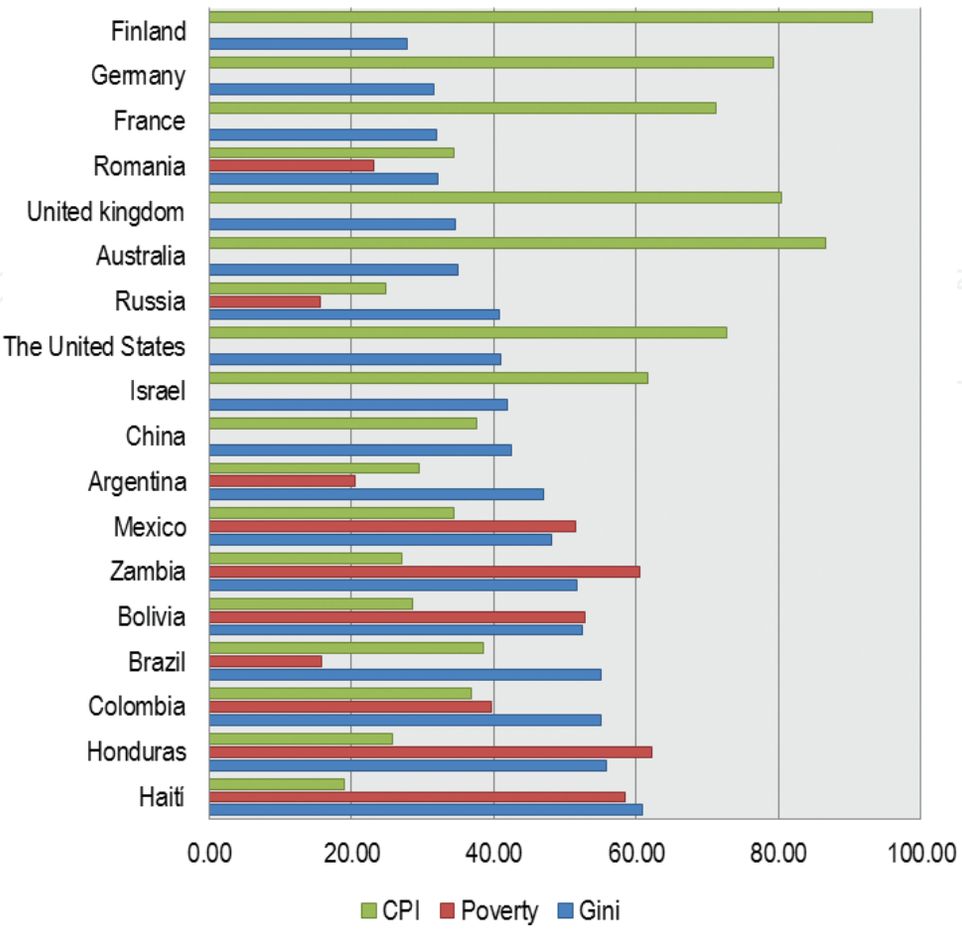

Figure 4. Average CPI, poverty, and Gini of the selected countries (2002–2014). Source: data construction with the World Bank and Transparency International data.

5. Conclusions

This chapter showed that inequality and poverty are related because both refer to the lack of an attribute, but differ in terms of access and comparison thereof. This difference allows understanding why people, even if they dislike inequality and poverty, more easily support the first than the second. This is because people have not recognized that equality means the right to enjoy access to the use of the attribute, but as in poverty there is an absence of the right, they do not see relevant defend it, in spite of the fact that in supporting inequality poverty persists.

It was also indicated that inequality was generated from the hierarchy and the establishing of differences that were legalized. However, there are areas where inequality is inevitable, hence the relevance of distinguishing between unavoidable inequalities (basal) and avoidable (secondary). Avoidable should be reduced, because in these corruption intervenes to establish rules of inclusion and exclusion in order to maintain hierarchies. Nonetheless, in some areas inequality might be allowed to promote a more egalitarian society, for example, with taxes.

At any case, it is time to take measures to combat or accept corruption because it is unacceptable to continue proposing targets on reducing poverty and inequality while observed results are

meager. It is time to give coherence between what is said and executed, stop living in a world that handles a double speech. That is, the politicians and the economy stop disguising their speeches and openly express if they are determined to fight corruption or, on the contrary, they are ruling and defending the interests of certain privileged individuals at the expense of the welfare of the majority, cynically accepting the consequences that bring inequality and poverty.

If it is effectively decided to overcome both problems, public policies based on a comprehensive approach on several dimensions should be designed such as ending tax havens; combating tax evasion; promoting political control by citizens; preventing unemployment and precarious jobs; improving statistical systems of countries on welfare indicators; avoiding marked gaps of gender, between ethnic groups, between regions, between socioeconomic strata (in areas such as education, health, and nutrition), and a differentiated approach in designing policies for each stage of people life.

The foregoing is validated because it is unacceptable that more than 10% of the inhabitants of the earth live in extreme poverty or that only eight people have the same wealth that 3600 million people. Human beings are entitled to enjoy equal access to the benefits that would result from living in a more egalitarian and less poor world (according to the attribute of the reference in which we want to place the framework for analysis and evaluation). This does not necessarily mean assuming a socialist State, but one that takes its impartial role and stop promoting and maintaining the culture of privilege under the aegis of that everyone gets what he deserves. On the contrary, as long as government intervention is greater, the greater power the interest groups have in controlling public policies and the greater privileges they obtain. As a result of this rent-seeking process, the social inequalities tend to increase in time.

In conclusion, if policymakers are deeply concerned about reducing poverty in their countries, they should start by reducing or limiting inequalities in society. Hence, the importance of the proposal to impose a limit on the concentration of the attribute of interest, since individuals who concentrate more could do so up to a ceiling, which would help reducing corrupt behaviors. Even so, in the presence of a norm ingenious ways to violate it appear, which would require of the State the adjustment of its instruments of control.

Finally, it should be understood that poverty persists because inequality persists, which is legitimated in the political arena where the poor have no voice to remove and prevent sinecures and cooptation of some Government officials. It is certainly necessary to build companies that leave behind the culture of privilege and social injustice, leave submission and instead rebel to defend the right to live in a more egalitarian society and, therefore, less poor.

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